

polymer bearings

... dry-tech® ... bearing technology 2023 motion? plastics! ...

... igus.eu



Linear systems and ball bearings

bearings

Tech up, Cost down

igus® **dry-tech**® bearings offer an alternative to lubricated plain, linear and rolling bearings. igus® develops tribopolymers for continuous dry operation. By avoiding lubrication, **dry-tech**® bearing technology attains superior service life: from -100°C up to +250°C at continuous exposure, from cleanrooms to extreme dirt exposure, from vacuum to extreme humidity.



Available from stock.

Ready to ship from 24hrs, earlier upon request.

The delivery times indicated are the average time until the ordered goods are dispatched.



No minimum order value. No surcharges.

No minimum order value with igus®. Just order the amount you need.

You can find our prices online at www.igus.eu



"7 to 8 plus Saturday" service

Monday to Friday 7.00am to 8.00pm

Saturday from 8.00am to 12.00pm



Order hotline

Phone +49-2203 9649-145

Fax +49-2203 9649-334



Online shop www.igus.eu

Product finder, configurator, online catalogue, CAD modules and many more. Order around-the-clock!



Calculate and configure online

Download 3D CAD models free of charge and quickly find the product you are looking for with our product finders and intelligent filters.



igus® live chat

There are many ways to reach us.

For example, you can use our online live chat.



Do you have any questions?

If you have any questions, simply call us or use our online tools at www.igus.eu



iglidur®

Plastic plain bearings

- ▶ Online service life calculation
- ▶ Online product finder

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iglidur®

Clip bearings, guide rings and more

- ▶ Online service life calculation
- ▶ Online product finder

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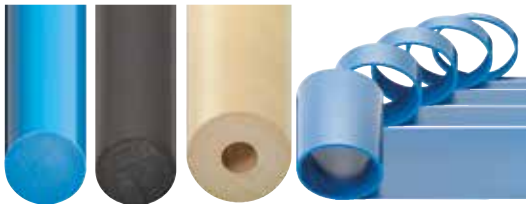
iglidur®

PRT slewing rings

- ▶ Online service life calculation
- ▶ Online product finder

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iglidur®

Bar stock for design freedom

- ▶ Online service life calculation
- ▶ Online product finder

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iglidur®

Gears

- ▶ Online service life calculation
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iglidur®

3D printing

- ▶ Online service life calculation
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igubal®

Spherical bearings

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xiros®

Ball bearings and accessories

- ▶ [Online service life calculation](#)
- ▶ [System configurator online](#)

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drylin®

Modular linear technology

- ▶ [Online service life calculation](#)
- ▶ [System configurator online](#)

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dryspin®

Efficient lead screw technology

- ▶ [Online service life calculation](#)
- ▶ [System configurator online](#)

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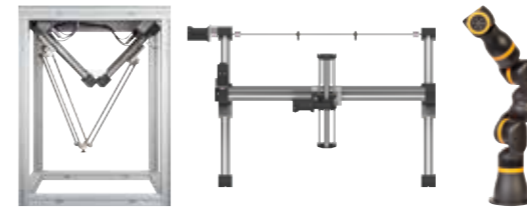
drylin®

Drive technology

- ▶ [Online service life calculation](#)
- ▶ [System configurator online](#)

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Low Cost Automation

- ▶ [Online service life calculation](#)
- ▶ [Online product finder](#)

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Disclaimer

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The information in this catalogue does not constitute a legally binding assurance of certain properties or suitability for a specific purpose. Due to constant technical refinement, we reserve the right to make technical changes to products at any time. Subject to printing errors.

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All products that are marked "New" in the catalogue have been added since the last version of the catalogue was published in May 2020.

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Imperial dimensions

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Online tools and more

From page

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Proven. Predictable. Performance.

iglidur® plastic plain bearings from igus® are lubrication-free, maintenance-free, cost-effective and versatile. They are suitable for mass-produced automotive products or for the construction of special machines, for underwater applications, for the food and packaging industry, for extreme resistance to chemicals and temperature fluctuations or for simple metal-sheet bearings: iglidur® plain bearings always offer a solution - either from the product range in the catalogue or as a special customised bearing solution - no minimum order quantity!

For more than 30 years, iglidur® plain bearings, which conform with RoHS, have been a technically and economically advantageous alternative to metal bearings of all kinds. The industry's biggest test laboratory with approximately 15,000 tests per year enables reliable predictability.

Longer service life, no maintenance, available immediately.

The most cost-effective bearing for any application

- 17 standard materials from high temperature to seawater, from food to the automotive
- More than 7,000 standard-compliant bearings available
- Savings potential up to 40%
- 100% lubrication-free and maintenance-free
- 100% corrosion-free
- 100% RoHS-compliant
- Online: product finder and service life calculator, prices, ordering, CAD etc.



Sustainability at igus®

We have been focusing on sustainability in manufacturing and products. As a result, we are now also able to state the CO₂ footprint of a large number of our iglidur® plain bearings. In addition, there are new products that are largely or completely made from recycled material.



Resistant to dirt with igus®

Zero-maintenance and dirt resistance are not the only advantages of iglidur® and drylin® linear technology. Cost down, life up!



No lubrication with igus®

The lubrication-free design of iglidur® also permits its use in the food and pharmaceutical industries. Don't wait any longer!



No maintenance with igus®

iglidur® materials for wide variety of operating conditions. Large program of dimensions compatible with nearly all applications. Predictable service life!



No corrosion with igus®

Lightweight, corrosion resistance as well as zero maintenance and lubrication achieve solutions for almost all types of applications. Fit and forget!

Reduce process costs: bearings technology on the web

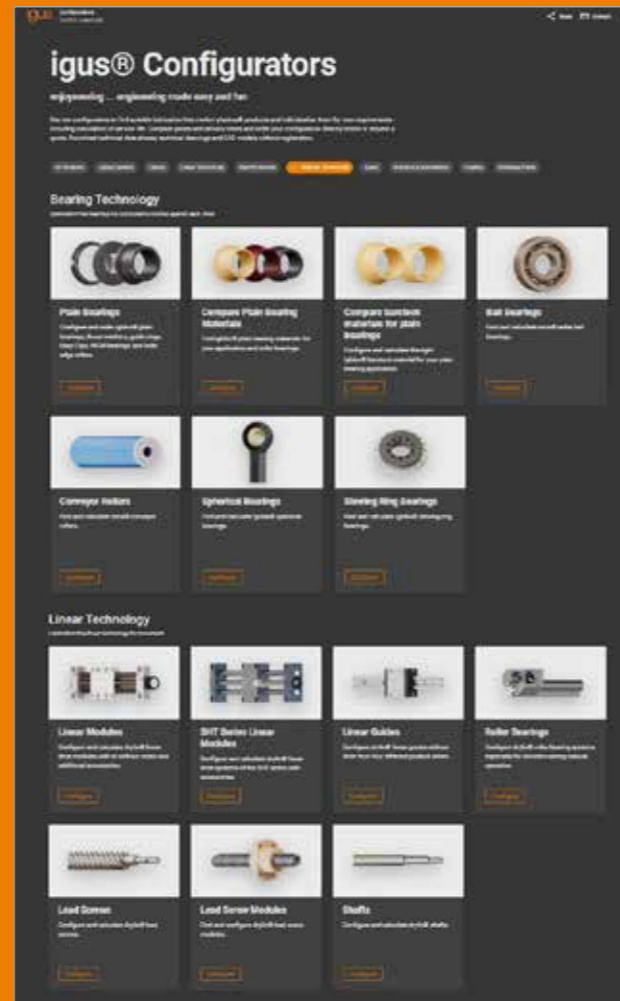
For every product in this catalogue, there is a special quick link or direct online pointer to further details, data and facts.

These include:

- Online tools for calculating service life
- 3D CAD files
- DXF data
- Download of current catalogues, brochures, videos and assembly instructions
- Application pictures
- Imperial dimensions
- Personal support
- Catalogue and sample ordering
- Online price list and online shop

More than 40 online tools help you to quickly find, configure and calculate the right product. No registration necessary. 3D CAD models online for downloading. Easy to use.

- ▶ www.igus.eu/CAD
- ▶ www.igus.eu/online-tools



ONLINE TOOLS

Fast selection of the right product incl. service life calculation

CONFIGURATORS

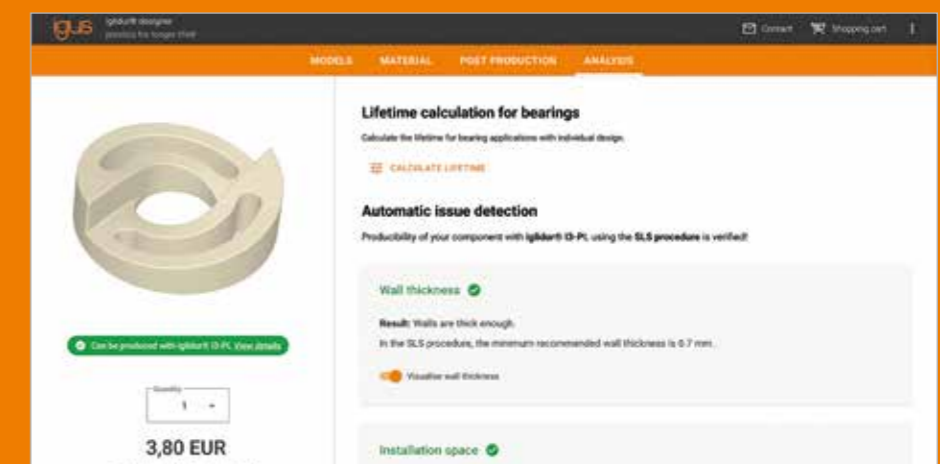
Assemble your required product, also with individual accessories and post-processing.

SERVICES

Custom machining and other tools.

Individual components

- Service life calculation
- Feasibility analysis
- Instant price



Quality from the igus® test laboratory

**Tested thousands of times.
Proven millions of times.**

Applications involving high duty cycles, speeds and acceleration or demanding environmental conditions require proven systems especially for polymer plain bearings and linear systems. igus® constantly conducts tests at its own laboratory under real-world conditions. More than 15,000 tests are conducted each year. These tests focus on push/pull forces, coefficient of friction and wear rates. Other factors like speed, load, dirt, weathering, temperature and impact are also tested.

Our laboratory is also at your disposal. If we don't have data for your type of application, we can conduct a test representative of your requirements.

► www.igus.eu/test

Explore the igus® test laboratory virtually:
► igusvr.igus.eu

All products are tested and available from one source.

Examples of test certificates and quality seals for igus® products ... more certificates upon request at

► www.igus.eu/quality



igus® quality assurance ...



... 100% visual inspection ...



... tested in the 250m² dry-tech® lab



More than 15,000 tribological tests per year on more than 50 test rigs ...



... 549 customer tests per year ...



... or heavy duty tests up to 250MPa



Worldwide, quick and reliable - the igus® service

Delivery and consultation daily from 7am to 8pm, Saturday from 8am to 12pm!

No minimum order quantity, delivery from 24hrs, over 200,000 products from stock. Order an iglidur® plain bearing or a harnessed standard system from stock in 24 hours at no extra cost. Rapid delivery worldwide guaranteed. Spare parts are delivered from stock in the shortest possible time.

Take advantage of further service options from igus®:

- **Installation service:** Our installation experts help you to install igus® solutions in your application easily and quickly
- **Free samples:** We will be happy to send you free samples for testing in your application. online request ► www.igus.eu/sample
- **The monthly newsletter:** we keep you regularly informed about new igus® solutions. Register here ► www.igus.eu/newsletter

Order at igus®:
No minimum order quantities, no surcharges.

24hrs

Single components

For example:
iglidur® W300 plain bearings; igubal® rod end bearings or drylin® linear bearings.



24 - 48hrs

Custom-made linear systems

Example:
2.46m drylin® T profile rail with carriages.



24 - 72hrs

Complete drive modules

Example:
Lead screw linear systems made to your individual requirements and dimensions.



3 - 7 days

FastLine service

Example:
Customised injection-moulded plain bearings.



3 - 10 days

Machined components or 3D printed special parts

Example:
online configured and machined shafts, lead screws, special parts and bar stock made to design.



speedigus®
production for custom injection moulded or machined parts made of polymer

3 - 6 weeks

Initial samples from new tools

Example:
Injection moulding of parts made to your design.



Shipped from 24hrs



No minimum order quantity



7am to 8pm plus Saturday service

Free igus[®] online services


Reduce process costs ... discover potential ... gain knowledge ...

Our motion plastics[®] are already moving your machines and other installed equipment but did you know that we offer unique services on top of this?

From your application evaluation to our free in-house exhibitions directly on your premises, to specific tests performed exactly according to your requirements.

We are always happy to work with you and support you. Find out about our free offers for your application now.

Use services now
▶ www.igus.eu/service


Handle and test
Free sample parts for tests and prototypes




Tests according to your specifications
Application and custom tests in the largest laboratory in the industry.




Recycling made easy
Make a contribution towards the reduction of plastic waste and the improvement of recycling in industry.




Assessment of your project application
Our technical sales department will assess your project application with you.



No minimum order quantity
Whether 3D printed or as a series injection-moulded part, whether 1 metre of cable or hundreds of metres on a drum.




Experience motion plastics[®] live
Free tickets or in-house tours in Cologne.




We make your machines smart
Predictive maintenance:
Free assessment at your premises.



Qualification and training of your employees
Free training courses on installation/assembly and the use of our products.




Free 3D CAD library
Quickly generate complete 3D models, free and without registration.



No time for trade show visits?
Free in-house exhibitions at your premises. We take care of everything.




Quickly available on site, worldwide
More than 700 field representatives are there for you in 30 countries.




Samples for prototypes
We will send you samples for your prototypes and exhibition machines.




Virtual factory tour
Discover our operations from injection moulding to the tool shop, to quality control or our laboratory.



The motion plastics[®] game: igumania
In the igus[®] game, you install lubricant and maintenance-free products to reduce production maintenance times.




We test your Low Cost Automation solution
Just send us your workpiece and we will provide you with a live video of our test or show you the feasibility.




Interchange of digital catalogue data made easy
BMEcat and EDI: talk to us about your preferred data exchange formats.



Ready-to-install energy supply systems
Design, harnessing, delivery up to complete assembly of energy chains.



igus[®] motion plastics[®] show (imps) - the virtual/real trade show
Experience the new products at our virtual-real imps booth, which you can explore on your own or with a guide.



igus[®] Corner
A sales colleague will bring the display unit to you, set it up on request and equip the compartments with the products of your choice.



Products developed for you
Numerous innovations every year, to meet customer requests.



Low Cost Automation roadshow
Experts demonstrate the robots live at your premises and program your individual application.

The flexible igus[®] factory

Investments in better technology and faster delivery times

Nearly 200,000 customers worldwide trust "motion plastics[®]" - manufacturing products at low-cost, while also ensuring quality. We have been developing, making and selling our products according to this principle for years. Wear-resistant parts as catalogue items are on stock, to allow us to complete customer requests within hours and ship.

igus[®] is continuing its growth trend and is focusing more than ever on sophisticated yet simpler solutions for all applications and budgets.



Material preparation



Injection moulding



Warehouse



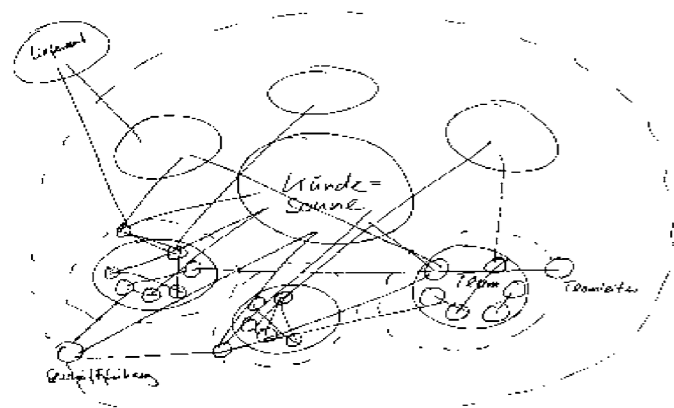
Assembly factory



Toolmaking



Open offices



"For us, customers have the same significance as the sun to life on earth. The sun gives light, warmth and energy; our customers give us ideas, work and money."

Global standards - igus® is close to you

Individual consultation worldwide by phone or at your premises. 30 subsidiaries worldwide.

A large network of sales engineers are at your disposal in Germany and worldwide. We will gladly provide consultation at your premises, supply assembly instructions and tools to installation sites, as well as measure installation spaces and check environmental conditions on site.

There are 4,500 employees in Germany and 30 international subsidiaries, plus distributors in another 52 countries to guarantee a rapid delivery worldwide.

- **Customer-specific projects and special solutions:** for every challenge, we will work with you to find a solution and provide a sample for your application free of charge
- **We are wherever you need us:** numerous e-chain® and plain bearing consultants are at your disposal at any time
- Hands-on with our products at 200 trade shows worldwide
- Individually at your premises with our mobile company trade show stand



► www.igus.eu/worldwide



igus® motion plastics® show - at your premises or virtually



Technical consultation at your premises



Worldwide open offices - for example in China



Worldwide modular factories - for example in the USA



igus® in-house trade show stand



igus® at trade shows



igus® offices and distributors
All addresses on last page.

Sustainable product development

Plastic is a much-discussed material. We know that high-performance polymers can make a contribution to the protection of resources and to the environment, and have made this the focus of our activities. We look at plastics in three phases: during production, in use and at the end of the product's life. We will give you our answers to sustainability questions for both our products and everyday life at igus®. Much remains unanswered, and for some things, especially with regard to sustainable production, we are still working on answers and solutions.



► www.igus.eu/sustainability



ECO product range



Cost-effective and versatile.
The new, sustainable iglidur® ECO materials consist of regranulates of our top materials, which have proven themselves for many years.

CO₂ footprint



CO₂ footprint in the online shop
igus® has been focusing more and more on sustainability in manufacturing and products since 2018. As a result, we are now also able to state the carbon footprint of a large number of our iglidur® plain bearings. In addition, there are new products that are largely or completely made from recycled material from our own production. And these are also tested in the laboratory and have a predictable service life.

change program



Recycling made easy
As a plastics processing and manufacturing company, we are very concerned about making our contribution to sustainable, resource-conserving use of plastic. We focus on technical plastics because that is exactly what our business is. Make a contribution towards the reduction of plastic waste and the improvement of recycling in industry.
► www.change.igus.eu

igus:bike



Yesterday's waste for tomorrow's mobility: the first motion plastics® bike in the world
The idea for the igus:bike project was born with this vision. The project aims to use plastic waste dumps worldwide as resources for a recycled bicycle. On the newly created igus:bike platform, we want to work with other bicycle and component manufacturers to create a sustainable, corrosion-free, maintenance-free alternative for urban mobility. We are taking the first step with mtrl, a start-up we are supporting during development and production of a bicycle made entirely of plastic.
► www.igus.bike

Fit and forget

For all tasks - the appropriate solution in any batch size from stock

Different industries need different solutions. From mechanical engineering, automotive assembly or medical technology, to the robotics industry - igus® offers customised solutions for specific applications. igus® possesses many years of experience in most branches of industry and has competent specialists that can be contacted when necessary. If your industry is not listed, please let us know. We're here to help.

Go online and find solutions for almost every branch of industry

► www.igus.eu/industry

Floating power turbine

A floating power generation system that converts the force of sea waves or river currents into energy with the help of turbines. The bearings in the system are exposed to extremely difficult conditions: they have to be mechanically robust as well as compact, lightweight and resistant to seawater. The engineers selected igubal® pillow block bearings (KSTM-GT) and fixed flange bearings made iglidur® W300.



Fertiliser machine

The machine forms a narrow furrow in the soil and injects urea ammonium nitrate (UAN). Bronze bushes cannot withstand the liquid fertiliser, moisture, mud and constant impact forces. The designers therefore use maintenance-free and wear-resistant iglidur® M250 and iglidur® G polymer bearings. Machines equipped with bearings from igus® have already been operating for four years without any problems.



Filling systems for reaction vessels

The vessels are transported via a vibrating conveyor and brought to a pick-up position. Grippers from the top remove vessels one by one and bring them to a pump unit for filling before they are brought for sealing. After closing, the gripper opens and the vessel drops gently into the practical pedestal box. The drylin® lead screw drives are used for feed mechanisms and linear movements. For this, the customer combines an iglidur® W300 trapezoidal lead screw nut with a rolled trapezoidal lead screw made from (stainless steel) AISI 304.



Refrigerated counter closure system

An automatic closure system for refrigerated counters is being built by the Italian company Cisaplast. For the door movement guides, the experts use drylin® stepper motors and dryspin® flanged lead screw nuts made of the high-performance polymer iglidur® J. The components work without external lubricants, are maintenance-free, lightweight, cost-effective and durable.



Drilling system

Amrikart, a Canadian company, is developing a linear guide system for positioning drills in aircraft construction. That is why the engineers are using drylin® T guide rails and carriages (TS-01 and TW-01-15-HKA). The components are lightweight and compact, but can be set precisely with high repeatability.

iglidur®

Polymer plain bearings



...plastics

Application examples: iglidur®

Tech up ... Cost down

For years the igus® motto has been motion plastics® - high-performance polymers for motion. By this we mean the production of innovative plastic products which reduce maintenance work, achieve technical improvements, at the same time as reducing costs and increasing service life, everything delivered immediately from stock. Our references from the practice show the proven employment from iglidur® plain bearings in a wide variety of applications.

Track vehicle

Despite extensive sealing, dirt still sometimes reaches the bearing points. If the bearings then get stuck, the chain could, in the worst case, wear out. To prevent that, the vehicle manufacturers use igutex® TX1 plain bearing bushes on the four oscillating axles and the tensioning axle. igus® manufactured the bushes specifically for Kässbohrer Geländefahrzeug AG in unprecedented dimensions and tested them.

(Kässbohrer Geländefahrzeug AG)



Oscillating axles for heavy load transport

The use of iglidur® G plain bearings as well as igutex® TX1 thrust washers made the use of additional lubricants unnecessary and reduced maintenance and servicing to a minimum.

(Demarko)



Plain bearings in farm loaders

igus® plain bearings do not require additional lubrication or sealing, which makes cleaning the unit easier. They are extremely robust and perfectly suited for diverse and fluctuating environmental conditions. At the same time, the high loads are reduced by the vibration-damping properties of the bearings.

(Thaler)



Automated guided vehicle system

igidur® Z plain bearings are used in the control arms of the autonomous transport vehicles. The bearings ensure that the weight of the robot and its load are distributed evenly. They transmit the axial forces exerted on the suspension bolts and ensure that the entire mechanism moves easily.

(Etisoft Smart Solutions)

Solar steam system saves CO₂

With iglidur® plain bearings made of the material J UV, the ideal solution was found for the approximately 1,000 bearing points in each plant. The material was specially developed for use in UV radiation and is durable, reliable and maintenance-free even in sunlight.

(ECOTHERM)



iglidur® plain bearings: all-rounder

Materials for general purpose



The classic all-rounder: iglidur® G
▶ Page 85



More universal: iglidur® G1
▶ Page 101



The robust all-rounder according to ISO 2795: iglidur® M250
▶ Page 111



Specialist for pivoting, rolling applications and more: iglidur® P210
▶ Page 121



For series: iglidur® P230
▶ Page 129



The cost-effective outdoor all-rounder: iglidur® P
▶ Page 135



Versatile and cost-effective: iglidur® K
▶ Page 145



Low-cost material for high-volume production: iglidur® GLW
▶ Page 153

iglidur® plain bearings: endurance runner

Materials for long service life



The versatile endurance runner: iglidur® J
▶ Page 163



The classic endurance runner up to 30MPa: iglidur® W300
▶ Page 175



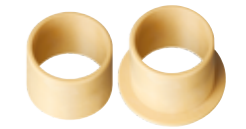
Specialist for pivoting and pulsating loads: iglidur® J3
▶ Page 187



Proven long-life material in black: iglidur® J3B
▶ Page 195



Endurance runner with high dimensional stability at high temperature: iglidur® J350
▶ Page 203



Ideal for plastic shafts: iglidur® J260
▶ Page 211

iglidur® plain bearings: endurance runner



Endurance runner up to +180°C: iglidur® W360
▶ Page 219



For fast rotating applications: iglidur® L250
▶ Page 227



For high rotational speeds: iglidur® L350
▶ Page 235



For extreme rotational speeds: iglidur® L500
▶ Page 243



Low-cost: iglidur® R
▶ Page 251



Low-cost with silicone: iglidur® D
▶ Page 259



Specialist for aluminium shafts: iglidur® J200
▶ Page 265



Ideal for pivoting movement: iglidur® E7
▶ Page 271

iglidur® plain bearings: high temperature



Extremely wear-resistant: iglidur® E
▶ Page 279

Materials for use at high temperatures



The chemical and temperature specialist: iglidur® X
▶ Page 291



Long service life under extreme conditions: iglidur® Z
▶ Page 301



The high temperature specialists up to +250°C: iglidur® X6
▶ Page 311



For soft shafts and high temperatures: iglidur® V400
▶ Page 319



All-rounder for steam sterilisation: iglidur® HSD350
▶ Page 327



For hot liquids: iglidur® UW500
▶ Page 335

iglidur® plain bearings: high media resistance

Materials with good media resistance



Endurance runner with high media resistance: iglidur® H1
▶ Page 345



Long service life under water: iglidur® H370
▶ Page 353



The classic with high resistance to media and temperature: iglidur® H
▶ Page 363



High temperature endurance runner: iglidur® C500
▶ Page 371



The low cost specialist for chemicals and temperatures: iglidur® H2
▶ Page 379



Chemical-resistant: iglidur® H3
▶ Page 385



Resistant to temperature and chemicals: iglidur® H5
▶ Page 391

iglidur® plain bearings: for contact with food

Materials for contact with food



The universal bearing for food contact:
iglidur® A181
▶ Page 401



The endurance runner at higher temperatures in the food sector:
iglidur® A350
▶ Page 409



The media and temperature specialist in the food sector:
iglidur® A500
▶ Page 417



The all-rounder for food:
iglidur® A180
▶ Page 425



The "food-classic" for low duty:
iglidur® A200
▶ Page 433



Food bearing with high media resistance up to +90°C:
iglidur® A160
▶ Page 443



Suitable for contact with drinking water:
iglidur® UW160
▶ Page 451

iglidur® plain bearings: for contact with food



For the tobacco industry:
iglidur® T220
▶ Page 459



New

Conductive and resistant:
iglidur® AX500
▶ Page 465

iglidur® plain bearings: for harsh environments

Materials for harsh environments



The durable heavy-duty bearing:
iglidur® Q2
▶ Page 477



New

Cost-effective heavy-duty bearing:
iglidur® Q3E
▶ Page 485



The peak of stability:
iglidur® Q
▶ Page 491

iglidur® plain bearings: for harsh environments



Heavy-duty on soft shafts:
iglidur® Q290
▶ Page 499



New

For medium-sized loads:
iglidur® M210
▶ Page 505



New

For heavy duty:
iglidur® M260
▶ Page 511

igutex® plain bearings: for high loads

Materials for heavy-duty applications



The robust all-rounder:
igutex® TX1
▶ Page 521



New

The technical shafts specialist:
igutex® TX2
▶ Page 527



New

The endurance runner for the highest loads:
igutex® TX3
▶ Page 533

iglidur® plain bearings: specialists

Materials for special application areas



Electrically conductive:
iglidur® F
▶ Page 545



ESD-compatible all-rounder:
iglidur® F2
▶ Page 553



The automotive standard:
iglidur® H4
▶ Page 561



For fast rotation under water:
iglidur® UW
▶ Page 569



For continuous direct sunlight:
iglidur® J UV
▶ Page 577



The biopolymer:
iglidur® N54
▶ Page 585

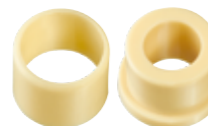


Low-cost all-rounder for fire protection:
iglidur® G V0
▶ Page 593

iglidur® plain bearings: specialists



Versatile and cost-effective:
iglidur® J2
▶ Page 601



The first antibacterial iglidur® plain bearing:
iglidur® AB
▶ Page 609



Complies with DIN EN 45545 HL3, R22/R23:
iglidur® RW370
▶ Page 617



The variable one:
iglidur® B
▶ Page 625



Free from PTFE and silicone:
iglidur® C
▶ Page 631

iglidur®	G	G1	M250	P210	P230	P	K	GLW
Installation tolerances	E10	E10	D11	E10	E10	E10	E10	E10
Descriptive technical specifications								
Wear resistance at +23°C	█	█	█	█	█	█	█	█
Wear resistance at +90°C	█	█	█	█	█	█	█	█
Wear resistance at +150°C	█	█	█	█	█	█	█	█
Slide property	█	█	█	█	█	█	█	█
Wear resistance under water	█	█	█	█	█	█	█	█
Media resistance	█	█	█	█	█	█	█	█
Resistant to edge pressures	█	█	█	█	█	█	█	█
Resistant to shock and impact loads	█	█	█	█	█	█	█	█
Dirt resistance	█	█	█	█	█	█	█	█
For high loads (>60MPa)	●	●						●
Electrically conductive								
Approvals and standards								
Dimensions in accordance with DIN	ISO 3547	ISO 3547	ISO 2795	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547
FDA-compliant								
EU 10/2011-compliant								
Fire class in accordance with UL-94	HB	HB	V-2	HB	HB	HB	HB	HB
Mould test DIN EN ISO 846	●	●						
Fogging DIN 75201-B	●		●	●				●
Availabilities / variants								
Type S, sleeve	●	●	●	●	●	●	●	●
Type F, with flange	●	●	●	●	●	●	●	●
Type T, thrust washer	●		●					
Bar stock, round material			●	●				●
Bar stock, plate								
Bar stock, tube								
Machined parts made from bar stock			●	●				
tribo-tape liner								
Page	85	101	111	121	129	135	145	153

J	W300	J3	J3B	J350	J260	W360	L250	L350	L500	R	D
E10	E10	E10	E10	F10	E10	E10	E10	F10	F10	E10	E10
Descriptive technical specifications											
Wear resistance at +23°C	█	█	█	█	█	█	█	█	█	█	█
Wear resistance at +90°C	█	█	█	█	█	█	█	█	█	█	█
Wear resistance at +150°C	█	█	█	█	█	█	█	█	█	█	█
Slide property	█	█	█	█	█	█	█	█	█	█	█
Wear resistance under water	█	█	█	█	█	█	█	█	█	█	█
Media resistance	█	█	█	█	█	█	█	█	█	█	█
Resistant to edge pressures	█	█	█	█	█	█	█	█	█	█	█
Resistant to shock and impact loads	█	█	█	█	█	█	█	█	█	█	█
Dirt resistance	█	█	█	█	█	█	█	█	█	█	█
For high loads (>60MPa)				●		●					
Electrically conductive											
Approvals and standards											
Dimensions in accordance with DIN	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	
FDA-compliant											
EU 10/2011-compliant											
Fire class in accordance with UL-94	HB	HB	HB	HB	V-0	V-2	HB	HB	V-0	V-0	HB
Mould test DIN EN ISO 846	●				●						
Fogging DIN 75201-B											
Availabilities / variants											
Type S, sleeve	●	●	●	●	●	●	●	●	●	●	
Type F, with flange	●	●	●	●	●	●	●	●	●	●	
Type T, thrust washer	●	●									
Bar stock, round material	●	●	●		●	●				●	
Bar stock, plate	●										
Bar stock, tube	●										
Machined parts made from bar stock	●	●	●		●	●				●	
tribo-tape liner											
Page	163	175	187	195	203	211	219	227	235	243	251









iglidur®	J200	E7	E	X	Z	X6	V400	HSD350	UW500
Installation tolerances	E10	E10	E10	F10	F10	F10	F10	F10	F10
Descriptive technical specifications									
Wear resistance at +23°C									
Wear resistance at +90°C									
Wear resistance at +150°C									
Slide property									
Wear resistance under water									
Media resistance									
Resistant to edge pressures									
Resistant to shock and impact loads									
Dirt resistance									
For high loads (>60MPa)				●	●	●			●
Electrically conductive				●		●			●
Approvals and standards									
Dimensions in accordance with DIN		ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547
FDA-compliant									
EU 10/2011-compliant									
Fire class in accordance with UL-94	HB	HB	HB	V-0	V-0	V-0	V-0	V-0	V-0
Mould test DIN EN ISO 846				●	●				
Fogging DIN 75201-B									
Availabilities / variants									
Type S, sleeve		●	●	●	●	●	●	●	●
Type F, with flange		●	●	●	●	●	●	●	●
Type T, thrust washer				●	●				
Bar stock, round material	●	●	●	●				●	
Bar stock, plate									
Bar stock, tube									
Machined parts made from bar stock	●		●	●				●	
tribo-tape liner							●		
Page	265	271	279	291	301	311	319	327	335
















H1	H370	H	C500	H2	H3	H5	A181	A350	A500	A180	A200	A160
F10	F10	F10	F10	F10	F10	F10	E10	F10	F10	E10	D11	E10
●	●	●	●	●				●	●			
	●											
ISO 3547	ISO 3547	ISO 3547	ISO 3547		ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 2795	ISO 3547
							●	●	●	●	●	●
							●	●	●	●	●	●
V-0	V-0	V-0	V-0	V-0	V-0	V-0	HB	V-0	V-1	HB	V-2	HB
●												
●	●	●	●				●	●	●	●	●	●
●	●	●	●				●	●	●	●	●	●
●		●	●		●		●	●	●	●		●
								●				
●		●	●		●		●	●	●	●		●
												●
345	353	363	371	379	385	391	401	409	417	425	433	443

iglidur®	UW160	T220	AX500	Q2	Q3E	Q	Q290	M210	M260	TX1
Installation tolerances	E10	E10	F10	E10	E10	E10	D11	D11	D11	D11
Descriptive technical specifications										
Wear resistance at +23°C										
Wear resistance at +90°C										
Wear resistance at +150°C										
Slide property										
Wear resistance under water										
Media resistance										
Resistant to edge pressures										
Resistant to shock and impact loads										
Dirt resistance										
For high loads (>60MPa)			●	●	●	●	●			●
Electrically conductive										
Approvals and standards										
Dimensions in accordance with DIN	ISO 3547		ISO 3547	ISO 3547		ISO 3547	ISO 3547	ISO 2795	ISO 2795	ISO 2795
FDA-compliant		●	●							
EU 10/2011-compliant			●							
Fire class in accordance with UL-94	HB	HB	V-1	HB	HB	HB	HB	HB	V-2	
Mould test DIN EN ISO 846										
Fogging DIN 75201-B										
Availabilities / variants										
Type S, sleeve	●		●	●	●	●	●	●	●	●
Type F, with flange	●		●	●	●	●	●			
Type T, thrust washer										
Bar stock, round material	●	●								
Bar stock, plate										
Bar stock, tube										
Machined parts made from bar stock	●	●								
tribo-tape liner										
Page	451	459	465	477	485	491	499	505	511	521









TX2	TX3	F	F2	H4	UW	J UV	N54	G V0	J2	AB	RW370	B	C
D11	D11	D11	E10	F10	E10	E10	E10	E10	E10	E10	F10	D11	D11
Descriptive technical specifications													
●	●	●	●	●				●			●		
		●	●										
Approvals and standards													
ISO 2795	ISO 2795	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547
		HB	HB	V-0	HB	HB	HB	V-0	HB	HB	V-0	HB	HB
								●					
●	●	●	●	●	●	●	●	●		●	●		
		●	●	●	●	●	●	●		●	●		
			●							●	●	●	
			●							●	●	●	
527	533	545	553	561	569	577	585	593	601	609	617	625	631















iglidur® plain bearings | Material properties

iglidur®	Unit	G	G1	M250	P210	P230	P	K	GLW
General properties									
Density	[g/cm³]	1.46	1.58	1.14	1.40	1.57	1.58	1.52	1.36
Colour									
Max. moisture absorption at +23°C and 50% relative humidity	[% weight]	0.7	0.2	1.4	0.3	0.1	0.2	0.1	1.3
Max. moisture absorption	[% weight]	4.0	1.7	7.6	0.5	0.3	0.4	0.6	5.5
Coefficient of sliding friction, dynamic against steel	[μ]	0.08-0.15	0.08-0.15	0.18-0.40	0.07-0.19	0.06-0.21	0.06-0.21	0.06-0.21	0.10-0.24
pv value, max. (dry)	[MPa·m/s]	0.42	0.60	0.12	0.4	0.30	0.39	0.3	0.3
Mechanical properties									
Flexural modulus	[MPa]	7,800	11,486	2,700	2,500	6,532	5,300	3,500	7,700
Flexural strength at +20°C	[MPa]	210	178	112	70	173	120	80	235
Compressive strength	[MPa]	78	115	52	50	101	66	60	74
Max. permissible surface pressure at +20°C	[MPa]	80	91	20	50	60	50	50	80
Shore D hardness		81	81	79	75	80	75	72	78
Physical and thermal properties									
Max. continuous operating temperature	[°C]	+130	+180	+80	+100	+110	+130	+170	+100
Max. short-term operating temperature	[°C]	+220	+220	+170	+160	+180	+200	+240	+160
Min. continuous operating temperature	[°C]	-40	-40	-40	-40	-30	-40	-40	-40
Thermal conductivity	[W/m·K]	0.24	0.46	0.24	0.25	0.34	0.25	0.25	0.24
Coefficient of thermal expansion at +23°C	[K ⁻¹ ·10 ⁻⁵]	9	3.5	10	8	5	4	3	17
Electrical properties									
Specific contact resistance	[Ωcm]	> 10 ¹³	> 10 ⁹	> 10 ¹³	> 10 ¹²	> 10 ¹²	> 10 ¹³	> 10 ¹²	> 10 ¹¹
Surface resistance	[Ω]	> 10 ¹¹	> 10 ¹¹	> 10 ¹¹	> 10 ¹¹	> 10 ¹²	> 10 ¹²	> 10 ¹²	> 10 ¹¹
Page		85	101	111	121	129	135	145	153








J	W300	J3	J3B	J350	J260	W360	L250	L350	L500	R	D	J200	E7	E
1.49	1.24	1.42	1.42	1.44	1.35	1.34	1.5	1.54	1.53	1.39	1.4	1.72	1.05	1.50
														
0.3	1.3	0.3	0.3	0.3	0.2	0.2	0.7	0.4	0.1	0.2	0.3	0.2	0.1	0.2
1.3	6.5	1.3	1.3	1.6	0.4	1.6	3.9	1.4	0.3	1.1	1.1	0.7	0.1	1.7
0.06-0.18	0.08-0.23	0.06-0.20	0.09-0.23	0.10-0.20	0.06-0.20	0.07-0.21	0.08-0.19	0.15-0.20	0.19-0.26	0.09-0.25	0.08-0.26	0.11-0.17	0.08-0.17	0.08-0.23
0.34	0.23	0.5	0.5	0.45	0.35	0.35	0.4	3.0	4.0	0.27	0.27	0.3	0.22	0.25
2,400	3,500	2,700	2,895	2,000	2,200	3,829	1,950	15,882	12,015	1,950	2,000	2,800	1,477	2,975
73	125	70	65	55	60	119	67	210	201	70	72	58	22	79
60	61	60	n.s.	60	50	n.s.	47	210	70	68	70	43	18	n.s.
35	60	45	44	60	40	75	45	59	70	23	23	23	18	37
74	77	73	76	80	77	n.s.	68	80	81	77	78	70	61	78
+90	+90	+90	+90	+180	+120	+180	+90	+180	+250	+90	+90	+90	+70	+90
+120	+180	+120	+110	+220	+140	+200	+180	+210	+315	+110	+110	+120	+90	+120
-50	-40	-50	-50	-100	-100	-40	-40	-100	-100	-50	-50	-50	-50	-50
0.25	0.24	0.25	0.30	0.24	0.24	0.24	0.24	0.61	0.45	0.25	0.25	0.24	0.24	0.25
10	9	13	12.7	7	13	6	10	7	6	11	11	8	25	10
> 10 ¹³	> 10 ¹³	> 10 ¹²	> 10 ¹²	> 10 ¹³	> 10 ¹²	> 10 ¹³	> 10 ¹⁰	> 10 ⁵	> 10 ¹⁰	> 10 ¹²	> 10 ¹⁴	> 10 ⁸	> 10 ⁹	> 10 ¹²
> 10 ¹²	> 10 ¹²	> 10 ¹²	> 10 ¹²	> 10 ¹⁰	> 10 ¹⁰	> 10 ¹²	> 10 ¹¹	> 10 ⁵	> 10 ¹²	> 10 ¹²	> 10 ¹⁴	> 10 ⁸	> 10 ⁹	> 10 ¹²
163	175	187	195	203	211	219	227	235	243	251	259	265	271	279















iglidur® plain bearings | Material properties

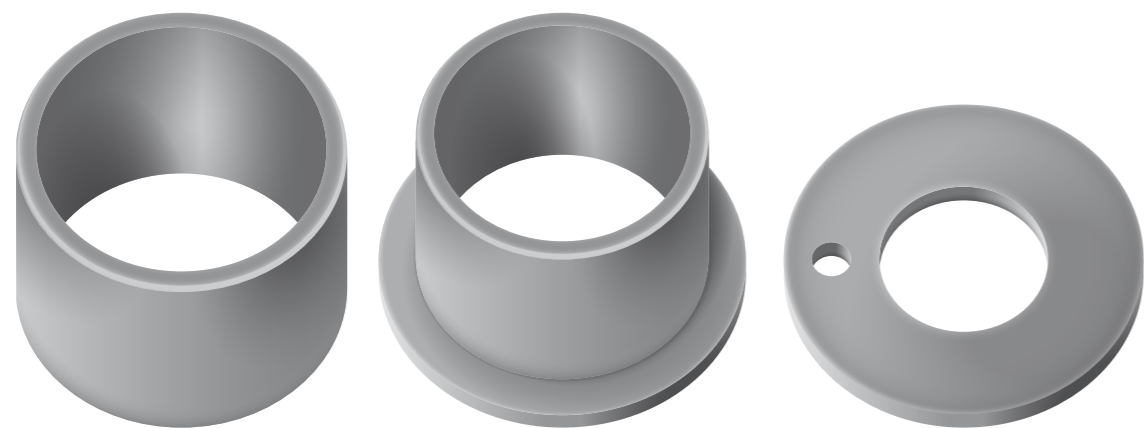
iglidur®	Unit	X	Z	X6	V400	HSD350	UW500	H1	H370
General properties									
Density	[g/cm³]	1.44	1.4	1.53	1.51	1.39	1.49	1.53	1.66
Colour									
Max. moisture absorption at +23°C and 50% relative humidity	[% weight]	0.1	0.3	0.1	0.1	0.6	0.1	0.1	0.1
Max. moisture absorption	[% weight]	0.5	1.1	0.5	0.2	1.2	0.5	0.3	0.1
Coefficient of sliding friction, dynamic against steel	[μ]	0.09-0.27	0.06-0.14	0.09-0.25	0.15-0.20	0.07-0.23	0.20-0.36	0.06-0.20	0.07-0.17
pv value, max. (dry)	[MPa · m/s]	1.32	0.84	1.35	0.5	0.3	0.35	0.80	0.74
Mechanical properties									
Flexural modulus	[MPa]	8,100	2,400	16,000	4,500	2,150	16,000	2,800	11,100
Flexural strength at +20°C	[MPa]	170	95	290	95	67	260	55	135
Compressive strength	[MPa]	100	65	190	47	44	140	78	79
Max. permissible surface pressure at +20°C	[MPa]	150	150	150	45	30	140	80	75
Shore D hardness		85	81	89	74	77	86	77	82
Physical and thermal properties									
Max. continuous operating temperature	[°C]	+250	+250	+250	+200	+180	+250	+200	+200
Max. short-term operating temperature	[°C]	+315	+310	+315	+240	+210	+300	+240	+240
Min. continuous operating temperature	[°C]	-100	-100	-100	-50	-40	-100	-40	-40
Thermal conductivity	[W/m · K]	0.60	0.62	0.55	0.24	0.24	0.6	0.24	0.5
Coefficient of thermal expansion at +23°C	[K ⁻¹ · 10 ⁻⁵]	5	4	1.1	3	7	4	6	5
Electrical properties									
Specific contact resistance	[Ωcm]	< 10 ⁵	> 10 ¹¹	< 10 ⁵	> 10 ¹²	> 10 ¹³	< 10 ⁹	> 10 ¹²	< 10 ⁵
Surface resistance	[Ω]	< 10 ³	> 10 ¹¹	< 10 ³	> 10 ¹²	> 10 ¹⁴	< 10 ⁹	> 10 ¹¹	< 10 ⁵
Page		291	301	311	319	327	335	345	353

H	C500	H2	H3	H5	A181	A350	A500	A180	A200	A160	UW160	T220	AX500
1.71	1.37	1.72	1.41	1.41	1.38	1.42	1.28	1.46	1.14	1.00	1.04	1.28	1.52
													
0.1	0.3	0.1	0.2	0.1	0.2	0.6	0.3	0.2	1.5	0.1	0.1	0.3	0.3
0.3	0.5	0.2	0.5	0.7	1.3	1.9	0.5	1.3	7.6	0.1	0.1	0.5	0.5
0.07-0.20	0.07-0.19	0.07-0.30	0.08-0.17	0.08-0.24	0.10-0.21	0.10-0.20	0.26-0.41	0.05-0.23	0.10-0.40	0.09-0.19	0.17-0.31	0.20-0.32	0.08-0.22
1.37	0.7	0.58	0.7	0.7	0.31	0.40	0.28	0.31	0.09	0.25	0.22	0.28	0.9
Mechanical properties													
12,500	3,300	10,300	2,760	6,400	1,913	2,000	3,600	2,300	2,500	1,151	1,349	1,800	6,170
175	100	210	68	150	48	110	140	88	116	19	22	65	115
81	110	109	n.s.	n.s.	60	78	118	78	54	37	32	55	n.s.
90	80	110	40	80	31	60	120	28	18	14	20	40	69
87	80	88	75	72	76	76	83	76	81	60	60	76	81
Physical and thermal properties													
+200	+250	+200	+200	+200	+90	+180	+250	+90	+80	+90	+90	+100	+250
+240	+300	+240	+240	+240	+110	+210	+300	+110	+170	+100	+100	+160	+300
-40	-100	-40	-40	-40	-50	-100	-100	-50	-40	-50	-50	-40	-100
0.6	0.24	0.24	0.25	0.25	0.25	0.24	0.24	0.25	0.24	0.30	0.50	0.24	0.26
4	9	4	6	7	11	8	9	11	10	11	18	11	9
Electrical properties													
< 10 ⁵	> 10 ¹⁴	> 10 ¹⁵	> 10 ¹²	> 10 ¹²	> 10 ¹²	> 10 ¹¹	> 10 ¹⁴	> 10 ¹²	> 10 ¹³	> 10 ¹²	> 10 ¹²	> 10 ¹⁰	> 10 ⁵ -> 10 ¹¹
< 10 ²	> 10 ¹³	> 10 ¹⁴	> 10 ¹²	> 10 ¹²	> 10 ¹²	> 10 ¹¹	> 10 ¹³	> 10 ¹¹	> 10 ¹²	> 10 ¹²	> 10 ¹²	> 10 ¹⁰	> 10 ⁵ -> 10 ¹¹
363	371	379	385	391	401	409	417	425	433	443	451	459	465

iglidur® plain bearings | Material properties

iglidur®	Unit	Q2	Q3E	Q	Q290	M210	M260	TX1
General properties								
Density	[g/cm³]	1.46	1.46-1.69	1.4	1.27	1.4	1.35	2.1
Colour								
Max. moisture absorption at +23°C and 50% relative humidity	[% weight]	1.1	1.5	0.9	3.0	0.3	0.2	0.2
Max. moisture absorption	[% weight]	4.6	5.0	4.9	9.3	0.5	0.4	0.5
Coefficient of sliding friction, dynamic against steel	[μ]	0.22-0.42	0.22-0.42	0.05-0.15	0.14-0.26	0.08-0.20	0.08-0.16	0.09-0.37
pv value, max. (dry)	[MPa·m/s]	0.7	0.7	0.55	0.70	0.5	0.35	0.89
Mechanical properties								
Flexural modulus	[MPa]	8,370	n.s.	4,500	3,074	2,200	2,200	12,000
Flexural strength at +20°C	[MPa]	240	235	120	97	65	60	55
Compressive strength	[MPa]	130	n.s.	89	68	50	50	220
Max. permissible surface pressure at +20°C	[MPa]	120	135	100	55	50	40	200
Shore D hardness		80	80	83	80	75	77	94
Physical and thermal properties								
Max. continuous operating temperature	[°C]	+130	+100	+135	+140	+100	+120	+120
Max. short-term operating temperature	[°C]	+200	+140	+155	+180	+160	+140	+170
Min. continuous operating temperature	[°C]	-40	-30	-40	-40	-40	-100	-60
Thermal conductivity	[W/m·K]	0.24	n.s.	0.23	0.24	0.25	0.24	0.24
Coefficient of thermal expansion at +23°C	[K ⁻¹ ·10 ⁻⁵]	8	n.s.	5	7	8	13	3
Electrical properties								
Specific contact resistance	[Ωcm]	> 10 ¹³	> 10 ¹²	> 10 ¹⁵	> 10 ¹²	> 10 ¹¹	> 10 ¹⁰	> 10 ¹¹
Surface resistance	[Ω]	> 10 ¹¹	> 10 ¹²	> 10 ¹²	> 10 ¹²	> 10 ¹¹	> 10 ¹⁰	> 10 ¹³
Page		477	485	491	499	505	511	521

TX2	TX3	F	F2	H4	UW	J UV	N54	G V0	J2	AB	RW370	B	C
1.77	1.9	1.25	1.52	1.79	1.52	1.49	1.13	1.53	1.44	1.11	1.34	1.15	1.1
													
1.0	0.1	1.8	0.2	0.1	0.2	0.3	1.6	0.7	0.2	0.8	0.25	1.0	1.0
1.3	0.1	8.4	0.4	0.2	0.8	1.3	3.6	4.0	1.3	1.6	1.2	6.3	6.9
n.s.	n.s.	0.10-0.39	0.16-0.22	0.08-0.25	0.15-0.35	0.08-0.19	0.15-0.23	0.07-0.20	0.11-0.27	0.18-0.31	0.13-0.17	0.18-0.28	0.17-0.25
0.2	0.2	0.34	0.31	0.70	0.11	0.30	0.5	0.5	0.23	0.25	1.2	0.15	0.10
Mechanical properties													
n.s.	n.s.	11,600	7,418	7,500	9,600	2,400	1,800	7,900	3,605	1,850	2,997	1,800	1,900
n.s.	n.s.	260	93	120	90	72	70	140	101	50	100	55	60
180	n.s.	98	61	50	70	n.s.	30	100	77	40	129	20	30
180	180	105	47	65	40	34	36	75	46	25	75	40	40
91	91	84	72	80	78	74	74	80	n.s.	70	80	69	72
Physical and thermal properties													
+130	+130	+140	+120	+200	+90	+90	+80	+130	+90	+70	+170	+100	+90
+140	+140	+180	+165	+240	+110	+120	+120	+210	+110	+140	+190	+130	+130
-20	-20	-40	-40	-40	-50	-50	-40	-40	-50	-40	-50	-40	-40
0.25	0.25	0.65	0.61	0.24	0.6	0.3	0.24	0.25	0.25	0.24	0.22	0.24	0.24
n.s.	n.s.	12	5	5	6	10	9	9	7	10	5	12	15
Electrical properties													
insulating	insulating	< 10 ³	< 10 ⁹	> 10 ¹³	< 10 ⁵	> 10 ¹³	> 10 ¹³	> 10 ¹²	> 10 ¹³	> 10 ¹²	> 10 ¹²	> 10 ¹⁰	> 10 ¹⁰
insulating	insulating	< 10 ²	< 10 ⁹	> 10 ¹²	< 10 ⁵	> 10 ¹³	> 10 ¹¹	> 10 ¹¹	> 10 ¹²	> 10 ¹²	> 10 ¹²	> 10 ⁹	> 10 ⁹
527	533	545	553	561	569	577	585	593	601	609	617	625	631



Proven.

Since 1983, igus® has been manufacturing plain bearings from specifically developed iglidur® high-performance plastics. Over 50 different polymer compounds have been developed and tested since then. In order to make the selection of the best material for wear-resistant parts in various environments as easy and safe as possible, igus® tests these materials in over 15,000 application-oriented test series per year. The collected findings flow into unique online selection tools and the know-how of our global network of iglidur® application consultants.

Predictable.

Plain bearings are wear-resistant parts. And wear-resistant parts wear out. But when? When is the wear limit reached and when does the plain bearing have to be replaced? The iglidur® expert system answers this question. Based on more than 15,000 wear tests per year, the iglidur® expert system

offers designers the possibility of not only determining the iglidur® plain bearing with the best price-performance ratio within a few minutes, but also to get an exact report on the predicted service life in the application. Easy. Online calculation available.

Performance.

Since 1983, iglidur® plain bearings have successfully established themselves in various applications all over the world. They are not only cost-effective but also maintenance-free, lubrication-free and versatile. They are suitable for large or small volume production, in the automotive sector, in special machine construction, underwater applications or for the food and packaging industry. More than 200,000 customers worldwide successfully use iglidur® plain bearings and thereby reduce the costs and increase the service life of their bearing points.



Picture 01: igus® test lab: 15,000 tribological tests (friction and wear) in 300 test set-ups in the industry's largest laboratory (3,800m²). View inside bearing laboratory in Cologne

Properties and design

igidur® plain bearings made from high-performance polymers

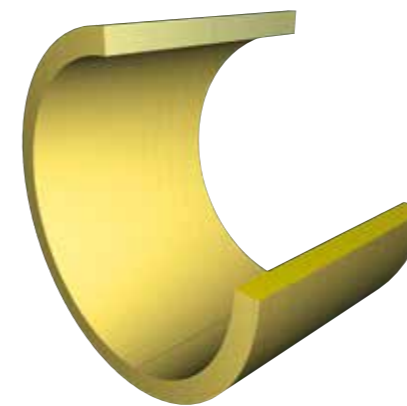
Wear-resistant tribo-polymers improved by precise additions of strengthening materials and solid lubricants, tested thousands of times and proven millions of times - that is iglidur®. igus® engineers develop and test more than 267 new plastic compounds every year. The finely tuned combination of plastic matrix, strengthening components and solid lubricants in every single tribo-polymer results in an individual properties profile in each case. In more than 15,000 individual tests a year on over 200 test rigs in the igus® test laboratory, all materials are thoroughly tested. The findings go into a unique knowledge database on the tribology of maintenance-free plastic plain bearings. This database enables us to select the ideal iglidur® plain bearing for our customers depending on the application and to calculate its anticipated service life. If necessary, it is also possible to develop an application-specific material, exactly adapted to the thermal, mechanical and tribological requirements, which goes beyond the existing iglidur® product range. In addition, freely accessible and user-friendly online tools enable every user to select his personal plain bearing from the iglidur® product range. Whether iglidur® product finder or iglidur® service life calculation, piston ring or bar stock configurator: with a few clicks and application-related information a suitable bearing is quickly found.

► www.igus.eu/online-tools

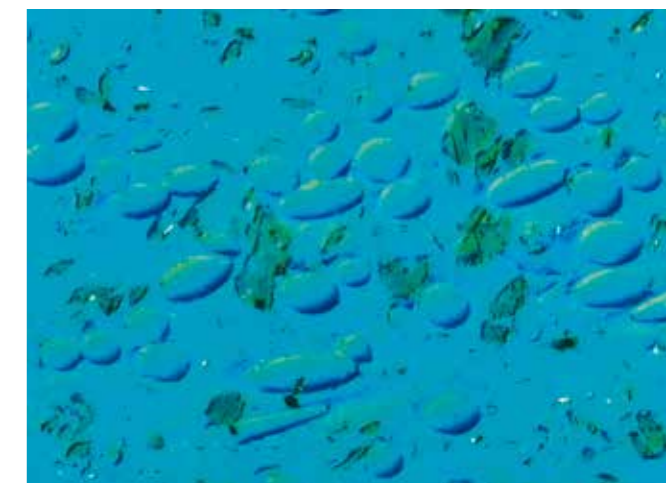
General properties of iglidur® plain bearings

- Lubrication-free
- Corrosion-resistant
- Good media resistance
- High compressive strength
- High mechanical dampening
- Low coefficient of friction
- Maintenance-free
- High resistance to contamination
- Lightweight
- High wear resistance
- Excellent price-performance ratio

Over and above the general properties, each iglidur® bearing material possesses a series of special properties and strengths, which make it specially suitable for certain applications and requirements. You can find a comprehensive description of the materials in the respective chapters before the dimensions tables.



Picture 02: Injection-moulded iglidur® plain bearings are homogeneously structured. Base polymer, bonding materials and solid lubricants mutually complement each other.



Picture 03: Base polymers with fibres and solid lubricants, magnified 200 times, dyed

Properties and design

The traditional solution

Hard shells with soft coating. Every lubricated bearing works according to this principle, and also a number of maintenance-free bearings that are equipped with special sliding layers. However, this soft sliding layer is not strong enough. For high loads, edge pressure or oscillations, it is easily removed.

Base polymers and technical fibres

The radial pressure with which the bearings are loaded is received by the polymer material. In the contact area, this material provides a support to the shaft. The polymer base material ensures that the lubricants do not receive a surface pressure that is too high. The base material is also reinforced by technical fibres or filling materials. These additional materials stabilise the bearing especially in cases of continuous load.

Incorporated self-lubrication

The solid lubricants are, as microscopic particles, embedded in millions of tiny chambers of the material. From these chambers, the plain bearings release tiny amounts of solid lubricants during movement. This is adequate to sufficiently lubricate the immediate surrounding area. The lubricants help to reduce the iglidur® bearing's coefficient of friction. They are not indispensable for the bearing's function, but have a supporting effect. Since they are embedded in the tiny chambers, they cannot be forced out. They are always there as soon as the bearing or the shaft is set in motion.



Picture 04: Polymer granulate; basis compound of the lubrication-free and predictable iglidur® plain bearings

The iglidur® solution: the self-lubricating effect

The high-performance polymers of the iglidur® plain bearings consist of:

- Base polymer
- Fibres and filling material
- Solid lubricants

These components are **not applied in layers**, but instead are mixed together homogeneously. The advantage of this design is clear when the requirements on the bearings surface are studied:

1. The coefficient of friction, which is determined especially by the surface of the bearing, should be as low as possible.
2. The surface cannot be removed by forces that act on the bearing.
3. The wearing force acts especially on the surface of the bearing, for this the bearing must be capable of high resistance.

One universal material, which can fulfil all these tasks equally well, unfortunately does not exist yet. That is why iglidur® plain bearings work differently. Different components of the iglidur® materials give the bearings their properties:

- The **base polymers** are responsible for the resistance to wear.
- **Fibres and filling materials** reinforce the bearing so that high forces or edge loads are possible.
- **Solid lubricants** lubricate the bearing independently and prevent friction of the system.

Load

The load of a plain bearing is expressed by the surface pressure (p) in MPa (corresponding to N/mm²). For this purpose, the radial load is determined on the projected surface of the bearing.

Radial bearing:

$$p = \frac{F}{d1 \cdot b1}$$

Thrust bearing:

$$p = \frac{F}{(d2^2 - d1^2) \cdot \frac{\pi}{4}}$$

In these equations:

F load in [N]

d1 bearing inner diameter in [mm]

b1 bearing length in [mm]

d2 outer diameter of the bearing in [mm]

Max. recommended surface pressure

A comparative value of the iglidur® material is the maximum recommended static surface pressure [MPa] at +20°C. The values of the individual iglidur® plain bearings differ greatly on this point. The value [p] indicates the pressure limit of a plain bearing. The plain bearing can carry this pressure permanently without damage. The given value applies to static operation; only very slow speeds up to 0.01m/s are tolerated under this pressure. Higher pressures than those indicated are possible if the duration of the load is short.

► Material properties, page 60

Load and temperature

Diagram 02 and 03 show the maximum recommended static surface pressure of the iglidur® plain bearing as a function of temperature. With increasing temperature, this value decreases continuously. Take advantage of the opportunity presented by the predictability of the iglidur® plain bearing to record these effects in advance, or determine the effective temperatures in the test.

Pressure and speed

With decreasing radial load on the plain bearing, the permissible surface speed increases. The product of the pressure [p] and speed [v], the so-called pv value, can be understood as a measurement for the frictional heat of the bearing. This relationship is shown by the pv graph that is the first in the respective chapter for each iglidur® material.

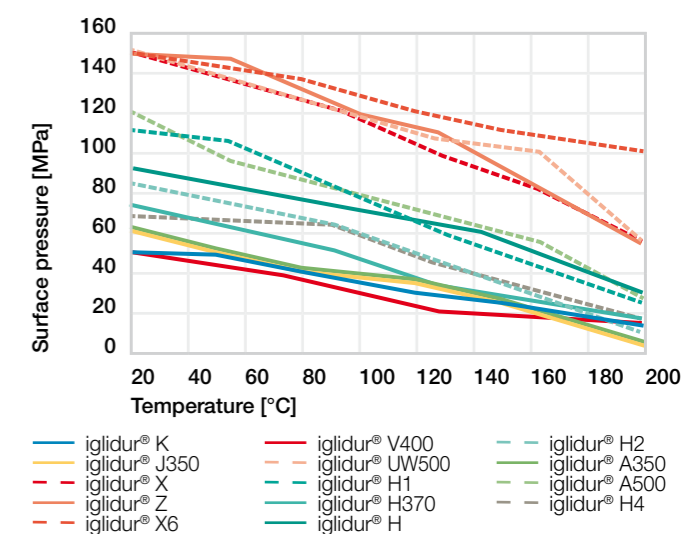
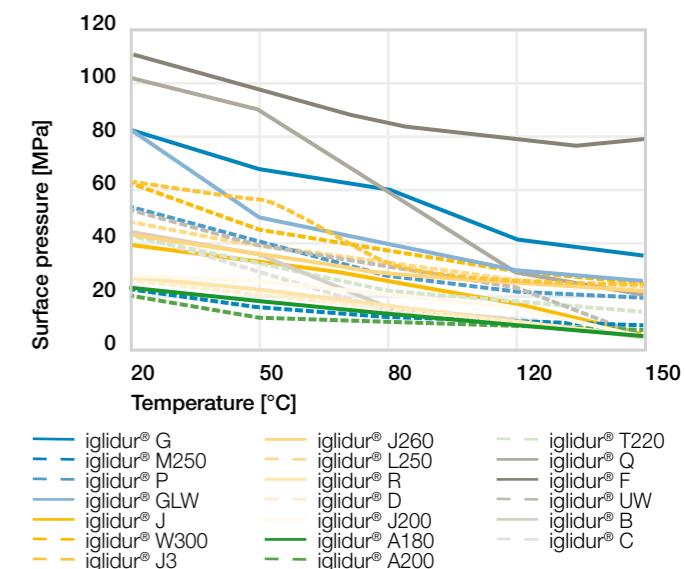


Diagram 02-03: Maximum recommended surface pressure as a function of temperature

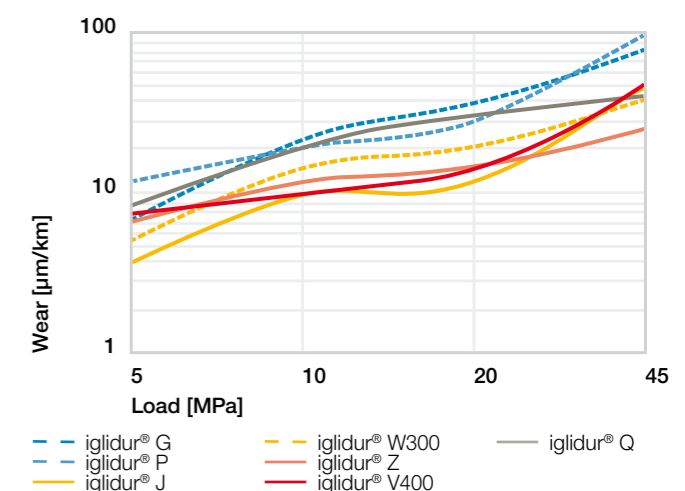
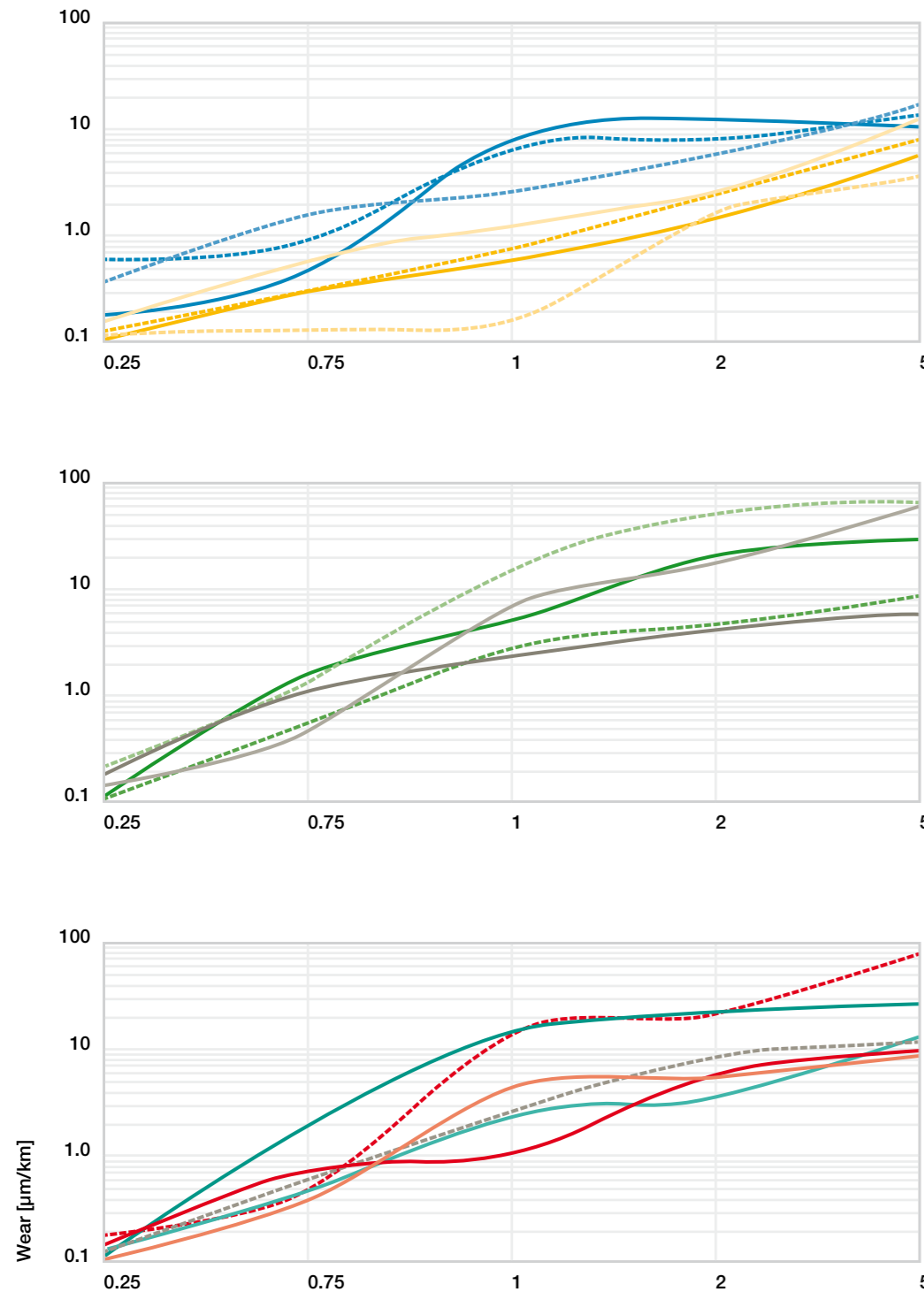


Diagram 04: Wear of iglidur® plain bearings under medium and high pressures

Pressure and wear

The following diagrams show the wear behaviour of the iglidur® bearing materials. It is easily recognised that for

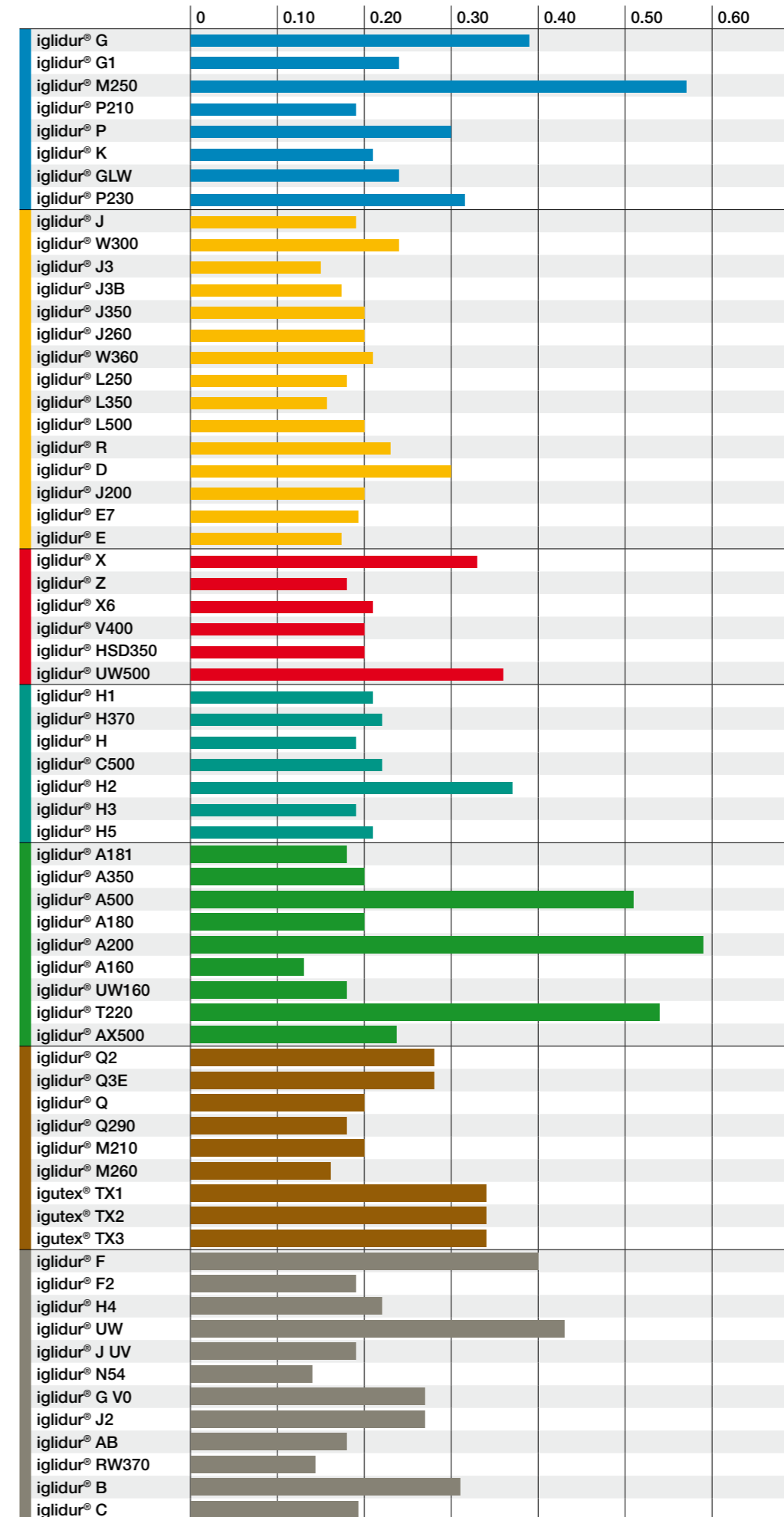
each pressure, there is an optimal plain bearing available. The wear is shown as a wear rate in [µm/km].



- iglidur® G
- iglidur® J
- - iglidur® M250
- - iglidur® W300
- - iglidur® P
- - iglidur® L250
- - iglidur® R
- iglidur® A180
- - iglidur® A200
- - iglidur® A500
- iglidur® F
- iglidur® Q
- - iglidur® X
- iglidur® V400
- iglidur® Z
- iglidur® H
- iglidur® H370
- - iglidur® H4

Diagrams 05-07: Wear of iglidur® plain bearings under low pressures

Pressure and coefficient of friction



With increasing load, the coefficient of friction of the plain bearing typically decreases. In this context, shaft materials and the surface finish are also significant.

► Coefficient of friction, page 51

Diagram 08: Coefficient of friction of iglidur® materials with Cf53 shaft, rotating

Surface Speed

The peripheral speed is always significant in plain bearings. The absolute speed is not crucial, but the relative speed between the shaft and the bearing. The surface speed is expressed in meters per second [m/s] and calculated from the speed n [rpm] with the following formula.

With varying speeds for example with pivoting movements, the value needed is the average surface speed v (see above formula).

Rotational movement:
$$v = \frac{n \cdot d1 \cdot \pi}{60 \cdot 1,000} \left[\frac{m}{s} \right]$$

Pivoting movement:
$$v = d1 \cdot \pi \cdot \frac{2 \cdot \beta}{360} \cdot \frac{f}{1,000} \left[\frac{m}{s} \right]$$

In these equations:

d1 = Shaft diameter [mm]

f = Frequency per second

β = Angle of motion per cycle [°]

n = rpm



Permissible surface speeds

iglidur® plain bearings were primarily developed for low to average surface speeds in continuous operation. Table 01 shows the permissible surface speed of iglidur® plain

bearings for rotating, pivoting, and linear movements. These surface speeds are limit values assuming minimal pressure loading of the bearing. In practice, these limit values are rarely reached due to an inverse relationship between load and speed. Each pressure increase leads unavoidably to a reduction of the permissible surface speeds and vice versa. The speed limit is determined by the thermal properties of the bearing. This is also the reason why different surface speeds can occur for the different movement types. For linear movements, more heat can be dissipated via the shaft, since the bearing uses a longer surface area on the shaft.

Surface speed and wear

Considerations regarding the permissible surface speeds should also include the wear resistance of the plain bearing. High surface speeds automatically bring correspondingly high wear rates with them. With higher surface speed, not only the wear rate rises but also the absolute wear.

Surface speed and coefficient of friction

In practice the coefficient of friction of plain bearings is a result of the surface speed. High surface speeds have a higher coefficient of friction than low surface speeds. Diagram 08 shows this relationship by using the example of a steel shaft (Cf53) with a load of 0.7MPa.

Chemical resistance

iglidur® plain bearings can come into contact with many chemicals during their use. This contact can lead to changes of the structural properties. The behaviour of plastics towards a certain chemical is dependent on the temperature, the length of exposure, and the type and amount of the mechanical stress. If iglidur® plain bearings are resistant to a chemical, they can be used in these media. Sometimes, the surrounding media can even take on the role of a lubricant. Therefore plain bearings may also be used lubricated. However, in dirty environments, a traditional lubricant can decrease the wear resistance when compared to dry operation. The following overview demonstrates this. You'll find a detailed list of chemical resistances in the rear of the catalogue.

► Chemical table, page 1894

Applications in the food industry

The iglidur® product range with specially developed bearing materials is prepared for the special requirements in machines and equipment for the food industry. The materials of the iglidur® A series and of iglidur® T220 are made according to the requirements of the American Food and Drugs Administration (FDA) for the repeated contact with food.

Material	Hydro-carbons	Greases, oils, without additives	Weak acids	Weak alkalines
iglidur® G	+	+	0 up to -	+
iglidur® G1	+	+	0 up to -	+
iglidur® M250	+	+	0 up to -	+
iglidur® P210	-	-	0	-
iglidur® P	-	+	0	-
iglidur® K	+	+	0 up to -	+
iglidur® GLW	+	+	0 up to -	+
iglidur® P230	+	+	+	+
iglidur® J	+	+	0 up to -	+
iglidur® W300	+	+	0 up to -	+
iglidur® J3	+	+	0 up to -	+
iglidur® J3B	+	+	0 up to -	+
iglidur® J350	+ up to 0	+	+	+
iglidur® J260	+	0 up to -	-	+ up to 0
iglidur® W360	+	+	0 up to -	+
iglidur® L250	+	+	0 up to -	+
iglidur® L350	+ up to 0	+	+	+
iglidur® L500	+	+	+	+
iglidur® R	+	+	0 up to -	+
iglidur® D	+	+	0 up to -	+
iglidur® J200	+	+	0 up to -	+
iglidur® E7	+	+	0 up to -	+
iglidur® E	+	+	0 up to -	+
iglidur® X	+	+	+	+
iglidur® Z	+	+	+	+
iglidur® X6	+	+	+	+
iglidur® V400	+	+	+	+
iglidur® HSD350	+	+	+	+
iglidur® UW500	+	+	+	+
iglidur® H1	+	+	+ up to 0	+
iglidur® H370	+	+	+ up to 0	+
iglidur® H	+	+	+ up to 0	+
iglidur® C500	+	+	+	+

Material	Hydro-carbons	Greases, oils, without additives	Weak acids	Weak alkalines
iglidur® H2	+	+	+ up to 0	+
iglidur® H3	+	+	+ up to 0	+
iglidur® H5	+	+	+ up to 0	+
iglidur® A181	+	+	0 up to -	+
iglidur® A350	+ up to 0	+	+	+
iglidur® A500	+	+	+	+
iglidur® A180	+	+	0 up to -	+
iglidur® A200	+	+	0 up to -	+
iglidur® A160	+	+	+	+
iglidur® UW160	+	+	+	+
iglidur® T220	-	+	0	-
iglidur® AX500	+	+	+	+
iglidur® Q2	+	+	0 up to -	+
iglidur® Q3E	+	+	0 up to -	+
iglidur® Q	+	+	0 up to -	+
iglidur® Q290	+	+	0 up to -	+
iglidur® M210	-	-	0	-
iglidur® M260	+	0 up to -	-	+ up to 0
igutex® TX1	+	+	+	+
igutex® TX2	+	+	+	+
igutex® TX3	+	+	+	+
iglidur® F	+	+	0 up to -	+
iglidur® F2	-	+	0	-
iglidur® H4	+	+	+ up to 0	+
iglidur® UW	+	+	0 up to -	+
iglidur® J UV	+	+	0 up to -	+
iglidur® N54	+	+	0 up to -	+
iglidur® G V0	+	+	0 up to -	+
iglidur® J2	+	+	0 up to -	+
iglidur® AB	+	+	0 up to -	+
iglidur® RW370	-	+	+	+
iglidur® B	-	-	0 up to -	-
iglidur® C	+	+	0 up to -	+

Table 05: Chemical resistance of iglidur® materials

+ resistant 0 conditionally resistant - not resistant

All data given at room temperature [+20°C]

pv value and coefficient of friction

For plain bearings, the product is given a new value depending on the pressure [p] and the surface speed [v]. The **pv value** can be considered a measure of the frictional heat and can be used as an analytical tool to answer questions concerning the proper application of a plain bearing. For this purpose the actual **pv value** is compared with a permitted **pv value** calculable for the height. The permitted **pv value** depends on the shaft material, the ambient temperature and the service time.

Correction factor

The permissible **pv value** can be increased in practical operation if the bearing temperature never reaches the maximum limit because of the short operating time. Tests have shown that this is true for operating times below 10 minutes. It is known that a longer dwell time makes a greater contribution to re-cooling. An important qualifier here is the ratio of the operating time and dwell times. The different curves of diagram 09 represent different ratios (3x means that the dwell time is three times longer than the operating time).

Lubrication

Although iglidur® plain bearings are designed for dry operation, they are quite compatible with standard oils and greases. A single lubrication during the installation improves the start-up behaviour and the coefficient of friction, thus reducing the frictional heat. Due to this effect, the permissible loads for plain bearings can be increased by lubrication. Table 02 shows the correction factors for **pv value** using lubrication.

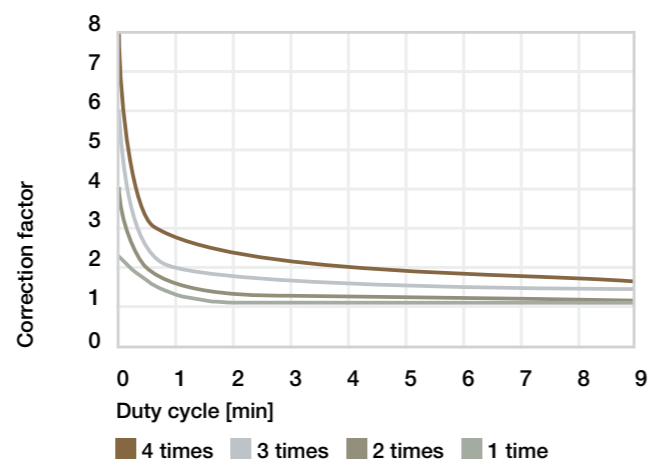


Diagram 09: Correction factor for p · v

Lubrication	Correction factor
Dry operation	1.0
During installation	1.3
Continuous, grease	2.0
Continuous, water	4.0
Continuous, oil	5.0

Table 02: Correction of the tolerated pv value by means of lubrication

Material	Thermal conductivity [W/m · k]
Steel	46
Aluminium	204
Grey cast iron	58
304 stainless steel	16
Ceramics	1.4
Polymer	0.24

Table 03: Heat conductivity values of shaft or housing materials

Coefficient of friction

iglidur® plain bearings are self-lubricating with the addition of solid lubricants. The solid lubricants lower the coefficient of friction of the plain bearings and thus increase the wear resistance. The coefficient of friction μ is proportional to the normal force and describes which force is needed to move a body in relation to another.

Depending on whether an application is starting from a stationary position or the movement is in progress and needs to be maintained, a distinction is made between a static coefficient of friction and a dynamic coefficient of friction.

Coefficient of friction and surfaces

Shown here is the relationship between coefficient of friction and surface finish of shaft materials. It is clearly shown that the amount of friction is composed of different factors.

If the shaft is too rough, abrasion levels play an important role. Small areas of unevenness that can interlock with each other must be worn off the surface.

When the surfaces are too smooth, however, higher adhesion results, i.e. the surfaces stick to each other. Higher forces are necessary to overcome the adhesion, which results from an increased coefficient of friction.

Stick-slip can be the result of a large difference between static and dynamic friction and of a higher adhesive tendency of mating surfaces. Stick-slip also occurs due to intermittent running behaviour and can result in loud squeaking. Over and over again, it is observed that these noises do not occur or can be eliminated with rough shafts. Thus for applications that have a great potential for stick-slip - slow movements, large resonance of the housing - attention must be paid to the optimal surface finish of the shafts.

pv value

$$pv_{perm.} = \left(\frac{[K1 \cdot \pi \cdot \lambda k \cdot \Delta T]}{\mu \cdot s} + \frac{[K2 \cdot \pi \cdot \lambda s \cdot \Delta T]}{\mu \cdot b1 \cdot 2} \right) \cdot 10^{-3}$$

In these equations:

- K1, K2** = Constant for heat dissipation (K1 = 0.5, K2 = 0.042)
- s** = Bearing wall thickness mm
- b1** = Bearing length mm
- μ** = Coefficient of friction
- λs** = Thermal conductivity of the shaft
- λk** = Thermal conductivity of the bearing
- ΔT** = ($T_a - T_u$)
- T_u** = Ambient temperature [°C]
- T_a** = Max. application temperature [°C]



Picture 05: More cost-effective products - a crucial component: the largest test laboratory in the industry. 3,800m² laboratory, over 12,000 tests and two billion test strokes a year.

Temperatures

The temperature resistance of high-performance polymer plain bearings is usually underestimated. Data is often found in the literature about the continuous operating temperature. The continuous operating temperature is the highest temperature, which the plastic can withstand for a period of time without a reduction in the tensile strength of the material above or below a prespecified value. This standardised test however yields only a less relevant characteristic value, as bearings are almost always subjected to a load. The application temperatures of the materials are more revealing.

Application temperatures

The minimum application temperature is the temperature below which the material is so rigid and hard that it becomes too brittle for standard applications. The maximum continuous application temperature is the temperature the material can endure for a longer period of time without the properties changing considerably.

The maximum, short-term application temperature is the temperature above which the material becomes so soft, that it can only withstand small external loads. "Short term" is defined as a period of a few minutes.

If the plain bearings are moved axially or axial forces occur, there is more opportunity for the bearing to lose press-fit. In these cases, axial securing of the bearing is necessary in

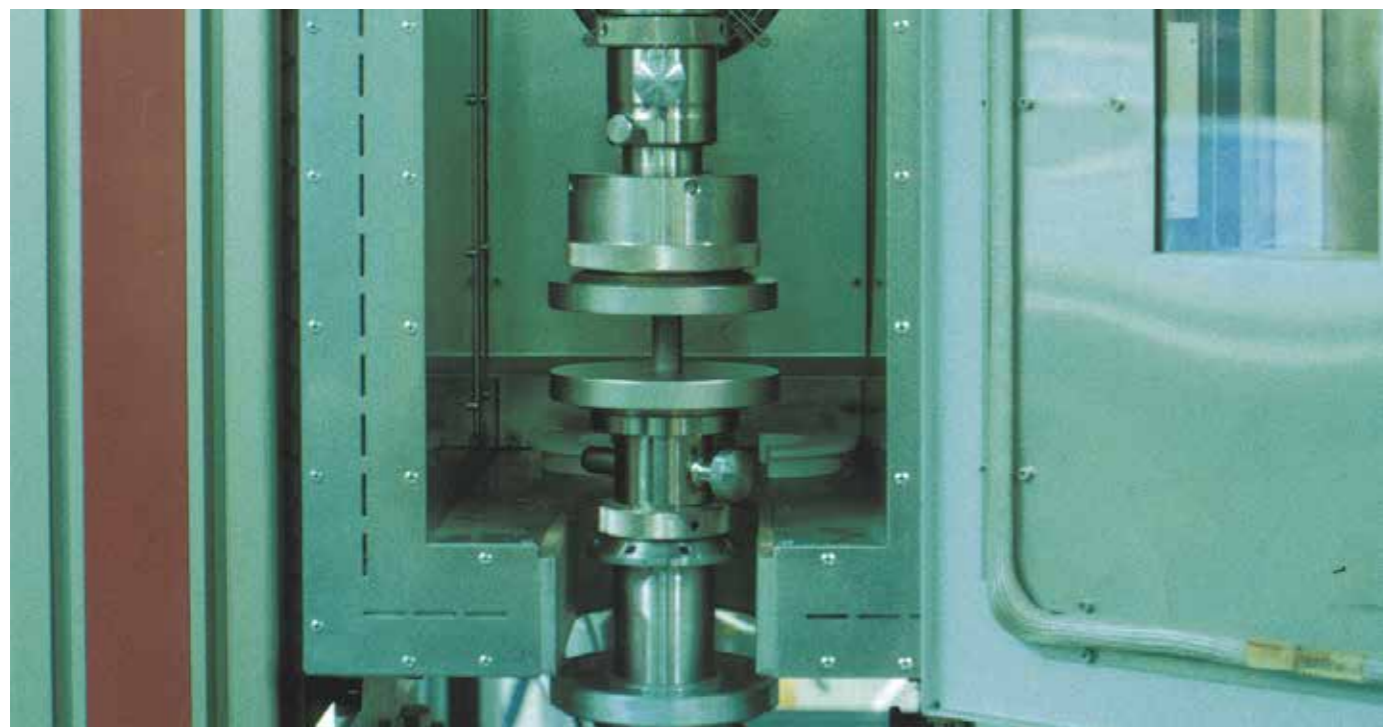
addition to the press-fit. The table 04 shows the temperature at which additional securing of the iglidur® plain bearing is required, even under low axial loads. The greater the forces, the more reasons to engage such a fastening.

Temperature and load

The diagrams 02 and 03 (► Page 45) show the maximum recommended surface pressure [p] of the iglidur® plain bearings as a function of temperature. With increasing temperature, this value decreases continuously. With plain bearings it is important to note that, due to the friction, the bearing temperature may be higher than the ambient temperature.

Coefficient of thermal expansion

The thermal expansion of polymers is approximately 10 to 20 times higher than metals. In contrast to metal, this expansion is non-linear in plastics. The coefficient of thermal expansion of the iglidur® plain bearing is a significant reason for the bearing clearance. At the given application clearance, seizing of the bearing to the shaft does not occur at high temperatures. The coefficient of thermal expansion of iglidur® plain bearings was examined for significant temperature ranges and the results are given in the individual materials tables, at the start of each chapter.



Picture 06: Material tests are possible up to +250°C

	-100	-50	0	+50	+100	+150	+200	+250	+300	Material	Temperature [°C]
iglidur® G										iglidur® G	+80
iglidur® G1										iglidur® G1	+120
iglidur® M250										iglidur® M250	+60
iglidur® P210										iglidur® P210	+50
iglidur® P										iglidur® P	+90
iglidur® K										iglidur® K	+70
iglidur® GLW										iglidur® GLW	+80
iglidur® P230										iglidur® P230	+100
iglidur® J										iglidur® J	+60
iglidur® W300										iglidur® W300	+60
iglidur® J3										iglidur® J3	+60
iglidur® J3B										iglidur® J3B	+60
iglidur® J350										iglidur® J350	+140
iglidur® J260										iglidur® J260	+80
iglidur® W360										iglidur® W360	+90
iglidur® L250										iglidur® L250	+55
iglidur® L350										iglidur® L350	+140
iglidur® L500										iglidur® L500	+135
iglidur® R										iglidur® R	+50
iglidur® D										iglidur® D	+50
iglidur® J200										iglidur® J200	+60
iglidur® E7										iglidur® E7	+30
iglidur® E										iglidur® E	+60
iglidur® X										iglidur® X	+135
iglidur® Z										iglidur® Z	+145
iglidur® X6										iglidur® X6	+165
iglidur® V400										iglidur® V400	+100
iglidur® HSD350										iglidur® HSD350	+130
iglidur® UW500										iglidur® UW500	+150
iglidur® H1										iglidur® H1	+80
iglidur® H370										iglidur® H370	+100
iglidur® H										iglidur® H	+120
iglidur® C500										iglidur® C500	+130
iglidur® H2										iglidur® H2	+110
iglidur® H3										iglidur® H3	+80
iglidur® H5										iglidur® H5	+80
iglidur® A181										iglidur® A181	+60
iglidur® A350										iglidur® A350	+140
iglidur® A500										iglidur® A500	+130
iglidur® A180										iglidur® A180	+60
iglidur® A200										iglidur® A200	+50
iglidur® A160										iglidur® A160	+60
iglidur® UW160										iglidur® UW160	+70
iglidur® T220										iglidur® T220	+50
iglidur® AX500										iglidur® AX500	+130
iglidur® Q2										iglidur® Q2	+70
iglidur® Q3E										iglidur® Q3E	+75
iglidur® Q										iglidur® Q	+50
iglidur® Q290										iglidur® Q290	+80
iglidur® M210										iglidur® M210	+50
iglidur® M260										iglidur® M260	+80
igutex® TX1										igutex® TX1	+100
igutex® TX2										igutex® TX2	+100
igutex® TX3										igutex® TX3	+100
iglidur® F										iglidur® F	+105
iglidur® F2										iglidur® F2	+70
iglidur® H4										iglidur® H4	+110
iglidur® UW										iglidur® UW	+80
iglidur® J UV										iglidur® J UV	+60
iglidur® N54										iglidur® N54	+60
iglidur® G V0										iglidur® G V0	+100
iglidur® J2										iglidur® J2	+60
iglidur® AB										iglidur® AB	+50
iglidur® RW370										iglidur® RW370	+120
iglidur® B										iglidur® B	+50
iglidur® C										iglidur® C	+40

Diagram 10 (left): Comparison of the continuous and short-term upper application temperature limits [°C].

Table 04 (right): Temperature at which additional securing of the iglidur® plain bearing is required

Wear resistance

The wear of components depends on many different factors, therefore it is difficult to make general statements about the wear behaviour. In many experiments and tests, the measurement of the wear is a primary factor. In testing, it has become clear what variances are possible between different material pairings. For given loads and surface speeds, the wear resistance can easily vary by a factor of 10 between material pairings that run well together.

► Shaft materials, page 56

Wear under load

Different loads greatly influence the bearing wear. Among the iglidur® plain bearings, certain materials are optimised for low loads, while others are suitable for use with high or extremely high loads.

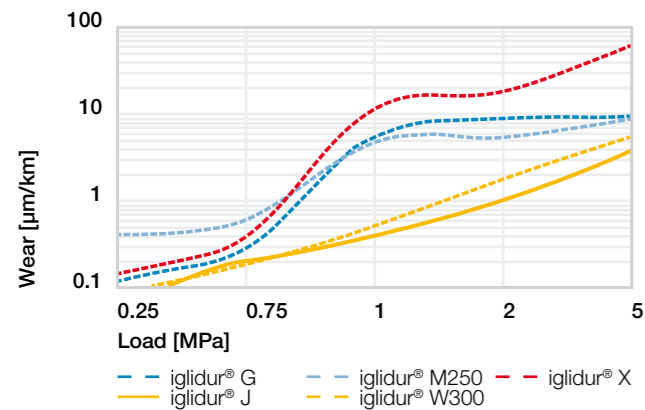


Diagram 11: Wear of iglidur® plain bearings under low pressures, Cf53 shaft, v = 0.1m/s

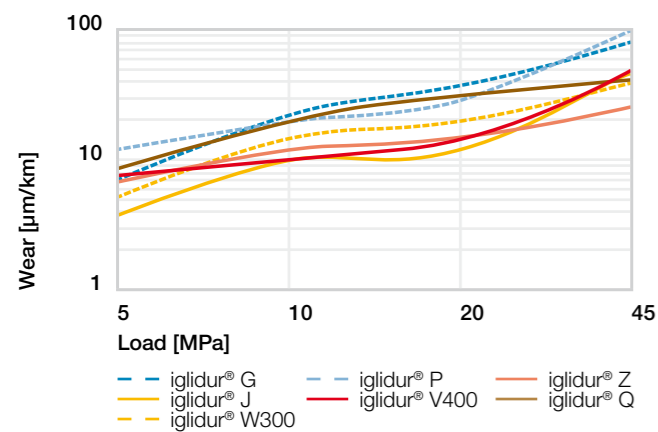


Diagram 12: Wear of iglidur® plain bearings at medium and high pressures, shaft: Cf53, v = 0.1m/s

Wear and temperature

Within wide temperature ranges, the wear resistance of the iglidur® plain bearings shows little change. In the maximum temperature range, however, the temperature increases and the wear of the plain bearing increases. One particular exception is represented by iglidur® X. The wear resistance of iglidur® X greatly increases as temperature increases and reaches the optimum wear resistance at a temperature of +160°C. Then resistance decreases again, gradually.

Wear during abrasive dirt accumulation

Special wear problems frequently occur if abrasive dirt particles get into the bearing. iglidur® plain bearings can clearly improve the operating time of machines and systems in these situations. The high wear resistance of the materials and the dry operation result in the highest service life. As no oil or grease is on the bearing, dirt particles cannot adhere or penetrate as easily into the bearing. Most debris simply falls away from the bearing thus limiting potential damage. If however, a hard particle penetrates into the bearing area, then an iglidur® plain bearing can absorb this particle. The foreign body becomes embedded in the wall of the plain bearing. Up to a certain point, operation can be maintained at optimal levels even when there is extreme dirt accumulation.

However, it is not just hard particles that can damage bearings and shafts. Soft dirt particles such as for example, textile or paper fibres, are frequently the cause for increased wear. In this instance, the dry operation capability and the dust resistance of the iglidur® plain bearings go into action. In the past, this helped save costs in many applications.

Wear and surfaces

Shaft surfaces are important for the wear of bearing systems. Similar to the considerations for the coefficient of friction, a shaft can be too rough in regard to the bearing wear, but it can also be too smooth. A shaft that is too rough acts like a file and during movement separates small particles from the bearing surface. For shafts that are too smooth, however, higher wear can also occur. An extreme increase in friction results due to adhesion. The forces that act on the mating surface can be so large that material blow-outs occur.

It is significant to note that wear by erosion is non-linear, random and cannot be accurately predicted.



Picture 07: High wear resistance: plain bearing in permanent contact with sand



Picture 8: Wear experiments with aluminium shafts



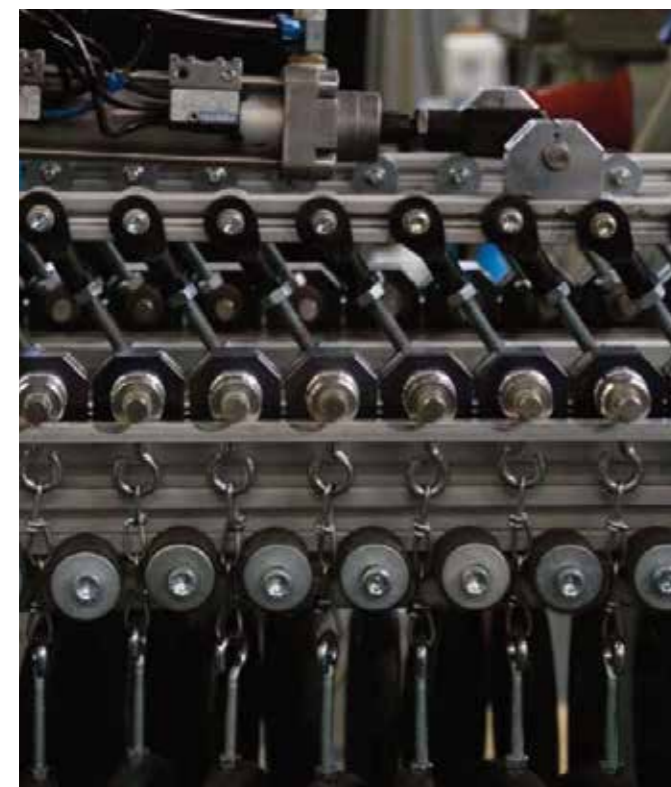
Picture 9: Erosion damage due to shafts that are too smooth

Wear and shaft materials

The shaft is, apart from the plain bearing itself, the most important parameter in a bearing system. It is in direct contact with the bearing, and like the bearing, it is affected by relative motion. The shaft will wear in any case. Modern bearing systems however are designed in a way that the wear of the shafts is so small that it cannot be detected with traditional methods of measurement technology. Shafts can be distinguished and classified according to their hardness and according to the surface finish.

- ▶ Coefficient of friction, **page 51**
- ▶ Wear resistance, **page 54**

The hardness of the shaft also plays an important role. When the shafts are less hard, the shaft is worn smooth during the break-in phase. Abrasive points are worn off and the surface is rebuilt. For some materials, this effect has positive influences, and the wear resistance of the polymer bearing increases. In the following graphs, the most common shaft materials are listed and the iglidur® materials that are best suited are compared. For easier comparison, the scaling of the wear axis is the same in all graphs.

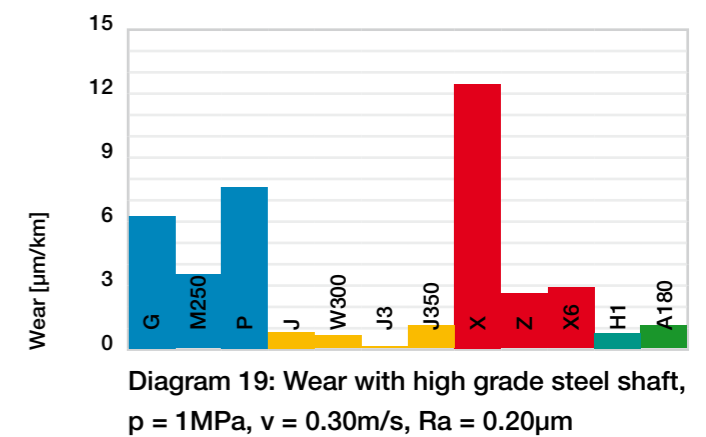
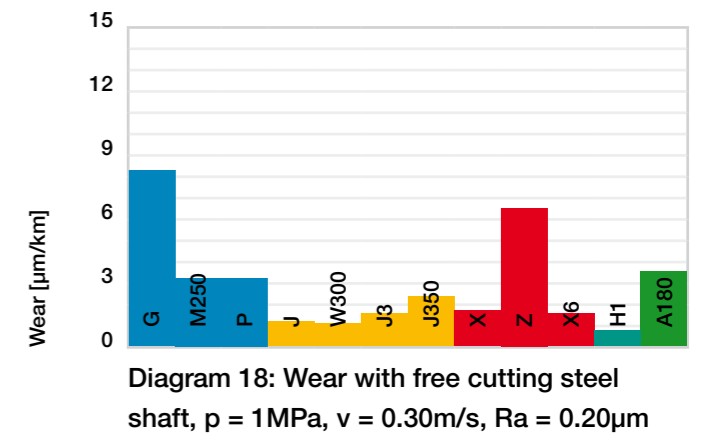
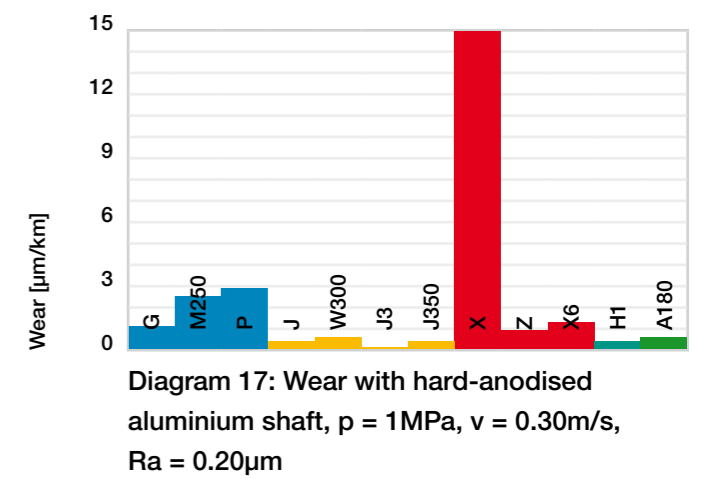
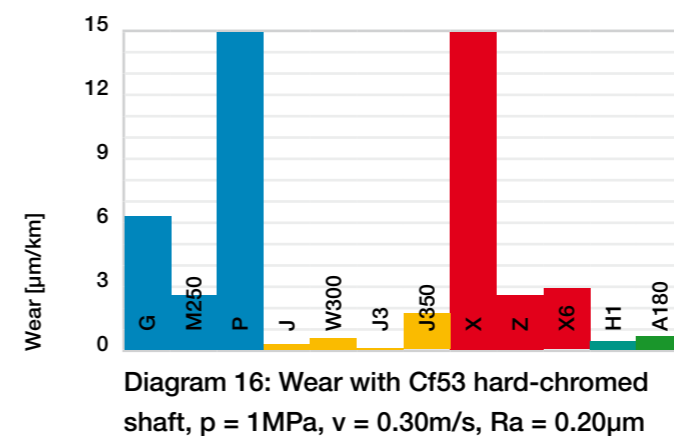
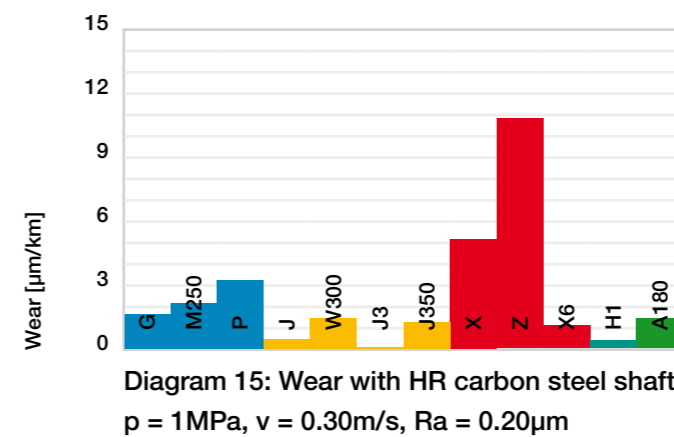
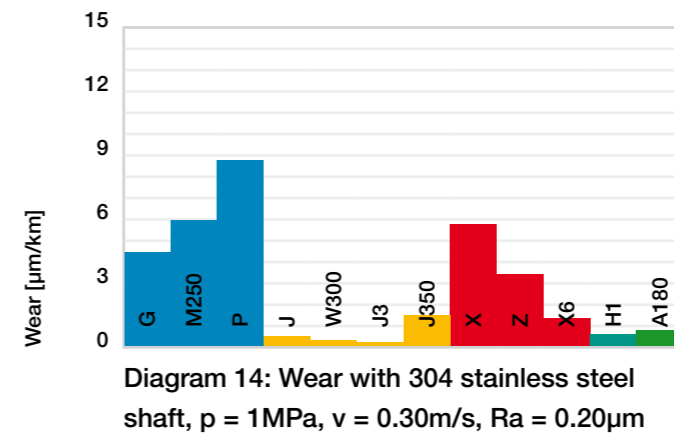
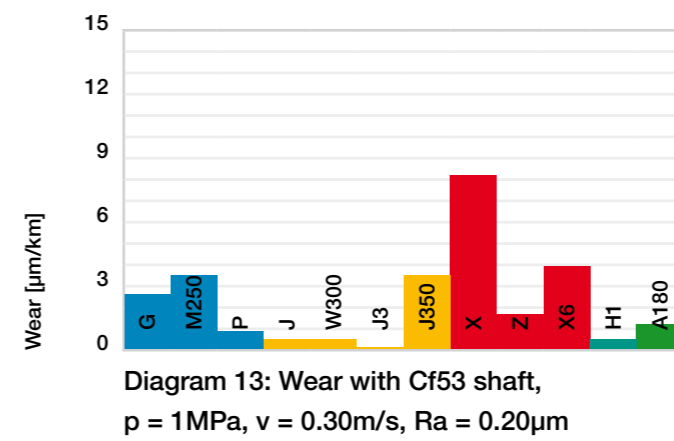


Picture 10: Pivoting wear test rig for testing the wear in pivoting movements at low loads

The low wear results of the systems with hard-chromed shafts are especially impressive. This very hard, but also smooth shaft gives excellent results on the wear behaviour with many bearing combinations. The wear of many iglidur® plain bearings is lower on this shaft than on any other shaft material tested. However, it should be pointed out that because of the low surface roughness, the danger of stick-slip on hard-chromed shafts is especially high. With high-grade steel, a similarly good result is obtained. Cf53 standard shafts give very good results, too. With other shaft materials, the wear results vary considerably. For example, in tests with 304 stainless steel shafts at low loads, extremely positive results can be found with the right bearing material. It must be said on the other side, that no other shaft material shows a bigger variation of wear results with different bearing materials. Therefore, the choice of the most suitable bearing material is particularly important with the shaft materials 304 stainless steel and HR carbon steel. The test results give only a sample of the existing data. All of the results shown were made with same loads and speeds.



Picture 11: Pivoting wear test rig for testing the wear in pivoting movements at medium loads



Resistance to weathering

Radioactive radiation

A comparison of the resistance to radioactive radiation is shown in table 06. iglidur® X, UW500 and Z are by far the most resistant materials.

Resistance to weathering

The UV resistance is an important measure that states whether a material is affected by UV radiation. The effects can extend from slight changes in colour to brittleness of the material. A comparison of the materials to each other is shown in table 08. The results show that iglidur® plain bearings are suitable for outside use. Only for a few iglidur® materials are any changes expected.

Vacuum

iglidur® plain bearings can be used in a vacuum to a limited extent. Only a small amount of outgassing takes place. In most iglidur® plain bearings, the outgassing does not change the material properties. Generally, materials with low moisture absorption are recommended.

Material	Radiation resistance
X, Z, UW500, A160	1 · 10 ⁵ Gy
X6, A500	2 · 10 ⁵ Gy
M250, J3, A200, N54	1 · 10 ⁴ Gy
L250	3 · 10 ⁴ Gy
V400, C	2 · 10 ⁴ Gy
P, K	5 · 10 ² Gy
G, G1, J, W300, P210, P230, J260, J200, R, D, C500, A180, UW160, T220, F, F2, Q, Q2, UW, G V0, J2, B, GLW, L500, Q290, AB, J UV, Q3E, E7, J3B, E, AX500, M210, M260	3 · 10 ² Gy
J350, H, H1, H370, H2, H4, A181, A350, W360, H3, H5	2 · 10 ² Gy

Table 06: Comparison of the radiation resistance of iglidur® plain bearings

Electrical properties

In the product range of the maintenance-free, self-lubricating iglidur® plain bearings, there are both insulating as well as electrically conductive materials. The electrical properties are given in detail in the individual material descriptions. Table 07 compares the surface resistance of "conductive" iglidur® plain bearings. The iglidur® plain bearings not mentioned here are usually electrically insulating. Please observe that for some materials the properties can be changed by the absorption of moisture. In experiments, it should be tested whether the required properties are also stable when the conditions are changing.

Material	Surface resistance [Ω]
iglidur® X	< 10 ³
iglidur® X6	< 10 ⁵
iglidur® UW500	< 10 ⁹
iglidur® H	< 10 ²
iglidur® H370	< 10 ⁵
iglidur® F	< 10 ²
iglidur® F2	< 10 ⁹
iglidur® UW	< 10 ⁵
iglidur® AX500	10 ⁵ - 10 ¹¹

Table 07: Electrical properties of conductive iglidur® plain bearings

Material	Resistance to weathering
iglidur® G	4
iglidur® G1	n.s.
iglidur® M250	2
iglidur® P210	5
iglidur® P	5
iglidur® K	4
iglidur® GLW	4
iglidur® P230	n.s.
iglidur® J	4
iglidur® W300	3
iglidur® J3	4
iglidur® J3B	n.s.
iglidur® J350	5
iglidur® J260	5
iglidur® W360	4
iglidur® L250	3
iglidur® L350	n.s.
iglidur® L500	5
iglidur® R	4
iglidur® D	5
iglidur® J200	4
iglidur® E7	5
iglidur® E	4
iglidur® X	5
iglidur® Z	5
iglidur® X6	5
iglidur® V400	5
iglidur® HSD350	5
iglidur® UW500	5
iglidur® H1	5
iglidur® H370	5
iglidur® H	5

Material	Resistance to weathering
iglidur® C500	4
iglidur® H2	5
iglidur® H3	5
iglidur® H5	5
iglidur® A181	4
iglidur® A350	5
iglidur® A500	2
iglidur® A180	1
iglidur® A200	1
iglidur® A160	5
iglidur® UW160	5
iglidur® T220	4
iglidur® AX500	2
iglidur® Q2	5
iglidur® Q3E	n.s.
iglidur® Q	4
iglidur® Q290	1
iglidur® M210	5
iglidur® M260	5
iglidur® F	3
iglidur® F2	4
iglidur® H4	5
iglidur® UW	3
iglidur® J UV	5
iglidur® N54	4
iglidur® G V0	4
iglidur® J2	3
iglidur® AB	3
iglidur® RW370	5
iglidur® B	3
iglidur® C	3

Table 08: UV resistance of iglidur® plain bearings, 1 low resistance, 5 highest resistance

Determination of bending specifications according to DIN EN ISO 178 after weathering with double stroke 4 of ASTM G154. Two alternating statuses (total time: 2,000hrs). Status 1: Irradiation with UVA-340, irradiance 1.55W/m²/nm and 70°C for 8hrs. Status 2: no irradiation, condensation at 50°C for 4hrs.

Assembly instructions

iglidur® plain bearings are press-fit bearings. The inner diameter adjusts only after press-fit in the proper housing hole with a recommended (H7) tolerance. The press-fit excess dimension can be up to 2% of the inner diameter. This ensures the secure press-fitting of the bearing. Axial or radial movement in the housing are also prevented this way. The hole in the housing should be made with the recommended tolerance (H7) for all bearings and be smooth, flat and chamfered. The bearing should be press-fitted using a flat press. The use of centring or calibrating pins can cause damage to the bearings and bring a greater amount of clearance.

Adhesion

It is not usually necessary to use an adhesive to fit the bearing. If a bearing is likely to lose its firm fit on account of high temperatures, a more temperature-resistant plain bearing should be used. If, however, there are plans to secure the bearings with adhesive, it will be necessary to perform suitable tests in each case. It is not possible to simply transfer the successful results seen in other applications.

Machining

iglidur® plain bearings are delivered ready-to-fit. The extensive product line makes it possible to use a standard dimension in most cases. If for some reason, a subsequent machining of the plain bearing is necessary, the adjacent table shows the machining standard values. The subsequent machining of the sliding surfaces is to be avoided if possible. Higher wear rate is most often the result. An exception is iglidur® M250 which is suitable for subsequent machining. In other iglidur® plain bearings, disadvantages of a sliding surface machining can be counteracted by lubrication during installation.

Process	Turning	Drilling	Milling
Tool material	Stainless steel	Stainless steel	Stainless steel
Feed [mm]	0.1...0.5	0.1...0.5	up to 0.5
Clearance angle	5...15	10...12	3
Rake angle	0...10	3...5	
Cutting speed [m/min]	200...500	50...100	up to 1,000

Table 09: Guidelines for machining



Picture 12: The bearing should be press-fitted using a flat press

Tolerances and measurement system

The installation dimensions and tolerances of the iglidur® plain bearings are a function of the material and wall thicknesses. For each material, the moisture absorption and the thermal expansion are imperative. Plain bearings with low moisture absorption can be designed with a minimal amount of bearing clearance. For wall thickness, the rule is: the thicker the bearings are, the larger the tolerances must be. Thus, different tolerance classes exist for iglidur® plain bearings. Within these tolerances, iglidur® plain bearings can operate in the permissible temperature range and in humidity conditions up to 70% according to the installation recommendations. Should higher air moisture levels be present, or the bearing is used under water, we provide advice with regard to applications, in order to help you use your bearings correctly.

Testing methods

iglidur® plain bearings are press-fit bearings for housings with a H7 standard hole. This press-fitting of the bearing fixes the bearing in the housing, and the inner diameter of the plain bearing is also formed upon press-fit. The bearing size test is performed when the bearing is installed in a hole with the minimum specified dimension; both using a dial gauge and a plug gauge:

- The "Go-Side" of the plug gauge, pressed into the hole, must pass easily through the bearing
- With the 3 point probe, the inner diameter of the bearing must lie within the prescribed tolerance on the measurement plane (diagram 20)

Troubleshooting

In spite of careful manufacturing and assembly of the bearings, differences and questions regarding the recommended installation heights and tolerances can result. For this reason, we have compiled a list of the most frequent reasons for differences. In many cases, with this troubleshooter, the reasons for the differences can be found quickly:

- The hole is not chamfered correctly, so the bearing material is removed upon press-fitting
- A centring pin was used which expanded the inside diameter of the bearing during press-fit
- The hole does not meet the recommended housing hole specifications (usually H7)
- The housing is made out of a soft material that was expanded by the bearing installation
- The shaft is not within recommended tolerances
- The measuring doesn't take place within the measuring lines



Picture 13: measurement of the inner diameter of a press-fit plain bearing

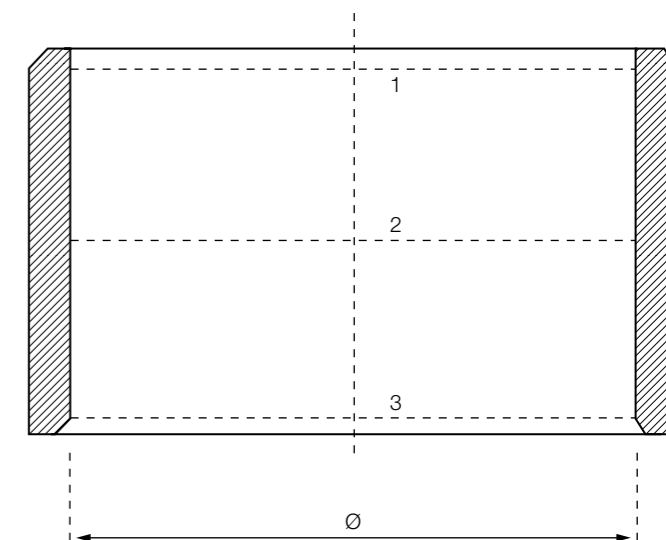


Diagram 20: Positions of the measurement lines

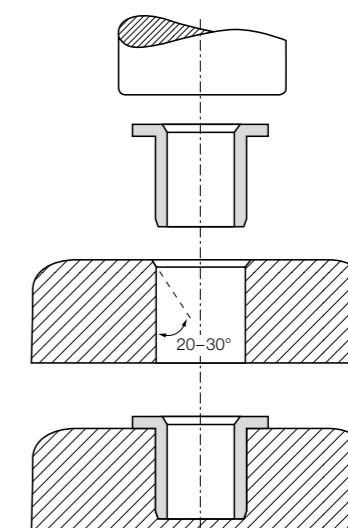


Diagram 21: Press-fit of the bearing (section view)

Tolerances

Installation tolerances

iglidur® plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the corresponding tolerances. For particular dimensions the tolerance differs depending on the wall thickness.

ISO tolerances for iglidur® plain bearings [mm]

Diameter d1	Housing H7	Shaft h9
up to 3	+0.000 +0.010	-0.025 +0.000
> 3 up to 6	+0.000 +0.012	-0.030 +0.000
> 6 up to 10	+0.000 +0.015	-0.036 +0.000
> 10 up to 18	+0.000 +0.018	-0.043 +0.000
> 18 up to 30	+0.000 +0.021	-0.052 +0.000
> 30 up to 50	+0.000 +0.025	-0.062 +0.000
> 50 up to 80	+0.000 +0.030	-0.074 +0.000
> 80 up to 120	+0.000 +0.035	-0.087 +0.000
>120 up to 180	+0.000 +0.040	-0.100 +0.000

Diameter d1	Tolerances according to ISO 3547-1			
	E10	E11	F10	D11
up to 3	+0.014 +0.054	+0.014 +0.074	+0.006 +0.046	+0.020 +0.080
> 3 up to 6	+0.020 +0.068	+0.020 +0.095	+0.010 +0.058	+0.030 +0.105
> 6 up to 10	+0.025 +0.083	+0.025 +0.115	+0.013 +0.071	+0.040 +0.130
> 10 up to 18	+0.032 +0.102	+0.032 +0.142	+0.016 +0.086	+0.050 +0.160
> 18 up to 30	+0.040 +0.124	+0.040 +0.170	+0.020 +0.104	+0.065 +0.195
> 30 up to 50	+0.050 +0.150	+0.050 +0.210	+0.025 +0.125	+0.080 +0.240
> 50 up to 80	+0.060 +0.180	+0.060 +0.250	+0.030 +0.150	+0.100 +0.290
> 80 up to 120	+0.072 +0.212	+0.072 +0.292	+0.036 +0.176	+0.120 +0.340
>120 up to 180	+0.085 +0.245	+0.085 +0.335	+0.043 +0.203	+0.145 +0.395

Tolerances

Material	E10	E11	F10	D11
iglidur® G	●			
iglidur® G1			●	
iglidur® M250				●
iglidur® P210	●			
iglidur® P	●			
iglidur® K	●			
iglidur® GLW	●			
iglidur® P230	●			
iglidur® J	●			
iglidur® W300	●			
iglidur® J3	●			
iglidur® J3B	●			
iglidur® J350			●	
iglidur® J260	●			
iglidur® W360	●			
iglidur® L250	●			
iglidur® L350			●	
iglidur® L500			●	
iglidur® R	●			
iglidur® D	●			
iglidur® J200	●			
iglidur® E7	●			
iglidur® E	●			
iglidur® X			●	
iglidur® Z			●	
iglidur® X6			●	
iglidur® V400			●	
iglidur® HSD350			●	
iglidur® UW500			●	
iglidur® H1			●	
iglidur® H370			●	
iglidur® H			●	
iglidur® C500			●	
iglidur® H2				●
iglidur® H3				●
iglidur® H5				●
iglidur® A181	●			
iglidur® A350			●	
iglidur® A500			●	
iglidur® A180	●			
iglidur® A200				●
iglidur® A160	●			
iglidur® UW160	●			
iglidur® T220	●			
iglidur® AX500			●	
iglidur® Q2	●			
iglidur® Q3E		●		
iglidur® Q	●			
iglidur® Q290	●			
iglidur® M210				●
iglidur® M260				●
igutex® TX1				●
igutex® TX2				●
igutex® TX3				●
iglidur® F				●
iglidur® F2	●			
iglidur® H4			●	
iglidur® UW	●			
iglidur® J UV	●			
iglidur® N54	●			
iglidur® G V0	●			
iglidur® J2	●			
iglidur® AB	●			
iglidur® RW370			●	
iglidur® B				●
iglidur® C				●

Table 10: Tolerances of iglidur® plain bearing materials

Surface pressure

Radial bearing: $p = \frac{F}{d1 \cdot b1}$

Thrust bearing: $p = \frac{F}{(d2^2 - d1^2) \cdot \frac{\pi}{4}}$

Surface Speed

Rotational movement: $v = \frac{n \cdot d1 \cdot \pi}{60 \cdot 1,000} \left[\frac{m}{s} \right]$

Pivoting movement: $v = d1 \cdot \pi \cdot \frac{2 \cdot \beta}{360} \cdot \frac{f}{1,000} \left[\frac{m}{s} \right]$

pv value

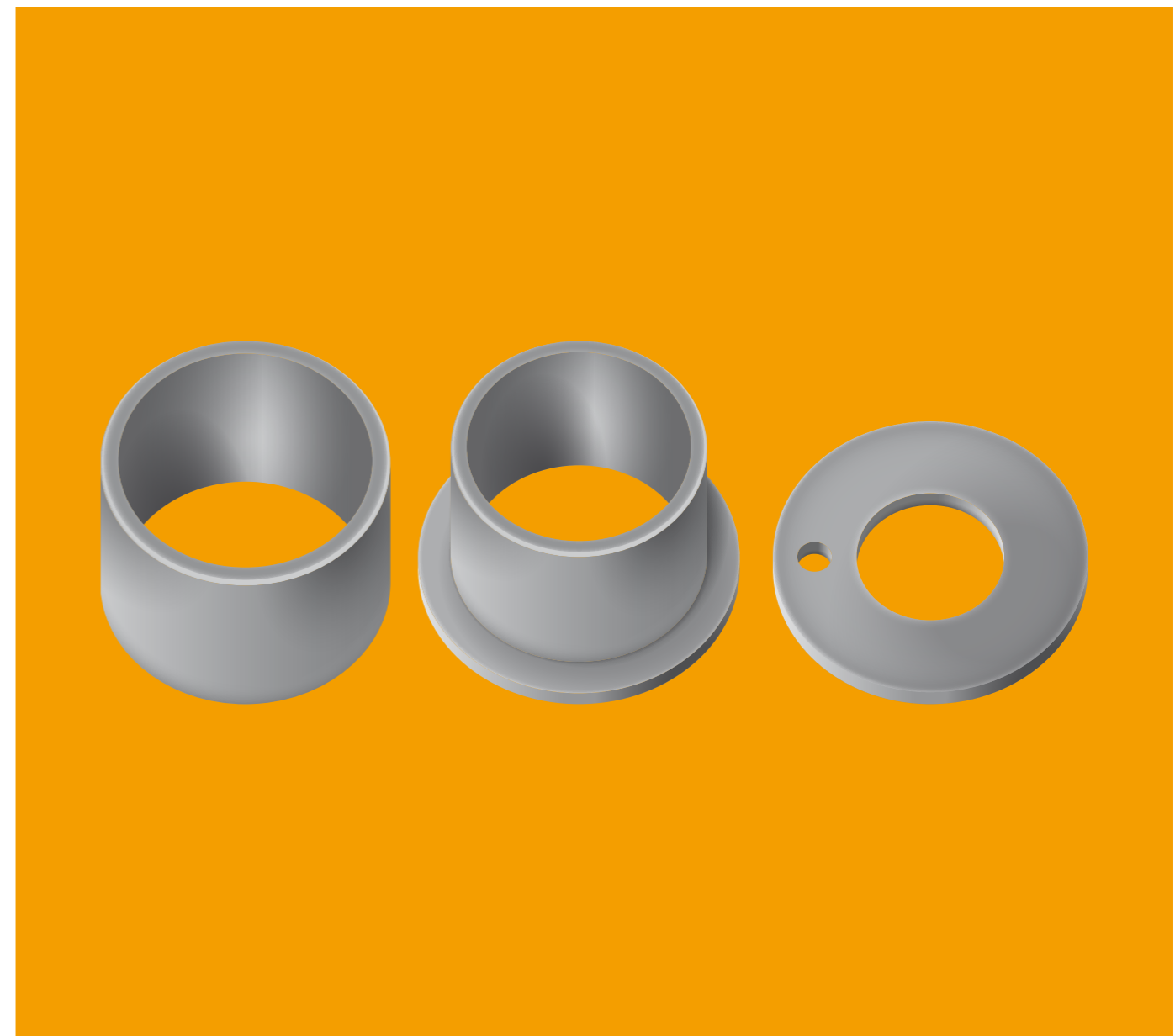
$$pv_{perm.} = \left(\frac{[K1 \cdot \pi \cdot \mu \cdot \Delta T]}{\mu \cdot s} + \frac{[K2 \cdot \pi \cdot \lambda s \cdot \Delta T]}{\mu \cdot b1 \cdot 2} \right) \cdot 10^{-3}$$

Friction force

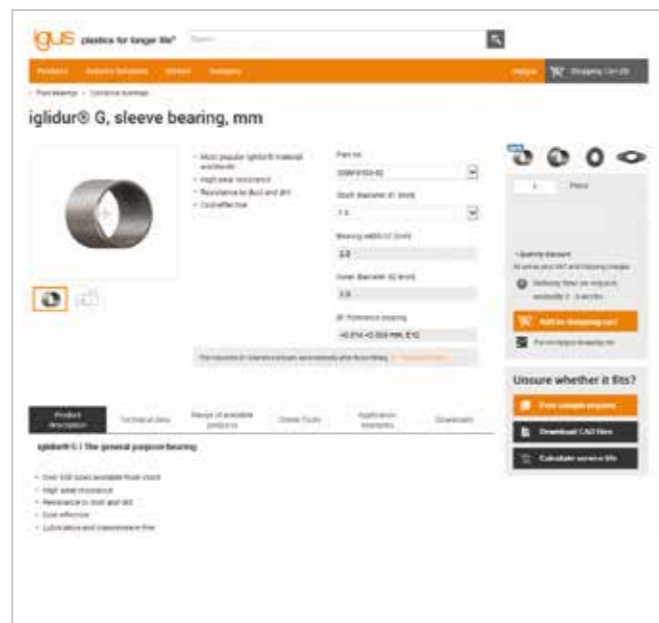
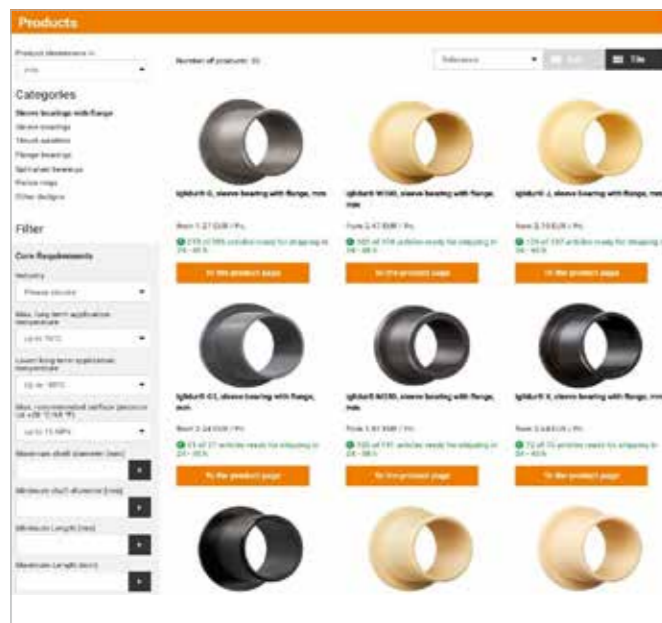
$F_R = \mu \cdot F$

Short cuts and formulae for polymer plain bearings

F	= Load	[N]
F_R	= Friction force	[N]
$d1$	= Inner diameter of the bearing	[mm]
$b1$	= Bearing length	[mm]
$d2$	= Outer diameter of the bearing	[mm]
p	= Surface pressure	[N/mm ²]
v	= Surface Speed	[m/s]
n	= Revolutions per minute	
β	= Angle	[°]
f	= Frequency in Hertz	
$K1, K2$	= Constant for heat dissipation ($K1 = 0.5$ $K2 = 0.042$)	[N]
s	= Bearing wall thickness	[mm]
μ	= Coefficient of friction	
λs	= Thermal conductivity of the shaft	
λk	= Thermal conductivity of the bearing	
ΔT	= ($T_a - T_u$)	
T_u	= Ambient temperature	[°C]
T_a	= Max. Application temperature	[°C]



Quicklinks



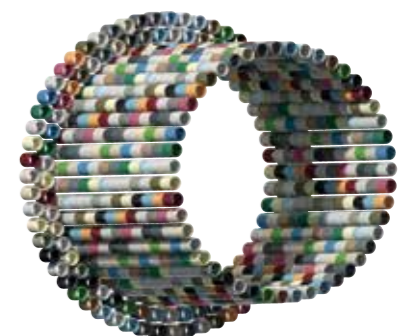
**iglidur® standards:
more than 1,900 parts from stock**

Choice of 17 standard iglidur® materials

For shaft sizes up to 50mm according to ISO 3547-1

Lubrication and maintenance-free

Calculate service life online



Quicklinks for more information and additional features on each page. Visit directly your chosen product online, e.g. ► www.igus.eu/G and you'll find more details, 3D CAD files, DXF files, PDF downloads, application examples and many more for your chosen igus® product.

iglidur® plain bearings: all-rounder

Materials for general purpose



The classic all-rounder:
iglidur® G
▶ Page 85



More universal:
iglidur® G1
▶ Page 101



The robust all-rounder according to ISO 2795:
iglidur® M250
▶ Page 111



Specialist for pivoting, rolling applications and more:
iglidur® P210
▶ Page 121



The cost-effective outdoor all-rounder:
iglidur® P
▶ Page 135



iglidur® plain bearings: endurance runner

Materials for long service life



The versatile endurance runner:
iglidur® J
▶ Page 163



The classic endurance runner up to 30MPa:
iglidur® W300
▶ Page 175



Specialist for pivoting and pulsating loads:
iglidur® J3
▶ Page 187



Endurance runner with high dimensional stability at high temperature:
iglidur® J350
▶ Page 203



iglidur® plain bearings: high temperature

Materials for use at high temperatures



The chemical and temperature specialist:
iglidur® X
▶ Page 291



Long service life under extreme conditions:
iglidur® Z
▶ Page 301



iglidur® plain bearings: high media resistance

Materials with good media resistance



Endurance runner with high media resistance:
iglidur® H1
▶ Page 345



Long service life under water:
iglidur® H370
▶ Page 353



iglidur® plain bearings: for contact with food

Materials for contact with food



The universal bearing for food contact:
iglidur® A181
▶ Page 401



The endurance runner at higher temperatures in the food sector:
iglidur® A350
▶ Page 409



The media and temperature specialist in the food sector:
iglidur® A500
▶ Page 417



iglidur® plain bearings: for harsh environments

Materials for harsh environments










The durable heavy-duty bearing:
iglidur® Q2
▶ Page 477













The most suitable bearing for any application

The iglidur® standard product range now features standardisation for the main materials with the most common standard dimensions (up to a 50mm shaft diameter) - with or without flange. This means that the standard catalogue range offers more than 1,900 dimensions. Finding, calculating and ordering the most suitable plain bearing for your application that is guaranteed to work has never been easier; for (virtually) any application from high-temperature to salt water, from food to automotive.

- Lubrication and maintenance-free
- Calculate service life online
- No minimum order quantities, no surcharges
- No minimum order quantity
- More than 1,900 dimensions

	iglidur® G - the classic all-rounder Excellent price-performance ratio ▶ Page 85	Temperature [°C] ¹²³⁾ +130	Surface pressure [MPa] ¹²⁴⁾ 80	Coefficient of friction [μ] ¹²⁵⁾ 0.22	Wear [μm/km] ¹²⁵⁾ 1.75	Price index
	iglidur® G1 - more universal The advanced development of iglidur® G ▶ Page 101	Temperature [°C] ¹²³⁾ +180	Surface pressure [MPa] ¹²⁴⁾ 91	Coefficient of friction [μ] ¹²⁵⁾ 0.11	Wear [μm/km] ¹²⁵⁾ 0.76	Price index
	iglidur® M250 - the robust all-rounder according to ISO 2795 Excellent vibration dampening ▶ Page 111	Temperature [°C] ¹²³⁾ +80	Surface pressure [MPa] ¹²⁴⁾ 20	Coefficient of friction [μ] ¹²⁵⁾ 0.56	Wear [μm/km] ¹²⁵⁾ 2.10	Price index
	iglidur® P210 - specialist for pivoting, rolling applications and more Low coefficient of friction and wear on almost every shaft ▶ Page 121	Temperature [°C] ¹²³⁾ +100	Surface pressure [MPa] ¹²⁴⁾ 50	Coefficient of friction [μ] ¹²⁵⁾ 0.17	Wear [μm/km] ¹²⁵⁾ 0.38	Price index
	iglidur® P - the cost-effective outdoor all-rounder No moisture absorption even with high ambient humidity ▶ Page 135	Temperature [°C] ¹²³⁾ +130	Surface pressure [MPa] ¹²⁴⁾ 50	Coefficient of friction [μ] ¹²⁵⁾ 0.24	Wear [μm/km] ¹²⁵⁾ 1.80	Price index
	iglidur® J - the versatile endurance runner Strong performer on most shafts, very low coefficient of friction ▶ Page 163	Temperature [°C] ¹²³⁾ +90	Surface pressure [MPa] ¹²⁴⁾ 35	Coefficient of friction [μ] ¹²⁵⁾ 0.16	Wear [μm/km] ¹²⁵⁾ 0.29	Price index
	iglidur® W300 - the classic endurance runner up to 30MPa Excellent wear resistance on (virtually) all shafts ▶ Page 175	Temperature [°C] ¹²³⁾ +90	Surface pressure [MPa] ¹²⁴⁾ 60	Coefficient of friction [μ] ¹²⁵⁾ 0.18	Wear [μm/km] ¹²⁵⁾ 0.33	Price index






¹²³⁾ Max. long-term application temperature; ¹²⁴⁾ Max. permissible surface pressure at +20°C; ¹²⁵⁾ Best combination for p = 1MPa, v = 0.3m/s, rotating













	iglidur® J3 - the new endurance runner: specialist for pivoting and pulsating loads Up to 10MPa up to three times more wear-resistant than iglidur® J ▶ Page 187	Temperature [°C] ¹²³⁾ +90	Surface pressure [MPa] ¹²⁴⁾ 45	Coefficient of friction [μ] ¹²⁵⁾ 0.13	Wear [μm/km] ¹²⁵⁾ 0.07	Price index
	iglidur® J350 - endurance runner with high dimensional stability at high temperature Can be used with many kinds of shafts and loads ▶ Page 203	Temperature [°C] ¹²³⁾ +180	Surface pressure [MPa] ¹²⁴⁾ 60	Coefficient of friction [μ] ¹²⁵⁾ 0.16	Wear [μm/km] ¹²⁵⁾ 1.14	Price index
	iglidur® X - the chemical and temperature specialist Up to 150MPa ▶ Page 291	Temperature [°C] ¹²³⁾ +250	Surface pressure [MPa] ¹²⁴⁾ 150	Coefficient of friction [μ] ¹²⁵⁾ 0.31	Wear [μm/km] ¹²⁵⁾ 6.30	Price index
	iglidur® Z - long service life under extreme conditions Resistant to wear and impact even at high loads and temperatures ▶ Page 301	Temperature [°C] ¹²³⁾ +250	Surface pressure [MPa] ¹²⁴⁾ 150	Coefficient of friction [μ] ¹²⁵⁾ 0.18	Wear [μm/km] ¹²⁵⁾ 1.00	Price index
	iglidur® H1 - endurance runner with high media resistance Excellent coefficient of friction and wear ▶ Page 345	Temperature [°C] ¹²³⁾ +200	Surface pressure [MPa] ¹²⁴⁾ 80	Coefficient of friction [μ] ¹²⁵⁾ 0.17	Wear [μm/km] ¹²⁵⁾ 0.29	Price index
	iglidur® H370 - long service life under water High media resistance ▶ Page 353	Temperature [°C] ¹²³⁾ +200	Surface pressure [MPa] ¹²⁴⁾ 75	Coefficient of friction [μ] ¹²⁵⁾ 0.17	Wear [μm/km] ¹²⁵⁾ 1.20	Price index
	iglidur® A181 - the universal bearing for food contact FDA- and EU10/2011-compliant ▶ Page 401	Temperature [°C] ¹²³⁾ +90	Surface pressure [MPa] ¹²⁴⁾ 31	Coefficient of friction [μ] ¹²⁵⁾ 0.18	Wear [μm/km] ¹²⁵⁾ 0.48	Price index
	iglidur® A350 - the endurance runner at higher temperatures in the food sector FDA- and EU10/2011-compliant, extremely wear-resistant ▶ Page 409	Temperature [°C] ¹²³⁾ +180	Surface pressure [MPa] ¹²⁴⁾ 60	Coefficient of friction [μ] ¹²⁵⁾ 0.17	Wear [μm/km] ¹²⁵⁾ 1.79	Price index
	iglidur® A500 - the media and temperature specialist in the food sector FDA- and EU10/2011-compliant, extremely wear-resistant for high temperatures ▶ Page 417	Temperature [°C] ¹²³⁾ +250	Surface pressure [MPa] ¹²⁴⁾ 120	Coefficient of friction [μ] ¹²⁵⁾ 0.36	Wear [μm/km] ¹²⁵⁾ 4.10	Price index
	iglidur® Q2 - the durable heavy-duty bearing Combined wear resistance and compressive strength at high loads ▶ Page 477	Temperature [°C] ¹²³⁾ +130	Surface pressure [MPa] ¹²⁴⁾ 120	Coefficient of friction [μ] ¹²⁵⁾ 0.17	Wear [μm/km] ¹²⁵⁾ 1.50	Price index

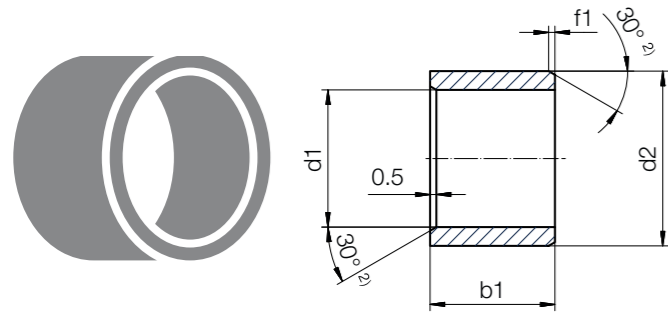
¹²³⁾ Max. long-term application temperature; ¹²⁴⁾ Max. permissible surface pressure at +20°C; ¹²⁵⁾ Best combination for p = 1MPa, v = 0.3m/s, rotating

iglidur®	G	G1	M250	P210	P
Installation tolerances	E10	E10	D11	E10	E10
Descriptive technical specifications					
Wear resistance at +23°C					
Wear resistance at +90°C					
Wear resistance at +150°C					
Slide property					
Wear resistance under water					
Media resistance					
Resistant to edge pressures					
Resistant to shock and impact loads					
Dirt resistance					
For high loads (>60MPa)	●	●			
Electrically conductive					
Approvals and standards					
Dimensions in accordance with DIN	ISO 3547	ISO 3547	ISO 2795	ISO 3547	ISO 3547
FDA- and EU10/2011-compliant					
Fire class in accordance with UL-94	HB	HB	V-2	HB	HB
Mould test DIN EN ISO 846	●	●			
Fogging DIN 75201-B	●		●	●	
Availabilities / variants					
Type S, sleeve	●	●	●	●	●
Type F, with flange	●	●	●	●	●
Type T, thrust washer	●		●		
Bar stock, round bar / tube			●	●	
Bar stock, plate					
Machined made from bar stocks			●	●	

J	W300	J3	J350	X	Z	H1	H370	A181	A350	A500	Q2
E10	E10	E10	F10	F10	F10	F10	F10	E10	F10	F10	E10
Descriptive technical specifications											
			●	●	●	●	●		●	●	●
				●			●				
Approvals and standards											
ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547	ISO 3547
								●	●	●	
HB	HB	HB	V-0	V-0	V-0	V-0	V-0	HB	V-0	V-1	HB
●			●	●		●					
Availabilities / variants											
●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●	●	●	●
●	●			●	●						
●	●	●	●	●		●		●	●		
●									●		
●	●	●	●	●		●		●	●		

iglidur®	Unit	G	G1	M250	P210	P
General properties						
Density	[g/cm³]	1.46	1.58	1.14	1.40	1.58
Colour						
Max. moisture absorption at +23°C and 50% relative humidity	[% weight]	0.7	0.2	1.4	0.3	0.2
Max. moisture absorption	[% weight]	4.0	1.7	7.6	0.5	0.4
Coefficient of sliding friction, dynamic against steel	[μ]	0.08-0.15	0.08-0.15	0.18-0.40	0.07-0.19	0.06-0.21
pv value, max. (dry)	[MPa·m/s]	0.42	0.60	0.12	0.4	0.39
Mechanical properties						
Flexural modulus	[MPa]	7,800	11,486	2,700	2,500	5,300
Flexural strength at +20°C	[MPa]	210	178	112	70	120
Compressive strength	[MPa]	78	115	52	50	66
Max. permissible surface pressure at +20°C	[MPa]	80	91	20	50	50
Shore D hardness		81	81	79	75	75
Physical and thermal properties						
Max. continuous operating temperature	[°C]	+130	+180	+80	+100	+130
Max. short-term operating temperature	[°C]	+220	+220	+170	+160	+200
Min. continuous operating temperature	[°C]	-40	-40	-40	-40	-40
Thermal conductivity	[W/m·K]	0.24	0.46	0.24	0.25	0.25
Coefficient of thermal expansion at +23°C	[K ⁻¹ ·10 ⁻⁵]	9	3.5	10	8	4
Electrical properties						
Specific contact resistance	[Ωcm]	> 10 ¹³	> 10 ⁹	> 10 ¹³	> 10 ¹²	> 10 ¹³
Surface resistance	[Ω]	> 10 ¹¹	> 10 ¹¹	> 10 ¹¹	> 10 ¹¹	> 10 ¹²

J	W300	J3	J350	X	Z	H1	H370	A181	A350	A500	Q2
1.49	1.24	1.42	1.44	1.44	1.4	1.53	1.66	1.38	1.42	1.28	1.46
											
0.3	1.3	0.3	0.3	0.1	0.3	0.1	0.1	0.2	0.6	0.3	1.1
1.3	6.5	1.3	1.6	0.5	1.1	0.3	0.1	1.3	1.9	0.5	4.6
0.06-0.18	0.08-0.23	0.06-0.20	0.10-0.20	0.09-0.27	0.06-0.14	0.06-0.20	0.07-0.17	0.10-0.21	0.10-0.20	0.26-0.41	0.22-0.42
0.34	0.23	0.5	0.45	1.32	0.84	0.80	0.74	0.31	0.40	0.28	0.7
Mechanical properties											
2,400	3,500	2,700	2,000	8,100	2,400	2,800	11,100	1,913	2,000	3,600	8,370
73	125	70	55	170	95	55	135	48	110	140	240
60	61	60	60	100	65	78	79	60	78	118	130
35	60	45	60	150	150	80	75	31	60	120	120
74	77	73	80	85	81	77	82	76	76	83	80
Physical and thermal properties											
+90	+90	+90	+180	+250	+250	+200	+200	+90	+180	+250	+130
+120	+180	+120	+220	+315	+310	+240	+240	+110	+210	+300	+200
-50	-40	-50	-100	-100	-100	-40	-40	-50	-100	-100	-40
0.25	0.24	0.25	0.24	0.60	0.62	0.24	0.5	0.25	0.24	0.24	0.24
10	9	13	7	5	4	6	5	11	8	9	8
Electrical properties											
> 10 ¹³	> 10 ¹³	> 10 ¹²	> 10 ¹³	< 10 ⁵	> 10 ¹¹	> 10 ¹²	< 10 ⁵	> 10 ¹²	> 10 ¹¹	> 10 ¹⁴	> 10 ¹³
> 10 ¹²	> 10 ¹²	> 10 ¹²	> 10 ¹⁰	< 10 ³	> 10 ¹¹	> 10 ¹¹	< 10 ⁵	> 10 ¹²	> 10 ¹¹	> 10 ¹³	> 10 ¹¹



2) Thickness < 0.6mm: chamfer = 20°

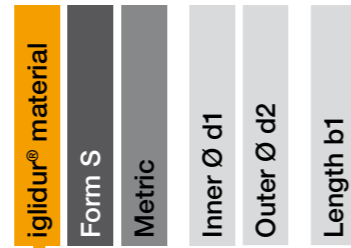
Chamfer in relation to d1

d1 [mm]:	Ø 1-6	Ø 6-12	Ø 12-30	Ø >30
f [mm]:	0.3	0.5	0.8	1.2

Order key

Type Dimensions [mm]

S M-04 05-04



Choose the suitable material and dimensions for your application

i Dimensions according to ISO 3547-1
With the exception of iglidur® M250: ISO 2795

inch Imperial dimensions available
► From page 1816

Dimensions [mm]

d1 ¹²⁶⁾	d2	b1	Part No.
4	5.5	4	<input type="checkbox"/> SM-0405-04
4	5.5	6	<input type="checkbox"/> SM-0405-06
5	7	5	<input type="checkbox"/> SM-0507-05
5	7	10	<input type="checkbox"/> SM-0507-10
6	8	6	<input type="checkbox"/> SM-0608-06
6	8	8	<input type="checkbox"/> SM-0608-08
6	8	10	<input type="checkbox"/> SM-0608-10
8	10	8	<input type="checkbox"/> SM-0810-08
8	10	10	<input type="checkbox"/> SM-0810-10
8	10	12	<input type="checkbox"/> SM-0810-12
10	12	8	<input type="checkbox"/> SM-1012-08
10	12	10	<input type="checkbox"/> SM-1012-10
10	12	12	<input type="checkbox"/> SM-1012-12
10	12	15	<input type="checkbox"/> SM-1012-15
10	12	20	<input type="checkbox"/> SM-1012-20
12	14	10	<input type="checkbox"/> SM-1214-10
12	14	12	<input type="checkbox"/> SM-1214-12
12	14	15	<input type="checkbox"/> SM-1214-15
12	14	20	<input type="checkbox"/> SM-1214-20
13	15	10	<input type="checkbox"/> SM-1315-10

d1 ¹²⁶⁾	d2	b1	Part No.
13	15	20	<input type="checkbox"/> SM-1315-20
14	16	15	<input type="checkbox"/> SM-1416-15
14	16	20	<input type="checkbox"/> SM-1416-20
14	16	25	<input type="checkbox"/> SM-1416-25
15	17	15	<input type="checkbox"/> SM-1517-15
15	17	20	<input type="checkbox"/> SM-1517-20
15	17	25	<input type="checkbox"/> SM-1517-25
16	18	15	<input type="checkbox"/> SM-1618-15
16	18	20	<input type="checkbox"/> SM-1618-20
16	18	25	<input type="checkbox"/> SM-1618-25
18	20	15	<input type="checkbox"/> SM-1820-15
18	20	20	<input type="checkbox"/> SM-1820-20
18	20	25	<input type="checkbox"/> SM-1820-25
20	23	10	<input type="checkbox"/> SM-2023-10
20	23	15	<input type="checkbox"/> SM-2023-15
20	23	20	<input type="checkbox"/> SM-2023-20
20	23	25	<input type="checkbox"/> SM-2023-25
20	23	30	<input type="checkbox"/> SM-2023-30
22	25	15	<input type="checkbox"/> SM-2225-15
22	25	20	<input type="checkbox"/> SM-2225-20

¹²⁶⁾ After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the tolerances (more information in material specific chapters)

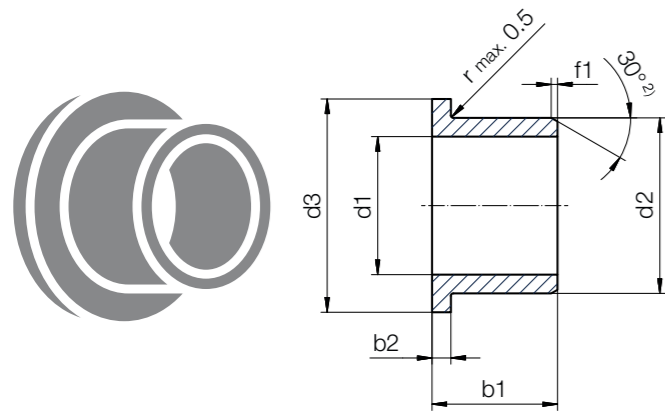
G	The classic all-rounder
G1	More universal
M(250)	The robust all-rounder according to ISO 2795
P210	Specialist for pivoting, rolling applications and more
P	The cost-effective outdoor all-rounder
J	The versatile endurance runner
W(300)	The classic endurance runner up to 30MPa
J3	The new endurance runner: specialist for pivoting applications and pulsating loads
J350	Endurance runner with high dimensional stability at high temperature
X	The chemical and temperature specialist
Z	Long service life under extreme conditions
H1	Endurance runner with high media resistance
H370	Long service life under water
A181	The universal bearing for food contact
A350	The endurance runner at higher temperatures in the food sector
A500	The media and temperature specialist in the food sector
Q2	The durable heavy-duty bearing

Dimensions [mm]

d1 ¹²⁶⁾	d2	b1	Part No.
22	25	25	<input type="checkbox"/> SM-2225-25
22	25	30	<input type="checkbox"/> SM-2225-30
24	27	15	<input type="checkbox"/> SM-2427-15
24	27	20	<input type="checkbox"/> SM-2427-20
24	27	25	<input type="checkbox"/> SM-2427-25
24	27	30	<input type="checkbox"/> SM-2427-30
25	28	15	<input type="checkbox"/> SM-2528-15
25	28	20	<input type="checkbox"/> SM-2528-20
25	28	25	<input type="checkbox"/> SM-2528-25
25	28	30	<input type="checkbox"/> SM-2528-30
28	32	20	<input type="checkbox"/> SM-2832-20
28	32	25	<input type="checkbox"/> SM-2832-25
28	32	30	<input type="checkbox"/> SM-2832-30
30	34	20	<input type="checkbox"/> SM-3034-20
30	34	25	<input type="checkbox"/> SM-3034-25
30	34	30	<input type="checkbox"/> SM-3034-30
30	34	40	<input type="checkbox"/> SM-3034-40
32	36	20	<input type="checkbox"/> SM-3236-20
32	36	30	<input type="checkbox"/> SM-3236-30
32	36	40	<input type="checkbox"/> SM-3236-40

d1 ¹²⁶⁾	d2	b1	Part No.
35	39	20	<input type="checkbox"/> SM-3539-20
35	39	30	<input type="checkbox"/> SM-3539-30
35	39	40	<input type="checkbox"/> SM-3539-40
35	39	50	<input type="checkbox"/> SM-3539-50
40	44	20	<input type="checkbox"/> SM-4044-20
40	44	30	<input type="checkbox"/> SM-4044-30
40	44	40	<input type="checkbox"/> SM-4044-40
40	44	50	<input type="checkbox"/> SM-4044-50
45	50	20	<input type="checkbox"/> SM-4550-20
45	50	30	<input type="checkbox"/> SM-4550-30
45	50	40	<input type="checkbox"/> SM-4550-40
45	50	50	<input type="checkbox"/> SM-4550-50
50	55	20	<input type="checkbox"/> SM-5055-20
50	55	30	<input type="checkbox"/> SM-5055-30
50	55	40	<input type="checkbox"/> SM-5055-40
50	55	50	<input type="checkbox"/> SM-5055-50
50	55	60	<input type="checkbox"/> SM-5055-60

¹²⁶⁾ After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the tolerances (more information in material specific chapters)



Order key

Type Dimensions [mm]

F M-0608-04

iglidur® material

- Form F
- Metric
- Inner Ø d1
- Outer Ø d2
- Length b1

Choose the suitable material and dimensions for your application

i Dimensions according to ISO 3547-1
With the exception of iglidur® M250: ISO 2795

inch Imperial dimensions available
► From page 1818

²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]:	Ø 1-6	Ø 6-12	Ø 12-30	Ø >30
f [mm]:	0.3	0.5	0.8	1.2

Dimensions [mm]

d1 ¹²⁶⁾	d2	d3 d13	b1 h13	b2 h13	Part No.
6	8	12	4	1	<input type="checkbox"/> FM-0608-04
6	8	12	8	1	<input type="checkbox"/> FM-0608-08
8	10	15	5.5	1	<input type="checkbox"/> FM-0810-05
8	10	15	7.5	1	<input type="checkbox"/> FM-0810-07
8	10	15	9.5	1	<input type="checkbox"/> FM-0810-09
10	12	18	7	1	<input type="checkbox"/> FM-1012-07
10	12	18	9	1	<input type="checkbox"/> FM-1012-09
10	12	18	12	1	<input type="checkbox"/> FM-1012-12
10	12	18	17	1	<input type="checkbox"/> FM-1012-17
12	14	20	7	1	<input type="checkbox"/> FM-1214-07
12	14	20	9	1	<input type="checkbox"/> FM-1214-09
12	14	20	12	1	<input type="checkbox"/> FM-1214-12
12	14	20	17	1	<input type="checkbox"/> FM-1214-17
14	16	22	12	1	<input type="checkbox"/> FM-1416-12
14	16	22	17	1	<input type="checkbox"/> FM-1416-17
15	17	23	9	1	<input type="checkbox"/> FM-1517-09
15	17	23	12	1	<input type="checkbox"/> FM-1517-12
15	17	23	17	1	<input type="checkbox"/> FM-1517-17

¹²⁶⁾ After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the tolerances (more information in material specific chapters)

G	The classic all-rounder
G1	More universal
M(250)	The robust all-rounder according to ISO 2795
P210	Specialist for pivoting, rolling applications and more
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J3	The new endurance runner: specialist for pivoting applications and pulsating loads
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H1	Endurance runner with high media resistance
H370	Long service life under water
A181	The universal bearing for food contact
A350	The endurance runner at higher temperatures in the food sector
A500	The media and temperature specialist in the food sector
Q2	The durable heavy-duty bearing

Dimensions [mm]

d1 ¹²⁶⁾	d2	d3 d13	b1 h13	b2 h13	Part No.
16	18	24	12	1	<input type="checkbox"/> FM-1618-12
16	18	24	17	1	<input type="checkbox"/> FM-1618-17
18	20	26	12	1	<input type="checkbox"/> FM-1820-12
18	20	26	17	1	<input type="checkbox"/> FM-1820-17
18	20	26	22	1	<input type="checkbox"/> FM-1820-22
20	23	30	11.5	1.5	<input type="checkbox"/> FM-2023-11
20	23	30	16.5	1.5	<input type="checkbox"/> FM-2023-16
20	23	30	21.5	1.5	<input type="checkbox"/> FM-2023-21
25	28	35	11.5	1.5	<input type="checkbox"/> FM-2528-11
25	28	35	16.5	1.5	<input type="checkbox"/> FM-2528-16
25	28	35	21.5	1.5	<input type="checkbox"/> FM-2528-21
30	34	42	16	2	<input type="checkbox"/> FM-3034-16
30	34	42	26	2	<input type="checkbox"/> FM-3034-26
35	39	47	16	2	<input type="checkbox"/> FM-3539-16
35	39	47	26	2	<input type="checkbox"/> FM-3539-26
40	44	52	30	2	<input type="checkbox"/> FM-4044-30
40	44	52	40	2	<input type="checkbox"/> FM-4044-40
45	50	58	50	2	<input type="checkbox"/> FM-4550-50

¹²⁶⁾ After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the tolerances (more information in material specific chapters)

Order key

Type: **T** Dimensions [mm]: **M-06 20-015**

iglidur® material

- Form T
- Metric
- Inner Ø d1
- Outer Ø d2
- Length b1

- G** The classic all-rounder
- W(300)** The classic endurance runner up to 30MPa
- X** The chemical and temperature specialist



i Dimensions according to ISO 3547-1 and special dimensions

inch Imperial dimensions available

Choose the suitable material and dimensions for your application

Dimensions [mm]

d1	d2	s	d4	d5	h	d6	Part No.
+0.25	-0.25	-0.05	-0.12	+0.375	+0.2	+0.12	
			+0.12	+0.125	-0.2		
6.0	20.0	1.5	13.0	1.5	1.0	20.0	TM-0620-015
8.0	18.0	1.5	13.0	1.5	1.0	18.0	TM-0818-015
10.0	18.0	1.0	⁴⁾	⁴⁾	0.7	18.0	TM-1018-010
12.0	24.0	1.5	18.0	1.5	1.0	24.0	TM-1224-015
14.0	26.0	1.5	20.0	2.0	1.0	26.0	TM-1426-015
15.0	24.0	1.5	19.5	1.5	1.0	24.0	TM-1524-015
16.0	30.0	1.5	22.0	2.0	1.0	30.0	TM-1630-015
18.0	32.0	1.5	25.0	2.0	1.0	32.0	TM-1832-015
20.0	36.0	1.5	28.0	3.0	1.0	36.0	TM-2036-015
22.0	38.0	1.5	30.0	3.0	1.0	38.0	TM-2238-015

⁴⁾ Design without fixing hole

Dimensions [mm]

d1	d2	s	d4	d5	h	d6	Part No.
+0.25	-0.25	-0.05	-0.12	+0.375	+0.2	+0.12	
			+0.12	+0.125	-0.2		
24.0	42.0	1.5	33.0	3.0	1.0	42.0	TM-2442-015
26.0	44.0	1.5	35.0	3.0	1.0	44.0	TM-2644-015
28.0	48.0	1.5	38.0	4.0	1.0	48.0	TM-2848-015
32.0	54.0	1.5	43.0	4.0	1.0	54.0	TM-3254-015
38.0	62.0	1.5	50.0	4.0	1.0	62.0	TM-3862-015
42.0	66.0	1.5	54.0	4.0	1.0	66.0	TM-4266-015
48.0	74.0	2.0	61.0	4.0	1.5	74.0	TM-4874-020
52.0	78.0	2.0	65.0	4.0	1.5	78.0	TM-5278-020
62.0	90.0	2.0	76.0	4.0	1.5	90.0	TM-6290-020

⁴⁾ Design without fixing hole







Materials for general purpose

Materials for general purpose





This group includes iglidur® materials that can be used almost universally under normal conditions (temperature, media, etc.). iglidur® G is the decathlete among iglidur® materials. It performs exceedingly well in almost all technical disciplines. With reduced moisture absorption and improved wear and temperature behaviour for many applications, iglidur® G1 represents an advanced development of this classic. The iglidur® GLW is specially suitable for solutions in large batches. iglidur® P and iglidur® K have a similar potential as iglidur® G paired with significantly reduced moisture absorption, which is advantageous for use in wet environments.

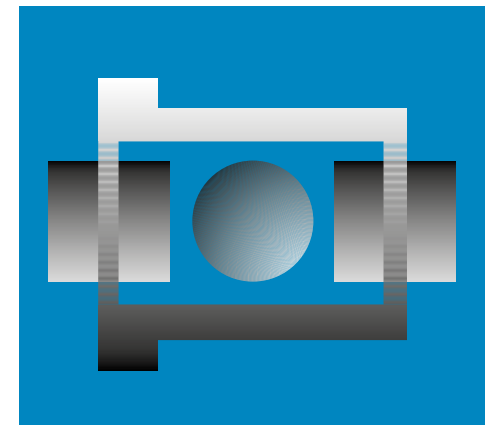
 Online product finder
www.igus.eu/igidur-finder

 Online service life calculation
www.igus.eu/igidur-expert

	igidur® G The classic all-rounder	Temperature [°C] ¹²³⁾	+130	-							+
		Surface pressure [MPa] ¹²⁴⁾	80	-							+
		Coefficient of friction [μ] ¹²⁵⁾	0.22	-							+
		Wear [μm/km] ¹²⁵⁾	1.75	-							+
		Price index	-								+
	igidur® G1 More universal	Temperature [°C] ¹²³⁾	+180	-							+
		Surface pressure [MPa] ¹²⁴⁾	91	-							+
		Coefficient of friction [μ] ¹²⁵⁾	0.11	-							+
		Wear [μm/km] ¹²⁵⁾	0.76	-							+
		Price index	-								+
	igidur® M250 The robust all-rounder according to ISO 2795	Temperature [°C] ¹²³⁾	+80	-							+
		Surface pressure [MPa] ¹²⁴⁾	20	-							+
		Coefficient of friction [μ] ¹²⁵⁾	0.56	-							+
		Wear [μm/km] ¹²⁵⁾	2.10	-							+
		Price index	-								+
	igidur® P210 Specialist for pivoting, rolling applications and more	Temperature [°C] ¹²³⁾	+100	-							+
		Surface pressure [MPa] ¹²⁴⁾	50	-							+
		Coefficient of friction [μ] ¹²⁵⁾	0.17	-							+
		Wear [μm/km] ¹²⁵⁾	0.38	-							+
		Price index	-								+

¹²³⁾ Upper long-term application temperature ¹²⁴⁾ Max. recommended surface pressure at +20°C ¹²⁵⁾ Best pairing for p = 1 MPa, v = 0.3m/s, rotating

	igidur® P230 The low-cost all-rounder	Temperature [°C] ¹²³⁾	+110	-							+
		Surface pressure [MPa] ¹²⁴⁾	60	-							+
		Coefficient of friction [μ] ¹²⁵⁾	0.13	-							+
		Wear [μm/km] ¹²⁵⁾	1.53	-							+
		Price index	-								+
	igidur® P The cost-effective outdoor all-rounder	Temperature [°C] ¹²³⁾	+130	-							+
		Surface pressure [MPa] ¹²⁴⁾	50	-							+
		Coefficient of friction [μ] ¹²⁵⁾	0.24	-							+
		Wear [μm/km] ¹²⁵⁾	1.80	-							+
		Price index	-								+
	igidur® K Versatile and cost-effective	Temperature [°C] ¹²³⁾	+170	-							+
		Surface pressure [MPa] ¹²⁴⁾	50	-							+
		Coefficient of friction [μ] ¹²⁵⁾	0.16	-							+
		Wear [μm/km] ¹²⁵⁾	0.60	-							+
		Price index	-								+
	igidur® GLW Low-cost material for high-volume production	Temperature [°C] ¹²³⁾	+100	-							+
		Surface pressure [MPa] ¹²⁴⁾	80	-							+
		Coefficient of friction [μ] ¹²⁵⁾	0.23	-							+
		Wear [μm/km] ¹²⁵⁾	8.30	-							+



The classic all-rounder

Excellent price-performance ratio

iglidur® G



When to use it?

- When an economical all-round performance bearing is required
- For low to medium speeds
- When the bearing needs to run on different shaft materials
- For pivoting and rotational movements



When not to use it?

- When mechanical reaming of the bore is necessary
iglidur® M250
- When lowest wear is required
iglidur® W300
- When universal chemical resistance is required
iglidur® X
- When temperatures are constantly higher than +130°C
iglidur® H, iglidur® X, iglidur® H370
- For underwater applications
iglidur® H370

Bearing technology | Plain bearings | iglidur® G



Ø
1.5-195.0mm



Also available as:



Bar stock, round bar
Page 743



Bar stock, plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

The classic all-rounder Excellent price-performance ratio

iglidur® G plain bearings cover an extremely wide range of different requirements - they are truly "all-round". Therefore, the material is rightly called universal. Typical applications include medium to high loads, medium surface speeds and medium temperatures.

- Over 650 sizes available from stock
- High wear resistance
- Resistant to dirt
- Cost-effective
- Lubrication-free
- Maintenance-free
- Resistant to dirt

Typical application areas

- Agricultural machines
- Construction machinery industry
- Sports and leisure
- Automotive industry
- Mechatronics
- Machine building

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 40%; background-color: #0070C0;"></div>	+
Wear resistance at +90°C	-	<div style="width: 30%; background-color: #0070C0;"></div>	+
Wear resistance at +150°C	-	<div style="width: 20%; background-color: #0070C0;"></div>	+
Slide property	-	<div style="width: 50%; background-color: #0070C0;"></div>	+
Wear resistance under water	-	<div style="width: 10%; background-color: #0070C0;"></div>	+
Media resistance	-	<div style="width: 45%; background-color: #0070C0;"></div>	+
Resistant to edge pressures	-	<div style="width: 55%; background-color: #0070C0;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 50%; background-color: #0070C0;"></div>	+
Dirt resistance	-	<div style="width: 60%; background-color: #0070C0;"></div>	+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

EN 06/2023

EN 06/2023

Technical data

General properties		Testing method	
Density	g/cm ³	1.46	
Colour		matt grey	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.7	DIN 53495
Max. moisture absorption	% weight	4.0	
Coefficient of friction, dynamic, against steel	μ	0.08-0.15	
pv value, max. (dry)	MPa · m/s	0.42	
Mechanical properties			
Flexural modulus	MPa	7,800	DIN 53457
Flexural strength at +20°C	MPa	210	DIN 53452
Compressive strength	MPa	78	
Max. permissible surface pressure (+20°C)	MPa	80	
Shore D hardness		81	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+130	
Max. application temperature short-term	°C	+220	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	9	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹³	DIN IEC 93
Surface resistance	Ω	> 10 ¹¹	DIN 53482

Table 01: Material properties

iglidur® G is the decathlete among iglidur® materials. It performs exceedingly well in all technical disciplines and is the classic all-rounder, primarily with respect to the overall general, mechanical, thermal and tribological specifications.

Moisture absorption

The moisture absorption of iglidur® G plain bearings in ambient conditions is approximately 0.7 % weight. The saturation limit submerged in water is 4.0% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® G1 bearings.

Radiation resistance

Plain bearings made from iglidur® G are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

iglidur® G plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® G plain bearings decreases. Diagram 02 shows this inverse relationship. With the long-term permitted application temperature of +130°C, the permitted surface pressure still amounts to 35MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this. Diagram 03 shows the elastic deformation of iglidur® G at radial loads. The plastic deformation is minimal up to a pressure of approximately 100MPa. However, it is also dependent on the service time.

Surface pressure, page 45



-40°C up to +130°C



80MPa



HB



Permissible surface speeds

iglidur® G has been developed for low to medium surface speeds. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

The ambient temperatures strongly influence the properties of plain bearings. The temperatures prevailing in the bearing system also have an influence on the wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +120°C. For temperatures over +80°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. For iglidur® G a ground surface with an average surface finish $R_a = 0.8\mu\text{m}$ is recommended. Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® G. It is important to notice that with increasing loads, the recommended hardness of the shaft increases. The "soft" shafts tend to wear themselves and thus increase the wear of the overall system. If the loads exceed 2MPa it is important to recognise that the wear rate (the gradient of the curves) clearly decreases with the hard shaft materials. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 56

Installation tolerances

iglidur® G plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 1.0	0.7	4.0
Short-term	m/s 2.0	1.4	5.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.08-0.15	0.09	0.04	0.04

Table 04: Coefficient of friction against steel ($R_a = 1\mu\text{m}$, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]		
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

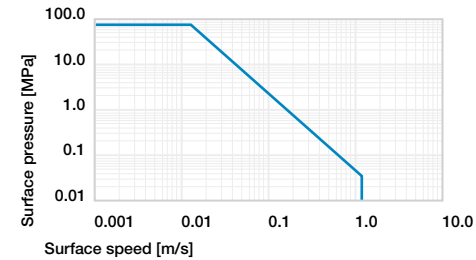


Diagram 01: Permissible pv values for iglidur® G plain bearing with a wall thickness of 1 mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

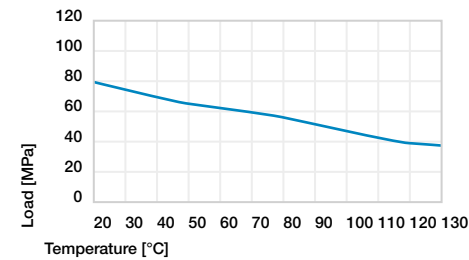


Diagram 02: Maximum recommended surface pressure as a function of temperature (80MPa at +20°C)

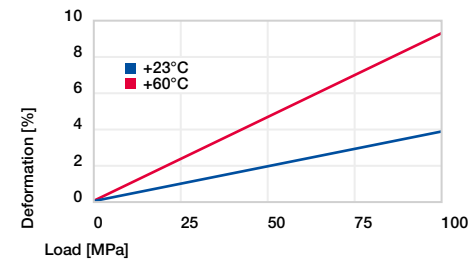


Diagram 03: Deformation under pressure and temperature

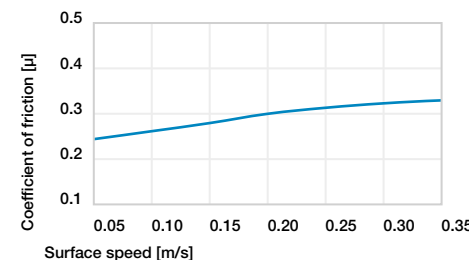


Diagram 04: Coefficient of friction as a function of the surface speed, $p = 0.75\text{MPa}$

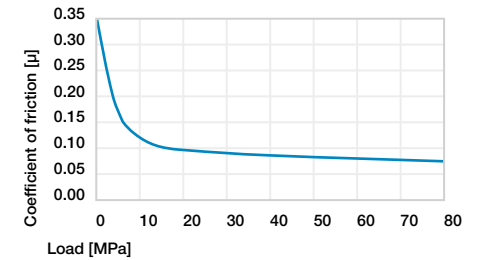


Diagram 05: Coefficient of friction as a function of the pressure, $v = 0.01\text{m/s}$

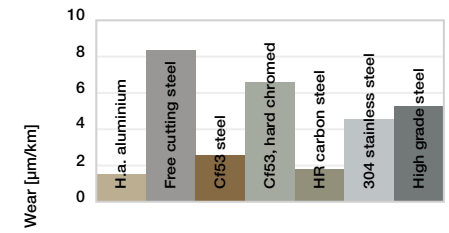


Diagram 06: Wear, rotating with different shaft materials, pressure, $p = 1\text{MPa}$, $v = 0.3\text{m/s}$

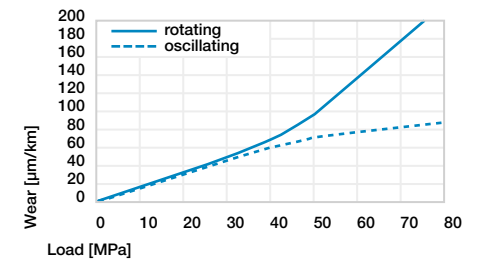
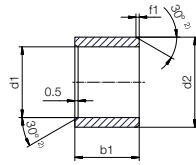


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® G

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions



Order example: **GSM-0103-02** – no minimum order quantity.

G iglidur® material **S** Cylindrical **M** Metric **01** Inner Ø d1 **03** Outer Ø d2 **02** Total length b1

d1	d1	d2	b1	Part No.	d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13		[mm]	Tolerance ³⁾	[mm]	h13	
1.5		3.0	2.0	GSM-0103-02	6.0		8.0	8.0	GSM-0608-08
2.0		3.5	3.0	GSM-0203-03	6.0		8.0	9.5	GSM-0608-09
2.5	+0.014	4.5	5.0	GSM-02504-05	6.0	+0.020	8.0	10.0	GSM-0608-10
3.0	+0.054	4.5	3.0	GSM-0304-03	6.0	+0.068	8.0	11.8	GSM-0608-11
3.0		4.5	5.0	GSM-0304-05	6.0		8.0	13.8	GSM-0608-13
3.0		4.5	6.0	GSM-0304-06	7.0	+0.013	8.0	10.0	GSM-0708-10
4.0		5.5	4.0	GSM-0405-04	7.0	+0.049	8.0	19.0	GSM-0708-19
4.0	+0.020	5.5	6.0	GSM-0405-06	7.0		9.0	8.0	GSM-0709-08
4.0	+0.068	7.0	5.5	GSM-0407-05	7.0	+0.025	9.0	9.0	GSM-0709-09
4.5		6.0	8.0	GSM-0406-08	7.0	+0.083	9.0	10.0	GSM-0709-10
5.0		6.0	4.6	GSM-0506-046	7.0		9.0	12.0	GSM-0709-12
5.0	+0.010	6.0	5.0	GSM-0506-05	8.0		9.0	5.0	GSM-0809-05
5.0	+0.040	6.0	7.0	GSM-0506-07	8.0	+0.013	9.0	6.0	GSM-0809-06
5.0		7.0	5.0	GSM-0507-05	8.0	+0.049	9.0	8.0	GSM-0809-08
5.0	+0.020	7.0	7.0	GSM-0507-07	8.0		9.0	12.0	GSM-0809-12
5.0	+0.068	7.0	8.0	GSM-0507-08	8.0		10.0	5.0	GSM-0810-05
5.0		7.0	10.0	GSM-0507-10	8.0		10.0	6.0	GSM-0810-06
6.0		7.0	6.0	GSM-0607-06	8.0		10.0	6.8	GSM-0810-07
6.0		7.0	12.0	GSM-0607-12	8.0		10.0	8.0	GSM-0810-08
6.0	+0.010	7.0	17.0	GSM-0607-17	8.0		10.0	10.0	GSM-0810-10
6.0	+0.040	7.0	17.5	GSM-0607-17.5	8.0		10.0	12.0	GSM-0810-12
6.0		7.0	19.0	GSM-0607-19	8.0	+0.025	10.0	13.8	GSM-0810-13
6.0		8.0	1.5	GSM-0608-015	8.0	+0.083	10.0	14.0	GSM-0810-14
6.0		8.0	2.5	GSM-0608-025	8.0		10.0	15.0	GSM-0810-15
6.0		8.0	3.0	GSM-0608-03	8.0		10.0	16.0	GSM-0810-16
6.0	+0.020	8.0	4.0	GSM-0608-04	8.0		10.0	18.0	GSM-0810-18
6.0	+0.068	8.0	5.0	GSM-0608-05	8.0		10.0	20.0	GSM-0810-20
6.0		8.0	5.5	GSM-0608-055	8.0		10.0	22.0	GSM-0810-22
6.0		8.0	6.0	GSM-0608-06	8.0		10.0	25.0	GSM-0810-25

³⁾ After press-fit. Testing methods, page 61

Product range

d1	d1	d2	b1	Part No.	d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13		[mm]	Tolerance ³⁾	[mm]	h13	
8.0	+0.040 +0.130	12.0	9.0	GSM-0812-09	13.0		15.0	7.0	GSM-1315-070
9.0	+0.013	10.0	12.0	GSM-0910-12	13.0		15.0	7.5	GSM-1315-075
9.0	+0.049	10.0	16.0	GSM-0910-16	13.0		15.0	10.0	GSM-1315-10
9.0	+0.025	11.0	6.0	GSM-0911-06	13.0		15.0	15.0	GSM-1315-15
9.0	+0.083	11.0	20.0	GSM-0911-20	13.0		15.0	20.0	GSM-1315-20
10.0		11.0	6.0	GSM-1011-06	13.0		15.0	25.0	GSM-1315-25
10.0		11.0	7.0	GSM-1011-07	14.0	+0.032	16.0	3.0	GSM-1416-03
10.0	+0.013	11.0	10.0	GSM-1011-10	14.0	+0.102	16.0	6.0	GSM-1416-06
10.0	+0.049	11.0	20.0	GSM-1011-20	14.0		16.0	8.0	GSM-1416-08
10.0		11.0	25.0	GSM-1011-25	14.0		16.0	10.0	GSM-1416-10
10.0		11.0	30.0	GSM-1011-30	14.0		16.0	12.0	GSM-1416-12
10.0		12.0	4.0	GSM-1012-04	14.0		16.0	15.0	GSM-1416-15
10.0		12.0	4.5	GSM-1012-045	14.0		16.0	20.0	GSM-1416-20
10.0		12.0	5.0	GSM-1012-05	14.0		16.0	25.0	GSM-1416-25
10.0		12.0	6.0	GSM-1012-06	14.0		16.0	45.0	GSM-1416-45
10.0		12.0	7.0	GSM-1012-07	15.0	+0.016	16.0	10.0	GSM-1516-10
10.0		12.0	8.0	GSM-1012-08	15.0	+0.059	16.0	15.0	GSM-1516-15
10.0	+0.025	12.0	9.0	GSM-1012-09	15.0		17.0	4.0	GSM-1517-04
10.0	+0.083	12.0	10.0	GSM-1012-10	15.0		17.0	10.0	GSM-1517-10
10.0		12.0	12.0	GSM-1012-12	15.0		17.0	12.0	GSM-1517-12
10.0		12.0	14.0	GSM-1012-14	15.0		17.0	15.0	GSM-1517-15
10.0		12.0	15.0	GSM-1012-15	15.0		17.0	20.0	GSM-1517-20
10.0		12.0	17.0	GSM-1012-17	15.0		17.0	25.0	GSM-1517-25
10.0		12.0	20.0	GSM-1012-20	16.0		18.0	5.5	GSM-1618-055
10.0		13.0	13.5	GSM-1013-13	16.0		18.0	8.0	GSM-1618-08
10.0	+0.025	14.0	10.0	GSM-1014-10	16.0	+0.032	18.0	10.0	GSM-1618-10
10.0	+0.115	14.0	20.0	GSM-1014-20	16.0	+0.102	18.0	12.0	GSM-1618-12
10.0	+0.040 +0.130	16.0	10.0	GSM-1016-10	16.0		18.0	13.5	GSM-1618-13.5
12.0		13.0	4.7	GSM-1213-047	16.0		18.0	15.0	GSM-1618-15
12.0	+0.016	13.0	10.0	GSM-1213-10	16.0		18.0	20.0	GSM-1618-20
12.0	+0.059	13.0	12.0	GSM-1213-12	16.0		18.0	25.0	GSM-1618-25
12.0		13.0	15.0	GSM-1213-15	16.0		18.0	30.0	GSM-1618-30
12.0		14.0	4.0	GSM-1214-04	16.0		18.0	38.5	GSM-1618-38.5
12.0		14.0	5.0	GSM-1214-05	16.0		18.0	50.0	GSM-1618-50
12.0		14.0	6.0	GSM-1214-06	17.0		19.0	15.0	GSM-1719-15
12.0		14.0	8.0	GSM-1214-08	18.0	+0.016 +0.059	19.0	15.0	GSM-1819-15
12.0		14.0	10.0	GSM-1214-10	18.0		20.0	6.0	GSM-1820-06
12.0	+0.032	14.0	12.0	GSM-1214-12	18.0		20.0	10.0	GSM-1820-10
12.0	+0.102	14.0	14.0	GSM-1214-14	18.0		20.0	12.0	GSM-1820-12
12.0		14.0	15.0	GSM-1214-15	18.0		20.0	15.0	GSM-1820-15
12.0		14.0	20.0	GSM-1214-20	18.0	+0.032	20.0	20.0	GSM-1820-20
12.0		14.0	25.0	GSM-1214-25	18.0	+0.102	20.0	25.0	GSM-1820-25
12.0		15.0	6.0	GSM-1215-06	18.0		20.0	34.0	GSM-1820-34
12.0		15.0	22.0	GSM-1215-22	18.0		20.0	38.0	GSM-1820-38
12.0	+0.050	16.0	10.0	GSM-1216-10	18.0		20.0	45.0	GSM-1820-45
12.0	+0.160	16.0	20.0	GSM-1216-20	18.0		22.0	30.0	GSM-1822-30

³⁾ After press-fit. Testing methods, page 61

Bearing technology | Plain bearings | iglidur® G

d1	d1	d2	b1	Part No.	d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13		[mm]	Tolerance ³⁾	[mm]	h13	
19.0		22.0	6.0	GSM-1922-06	25.0		28.0	24.0	GSM-2528-24
19.0	+0.040	22.0	28.0	GSM-1922-28	25.0		28.0	25.0	GSM-2528-25
19.0	+0.124	22.0	35.0	GSM-1922-35	25.0		28.0	30.0	GSM-2528-30
20.0	+0.020	21.0	20.0	GSM-2021-20	25.0		28.0	35.0	GSM-2528-35
20.0	+0.072				25.0		28.0	50.0	GSM-2528-50
20.0		22.0	3.0	GSM-2022-03	26.0		30.0	16.0	GSM-2630-16
20.0		22.0	8.0	GSM-2022-08	27.0	+0.040	30.0	5.0	GSM-2730-05
20.0		22.0	10.5	GSM-2022-105	28.0	+0.124	32.0	10.5	GSM-2832-105
20.0		22.0	15.0	GSM-2022-15	28.0		32.0	12.0	GSM-2832-12
20.0		22.0	20.0	GSM-2022-20	28.0		32.0	15.0	GSM-2832-15
20.0		22.0	22.0	GSM-2022-22	28.0		32.0	20.0	GSM-2832-20
20.0		22.0	28.0	GSM-2022-28	28.0		32.0	23.0	GSM-2832-23
20.0		22.0	30.0	GSM-2022-30	28.0		32.0	25.0	GSM-2832-25
20.0		22.0	47.0	GSM-2022-47	28.0		32.0	30.0	GSM-2832-30
20.0		23.0	4.5	GSM-2023-045	28.0	+0.065	35.0	19.0	GSM-2835-19
20.0		23.0	10.0	GSM-2023-10	28.0	+0.195	35.0	28.0	GSM-2835-28
20.0		23.0	15.0	GSM-2023-15	29.0	+0.040	33.0	6.0	GSM-2933-06
20.0		23.0	20.0	GSM-2023-20	29.0	+0.124			
20.0		23.0	24.0	GSM-2023-24	30.0	+0.020	31.0	5.0	GSM-3031-05
20.0	+0.040	23.0	25.0	GSM-2023-25	30.0	+0.072	31.0	12.0	GSM-3031-12
20.0	+0.124	23.0	30.0	GSM-2023-30	30.0		31.0	30.0	GSM-3031-30
20.0		23.0	35.0	GSM-2023-35	30.0		34.0	12.0	GSM-3034-12
22.0		24.0	8.0	GSM-2224-08	30.0		34.0	15.0	GSM-3034-15
22.0		24.0	10.0	GSM-2224-10	30.0		34.0	20.0	GSM-3034-20
22.0		24.0	12.0	GSM-2224-12	30.0		34.0	24.0	GSM-3034-24
22.0		24.0	15.0	GSM-2224-15	30.0	+0.040	34.0	25.0	GSM-3034-25
22.0		24.0	17.0	GSM-2224-17	30.0	+0.124	34.0	30.0	GSM-3034-30
22.0		24.0	20.0	GSM-2224-20	30.0		34.0	35.0	GSM-3034-35
22.0		24.0	30.0	GSM-2224-30	30.0		34.0	40.0	GSM-3034-40
22.0		24.0	48.0	GSM-2224-48	30.0		34.0	52.5	GSM-3034-525
22.0		25.0	15.0	GSM-2225-15	32.0		36.0	15.0	GSM-3236-15
22.0		25.0	20.0	GSM-2225-20	32.0		36.0	20.0	GSM-3236-20
22.0		25.0	25.0	GSM-2225-25	32.0		36.0	30.0	GSM-3236-30
22.0		25.0	30.0	GSM-2225-30	32.0		36.0	40.0	GSM-3236-40
22.0		25.0	38.5	GSM-2225-38.5	35.0		39.0	14.0	GSM-3539-14
24.0	+0.020	25.0	25.0	GSM-2425-25	35.0		39.0	20.0	GSM-3539-20
24.0	+0.072				35.0		39.0	25.0	GSM-3539-25
24.0		27.0	6.0	GSM-2427-06	35.0		39.0	30.0	GSM-3539-30
24.0		27.0	15.0	GSM-2427-15	35.0	+0.050	39.0	40.0	GSM-3539-40
24.0	+0.040	27.0	20.0	GSM-2427-20	35.0	+0.150	39.0	50.0	GSM-3539-50
24.0	+0.124	27.0	24.0	GSM-2427-24	35.0		41.0	50.0	GSM-3541-50
24.0		27.0	25.0	GSM-2427-25	36.0		40.0	20.0	GSM-3640-20
24.0		27.0	30.0	GSM-2427-30	37.0		41.0	20.0	GSM-3741-20
25.0	+0.020	26.0	23.0	GSM-2526-23	38.0		42.0	25.0	GSM-3842-25
25.0	+0.072	26.0	25.0	GSM-2526-25	40.0		44.0	10.0	GSM-4044-10
25.0		28.0	12.0	GSM-2528-12	40.0		44.0	16.5	GSM-4044-16
25.0	+0.040	28.0	15.0	GSM-2528-15	40.0		44.0	20.0	GSM-4044-20
25.0	+0.124	28.0	20.0	GSM-2528-20	40.0		44.0	30.0	GSM-4044-30

³⁾ After press-fit. *Testing methods, page 61*

Product range

d1	d1	d2	b1	Part No.	d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13		[mm]	Tolerance ³⁾	[mm]	h13	
40.0		44.0	40.0	GSM-4044-40	62.0	+0.100	67.0	35.0	GSM-6267-35
40.0		44.0	50.0	GSM-4044-50		+0.250			
40.0		44.0	52.5	GSM-4044-525	62.0		67.0	72.0	GSM-6267-72
42.0		46.0	40.0	GSM-4246-40	65.0		70.0	30.0	GSM-6570-30
44.0		48.0	20.0	GSM-4448-20	65.0		70.0	50.0	GSM-6570-50
45.0		50.0	10.0	GSM-4550-10	65.0		70.0	104.0	GSM-6570-104
45.0		50.0	20.0	GSM-4550-20	68.0		73.0	60.0	GSM-6873-60
45.0		50.0	22.0	GSM-4550-22	70.0	+0.060	75.0	60.0	GSM-7075-60
45.0		50.0	23.5	GSM-4550-235	72.0	+0.180	77.0	24.5	GSM-7277-24.5
45.0	+0.050	50.0	30.0	GSM-4550-30	72.0		77.0	76.0	GSM-7277-76
45.0	+0.150	50.0	38.0	GSM-4550-38	75.0		80.0	40.0	GSM-7580-40
45.0		50.0	40.0	GSM-4550-40	75.0		80.0	60.0	GSM-7580-60
45.0		50.0	50.0	GSM-4550-50	80.0		85.0	60.0	GSM-8085-60
50.0		55.0	20.0	GSM-5055-20	80.0		85.0	100.0	GSM-8085-100
50.0		55.0	25.0	GSM-5055-25	85.0		90.0	100.0	GSM-8590-100
50.0		55.0	30.0	GSM-5055-30	90.0		95.0	100.0	GSM-9095-100
50.0		55.0	40.0	GSM-5055-40	95.0		100.0	100.0	GSM-95100-100
50.0		55.0	50.0	GSM-5055-50	100.0		105.0	21.5	GSM-100105-21.5
50.0		55.0	60.0	GSM-5055-60	100.0	+0.072	105.0	30.0	GSM-100105-30
52.0		57.0	20.0	GSM-5257-20	100.0	+0.212	105.0	32.0	GSM-100105-32
55.0		60.0	20.0	GSM-5560-20	100.0		105.0	100.0	GSM-100105-100
55.0		60.0	40.0	GSM-5560-40	105.0		110.0	100.0	GSM-105110-100
55.0		60.0	50.0	GSM-5560-50	110.0		115.0	100.0	GSM-110115-100
55.0	+0.060	60.0	60.0	GSM-5560-60	120.0		125.0	100.0	GSM-120125-100
60.0	+0.180	65.0	30.0	GSM-6065-30	125.0		130.0	100.0	GSM-125130-100
60.0		65.0	40.0	GSM-6065-40	130.0		135.0	100.0	GSM-130135-100
60.0		65.0	50.0	GSM-6065-50	135.0	+0.085	140.0	80.0	GSM-135140-80
60.0		65.0	60.0	GSM-6065-60	140.0	+0.245	145.0	100.0	GSM-140145-100
60.0		65.0	70.0	GSM-6065-70	140.0		145.0	104.0	GSM-140145-104
					150.0		155.0	100.0	GSM-150155-100

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

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Order online

including delivery times, prices, online tools

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Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling

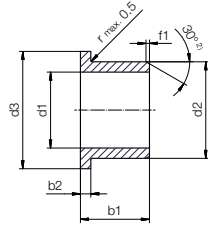
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Flange bearings (form F)



³⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions



Order example: **GFM-0304-02** – no minimum order quantity.

G iglidur® material **F** With flange **M** Metric **03** Inner Ø d1 **04** Outer Ø d2 **02** Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	[mm]	[mm]	
3.0		4.5	7.5	2.0	0.50	GFM-0304-02
3.0	+0.014	4.5	7.5	2.7	0.75	GFM-0304-0275
3.0	+0.054	4.5	7.5	3.0	0.75	GFM-0304-03
3.0		4.5	7.5	5.0	0.75	GFM-0304-05
3.0		4.5	7.0	5.0	0.75	GFM-030407-05
4.0	+0.010	5.0	9.5	4.0	0.50	GFM-04050-04
4.0	+0.040	5.0	9.5	6.0	0.50	GFM-04050-06
4.0		5.5	9.5	2.5	0.75	GFM-0405-0255
4.0	+0.020	5.5	9.5	3.0	0.75	GFM-0405-03
4.0	+0.068	5.5	9.5	4.0	0.75	GFM-0405-04
4.0		5.5	9.5	6.0	0.75	GFM-0405-06
4.0		5.5	8.0	10.0	1.00	GFM-040508-10
5.0		6.0	10.0	3.5	0.50	GFM-0506-035
5.0	+0.010	6.0	10.0	4.0	0.50	GFM-0506-04
5.0	+0.040	6.0	10.0	5.0	0.50	GFM-0506-05
5.0		6.0	10.0	6.0	0.50	GFM-0506-06
5.0		6.0	10.0	15.3	0.50	GFM-0506-15
5.0		7.0	11.0	3.5	1.00	GFM-0507-03
5.0		7.0	11.0	4.0	1.00	GFM-0507-04
5.0		7.0	15.0	4.0	1.00	GFM-050715-04
5.0	+0.020	7.0	11.0	5.0	1.00	GFM-0507-05
5.0	+0.068	7.0	9.5	5.0	1.00	GFM-050709-05
5.0		7.0	11.0	7.0	1.00	GFM-0507-07
5.0		7.0	11.0	11.0	1.00	GFM-0507-11
5.0		7.0	11.0	14.5	1.00	GFM-0507-145
5.0		7.0	11.0	30.0	1.00	GFM-0507-30
6.0	+0.010	7.0	11.0	2.4	0.50	GFM-0607-024
6.0	+0.040	7.0	11.0	4.5	0.50	GFM-0607-045

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	[mm]	[mm]	
6.0	+0.010	7.0	11.0	6.0	0.50	GFM-0607-06
6.0	+0.040	7.0	11.0	10.0	0.50	GFM-0607-10
6.0		8.0	12.0	2.5	1.00	GFM-0608-025
6.0		8.0	14.0	2.8	1.00	GFM-060814-028
6.0		8.0	12.0	4.0	1.00	GFM-0608-04
6.0		8.0	12.0	4.8	1.00	GFM-0608-048
6.0		8.0	12.0	5.0	1.00	GFM-0608-05
6.0	+0.020	8.0	12.0	6.0	1.00	GFM-0608-06
6.0	+0.068	8.0	12.0	7.0	1.00	GFM-0608-07
6.0		8.0	12.0	8.0	1.00	GFM-0608-08
6.0		8.0	12.0	10.0	1.00	GFM-0608-10
6.0		8.0	14.0	12.0	1.00	GFM-060814-12
6.0		8.0	12.0	25.0	1.00	GFM-0608-25
6.0		8.0	12.0	35.0	1.00	GFM-0608-35
7.0		8.0	12.0	1.7	0.50	GFM-0708-017
7.0	+0.013	8.0	12.0	3.0	0.50	GFM-0708-03
7.0	+0.049	8.0	12.0	6.0	0.50	GFM-0708-06
7.0		8.0	12.0	8.0	0.50	GFM-0708-08
7.0		9.0	15.0	3.5	1.00	GFM-0709-035
7.0		9.0	15.0	6.0	1.00	GFM-0709-06
7.0	+0.025	9.0	15.0	10.0	1.00	GFM-0709-10
7.0	+0.083	9.0	19.0	10.0	1.00	GFM-070919-10
7.0		9.0	15.0	12.0	1.00	GFM-0709-12
8.0		9.0	15.0	3.0	0.50	GFM-0809-03
8.0	+0.013	9.0	13.0	3.5	0.50	GFM-0809-035
8.0	+0.049	9.0	13.0	5.5	0.50	GFM-0809-055
8.0		9.0	13.0	8.0	0.50	GFM-0809-08
8.0		9.0	13.0	12.0	0.50	GFM-0809-12

³⁾ After press-fit. Testing methods, page 61

Product range

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	[mm]	[mm]	
8.0		10.0	15.0	3.0	1.00	GFM-0810-03
8.0	+0.025	10.0	18.0	3.0	1.00	GFM-081018-03
8.0	+0.083	10.0	15.0	4.0	1.00	GFM-0810-04
8.0	+0.040	10.0	14.0	5.0	1.00	GFM-081014-05
8.0	+0.098	10.0	15.0	5.5	1.00	GFM-0810-05
8.0		10.0	14.0	6.0	1.00	GFM-081014-06
8.0		10.0	15.0	6.5	1.00	GFM-0810-065
8.0	+0.025	10.0	15.0	7.5	1.00	GFM-0810-07
8.0	+0.083	10.0	13.0	8.0	1.00	GFM-081013-08
8.0		10.0	14.0	8.0	1.00	GFM-081014-08
8.0		10.0	15.0	9.5	1.00	GFM-0810-09
8.0		10.0	15.0	10.0	1.00	GFM-0810-10
8.0	+0.040	10.0	14.0	10.0	1.00	GFM-081014-10
8.0	+0.098	10.0	14.0	11.0	1.00	GFM-0810-11
8.0		10.0	16.0	11.5	1.50	GFM-081016-11
8.0		10.0	12.0	12.5	1.00	GFM-081012-125
8.0	+0.025	10.0	15.0	15.0	1.00	GFM-0810-15
8.0	+0.083	10.0	16.0	15.0	1.50	GFM-081016-15
8.0		10.0	17.0	15.0	1.00	GFM-081017-15
8.0		10.0	15.0	25.0	1.00	GFM-0810-25
8.0		10.0	15.0	30.0	1.00	GFM-0810-30
8.0	+0.040	12.0	16.0	6.0	2.00	GFM-0812-06
8.0	+0.130	12.0	21.0	8.0	2.00	GFM-081221-08
9.0	+0.013	10.0	15.0	6.5	0.50	GFM-0910-065
9.0	+0.049	10.0	15.0	17.5	0.50	GFM-0910-17
10.0	+0.013	11.0	20.0	3.5	0.50	GFM-1011-03
10.0	+0.046	11.0	20.0	4.4	0.50	GFM-1011-044
10.0	+0.013	11.0	15.0	10.0	0.50	GFM-1011-10
10.0	+0.049	11.0	15.0	10.0	0.50	GFM-1011-10
10.0		12.0	18.0	3.5	1.00	GFM-1012-035
10.0		12.0	18.0	4.0	1.00	GFM-1012-04
10.0		12.0	18.0	5.0	1.00	GFM-1012-05
10.0		12.0	18.0	6.0	1.00	GFM-1012-06
10.0		12.0	16.0	6.0	1.00	GFM-101216-06
10.0		12.0	18.0	7.0	1.00	GFM-1012-07
10.0	+0.025	12.0	18.0	9.0	1.00	GFM-1012-09
10.0	+0.083	12.0	16.0	9.0	1.00	GFM-101216-09
10.0		12.0	18.0	10.0	1.00	GFM-1012-10
10.0		12.0	18.0	12.0	1.00	GFM-1012-12
10.0		12.0	15.0	12.0	1.00	GFM-101215-12
10.0		12.0	18.0	15.0	1.00	GFM-1012-15
10.0		12.0	16.0	15.0	1.00	GFM-101216-15
10.0		12.0	18.0	17.0	1.00	GFM-1012-17
11.0	+0.016	12.0	16.0	6.0	0.50	GFM-1112-06
12.0	+0.059	13.0	17.0	3.0	0.50	GFM-1213-03
12.0		13.0	17.0	12.0	0.50	GFM-1213-12

³⁾ After press-fit. Testing methods, page 61

Bearing technology | Plain bearings | iglidur® G

d1	d1	d2	d3	b1	b2	Part No.	d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13		[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
16.0		18.0	24.0	9.0	1.00	GFM-1618-09	28.0		30.0	36.0	31.0	1.00	GFM-283036-31
16.0		18.0	24.0	12.0	1.00	GFM-1618-12	28.0		30.0	35.0	36.0	1.00	GFM-2830-36
16.0		18.0	24.0	16.0	1.00	GFM-1618-16	28.0		30.0	35.0	48.0	1.00	GFM-2830-48
16.0		18.0	24.0	17.0	1.00	GFM-1618-17	28.0		32.0	39.0	20.0	2.00	GFM-283239-20
16.0		18.0	24.0	21.0	1.00	GFM-1618-21	28.0		32.0	50.0	35.0	2.00	GFM-283250-35
17.0		19.0	25.0	9.0	1.00	GFM-1719-09	30.0		31.0	36.0	20.0	0.50	GFM-3031-20
17.0		19.0	25.0	16.0	1.00	GFM-1719-16	30.0		31.0	35.0	30.0	0.50	GFM-3031-30
17.0		19.0	25.0	25.0	1.00	GFM-1719-25	30.0		32.0	37.0	4.0	1.00	GFM-3032-04
18.0		20.0	26.0	4.0	1.00	GFM-1820-04	30.0	+0.040	32.0	37.0	12.0	1.00	GFM-3032-12
18.0	+0.032	20.0	26.0	6.0	1.00	GFM-1820-06	30.0	+0.124	32.0	37.0	17.5	1.00	GFM-3032-17
18.0	+0.102	20.0	22.0	6.0	1.00	GFM-182022-06	30.0		32.0	37.0	22.0	1.00	GFM-3032-22
18.0		20.0	26.0	9.0	1.00	GFM-1820-09	30.0		34.0	42.0	9.0	2.00	GFM-3034-09
18.0		20.0	26.0	11.0	1.00	GFM-1820-11	30.0		34.0	40.0	10.0	2.00	GFM-303440-10
18.0		20.0	26.0	12.0	1.00	GFM-1820-12	30.0		34.0	42.0	16.0	2.00	GFM-3034-16
18.0		20.0	26.0	17.0	1.00	GFM-1820-17	30.0		34.0	42.0	20.0	2.00	GFM-3034-20
18.0		20.0	26.0	22.0	1.00	GFM-1820-22	30.0		34.0	42.0	26.0	2.00	GFM-3034-26
18.0		20.0	26.0	30.0	1.00	GFM-1820-30	30.0		34.0	42.0	37.0	2.00	GFM-3034-37
18.0		20.0	26.0	32.0	1.00	GFM-1820-32	32.0		36.0	40.0	16.0	2.00	GFM-3236-16
18.0		22.0	26.0	28.0	2.00	GFM-1822-28	32.0		36.0	40.0	26.0	2.00	GFM-3236-26
20.0		21.0	26.0	3.5	0.50	GFM-2021-035	34.0		38.0	50.0	35.0	2.00	GFM-343850-35
20.0	+0.020	21.0	25.0	15.0	0.50	GFM-2021-15	35.0		39.0	47.0	5.8	2.00	GFM-3539-058
20.0	+0.072	21.0	25.0	20.0	0.50	GFM-2021-20	35.0		39.0	47.0	7.0	2.00	GFM-3539-07
20.0		23.0	30.0	7.0	1.50	GFM-2023-07	35.0		39.0	47.0	12.0	2.00	GFM-3539-12
20.0		23.0	26.0	7.0	1.50	GFM-202326-07	35.0		39.0	47.0	16.0	2.00	GFM-3539-16
20.0		23.0	30.0	11.5	1.50	GFM-2023-11	35.0		39.0	47.0	26.0	2.00	GFM-3539-26
20.0		23.0	28.0	15.0	1.50	GFM-202328-15	35.0		39.0	47.0	36.0	2.00	GFM-3539-36
20.0		23.0	30.0	16.5	1.50	GFM-2023-16	38.0		42.0	54.0	10.0	2.00	GFM-3842-10
20.0		23.0	29.0	20.0	1.50	GFM-202329-20	38.0		42.0	54.0	22.0	2.00	GFM-3842-22
20.0		23.0	30.0	21.5	1.50	GFM-2023-21	40.0		44.0	52.0	7.0	2.00	GFM-4044-07
20.0	+0.040	23.0	26.0	21.5	1.50	GFM-202326-21	40.0		44.0	52.0	14.0	2.00	GFM-4044-14
22.0	+0.124	24.0	30.0	25.0	1.00	GFM-2224-25	40.0	+0.050	44.0	52.0	20.0	2.00	GFM-4044-20
22.0		25.0	29.0	4.5	1.50	GFM-222529-045	40.0	+0.150	44.0	52.0	30.0	2.00	GFM-4044-30
22.0		25.0	30.0	21.5	1.50	GFM-222530-215	40.0		44.0	52.0	40.0	2.00	GFM-4044-40
22.0		25.0	30.0	25.0	1.50	GFM-222530-25	40.0		44.0	52.0	50.0	2.00	GFM-4044-50
22.0		25.0	35.0	31.5	1.50	GFM-222535-315	40.0		46.0	50.0	20.0	2.00	GFM-4046-20
24.0		27.0	32.0	7.0	1.50	GFM-2427-07	42.0		46.0	53.0	19.0	2.00	GFM-4246-19
24.0		27.0	32.0	10.5	1.50	GFM-2427-10	45.0		50.0	58.0	25.0	2.00	GFM-4550-25
25.0	+0.020	26.0	30.0	25.0	0.50	GFM-2526-25	45.0		50.0	58.0	30.0	2.00	GFM-4550-30
25.0	+0.072	27.0	32.0	7.0	1.00	GFM-2527-07	45.0		50.0	58.0	50.0	2.00	GFM-4550-50
25.0		27.0	32.0	48.0	1.00	GFM-2527-48	50.0		55.0	63.0	7.0	2.00	GFM-5055-07
25.0		28.0	30.0	10.0	1.50	GFM-252830-10	50.0		55.0	63.0	10.0	2.00	GFM-5055-10
25.0		28.0	35.0	11.5	1.50	GFM-2528-11	50.0		55.0	63.0	25.0	2.00	GFM-5055-25
25.0	+0.040	28.0	35.0	16.5	1.50	GFM-2528-16	50.0		55.0	63.0	40.0	2.00	GFM-5055-40
25.0	+0.124	28.0	35.0	21.5	1.50	GFM-2528-21	50.0		55.0	63.0	50.0	2.00	GFM-5055-50
26.0		30.0	37.0	12.0	2.00	GFM-2630-12	60.0	+0.060	65.0	73.0	7.0	2.00	GFM-6065-07
27.0		30.0	38.0	20.0	1.50	GFM-2730-20	60.0	+0.180	65.0	73.0	22.0	2.00	GFM-6065-22
28.0		30.0	35.0	10.0	1.00	GFM-2830-10	60.0		65.0	73.0	30.0	2.00	GFM-6065-30
							60.0		65.0	73.0	50.0	2.00	GFM-6065-50

³⁾ After press-fit. *Testing methods, page 61*

Product range

d1	d1	d2	d3	b1	b2	Part No.	d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13		[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
60.0		65.0	80.0	62.0	2.00	GFM-606580-62	100.0		105.0	113.0	100.0	2.50	GFM-100105-100
65.0		70.0	78.0	50.0	2.00	GFM-6570-50	110.0	+0.072	115.0	123.0	100.0	2.50	GFM-110115-100
70.0		75.0	83.0	50.0	2.00	GFM-7075-50	120.0	+0.212	125.0	133.0	80.0	2.50	GFM-120125-80
70.0	+0.060	75.0	83.0	85.5	2.00	GFM-7075-855	120.0		125.0	133.0	100.0	2.50	GFM-120125-100
75.0	+0.180	80.0	88.0	50.0	2.00	GFM-7580-50	125.0		130.0	138.0	100.0	2.50	GFM-125130-100
80.0		85.0	93.0	50.0	2.50	GFM-8085-50	130.0		135.0	143.0	100.0	2.50	GFM-130135-100
80.0		85.0	93.0	100.0	2.50	GFM-8085-100	140.0	+0.085	145.0	153.0	100.0	2.50	GFM-140145-100
85.0		90.0	98.0	100.0	2.50	GFM-8590-100	150.0	+0.245	155.0	163.0	40.0	2.50	GFM-150155-40
90.0	+0.072	95.0	103.0	100.0	2.50	GFM-9095-100	150.0		155.0	163.0	100.0	2.50	GFM-150155-100
95.0	+0.212	100.0	108.0	100.0	2.50	GFM-95100-100	195.0	+0.100	205.0	240.0	65.0	5.00	GFM-195205240-65
100.0		105.0	113.0	42.5	2.50	GFM-100105-425		+0.285					

³⁾ After press-fit. *Testing methods, page 61*



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Detailed information about delivery time online.

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Order online

including delivery times, prices, online tools

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Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling

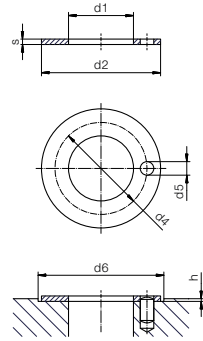
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Thrust washer (form T)



i Dimensions according to ISO 3547-1 and special dimensions

i Order example: **GTM-0408-005** – no minimum order quantity.
G iglidur® material T Thrust washer M Metric 04 Inner Ø d1 08 Outer Ø d2 005 Height s

d1	d2	d4	d5	h	d6	Øs	Part No.
+0.25	-0.25	-0.12 +0.12	+0.375 +0.125	+0.2/-0.2	+0.12	-0.05	
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
4	8	⁴⁾	⁴⁾	0.2	8	0.5	GTM-0408-005
4	9	⁴⁾	⁴⁾	0.3	9	0.6	GTM-0409-006
4	9	⁴⁾	⁴⁾	0.3	9	1.6	GTM-0409-016
4	10	⁴⁾	⁴⁾	0.2	10	0.5	GTM-0410-005
4	11	⁴⁾	⁴⁾	0.2	11	0.5	GTM-0411-005
5	9.5	⁴⁾	⁴⁾	0.3	9.5	0.6	GTM-0509-006
6	12	⁴⁾	⁴⁾	1	12	1.5	GTM-0612-015
6	15	⁴⁾	⁴⁾	1	15	1.5	GTM-0615-015
6	20	13	1.5	1	20	1.5	GTM-0620-015
6.2	11	⁴⁾	⁴⁾	0.7	11	1	GTM-0611-010
7	12	⁴⁾	⁴⁾	0.2	12	0.5	GTM-0712-005
7	13	⁴⁾	⁴⁾	0.2	13	0.5	GTM-0713-005
8	15	⁴⁾	⁴⁾	0.2	15	0.5	GTM-0815-005
8	15	⁴⁾	⁴⁾	1	15	1.5	GTM-0815-015
8	18	⁴⁾	⁴⁾	0.7	18	1	GTM-0818-010
8	18	13	1.5	1	18	1.5	GTM-0818-015
8	18	⁴⁾	⁴⁾	1.5	18	2	GTM-0818-020
9	13	⁴⁾	⁴⁾	0.7	13	1	GTM-0913-010
9	18	13.5	1.5	1	18	1.5	GTM-0918-015
10	17.8	⁴⁾	⁴⁾	0.2	17.8	0.5	GTM-1018-005
10	18	⁴⁾	⁴⁾	0.7	18	1	GTM-1018-010
10	18	⁴⁾	⁴⁾	1	18	1.5	GTM-1018-015
10	18	⁴⁾	⁴⁾	1.5	18	2	GTM-1018-020
10	20	⁴⁾	⁴⁾	0.7	20	1.5	GTM-1020-015
11	15	⁴⁾	⁴⁾	0.7	15	1	GTM-1115-010
11	27	⁴⁾	⁴⁾	0.2	27	0.5	GTM-1127-005
12	24	18	1.5	1	24	1.5	GTM-1224-015
12	30	⁴⁾	⁴⁾	1	30	1.5	GTM-1230-015

⁴⁾ Design without fixing hole

Product range

d1	d2	d4	d5	h	d6	Øs	Part No.
+0.25	-0.25	-0.12 +0.12	+0.375 +0.125	+0.2/-0.2	+0.12	-0.05	
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
14	20	⁴⁾	⁴⁾	1	20	1.5	GTM-1420-015
14	26	20	2	1	26	1.5	GTM-1426-015
15	19	⁴⁾	⁴⁾	0.5	19	0.8	GTM-1519-008
15	22	⁴⁾	⁴⁾	0.5	22	0.8	GTM-1522-008
15	24	19.5	1.5	1	24	1.5	GTM-1524-015
15	24	⁴⁾	⁴⁾	2	24	2.75	GTM-1524-0275
16	28	⁴⁾	⁴⁾	0.7	28	1	GTM-1628-010
16	30	22	2	1	30	1.5	GTM-1630-015
18	32	25	2	1	32	1.5	GTM-1832-015
20	36	28	3	1	36	1.5	GTM-2036-015
22	30	⁴⁾	⁴⁾	1	30	1.5	GTM-2230-015
22	38	30	3	1	38	1.5	GTM-2238-015
24	42	33	3	1	42	1.5	GTM-2442-015
26	44	35	3	1	44	1.5	GTM-2644-015
28	48	38	4	1	48	1.5	GTM-2848-015
28.5	35.8	⁴⁾	⁴⁾	0.2	35.8	0.5	GTM-2835-005
32	45.8	⁴⁾	⁴⁾	0.7	45.8	1	GTM-3246-010
32	54	43	4	1	54	1.5	GTM-3254-015
38	62	50	4	1	62	1.5	GTM-3862-015
40	60	⁴⁾	⁴⁾	⁴⁾	60	3.5	GTM-4060-035
42	66	54	4	1	66	1.5	GTM-4266-015
48	60	⁴⁾	⁴⁾	1.5	74	2	GTM-4860-020
48	74	61	4	1.5	74	2	GTM-4874-020
52	78	65	4	1.5	78	2	GTM-5278-020
52.5	69	⁴⁾	⁴⁾	1.5	69	2	GTM-52569-020
62	78	⁴⁾	⁴⁾	1.5	78	2	GTM-6278-020
62	90	⁴⁾	⁴⁾	0.7	90	1	GTM-6290-010
62	90	76	4	1.5	90	2	GTM-6290-020
68	81	⁴⁾	⁴⁾	1.5	81	2	GTM-6881-020
78	114	⁴⁾	⁴⁾	1	114	1.5	GTM-78114-015
80.5	114	⁴⁾	⁴⁾	1	114	1.5	GTM-80114-015

⁴⁾ Design without fixing hole

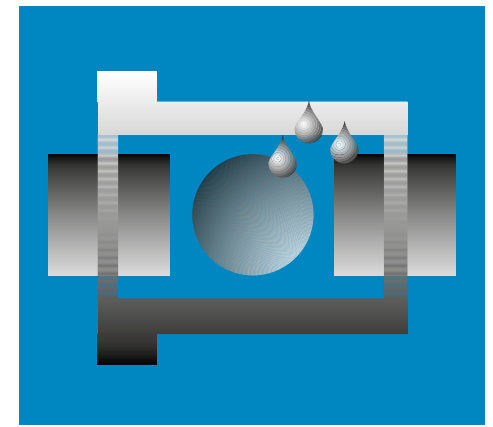
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including delivery times, prices, online tools
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Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.
No low-quantity surcharges.
Free shipping within Germany for orders above €150.



More universal

The advanced development of iglidur® G
iglidur® G1



When to use it?

- When a universal all-round bearing is required
- When low moisture absorption is fundamental
- For low to medium speeds
- For pivoting and rotational movements



When not to use it?

- When high shock, impact and edge loads occur
iglidur® G
- When lowest wear is required
iglidur® W300
- When the ultimate media resistance is required
iglidur® X
- For underwater applications
iglidur® H370

Bearing technology | Plain bearings | iglidur® G1



Ø
4.0-50.0mm



Also available
as:



Bar stock,
round bar
Page 743



Bar stock,
plate
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tribo-tape liner
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Guide rings
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flange
bearings
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Moulded
special parts
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igubal®
spherical balls
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More universal The advanced development of iglidur® G

The most successful plastic bearing in the world - iglidur® G - improved all round: iglidur® G1, the new standard.

- Double service life at high loads
- Up to 4 times less wear at low loads
- Continuous operating temperatures up to +180°C
- Press-fit up to +120°C (iglidur® G: up to +80°C)
- Moisture absorption reduced by 50%

Typical application areas

- Mechanical engineering
- Automation
- Sports and leisure
- Automotive industry
- Mechatronics

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 100%; height: 10px; background-color: #0070C0;"></div>	+
Wear resistance at +90°C	-	<div style="width: 100%; height: 10px; background-color: #0070C0;"></div>	+
Wear resistance at +150°C	-	<div style="width: 100%; height: 10px; background-color: #0070C0;"></div>	+
Slide property	-	<div style="width: 100%; height: 10px; background-color: #0070C0;"></div>	+
Wear resistance under water	-	<div style="width: 100%; height: 10px; background-color: #0070C0;"></div>	+
Media resistance	-	<div style="width: 100%; height: 10px; background-color: #0070C0;"></div>	+
Resistant to edge pressures	-	<div style="width: 100%; height: 10px; background-color: #0070C0;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 100%; height: 10px; background-color: #0070C0;"></div>	+
Dirt resistance	-	<div style="width: 100%; height: 10px; background-color: #0070C0;"></div>	+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.58	
Colour		grey	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	1.7	
Coefficient of friction, dynamic, against steel	μ	0.10-0.29	
pv value, max. (dry)	MPa · m/s	0.60	
Mechanical properties			
Flexural modulus	MPa	11,486	DIN 53457
Flexural strength at +20°C	MPa	178	DIN 53452
Compressive strength	MPa	115	
Max. permissible surface pressure (+20°C)	MPa	91	
Shore D hardness		81	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+180	
Max. application temperature short-term	°C	+220	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	3.7	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ⁹	DIN IEC 93
Surface resistance	Ω	> 10 ⁹	DIN 53482

Table 01: Material properties

The requirement profile is demanding: comprehensive advanced development of the successful all-round classic iglidur® G. This has been achieved especially in terms of moisture absorption, thermal properties and consistently improved wear resistance. Only with shock, impact and edge loads, the robustness of iglidur® G could not quite be achieved.

Moisture absorption

The moisture absorption of iglidur® G1 plain bearings in ambient conditions is approximately 0.2 % weight. The saturation limit submerged in water is 1.7% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® G1 bearings.

Radiation resistance

Plain bearings made from iglidur® G1 are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

Resistance to weathering

iglidur® G1 plain bearings have not yet been tested for their resistance to weathering. Please consult igus® if you're planning to use them outdoors.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® G1 plain bearings decreases. Diagram 02 shows this inverse relationship. With the long-term permitted application temperature of +180°C, the permitted surface pressure still amounts to 40MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® G1 at radial loads. The plastic deformation is minimal up to a pressure of approximately 100MPa. However, it is also dependent on the service time.

Surface pressure, page 45



-40°C up to
+180°C



91MPa



HB



RoHS



ISO
35474

Permissible surface speeds

iglidur® G1 has been developed for low to medium surface speeds. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

The ambient temperatures strongly influence the properties of plain bearings. The temperatures prevailing in the bearing system also have an influence on the wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +120°C. For temperatures over 120°C an additional securing of the bearings in the housing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The coefficient of friction μ of a plain bearing among other factors is influenced by the surface speed and the load (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. For iglidur® G1 a ground surface with an average surface finish $R_a = 0.8\mu\text{m}$ is recommended. Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® G1. It can be observed that iglidur® G1 achieves good to very good wear results with all shaft materials. The results for stainless steel types are most likely slightly lower. Diagram 07 compares the wear in rotating and pivoting applications. As with many of the iglidur® materials, wear rate is better in pivoting applications.

Shaft materials, page 56

Installation tolerances

iglidur® G1 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	1.3	1.0	5.0
Short-term m/s	2.5	1.8	6.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.10-0.29	0.09	0.04	0.04

Table 04: Coefficient of friction against steel ($R_a = 1\mu\text{m}$, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	F10 [mm]	F10 [mm]	h9 [mm]		
0-3	+0.000	+0.010	+0.006	+0.046	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.010	+0.058	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.013	+0.071	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.016	+0.086	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.020	+0.104	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.025	+0.125	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.030	+0.150	-0.074	+0.000
> 80-120	+0.000	+0.035	-0.036	+0.176	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

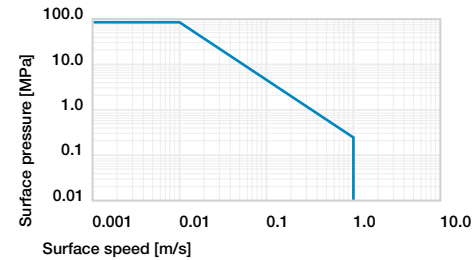


Diagram 01: Permissible pv values for iglidur® G plain bearing with a wall thickness of 1 mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

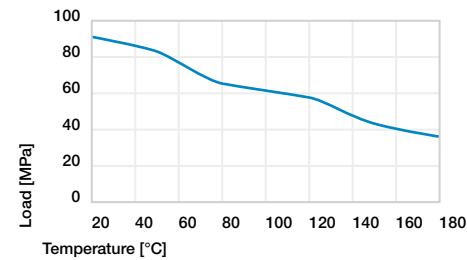


Diagram 02: Maximum recommended surface pressure as a function of temperature (91 MPa at +20°C)

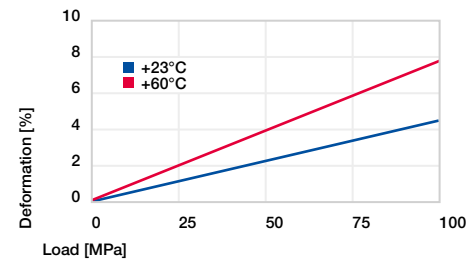


Diagram 03: Deformation under pressure and temperature

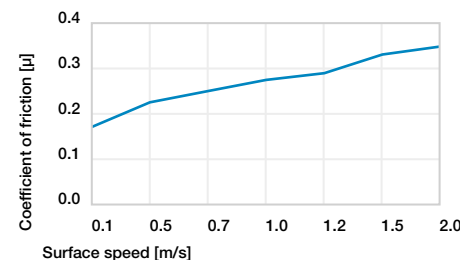


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1 MPa

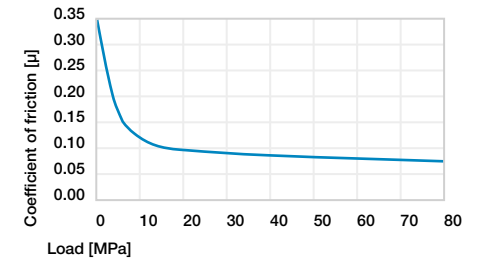


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

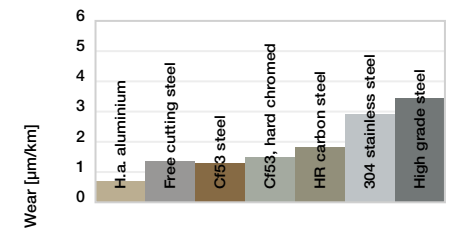


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1 MPa, v = 0.3 m/s

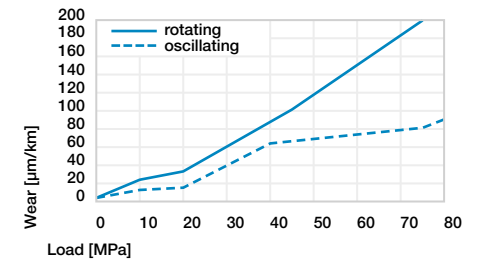
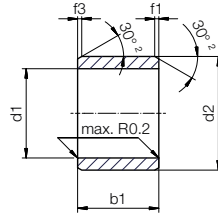


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1/f3 [mm]	0.3	0.5	0.8	1.2



Dimensions according to ISO 3547-1 and special dimensions



Order example: **G1SM-0405-04** – no minimum order quantity.

G1 iglidur® material **S** Cylindrical **M** Metric **04** Inner Ø d1 **05** Outer Ø d2 **04** Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
4.0		5.5	4.0	G1SM-0405-04
4.0		5.5	6.0	G1SM-0405-06
5.0	+0.010	7.0	5.0	G1SM-0507-05
5.0	+0.058	7.0	10.0	G1SM-0507-10
6.0		8.0	6.0	G1SM-0608-06
6.0		8.0	8.0	G1SM-0608-08
6.0		8.0	10.0	G1SM-0608-10
8.0		10.0	8.0	G1SM-0810-08
8.0		10.0	10.0	G1SM-0810-10
8.0		10.0	12.0	G1SM-0810-12
10.0	+0.013	12.0	8.0	G1SM-1012-08
10.0	+0.071	12.0	10.0	G1SM-1012-10
10.0		12.0	12.0	G1SM-1012-12
10.0		12.0	15.0	G1SM-1012-15
10.0		12.0	20.0	G1SM-1012-20
12.0		14.0	10.0	G1SM-1214-10
12.0		14.0	12.0	G1SM-1214-12
12.0		14.0	15.0	G1SM-1214-15
12.0		14.0	20.0	G1SM-1214-20
13.0		15.0	10.0	G1SM-1315-10
13.0		15.0	20.0	G1SM-1315-20
14.0	+0.016	16.0	15.0	G1SM-1416-15
14.0	+0.086	16.0	20.0	G1SM-1416-20
14.0		16.0	25.0	G1SM-1416-25
15.0		17.0	15.0	G1SM-1517-15
15.0		17.0	20.0	G1SM-1517-20
15.0		17.0	25.0	G1SM-1517-25
16.0		18.0	15.0	G1SM-1618-15
16.0		18.0	20.0	G1SM-1618-20

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
16.0		18.0	25.0	G1SM-1618-25
18.0	+0.016	20.0	15.0	G1SM-1820-15
18.0	+0.086	20.0	20.0	G1SM-1820-20
18.0		20.0	25.0	G1SM-1820-25
20.0		23.0	10.0	G1SM-2023-10
20.0		23.0	15.0	G1SM-2023-15
20.0		23.0	20.0	G1SM-2023-20
20.0		23.0	25.0	G1SM-2023-25
20.0		23.0	30.0	G1SM-2023-30
22.0		25.0	15.0	G1SM-2225-15
22.0		25.0	20.0	G1SM-2225-20
22.0		25.0	25.0	G1SM-2225-25
22.0		25.0	30.0	G1SM-2225-30
24.0		27.0	15.0	G1SM-2427-15
24.0		27.0	20.0	G1SM-2427-20
24.0	+0.020	27.0	25.0	G1SM-2427-25
24.0	+0.104	27.0	30.0	G1SM-2427-30
25.0		28.0	15.0	G1SM-2528-15
25.0		28.0	20.0	G1SM-2528-20
25.0		28.0	25.0	G1SM-2528-25
25.0		28.0	30.0	G1SM-2528-30
28.0		32.0	20.0	G1SM-2832-20
28.0		32.0	25.0	G1SM-2832-25
28.0		32.0	25.0	G1SM-2832-30
30.0		34.0	20.0	G1SM-3034-20
30.0		34.0	25.0	G1SM-3034-25
30.0		34.0	30.0	G1SM-3034-30
30.0		34.0	40.0	G1SM-3034-40

³⁾ After press-fit. *Testing methods, page 61*

Product range

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
32.0		36.0	20.0	G1SM-3236-20
32.0		36.0	30.0	G1SM-3236-30
32.0		36.0	40.0	G1SM-3236-40
35.0		39.0	20.0	G1SM-3539-20
35.0	+0.025	39.0	30.0	G1SM-3539-30
35.0	+0.125	39.0	40.0	G1SM-3539-40
35.0		39.0	50.0	G1SM-3539-50
40.0		44.0	20.0	G1SM-4044-20
40.0		44.0	30.0	G1SM-4044-30
40.0		44.0	40.0	G1SM-4044-40

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
40.0		44.0	50.0	G1SM-4044-50
45.0		50.0	20.0	G1SM-4550-20
45.0		50.0	30.0	G1SM-4550-30
45.0		50.0	40.0	G1SM-4550-40
45.0	+0.025	50.0	50.0	G1SM-4550-50
50.0	+0.125	55.0	20.0	G1SM-5055-20
50.0		55.0	30.0	G1SM-5055-30
50.0		55.0	40.0	G1SM-5055-40
50.0		55.0	50.0	G1SM-5055-50
50.0		55.0	60.0	G1SM-5055-60

³⁾ After press-fit. *Testing methods, page 61*



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Discount scaling

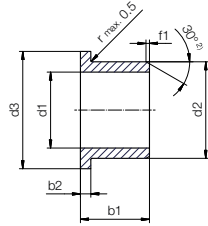
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Flange bearings (form F)



^{a)} Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2



Dimensions according to ISO 3547-1 and special dimensions



Order example: **G1FM-0608-04** – no minimum order quantity.

G1 iglidur® material **F** With flange **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **04** Total length b1

d1	d1 Tolerance ^{a)}	d2	d3 ^{a)}	b1	b2	Part No.
[mm]		[mm]	[mm]	[mm]	[mm]	
6.0	+0.010 +0.058	8.0	12.0	4.0	1.00	G1FM-0608-04
6.0		8.0	12.0	8.0	1.00	G1FM-0608-08
8.0	+0.013 +0.071	10.0	15.0	5.5	1.00	G1FM-0810-05
8.0		10.0	15.0	7.5	1.00	G1FM-0810-07
8.0		10.0	15.0	9.5	1.00	G1FM-0810-09
10.0		12.0	18.0	7.0	1.00	G1FM-1012-07
10.0		12.0	18.0	9.0	1.00	G1FM-1012-09
10.0		12.0	18.0	12.0	1.00	G1FM-1012-12
10.0	+0.016 +0.086	12.0	18.0	17.0	1.00	G1FM-1012-17
12.0		14.0	20.0	7.0	1.00	G1FM-1214-07
12.0		14.0	20.0	9.0	1.00	G1FM-1214-09
12.0		14.0	20.0	12.0	1.00	G1FM-1214-12
12.0		14.0	20.0	17.0	1.00	G1FM-1214-17
14.0		16.0	22.0	12.0	1.00	G1FM-1416-12
14.0		16.0	22.0	17.0	1.00	G1FM-1416-17
15.0		17.0	23.0	9.0	1.00	G1FM-1517-09
15.0		17.0	23.0	12.0	1.00	G1FM-1517-12
15.0		17.0	23.0	17.0	1.00	G1FM-1517-17
16.0	+0.020 +0.104	18.0	24.0	12.0	1.00	G1FM-1618-12
16.0		18.0	24.0	17.0	1.00	G1FM-1618-17
18.0		20.0	26.0	12.0	1.00	G1FM-1820-12
18.0		20.0	26.0	17.0	1.00	G1FM-1820-17
18.0		20.0	26.0	22.0	1.00	G1FM-1820-22
20.0		23.0	30.0	11.5	1.50	G1FM-2023-11
20.0		23.0	30.0	16.5	1.50	G1FM-2023-16
20.0		23.0	30.0	21.5	1.50	G1FM-2023-21
25.0		28.0	35.0	11.5	1.50	G1FM-2528-11
25.0		28.0	35.0	16.5	1.50	G1FM-2528-16

^{a)} After press-fit. *Testing methods, page 61*

Product range

d1	d1 Tolerance ^{a)}	d2	d3 ^{a)}	b1	b2	Part No.
[mm]		[mm]	[mm]	[mm]	[mm]	
25.0	+0.020 +0.104	28.0	35.0	21.5	1.50	G1FM-2528-21
30.0		34.0	42.0	16.0	2.00	G1FM-3034-16
30.0		34.0	42.0	26.0	2.00	G1FM-3034-26
35.0	+0.025 +0.125	39.0	47.0	16.0	2.00	G1FM-3539-16
35.0		39.0	47.0	26.0	2.00	G1FM-3539-26
40.0		44.0	52.0	30.0	2.00	G1FM-4044-30
40.0		44.0	52.0	40.0	2.00	G1FM-4044-40
45.0		50.0	58.0	50.0	2.00	G1FM-4550-50



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Discount scaling

1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.



The robust all-rounder according to ISO 2795

Excellent vibration dampening

igidur® M250



When to use it?

- When the bearings are exposed to large amounts of dirt
- When high vibration dampening is necessary
- For low to medium speeds
- When mechanical reaming of the bore is necessary



When not to use it?

- For applications in wet areas
igidur® H
- When very high precision is necessary
igidur® P
- For very smooth shafts
igidur® J
- When a cost-effective wear-resistant plain bearing is required
igidur® R

Bearing technology | Plain bearings | iglidur® M250



Ø
1.0-75.0mm

Also available
as:



Bar stock,
round bar
Page 743



Bar stock,
plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole
flange
bearings
Page 667



Moulded
special parts
Page 696



igubal®
spherical balls
Page 993



The robust all-rounder according to ISO 2795 Excellent vibration dampening

The self-lubricating plain bearings made of iglidur® M250 are characterised by impact strength, vibration dampening and wear resistance. They prove themselves particularly well under stresses in which the vibration dampening of the bearings is required, e. g. in sports equipment and packaging machines.

- Over 450 sizes available from stock
- Excellent vibration dampening
- Suitable for high edge pressures
- Suitable for impact loads
- Thick-walled according to ISO 2795
- Dirt can become embedded for shaft protection
- Lubrication-free
- Maintenance-free
- Thrust washers available only in imperial sizes, from page 1601

Typical application areas

- Agricultural machines
- Furniture/Industrial design
- Textile industry
- Doors and gates
- Mechanical engineering

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 25%; background-color: #0070C0;"></div>	+
Wear resistance at +90°C	-	<div style="width: 35%; background-color: #0070C0;"></div>	+
Wear resistance at +150°C	-	<div style="width: 15%; background-color: #0070C0;"></div>	+
Slide property	-	<div style="width: 30%; background-color: #0070C0;"></div>	+
Wear resistance under water	-	<div style="width: 15%; background-color: #0070C0;"></div>	+
Media resistance	-	<div style="width: 45%; background-color: #0070C0;"></div>	+
Resistant to edge pressures	-	<div style="width: 85%; background-color: #0070C0;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 95%; background-color: #0070C0;"></div>	+
Dirt resistance	-	<div style="width: 85%; background-color: #0070C0;"></div>	+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert



EN 06/2023

Technical data

General properties		Testing method	
Density	g/cm ³	1.14	
Colour		dark grey	
Max. moisture absorption at +23°C/50% r.h.	% weight	1.4	DIN 53495
Max. moisture absorption	% weight	7.6	
Coefficient of friction, dynamic, against steel	μ	0.18-0.40	
pv value, max. (dry)	MPa · m/s	0.12	
Mechanical properties			
Flexural modulus	MPa	2,700	DIN 53457
Flexural strength at +20°C	MPa	112	DIN 53452
Compressive strength	MPa	52	
Max. permissible surface pressure (+20°C)	MPa	20	
Shore D hardness		79	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+80	
Max. application temperature short-term	°C	+170	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	10	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹³	DIN IEC 93
Surface resistance	Ω	> 10 ¹¹	DIN 53482

Table 01: Material properties

The self-lubricating plain bearings made of iglidur® M250 are characterised by impact strength, vibration dampening and wear resistance. They prove themselves particularly well under stresses in which the vibration dampening of the bearings is required, e.g. in sports equipment and packaging machines. Since they are additionally able to absorb dirt, they are also suited for agricultural machines and garden appliances.

Moisture absorption

The moisture absorption of iglidur® M250 plain bearings in ambient conditions is approximately 1.4% weight. The saturation limit submerged in water is 7.6% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® M250 have limited use under radioactive radiation. They are resistant up to a radiation intensity of 1 · 10⁴ Gy.

Resistance to weathering

iglidur® M250 plain bearings are not resistant to weathering. The material properties are significantly affected. Discolouration occurs. Practical tests under real application conditions are strongly recommended.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® M250 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

iglidur® M250 plain bearings can withstand a maximum recommended surface pressure of 20MPa. Compared with other iglidur® materials iglidur® M250 plain bearings are highly elastic. By this elasticity they can yield very well, but retain their original shape again. A plastic deformation is minimal up to the maximum recommended surface pressure.

Surface pressure, page 45



-40 °C up to
+80 °C



210MPa



Permissible surface speeds

As standard, iglidur® M250 is manufactured as a thick-walled bearing. iglidur® M250 is best suited for low to medium surface speeds. The maximum permissible surface speed for dry-operating applications is 0.8m/s (rotating) and 2.5 m/s (linear). In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

Application temperatures up to +170°C are permissible for short periods. However, it is permissible to expose iglidur® M250 plain bearings to this temperature only if they are not subjected to any further load. The maximum long-term application temperature is +80°C. This is also the point of the wear limit, i.e. the temperature over which the wear increases exponentially. For temperatures over +60°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The coefficient of friction μ of a plain bearing among other factors is influenced by the surface speed and the load (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. If you observe the coefficient of friction, then the ideal shaft surface finish for iglidur® M250 bearings is Ra = 0.6mm. Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® M250. Up to loads of 2MPa the shaft material plays a relatively small role for rotational movements. Therefore, a suitable shaft material must be considered for higher loads. These are hardened shafts, such as Cf53 or hard-chromed. Diagram 07 shows that iglidur® M250 is much better suited for rotational motion than for pivoting movements. However, it must be mentioned that pivoting movements often cause high vibrations, which act on the bearing. This is where iglidur® M250 can show off its special dampening specifications. In our test, these vibrations are excluded for clarity so that the comparison between rotation and pivoting operation is accurate.

Shaft materials, page 56

Installation tolerances

iglidur® M250 plain bearings require a relatively large amount of bearing clearance for optimal operation. This ensures that the bearing remains reliable during temperature change and water absorption. The disadvantages of the bearings clearance are minimised by the vibration-dampening properties. The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the D11 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table). The shaft should have a recommended minimum h9 tolerance.

Testing methods, page 61

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	0.8	0.6	2.5
Short-term m/s	2.0	1.4	5.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.18-0.40	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

\varnothing d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	D11 [mm]	H7 [mm]	D11 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.020	+0.080	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.030	+0.105	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.040	+0.130	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.050	+0.160	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.065	+0.195	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.080	+0.240	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.100	+0.290	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.120	+0.340	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.145	+0.395	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

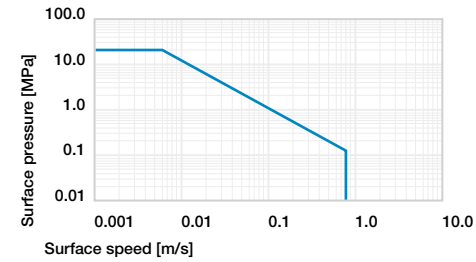


Diagram 01: Permissible pv values for iglidur® M250 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

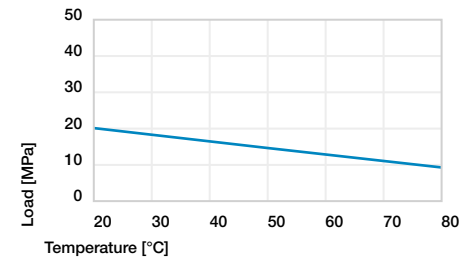


Diagram 02: Maximum recommended surface pressure as a function of temperature (20MPa at +20°C)

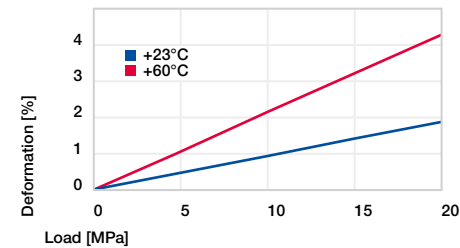


Diagram 03: Deformation under pressure and temperature

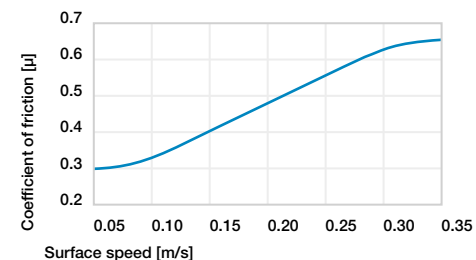


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

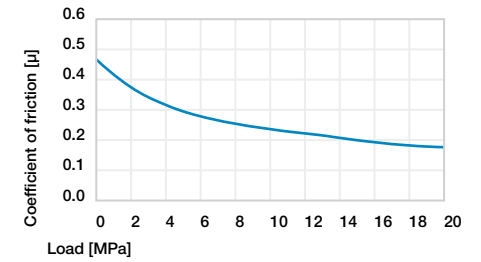


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

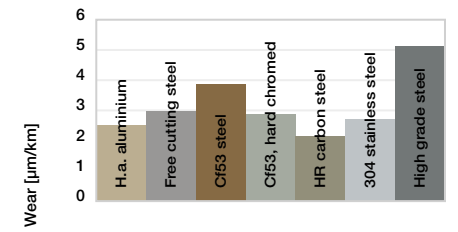


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

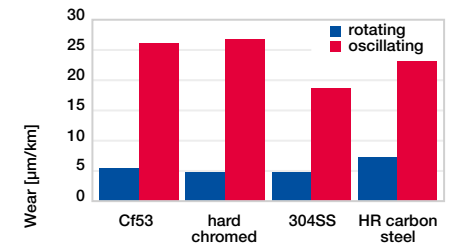
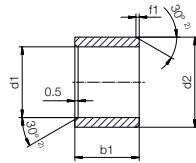


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 2795 and special dimensions



Order example: **MSM-0103-02** – no minimum order quantity.

M250 iglidur® material **S** Cylindrical **M** Metric **01** Inner Ø d1 **03** Outer Ø d2 **02** Total length b1

d1	d1	d2	b1	Part No.	d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	[mm]		[mm]	Tolerance ³⁾	[mm]	[mm]	
1.0		3.0	2.0	MSM-0103-02	6.0		10.0	4.0	MSM-0610-04
1.5		4.0	2.0	MSM-0104-02	6.0		10.0	6.0	MSM-0610-06
2.0		5.0	1.0	MSM-0205-01	6.0		10.0	8.0	MSM-0610-08
2.0		5.0	2.0	MSM-0205-02	6.0	+0.030	10.0	10.0	MSM-0610-10
2.0	+0.020	5.0	3.0	MSM-0205-03	6.0	+0.105	11.0	4.0	MSM-0611-04
2.5	+0.080	6.0	3.0	MSM-0206-03	6.0		12.0	6.0	MSM-0612-06
3.0		5.0	3.0	MSM-0305-03	6.0		12.0	10.0	MSM-0612-10
3.0		5.0	4.0	MSM-0305-04	7.0		10.0	5.0	MSM-0710-05
3.0		6.0	3.0	MSM-0306-03	7.0		10.0	8.0	MSM-0710-08
3.0		6.0	4.0	MSM-0306-04	7.0		10.0	10.0	MSM-0710-10
4.0		5.5	4.0	MSM-0405-04	7.0		11.0	16.0	MSM-0711-16
4.0		5.5	6.0	MSM-0405-06	8.0		10.0	6.0	MSM-0810-06
4.0		7.0	3.0	MSM-0407-03	8.0		10.0	8.0	MSM-0810-08
4.0		7.0	4.0	MSM-0407-04	8.0		10.0	10.0	MSM-0810-10
4.0		7.0	6.0	MSM-0407-06	8.0		10.0	12.0	MSM-0810-12
4.0		8.0	4.0	MSM-0408-04	8.0		11.0	6.0	MSM-0811-06
4.0		8.0	6.0	MSM-0408-06	8.0		11.0	8.0	MSM-0811-08
5.0		7.0	5.0	MSM-0507-05	8.0	+0.040	11.0	12.0	MSM-0811-12
5.0		7.0	10.0	MSM-0507-10	8.0	+0.130	12.0	4.0	MSM-0812-04
5.0	+0.030	8.0	4.0	MSM-0508-04	8.0		12.0	6.0	MSM-0812-06
5.0	+0.105	8.0	5.0	MSM-0508-05	8.0		12.0	8.0	MSM-0812-08
5.0		8.0	8.0	MSM-0508-08	8.0		12.0	10.0	MSM-0812-10
5.0		9.0	5.0	MSM-0509-05	8.0		12.0	12.0	MSM-0812-12
5.0		9.0	8.0	MSM-0509-08	8.0		14.0	6.0	MSM-0814-06
6.0		8.0	6.0	MSM-0608-06	8.0		14.0	10.0	MSM-0814-10
6.0		8.0	8.0	MSM-0608-08	9.0		12.0	14.0	MSM-0912-14
6.0		8.0	10.0	MSM-0608-10	10.0		12.0	8.0	MSM-1012-08
6.0		9.0	6.0	MSM-0609-06	10.0		12.0	10.0	MSM-1012-10
6.0		10.0	2.5	MSM-0610-02	10.0		12.0	12.0	MSM-1012-12

³⁾ After press-fit. Testing methods, page 61

Product range

d1	d1	d2	b1	Part No.	d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	[mm]		[mm]	Tolerance ³⁾	[mm]	[mm]	
10.0		12.0	15.0	MSM-1012-15	16.0		21.0	7.0	MSM-1621-07
10.0		12.0	20.0	MSM-1012-20	16.0		22.0	12.0	MSM-1622-12
10.0		14.0	6.0	MSM-1014-06	16.0		22.0	15.0	MSM-1622-15
10.0		14.0	8.0	MSM-1014-08	16.0		22.0	16.0	MSM-1622-16
10.0		14.0	10.0	MSM-1014-10	16.0		22.0	20.0	MSM-1622-20
10.0	+0.040	14.0	16.0	MSM-1014-16	16.0		22.0	25.0	MSM-1622-25
10.0	+0.130	16.0	6.0	MSM-1016-06	18.0	+0.050	20.0	15.0	MSM-1820-15
10.0		16.0	8.0	MSM-1016-08	18.0	+0.160	20.0	20.0	MSM-1820-20
10.0		16.0	10.0	MSM-1016-10	18.0		20.0	25.0	MSM-1820-25
10.0		16.0	16.0	MSM-1016-16	18.0		24.0	12.0	MSM-1824-12
10.0		16.0	50.0	MSM-1016-50	18.0		24.0	20.0	MSM-1824-20
12.0		14.0	10.0	MSM-1214-10	18.0		24.0	30.0	MSM-1824-30
12.0		14.0	12.0	MSM-1214-12	18.0		24.0	40.0	MSM-1824-40
12.0		14.0	15.0	MSM-1214-15	20.0		23.0	10.0	MSM-2023-10
12.0		14.0	20.0	MSM-1214-20	20.0		23.0	15.0	MSM-2023-15
12.0		16.0	15.0	MSM-1216-15	20.0		23.0	20.0	MSM-2023-20
12.0		16.0	20.0	MSM-1216-20	20.0		23.0	25.0	MSM-2023-25
12.0		18.0	8.0	MSM-1218-08	20.0		23.0	30.0	MSM-2023-30
12.0		18.0	10.0	MSM-1218-10	20.0		25.0	14.0	MSM-2025-14
12.0		18.0	15.0	MSM-1218-15	20.0		25.0	20.0	MSM-2025-20
12.0		18.0	20.0	MSM-1218-20	20.0		25.0	30.0	MSM-2025-30
13.0		15.0	10.0	MSM-1315-10	20.0		26.0	12.0	MSM-2026-12
13.0		15.0	20.0	MSM-1315-20	20.0		26.0	15.0	MSM-2026-15
14.0		16.0	8.5	MSM-1416-085	20.0		26.0	20.0	MSM-2026-20
14.0		16.0	10.0	MSM-1416-10	20.0		26.0	30.0	MSM-2026-30
14.0		16.0	15.0	MSM-1416-15	22.0		24.0	8.0	MSM-2224-08
14.0		16.0	20.0	MSM-1416-20	22.0		25.0	15.0	MSM-2225-15
14.0		16.0	25.0	MSM-1416-25	22.0		25.0	20.0	MSM-2225-20
14.0		16.0	29.0	MSM-1416-29	22.0		25.0	25.0	MSM-2225-25
14.0	+0.050	18.0	20.0	MSM-1418-20	22.0	+0.065	25.0	30.0	MSM-2225-30
14.0	+0.160	20.0	10.0	MSM-1420-10	22.0	+0.195	26.0	15.0	MSM-2226-15
14.0		20.0	15.0	MSM-1420-15	22.0		28.0	10.0	MSM-2228-10
14.0		20.0	20.0	MSM-1420-20	22.0		28.0	15.0	MSM-2228-15
15.0		17.0	10.0	MSM-1517-10	22.0		28.0	20.0	MSM-2228-20
15.0		17.0	15.0	MSM-1517-15	22.0		28.0	30.0	MSM-2228-30
15.0		17.0	20.0	MSM-1517-20	24.0		27.0	15.0	MSM-2427-15
15.0		17.0	25.0	MSM-1517-25	24.0		27.0	20.0	MSM-2427-20
15.0		21.0	10.0	MSM-1521-10	24.0		27.0	25.0	MSM-2427-25
15.0		21.0	15.0	MSM-1521-15	24.0		27.0	30.0	MSM-2427-30
15.0		21.0	20.0	MSM-1521-20	24.0		30.0	15.0	MSM-2430-15
15.0		21.0	23.0	MSM-1521-23	24.0		30.0	20.0	MSM-2430-20
16.0		18.0	12.0	MSM-1618-12	24.0		30.0	30.0	MSM-2430-30
16.0		18.0	15.0	MSM-1618-15	25.0		28.0	12.0	MSM-2528-12
16.0		18.0	20.0	MSM-1618-20	25.0		28.0	15.0	MSM-2528-15
16.0		18.0	25.0	MSM-1618-25	25.0		28.0	20.0	MSM-2528-20
16.0		20.0	20.0	MSM-1620-20	25.0		28.0	25.0	MSM-2528-25
16.0		20.0	25.0	MSM-1620-25	25.0		28.0	30.0	MSM-2528-30
16.0		20.0	30.0	MSM-1620-30	25.0		30.0	20.0	MSM-2530-20

³⁾ After press-fit. Testing methods, page 61

Bearing technology | Plain bearings | iglidur® M250

d1	d1	d2	b1	Part No.	d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13		[mm]	Tolerance ³⁾	[mm]	h13	
25.0		30.0	30.0	MSM-2530-30	30.0		38.0	20.0	MSM-3038-20
25.0		30.0	40.0	MSM-2530-40	30.0	+0.065	38.0	30.0	MSM-3038-30
25.0		32.0	10.0	MSM-2532-10	30.0	+0.195	38.0	40.0	MSM-3038-40
25.0		32.0	12.0	MSM-2532-12	30.0		40.0	40.0	MSM-3040-40
25.0		32.0	20.0	MSM-2532-20	32.0		36.0	20.0	MSM-3236-20
25.0		32.0	30.0	MSM-2532-30	32.0		36.0	30.0	MSM-3236-30
25.0		32.0	35.0	MSM-2532-35	32.0		36.0	40.0	MSM-3236-40
25.0		32.0	40.0	MSM-2532-40	32.0		40.0	20.0	MSM-3240-20
26.0		30.0	20.0	MSM-2630-20	32.0		40.0	30.0	MSM-3240-30
26.0		32.0	30.0	MSM-2632-30	32.0		40.0	40.0	MSM-3240-40
27.0		34.0	20.0	MSM-2734-20	35.0		39.0	20.0	MSM-3539-20
27.0		34.0	30.0	MSM-2734-30	35.0		39.0	30.0	MSM-3539-30
27.0	+0.065	34.0	40.0	MSM-2734-40	35.0		39.0	40.0	MSM-3539-40
28.0	+0.195	32.0	20.0	MSM-2832-20	35.0		39.0	50.0	MSM-3539-50
28.0		32.0	25.0	MSM-2832-25	35.0		42.0	50.0	MSM-3542-50
28.0		32.0	30.0	MSM-2832-30	40.0		44.0	20.0	MSM-4044-20
28.0		33.0	20.0	MSM-2833-20	40.0	+0.080	44.0	30.0	MSM-4044-30
28.0		36.0	20.0	MSM-2836-20	40.0	+0.240	44.0	40.0	MSM-4044-40
28.0		36.0	30.0	MSM-2836-30	40.0		44.0	50.0	MSM-4044-50
28.0		36.0	40.0	MSM-2836-40	40.0		46.0	20.0	MSM-4046-20
30.0		34.0	20.0	MSM-3034-20	45.0		50.0	20.0	MSM-4550-20
30.0		34.0	25.0	MSM-3034-25	45.0		50.0	30.0	MSM-4550-30
30.0		34.0	30.0	MSM-3034-30	45.0		50.0	40.0	MSM-4550-40
30.0		34.0	40.0	MSM-3034-40	45.0		50.0	50.0	MSM-4550-50
30.0		35.0	20.0	MSM-3035-20	50.0		55.0	20.0	MSM-5055-20
30.0		35.0	40.0	MSM-3035-40	50.0		55.0	30.0	MSM-5055-30
30.0	+0.032	38.0	3.0	MSM-3038-03	50.0		55.0	40.0	MSM-5055-40
30.0	+0.102	38.0	3.0	MSM-3038-03	50.0		55.0	50.0	MSM-5055-50
30.0	+0.065	38.0	4.5	MSM-3038-045	50.0		55.0	60.0	MSM-5055-60
30.0	+0.195	38.0	4.5	MSM-3038-045	50.0		55.0	60.0	MSM-5055-60
30.0	+0.080	38.0	17.0	MSM-3038-17	75.0	+0.100	80.0	60.0	MSM-7580-60
30.0	+0.240	38.0	17.0	MSM-3038-17	75.0	+0.290	80.0	60.0	MSM-7580-60

³⁾ After press-fit. Testing methods, page 61



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

Including delivery times, prices, online tools

www.igus.eu/M250



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling

1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

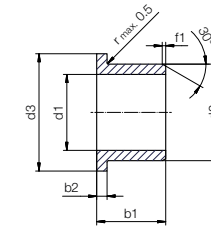
No low-quantity surcharges.

Free shipping within Germany for orders above €150.

EN 06/2023

Bearing technology | Plain bearings | iglidur® M250

Flange bearings (form F)



³⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 2795 and special dimensions



Order example: MFM-0103-02 – no minimum order quantity.

M250 iglidur® material F With flange M Metric 01 Inner Ø d1 03 Outer Ø d2 02 Total length b1

d1	d1	d2	d3	b1	b2	Part No.	d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13		[mm]	Tolerance ³⁾	[mm]	[mm]	[mm]	[mm]	
1.0		3.0	5.0	2.0	1.00	MFM-0103-02	8.0		12.0	16.0	8.0	2.00	MFM-0812-08
1.5		4.0	6.0	2.0	1.00	MFM-0104-02	8.0		12.0	16.0	12.0	2.00	MFM-0812-12
2.0	+0.020	5.0	8.0	3.0	1.50	MFM-0205-03	8.0		14.0	18.0	6.0	3.00	MFM-0814-06
2.5	+0.080	6.0	9.0	3.0	1.50	MFM-0206-03	8.0		14.0	16.0	6.0	3.00	MFM-081416-06
3.0		6.0	9.0	4.0	1.50	MFM-0306-04	8.0		14.0	18.0	10.0	3.00	MFM-0814-10
4.0		8.0	12.0	4.0	2.00	MFM-0408-04	8.0		14.0	16.0	10.0	3.00	MFM-081416-10
4.0		8.0	12.0	6.0	2.00	MFM-0408-06	9.0		14.0	19.0	6.0	2.00	MFM-0914-06
4.0		8.0	12.0	8.0	2.00	MFM-0408-08	9.0		14.0	19.0	10.0	2.00	MFM-0914-10
5.0		9.0	13.0	5.0	2.00	MFM-0509-05	9.0		14.0	19.0	14.0	2.00	MFM-0914-14
5.0		9.0	13.0	6.0	2.00	MFM-0509-06	10.0		12.0	18.0	7.0	1.00	MFM-1012-07
5.0		9.0	13.0	8.0	2.00	MFM-0509-08	10.0		12.0	18.0	9.0	1.00	MFM-1012-09
6.0	+0.030	8.0	12.0	4.0	1.00	MFM-0608-04	10.0		12.0	18.0	9.0	1.00	MFM-1012-09
6.0	+0.105	8.0	12.0	8.0	1.00	MFM-0608-08	10.0		12.0	18.0	12.0	1.00	MFM-1012-12
6.0		10.0	14.0	4.0	2.00	MFM-0610-04	10.0	+0.040	12.0	18.0	17.0	1.00	MFM-1012-17
6.0		10.0	14.0	6.0	2.00	MFM-0610-06	10.0	+0.130	14.0	19.0	8.0	2.00	MFM-101419-08
6.0		10.0	14.0	10.0	2.00	MFM-0610-10	10.0		14.0	19.0	10.0	2.00	MFM-1014-10
6.0		11.0	14.0	4.0	2.00	MFM-0611-04	10.0		14.0	19.0	12.0	1.50	MFM-101419-12
6.0		12.0	14.0	6.0	3.00	MFM-0612-06	10.0		14.0	20.0	12.0	2.00	MFM-101420-12
6.0		12.0	14.0	10.0	3.00	MFM-0612-10	10.0		14.0	17.5	14.0	1.00	MFM-1014-14
7.0		11.0	15.0	6.0	2.00	MFM-0711-06	10.0		14.0	17.5	19.0	1.00	MFM-1014-19
7.0		11.0	15.0	8.0	2.00	MFM-0711-08	10.0		14.0	17.5	24.0	1.00	MFM-1014-24
8.0		9.0	13.0	5.5	0.50	MFM-0809-055	10.0		14.0	17.5	34.0	1.00	MFM-1014-34
8.0		10.0	15.0	5.5	1.00	MFM-0810-05	10.0		16.0	20.0	6.0	3.00	MFM-101620-06
8.0	+0.040	10.0	15.0	7.5	1.00	MFM-0810-07	10.0		16.0	22.0	8.0	3.00	MFM-1016-08
8.0	+0.130	10.0	15.0	9.5	1.00	MFM-0810-09	10.0		16.0	22.0	10.0	3.00	MFM-1016-10
8.0		11.0	13.0	5.0	2.00	MFM-0811-05	10.0		16.0	20.0	10.0	3.00	MFM-101620-10
8.0		11.0	13.0	8.0	2.00	MFM-0811-08	10.0		16.0	22.0	16.0	3.00	MFM-1016-16
8.0		12.0	16.0	6.0	2.00	MFM-0812-06	10.0		16.0	22.0	16.0	3.00	MFM-1016-16

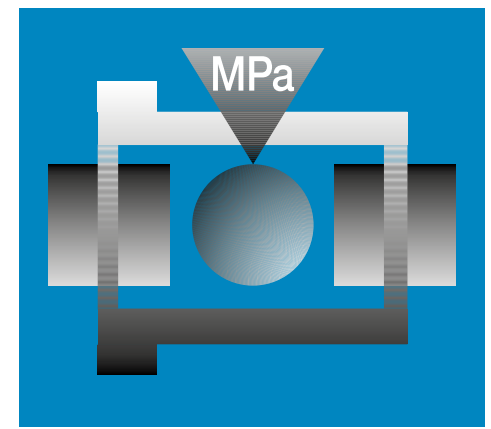
³⁾ After press-fit. Testing methods, page 61

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Bearing technology | Plain bearings | iglidur® M250

d1	d1	d2	d3	b1	b2	Part No.	d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13		[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
12.0		14.0	20.0	7.0	1.00	MFM-1214-07	19.0		24.0	27.0	12.0	2.00	MFM-192427-12
12.0		14.0	20.0	9.0	1.00	MFM-1214-09	20.0		23.0	30.0	11.5	1.50	MFM-2023-11
12.0		14.0	20.0	12.0	1.00	MFM-1214-12	20.0		23.0	30.0	16.5	1.50	MFM-2023-16
12.0		14.0	20.0	17.0	1.00	MFM-1214-17	20.0		23.0	30.0	21.5	1.50	MFM-2023-21
12.0		16.0	22.0	10.0	2.00	MFM-1216-10	20.0		26.0	28.0	12.0	3.00	MFM-202628-12
12.0		16.0	22.0	20.0	2.00	MFM-1216-20	20.0		26.0	32.0	15.0	3.00	MFM-2026-15
12.0		18.0	24.0	8.0	3.00	MFM-1218-08	20.0		26.0	32.0	20.0	3.00	MFM-2026-20
12.0		18.0	22.0	10.0	3.00	MFM-1218-10	20.0		26.0	32.0	30.0	3.00	MFM-2026-30
12.0		18.0	24.0	12.0	3.00	MFM-1218-12	22.0		28.0	34.0	15.0	3.00	MFM-2228-15
12.0		18.0	22.0	15.0	3.00	MFM-1218-15	22.0		28.0	34.0	20.0	3.00	MFM-2228-20
12.0		18.0	22.0	20.0	3.00	MFM-1218-20	22.0		28.0	34.0	30.0	3.00	MFM-2228-30
13.0		15.0	20.0	14.0	2.00	MFM-1315-14	24.0		30.0	36.0	15.0	3.00	MFM-2430-15
13.0		16.0	24.0	8.0	2.00	MFM-131624-08	24.0		30.0	36.0	20.0	3.00	MFM-2430-20
14.0		16.0	22.0	12.0	1.00	MFM-1416-12	24.0		30.0	36.0	30.0	3.00	MFM-2430-30
14.0		16.0	22.0	17.0	1.00	MFM-1416-17	25.0		28.0	35.0	11.5	1.50	MFM-2528-11
14.0		20.0	25.0	7.0	3.00	MFM-1420-07	25.0		28.0	35.0	16.5	1.50	MFM-2528-16
14.0		20.0	25.0	10.0	3.00	MFM-1420-10	25.0	+0.065	28.0	35.0	21.5	1.50	MFM-2528-21
14.0		20.0	25.0	15.0	3.00	MFM-1420-15	25.0	+0.195	32.0	38.0	12.0	4.00	MFM-2532-12
14.0		20.0	25.0	20.0	3.00	MFM-1420-20	25.0		32.0	38.0	15.0	4.00	MFM-2532-15
15.0		17.0	23.0	9.0	1.00	MFM-1517-09	25.0		32.0	38.0	20.0	4.00	MFM-2532-20
15.0	+0.050	17.0	23.0	12.0	1.00	MFM-1517-12	25.0		32.0	38.0	30.0	4.00	MFM-2532-30
15.0	+0.160	17.0	23.0	17.0	1.00	MFM-1517-17	25.0		32.0	38.0	40.0	4.00	MFM-2532-40
15.0		21.0	27.0	10.0	3.00	MFM-1521-10	27.0		34.0	40.0	20.0	4.00	MFM-2734-20
15.0		21.0	27.0	15.0	3.00	MFM-1521-15	27.0		34.0	40.0	30.0	4.00	MFM-2734-30
15.0		21.0	27.0	20.0	3.00	MFM-1521-20	27.0		34.0	40.0	40.0	4.00	MFM-2734-40
15.0		21.0	27.0	25.0	3.00	MFM-1521-25	28.0		36.0	42.0	20.0	4.00	MFM-2836-20
16.0		18.0	28.0	8.0	2.00	MFM-1618-08/02	28.0		36.0	42.0	30.0	4.00	MFM-2836-30
16.0		18.0	24.0	12.0	1.00	MFM-1618-12	28.0		36.0	42.0	40.0	4.00	MFM-2836-40
16.0		18.0	24.0	17.0	1.00	MFM-1618-17	30.0		34.0	42.0	16.0	2.00	MFM-3034-16
16.0		22.0	28.0	12.0	3.00	MFM-1622-12	30.0		34.0	42.0	26.0	2.00	MFM-3034-26
16.0		22.0	28.0	15.0	3.00	MFM-1622-15	30.0		35.0	44.0	20.0	4.00	MFM-3035-20
16.0		22.0	28.0	20.0	3.00	MFM-1622-20	30.0		38.0	44.0	20.0	4.00	MFM-3038-20
16.0		22.0	28.0	25.0	3.00	MFM-1622-25	30.0		38.0	44.0	30.0	4.00	MFM-3038-30
18.0		20.0	26.0	12.0	1.00	MFM-1820-12	30.0		38.0	44.0	40.0	4.00	MFM-3038-40
18.0		20.0	26.0	17.0	1.00	MFM-1820-17	32.0		40.0	46.0	20.0	4.00	MFM-3240-20
18.0		20.0	26.0	22.0	1.00	MFM-1820-22	32.0		40.0	46.0	30.0	4.00	MFM-3240-30
18.0		24.0	26.0	7.8	3.00	MFM-182426-078	32.0		40.0	46.0	40.0	4.00	MFM-3240-40
18.0		24.0	30.0	8.0	3.00	MFM-1824-08	35.0	+0.080	39.0	47.0	16.0	2.00	MFM-3539-16
18.0		24.0	30.0	12.0	3.00	MFM-1824-12	35.0	+0.240	39.0	47.0	26.0	2.00	MFM-3539-26
18.0		24.0	30.0	18.0	3.00	MFM-1824-18	40.0		44.0	52.0	30.0	2.00	MFM-4044-30
18.0		24.0	30.0	20.0	3.00	MFM-1824-20	40.0		44.0	52.0	40.0	2.00	MFM-4044-40
18.0		24.0	30.0	30.0	3.00	MFM-1824-30	45.0		50.0	58.0	50.0	2.00	MFM-4550-50

³⁾ After press-fit. Testing methods, page 61



Specialist for pivoting, rolling applications and more

Low coefficient of friction and wear on almost every shaft
iglidur® P210



When to use it?

- When a universal plain bearing for use in a wet environment is required
- When a wear-resistant plain bearing for pivoting applications at medium loads is required
- When edge loads and shocks occur
- When the surface pressure of iglidur® J is insufficient



When not to use it?

- When a universal plain bearing with the largest possible range of dimensions is required
iglidur® G
- When a plain bearing for highly loaded pivoting applications is required
iglidur® Q, iglidur® Q2
- When temperatures are higher than +100°C
iglidur® G, iglidur® J350

Bearing technology | Plain bearings | iglidur® P210



Ø
4.0-50.0mm



Also available
as:



Bar stock,
round bar
Page 743

Specialist for pivoting, rolling applications and more

Low coefficient of friction and wear on almost every shaft



Bar stock,
plate
Page 773

This versatile material has already proven its worth in many customer-specific solutions and as a bar stock material. Clip-on or pre-loaded designs as well as vehicle interior applications are possible. Now available in a standard size range from stock.

- Low moisture absorption
- Versatile: performance on many different shafts
- Suitable for high edge pressures
- Lubrication-free
- Maintenance-free



tribo-tape liner
Page 781

Typical application areas

- Agricultural machines
- Furniture/Industrial design
- Textile industry
- Doors and gates
- Mechanical engineering



Guide rings
Page 641



Two hole
flange
bearings
Page 667



Moulded
special parts
Page 696



igubal®
spherical balls
Page 993

Descriptive technical specifications				
Wear resistance at +23°C	-	<div style="width: 80%; background-color: #0070C0;"></div>		+
Wear resistance at +90°C	-	<div style="width: 70%; background-color: #0070C0;"></div>		+
Wear resistance at +150°C	-	<div style="width: 60%; background-color: #0070C0;"></div>		+
Slide property	-	<div style="width: 90%; background-color: #0070C0;"></div>		+
Wear resistance under water	-	<div style="width: 75%; background-color: #0070C0;"></div>		+
Media resistance	-	<div style="width: 70%; background-color: #0070C0;"></div>		+
Resistant to edge pressures	-	<div style="width: 95%; background-color: #0070C0;"></div>		+
Resistant to shock and impact loads	-	<div style="width: 90%; background-color: #0070C0;"></div>		+
Dirt resistance	-	<div style="width: 85%; background-color: #0070C0;"></div>		+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

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Technical data

General properties		Testing method	
Density	g/cm ³	1.40	
Colour		yellow	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.3	DIN 53495
Max. moisture absorption	% weight	0.5	
Coefficient of friction, dynamic, against steel	μ	0.07-0.19	
pv value, max. (dry)	MPa · m/s	0.40	
Mechanical properties			
Flexural modulus	MPa	2,500	DIN 53457
Flexural strength at +20°C	MPa	70	DIN 53452
Compressive strength	MPa	50	
Max. permissible surface pressure (+20°C)	MPa	50	
Shore D hardness		75	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+100	
Max. application temperature short-term	°C	+160	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	8	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹¹	DIN 53482

Table 01: Material properties

iglidur® P210 plain bearings provide the user with versatile all-round bearings, which have proven to have above average service life, primarily in pivoting applications at medium loads of up to 20MPa.

Moisture absorption

The humidity absorption of iglidur® P210 bearings amounts to about 0.3 % weight in standard climatic conditions. The saturation limit submerged in water is 0.5% weight. This low moisture absorption is well below the values of iglidur® G.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® P210 have limited use under radioactive radiation. They are resistant up to a radiation intensity of 3 - 10² Gy.

Resistance to weathering

iglidur® P210 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® P210 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® P210 as a function of radial pressure. At the recommended maximum surface pressure of 50MPa the deformation is less than 3% at room temperature.

Surface pressure, page 45



-40°C up to
+100°C



50MPa



HB



ISO
35474

Permissible surface speeds

Plain bearings made from iglidur® P210 are maintenance-free, they are developed for low to medium surface speeds. The maximum values given in table 03 can only be achieved at a very low surface pressure. The maximum speed given is the speed at which an increase up to the continuous use temperature occurs due to friction.

Surface speed, page 48

Temperature

Also thanks to its maximum long-term application temperature of +100°C, iglidur® P210 is suitable for a wide range of applications. If even higher temperatures are required, iglidur® G is also available with a max. long-term application temperature of +130°C. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. For temperatures over +50°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® P210. For rotational movements at radial loads below 1MPa, iglidur® P210 has generally very low wear. Wear is only significantly higher in combination with HR carbon steel shafts. Generally, rotational wear will be higher than for a pivoting application of equal load. This is only reversed at loads above 25MPa (diagram 07).

Shaft materials, page 56

Installation tolerances

iglidur® P210 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	0
Diluted alkalines	-
Fuels	+
Greases, oils without additives	+
Hydrocarbons	-
Strong acids	-
Strong alkalines	-

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	1.0	0.7	3.0
Short-term m/s	2.0	1.4	4.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.07-0.19	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

\varnothing d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]		
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

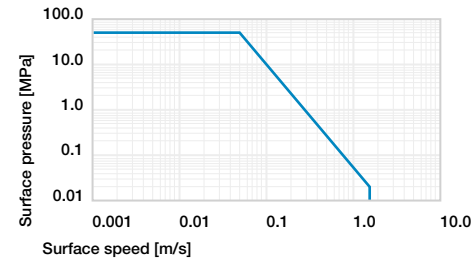


Diagram 01: Permissible pv values for iglidur® P210 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

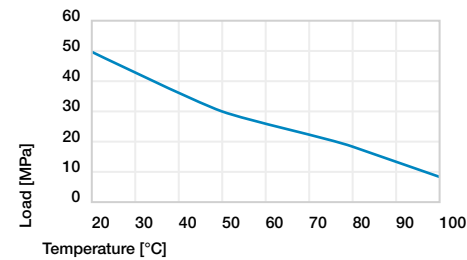


Diagram 02: Maximum recommended surface pressure as a function of temperature (50MPa at +20°C)

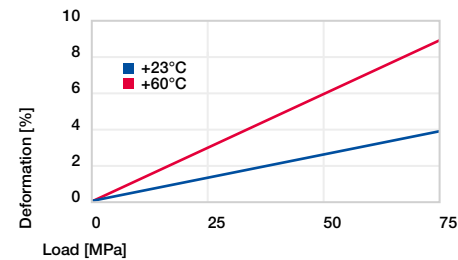


Diagram 03: Deformation under pressure and temperature

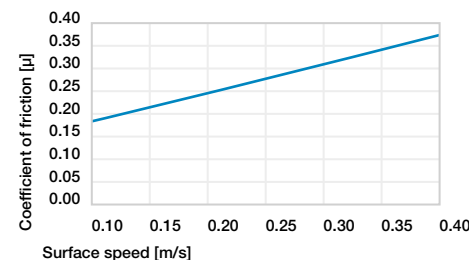


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

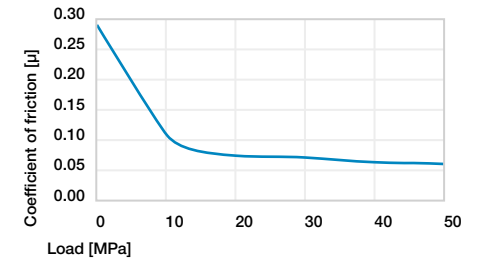


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

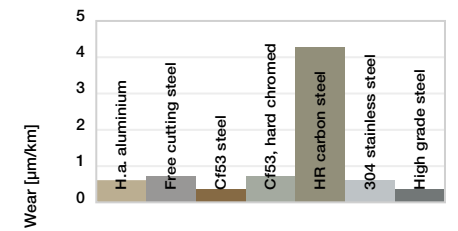


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

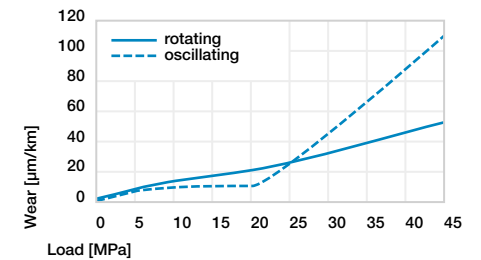
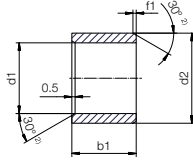


Diagram 07: Wear for oscillating and rotating applications with shaft material Cr53 hardened and ground steel, as a function of the load

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions

i Order example: **P210SM-0405-04** – no minimum order quantity.
P210 iglidur® material **S** Cylindrical **M** Metric **04** Inner Ø d1 **05** Outer Ø d2 **04** Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	[mm]	
4.0		5.5	4.0	P210SM-0405-04
4.0		5.5	6.0	P210SM-0405-06
5.0	+0.020	7.0	5.0	P210SM-0507-05
5.0	+0.068	7.0	10.0	P210SM-0507-10
6.0		8.0	6.0	P210SM-0608-06
6.0		8.0	8.0	P210SM-0608-08
6.0		8.0	10.0	P210SM-0608-10
8.0		10.0	8.0	P210SM-0810-08
8.0		10.0	10.0	P210SM-0810-10
8.0		10.0	12.0	P210SM-0810-12
10.0	+0.025	12.0	8.0	P210SM-1012-08
10.0	+0.083	12.0	10.0	P210SM-1012-10
10.0		12.0	12.0	P210SM-1012-12
10.0		12.0	15.0	P210SM-1012-15
10.0		12.0	20.0	P210SM-1012-20
12.0		14.0	10.0	P210SM-1214-10
12.0		14.0	12.0	P210SM-1214-12
12.0		14.0	15.0	P210SM-1214-15
12.0		14.0	20.0	P210SM-1214-20
13.0		15.0	10.0	P210SM-1315-10
13.0		15.0	20.0	P210SM-1315-20
14.0	+0.032	16.0	15.0	P210SM-1416-15
14.0	+0.102	16.0	20.0	P210SM-1416-20
14.0		16.0	25.0	P210SM-1416-25
15.0		17.0	15.0	P210SM-1517-15
15.0		17.0	20.0	P210SM-1517-20
15.0		17.0	25.0	P210SM-1517-25
16.0		18.0	15.0	P210SM-1618-15
16.0		18.0	20.0	P210SM-1618-20

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	[mm]	
16.0		18.0	25.0	P210SM-1618-25
18.0	+0.032	20.0	15.0	P210SM-1820-15
18.0	+0.102	20.0	20.0	P210SM-1820-20
18.0		20.0	25.0	P210SM-1820-25
20.0		23.0	10.0	P210SM-2023-10
20.0		23.0	15.0	P210SM-2023-15
20.0		23.0	20.0	P210SM-2023-20
20.0		23.0	25.0	P210SM-2023-25
20.0		23.0	30.0	P210SM-2023-30
22.0		25.0	15.0	P210SM-2225-15
22.0		25.0	20.0	P210SM-2225-20
22.0		25.0	25.0	P210SM-2225-25
22.0		25.0	30.0	P210SM-2225-30
24.0		27.0	15.0	P210SM-2427-15
24.0		27.0	20.0	P210SM-2427-20
24.0	+0.040	27.0	25.0	P210SM-2427-25
24.0	+0.124	27.0	30.0	P210SM-2427-30
25.0		28.0	15.0	P210SM-2528-15
25.0		28.0	20.0	P210SM-2528-20
25.0		28.0	25.0	P210SM-2528-25
25.0		28.0	30.0	P210SM-2528-30
28.0		32.0	20.0	P210SM-2832-20
28.0		32.0	25.0	P210SM-2832-25
28.0		32.0	30.0	P210SM-2832-30
30.0		34.0	20.0	P210SM-3034-20
30.0		34.0	25.0	P210SM-3034-25
30.0		34.0	30.0	P210SM-3034-30
30.0		34.0	40.0	P210SM-3034-40

³⁾ After press-fit. *Testing methods, page 61*

Product range

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
32.0		36.0	20.0	P210SM-3236-20
32.0		36.0	30.0	P210SM-3236-30
32.0		36.0	40.0	P210SM-3236-40
35.0		39.0	20.0	P210SM-3539-20
35.0	+0.050	39.0	30.0	P210SM-3539-30
35.0	+0.150	39.0	40.0	P210SM-3539-40
35.0		39.0	50.0	P210SM-3539-50
40.0		44.0	20.0	P210SM-4044-20
40.0		44.0	30.0	P210SM-4044-30
40.0		44.0	40.0	P210SM-4044-40

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
40.0		44.0	50.0	P210SM-4044-50
45.0		50.0	20.0	P210SM-4550-20
45.0		50.0	30.0	P210SM-4550-30
45.0		50.0	40.0	P210SM-4550-40
45.0	+0.050	50.0	50.0	P210SM-4550-50
50.0	+0.150	55.0	20.0	P210SM-5055-20
50.0		55.0	30.0	P210SM-5055-30
50.0		55.0	40.0	P210SM-5055-40
50.0		55.0	50.0	P210SM-5055-50
50.0		55.0	60.0	P210SM-5055-60

³⁾ After press-fit. *Testing methods, page 61*

Available from stock
Detailed information about delivery time online.
www.igus.eu/24

Order online
including delivery times, prices, online tools
www.igus.eu/P210

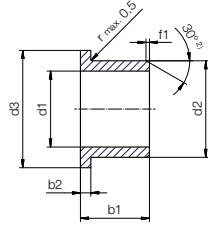
Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.
No low-quantity surcharges.
Free shipping within Germany for orders above €150.

Bearing technology | Plain bearings | iglidur® P210

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions



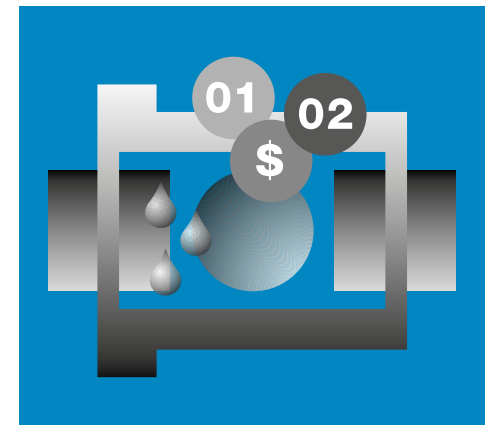
Order example: **P210FM-0608-04** – no minimum order quantity.

P210 iglidur® material **F** With flange **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **04** Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
6.0		8.0	12.0	4.0	1.00	P210FM-0608-04
6.0	+0.020	8.0	12.0	6.0	1.00	P210FM-0608-06
6.0	+0.068	8.0	12.0	8.0	1.00	P210FM-0608-08
8.0		10.0	15.0	5.5	1.00	P210FM-0810-05
8.0		10.0	15.0	7.5	1.00	P210FM-0810-07
8.0		10.0	15.0	9.5	1.00	P210FM-0810-09
8.0		10.0	15.0	10.0	1.00	P210FM-0810-10
8.0	+0.025	10.0	16.0	15.0	1.50	P210FM-081016-15
10.0	+0.083	12.0	18.0	7.0	1.00	P210FM-1012-07
10.0		12.0	18.0	9.0	1.00	P210FM-1012-09
10.0		12.0	18.0	10.0	1.00	P210FM-1012-10
10.0		12.0	18.0	12.0	1.00	P210FM-1012-12
10.0		12.0	18.0	17.0	1.00	P210FM-1012-17
12.0		14.0	20.0	7.0	1.00	P210FM-1214-07
12.0		14.0	20.0	9.0	1.00	P210FM-1214-09
12.0		14.0	20.0	12.0	1.00	P210FM-1214-12
12.0	+0.032	14.0	20.0	17.0	1.00	P210FM-1214-17
14.0	+0.102	16.0	22.0	12.0	1.00	P210FM-1416-12
14.0		16.0	22.0	17.0	1.00	P210FM-1416-17
15.0		17.0	23.0	9.0	1.00	P210FM-1517-09
15.0		17.0	23.0	12.0	1.00	P210FM-1517-12

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
15.0		17.0	23.0	17.0	1.00	P210FM-1517-17
16.0		18.0	24.0	12.0	1.00	P210FM-1618-12
16.0	+0.032	18.0	24.0	17.0	1.00	P210FM-1618-17
18.0	+0.102	20.0	26.0	12.0	1.00	P210FM-1820-12
18.0		20.0	26.0	17.0	1.00	P210FM-1820-17
18.0		20.0	26.0	22.0	1.00	P210FM-1820-22
20.0		23.0	30.0	11.5	1.50	P210FM-2023-11
20.0		23.0	30.0	16.5	1.50	P210FM-2023-16
20.0		23.0	30.0	21.5	1.50	P210FM-2023-21
25.0	+0.040	28.0	35.0	11.5	1.50	P210FM-2528-11
25.0	+0.124	28.0	35.0	16.5	1.50	P210FM-2528-16
25.0		28.0	35.0	21.5	1.50	P210FM-2528-21
30.0		34.0	42.0	16.0	2.00	P210FM-3034-16
30.0		34.0	42.0	26.0	2.00	P210FM-3034-26
35.0	+0.050	39.0	47.0	16.0	2.00	P210FM-3539-16
35.0	+0.124	39.0	47.0	26.0	2.00	P210FM-3539-26
40.0	+0.040	44.0	52.0	30.0	2.00	P210FM-4044-30
40.0	+0.124	44.0	52.0	40.0	2.00	P210FM-4044-40
45.0		50.0	58.0	50.0	2.00	P210FM-4550-50

³⁾ After press-fit. Testing methods, page 61



The low-cost all-rounder

Well-balanced properties at a low price

iglidur® P230



When to use it?

- When a cost-effective all-round bearing for high volumes is required
- When a low-cost bearing with low moisture absorption is required
- When low pv values occur



When not to use it?

- When a cost-effective all-rounder for small quantities is required
iglidur® G
- When high wear resistance is required
iglidur® G, iglidur® G1
- When continuous operating temperatures are higher than +110°C
iglidur® G, iglidur® G1

Bearing technology | Plain bearings | iglidur® P230



Ø
-



Also available as:



Bar stock, round bar
Page 743

The low-cost all-rounder Well-balanced properties at a low price

Developed for (large-scale) series application, iglidur® P230 has a well-balanced property profile compared to other iglidur® low-cost materials.

- Good wear resistance
- High media resistance
- Cost-effective
- For low and medium loads
- For applications with low pv values



Bar stock, plate
Page 773

Typical application areas

- Industrial series-production applications
- Mechanical engineering and jig construction
- Two-wheeler



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

Descriptive technical specifications				
Wear resistance at +23°C	-	■ ■ ■ ■ ■		+
Wear resistance at +90°C	-	■ ■ ■ ■ ■		+
Wear resistance at +150°C	-	■ ■ ■ ■ ■		+
Slide property	-	■ ■ ■ ■ ■		+
Wear resistance under water	-	■ ■ ■ ■ ■		+
Media resistance	-	■ ■ ■ ■ ■		+
Resistant to edge pressures	-	■ ■ ■ ■ ■		+
Resistant to shock and impact loads	-	■ ■ ■ ■ ■		+
Dirt resistance	-	■ ■ ■ ■ ■		+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert



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Technical data

General properties		Testing method	
Density	g/cm³	1.57	
Colour		beige	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.3	
Coefficient of friction, dynamic, against steel	μ	0.13-0.32	
pv value, max. (dry)	MPa · m/s	0.30	
Mechanical properties			
Flexural modulus	MPa	6,532	DIN 53457
Flexural strength at +20°C	MPa	173	
Compressive strength	MPa	101	
Max. permissible surface pressure (+20°C)	MPa	60	
Shore D hardness		80	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+110	
Max. application temperature short-term	°C	+180	
Min. application temperature	°C	-30	
Thermal conductivity	W/m · K	0.34	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	5	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	>10 ¹²	DIN IEC 93
Surface resistance	Ω	>10 ¹²	DIN 53482

Table 01: Material properties

iglidur® P230 is a material with low moisture absorption and well-balanced thermal properties for use in cost-sensitive series-production applications. Good wear resistance at low pv values and low to medium speeds and loads round off the all-round profile.

Moisture absorption

The humidity absorption of iglidur® P230 bearings amounts to about 0.1% weight in standard climatic conditions. The saturation limit submerged in water is 0.3% weight. This low moisture absorption is well below the values of iglidur® M250 or iglidur® G.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® P230 bearings.

Radiation resistance

Plain bearings made from iglidur® P230 have limited use under radioactive radiation. They are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

iglidur® P230 plain bearings have not yet been tested

for their resistance to weathering. Please consult igus® if you're planning to use them outdoors.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® P230 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® P230 as a function of radial pressure. At the recommended maximum surface pressure of 60MPa the deformation is less than 3% at room temperature. A plastic deformation can be negligible up to this value. It is however also dependent on the duty cycle of the load.

Surface pressure, page 45



-30°C up to +110°C



60MPa



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Permissible surface speeds

iglidur® P230 was developed for low to average surface speeds. During continuous operation, a maximum speed of 1.0m/s (rotating) or 3.0m/s (linear) is permissible. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

Also thanks to its maximum long-term application temperature of +110°C, iglidur® P230 is suitable for a wide range of applications. If even higher temperatures are required, the best-seller iglidur® G (+130°C) or the new standard iglidur® G1 (+180°C) are available. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. For temperatures over +100°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagram 04).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® P230. For rotating movements with 1 MPa radial load, wear on all shafts is low, with the "soft" shaft types providing the higher coefficients of wear. The comparison of pivoting and rotational movements (diagram 07) shows fewer differences than with many other iglidur® materials. The limitation of iglidur® P230 to low to medium loads becomes clear.

Shaft materials, page 56

Installation tolerances

iglidur® P230 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Product range

iglidur® P230 plain bearings are currently manufactured to special order.

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	+
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	+
Strong alkalines	+ up to 0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	1.0	0.7	3.0
Short-term m/s	2.0	1.4	4.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.13-0.32	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	H7 [mm]	E10 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

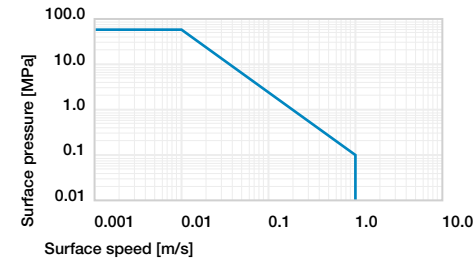


Diagram 01: Permissible pv values for iglidur® P230 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

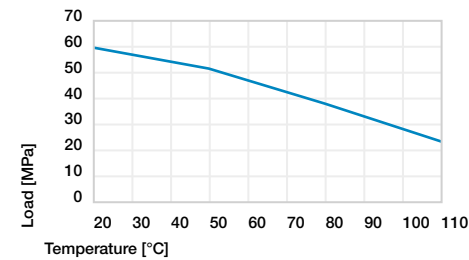


Diagram 02: Maximum recommended surface pressure as a function of temperature (60MPa at +20°C)

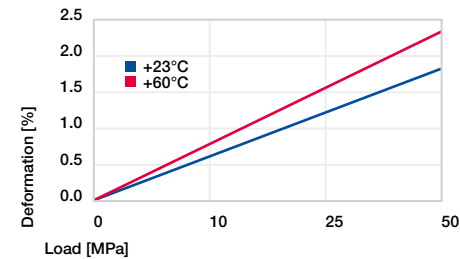


Diagram 03: Deformation under pressure and temperature

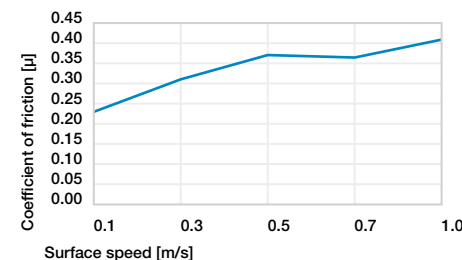


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1 MPa

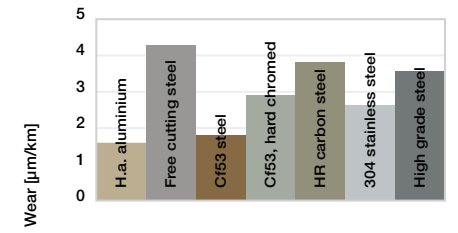


Diagram 05: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

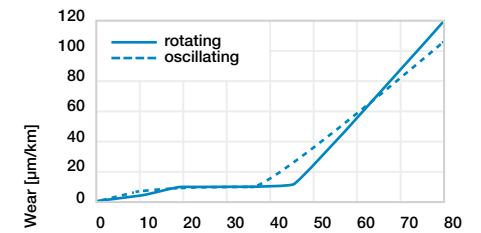
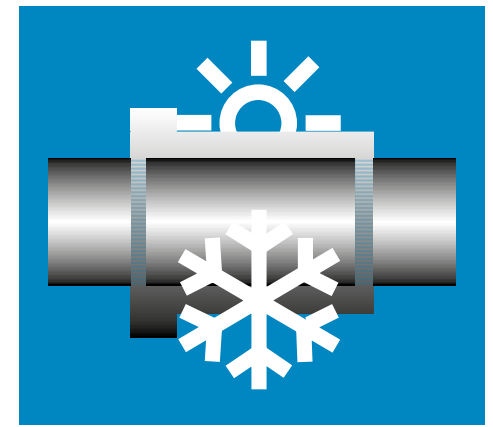


Diagram 06: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load



The cost-effective outdoor all-rounder

No moisture absorption even with high ambient humidity

igidur® P



When to use it?

- When low moisture absorption is fundamental
- When a cost-effective plain bearing for high pressure loads is required
- When high precision in high humidity and moderately high temperatures are required



When not to use it?

- When the maximum application temperature is above +120°C

igidur® K

- When mechanical reaming of the bore is necessary

igidur® M250

- When the highest wear resistance is required

igidur® W300

Bearing technology | Plain bearings | iglidur® P



Ø 3.0-95.0mm



Also available as:



Bar stock, round bar
Page 743

The cost-effective outdoor all-rounder No moisture absorption even with high ambient humidity

Due to thermal stability and low water absorption, the iglidur® P bearings are among the most dimensionally strong all-round bearings under varying environmental conditions. iglidur® P plain bearings are recommended for pivoting and rotational movements at average loads.

- Low moisture absorption
- High wear resistance
- Suitable for high loads
- Cost-effective
- Lubrication-free
- Standard range from stock
- Maintenance-free



Bar stock, plate
Page 773



tribo-tape liner
Page 781

Typical application areas

- Solar technology
- Mechanical engineering
- Doors and gates
- Railway technology
- Sports and leisure



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

Descriptive technical specifications				
Wear resistance at +23°C	-	<div style="width: 40%; background-color: #0070C0;"></div>		+
Wear resistance at +90°C	-	<div style="width: 40%; background-color: #0070C0;"></div>		+
Wear resistance at +150°C	-	<div style="width: 10%; background-color: #0070C0;"></div>		+
Slide property	-	<div style="width: 80%; background-color: #0070C0;"></div>		+
Wear resistance under water	-	<div style="width: 40%; background-color: #0070C0;"></div>		+
Media resistance	-	<div style="width: 40%; background-color: #0070C0;"></div>		+
Resistant to edge pressures	-	<div style="width: 80%; background-color: #0070C0;"></div>		+
Resistant to shock and impact loads	-	<div style="width: 80%; background-color: #0070C0;"></div>		+
Dirt resistance	-	<div style="width: 40%; background-color: #0070C0;"></div>		+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

EN 06/2023

Technical data

General properties		Testing method	
Density	g/cm ³	1.58	
Colour		black	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	0.4	
Coefficient of friction, dynamic, against steel	μ	0.06-0.21	
pv value, max. (dry)	MPa · m/s	0.39	
Mechanical properties			
Flexural modulus	MPa	5,300	DIN 53457
Flexural strength at +20°C	MPa	120	DIN 53452
Compressive strength	MPa	66	
Max. permissible surface pressure (+20°C)	MPa	50	
Shore D hardness		75	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+130	
Max. application temperature short-term	°C	+200	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	4	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹³	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

Table 01: Material properties

The iglidur® P plain bearings are a cost-effective, maintenance-free bearing solution for the user. Compared to iglidur® G, plain bearings made from iglidur® P are suitable for use with rotational movements and average loads.

Moisture absorption

The moisture absorption of iglidur® P plain bearings in ambient conditions is approximately 0.2% weight. The saturation limit submerged in water is 0.4% weight. This low moisture absorption is well below the values of iglidur® G.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® P have limited use under radioactive radiation. They are resistant up to a radiation intensity of 5 · 10² Gy.

Resistance to weathering

iglidur® P plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® P plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® P at radial loads. At the maximum recommended surface pressure of 50MPa, the deformation is less than 4%.

Surface pressure, page 45



-40°C up to +130°C



50MPa



HB



RoHS



ISO 35474



ISO 35474



Permissible surface speeds

Plain bearings made from iglidur® P are maintenance-free plain bearings developed for low to medium surface speeds. The maximum values given in table 03 can only be achieved at a very low surface pressure. The maximum speed given is the speed at which an increase up to the continuous use temperature occurs due to friction.

Surface speed, page 48

Temperature

Even with its maximum long-term application temperature of +130°C, the values for iglidur® P do not quite come up to those of iglidur® G. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. For temperatures over +90°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The coefficient of friction declines just as the wear resistance with increasing load (diagrams 04 and 05). iglidur® P plain bearings obtain a minimum coefficient of friction on shafts with a surface finish Ra from 0.1-0.2µm. Both smoother and rougher shaft surface finish cause the friction to clearly increase.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® P. For rotational movements, the wear of iglidur® P with Cf53 and HR carbon steel shafts is very low. On the other hand, the bearings hard-chromed shafts result in higher wear than other shaft materials even in the low load range. For example at a load of 2MPa, cold rolled steel is six times better than 304 stainless steel. For pivoting movement, hardened shafts and 304 stainless steel perform better than that of a softer unhardened carbon shafts.

Shaft materials, page 56

Installation tolerances

iglidur® P plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	0
Diluted alkalines	-
Fuels	+
Greases, oils without additives	+
Hydrocarbons	-
Strong acids	-
Strong alkalines	-

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	1.0	0.7	3.0
Short-term m/s	2.0	1.4	4.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction µ	0.06-0.21	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

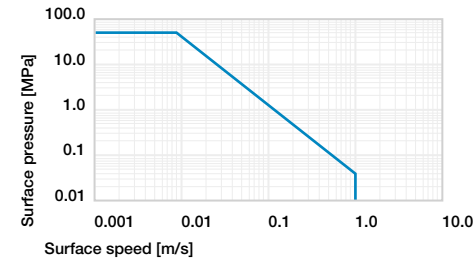


Diagram 01: Permissible pv values for iglidur® P plain bearing with a wall thickness of 1 mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

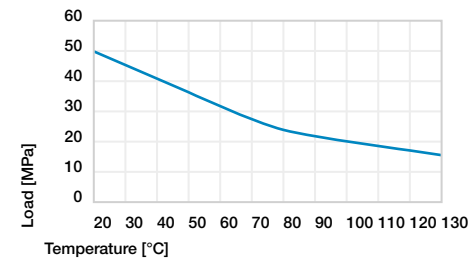


Diagram 02: Maximum recommended surface pressure as a function of temperature (50MPa at +20°C)

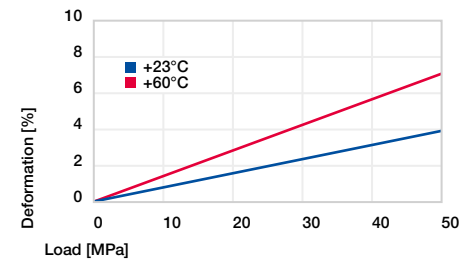


Diagram 03: Deformation under pressure and temperature

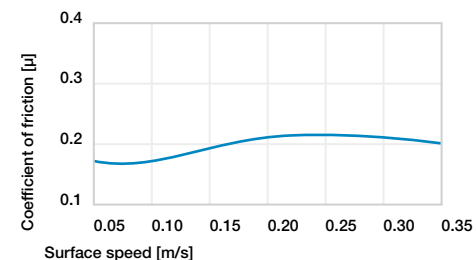


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

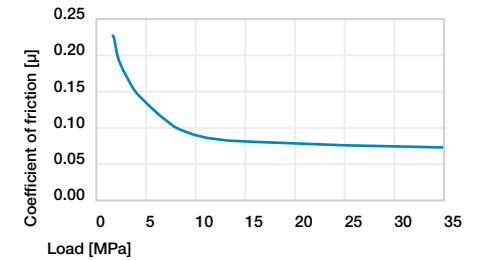


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

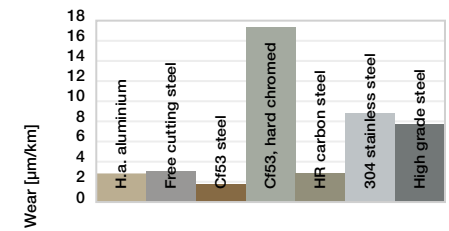


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

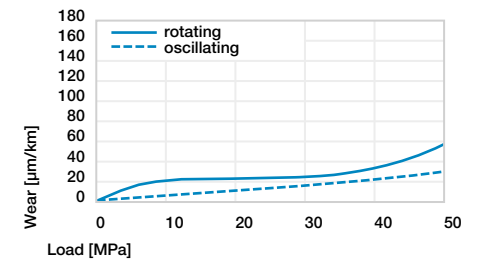
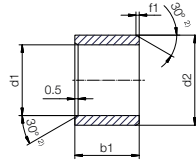


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions



Order example: **PSM-0304-03** – no minimum order quantity.

P iglidur® material S Cylindrical M Metric 03 Inner Ø d1 04 Outer Ø d2 03 Total length b1

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
3.0	+0.014 +0.054	4.5	3.0	PSM-0304-03
4.0	+0.020 +0.068	5.5	4.0	PSM-0405-04
4.0		5.5	6.0	PSM-0405-06
5.0	+0.025 +0.083	7.0	5.0	PSM-0507-05
5.0		7.0	10.0	PSM-0507-10
6.0	+0.032 +0.102	8.0	6.0	PSM-0608-06
6.0		8.0	8.0	PSM-0608-08
6.0	+0.040 +0.124	8.0	10.0	PSM-0608-10
8.0		10.0	8.0	PSM-0810-08
8.0	+0.032 +0.102	10.0	10.0	PSM-0810-10
8.0		10.0	11.5	PSM-0810-11
8.0	+0.025 +0.083	10.0	12.0	PSM-0810-12
10.0		12.0	8.0	PSM-1012-08
10.0	+0.032 +0.102	12.0	10.0	PSM-1012-10
10.0		12.0	12.0	PSM-1012-12
10.0	+0.032 +0.102	12.0	15.0	PSM-1012-15
10.0		12.0	20.0	PSM-1012-20
12.0	+0.032 +0.102	14.0	10.0	PSM-1214-10
12.0		14.0	12.0	PSM-1214-12
12.0	+0.032 +0.102	14.0	15.0	PSM-1214-15
12.0		14.0	20.0	PSM-1214-20
12.0	+0.032 +0.102	14.0	25.0	PSM-1214-25
13.0		15.0	10.0	PSM-1315-10
13.0	+0.032 +0.102	15.0	20.0	PSM-1315-20
14.0		16.0	15.0	PSM-1416-15
14.0	+0.032 +0.102	16.0	20.0	PSM-1416-20
14.0		16.0	25.0	PSM-1416-25
15.0	+0.032 +0.102	17.0	15.0	PSM-1517-15
15.0		17.0	15.0	PSM-1517-15

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
15.0	+0.032 +0.102	17.0	20.0	PSM-1517-20
15.0		17.0	25.0	PSM-1517-25
16.0	+0.032 +0.102	18.0	15.0	PSM-1618-15
16.0		18.0	20.0	PSM-1618-20
16.0	+0.032 +0.102	18.0	25.0	PSM-1618-25
16.0		18.0	42.0	PSM-1618-42
18.0	+0.040 +0.124	20.0	15.0	PSM-1820-15
18.0		20.0	20.0	PSM-1820-20
18.0	+0.040 +0.124	20.0	25.0	PSM-1820-25
18.0		20.0	33.0	PSM-1820-33
20.0	+0.040 +0.124	22.0	22.0	PSM-2022-22
20.0		22.0	30.0	PSM-2022-30
20.0	+0.040 +0.124	22.0	48.0	PSM-2022-48
20.0		22.0	51.0	PSM-2022-51
20.0	+0.040 +0.124	23.0	10.0	PSM-2023-10
20.0		23.0	15.0	PSM-2023-15
20.0	+0.040 +0.124	23.0	20.0	PSM-2023-20
20.0		23.0	25.0	PSM-2023-25
20.0	+0.040 +0.124	23.0	30.0	PSM-2023-30
22.0		24.0	42.0	PSM-2224-42
22.0	+0.040 +0.124	24.0	45.0	PSM-2224-45
22.0		25.0	15.0	PSM-2225-15
22.0	+0.040 +0.124	25.0	20.0	PSM-2225-20
22.0		25.0	25.0	PSM-2225-25
22.0	+0.040 +0.124	25.0	30.0	PSM-2225-30
22.0		25.0	45.0	PSM-2225-45
23.0	+0.040 +0.124	25.0	37.0	PSM-2325-37
23.0		25.0	58.0	PSM-2325-58
23.0	+0.040 +0.124	25.0	68.0	PSM-2325-68
23.0		25.0	68.0	PSM-2325-68

³⁾ After press-fit. Testing methods, page 61

Product range

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
24.0	+0.040	27.0	15.0	PSM-2427-15
24.0		27.0	20.0	PSM-2427-20
24.0	+0.124	27.0	25.0	PSM-2427-25
24.0		27.0	30.0	PSM-2427-30
25.0	+0.040	28.0	15.0	PSM-2528-15
25.0		28.0	20.0	PSM-2528-20
25.0	+0.124	28.0	25.0	PSM-2528-25
25.0		28.0	30.0	PSM-2528-30
25.0	+0.124	28.0	35.0	PSM-2528-35
26.0		30.0	25.0	PSM-2630-25
28.0	+0.050	32.0	20.0	PSM-2832-20
28.0		32.0	25.0	PSM-2832-25
28.0	+0.150	32.0	30.0	PSM-2832-30
30.0		34.0	20.0	PSM-3034-20
30.0	+0.050	34.0	25.0	PSM-3034-25
30.0		34.0	30.0	PSM-3034-30
30.0	+0.150	34.0	40.0	PSM-3034-40
30.0		34.0	45.0	PSM-3034-45
32.0	+0.050	36.0	20.0	PSM-3236-20
32.0		36.0	30.0	PSM-3236-30
32.0	+0.150	36.0	40.0	PSM-3236-40
35.0		39.0	20.0	PSM-3539-20
35.0	+0.050	39.0	30.0	PSM-3539-30
35.0		39.0	30.0	PSM-3539-30

³⁾ After press-fit. Testing methods, page 61



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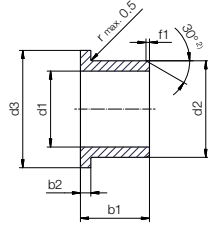
1-9	50-99	500-999
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No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2



Dimensions according to ISO 3547-1 and special dimensions



Order example: **PFM-0405-04** – no minimum order quantity.

P iglidur® material F With flange M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
4.0		5.5	9.5	4.0	0.75	PFM-0405-04
5.0	+0.020	6.0	10.0	3.0	0.50	PFM-0506-03
5.0	+0.068	7.0	11.0	5.0	1.00	PFM-0507-05
6.0		8.0	12.0	4.0	1.00	PFM-0608-04
6.0		8.0	12.0	6.0	1.00	PFM-0608-06
6.0		8.0	12.0	8.0	1.00	PFM-0608-08
7.0		9.0	15.0	4.0	1.00	PFM-0709-04
8.0		10.0	15.0	5.5	1.00	PFM-0810-05
8.0	+0.025	10.0	15.0	7.5	1.00	PFM-0810-07
8.0	+0.083	10.0	15.0	9.5	1.00	PFM-0810-09
8.0		10.0	15.0	10.0	1.00	PFM-0810-10
8.0		10.0	12.0	10.0	1.00	PFM-081012-10
8.0		10.0	15.0	15.0	1.00	PFM-0810-15
10.0	+0.032	12.0	18.0	5.0	1.00	PFM-1012-05
10.0	+0.102	12.0	18.0	7.0	1.00	PFM-1012-07
10.0		12.0	18.0	9.0	1.00	PFM-1012-09
10.0	+0.025	12.0	18.0	10.0	1.00	PFM-1012-10
10.0	+0.083	12.0	18.0	12.0	1.00	PFM-1012-12
10.0		12.0	18.0	17.0	1.00	PFM-1012-17
12.0		14.0	20.0	7.0	1.00	PFM-1214-07
12.0		14.0	18.0	8.0	1.00	PFM-121418-08
12.0		14.0	20.0	9.0	1.00	PFM-1214-09
12.0	+0.032	14.0	20.0	10.0	1.00	PFM-1214-10
12.0	+0.102	14.0	20.0	12.0	1.00	PFM-1214-12
12.0		14.0	20.0	15.0	1.00	PFM-1214-15
12.0		14.0	20.0	17.0	1.00	PFM-1214-17
14.0		16.0	22.0	4.0	1.00	PFM-1416-04

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
14.0		16.0	22.0	8.0	1.00	PFM-1416-08
14.0	+0.032	16.0	22.0	12.0	1.00	PFM-1416-12
14.0	+0.102	16.0	22.0	17.0	1.00	PFM-1416-17
14.0		16.0	24.0	25.0	1.00	PFM-141624-25
14.0	+0.050	20.0	25.0	10.0	3.00	PFM-1420-10
14.0	+0.160	17.0	23.0	9.0	1.00	PFM-1517-09
15.0		17.0	23.0	12.0	1.00	PFM-1517-12
15.0		17.0	23.0	17.0	1.00	PFM-1517-17
15.0		17.0	23.0	22.0	1.00	PFM-1517-22
15.0		18.0	24.0	32.0	1.50	PFM-151824-32
16.0	+0.032	18.0	24.0	12.0	1.00	PFM-1618-12
16.0	+0.102	18.0	24.0	17.0	1.00	PFM-1618-17
16.0		18.0	24.0	40.0	1.00	PFM-161824-40
17.0		19.0	25.0	25.0	1.00	PFM-1719-25
18.0		20.0	26.0	12.0	1.00	PFM-1820-12
18.0		20.0	26.0	17.0	1.00	PFM-1820-17
18.0		20.0	26.0	22.0	1.00	PFM-1820-22
20.0		23.0	30.0	11.5	1.50	PFM-2023-11
20.0		23.0	28.0	15.0	1.50	PFM-202328-15
20.0		23.0	30.0	16.5	1.50	PFM-2023-16
20.0		23.0	30.0	21.5	1.50	PFM-2023-21
20.0	+0.040	23.0	30.0	30.0	1.50	PFM-2023-30
20.0	+0.124	27.0	32.0	22.0	1.50	PFM-2427-22
24.0		28.0	35.0	11.5	1.50	PFM-2528-11
25.0		28.0	35.0	16.5	1.50	PFM-2528-16
25.0		28.0	35.0	21.5	1.50	PFM-2528-21
30.0		34.0	42.0	16.0	2.00	PFM-3034-16

³⁾ After press-fit. *Testing methods, page 61*

Product range

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
30.0		34.0	42.0	26.0	2.00	PFM-3034-26
30.0	+0.040	34.0	42.0	30.0	2.00	PFM-3034-30
30.0	+0.124	34.0	42.0	37.0	2.00	PFM-3034-37
35.0		39.0	47.0	16.0	2.00	PFM-3539-16
35.0	+0.050	39.0	47.0	26.0	2.00	PFM-3539-26
40.0	+0.150	44.0	52.0	30.0	2.00	PFM-4044-30
40.0		44.0	52.0	40.0	2.00	PFM-4044-40

³⁾ After press-fit. *Testing methods, page 61*

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
45.0	+0.050	50.0	58.0	50.0	2.00	PFM-4550-50
50.0	+0.150	55.0	63.0	50.0	2.00	PFM-5055-50
60.0		65.0	73.0	40.0	2.00	PFM-6065-40
60.0	+0.060	65.0	73.0	50.0	2.00	PFM-6065-50
70.0	+0.180	75.0	83.0	50.0	2.00	PFM-7075-50
80.0		85.0	93.0	100.0	2.50	PFM-8085-100



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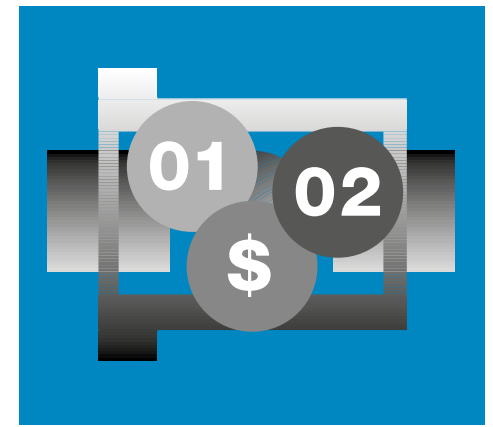
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For medium temperatures and wet environments

igidur® K



When to use it?

- When a cost-effective all-round plain bearing is required
- For operations in wet environments
- When good wear resistance is required at medium loads



When not to use it?

- When the highest wear resistance is required
igidur® W300
- When high media resistance is required
igidur® X6
- When a high-temperature bearing is required
igidur® H

Bearing technology | Plain bearings | iglidur® K



Ø
6.0-20.0mm



Also available as:



Bar stock, round bar
Page 743



Bar stock, plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

Versatile and cost-effective For medium temperatures and wet environments

iglidur® K is the cost-effective general purpose bearing for medium temperatures, low moisture absorption and good environmental resistance.

- Low moisture absorption
- Wear-resistant
- Cost-effective
- Lubrication-free
- Maintenance-free

Typical application areas

- Printing industry
- Electronics industry
- Packaging
- Medical technology
- Polymer processing machines

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 40%; background-color: #0070C0;"></div>	+
Wear resistance at +90°C	-	<div style="width: 30%; background-color: #0070C0;"></div>	+
Wear resistance at +150°C	-	<div style="width: 20%; background-color: #0070C0;"></div>	+
Slide property	-	<div style="width: 60%; background-color: #0070C0;"></div>	+
Wear resistance under water	-	<div style="width: 30%; background-color: #0070C0;"></div>	+
Media resistance	-	<div style="width: 40%; background-color: #0070C0;"></div>	+
Resistant to edge pressures	-	<div style="width: 40%; background-color: #0070C0;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 40%; background-color: #0070C0;"></div>	+
Dirt resistance	-	<div style="width: 40%; background-color: #0070C0;"></div>	+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.52	
Colour		yellow-beige	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.6	
Coefficient of friction, dynamic, against steel	μ	0.06-0.21	
pv value, max. (dry)	MPa · m/s	0.30	
Mechanical properties			
Flexural modulus	MPa	3,500	DIN 53457
Flexural strength at +20°C	MPa	80	DIN 53452
Compressive strength	MPa	60	
Max. permissible surface pressure (+20°C)	MPa	50	
Shore D hardness		72	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+170	
Max. application temperature short-term	°C	+240	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	3	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

Table 01: Material properties

iglidur® K is characterised by its good wear characteristics at low moisture absorption and good thermal and mechanical specifications. This supports a very universal application spectrum.

Moisture absorption

The moisture absorption of iglidur® K plain bearings in ambient conditions is approximately 0.1% weight. The saturation limit submerged in water is 0.6% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® K bearings.

Radiation resistance

Plain bearings made from iglidur® K are resistant up to a radiation intensity of 5 · 10² Gy.

Resistance to weathering

iglidur® K plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® K plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® K at radial loads. At the maximum recommended surface pressure of 50MPa, the deformation is less than 3%. A possible deformation could be, among others, dependant on the duty cycle of the load.

Surface pressure, page 45



-40°C up to +170°C



50MPa



Permissible surface speeds

iglidur® K has been developed for low to medium surface speeds. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

The temperatures prevailing in the bearing system also have an influence on the wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +100°C. For temperatures over +70°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. For iglidur® K a ground surface with an average surface finish $R_a = 0.15-0.2\mu\text{m}$ is recommended. Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® K. It is important to notice that with increasing loads, the recommended hardness of the shaft increases. The "soft" shafts tend to wear more easily and thus increase the wear of the overall system, if the loads exceed 2MPa. The comparison of rotation and pivoting shows that the wear is almost identical at a pressure up to 5MPa. The higher the loads, the greater the difference (diagram 07).

Shaft materials, page 56

Installation tolerances

iglidur® K plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table). In relation to the installation tolerance, the inner diameter changes with the absorption of humidity.

Testing methods, page 61

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	1.0	0.7	3.0
Short-term m/s	2.0	1.4	4.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.06-0.21	0.09	0.04	0.04

Table 04: Coefficient of friction against steel ($R_a = 1\mu\text{m}$, 50HRC)

	Housing		Plain bearings		Shaft	
	\varnothing d1 [mm]	H7 [mm]	E10 [mm]	h9 [mm]		
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

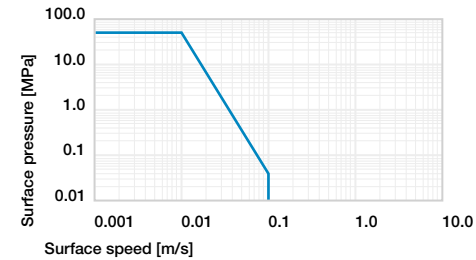


Diagram 01: Permissible pv values for iglidur® K plain bearing with a wall thickness of 1 mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

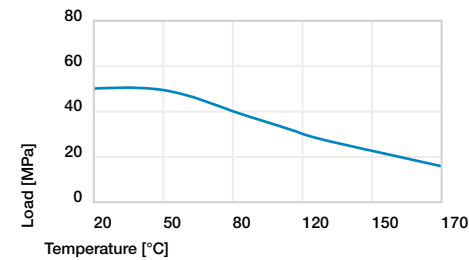


Diagram 02: Maximum recommended surface pressure as a function of temperature (50MPa at +20°C)

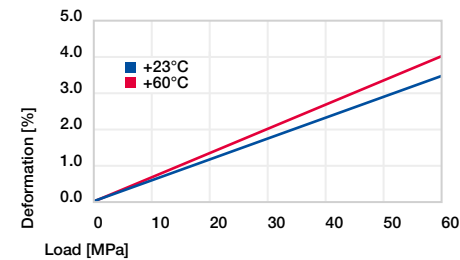


Diagram 03: Deformation under pressure and temperature

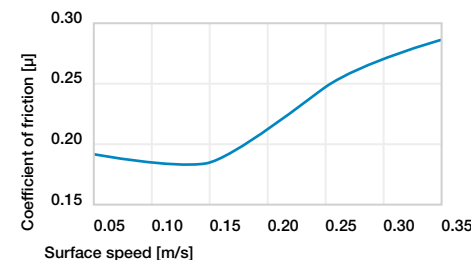


Diagram 04: Coefficient of friction as a function of the surface speed, $p = 0.75\text{MPa}$

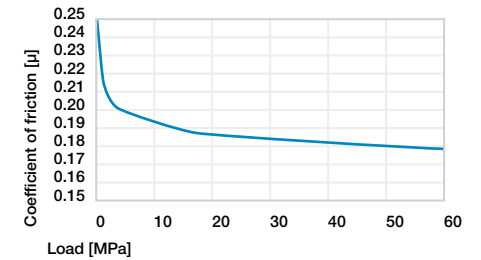


Diagram 05: Coefficient of friction as a function of the pressure, $v = 0.01\text{m/s}$

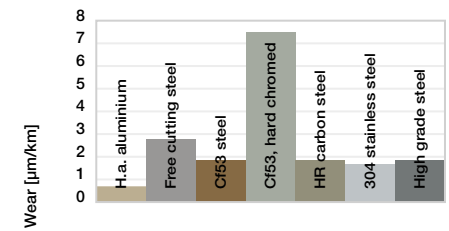


Diagram 06: Wear, rotating with different shaft materials, pressure, $p = 1\text{MPa}$, $v = 0.3\text{m/s}$

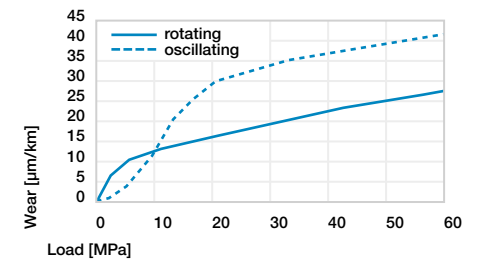
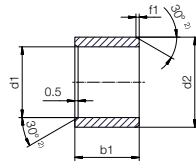


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® K

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8



Order example: KSM-0608-06 – no minimum order quantity.

K iglidur® material **S** Cylindrical **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **06** Total length b1

d1 [mm]	d1 Tolerance ³⁾	d2 [mm]	b1 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	6.0	KSM-0608-06
8.0	+0.025 +0.083	10.0	10.0	KSM-0810-10
10.0	+0.025 +0.083	12.0	10.0	KSM-1012-10
12.0	+0.032 +0.102	14.0	12.0	KSM-1214-12
16.0	+0.032 +0.102	18.0	15.0	KSM-1618-15
20.0	+0.040 +0.124	23.0	20.0	KSM-2023-20

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

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Order online

including delivery times, prices, online tools

www.igus.eu/K



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

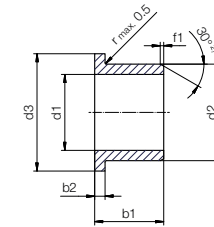
No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Bearing technology | Plain bearings | iglidur® K

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 6-12	Ø 12-30
f1 [mm]	0.5	0.8



Order example: KFM-0608-06 – no minimum order quantity.

K iglidur® material **F** With flange **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **06** Total length b1

d1 [mm]	d1 Tolerance ³⁾	d2 [mm]	d3 d13 ³⁾ [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.020 +0.068	8.0	12.0	6.0	1.00	KFM-0608-06
8.0	+0.025 +0.083	10.0	15.0	10.0	1.00	KFM-0810-10
10.0	+0.025 +0.083	12.0	18.0	10.0	1.00	KFM-1012-10
12.0	+0.032 +0.102	14.0	20.0	12.0	1.00	KFM-1214-12
16.0	+0.032 +0.102	18.0	24.0	17.0	1.00	KFM-1618-17
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	KFM-2023-21

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

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Order online

including delivery times, prices, online tools

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Ordering note

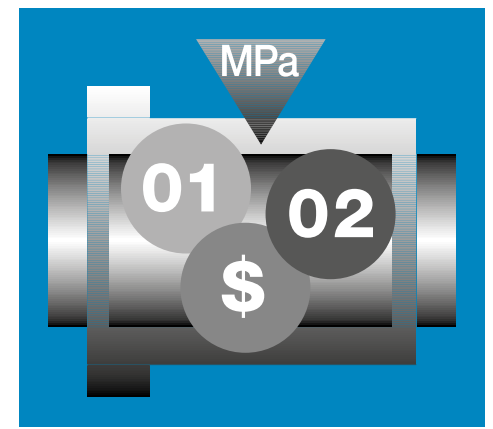
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No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.



Low-cost material for high-volume production

For applications with mainly static loads

igidur® GLW



When to use it?

- When an economical universal bearing for high volumes is required
- For high, primarily static loads
- For low to medium speeds



When not to use it?

- When mechanical reaming of the bore is necessary
igidur® M250
- For primarily dynamic loads
igidur® G
- When the highest wear resistance is required
igidur® W300
- When temperatures are constantly higher than +130°C
igidur® K
- For underwater applications
igidur® H2

Bearing technology | Plain bearings | iglidur® GLW



Ø
-



Also available as:



Bar stock, round bar
Page 743

Low-cost material for high-volume production For applications with mainly static loads

iglidur® GLW plain bearings are preferred in applications with static load, where only occasional movement takes place.

- Applications with static loads
- Cost-effective
- Resistant to dirt
- Resistant to vibrations
- Lubrication-free
- Maintenance-free



Bar stock, plate
Page 773

Typical application areas

- Automation
- Automotive
- Industrial handling



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

Descriptive technical specifications				
Wear resistance at +23°C	-	<div style="width: 25%; background-color: #0070C0;"></div>		+
Wear resistance at +90°C	-	<div style="width: 25%; background-color: #0070C0;"></div>		+
Wear resistance at +150°C	-	<div style="width: 10%; background-color: #0070C0;"></div>		+
Slide property	-	<div style="width: 25%; background-color: #0070C0;"></div>		+
Wear resistance under water	-	<div style="width: 10%; background-color: #0070C0;"></div>		+
Media resistance	-	<div style="width: 40%; background-color: #0070C0;"></div>		+
Resistant to edge pressures	-	<div style="width: 40%; background-color: #0070C0;"></div>		+
Resistant to shock and impact loads	-	<div style="width: 60%; background-color: #0070C0;"></div>		+
Dirt resistance	-	<div style="width: 40%; background-color: #0070C0;"></div>		+

Online product finder
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Online service life calculation
www.igus.eu/igidur-expert

EN 06/2023



Technical data

General properties		Testing method	
Density	g/cm ³	1.36	
Colour		black	
Max. moisture absorption at +23°C/50% r.h.	% weight	1.3	DIN 53495
Max. moisture absorption	% weight	5.5	
Coefficient of friction, dynamic, against steel	μ	0.10-0.24	
pv value, max. (dry)	MPa · m/s	0.30	
Mechanical properties			
Flexural modulus	MPa	7,700	DIN 53457
Flexural strength at +20°C	MPa	235	DIN 53452
Compressive strength	MPa	74	
Max. permissible surface pressure (+20°C)	MPa	80	
Shore D hardness		78	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+100	
Max. application temperature short-term	°C	+160	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	17	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹¹	DIN IEC 93
Surface resistance	Ω	> 10 ¹¹	DIN 53482

Table 01: Material properties

With plain bearings made from iglidur® GLW, we can offer our customers an alternative to iglidur® G for high-volume production applications. Featuring similar mechanical designed as iglidur® G, iglidur® GLW plain bearings are primarily recommended for static loads. With regard to these applications, in which the dynamic properties of iglidur® G to a large extent are unimportant, iglidur® GLW presents a cost-effective alternative.

Moisture absorption

The moisture absorption of iglidur® GLW plain bearings in ambient conditions is approximately 1.3% weight. The saturation limit submerged in water is 5.5% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour.

Radiation resistance

Plain bearings made from iglidur® GLW are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

iglidur® GLW plain bearings are resistant to weathering.

The material properties are slightly affected. Discolouration occurs.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® GLW plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® GLW as a function of radial pressure. At the recommended maximum surface pressure of 80MPa the deformation is less than 3% at room temperature. A plastic deformation can be negligible up to this value. It is however also dependent on the duty cycle of the load.

Surface pressure, page 45



-40°C up to +100°C



80MPa



HB



Bearing technology | Plain bearings | iglidur® GLW

Permissible surface speeds

iglidur® GLW has been developed for low to medium surface speeds. During continuous operation, a maximum speed of 0.8m/s (rotating) or 2.5m/s (linear) is permissible. The maximum values shown in table 03 can only be achieved at low pressures. In practice, these values are rarely reached, due to the increasing temperatures approaching or exceeding the maximum permitted value.

Surface speed, page 48

Temperature

The ambient temperatures strongly influence the properties of plain bearings. Diagram 02 shows this inverse relationship. The wear rises with increasing temperatures. For temperatures over +80°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. For iglidur® GLW a ground surface with an average surface finish $R_a = 0.1-0.2\mu\text{m}$ is recommended. Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® GLW. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 56

Installation tolerances

iglidur® GLW plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Product range

iglidur® GLW plain bearings are manufactured to special order. For high volume applications, please request iglidur® GLW plain bearings as an alternative to iglidur® G.

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	0.8	0.6	2.5
Short-term m/s	1.0	0.7	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.10-0.24	0.09	0.04	0.04

Table 04: Coefficient of friction against steel ($R_a = 1\mu\text{m}$, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

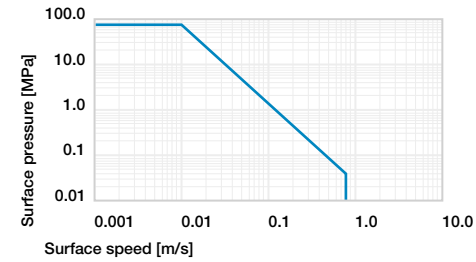


Diagram 01: Permissible pv values for iglidur® GLW with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

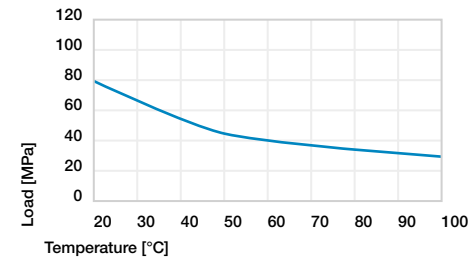


Diagram 02: Maximum recommended surface pressure as a function of temperature (80MPa at +20°C)

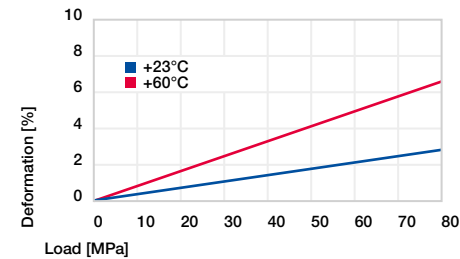


Diagram 03: Deformation under pressure and temperature

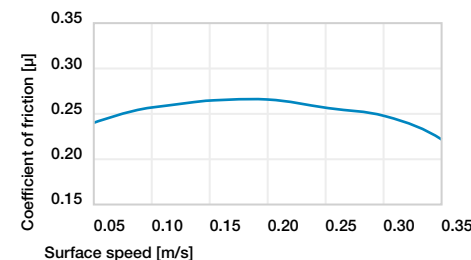


Diagram 04: Coefficient of friction as a function of the surface speed, $p = 0.75\text{MPa}$

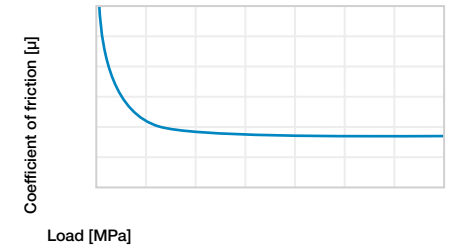


Diagram 05: Coefficient of friction as a function of the pressure, $v = 0.01\text{m/s}$

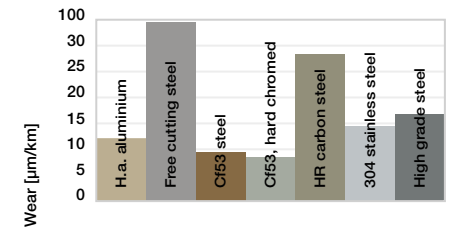


Diagram 06: Wear, rotating with different shaft materials, pressure, $p = 1\text{MPa}$, $v = 0.3\text{m/s}$



Materials for long service life

Materials for long service life

Every iglidur® plain bearing is naturally optimised for wear, but the materials in this group are characterised by very low rates of wear and therefore the ability to provide a long service life. In addition to their service life and the price level, the materials differ among other things by temperature and load ranges as well as the applicability in conjunction with special shaft materials.

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igidur® J
The versatile endurance runner

Temperature [°C] ¹²³⁾	+90	-	■	■	■	■	■	■	■	■	+
Surface pressure [MPa] ¹²⁴⁾	35	-	■	■	■	■	■	■	■	■	+
Coefficient of friction [μ] ¹²⁵⁾	0.16	-	■	■	■	■	■	■	■	■	+
Wear [μm/km] ¹²⁵⁾	0.29	-	■	■	■	■	■	■	■	■	+
Price index	-	-	■	■	■	■	■	■	■	■	+



igidur® W300
The classic endurance runner up to 30MPa

Temperature [°C] ¹²³⁾	+90	-	■	■	■	■	■	■	■	■	+
Surface pressure [MPa] ¹²⁴⁾	60	-	■	■	■	■	■	■	■	■	+
Coefficient of friction [μ] ¹²⁵⁾	0.18	-	■	■	■	■	■	■	■	■	+
Wear [μm/km] ¹²⁵⁾	0.33	-	■	■	■	■	■	■	■	■	+
Price index	-	-	■	■	■	■	■	■	■	■	+



igidur® J3
The new endurance runner: specialist for pivoting applications and pulsating loads

Temperature [°C] ¹²³⁾	+90	-	■	■	■	■	■	■	■	■	+
Surface pressure [MPa] ¹²⁴⁾	45	-	■	■	■	■	■	■	■	■	+
Coefficient of friction [μ] ¹²⁵⁾	0.13	-	■	■	■	■	■	■	■	■	+
Wear [μm/km] ¹²⁵⁾	0.07	-	■	■	■	■	■	■	■	■	+
Price index	-	-	■	■	■	■	■	■	■	■	+



igidur® J3B
Proven long-life material in black

Temperature [°C] ¹²³⁾	+90	-	■	■	■	■	■	■	■	■	+
Surface pressure [MPa] ¹²⁴⁾	44	-	■	■	■	■	■	■	■	■	+
Coefficient of friction [μ] ¹²⁵⁾	0.17	-	■	■	■	■	■	■	■	■	+
Wear [μm/km] ¹²⁵⁾	0.07	-	■	■	■	■	■	■	■	■	+
Price index	-	-	■	■	■	■	■	■	■	■	+



igidur® J350
Endurance runner with high dimensional stability at high temperatures

Temperature [°C] ¹²³⁾	+180	-	■	■	■	■	■	■	■	■	+
Surface pressure [MPa] ¹²⁴⁾	60	-	■	■	■	■	■	■	■	■	+
Coefficient of friction [μ] ¹²⁵⁾	0.16	-	■	■	■	■	■	■	■	■	+
Wear [μm/km] ¹²⁵⁾	1.14	-	■	■	■	■	■	■	■	■	+
Price index	-	-	■	■	■	■	■	■	■	■	+




igidur® J260
Ideal for plastic shafts

Temperature [°C] ¹²³⁾	+120	-	■	■	■	■	■	■	■	■	+
Surface pressure [MPa] ¹²⁴⁾	40	-	■	■	■	■	■	■	■	■	+
Coefficient of friction [μ] ¹²⁵⁾	0.16	-	■	■	■	■	■	■	■	■	+
Wear [μm/km] ¹²⁵⁾	0.11	-	■	■	■	■	■	■	■	■	+
Price index	-	-	■	■	■	■	■	■	■	■	+

¹²³⁾ Upper long-term application temperature ¹²⁴⁾ Max. recommended surface pressure at +20°C ¹²⁵⁾ Best pairing for p = 1 MPa, v = 0.3m/s, rotating

Endurance runner



igidur® W360
Endurance runner up to +180°C

Temperature [°C] ¹²³⁾	+180	-	■	■	■	■	■	■	■	■	+
Surface pressure [MPa] ¹²⁴⁾	75	-	■	■	■	■	■	■	■	■	+
Coefficient of friction [μ] ¹²⁵⁾	0.07	-	■	■	■	■	■	■	■	■	+
Wear [μm/km] ¹²⁵⁾	0.24	-	■	■	■	■	■	■	■	■	+
Price index	-	-	■	■	■	■	■	■	■	■	+




igidur® L250
For fast rotating applications

Temperature [°C] ¹²³⁾	+90	-	■	■	■	■	■	■	■	■	+
Surface pressure [MPa] ¹²⁴⁾	45	-	■	■	■	■	■	■	■	■	+
Coefficient of friction [μ] ¹²⁵⁾	0.18	-	■	■	■	■	■	■	■	■	+
Wear [μm/km] ¹²⁵⁾	0.20	-	■	■	■	■	■	■	■	■	+
Price index	-	-	■	■	■	■	■	■	■	■	+



igidur® L350
For high rotational speeds

Temperature [°C] ¹²³⁾	+180	-	■	■	■	■	■	■	■	■	+
Surface pressure [MPa] ¹²⁴⁾	59	-	■	■	■	■	■	■	■	■	+
Coefficient of friction [μ] ¹²⁵⁾	0.12	-	■	■	■	■	■	■	■	■	+
Wear [μm/km] ¹²⁵⁾	1.50	-	■	■	■	■	■	■	■	■	+
Price index	-	-	■	■	■	■	■	■	■	■	+




igidur® L500
For extreme rotational speeds

Temperature [°C] ¹²³⁾	+250	-	■	■	■	■	■	■	■	■	+
Surface pressure [MPa] ¹²⁴⁾	70	-	■	■	■	■	■	■	■	■	+
Coefficient of friction [μ] ¹²⁵⁾	0.19	-	■	■	■	■	■	■	■	■	+
Wear [μm/km] ¹²⁵⁾	1.00	-	■	■	■	■	■	■	■	■	+
Price index	-	-	■	■	■	■	■	■	■	■	+



igidur® R
Low-cost

Temperature [°C] ¹²³⁾	+90	-	■	■	■	■	■	■	■	■	+
Surface pressure [MPa] ¹²⁴⁾	23	-	■	■	■	■	■	■	■	■	+
Coefficient of friction [μ] ¹²⁵⁾	0.20	-	■	■	■	■	■	■	■	■	+
Wear [μm/km] ¹²⁵⁾	0.95	-	■	■	■	■	■	■	■	■	+
Price index	-	-	■	■	■	■	■	■	■	■	+



igidur® D
Low-cost with silicone

Temperature [°C] ¹²³⁾	+90	-	■	■	■	■	■	■	■	■	+
Surface pressure [MPa] ¹²⁴⁾	23	-	■	■	■	■	■	■	■	■	+
Coefficient of friction [μ] ¹²⁵⁾	0.25	-	■	■	■	■	■	■	■	■	+
Wear [μm/km] ¹²⁵⁾	1.91	-	■	■	■	■	■	■	■	■	+



igidur® J200
Specialist for linear movement

Temperature [°C] ¹²³⁾	+90	-	■	■	■	■	■	■	■	■	+
Surface pressure [MPa] ¹²⁴⁾	23	-	■	■	■	■	■	■	■	■	+
Coefficient of friction [μ] ¹²⁵⁾	0.15	-	■	■	■	■	■	■	■	■	+
Wear [μm/km] ¹²⁵⁾	1.30	-	■	■	■	■	■	■	■	■	+
Price index	-	-	■	■	■	■	■	■	■	■	+



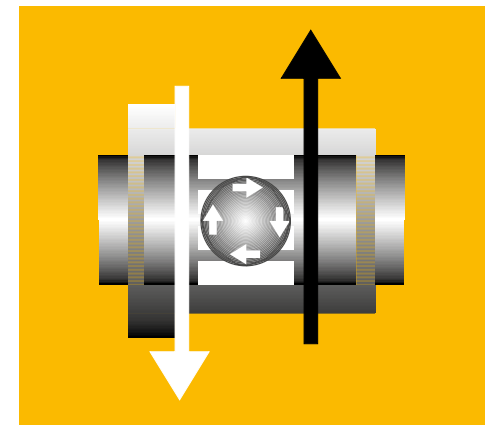
igidur® E7
Ideal for pivoting movement

Temperature [°C] ¹²³⁾	+70	-	■	■	■	■	■	■	■	■	+
Surface pressure [MPa] ¹²⁴⁾	18	-	■	■	■	■	■	■	■	■	+
Coefficient of friction [μ] ¹²⁵⁾	0.13	-	■	■	■	■	■	■	■	■	+
Wear [μm/km] ¹²⁵⁾	0.14	-	■	■	■	■	■	■	■	■	+
Price index	-	-	■	■	■	■	■	■	■	■	+



igidur® E
Extremely wear-resistant

Temperature [°C] ¹²³⁾	+90	-	■	■	■	■	■	■	■	■	+
Surface pressure [MPa] ¹²⁴⁾	37	-	■	■	■	■	■	■	■	■	+
Coefficient of friction [μ] ¹²⁵⁾	0.18	-	■	■	■	■	■	■	■	■	+
Wear [μm/km] ¹²⁵⁾	0.10	-	■	■	■	■	■	■	■	■	+
Price index	-	-	■	■	■	■	■	■	■	■	+



The versatile endurance runner

Strong performer on most shafts,
very low coefficient of friction

iglidur® J



When to use it?

- For high speeds
- When highest wear resistance at low to medium pressures is required
- Low wear against different shafts
- When a low coefficient of friction in dry operation is requested
- For vibration dampening
- When good chemical resistance is required
- For best performance with soft shaft materials
- Low moisture absorption



When not to use it?

- When high pressures occur
iglidur® G, iglidur® W300
- When temperatures higher than +120°C occur
iglidur® G, iglidur® Z
- When a cost-effective plain bearing for occasional movements is necessary
iglidur® G

Bearing technology | Plain bearings | iglidur® J



Ø
1.5-120.0mm



Also available as:



Bar stock, round bar
Page 743

The versatile endurance runner Strong performer on most shafts, very low coefficient of friction

One main advantage of iglidur® J plain bearings is the combination of a low coefficient of friction in dry operation and the low stickslip tendency. With a maximum recommended surface pressure of 35MPa, iglidur® J plain bearings are not suitable for extreme loads.

- Over 250 sizes available from stock
- High wear resistance
- Low coefficient of friction
- Vibration-dampening
- Chemical-resistant
- Recommended for soft shafts
- Low moisture absorption



Bar stock, plate
Page 773

Typical application areas

- Automation
- Printing industry
- Beverage industry
- Aerospace engineering
- Cleanroom



tribo-tape liner
Page 781



Guide rings
Page 641

Descriptive technical specifications

Wear resistance at +23°C	-		+
Wear resistance at +90°C	-		+
Wear resistance at +150°C	-		+
Slide property	-		+
Wear resistance under water	-		+
Media resistance	-		+
Resistant to edge pressures	-		+
Resistant to shock and impact loads	-		+
Dirt resistance	-		+



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 848

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

EN 06/2023



Technical data

General properties		Testing method	
Density	g/cm ³	1.49	
Colour		yellow	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.3	DIN 53495
Max. moisture absorption	% weight	1.3	
Coefficient of friction, dynamic, against steel	μ	0.06-0.18	
pv value, max. (dry)	MPa · m/s	0.34	
Mechanical properties			
Flexural modulus	MPa	2,400	DIN 53457
Flexural strength at +20°C	MPa	73	DIN 53452
Compressive strength	MPa	60	
Max. permissible surface pressure (+20°C)	MPa	35	
Shore D hardness		74	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+120	
Min. application temperature	°C	-50	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	10	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹³	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

Table 01: Material properties

One main advantage of iglidur® J plain bearings is the combination of a low coefficient of friction in dry operation and the low stickslip tendency.

Moisture absorption

The moisture absorption of iglidur® J plain bearings in ambient conditions is approximately 0.3% weight. The saturation limit submerged in water is 1.3% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® J bearings.

Radiation resistance

Plain bearings made from iglidur® J are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

igidur® J plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® J plain bearings decreases. Diagram 02 shows this inverse relationship. With the long-term permitted application temperature of +90°C, the permitted surface pressure still amounts to 20MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

With a maximum recommended surface pressure of 35MPa, iglidur® J plain bearings are not suitable for extreme loads. Diagram 03 shows the elastic deformation of iglidur® J at radial loads.

Surface pressure, page 45



-50°C up to +90°C



35MPa



Permissible surface speeds

The low coefficient of friction and no stick-slip tendency of iglidur® J plain bearings are particularly important at very low speeds. However, iglidur® J can also be used for high speeds of over 1m/s. In both cases the static friction is very low and stick slip does not occur. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

igidur® J plain bearings can be used between -50°C and +90°C; the short-term maximum permissible temperature is +120°C. Wear increases significantly at temperatures above +80°C. For temperatures over +60°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. With increasing shaft surface finish, the coefficient of friction also increases. For iglidur® J a ground surface with an average surface finish $R_a = 0.1-0.3\mu\text{m}$ is recommended. Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® J. When compared to most other iglidur® materials, iglidur® J plain bearings have very low wear results at low loads compared with all shaft materials tested. Also, for increasing loads up to 5 MPa, the wear resistance of iglidur® J plain bearings is excellent. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 56

Installation tolerances

igidur® J plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	+ up to 0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	1.5	1.1	8.0
Short-term m/s	3.0	2.1	10.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.06-0.18	0.09	0.04	0.04

Table 04: Coefficient of friction against steel ($R_a = 1\mu\text{m}$, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

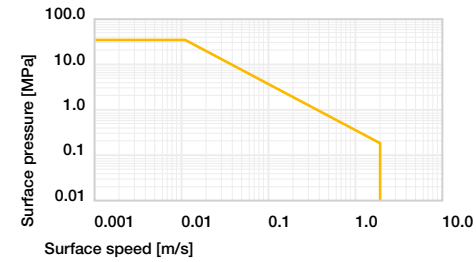


Diagram 01: Permissible pv values for iglidur® J plain bearing with a wall thickness of 1 mm dry operation against a steel shaft at +20°C, mounted in a steel housing

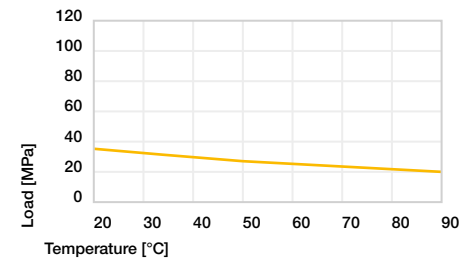


Diagram 02: Maximum recommended surface pressure as a function of temperature (35MPa at +20°C)

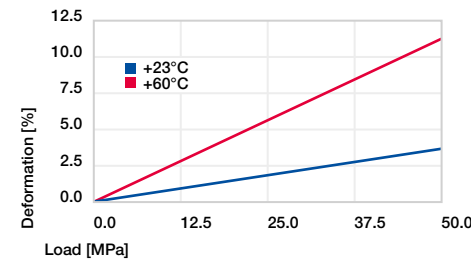


Diagram 03: Deformation under pressure and temperature

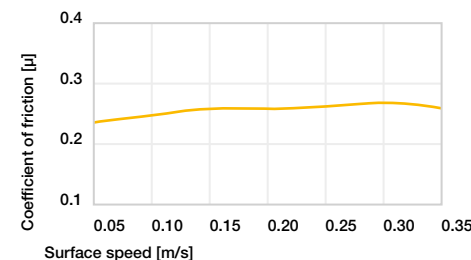


Diagram 04: Coefficient of friction as a function of the surface speed, $p = 0.75\text{MPa}$

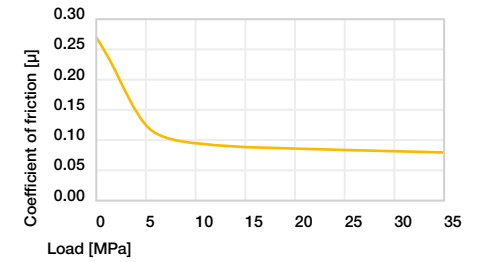


Diagram 05: Coefficient of friction as a function of the pressure, $v = 0.01\text{m/s}$

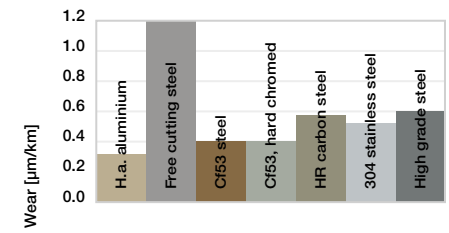


Diagram 06: Wear, rotating with different shaft materials, pressure, $p = 1\text{MPa}$, $v = 0.3\text{m/s}$

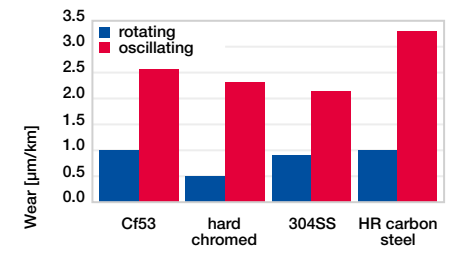
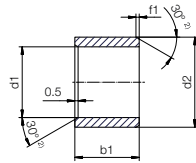


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, $p = 2\text{MPa}$

Bearing technology | Plain bearings | iglidur® J

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions



Order example: **JSM-0104-02** – no minimum order quantity.

J iglidur® material S Cylindrical M Metric 01 Inner Ø d1 04 Outer Ø d2 02 Total length b1

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
1.5	+0.014	4.0	2.0	JSM-0104-02
2.0	+0.054	3.5	7.0	JSM-0203-07
2.0	+0.020	5.0	2.5	JSM-0205-02
2.5	+0.080	6.0	2.5	JSM-0206-02
3.0	+0.014	4.5	5.0	JSM-0304-05
3.0	+0.054	4.5	9.0	JSM-0304-09
3.0		5.0	4.0	JSM-0305-04
3.0	+0.020	7.0	14.0	JSM-0307-14
3.0	+0.080	8.0	4.0	JSM-0308-04
3.0		8.0	5.0	JSM-0308-05
4.0		5.5	4.0	JSM-0405-04
4.0		5.5	6.0	JSM-0405-06
4.0		5.5	8.0	JSM-0405-08
5.0	+0.020	7.0	4.6	JSM-0507-046
5.0	+0.068	7.0	5.0	JSM-0507-05
5.0		7.0	10.0	JSM-0507-10
5.0		7.0	14.0	JSM-0507-14
5.0	+0.020	7.0	15.0	JSM-0507-15
5.0	+0.080			
5.0	+0.030	8.0	5.0	JSM-0508-05
5.0	+0.105			
6.0		7.0	3.0	JSM-0607-03
6.0		7.0	5.0	JSM-0607-05
6.0	+0.010	7.0	8.0	JSM-0607-08
6.0	+0.058	7.0	12.5	JSM-0607-12.5
6.0		7.0	14.0	JSM-0607-14
6.0		8.0	4.3	JSM-0608-043
6.0	+0.020	8.0	6.0	JSM-0608-06
6.0	+0.068	8.0	8.0	JSM-0608-08

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
6.0	+0.020	8.0	10.0	JSM-0608-10
6.0	+0.068			
6.0	+0.030	9.0	6.0	JSM-0609-06
6.0	+0.105	10.0	10.0	JSM-0610-10
7.0		9.0	5.0	JSM-0709-05
7.0		9.0	7.0	JSM-0709-07
7.0		9.0	9.0	JSM-0709-09
7.0		9.0	12.5	JSM-0709-125
8.0		10.0	3.0	JSM-0810-03
8.0	+0.025	10.0	4.0	JSM-0810-04
8.0	+0.083	10.0	6.0	JSM-0810-06
8.0		10.0	8.0	JSM-0810-08
8.0		10.0	10.0	JSM-0810-10
8.0		10.0	12.0	JSM-0810-12
8.0		10.0	16.0	JSM-0810-16
8.0	+0.040	12.0	10.0	JSM-0812-10
8.0	+0.130	12.0	12.0	JSM-0812-12
9.0		11.0	10.0	JSM-0911-10
10.0		12.0	5.0	JSM-1012-05
10.0		12.0	6.0	JSM-1012-06
10.0		12.0	8.0	JSM-1012-08
10.0	+0.025	12.0	10.0	JSM-1012-10
10.0	+0.083	12.0	11.0	JSM-1012-11
10.0		12.0	12.0	JSM-1012-12
10.0		12.0	15.0	JSM-1012-15
10.0		12.0	20.0	JSM-1012-20
10.0	+0.040	14.0	10.0	JSM-1014-10
10.0	+0.130	14.0	16.0	JSM-1014-16

³⁾ After press-fit. Testing methods, page 57

Product range

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
12.0		14.0	6.0	JSM-1214-06
12.0		14.0	8.0	JSM-1214-08
12.0		14.0	9.0	JSM-1214-09
12.0	+0.032	14.0	10.0	JSM-1214-10
12.0	+0.102	14.0	12.0	JSM-1214-12
12.0		14.0	15.0	JSM-1214-15
12.0		14.0	20.0	JSM-1214-20
12.0	+0.050	16.0	12.0	JSM-1216-12
12.0	+0.160	16.0	17.0	JSM-1216-17
13.0		15.0	10.0	JSM-1315-10
13.0		15.0	20.0	JSM-1315-20
13.0		16.0	18.5	JSM-1316-185
14.0		16.0	5.0	JSM-1416-05
14.0	+0.032	16.0	8.0	JSM-1416-08
14.0	+0.102	16.0	10.0	JSM-1416-10
14.0		16.0	15.0	JSM-1416-15
14.0		16.0	20.0	JSM-1416-20
14.0		16.0	25.0	JSM-1416-25
14.0		18.0	18.0	JSM-1418-18
14.0	+0.050	20.0	20.0	JSM-1420-20
14.0	+0.160			
15.0		17.0	6.0	JSM-1517-06
15.0		17.0	10.0	JSM-1517-10
15.0		17.0	12.0	JSM-1517-12
15.0		17.0	15.0	JSM-1517-15
15.0		17.0	20.0	JSM-1517-20
15.0	+0.032	17.0	25.0	JSM-1517-25
15.0	+0.102	18.0	10.0	JSM-1518-10
16.0		18.0	10.0	JSM-1618-10
16.0		18.0	12.0	JSM-1618-12
16.0		18.0	15.0	JSM-1618-15
16.0		18.0	20.0	JSM-1618-20
16.0		18.0	25.0	JSM-1618-25
16.0		20.0	16.0	JSM-1620-16
16.0	+0.050	22.0	16.0	JSM-1622-16
16.0	+0.160	22.0	20.0	JSM-1622-20
17.0		19.0	6.0	JSM-1719-06
18.0		20.0	10.0	JSM-1820-10
18.0	+0.032	20.0	15.0	JSM-1820-15
18.0	+0.102	20.0	20.0	JSM-1820-20
18.0		20.0	25.0	JSM-1820-25
19.0		22.0	14.0	JSM-1922-14
20.0		22.0	20.0	JSM-2022-20
20.0		22.0	30.0	JSM-2022-30
20.0	+0.040	23.0	10.0	JSM-2023-10
20.0	+0.124	23.0	15.0	JSM-2023-15
20.0		23.0	20.0	JSM-2023-20

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
20.0	+0.020	23.0	25.0	JSM-2023-25
20.0	+0.104	23.0	30.0	JSM-2023-30
20.0		26.0	6.0	JSM-2026-06
20.0	+0.065	26.0	20.0	JSM-2026-20
20.0	+0.195	26.0	25.0	JSM-2026-25
20.0		26.0	30.0	JSM-2026-30
21.0		24.0	12.0	JSM-2124-12
22.0		25.0	15.0	JSM-2225-15
22.0		25.0	20.0	JSM-2225-20
22.0		25.0	25.0	JSM-2225-25
22.0		25.0	30.0	JSM-2225-30
23.0		26.0	12.0	JSM-2326-12
24.0		27.0	15.0	JSM-2427-15
24.0	+0.040	27.0	20.0	JSM-2427-20
24.0	+0.124	27.0	25.0	JSM-2427-25
24.0		27.0	30.0	JSM-2427-30
24.0		27.0	46.0	JSM-2427-46
25.0		28.0	12.0	JSM-2528-12
25.0		28.0	15.0	JSM-2528-15
25.0		28.0	20.0	JSM-2528-20
25.0		28.0	25.0	JSM-2528-25
25.0		28.0	30.0	JSM-2528-30
25.0		28.0	60.0	JSM-2528-60
25.0		30.0	40.0	JSM-2530-40
25.0	+0.065	32.0	25.0	JSM-2532-25
25.0	+0.195	32.0	32.0	JSM-2532-32
25.0		32.0	35.0	JSM-2532-35
26.0		30.0	20.0	JSM-2630-20
27.0	+0.040	30.0	20.0	JSM-2730-20
27.0	+0.124			
28.0	+0.065	32.0	20.0	JSM-2832-20
28.0	+0.195	32.0	25.0	JSM-2832-25
28.0		32.0	30.0	JSM-2832-30
30.0		34.0	20.0	JSM-3034-20
30.0	+0.040	34.0	25.0	JSM-3034-25
30.0	+0.124	34.0	30.0	JSM-3034-30
30.0		34.0	40.0	JSM-3034-40
30.0	+0.065	38.0	40.0	JSM-3038-40
30.0	+0.195			
32.0		36.0	20.0	JSM-3236-20
32.0		36.0	30.0	JSM-3236-30
32.0		36.0	40.0	JSM-3236-40
32.0		37.0	25.0	JSM-3237-25
32.0	+0.050	38.0	50.0	JSM-3238-50
32.0	+0.150			
35.0		39.0	20.0	JSM-3539-20
35.0		39.0	30.0	JSM-3539-30
35.0		39.0	40.0	JSM-3539-40
35.0		39.0	50.0	JSM-3539-50

³⁾ After press-fit. Testing methods, page 57

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d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
36.0		40.0	45.0	JSM-3640-45
40.0		44.0	20.0	JSM-4044-20
40.0	+0.050	44.0	30.0	JSM-4044-30
40.0	+0.150	44.0	35.0	JSM-4044-35
40.0		44.0	40.0	JSM-4044-40
40.0		44.0	50.0	JSM-4044-50
42.0	+0.080 +0.240	46.0	73.0	JSM-4246-73
45.0		50.0	20.0	JSM-4550-20
45.0	+0.025	50.0	30.0	JSM-4550-30
45.0	+0.125	50.0	40.0	JSM-4550-40
45.0		50.0	50.0	JSM-4550-50

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
50.0		55.0	20.0	JSM-5055-20
50.0	+0.050	55.0	30.0	JSM-5055-30
50.0	+0.150	55.0	40.0	JSM-5055-40
50.0		55.0	50.0	JSM-5055-50
50.0		55.0	60.0	JSM-5055-60
55.0		60.0	60.0	JSM-5560-60
60.0		65.0	60.0	JSM-6065-60
65.0	+0.060	70.0	50.0	JSM-6570-50
70.0	+0.180	75.0	60.0	JSM-7075-60
75.0		80.0	60.0	JSM-7580-60
80.0		85.0	100.0	JSM-8085-100
80.0		86.0	60.0	JSM-8086-60
100.0	+0.072	105.0	100.0	JSM-100105-100
110.0	+0.212	115.0	60.0	JSM-110115-60

³⁾ After press-fit. Testing methods, page 57



Available from stock

Detailed information about delivery time online.

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Order online

including delivery times, prices, online tools

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Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling

1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

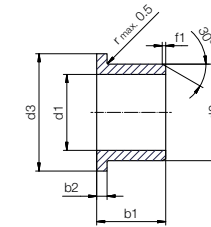
No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

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Flange bearings (form F)



³⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions



Order example: **JFM-0304-03** – no minimum order quantity.

J iglidur® material F With flange M Metric 03 Inner Ø d1 04 Outer Ø d2 03 Total length b1

d1	d1 Tolerance ³⁾	d2	d3	b1 h13	b2 h13	Part No.
[mm]		[mm]	[mm]	[mm]	[mm]	
3.0	+0.014	4.5	7.5	3.0	0.75	JFM-0304-03
3.0	+0.054	4.5	7.5	4.5	0.75	JFM-0304-045
3.0		4.5	7.5	5.0	0.75	JFM-0304-05
3.0	+0.020 +0.080	6.0	9.0	10.0	1.50	JFM-0306-10
4.0		5.5	9.5	3.0	0.75	JFM-0405-03
4.0		5.5	9.5	6.0	0.75	JFM-0405-06
5.0		6.0	10.0	5.0	0.50	JFM-0506-05
5.0		7.0	11.0	3.0	1.00	JFM-0507-03
5.0	+0.020	7.0	11.0	5.0	1.00	JFM-0507-05
6.0	+0.068	8.0	12.0	4.0	1.00	JFM-0608-04
6.0		8.0	12.0	6.0	1.00	JFM-0608-06
6.0		8.0	12.0	8.0	1.00	JFM-0608-08
6.0		8.0	12.0	10.0	1.00	JFM-0608-10
6.0	+0.030 +0.105	10.0	14.0	10.0	2.00	JFM-0610-10
8.0		10.0	15.0	3.8	1.00	JFM-0810-038
8.0		10.0	15.0	5.0	1.00	JFM-0810-05
8.0		10.0	15.0	6.0	1.00	JFM-0810-06
8.0		10.0	15.0	7.0	1.00	JFM-0810-07
8.0		10.0	15.0	8.0	1.00	JFM-0810-08
8.0	+0.025	10.0	15.0	9.5	1.00	JFM-0810-09
8.0	+0.083	10.0	15.0	10.0	1.00	JFM-0810-10
8.0		10.0	12.5	10.0	1.00	JFM-0810125-10
8.0		10.0	14.0	10.0	1.00	JFM-081014-10
8.0		10.0	16.0	11.0	2.00	JFM-081016-11
8.0		10.0	12.0	16.0	1.00	JFM-081012-16

d1	d1 Tolerance ³⁾	d2	d3	b1 h13	b2 h13	Part No.
[mm]		[mm]	[mm]	[mm]	[mm]	
8.0	+0.025 +0.115	12.0	16.0	6.0	2.00	JFM-0812-06
8.0		12.0	16.0	9.0	2.00	JFM-0812-09
10.0		12.0	15.0	3.5	1.00	JFM-101215-035
10.0		12.0	18.0	5.0	1.00	JFM-1012-05
10.0		12.0	18.0	7.0	1.00	JFM-1012-07
10.0		12.0	18.0	9.0	1.00	JFM-1012-09
10.0	+0.025 +0.083	12.0	18.0	10.0	1.00	JFM-1012-10
10.0		12.0	18.0	12.0	1.00	JFM-1012-12
10.0		12.0	18.0	15.0	1.00	JFM-1012-15
10.0		12.0	18.0	17.0	1.00	JFM-1012-17
10.0		12.0	18.0	18.0	1.00	JFM-1012-18
10.0		14.0	17.5	14.0	1.00	JFM-1014-14
10.0	+0.040	16.0	22.0	10.0	3.00	JFM-1016-10
10.0	+0.130	16.0	22.0	16.0	3.00	JFM-1016-16
11.0		13.0	18.0	5.0	1.00	JFM-1113-05
12.0		14.0	20.0	4.0	1.00	JFM-1214-04
12.0		14.0	18.0	4.5	1.00	JFM-121418-045
12.0		14.0	20.0	5.0	1.00	JFM-1214-05
12.0	+0.032	14.0	20.0	7.0	1.00	JFM-1214-07
12.0	+0.102	14.0	20.0	9.0	1.00	JFM-1214-09
12.0		14.0	18.0	10.0	1.00	JFM-121418-10
12.0		14.0	20.0	12.0	1.00	JFM-1214-12
12.0		14.0	20.0	15.0	1.00	JFM-1214-15
12.0		14.0	20.0	17.0	1.00	JFM-1214-17
12.0	+0.050	18.0	24.0	8.0	3.00	JFM-1218-08
12.0	+0.160	18.0	24.0	12.0	3.00	JFM-1218-12

³⁾ After press-fit. Testing methods, page 61

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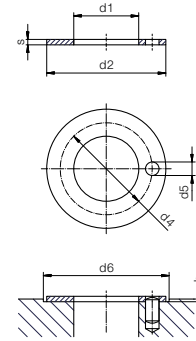
d1	d1 Tolerance ⁹⁾	d2	d3	b1	b2	Part No.
[mm]	[mm]	[mm]	d13 ⁹⁾	h13	h13	
12.0	+0.050 +0.160	18.0	22.0	20.0	3.00	JFM-1218-20
14.0		16.0	22.0	3.0	1.00	JFM-1416-03
14.0		16.0	22.0	10.0	1.00	JFM-1416-10
14.0		16.0	22.0	12.0	1.00	JFM-1416-12
14.0		16.0	22.0	17.0	1.00	JFM-1416-17
14.0	+0.032	18.0	22.0	20.0	2.00	JFM-141822-20
14.0	+0.102	18.0	25.0	24.0	2.00	JFM-141825-24
15.0		17.0	23.0	4.0	1.00	JFM-1517-04
15.0		17.0	23.0	5.5	1.00	JFM-1517-055
15.0		17.0	23.0	9.0	1.00	JFM-1517-09
15.0		17.0	23.0	12.0	1.00	JFM-1517-12
15.0		17.0	23.0	17.0	1.00	JFM-1517-17
15.0	+0.050 +0.160	21.0	27.0	20.0	3.00	JFM-1521-20
16.0		18.0	24.0	6.0	1.00	JFM-1618-06
16.0	+0.032	18.0	24.0	12.0	1.00	JFM-1618-12
16.0	+0.102	18.0	24.0	16.0	1.00	JFM-1618-16
16.0		18.0	24.0	17.0	1.00	JFM-1618-17
16.0	+0.050	22.0	28.0	12.0	3.00	JFM-1622-12
16.0	+0.160	22.0	28.0	15.0	3.00	JFM-1622-15
17.0		19.0	25.0	9.0	1.00	JFM-1719-09
17.0		19.0	25.0	21.0	1.00	JFM-1719-21
18.0		20.0	26.0	4.0	1.00	JFM-1820-04
18.0		20.0	26.0	12.0	1.00	JFM-1820-12
18.0	+0.032	20.0	26.0	17.0	1.00	JFM-1820-17
18.0	+0.102	20.0	26.0	22.0	1.00	JFM-1820-22
18.0		21.0	25.0	12.0	1.00	JFM-1821-12
19.0		22.0	26.0	23.0	1.00	JFM-1922-23
19.0		22.0	26.0	36.0	1.00	JFM-1922-36
20.0		23.0	30.0	11.5	1.50	JFM-2023-11
20.0	+0.040	23.0	30.0	15.5	1.50	JFM-2023-15.5
20.0	+0.124	23.0	30.0	16.5	1.50	JFM-2023-16
20.0		23.0	30.0	21.5	1.50	JFM-2023-21
20.0	+0.065	26.0	32.0	15.0	3.00	JFM-2026-15
20.0	+0.195	26.0	32.0	20.0	3.00	JFM-2026-20
20.0		26.0	32.0	25.0	3.00	JFM-2026-25
22.0	+0.040	25.0	32.0	8.0	1.50	JFM-222532-08
24.0	+0.124	30.0	36.0	30.0	3.00	JFM-2430-30

⁹⁾ After press-fit. Testing methods, page 61

d1	d1 Tolerance ⁹⁾	d2	d3	b1	b2	Part No.
[mm]	[mm]	[mm]	d13 ⁹⁾	h13	h13	
25.0		28.0	39.0	5.0	1.50	JFM-252839-05
25.0		28.0	35.0	6.0	1.50	JFM-2528-06
25.0		28.0	39.0	7.5	1.50	JFM-252839-075
25.0	+0.040	28.0	35.0	11.5	1.50	JFM-2528-11
25.0	+0.124	28.0	35.0	12.0	1.50	JFM-2528-12
25.0		28.0	35.0	14.5	1.50	JFM-2528-14.5
25.0		28.0	35.0	21.5	1.50	JFM-2528-21
25.0		32.0	38.0	20.0	4.00	JFM-2532-20
25.0	+0.065	32.0	38.0	25.0	4.00	JFM-2532-25
28.0	+0.195	32.0	35.0	7.0	2.00	JFM-283235-07
28.0		32.0	39.0	20.0	2.00	JFM-283239-20
30.0		32.0	40.0	12.0	1.00	JFM-303240-12
30.0	+0.040	34.0	42.0	16.0	2.00	JFM-3034-16
30.0	+0.124	34.0	42.0	20.0	2.00	JFM-3034-20
30.0		34.0	42.0	26.0	2.00	JFM-3034-26
30.0	+0.080 +0.240	38.0	44.0	20.0	4.00	JFM-3038-20
30.0	+0.065	38.0	44.0	30.0	4.00	JFM-3038-30
30.0	+0.195	38.0	44.0	36.0	4.00	JFM-3038-36
35.0		39.0	47.0	12.0	2.00	JFM-3539-12
35.0		39.0	47.0	16.0	2.00	JFM-3539-16
35.0		39.0	47.0	26.0	2.00	JFM-3539-26
40.0		44.0	52.0	20.0	2.00	JFM-4044-20
40.0		44.0	52.0	30.0	2.00	JFM-4044-30
40.0	+0.050	44.0	52.0	40.0	2.00	JFM-4044-40
45.0	+0.150	50.0	58.0	12.0	2.00	JFM-4550-12
45.0		50.0	58.0	20.0	2.00	JFM-4550-20
45.0		50.0	58.0	50.0	2.00	JFM-4550-50
50.0		55.0	63.0	11.5	2.00	JFM-5055-115
50.0		55.0	63.0	50.0	2.00	JFM-5055-50
55.0		60.0	68.0	50.0	2.00	JFM-5560-50
60.0	+0.060	65.0	73.0	37.0	2.00	JFM-6065-37
60.0	+0.180	65.0	73.0	50.0	2.00	JFM-6065-50
60.0		70.0	78.0	60.0	2.00	JFM-6570-60
70.0		75.0	83.0	50.0	2.00	JFM-7075-50
90.0		95.0	103.0	100.0	2.50	JFM-9095-100
100.0	+0.072	105.0	113.0	100.0	2.50	JFM-100105-100
110.0	+0.212	115.0	123.0	100.0	2.50	JFM-110115-100
120.0		125.0	133.0	100.0	2.50	JFM-120125-100

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Thrust washer (form T)



i Dimensions according to ISO 3547-1 and special dimensions

? Order example: **JTM-1224-015** – no minimum order quantity.
J iglidur® material T Thrust washer M Metric 12 Inner Ø d1 24 Outer Ø d2 015 Height s

d1	d2	d4	d5	h	d6	Øs	Part No.
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
+0.25	-0.25	-0.12 +0.12	+0.375 +0.125	+0.2/-0.2	+0.12	-0.05	
12	24	18	1.5	1	24	1.5	JTM-1224-015
12	34	⁴⁾	⁴⁾	1	34	1.5	JTM-1234-015
14	20	⁴⁾	⁴⁾	1	20	1.5	JTM-1420-015
20	36	28	3	1	36	1.5	JTM-2036-015
28	42	35	3	1	42	2	JTM-2842-020
30	39	⁴⁾	⁴⁾	1	39	1.5	JTM-3039-015
56	70	⁴⁾	⁴⁾	0.7	70	1	JTM-5670-010
139	188	⁴⁾	⁴⁾	1.5	188	2	JTM-139188-020

⁴⁾ Design without fixing hole

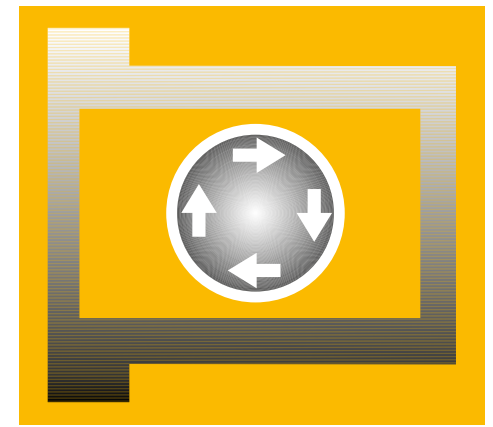
🚚 Available from stock
Detailed information about delivery time online.
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🖥️ Order online
including delivery times, prices, online tools
www.igus.eu/J

🛒 Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.
No low-quantity surcharges.
Free shipping within Germany for orders above €150.



The classic endurance runner up to 30MPa

Excellent wear resistance on (virtually)
all shafts

igidur® W300



When to use it?

- When especially long service life is necessary
- When low coefficient of dynamic friction and high wear resistance are required
- For use on 304 stainless steel shafts
- For harsh environments and rough shafts
- Dirt-resistant



When not to use it?

- For high loads starting at 50MPa
igidur® Q
- When temperatures are constantly higher than +90 °C
igidur® H, iglidur® X
- For very wet environments
igidur® P
- When a cost-effective plain bearing is required
igidur® G

Bearing technology | Plain bearings | iglidur® W300



Ø
2.0-120.0mm



Also available as:



Bar stock, round bar
Page 743

The classic endurance runner up to 30MPa Excellent wear resistance on (virtually) all shafts

iglidur® W300 gives excellent wear resistance, even in harsh environments or when used with rough shafts. Of all iglidur® materials, iglidur® W300 is the most resistant to these conditions.

- Over 400 sizes available from stock
- Very long service life
- Low coefficient of friction
- Low coefficient of friction
- Very wear-resistant
- Suitable for applications with soft shafts
- Lubrication-free
- Maintenance-free



Bar stock, plate
Page 773



tribo-tape liner
Page 781

Typical application areas

- Automation
- Printing industry
- Woodworking
- Mechatronics
- Test engineering and quality assurance



Guide rings
Page 641

Descriptive technical specifications

Wear resistance at +23°C	-		+
Wear resistance at +90°C	-		+
Wear resistance at +150°C	-		+
Slide property	-		+
Wear resistance under water	-		+
Media resistance	-		+
Resistant to edge pressures	-		+
Resistant to shock and impact loads	-		+
Dirt resistance	-		+



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 845

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

EN 06/2023



Technical data

General properties		Testing method	
Density	g/cm ³	1.24	
Colour		yellow	
Max. moisture absorption at +23°C/50% r.h.	% weight	1.3	DIN 53495
Max. moisture absorption	% weight	6.5	
Coefficient of friction, dynamic, against steel	μ	0.08-0.23	
pv value, max. (dry)	MPa · m/s	0.23	
Mechanical properties			
Flexural modulus	MPa	3,500	DIN 53457
Flexural strength at +20°C	MPa	125	DIN 53452
Compressive strength	MPa	61	
Max. permissible surface pressure (+20°C)	MPa	60	
Shore D hardness		77	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+180	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	9	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹³	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

Table 01: Material properties

iglidur® W300 gives excellent wear resistance, even in harsh environments or when used with rough shafts. This material is the most tolerant of these external effects out of all the iglidur® range.

Moisture absorption

The moisture absorption of iglidur® W300 plain bearings in ambient conditions is approximately 1.3% weight. The saturation limit submerged in water is 6.5% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® W300 are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

iglidur® W300 plain bearings have limited resistance to weathering. The material properties are affected. Discolouration occurs. Practical tests under real application conditions are recommended.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® W300 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

iglidur® W300 shows a very high compressive strength despite high elasticity. Diagram 03 shows the elastic deformation of iglidur® W300 at radial loads. At the maximum recommended surface pressure of 60MPa, the deformation is less than 3%.

Surface pressure, page 45



-40°C up to
+90°C



60MPa



Permissible surface speeds

Even at higher surface speeds, the coefficient of friction of iglidur® W300 plain bearings do not increase. In relation to other materials, therefore, somewhat higher surface speeds can be attained, for example, up to 1.5m/s rotating and up to 6m/s linear. The wear remains low when used for long periods at high speeds, due to exceptional wear resistance. Very high speeds can be attained with iglidur® W300 bearings on hardened shafts that are not too smooth.

Surface speed, page 48

Temperature

iglidur® W300 bearings retain their exceptional wear resistance even up to the highest permissible application temperatures and at the same time resist becoming brittle at low temperatures. For temperatures over +60°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the load. In contrast to other iglidur® materials, the coefficient of friction of iglidur® W300 remains consistently low at higher rotational speeds.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. Smooth shafts have the danger of stick slip. Squeaking as an effect of stick-slip is usually the result of shafts that are too smooth. Shaft finishes of $R_a = 0.4\text{--}0.5\mu\text{m}$ have proven best. For iglidur® W300, the wear resistance is still excellent with this surface finish as the friction adopts the minimum value. Diagram 06 shows results of testing different shafts. Hardened shafts are preferred for applications for higher loads. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 56

Installation tolerances

iglidur® W300 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	1.0	0.7	4.0
Short-term m/s	1.5	1.8	6.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.08-0.23	0.09	0.04	0.04

Table 04: Coefficient of friction against steel ($R_a = 1\mu\text{m}$, 50HRC)

$\varnothing d1$ [mm]	Housing			Plain bearings			Shaft		
	H7 [mm]	E10 [mm]		H7 [mm]	E10 [mm]		h9 [mm]		
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000			
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000			
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000			
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000			
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000			
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000			
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000			
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000			
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000			

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

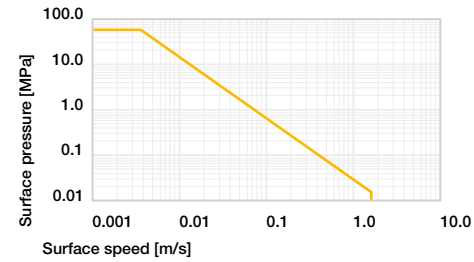


Diagram 01: Permissible pv values for iglidur® W300 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

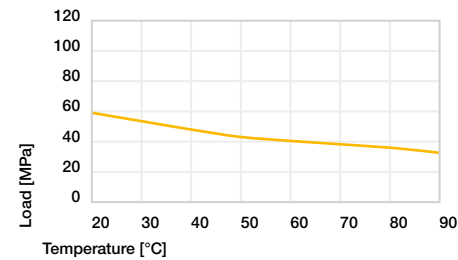


Diagram 02: Maximum recommended surface pressure as a function of temperature (60MPa at +20°C)

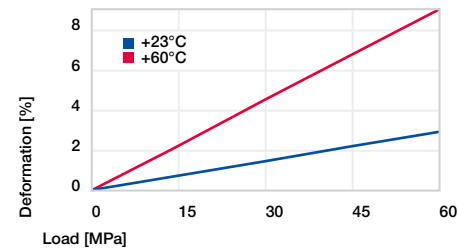


Diagram 03: Deformation under pressure and temperature

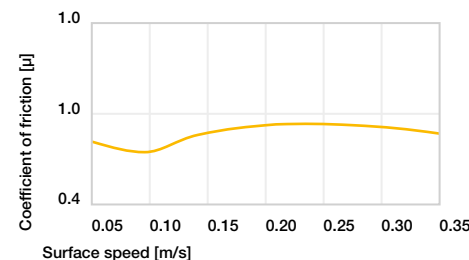


Diagram 04: Coefficient of friction as a function of the surface speed, $p = 0.75\text{MPa}$

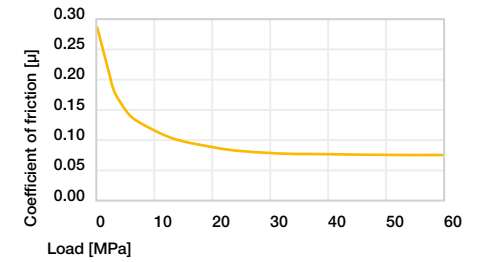


Diagram 05: Coefficient of friction as a function of the pressure, $v = 0.01\text{m/s}$

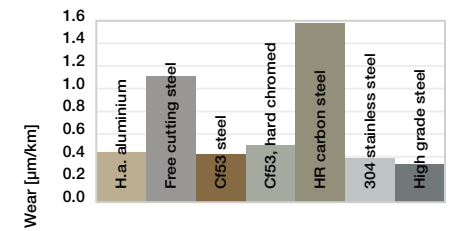


Diagram 06: Wear, rotating with different shaft materials, pressure, $p = 1\text{MPa}$, $v = 0.3\text{m/s}$

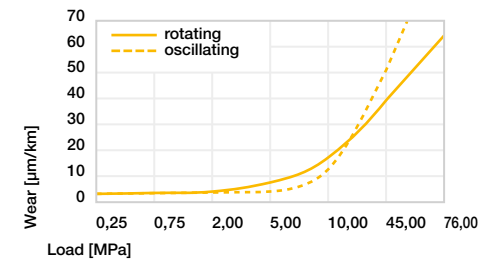
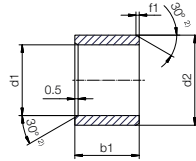


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions

Order example: WSM-0203-03 – no minimum order quantity.
W300 iglidur® material S Cylindrical M Metric 02 Inner Ø d1 03 Outer Ø d2 03 Total length b1

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.	d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]		[mm]		[mm]	[mm]	
2.0		3.5	3.0	WSM-0203-03	8.0		10.0	15.0	WSM-0810-15
2.5		4.0	1.8	WSM-0204-018	8.0		10.0	16.0	WSM-0810-16
2.5	+0.014	4.0	3.0	WSM-0204-03	8.0		10.0	20.0	WSM-0810-20
3.0	+0.054	4.5	3.0	WSM-0304-03	8.0		10.0	21.0	WSM-0810-21
3.0		4.5	5.0	WSM-0304-05	9.0		11.0	6.0	WSM-0911-06
3.0		4.5	6.0	WSM-0304-06	10.0		12.0	4.0	WSM-1012-04
4.0		5.5	4.0	WSM-0405-04	10.0	+0.025	12.0	6.0	WSM-1012-06
4.0		5.5	6.0	WSM-0405-06	10.0	+0.083	12.0	8.0	WSM-1012-08
4.0	+0.020	5.5	8.0	WSM-0405-08	10.0		12.0	9.0	WSM-1012-09
4.0	+0.068	5.5	10.0	WSM-0405-10	10.0		12.0	10.0	WSM-1012-10
5.0		7.0	5.0	WSM-0507-05	10.0		12.0	12.0	WSM-1012-12
5.0		7.0	8.0	WSM-0507-08	10.0		12.0	15.0	WSM-1012-15
5.0		7.0	10.0	WSM-0507-10	10.0		12.0	17.0	WSM-1012-17
6.0	+0.010	7.0	14.0	WSM-0607-14	10.0		12.0	20.0	WSM-1012-20
6.0	+0.058	7.0	14.0	WSM-0607-14	10.0		12.0	25.5	WSM-1012-25.5
6.0		8.0	6.0	WSM-0608-06	11.0		13.0	8.0	WSM-1113-08
6.0		8.0	8.0	WSM-0608-08	12.0		14.0	4.0	WSM-1214-04
6.0	+0.020	8.0	9.5	WSM-0608-09	12.0		14.0	5.0	WSM-1214-05
6.0	+0.068	8.0	10.0	WSM-0608-10	12.0		14.0	6.0	WSM-1214-06
6.0		8.0	11.8	WSM-0608-11	12.0		14.0	8.0	WSM-1214-08
6.0		8.0	13.8	WSM-0608-13	12.0		14.0	10.0	WSM-1214-10
7.0		9.0	9.0	WSM-0709-09	12.0	+0.032	14.0	12.0	WSM-1214-12
7.0		9.0	12.0	WSM-0709-12	12.0	+0.102	14.0	15.0	WSM-1214-15
7.0		9.0	12.5	WSM-0709-125	12.0		14.0	20.0	WSM-1214-20
8.0	+0.025	10.0	6.0	WSM-0810-06	12.0		14.0	25.0	WSM-1214-25
8.0	+0.083	10.0	8.0	WSM-0810-08	13.0		15.0	7.0	WSM-1315-07
8.0		10.0	10.0	WSM-0810-10	13.0		15.0	10.0	WSM-1315-10
8.0		10.0	12.0	WSM-0810-12	13.0		15.0	15.0	WSM-1315-15
8.0		10.0	13.8	WSM-0810-13	13.0		15.0	20.0	WSM-1315-20

³⁾ After press-fit. Testing methods, page 61

Product range

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.	d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]		[mm]		[mm]	[mm]	
14.0		16.0	7.2	WSM-1416-07	22.0		25.0	30.0	WSM-2225-30
14.0		16.0	10.0	WSM-1416-10	24.0		27.0	15.0	WSM-2427-15
14.0		16.0	15.0	WSM-1416-15	24.0		27.0	20.0	WSM-2427-20
14.0		16.0	20.0	WSM-1416-20	24.0		27.0	25.0	WSM-2427-25
14.0		16.0	25.0	WSM-1416-25	24.0		27.0	30.0	WSM-2427-30
14.0		16.0	33.0	WSM-1416-33	25.0		28.0	12.0	WSM-2528-12
15.0		17.0	10.0	WSM-1517-10	25.0		28.0	14.0	WSM-2528-14
15.0		17.0	15.0	WSM-1517-15	25.0		28.0	15.0	WSM-2528-15
15.0		17.0	20.0	WSM-1517-20	25.0		28.0	20.0	WSM-2528-20
15.0		17.0	25.0	WSM-1517-25	25.0		28.0	25.0	WSM-2528-25
16.0		18.0	7.0	WSM-1618-07	25.0		28.0	30.0	WSM-2528-30
16.0		18.0	8.0	WSM-1618-08	25.0		28.0	50.0	WSM-2528-50
16.0	+0.032	18.0	11.5	WSM-1618-11	26.0		30.0	16.0	WSM-2630-16
16.0	+0.102	18.0	12.0	WSM-1618-12	26.0		30.0	25.0	WSM-2630-25
16.0		18.0	15.0	WSM-1618-15	28.0	+0.040	30.0	10.0	WSM-2830-10
16.0		18.0	20.0	WSM-1618-20	28.0	+0.124	31.0	10.0	WSM-2831-10
16.0		18.0	25.0	WSM-1618-25	28.0		32.0	20.0	WSM-2832-20
16.0		18.0	30.0	WSM-1618-30	28.0		32.0	25.0	WSM-2832-25
16.0		18.0	35.0	WSM-1618-35	28.0		32.0	30.0	WSM-2832-30
16.0		18.0	45.0	WSM-1618-45	30.0		34.0	16.0	WSM-3034-16
18.0		20.0	12.0	WSM-1820-12	30.0		34.0	20.0	WSM-3034-20
18.0		20.0	15.0	WSM-1820-15	30.0		34.0	24.0	WSM-3034-24
18.0		20.0	20.0	WSM-1820-20	30.0		34.0	25.0	WSM-3034-25
18.0		20.0	25.0	WSM-1820-25	30.0		34.0	30.0	WSM-3034-30
18.0		20.0	33.0	WSM-1820-33	30.0		34.0	36.0	WSM-3034-36
18.0		20.0	35.0	WSM-1820-35	30.0		34.0	38.0	WSM-3034-38
19.0		22.0	28.0	WSM-1922-28	30.0		34.0	40.0	WSM-3034-40
20.0		22.0	11.5	WSM-2022-11	30.0		34.0	45.0	WSM-3034-45
20.0		22.0	12.0	WSM-2022-12	30.0		34.0	47.0	WSM-3034-47
20.0		22.0	15.0	WSM-2022-15	32.0		36.0	20.0	WSM-3236-20
20.0		22.0	20.0	WSM-2022-20	32.0		36.0	25.0	WSM-3236-25
20.0		22.0	30.0	WSM-2022-30	32.0		36.0	30.0	WSM-3236-30
20.0		23.0	8.0	WSM-2023-08	32.0		36.0	40.0	WSM-3236-40
20.0		23.0	10.0	WSM-2023-10	35.0		39.0	20.0	WSM-3539-20
20.0		23.0	12.0	WSM-2023-12	35.0		39.0	30.0	WSM-3539-30
20.0		23.0	15.0	WSM-2023-15	35.0		39.0	40.0	WSM-3539-40
20.0	+0.040	23.0	20.0	WSM-2023-20	35.0		39.0	50.0	WSM-3539-50
20.0	+0.124	23.0	23.0	WSM-2023-23	35.0		40.0	7.0	WSM-3540-07
20.0		23.0	25.0	WSM-2023-25	40.0	+0.050	44.0	20.0	WSM-4044-20
20.0		23.0	30.0	WSM-2023-30	40.0	+0.150	44.0	30.0	WSM-4044-30
22.0		24.0	15.0	WSM-2224-15	40.0		44.0	40.0	WSM-4044-40
22.0		24.0	20.0	WSM-2224-20	40.0		44.0	50.0	WSM-4044-50
22.0		24.0	30.0	WSM-2224-30	45.0		50.0	20.0	WSM-4550-20
22.0		24.0	35.0	WSM-2224-35	45.0		50.0	30.0	WSM-4550-30
22.0		24.0	45.0	WSM-2224-45	45.0		50.0	40.0	WSM-4550-40
22.0		25.0	15.0	WSM-2225-15	45.0		50.0	50.0	WSM-4550-50
22.0		25.0	20.0	WSM-2225-20	50.0		55.0	20.0	WSM-5055-20
22.0		25.0	25.0	WSM-2225-25	50.0		55.0	30.0	WSM-5055-30

³⁾ After press-fit. Testing methods, page 61

Bearing technology | Plain bearings | iglidur® W300

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]	[mm]	[mm]	[mm]	
50.0		55.0	40.0	WSM-5055-40
50.0	+0.050	55.0	50.0	WSM-5055-50
50.0	+0.150	55.0	55.0	WSM-5055-55
50.0		55.0	60.0	WSM-5055-60
55.0		60.0	40.0	WSM-5560-40
55.0	+0.060	60.0	60.0	WSM-5560-60
60.0	+0.180	65.0	30.0	WSM-6065-30
60.0		65.0	60.0	WSM-6065-60

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]	[mm]	[mm]	[mm]	
65.0		70.0	60.0	WSM-6570-60
70.0		75.0	60.0	WSM-7075-60
75.0	+0.060	80.0	100.0	WSM-7580-100
80.0	+0.180	85.0	20.0	WSM-8085-20
80.0		85.0	100.0	WSM-8085-100
90.0	+0.072	95.0	100.0	WSM-9095-100
100.0	+0.212	105.0	100.0	WSM-100105-100

³⁾ After press-fit. Testing methods, page 61



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/W300



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

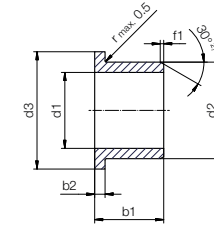
No low-quantity surcharges.

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Bearing technology | Plain bearings | iglidur® W300

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2



Dimensions according to ISO 3547-1 and special dimensions



Order example: **WFM-0204-03** – no minimum order quantity.

W300 iglidur® material **F** With flange **M** Metric **02** Inner Ø d1 **04** Outer Ø d2 **03** Total length b1

d1	d1 Tolerance ³⁾	d2	d3	b1 h13	b2 h13	Part No.
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
2.5		4.0	6.5	3.0	0.75	WFM-0204-03
3.0	+0.014	4.5	7.5	3.0	0.75	WFM-0304-03
3.0	+0.054	4.5	7.5	5.0	0.75	WFM-0304-05
4.0	+0.020	5.5	9.5	3.0	0.75	WFM-0405-03
4.0	+0.068	5.5	9.5	4.0	0.75	WFM-0405-04
4.0		5.5	9.5	6.0	0.75	WFM-0405-06
5.0	+0.010	6.0	10.0	8.0	0.50	WFM-0506-08
5.0	+0.040					
5.0		7.0	11.0	4.0	1.00	WFM-0507-04
5.0		7.0	11.0	5.0	1.00	WFM-0507-05
6.0	+0.020	8.0	12.0	4.0	1.00	WFM-0608-04
6.0	+0.068	8.0	12.0	6.0	1.00	WFM-0608-06
6.0		8.0	12.0	8.0	1.00	WFM-0608-08
6.0		8.0	12.0	10.0	1.00	WFM-0608-10
6.0		8.0	12.0	15.0	1.00	WFM-0608-15
7.0		9.0	15.0	10.0	1.00	WFM-0709-10
7.0		9.0	15.0	12.0	1.00	WFM-0709-12
8.0		10.0	15.0	2.7	1.00	WFM-0810-02
8.0		10.0	15.0	4.0	1.00	WFM-0810-04
8.0		10.0	15.0	5.0	1.00	WFM-081015-05
8.0	+0.025	10.0	15.0	5.5	1.00	WFM-0810-05
8.0	+0.083	10.0	15.0	7.5	1.00	WFM-0810-07
8.0		10.0	15.0	9.5	1.00	WFM-0810-09
8.0		10.0	15.0	10.0	1.00	WFM-0810-10
8.0		10.0	15.0	23.0	1.00	WFM-0810-23
8.0		10.0	15.0	30.0	1.00	WFM-0810-30
10.0		12.0	18.0	4.0	1.00	WFM-1012-04
10.0		12.0	18.0	5.0	1.00	WFM-1012-05

d1	d1 Tolerance ³⁾	d2	d3	b1 h13	b2 h13	Part No.
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
10.0		12.0	18.0	6.0	1.00	WFM-1012-06
10.0		12.0	18.0	7.0	1.00	WFM-1012-07
10.0		12.0	18.0	9.0	1.00	WFM-1012-09
10.0	+0.025	12.0	18.0	10.0	1.00	WFM-1012-10
10.0	+0.083	12.0	18.0	12.0	1.00	WFM-1012-12
10.0		12.0	18.0	15.0	1.00	WFM-1012-15
10.0		12.0	18.0	17.0	1.00	WFM-1012-17
12.0		14.0	20.0	4.0	1.00	WFM-1214-04
12.0		14.0	20.0	4.4	1.00	WFM-1214-044
12.0		14.0	20.0	6.0	1.00	WFM-1214-06
12.0		14.0	20.0	7.0	1.00	WFM-1214-07
12.0		14.0	20.0	9.0	1.00	WFM-1214-09
12.0		14.0	20.0	10.0	1.00	WFM-1214-10
12.0		14.0	20.0	11.0	1.00	WFM-1214-11
12.0		14.0	20.0	12.0	1.00	WFM-1214-12
12.0		14.0	20.0	15.0	1.00	WFM-1214-15
12.0		14.0	20.0	17.0	1.00	WFM-1214-17
12.0	+0.032	14.0	20.0	20.0	1.00	WFM-1214-20
13.0	+0.102	15.0	22.0	6.0	1.00	WFM-1315-06
14.0		16.0	22.0	4.0	1.00	WFM-1416-04
14.0		16.0	22.0	5.0	1.00	WFM-1416-05
14.0		16.0	22.0	8.0	1.00	WFM-1416-08
14.0		16.0	22.0	12.0	1.00	WFM-1416-12
14.0		16.0	22.0	17.0	1.00	WFM-1416-17
14.0		16.0	22.0	29.0	1.00	WFM-1416-29
15.0		17.0	23.0	9.0	1.00	WFM-1517-09
15.0		17.0	23.0	12.0	1.00	WFM-1517-12
15.0		17.0	23.0	17.0	1.00	WFM-1517-17

³⁾ After press-fit. Testing methods, page 61

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Bearing technology | Plain bearings | iglidur® W300

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
15.0		17.0	23.0	20.0	1.00	WFM-1517-20
16.0		18.0	24.0	9.0	1.00	WFM-1618-09
16.0		18.0	24.0	12.0	1.00	WFM-1618-12
16.0		18.0	24.0	17.0	1.00	WFM-1618-17
17.0	+0.032	19.0	25.0	12.0	1.00	WFM-1719-12
17.0	+0.102	19.0	25.0	18.0	1.00	WFM-1719-18
17.0		19.0	25.0	25.0	1.00	WFM-1719-25
18.0		20.0	26.0	6.0	1.00	WFM-1820-06
18.0		20.0	26.0	12.0	1.00	WFM-1820-12
18.0		20.0	26.0	17.0	1.00	WFM-1820-17
18.0		20.0	26.0	22.0	1.00	WFM-1820-22
20.0		23.0	30.0	8.0	1.50	WFM-2023-08
20.0		23.0	30.0	8.5	1.50	WFM-2023-085
20.0		23.0	30.0	11.5	1.50	WFM-2023-11
20.0		23.0	30.0	14.5	1.50	WFM-2023-14
20.0		23.0	30.0	16.5	1.50	WFM-2023-16
20.0		23.0	30.0	21.5	1.50	WFM-2023-21
24.0	+0.040	27.0	32.0	10.5	1.50	WFM-2427-10
25.0	+0.124	28.0	35.0	11.5	1.50	WFM-2528-11
25.0		28.0	31.0	13.5	1.50	WFM-252831-13
25.0		28.0	35.0	16.5	1.50	WFM-2528-16
25.0		28.0	35.0	21.5	1.50	WFM-2528-21
25.0		28.0	32.0	30.0	1.50	WFM-2528-30
28.0		30.0	35.0	36.0	1.00	WFM-2830-36
30.0		34.0	42.0	10.0	2.00	WFM-3034-10

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
30.0	+0.040	34.0	42.0	16.0	2.00	WFM-3034-16
30.0	+0.124	34.0	42.0	26.0	2.00	WFM-3034-26
30.0		34.0	42.0	37.0	2.00	WFM-3034-37
32.0		36.0	40.0	16.0	2.00	WFM-3236-16
32.0		36.0	40.0	26.0	2.00	WFM-3236-26
35.0		39.0	47.0	9.0	2.00	WFM-3539-09
35.0		39.0	47.0	16.0	2.00	WFM-3539-16
35.0		39.0	47.0	26.0	2.00	WFM-3539-26
35.0	+0.050	39.0	50.0	35.0	2.00	WFM-353950-35
38.0	+0.150	42.0	50.0	22.0	2.00	WFM-3842-22
40.0		44.0	52.0	30.0	2.00	WFM-4044-30
40.0		44.0	52.0	40.0	2.00	WFM-4044-40
45.0		50.0	58.0	50.0	2.00	WFM-4550-50
50.0		55.0	63.0	40.0	2.00	WFM-5055-40
50.0		55.0	63.0	50.0	2.00	WFM-5055-50
55.0		60.0	68.0	60.0	2.00	WFM-5560-60
57.0		62.0	67.0	40.0	2.00	WFM-5762-40
60.0	+0.060	65.0	73.0	60.0	2.00	WFM-6065-60
65.0	+0.180	70.0	78.0	60.0	2.00	WFM-6570-60
70.0		75.0	83.0	100.0	2.50	WFM-7075-100
75.0		80.0	88.0	100.0	2.50	WFM-7580-100
80.0		85.0	93.0	100.0	2.50	WFM-8085-100
90.0		95.0	103.0	100.0	2.50	WFM-9095-100
100.0	+0.072	105.0	113.0	100.0	2.50	WFM-100105-100
120.0	+0.212	125.0	133.0	100.0	2.50	WFM-120125-100

³⁾ After press-fit. Testing methods, page 61



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/W300



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling

1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

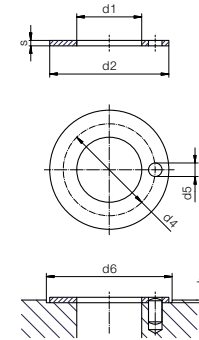
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Bearing technology | Plain bearings | iglidur® W300

Thrust washer (form T)



Dimensions according to ISO 3547-1 and special dimensions



Order example: **WTM-0509-006** – no minimum order quantity.

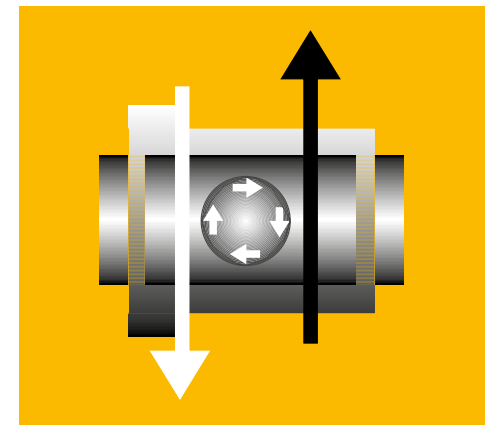
W300 iglidur® material **T** Thrust washer **M** Metric **05** Inner Ø **d1** **09** Outer Ø **d2** **006** Height **s**

d1	d2	d4	d5	h	d6	Øs	Part No.
+0.25	-0.25	-0.12	+0.375	+0.2/-0.2	+0.12	-0.05	
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
5	9.5	⁴⁾	⁴⁾	0.3	9.5	0.6	WTM-0509-006
6	20	13	1.5	1	20	1.5	WTM-0620-015
8	18	13	1.5	1	18	1.5	WTM-0818-015
10	18	⁴⁾	⁴⁾	0.7	18	1	WTM-1018-010
10	18	⁴⁾	⁴⁾	1	18	1.5	WTM-1018-015
12	24	18	1.5	1	24	1.5	WTM-1224-015
14	26	20	2	1	26	1.5	WTM-1426-015
15	24	19.5	1.5	1	24	1.5	WTM-1524-015
16	30	23	2	1	30	1.5	WTM-1630-015
18	32	25	2	1	32	1.5	WTM-1832-015
18	44	30	7	1	44	1.5	WTM-1844-015
20	36	28	3	1	36	1.5	WTM-2036-015
22	38	30	3	1	38	1.5	WTM-2238-015
24	42	33	3	1	42	1.5	WTM-2442-015
26	44	35	3	1	44	1.5	WTM-2644-015
28	40	38	4	1	48	1.5	WTM-2840-015
28	48	38	4	1	48	1.5	WTM-2848-015
32	54	43	4	1	54	1.5	WTM-3254-015
38	62	50	4	1	62	1.5	WTM-3862-015
42	66	54	4	1	66	1.5	WTM-4266-015
48	74	61	4	1.5	74	2	WTM-4874-020
52	78	65	4	1.5	78	2	WTM-5278-020
62	90	76	4	1.5	90	2	WTM-6290-020
82	110	⁴⁾	⁴⁾	1.5	110	2	WTM-82110-020
102	130	⁴⁾	⁴⁾	1.5	130	2	WTM-102130-020
120	150	⁴⁾	⁴⁾	1.5	150	2	WTM-120150-020

⁴⁾ Design without fixing hole

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The new endurance runner: specialist for pivoting applications and pulsating loads

Up to 10MPa, up to three times more
wear-resistant than iglidur® J

iglidur® J3



When to use it?

- When optimising wear resistance compared to iglidur® J
- When very low coefficient of friction in dry operation are required
- When high wear resistance at low loads is required
- When low moisture absorption is fundamental
- When good liquid media resistance is required



When not to use it?

- When a wear-resistant plain bearing for linear motion is required
iglidur® J
- When permanent temperatures exceed +90°C
iglidur® J260
- When radial surface pressure is higher than 45MPa
iglidur® W300

Bearing technology | Plain bearings | iglidur® J3



Ø
2.0-50.0mm



Also available as:



Bar stock, round bar
Page 743

The new endurance runner: specialist for pivoting applications and pulsating loads Up to 10MPa, up to three times more wear-resistant than iglidur® J

iglidur® J3 is a material with improved wear resistance at low to medium loads and high speed. The service life is up to 300% longer than iglidur® J - the proven top endurance runner material.

- Low coefficient of friction
- High media resistance
- Low moisture absorption
- PTFE-free
- Lubrication-free
- Maintenance-free



Bar stock, plate
Page 773



tribo-tape liner
Page 781

Typical application areas

- Automation
- Printing industry
- Beverage industry
- Glass industry
- Aerospace engineering



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

Descriptive technical specifications				
Wear resistance at +23°C	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>		+
Wear resistance at +90°C	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>		+
Wear resistance at +150°C	-	<div style="width: 10%; height: 10px; background-color: yellow;"></div>		+
Slide property	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>		+
Wear resistance under water	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>		+
Media resistance	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>		+
Resistant to edge pressures	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>		+
Resistant to shock and impact loads	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>		+
Dirt resistance	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>		+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

EN 06/2023



Technical data

General properties		Testing method	
Density	g/cm ³	1.42	
Colour		yellow	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.3	DIN 53495
Max. moisture absorption	% weight	1.3	
Coefficient of friction, dynamic, against steel	μ	0.06-0.20	
pv value, max. (dry)	MPa · m/s	0.50	
Mechanical properties			
Flexural modulus	MPa	2,700	DIN 53457
Flexural strength at +20°C	MPa	70	DIN 53452
Compressive strength	MPa	60	
Max. permissible surface pressure (+20°C)	MPa	45	
Shore D hardness		73	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+120	
Min. application temperature	°C	-50	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	13	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

Table 01: Material properties

With respect to its general mechanical and thermal specifications, iglidur® J3 is directly comparable to our classic, iglidur® J.

Moisture absorption

The moisture absorption of iglidur® J3 plain bearings in ambient conditions is approximately 0.3% weight. The saturation limit submerged in water is 1.3% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® J3 bearings.

Radiation resistance

They are resistant up to a radiation intensity of 1 · 10⁴ Gy.

Resistance to weathering

iglidur® J3 plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® J3 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® J3 at radial loads. At the recommended maximum surface pressure of 45MPa the deformation is less than 6% at room temperature. A possible deformation could be, among others, dependant on the duty cycle of the load.

Surface pressure, page 45



-50°C up to +90°C



45MPa



Permissible surface speeds

iglidur® J3 is also suitable for medium to high surface speeds. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

The temperatures prevailing in the bearing system also have an influence on the wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +90°C. For temperatures over +60°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. For iglidur® J3 a ground surface with an average surface finish $R_a = 0.1-0.3\mu\text{m}$ is recommended. Diagram 06 shows that iglidur® J3 can be combined with various shaft materials. Diagram 07 shows rotating and pivoting applications in comparison. With higher load, the wear increases more for rotating than for pivoting movements.

Shaft materials, page 56

Installation tolerances

iglidur® J3 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table). In relation to the installation tolerance, the inner diameter changes with the absorption of humidity.

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	+ up to 0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	1.5	1.1	8.0
Short-term m/s	3.0	2.1	10.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.06-0.20	0.09	0.04	0.04

Table 04: Coefficient of friction against steel ($R_a = 1\mu\text{m}$, 50HRC)

	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]		
0-3	+0.000 +0.010	+0.014 +0.054	-0.025 +0.000			
> 3-6	+0.000 +0.012	+0.020 +0.068	-0.030 +0.000			
> 6-10	+0.000 +0.015	+0.025 +0.083	-0.036 +0.000			
> 10-18	+0.000 +0.018	+0.032 +0.102	-0.043 +0.000			
> 18-30	+0.000 +0.021	+0.040 +0.124	-0.052 +0.000			
> 30-50	+0.000 +0.025	+0.050 +0.150	-0.062 +0.000			
> 50-80	+0.000 +0.030	+0.060 +0.180	-0.074 +0.000			
> 80-120	+0.000 +0.035	+0.072 +0.212	-0.087 +0.000			
> 120-180	+0.000 +0.040	+0.085 +0.245	-0.100 +0.000			

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

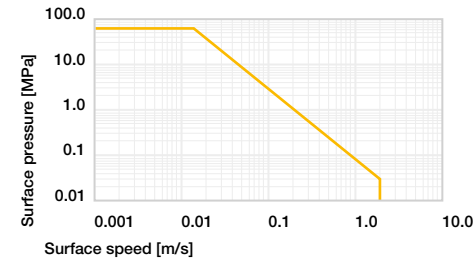


Diagram 01: Permissible pv values for iglidur® J3 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

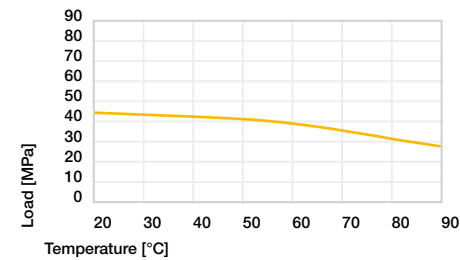


Diagram 02: Maximum recommended surface pressure as a function of temperature (45MPa at +20°C)

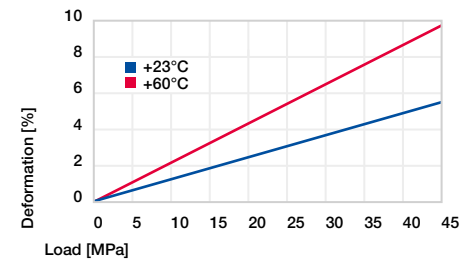


Diagram 03: Deformation under pressure and temperature

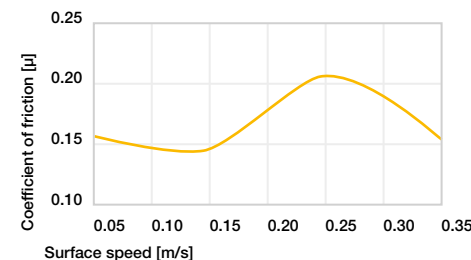


Diagram 04: Coefficient of friction as a function of the surface speed, $p = 0.75\text{MPa}$

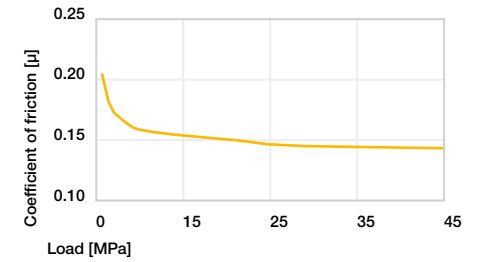


Diagram 05: Coefficient of friction as a function of the pressure, $v = 0.01\text{m/s}$

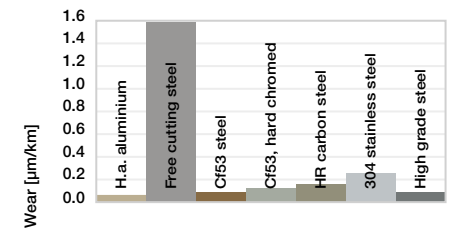


Diagram 06: Wear, rotating with different shaft materials, pressure, $p = 1\text{MPa}$, $v = 0.3\text{m/s}$

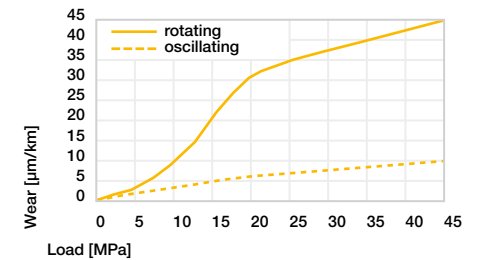
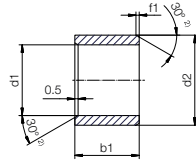


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® J3

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2



Dimensions according to ISO 3547-1 and special dimensions



Order example: **J3SM-0304-05** – no minimum order quantity.

J3 iglidur® material S Cylindrical M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
3.0	+0.014	4.5	5.0	J3SM-0304-05
	+0.054			
4.0		5.5	4.0	J3SM-0405-04
4.0		5.5	6.0	J3SM-0405-06
5.0	+0.020	7.0	5.0	J3SM-0507-05
5.0	+0.068	7.0	10.0	J3SM-0507-10
6.0		8.0	6.0	J3SM-0608-06
6.0		8.0	8.0	J3SM-0608-08
6.0		8.0	10.0	J3SM-0608-10
8.0		10.0	8.0	J3SM-0810-08
8.0		10.0	10.0	J3SM-0810-10
8.0		10.0	12.0	J3SM-0810-12
10.0	+0.025	12.0	8.0	J3SM-1012-08
10.0	+0.083	12.0	10.0	J3SM-1012-10
10.0		12.0	12.0	J3SM-1012-12
10.0		12.0	15.0	J3SM-1012-15
10.0		12.0	20.0	J3SM-1012-20
12.0		14.0	10.0	J3SM-1214-10
12.0		14.0	12.0	J3SM-1214-12
12.0		14.0	15.0	J3SM-1214-15
12.0		14.0	20.0	J3SM-1214-20
13.0		15.0	10.0	J3SM-1315-10
13.0	+0.032	15.0	20.0	J3SM-1315-20
14.0	+0.102	16.0	15.0	J3SM-1416-15
14.0		16.0	20.0	J3SM-1416-20
14.0		16.0	25.0	J3SM-1416-25
15.0		17.0	15.0	J3SM-1517-15
15.0		17.0	20.0	J3SM-1517-20
15.0		17.0	25.0	J3SM-1517-25

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
15.0		17.0	30.0	J3SM-1517-30
16.0		18.0	15.0	J3SM-1618-15
16.0		18.0	20.0	J3SM-1618-20
16.0	+0.032	18.0	25.0	J3SM-1618-25
18.0	+0.102	20.0	15.0	J3SM-1820-15
18.0		20.0	20.0	J3SM-1820-20
18.0		20.0	25.0	J3SM-1820-25
18.0		21.0	25.0	J3SM-1821-25
20.0		23.0	10.0	J3SM-2023-10
20.0		23.0	15.0	J3SM-2023-15
20.0		23.0	20.0	J3SM-2023-20
20.0		23.0	25.0	J3SM-2023-25
20.0		23.0	30.0	J3SM-2023-30
22.0		25.0	15.0	J3SM-2225-15
22.0		25.0	20.0	J3SM-2225-20
22.0		25.0	25.0	J3SM-2225-25
22.0		25.0	30.0	J3SM-2225-30
24.0		27.0	15.0	J3SM-2427-15
24.0	+0.040	27.0	20.0	J3SM-2427-20
24.0	+0.124	27.0	25.0	J3SM-2427-25
24.0		27.0	30.0	J3SM-2427-30
25.0		28.0	15.0	J3SM-2528-15
25.0		28.0	20.0	J3SM-2528-20
25.0		28.0	25.0	J3SM-2528-25
25.0		28.0	30.0	J3SM-2528-30
28.0		32.0	20.0	J3SM-2832-20
28.0		32.0	25.0	J3SM-2832-25
28.0		32.0	30.0	J3SM-2832-30
30.0		34.0	20.0	J3SM-3034-20

³⁾ After press-fit. *Testing methods, page 61*

Product range

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
30.0	+0.040	34.0	25.0	J3SM-3034-25
30.0	+0.124	34.0	30.0	J3SM-3034-30
30.0		34.0	40.0	J3SM-3034-40
32.0		36.0	20.0	J3SM-3236-20
32.0		36.0	30.0	J3SM-3236-30
32.0		36.0	40.0	J3SM-3236-40
35.0	+0.050	39.0	20.0	J3SM-3539-20
35.0	+0.150	39.0	30.0	J3SM-3539-30
35.0		39.0	40.0	J3SM-3539-40
35.0		39.0	50.0	J3SM-3539-50
40.0		44.0	20.0	J3SM-4044-20
40.0		44.0	30.0	J3SM-4044-30

³⁾ After press-fit. *Testing methods, page 61*

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
40.0		44.0	40.0	J3SM-4044-40
40.0		44.0	50.0	J3SM-4044-50
45.0		50.0	20.0	J3SM-4550-20
45.0		50.0	30.0	J3SM-4550-30
45.0	+0.050	50.0	40.0	J3SM-4550-40
45.0	+0.150	50.0	50.0	J3SM-4550-50
50.0		55.0	20.0	J3SM-5055-20
50.0		55.0	30.0	J3SM-5055-30
50.0		55.0	40.0	J3SM-5055-40
50.0		55.0	50.0	J3SM-5055-50
50.0		55.0	60.0	J3SM-5055-60



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/J3



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling

1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

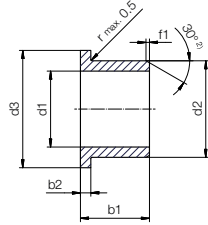
No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Bearing technology | Plain bearings | iglidur® J3

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions



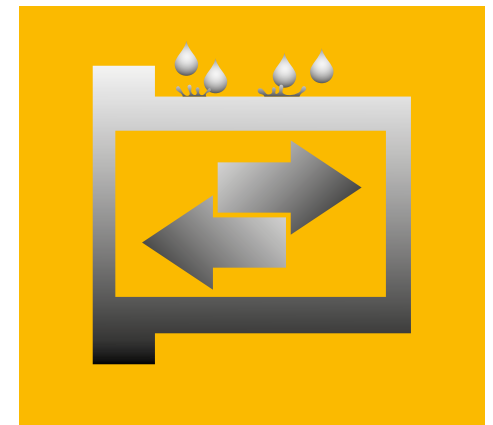
Order example: **J3FM-0304-05** – no minimum order quantity.

J3 iglidur® material F With flange M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
2.0	+0.014	3.5	5.0	5.0	0.75	J3FM-0203505-05
3.0	+0.054	4.5	7.5	5.0	0.75	J3FM-0304-05
5.0		7.0	11.0	5.0	1.00	J3FM-0507-05
6.0	+0.020	8.0	12.0	4.0	1.00	J3FM-0608-04
6.0	+0.068	8.0	12.0	6.0	1.00	J3FM-0608-06
6.0		8.0	12.0	8.0	1.00	J3FM-0608-08
8.0		10.0	15.0	5.5	1.00	J3FM-0810-05
8.0		10.0	15.0	7.5	1.00	J3FM-0810-07
8.0		10.0	15.0	9.5	1.00	J3FM-0810-09
8.0		10.0	15.0	10.0	1.00	J3FM-0810-10
10.0	+0.025	12.0	18.0	7.0	1.00	J3FM-1012-07
10.0	+0.083	12.0	18.0	9.0	1.00	J3FM-1012-09
10.0		12.0	18.0	10.0	1.00	J3FM-1012-10
10.0		12.0	18.0	12.0	1.00	J3FM-1012-12
10.0		12.0	18.0	17.0	1.00	J3FM-1012-17
12.0		14.0	20.0	7.0	1.00	J3FM-1214-07
12.0		14.0	20.0	9.0	1.00	J3FM-1214-09
12.0	+0.032	14.0	20.0	12.0	1.00	J3FM-1214-12
12.0	+0.102	14.0	20.0	17.0	1.00	J3FM-1214-17
14.0		16.0	22.0	12.0	1.00	J3FM-1416-12
14.0		16.0	22.0	17.0	1.00	J3FM-1416-17

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
15.0		17.0	23.0	9.0	1.00	J3FM-1517-09
15.0		17.0	23.0	12.0	1.00	J3FM-1517-12
15.0	+0.032	17.0	23.0	17.0	1.00	J3FM-1517-17
16.0	+0.102	18.0	24.0	12.0	1.00	J3FM-1618-12
16.0		18.0	24.0	17.0	1.00	J3FM-1618-17
18.0		20.0	26.0	12.0	1.00	J3FM-1820-12
18.0		20.0	26.0	17.0	1.00	J3FM-1820-17
18.0		20.0	26.0	22.0	1.00	J3FM-1820-22
18.0		21.0	25.0	12.0	1.00	J3FM-1821-12
20.0		23.0	30.0	11.5	1.50	J3FM-2023-11
20.0	+0.040	23.0	30.0	16.5	1.50	J3FM-2023-16
20.0	+0.124	23.0	30.0	21.5	1.50	J3FM-2023-21
25.0		28.0	35.0	11.5	1.50	J3FM-2528-11
25.0		28.0	35.0	16.5	1.50	J3FM-2528-16
25.0		28.0	35.0	21.5	1.50	J3FM-2528-21
30.0		34.0	42.0	16.0	2.00	J3FM-3034-16
30.0		34.0	42.0	26.0	2.00	J3FM-3034-26
35.0		39.0	47.0	16.0	2.00	J3FM-3539-16
35.0	+0.050	39.0	47.0	26.0	2.00	J3FM-3539-26
40.0	+0.150	44.0	52.0	30.0	2.00	J3FM-4044-30
40.0		44.0	52.0	40.0	2.00	J3FM-4044-40
45.0		50.0	58.0	50.0	2.00	J3FM-4550-50

³⁾ After press-fit. Testing methods, page 61



Proven long-life material in black Wear-resistant endurance runner up to 10MPa iglidur® J3B



When to use it?

- When optimising wear resistance compared to iglidur® J
- When low moisture absorption is fundamental
- When good liquid media resistance is required
- When high wear resistance at low loads is required
- When very low coefficient of friction in dry operation are required



When not to use it?

- When a wear-resistant plain bearing for linear motion is required
iglidur® J
- When permanent temperatures exceed +90°C
iglidur® J260
- When radial surface pressure is higher than 45MPa
iglidur® W300

Bearing technology | Plain bearings | iglidur® J3B



Ø
6.0-20.0mm



Also available as:



Bar stock, round bar
Page 743



Bar stock, plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

Proven long-life material in black Wear-resistant endurance runner up to 10MPa

The proven long-life material iglidur® J3 is now available in black as well. The endurance runner is a specialist for pivoting and pulsating loads and also media-resistant.

- Aesthetically suitable
- Low coefficient of friction
- Is especially long-lasting in the most varied of applications
- Low moisture absorption

Typical application areas

- Furniture industry
- Sports and leisure
- Two-wheel technology

Descriptive technical specifications

Wear resistance at +23°C	-		+
Wear resistance at +90°C	-		+
Wear resistance at +150°C	-		+
Slide property	-		+
Wear resistance under water	-		+
Media resistance	-		+
Resistant to edge pressures	-		+
Resistant to shock and impact loads	-		+
Dirt resistance	-		+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.42	
Colour		black	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.3	DIN 53495
Max. moisture absorption	% weight	1.3	
Coefficient of friction, dynamic, against steel	μ	0.08-0.17	
pv value, max. (dry)	MPa · m/s	0.50	
Mechanical properties			
Flexural modulus	MPa	2,895	DIN 53457
Flexural strength at +20°C	MPa	65	DIN 53452
Compressive strength	MPa	n.s.	
Max. permissible surface pressure (+20°C)	MPa	44	
Shore D hardness		76	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+110	
Min. application temperature	°C	-50	
Thermal conductivity	W/m · K	0.30	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	12.7	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

Table 01: Material properties

With respect to its general mechanical and thermal specifications, iglidur® J3B is directly comparable to our classic, iglidur® J.

Moisture absorption

The moisture absorption of iglidur® J3B plain bearings in ambient conditions is approximately 0.3% weight. The saturation limit submerged in water is 1.3% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® J3B bearings.

Radiation resistance

They are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

iglidur® J3B plain bearings have not yet been tested for their resistance to weathering. Please consult igus® if you're planning to use them outdoors.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® J3B plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® J3B at radial loads. At the recommended maximum surface pressure of 44MPa the deformation is less than 6% at room temperature. A possible deformation could be, among others, dependant on the duty cycle of the load.

Surface pressure, page 45



-50°C up to +90°C



44MPa



HB



RoHS



ISO 35474

Permissible surface speeds

iglidur® J3B is also suitable for medium to high surface speeds. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

The temperatures prevailing in the bearing system also have an influence on the wear. For temperatures over +60°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. For iglidur® J3B a ground surface with an average surface finish $R_a = 0.1-0.3\mu\text{m}$ is recommended. Diagram 06 shows results of testing different shafts. Diagram 07 shows rotating and pivoting applications in comparison. With higher load, the wear increases more for rotating than for pivoting movements.

Shaft materials, page 56

Installation tolerances

iglidur® J3B plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table). In relation to the installation tolerance, the inner diameter changes with the absorption of humidity.

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	+ up to 0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 1.5	1.1	8.0
Short-term	m/s 3.0	2.1	10.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.08-0.17	0.09	0.04	0.04

Table 04: Coefficient of friction against steel ($R_a = 1\mu\text{m}$, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

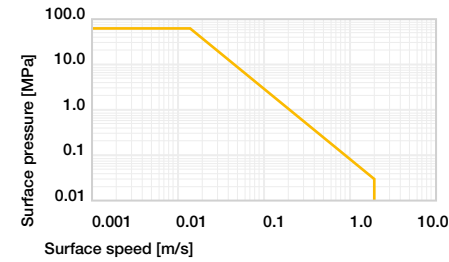


Diagram 01: Permissible pv values for iglidur® J3B plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

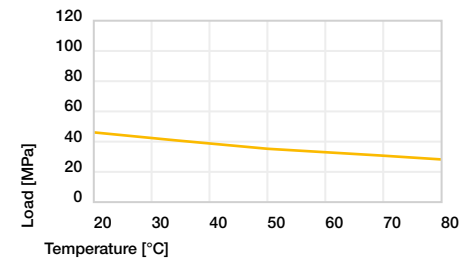


Diagram 02: Maximum recommended surface pressure as a function of temperature (44MPa at +20°C)

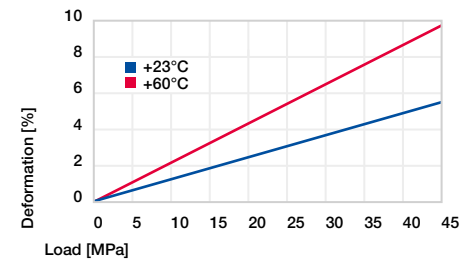


Diagram 03: Deformation under pressure and temperature

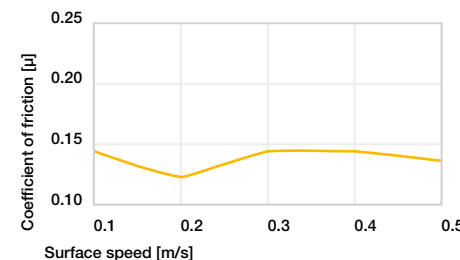


Diagram 04: Coefficient of friction as a function of the surface speed, $p = 0.75\text{MPa}$

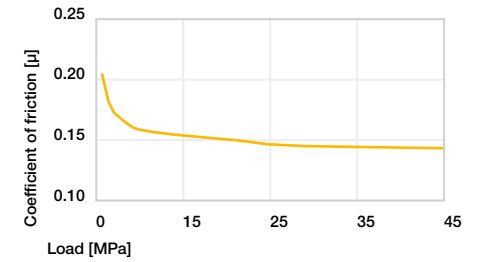


Diagram 05: Coefficient of friction as a function of the pressure, $v = 0.01\text{m/s}$

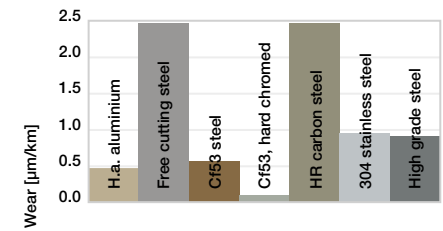


Diagram 06: Wear, rotating with different shaft materials, pressure, $p = 1\text{MPa}$, $v = 0.3\text{m/s}$

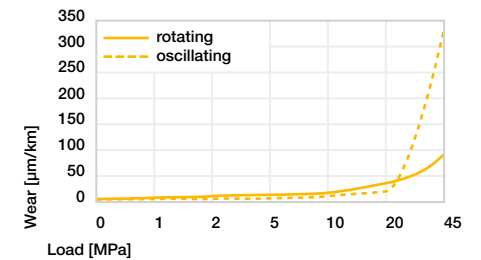
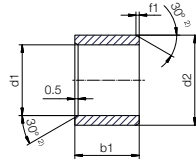


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® J3B

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8

i Order example: **J3BSM-0608-06** – no minimum order quantity.

J3B iglidur® material **S** Cylindrical **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **06** Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
6.0	+0.020 +0.068	8.0	6.0	J3BSM-0608-06
8.0	+0.025 +0.083	10.0	10.0	J3BSM-0810-10
10.0		12.0	10.0	J3BSM-1012-10
12.0	+0.032 +0.102	14.0	12.0	J3BSM-1214-12
16.0		18.0	15.0	J3BSM-1618-15
20.0	+0.040 +0.124	23.0	20.0	J3BSM-2023-20

³⁾ After press-fit. *Testing methods, page 61*

i Available from stock

Detailed information about delivery time online.

www.igus.eu/24

i Order online

including delivery times, prices, online tools

www.igus.eu/J3B

i Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

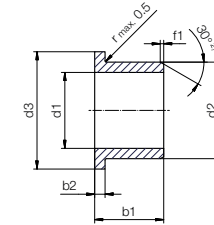
No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Bearing technology | Plain bearings | iglidur® J3B

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8

i Order example: **J3BFM-0608-06** – no minimum order quantity.

J3B iglidur® material **F** With flange **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **06** Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾ [mm]	h13 [mm]	h13 [mm]	
6.0	+0.020 +0.068	8.0	12.0	8.0	1.00	J3BFM-0608-06
8.0	+0.025 +0.083	10.0	15.0	9.5	1.00	J3BFM-0810-10
10.0		12.0	18.0	9.0	1.00	J3BFM-1012-10
12.0	+0.032 +0.102	14.0	20.0	12.0	1.00	J3BFM-1214-12
16.0		18.0	24.0	17.0	1.00	J3BFM-1618-17
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	J3BFM-2023-21

³⁾ After press-fit. *Testing methods, page 61*

i Available from stock

Detailed information about delivery time online.

www.igus.eu/24

i Order online

including delivery times, prices, online tools

www.igus.eu/J3B

i Ordering note

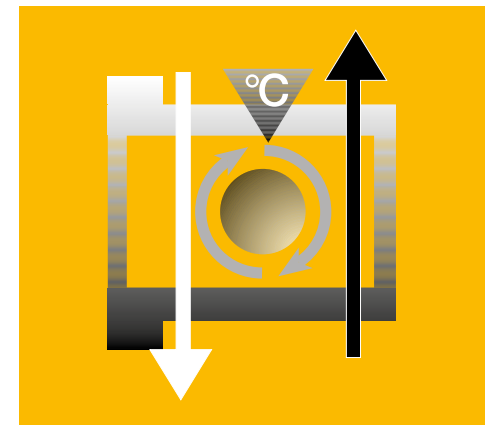
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10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.



Endurance runner with high dimensional stability at high temperatures

Can be used with many kinds of shafts and loads

igidur® J350



When to use it?

- When a wear-resistant bearing for rotational movement at medium and high loads is required
- When a cost-effective plain bearing for high temperatures is required
- When press-fit up to +150°C is necessary
- When the bearing is exposed to shock loading



When not to use it?

- When continuous operating temperatures are higher than +180°C
igidur® X
- When the lowest friction is required
igidur® J
- When a cost-effective plain bearing with low friction is required
igidur® D, iglidur® R
- For high rotational speeds
igidur® J

Bearing technology | Plain bearings | iglidur® J350



Ø
4.0-50.0mm



Also available as:



Bar stock, round bar
Page 743

Endurance runner with high dimensional stability at high temperatures Can be used with many kinds of shafts and loads

An outstanding plain bearing for rotating applications - and for a wide range of different shaft materials: with iglidur® J350 plain bearings, the service life can often be increased for applications between 2 and 50MPa. In addition, the high temperature resistance makes it a very versatile material.

- Recommended for steel shafts
- Continuous operating temperatures up to +180°C
- Suitable for medium and high loads
- Suitable for rotating applications
- Lubrication-free
- Maintenance-free



Bar stock, plate
Page 773



tribo-tape liner
Page 781

Typical application areas

- Automation
- Mechanical engineering
- Automotive
- Glass industry



Guide rings
Page 641

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>	+
Wear resistance at +90°C	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>	+
Wear resistance at +150°C	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>	+
Slide property	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>	+
Wear resistance under water	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>	+
Media resistance	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>	+
Resistant to edge pressures	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>	+
Dirt resistance	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>	+



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.44	
Colour		yellow	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.3	DIN 53495
Max. moisture absorption	% weight	1.6	
Coefficient of friction, dynamic, against steel	μ	0.10-0.20	
pv value, max. (dry)	MPa · m/s	0.45	
Mechanical properties			
Flexural modulus	MPa	2,000	DIN 53457
Flexural strength at +20°C	MPa	55	DIN 53452
Compressive strength	MPa	60	
Max. permissible surface pressure (+20°C)	MPa	60	
Shore D hardness		80	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+180	
Max. application temperature short-term	°C	+220	
Min. application temperature	°C	-100	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	7	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹³	DIN IEC 93
Surface resistance	Ω	> 10 ¹⁰	DIN 53482

Table 01: Material properties

iglidur® J350 blends universally good wear resistance, flexibility and temperature resistance into a very versatile iglidur® material with a broad application spectrum.

Moisture absorption

The moisture absorption of iglidur® J350 is low and can be ignored when using standard plain bearings. Even when saturated with water, iglidur® J350 does not absorb more than 1.6% weight of water (by weight).

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® J350 bearings.

Radiation resistance

Plain bearings made from iglidur® J350 are resistant up to a radiation intensity of 2 · 10² Gy.

Resistance to weathering

iglidur® J350 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® J350 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

iglidur® J350 plain bearings are adequate for medium and high loads. Diagram 03 shows the elastic deformation of iglidur® J350 at radial loads. It shows the material behaviour submitted to a short-term load. The ambient temperatures are only noticeable at 60MPa.

Surface pressure, page 45



-100 °C up to +180 °C



60MPa



Permissible surface speeds

iglidur® J350 plain bearings are suitable for low and medium speeds in rotating and oscillating applications. The wear rates, however, are much better in the case of rotating applications. Good bearing support for linear movements is also possible with iglidur® J350.

Surface speed, page 48

Temperature

The temperatures prevailing in the bearing system also have an influence on the wear. The wear-rate of iglidur® J350 bearings changes very little at high temperatures. In some cases, wear even decreases at +100°C. For temperatures over +140°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The coefficient of friction of iglidur® J350 in dry operation against steel is very good. They decrease significantly at higher surface speeds. This benefits the service life of the plain bearings in continuous operations with high surface speeds. Diagram 04 shows this inverse relationship. Especially with loads higher than 2MPa, the iglidur® J350 plain bearings are clearly superior to other bearings in rotating applications.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® J350. iglidur® J350 plain bearings can be combined with various shaft materials. One shaft - bearing combination stands out when looking at the wear results of the test: iglidur® J350 with soft 304 stainless steel. Not many bearing materials are suitable for use with this rather difficult soft stainless steel material (304 stainless steel) and achieve good wear results. Also, good properties are reached with hard-anodised aluminium shafts. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 56

Installation tolerances

iglidur® J350 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	+
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+ up to 0
Strong acids	+ up to 0
Strong alkalines	+

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	1.3	1.0	4.0
Short-term m/s	3.0	2.3	8.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.10-0.20	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	F10 [mm]	F10 [mm]	h9 [mm]		
0-3	+0.000	+0.010	+0.006	+0.046	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.010	+0.058	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.013	+0.071	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.016	+0.086	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.020	+0.104	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.025	+0.125	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.030	+0.150	-0.074	+0.000
> 80-120	+0.000	+0.035	-0.036	+0.176	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

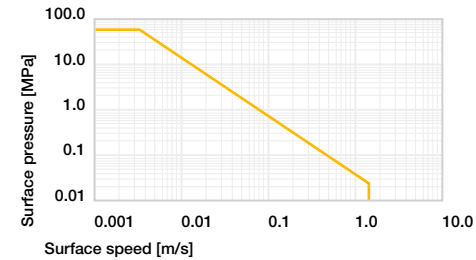


Diagram 01: Permissible pv values for iglidur® J350 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

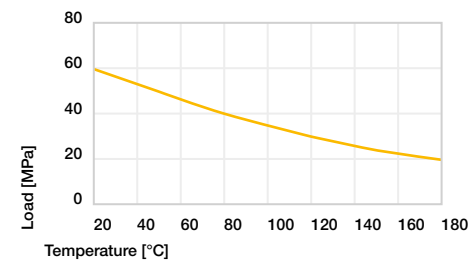


Diagram 02: Maximum recommended surface pressure as a function of temperature (60MPa at +20°C)

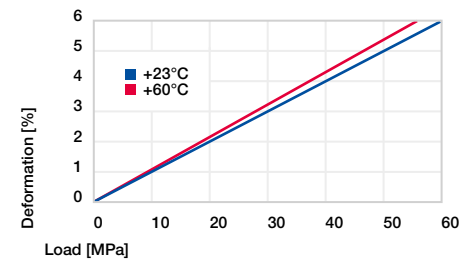


Diagram 03: Deformation under pressure and temperature

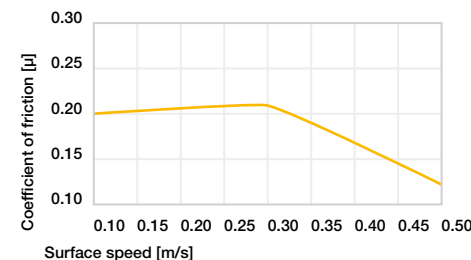


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

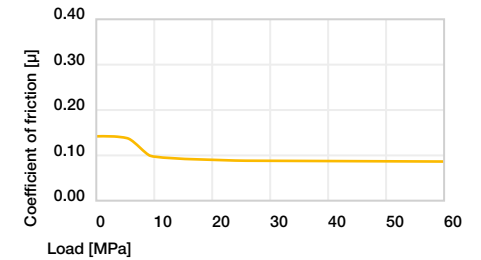


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

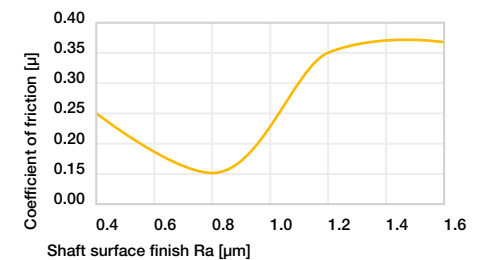


Diagram 06: Coefficient of friction as a function of the shaft surface (Cf53 shaft)

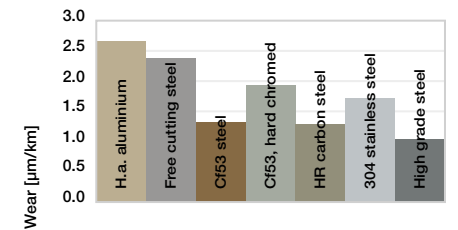
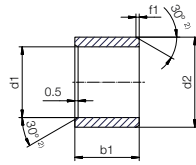


Diagram 07: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

Bearing technology | Plain bearings | iglidur® J350

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2



Dimensions according to ISO 3547-1 and special dimensions



Order example: **J350SM-0405-04** – no minimum order quantity.

J350 iglidur® material **S** Cylindrical **M** Metric **04** Inner Ø d1 **05** Outer Ø d2 **04** Total length b1

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
4.0		5.5	4.0	J350SM-0405-04
4.0		5.5	6.0	J350SM-0405-06
5.0	+0.010	7.0	5.0	J350SM-0507-05
5.0	+0.058	7.0	10.0	J350SM-0507-10
6.0		8.0	6.0	J350SM-0608-06
6.0		8.0	8.0	J350SM-0608-08
6.0		8.0	10.0	J350SM-0608-10
8.0		10.0	8.0	J350SM-0810-08
8.0		10.0	10.0	J350SM-0810-10
8.0		10.0	12.0	J350SM-0810-12
10.0	+0.013	12.0	8.0	J350SM-1012-08
10.0	+0.071	12.0	10.0	J350SM-1012-10
10.0		12.0	12.0	J350SM-1012-12
10.0		12.0	15.0	J350SM-1012-15
10.0		12.0	20.0	J350SM-1012-20
12.0		14.0	10.0	J350SM-1214-10
12.0		14.0	12.0	J350SM-1214-12
12.0		14.0	15.0	J350SM-1214-15
12.0		14.0	20.0	J350SM-1214-20
13.0		15.0	10.0	J350SM-1315-10
13.0		15.0	20.0	J350SM-1315-20
14.0	+0.016	16.0	15.0	J350SM-1416-15
14.0	+0.086	16.0	20.0	J350SM-1416-20
14.0		16.0	25.0	J350SM-1416-25
15.0		17.0	15.0	J350SM-1517-15
15.0		17.0	20.0	J350SM-1517-20
15.0		17.0	25.0	J350SM-1517-25
16.0		18.0	4.0	J350SM-1618-04
16.0		18.0	15.0	J350SM-1618-15

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
16.0		18.0	20.0	J350SM-1618-20
16.0		18.0	25.0	J350SM-1618-25
18.0	+0.016	20.0	15.0	J350SM-1820-15
18.0	+0.086	20.0	20.0	J350SM-1820-20
18.0		20.0	25.0	J350SM-1820-25
20.0		23.0	10.0	J350SM-2023-10
20.0		23.0	15.0	J350SM-2023-15
20.0		23.0	20.0	J350SM-2023-20
20.0		23.0	25.0	J350SM-2023-25
20.0		23.0	30.0	J350SM-2023-30
22.0		25.0	15.0	J350SM-2225-15
22.0		25.0	20.0	J350SM-2225-20
22.0		25.0	25.0	J350SM-2225-25
22.0		25.0	30.0	J350SM-2225-30
24.0		27.0	15.0	J350SM-2427-15
24.0		27.0	20.0	J350SM-2427-20
24.0	+0.020	27.0	25.0	J350SM-2427-25
24.0	+0.104	27.0	30.0	J350SM-2427-30
25.0		28.0	15.0	J350SM-2528-15
25.0		28.0	20.0	J350SM-2528-20
25.0		28.0	25.0	J350SM-2528-25
25.0		28.0	30.0	J350SM-2528-30
25.0		28.0	45.0	J350SM-2528-45
28.0		32.0	20.0	J350SM-2832-20
28.0		32.0	25.0	J350SM-2832-25
28.0		32.0	30.0	J350SM-2832-30
30.0		34.0	20.0	J350SM-3034-20
30.0		34.0	25.0	J350SM-3034-25
30.0		34.0	30.0	J350SM-3034-30

³⁾ After press-fit. Testing methods, page 61

Product range

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
30.0	+0.020 +0.104	34.0	40.0	J350SM-3034-40
32.0		36.0	20.0	J350SM-3236-20
32.0		36.0	30.0	J350SM-3236-30
32.0		36.0	40.0	J350SM-3236-40
35.0		39.0	20.0	J350SM-3539-20
35.0	+0.025 +0.125	39.0	30.0	J350SM-3539-30
35.0		39.0	40.0	J350SM-3539-40
35.0		39.0	50.0	J350SM-3539-50
40.0		44.0	20.0	J350SM-4044-20
40.0		44.0	30.0	J350SM-4044-30

³⁾ After press-fit. Testing methods, page 61

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
40.0		44.0	40.0	J350SM-4044-40
40.0		44.0	50.0	J350SM-4044-50
45.0		50.0	20.0	J350SM-4550-20
45.0		50.0	30.0	J350SM-4550-30
45.0		50.0	40.0	J350SM-4550-40
45.0	+0.025 +0.125	50.0	50.0	J350SM-4550-50
50.0		55.0	20.0	J350SM-5055-20
50.0		55.0	30.0	J350SM-5055-30
50.0		55.0	40.0	J350SM-5055-40
50.0		55.0	50.0	J350SM-5055-50
50.0		55.0	60.0	J350SM-5055-60



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/J350



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling

1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

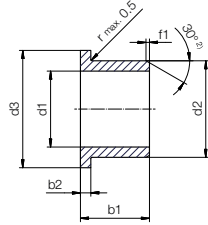
No minimum order value.

No low-quantity surcharges.

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Bearing technology | Plain bearings | iglidur® J350

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions



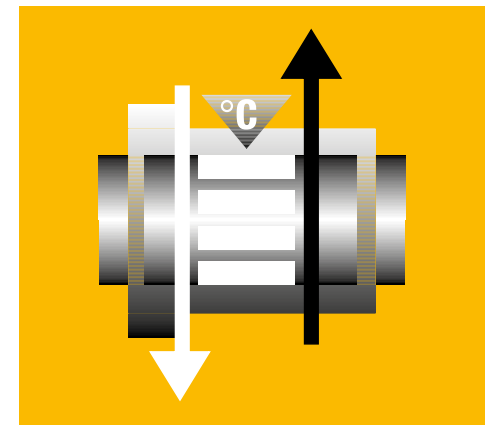
Order example: **J350FM-0608-04** – no minimum order quantity.

J350 iglidur® material **F** With flange **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **04** Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
6.0		8.0	12.0	4.0	1.00	J350FM-0608-04
6.0	+0.010	8.0	12.0	6.0	1.00	J350FM-0608-06
6.0	+0.058	8.0	12.0	8.0	1.00	J350FM-0608-08
8.0		10.0	15.0	5.5	1.00	J350FM-0810-05
8.0		10.0	15.0	7.5	1.00	J350FM-0810-07
8.0		10.0	15.0	9.5	1.00	J350FM-0810-09
8.0		10.0	15.0	10.0	1.00	J350FM-0810-10
10.0	+0.013	12.0	18.0	7.0	1.00	J350FM-1012-07
10.0	+0.071	12.0	18.0	9.0	1.00	J350FM-1012-09
10.0		12.0	18.0	10.0	1.00	J350FM-1012-10
10.0		12.0	18.0	12.0	1.00	J350FM-1012-12
10.0		12.0	18.0	17.0	1.00	J350FM-1012-17
12.0		14.0	20.0	7.0	1.00	J350FM-1214-07
12.0		14.0	20.0	9.0	1.00	J350FM-1214-09
12.0		14.0	20.0	12.0	1.00	J350FM-1214-12
12.0		14.0	20.0	17.0	1.00	J350FM-1214-17
14.0	+0.016	16.0	22.0	12.0	1.00	J350FM-1416-12
14.0	+0.086	16.0	22.0	17.0	1.00	J350FM-1416-17
15.0		17.0	23.0	9.0	1.00	J350FM-1517-09
15.0		17.0	23.0	12.0	1.00	J350FM-1517-12
15.0		17.0	23.0	17.0	1.00	J350FM-1517-17

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
16.0		18.0	24.0	12.0	1.00	J350FM-1618-12
16.0		18.0	24.0	17.0	1.00	J350FM-1618-17
18.0	+0.016	20.0	26.0	12.0	1.00	J350FM-1820-12
18.0	+0.086	20.0	26.0	17.0	1.00	J350FM-1820-17
18.0		20.0	26.0	22.0	1.00	J350FM-1820-22
20.0		23.0	30.0	11.5	1.50	J350FM-2023-11
20.0		23.0	30.0	16.5	1.50	J350FM-2023-16
20.0		23.0	30.0	21.5	1.50	J350FM-2023-21
25.0		28.0	35.0	11.5	1.50	J350FM-2528-11
25.0	+0.020	28.0	35.0	16.5	1.50	J350FM-2528-16
25.0	+0.104	28.0	35.0	21.5	1.50	J350FM-2528-21
30.0		34.0	42.0	16.0	2.00	J350FM-3034-16
30.0		34.0	42.0	22.0	2.00	J350FM-3034-22
30.0		34.0	42.0	26.0	2.00	J350FM-3034-26
30.0		34.0	42.0	37.0	2.00	J350FM-3034-37
35.0		39.0	47.0	16.0	2.00	J350FM-3539-16
35.0		39.0	47.0	26.0	2.00	J350FM-3539-26
40.0	+0.025	44.0	52.0	30.0	2.00	J350FM-4044-30
40.0	+0.125	44.0	52.0	40.0	2.00	J350FM-4044-40
45.0		50.0	58.0	50.0	2.00	J350FM-4550-50

³⁾ After press-fit. Testing methods, page 61



Ideal for plastic shafts

Wear-resistant at medium temperatures and loads

iglidur® J260



When to use it?

- When polymer shafts are used
- When the temperature rating of iglidur® J is not sufficient
- When a plain bearing with low coefficient of friction is required
- When high wear resistance is required at medium loads
- When good liquid media resistance is required



When not to use it?

- When high surface pressures occur
iglidur® Z
- When permanent temperatures exceed +120°C
iglidur® J350
- When universal wear resistance is required
iglidur® J

Bearing technology | Plain bearings | iglidur® J260



Ø
6.0-20.0mm



Also available
as:



Bar stock,
round bar
Page 743

Ideal for plastic shafts Wear-resistant at medium temperatures and loads

Time and again the iglidur® J260 material proves its worth where the maximum service life and best coefficient of friction are required under special application conditions - particularly in connection with plastic shafts!

- For low and medium loads
- High media resistance
- Slightly higher temperature rating than iglidur® J
- Long service life - even on polymer shafts and other special cases



Bar stock,
plate
Page 773

Typical application areas

- Automation
- Plant construction
- Test engineering and quality assurance
- Robotics industry
- Electronics industry



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole
flange
bearings
Page 667



Moulded
special parts
Page 696



igubal®
spherical balls
Page 993

Descriptive technical specifications				
Wear resistance at +23°C	-	■ ■ ■ ■ ■		+
Wear resistance at +90°C	-	■ ■ ■ ■ ■		+
Wear resistance at +150°C	-	■ ■ ■ ■ ■		+
Slide property	-	■ ■ ■ ■ ■		+
Wear resistance under water	-	■ ■ ■ ■ ■		+
Media resistance	-	■ ■ ■ ■ ■		+
Resistant to edge pressures	-	■ ■ ■ ■ ■		+
Resistant to shock and impact loads	-	■ ■ ■ ■ ■		+
Dirt resistance	-	■ ■ ■ ■ ■		+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm³	1.35	
Colour		yellow	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	0.4	
Coefficient of friction, dynamic, against steel	μ	0.06-0.20	
pv value, max. (dry)	MPa · m/s	0.35	
Mechanical properties			
Flexural modulus	MPa	2,200	DIN 53457
Flexural strength at +20°C	MPa	60	DIN 53452
Compressive strength	MPa	50	
Max. permissible surface pressure (+20°C)	MPa	40	
Shore D hardness		77	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+120	
Max. application temperature short-term	°C	+140	
Min. application temperature	°C	-100	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	13	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹⁰	DIN 53482

Table 01: Material properties

Similar to the classic, iglidur® J, iglidur® J260 is an endurance runner with outstanding wear behaviour, but provides increased reserves at its long-term application temperature of +120°C.

Moisture absorption

The moisture absorption of iglidur® J260 plain bearings in ambient conditions is approximately 0.2% weight. The saturation limit submerged in water is 0.4% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® J260 bearings.

Radiation resistance

They are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

igidur® J260 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® J260 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® J260 as a function of radial pressure. At the recommended maximum surface pressure of 40MPa the deformation is less than 2.5% at room temperature. A possible deformation could be, among others, dependant on the duty cycle of the load.

Surface pressure, page 45



-100°C up to
+120°C



40MPa



Permissible surface speeds

iglidur® J260 has been developed for low to medium surface speeds. The maximum values shown in table O3 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

The temperatures prevailing in the bearing system also have an influence on the wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +80°C. For temperatures over +80°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the load. The coefficient of friction decreases considerably with increasing loads, whereas a slight increase in surface speed causes an increase of the coefficient of friction (Diagram O4 and O5).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. For iglidur® J260 a ground surface with an average surface finish $R_a = 0.8\mu\text{m}$ is recommended. Diagram O6 shows a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® J260.

It is important to notice that with increasing loads, the recommended hardness of the shaft increases. The "soft" shafts tend to wear more easily and thus increase the wear of the overall system, if the loads exceed 2MPa. The comparison of rotating and pivoting movements in diagram O7 makes it very clear that iglidur® J260 plain bearings are most suited for rotating operation.

Shaft materials, page 56

Installation tolerances

iglidur® J260 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	-
Diluted alkalines	+ up to 0
Fuels	-
Greases, oils without additives	0 up to -
Hydrocarbons	+
Strong acids	-
Strong alkalines	+ up to 0

All data given at room temperature [+20°C]

Table O2: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	1.0	0.7	3.0
Short-term m/s	2.0	1.4	4.0

Table O3: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.06-0.20	0.09	0.04	0.04

Table O4: Coefficient of friction against steel ($R_a = 1\mu\text{m}$, 50HRC)

	Housing	Plain bearings		Shaft
$\varnothing d1$ [mm]	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.014	+0.054 -0.025 +0.000
> 3-6	+0.000	+0.012	+0.020	+0.068 -0.030 +0.000
> 6-10	+0.000	+0.015	+0.025	+0.083 -0.036 +0.000
> 10-18	+0.000	+0.018	+0.032	+0.102 -0.043 +0.000
> 18-30	+0.000	+0.021	+0.040	+0.124 -0.052 +0.000
> 30-50	+0.000	+0.025	+0.050	+0.150 -0.062 +0.000
> 50-80	+0.000	+0.030	+0.060	+0.180 -0.074 +0.000
> 80-120	+0.000	+0.035	+0.072	+0.212 -0.087 +0.000
> 120-180	+0.000	+0.040	+0.085	+0.245 -0.100 +0.000

Table O5: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

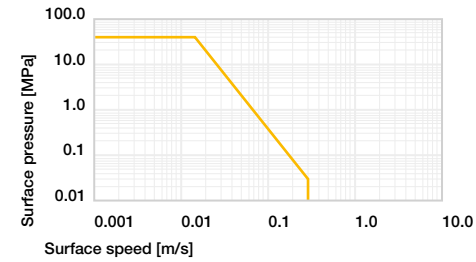


Diagram O1: Permissible pv values for iglidur® J260 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

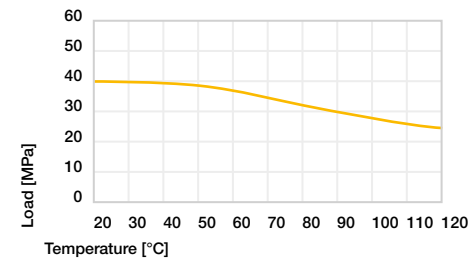


Diagram O2: Maximum recommended surface pressure as a function of temperature (40MPa at +20°C)

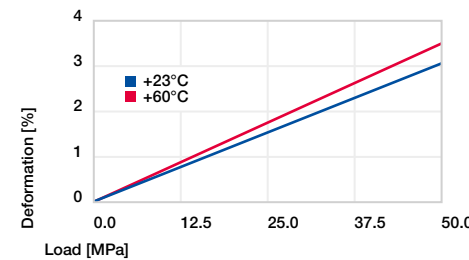


Diagram O3: Deformation under pressure and temperature

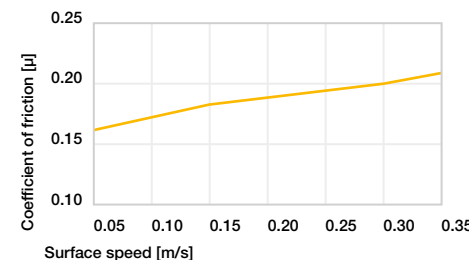


Diagram O4: Coefficient of friction as a function of the surface speed, $p = 0.75\text{MPa}$

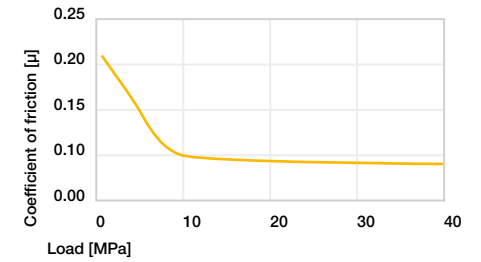


Diagram O5: Coefficient of friction as a function of the pressure, $v = 0.01\text{m/s}$

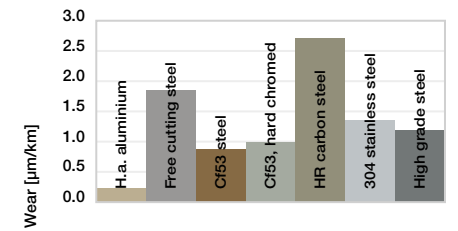


Diagram O6: Wear, rotating with different shaft materials, pressure, $p = 1\text{MPa}$, $v = 0.3\text{m/s}$

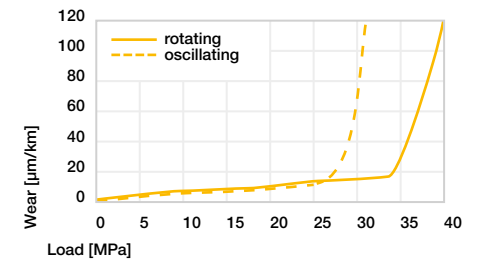
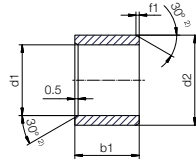


Diagram O7: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® J260

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8



Order example: J260SM-0608-06 – no minimum order quantity.

J260 iglidur® material **S** Cylindrical **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **06** Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
6.0	+0.020 +0.068	8.0	6.0	J260SM-0608-06
8.0		10.0	6.0	J260SM-0810-06
8.0	+0.025 +0.083	10.0	10.0	J260SM-0810-10
10.0		12.0	10.0	J260SM-1012-10
12.0		14.0	12.0	J260SM-1214-12
12.0		14.0	15.0	J260SM-1214-15
16.0		18.0	13.5	J260SM-1618-135
16.0	+0.032 +0.102	18.0	15.0	J260SM-1618-15
18.0		20.0	12.0	J260SM-1820-12
18.0		20.0	20.0	J260SM-1820-20
20.0	+0.040 +0.124	23.0	20.0	J260SM-2023-20

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/J260



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

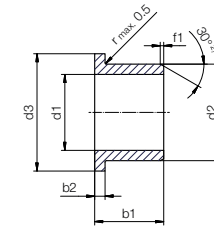
Free shipping within Germany for orders above €150.

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Bearing technology | Plain bearings | iglidur® J260

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8



Order example: J260FM-0608-06 – no minimum order quantity.

J260 iglidur® material **F** With flange **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **06** Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾ [mm]	h13 [mm]	h13 [mm]	
6.0	+0.020 +0.068	8.0	12.0	6.0	1.00	J260FM-0608-06
8.0		10.0	15.0	10.0	1.00	J260FM-0810-10
8.0	+0.025 +0.083	10.0	18.0	10.0	1.00	J260FM-1012-10
10.0		12.0	20.0	12.0	1.00	J260FM-1214-12
12.0		14.0	24.0	17.0	1.00	J260FM-1618-17
16.0	+0.032 +0.102	18.0	30.0	21.5	1.50	J260FM-2023-21
20.0	+0.040 +0.124	23.0				

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/J260



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

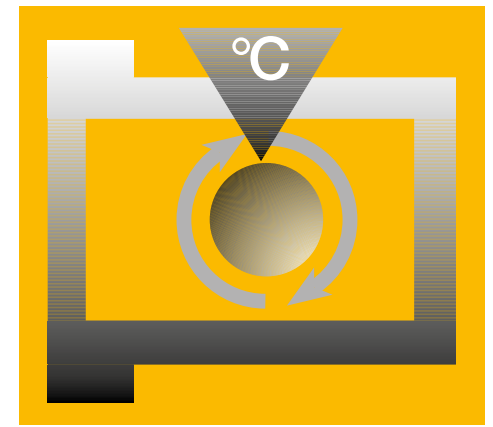
No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

EN 06/2023





Endurance runner up to +180°C

For applications that are clean and dry

igidur® W360



When to use it?

- When an extremely wear-resistant plain bearing is required for medium loads
- When a low coefficient of friction at higher temperatures is required
- When continuous operating temperatures are higher than +90°C



When not to use it?

- When a wear-resistant plain bearing is sought for the standard temperature range and low to medium loads

igidur® J

- When the maximum temperature resistance and high wear resistance is required

igidur® Z, iglidur® J350, iglidur® V400

- When the highest wear resistance under water is required

igidur® UW, iglidur® H370

Bearing technology | Plain bearings | iglidur® W360



Ø
6.0-20.0mm



Also available as:



Bar stock,
round bar
Page 743



Bar stock,
plate
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tribo-tape liner
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Guide rings
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Two hole
flange
bearings
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igubal®
spherical balls
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Endurance runner up to +180°C For applications that are clean and dry

The new iglidur® material combines outstanding endurance running properties with excellent temperature resistance, reduced moisture absorption and good value for money - a real all-rounder in the endurance field.

- High wear resistance
- Temperature-resistant up to +180°C
- Suitable for wet environments
- Good price-performance ratio
- Lubrication-free
- Maintenance-free

Typical application areas

- Material handling
- Automation
- Two-wheel technology
- Electromobility

Descriptive technical specifications

Wear resistance at +23°C	-		+
Wear resistance at +90°C	-		+
Wear resistance at +150°C	-		+
Slide property	-		+
Wear resistance under water	-		+
Media resistance	-		+
Resistant to edge pressures	-		+
Resistant to shock and impact loads	-		+
Dirt resistance	-		+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.34	
Colour		yellow	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	1.6	
Coefficient of friction, dynamic, against steel	μ	0.07-0.21	
pv value, max. (dry)	MPa · m/s	0.35	
Mechanical properties			
Flexural modulus	MPa	3,829	DIN 53457
Flexural strength at +20°C	MPa	119	DIN 53452
Compressive strength	MPa	75	
Max. permissible surface pressure (+20°C)	MPa	75	
Shore D hardness		80	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+180	
Max. application temperature short-term	°C	+200	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	6	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹³	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

Table 01: Material properties

Low moisture absorption and high temperature resistance result in an extremely broad range of uses for this extremely wear-resistant material.

Moisture absorption

The moisture absorption of iglidur® W360 is low and can be disregarded when used in a humid environment. With a full saturation of 1.6% weight, however, underwater use is only possible to a very restricted extent.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® W360 bearings.

Radiation resistance

Plain bearings made from iglidur® W360 are resistant up to a radiation intensity of 2 · 10² Gy.

Resistance to weathering

iglidur® W360 plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® W360 plain bearings decreases. Diagram 02 shows this inverse relationship. With the long-term permitted application temperature of +180°C, the permitted surface pressure still amounts to 10MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this. iglidur® W360 plain bearings are suitable for a broad range of loads. Diagram 03 shows the deformation under temperature. It shows the material behaviour submitted to a short-term load.

Surface pressure, page 45



-40°C up to
+180°C



75MPa



HB



RoHS



ISO
35474

Permissible surface speeds

iglidur® W360 plain bearings are suitable for low and medium speeds in rotating and oscillating applications. The wear rates, however, are much better in the case of rotating applications. Good bearing support for linear movements is also possible with iglidur® W360.

Surface speed, page 48

Temperature

The temperature resistance makes iglidur® W360 a very universal material for plain bearings in different industries. Application temperatures up to +200°C are permissible for short periods. For temperatures over +90°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The coefficient of friction of iglidur® W360 in dry operation against steel is very good. They constantly remain at a low level regardless of the speed. Diagram 04 shows this inverse relationship. As the load increases, the coefficient of friction decreases. The correlation is especially strong up to approximately 15MPa (diagram 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

In the case of W360, the shaft's surface finish has practically no effect on the coefficient of friction in the range of up to 1.6MPa (diagram 06). Diagram 07 shows results of testing different shafts. iglidur® W360 plain bearings are suitable for all sliding surfaces. During rotation with a load of 1MPa, all HC aluminium, Cf53 and stainless steel shafts stand out. A similar picture also exists with other loads or pivoting movements. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 56

Installation tolerances

iglidur® W360 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances.

Testing methods, page 61

Chemicals	Resistance
Alcohols	0 up to –
Diluted acids	0 up to –
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	0 up to –
Strong alkalines	+

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	1.2	0.9	3.0
Short-term m/s	2.7	2.0	5.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.07-0.21	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

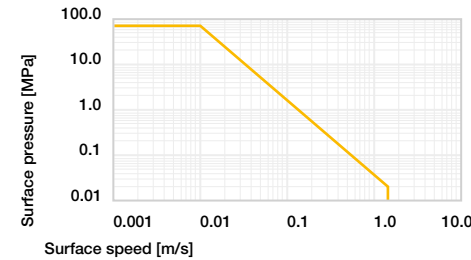


Diagram 01: Permissible pv values for iglidur® W360 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

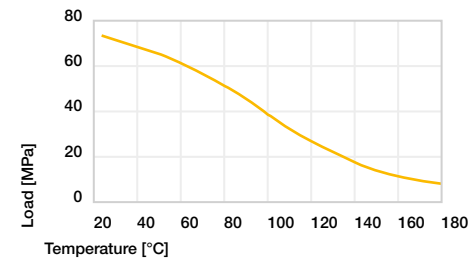


Diagram 02: Maximum recommended surface pressure as a function of temperature (75MPa at +20°C)

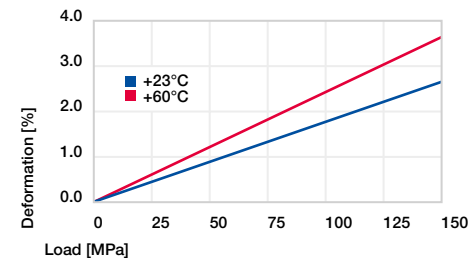


Diagram 03: Deformation under pressure and temperature

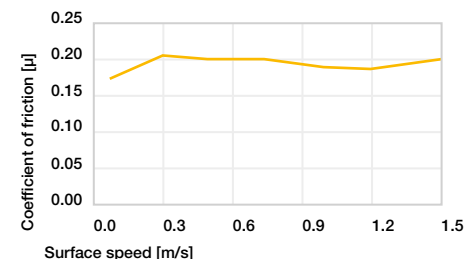


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

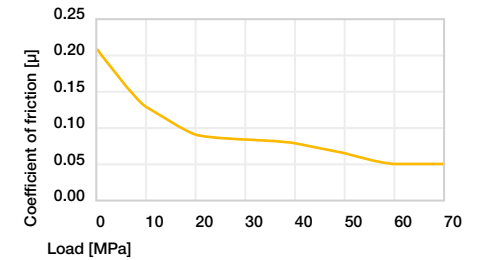


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

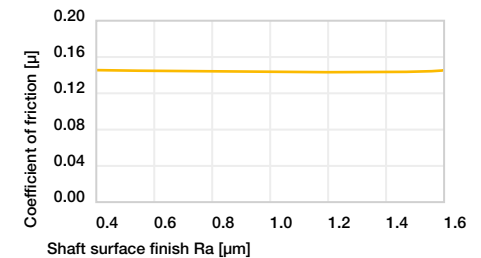


Diagram 06: Coefficient of friction as a function of the shaft surface (Cf53 shaft)

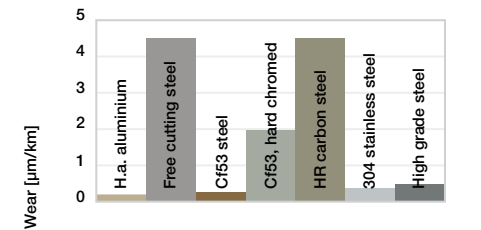
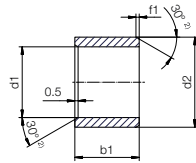


Diagram 07: Wear, rotating with different shaft materials, p = 1MPa, v = 0.3m/s

Bearing technology | Plain bearings | iglidur® W360

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8



Order example: W360SM-0608-06 – no minimum order quantity.

W360 iglidur® material **S** Cylindrical **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **06** Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
6.0	+0.020 +0.068	8.0	6.0	W360SM-0608-06
8.0	+0.025 +0.083	10.0	10.0	W360SM-0810-10
10.0		12.0	10.0	W360SM-1012-10
12.0	+0.032 +0.102	14.0	12.0	W360SM-1214-12
16.0		18.0	15.0	W360SM-1618-15
20.0	+0.040 +0.124	23.0	20.0	W360SM-2023-20

³⁾ After press-fit. *Testing methods, page 61*



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Order online

including delivery times, prices, online tools

www.igus.eu/W360



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

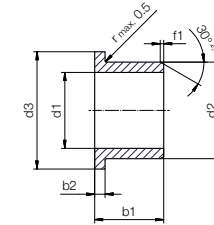
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EN 06/2023



Bearing technology | Plain bearings | iglidur® W360

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8



Order example: W360FM-0608-06 – no minimum order quantity.

W360 iglidur® material **F** With flange **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **06** Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾ [mm]	h13 [mm]	h13 [mm]	
6.0	+0.020 +0.068	8.0	12.0	6.0	1.00	W360FM-0608-06
8.0	+0.025 +0.083	10.0	15.0	10.0	1.00	W360FM-0810-10
10.0		12.0	18.0	10.0	1.00	W360FM-1012-10
12.0	+0.032 +0.102	14.0	20.0	12.0	1.00	W360FM-1214-12
16.0		18.0	24.0	17.0	1.00	W360FM-1618-17
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	W360FM-2023-21

³⁾ After press-fit. *Testing methods, page 61*



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including delivery times, prices, online tools

www.igus.eu/W360



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

EN 06/2023





For fast rotating applications

Low coefficient of friction under low load

iglidur® L250



When to use it?

- For rotating applications at high speed
- When the highest service life is required
- For low load applications
- When a low noise level is required
- For very low coefficient of friction



When not to use it?

- When high pressure occurs
iglidur® Q, iglidur® W300
- When continuous operating temperatures are higher than +90°C
iglidur® V400
- When low moisture absorption is required
iglidur® H1, iglidur® J

Bearing technology | Plain bearings | iglidur® L250



Ø
6.0-20.0mm



Also available as:



Bar stock, round bar
Page 743



Bar stock, plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

For fast rotating applications Low coefficient of friction under low load

Plain bearings for high speed rotation applications, especially for fans and motors.

- Suitable for high rotating speeds
- Low coefficient of friction
- Very wear-resistant
- Lubrication-free
- Maintenance-free

Typical application areas

- Automotive industry
- Electronics industry
- Mechatronics
- Optical industry
- Test engineering and quality assurance

Descriptive technical specifications				
Wear resistance at +23°C	-	■ ■ ■ ■ ■		+
Wear resistance at +90°C	-	■ ■ ■ ■ ■		+
Wear resistance at +150°C	-	■ ■ ■ ■ ■		+
Slide property	-	■ ■ ■ ■ ■		+
Wear resistance under water	-	■ ■ ■ ■ ■		+
Media resistance	-	■ ■ ■ ■ ■		+
Resistant to edge pressures	-	■ ■ ■ ■ ■		+
Resistant to shock and impact loads	-	■ ■ ■ ■ ■		+
Dirt resistance	-	■ ■ ■ ■ ■		+

Technical data

General properties		Testing method	
Density	g/cm ³	1.50	
Colour		beige	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.7	DIN 53495
Max. moisture absorption	% weight	3.9	
Coefficient of friction, dynamic, against steel	μ	0.08-0.19	
pv value, max. (dry)	MPa · m/s	0.40	
Mechanical properties			
Flexural modulus	MPa	1,950	DIN 53457
Flexural strength at +20°C	MPa	67	DIN 53452
Compressive strength	MPa	47	
Max. permissible surface pressure (+20°C)	MPa	45	
Shore D hardness		68	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+180	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	10	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹⁰	DIN IEC 93
Surface resistance	Ω	> 10 ¹¹	DIN 53482

Table 01: Material properties

iglidur® L250 is a bearing material for high rotation speeds and low coefficient of friction. The iglidur® L250 material can highlight these advantages particularly with low loads. Applications which feature these advantages are fans, small motors, fast-running sensors or the magnet technology.

Moisture absorption

With regard to applications where the smallest bearing clearances are concerned, please take the moisture absorption into consideration.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® L250 bearings.

Radiation resistance

Plain bearings made from iglidur® L250 are resistant up to a radiation intensity of 3 · 10⁴ Gy. Higher radiation weakens the material and may result in a significant decrease in mechanical properties.

Resistance to weathering

iglidur® L250 plain bearings have limited resistance to weathering. The material properties are affected. Discolouration occurs. Practical tests under real application conditions are recommended.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® L250 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® L250 under different loads. At the recommended maximum surface pressure of 45MPa the deformation is less than 3% at room temperature. A plastic deformation can be negligible up to this value. It is however also dependent on the duty cycle of the load.

Surface pressure, page 45



-40°C up to +90°C



45MPa



HB



Permissible surface speeds

iglidur® L250 has been developed especially for high surface speeds with low loads. Besides the physical limit, which is pre-set by the heating of the bearing, the coefficient of wear also acts limiting if rapidly high glide paths emerge at high peripheral speeds and the permitted wear limit is thus reached earlier. The maximum speeds are shown in table 03.

Surface speed, page 48

Temperature

iglidur® L250 plain bearings can be used at temperatures up to +180°C for short periods. Note that a mechanical securing of the bearing is recommended from temperatures of +55°C. Higher temperatures can also cause the plain bearing to lose its press-fit and move in the hole.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

In the best pairing (with 304 stainless steel shafts), coefficient of friction of 0.14μ is already reached with low loads. Coefficient of friction under 0.1 was measured already below 10MPa (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

As seen in diagram 06, many shafts are recommendable for low loads and low rotations. The low coefficient of friction is additionally retained over a wide range of recommendable shaft surfaces finish. For loads higher than 1MPa, particular attention should be paid to the shaft material used.

Shaft materials, page 56

Installation tolerances

iglidur® L250 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 1.0	0.7	2.0
Short-term	m/s 1.5	1.1	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.08-0.19	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

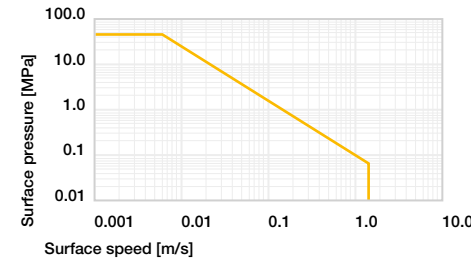


Diagram 01: Permissible pv values for iglidur® L250 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

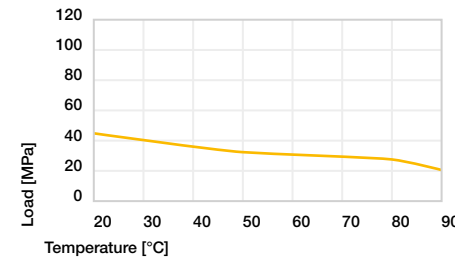


Diagram 02: Maximum recommended surface pressure as a function of temperature (45MPa at +20°C)

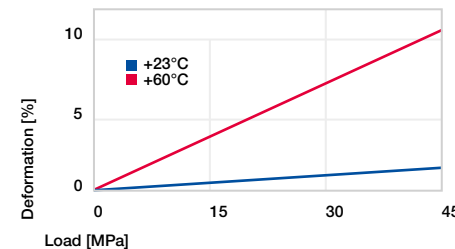


Diagram 03: Deformation under pressure and temperature

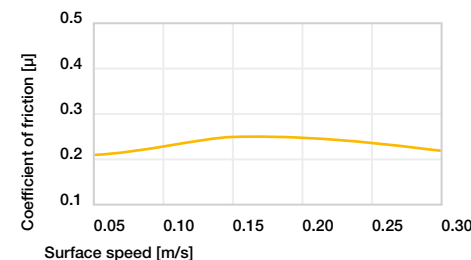


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

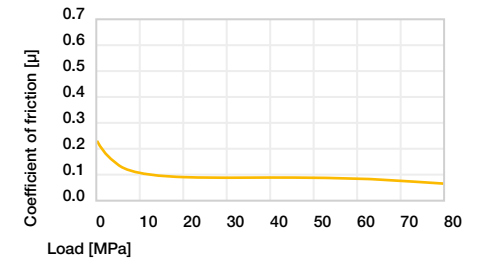


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

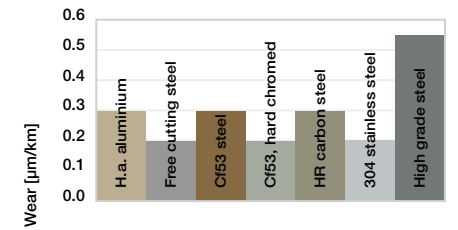


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

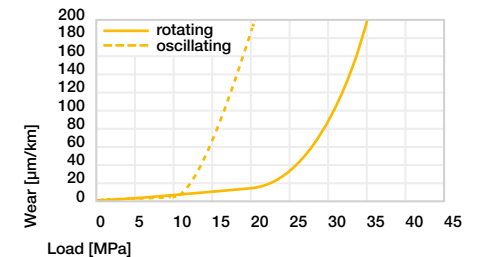
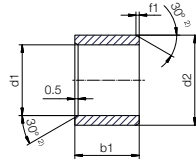


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® L250

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8



Order example: L250SM-0608-06 – no minimum order quantity.

L250 iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
6.0	+0.020 +0.068	8.0	6.0	L250SM-0608-06
8.0	+0.025 +0.083	10.0	10.0	L250SM-0810-10
10.0		12.0	10.0	L250SM-1012-10
12.0		14.0	12.0	L250SM-1214-12
16.0	+0.032 +0.102	18.0	15.0	L250SM-1618-15
20.0	+0.040 +0.124	23.0	20.0	L250SM-2023-20

³⁾ After press-fit. Testing methods, page 61



Available from stock

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Ordering note

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Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

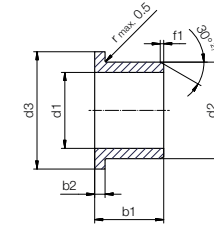
No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Bearing technology | Plain bearings | iglidur® L250

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8



Order example: 250FM-0608-06 – no minimum order quantity.

L250 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾ [mm]	h13 [mm]	h13 [mm]	
6.0	+0.020 +0.068	8.0	12.0	6.0	1.00	L250FM-0608-06
8.0	+0.025 +0.083	10.0	15.0	10.0	1.00	L250FM-0810-10
10.0		12.0	18.0	10.0	1.00	L250FM-1012-10
12.0		14.0	20.0	12.0	1.00	L250FM-1214-12
16.0	+0.032 +0.102	18.0	24.0	17.0	1.00	L250FM-1618-17
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	L250FM-2023-21

³⁾ After press-fit. Testing methods, page 61



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Ordering note

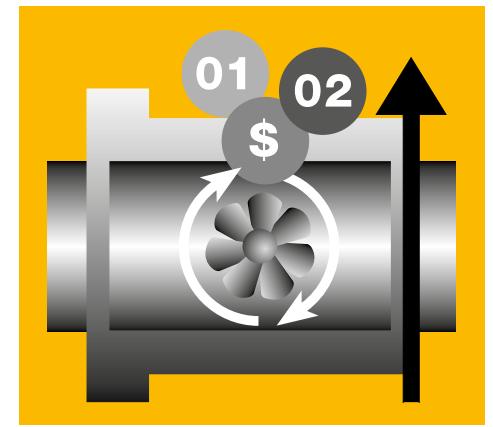
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Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.



For high rotational speeds

High performance at lower cost

iglidur® L350



When to use it?

- For rotating applications at high speed
- When the highest service life is required
- For high pv values with low loads
- At operating temperatures up to +180 °C (long-term, short-term up to max. +210°C)



When not to use it?

- When a universal bearing for high temperatures is required
iglidur® X
- When medium to high pressures occur
iglidur® G, iglidur® Q
- For oscillating applications
iglidur® W300, iglidur® J350

Bearing technology | Plain bearings | iglidur® L350



Ø
3.0-10.0mm



Also available as:



Bar stock, round bar
Page 743



Bar stock, plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

For high rotational speeds High performance at lower cost

iglidur® L350 is extremely long-lasting. Developed for the best coefficient of wear and friction at speeds of 1.5m/s and more, this material outperforms classic plain bearings in high-speed rotation operation.

- Up to 3.5m/s rotating
- Temperature-resistant up to +210°C in continuous use
- Low moisture absorption
- Good price-performance ratio
- Extremely wear-resistant
- Lubrication and maintenance-free
- Standard range from stock

Typical application areas

- Electric motors
- Fans
- Household appliances

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 100%; height: 10px; background-color: #ffc107;"></div>	+
Wear resistance at +90°C	-	<div style="width: 100%; height: 10px; background-color: #ffc107;"></div>	+
Wear resistance at +150°C	-	<div style="width: 100%; height: 10px; background-color: #ffc107;"></div>	+
Slide property	-	<div style="width: 100%; height: 10px; background-color: #ffc107;"></div>	+
Wear resistance under water	-	<div style="width: 100%; height: 10px; background-color: #ffc107;"></div>	+
Media resistance	-	<div style="width: 100%; height: 10px; background-color: #ffc107;"></div>	+
Resistant to edge pressures	-	<div style="width: 100%; height: 10px; background-color: #ffc107;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 100%; height: 10px; background-color: #ffc107;"></div>	+
Dirt resistance	-	<div style="width: 100%; height: 10px; background-color: #ffc107;"></div>	+

Technical data

General properties		Testing method	
Density	g/cm ³	1.54	
Colour		dark grey	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.4	DIN 53495
Max. moisture absorption	% weight	1.4	
Coefficient of friction, dynamic, against steel	μ	0.07-0.18	
pv value, max. (dry)	MPa · m/s	3.00	
Mechanical properties			
Flexural modulus	MPa	15,882	DIN 53457
Flexural strength at +20°C	MPa	210	DIN 53452
Compressive strength	MPa	210	
Max. permissible surface pressure (+20°C)	MPa	59	
Shore D hardness		80	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+180	
Max. application temperature short-term	°C	+210	
Min. application temperature	°C	-100	
Thermal conductivity	W/m · K	0.61	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	7	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ⁵	DIN IEC 93
Surface resistance	Ω	> 10 ⁵	DIN 53482

Table 01: Material properties

With iglidur® L350, another lubrication and maintenance-free material is now available, which is designed for continuous high speeds. Due to the low thermal expansion and low moisture absorption, bearings can be manufactured with very little clearance. iglidur® L350 is especially suitable for use in fans, blowers or electric motors – and the costs are also lower.

Moisture absorption

The very low moisture absorption of 0.4 %weight in standard climatic conditions and 1.4 %weight at maximum water absorption also enables continuous operation in high humidity or in liquid media.

Vacuum

In vacuum, the moisture content is released as vapour. Due to its low moisture absorption, use in a vacuum is possible.

Radiation resistance

Plain bearings made from iglidur® L350 are resistant up to a radiation intensity of $2 \cdot 10^2$ Gy. Higher radiation affects the material and may result in a significant decrease in mechanical properties.

Resistance to weathering

iglidur® L350 plain bearings have not yet been tested for their resistance to weathering. Please consult igus® if you're planning to use them outdoors.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® L350 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® L350 under different loads. At the recommended maximum surface pressure of 59MPa the deformation is less than 2.5% at room temperature. A plastic deformation can be negligible up to this value. It is however also dependent on the duty cycle of the load.

Surface pressure, page 45



-100°C up to +180°C



59MPa



V-0



Permissible surface speeds

iglidur® L350 has been developed especially for high surface speeds with low loads. Due to the high temperature resistance of iglidur® L350, the physical limit created from heating of the bearing has been increased significantly. In addition, the extremely low wear allows the high acceleration speeds to be reached and maintained. The maximum speeds are shown in table 03.

Surface speed, page 48

Temperature

The iglidur® L350 plain bearings can be used at temperatures up to +210°C for short periods. Note that a mechanical securing of the bearing is recommended from temperatures of +140°C. Higher temperatures can also cause the plain bearing to lose its press-fit and move in the hole.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The very low coefficient of friction remains, even at high speeds. Diagram 04 shows this relationship on a steel shaft at 0.75MPa surface pressure.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 05 compares the wear of a sintered bearing with that of bearings made of the materials iglidur® L500 and L350. At a surface speed of 1.5m/s or more, the wear of the sintered bearing increases exponentially whereas the wear of the iglidur® plain bearings almost remains the same up to a speed of more than 3m/s.

Shaft materials, page 56

Installation tolerances

iglidur® L350 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	+
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+ up to 0
Strong acids	+
Strong alkalines	+

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 3.0	1.5	4.0
Short-term	m/s 4.0	3.0	6.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.07-0.18	0.06	0.04	0.03

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	F10 [mm]	F10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.006	+0.046	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.010	+0.058	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.013	+0.071	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.016	+0.086	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.020	+0.104	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.025	+0.125	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.030	+0.150	-0.074	+0.000
> 80-120	+0.000	+0.035	-0.036	+0.176	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

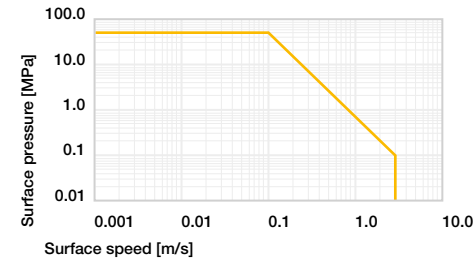


Diagram 01: Permissible pv values for iglidur® L350 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

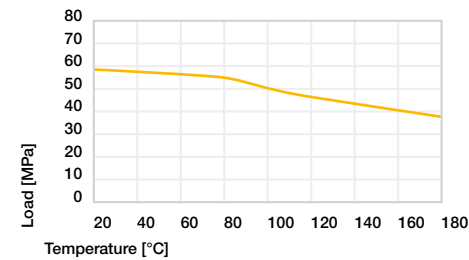


Diagram 02: Maximum recommended surface pressure as a function of temperature (59MPa at +20°C)

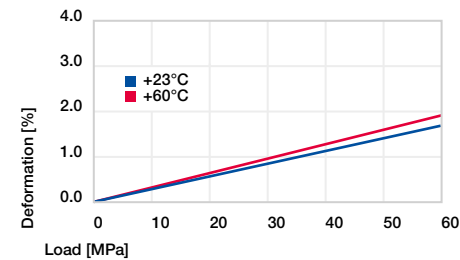


Diagram 03: Deformation under pressure and temperature

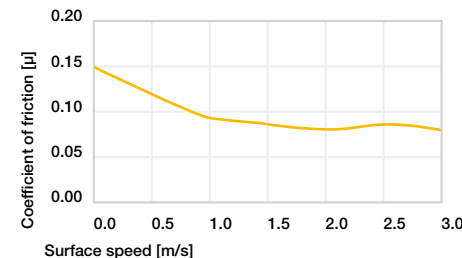


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

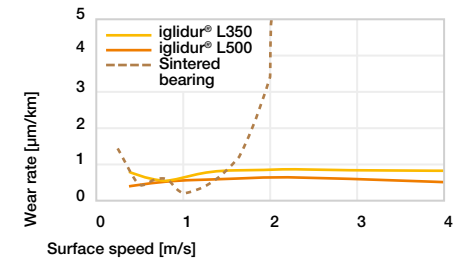


Diagram 05: Rotating wear against Cf53, p = 0.25MPa, T = +23°C

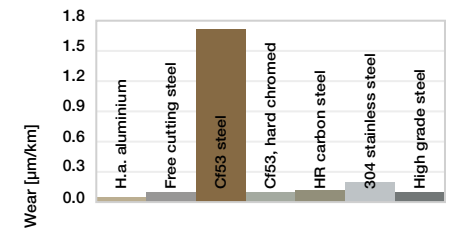


Diagram 06: Wear, rotating with different shaft materials, p = 1MPa, v = 0.3m/s

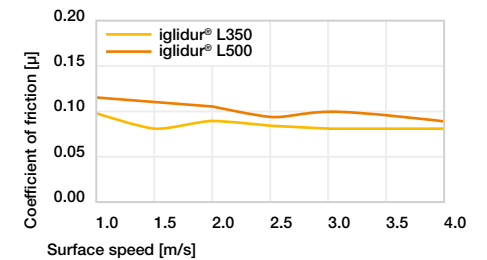
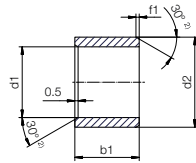


Diagram 07: Rotating coefficient of friction - "High speed" against Cf53, p = 1 MPa (except for iglidur® L250), T = +23°C

Bearing technology | Plain bearings | iglidur® L350

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12
f1 [mm]	0.3	0.5



Order example: L350SM-0304-03 – no minimum order quantity.

L350 iglidur® material S Cylindrical M Metric 03 Inner Ø d1 04 Outer Ø d2 03 Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
3.0	+0.006 +0.046	4.5	3.0	L350SM-0304-03
4.0		5.5	4.0	L350SM-0405-04
5.0	+0.010 +0.058	7.0	5.0	L350SM-0507-05
6.0		8.0	6.0	L350SM-0608-06
8.0	+0.013 +0.071	10.0	10.0	L350SM-0810-10
10.0		12.0	10.0	L350SM-1012-10

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

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Order online

including delivery times, prices, online tools

www.igus.eu/L350



Ordering note

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1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

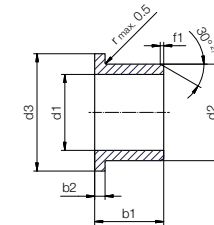
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Bearing technology | Plain bearings | iglidur® L350

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12
f1 [mm]	0.3	0.5



Order example: L350FM-0304-05 – no minimum order quantity.

L350 iglidur® material F With flange M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾ [mm]	h13 [mm]	h13 [mm]	
3.0	+0.006 +0.046	4.5	7.5	5.0	0.75	L350FM-0304-05
4.0		5.5	9.5	6.0	0.75	L350FM-0405-06
5.0	+0.010 +0.058	7.0	11.0	7.0	1.00	L350FM-0507-07
6.0		8.0	12.0	8.0	1.00	L350FM-0608-08
8.0	+0.013 +0.071	10.0	15.0	9.0	1.00	L350FM-0810-09
10.0		12.0	18.0	9.0	1.00	L350FM-1012-09

³⁾ After press-fit. *Testing methods, page 61*



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www.igus.eu/L350



Ordering note

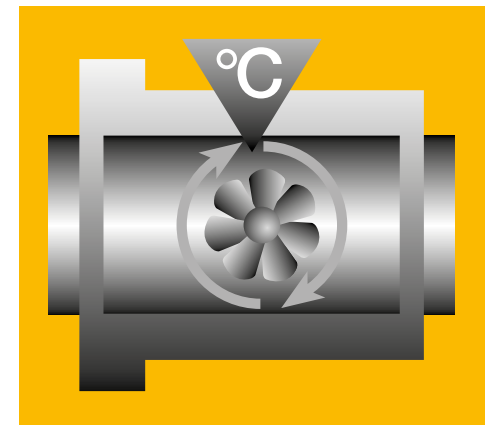
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.



For extreme rotational speeds Temperature-resistant and media-resistant **igidur® L500**



When to use it?

- For rotating applications at high speed
- When the highest service life is required
- For high pv values with low loads
- At continuous operating temperatures up to +250°C (short-term up to max. +350°C)



When not to use it?

- When a universal plain bearing for high temperatures is required
igidur® X
- When medium to high pressures occur
igidur® G, iglidur® Q
- For oscillating applications
igidur® W300, iglidur® J350

Bearing technology | Plain bearings | iglidur® L500



Ø
3.0-10.0mm



Also available as:



Bar stock, round bar
Page 743



Bar stock, plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

For extreme rotational speeds Temperature-resistant and media-resistant

Specially developed for fast continuous operation under low loads, iglidur® L500, inter alia, is intended for fan and electric motor applications.

- Temperature-resistant up to +250°C
- For rotational movements with surface speeds up to 5m/s
- Very wear-resistant
- Low moisture absorption
- Low thermal expansion
- Lubrication-free
- Maintenance-free

Typical application areas

- Cooling fans
- Electric motors
- Fans, etc.

Descriptive technical specifications

Wear resistance at +23°C	-		+
Wear resistance at +90°C	-		+
Wear resistance at +150°C	-		+
Slide property	-		+
Wear resistance under water	-		+
Media resistance	-		+
Resistant to edge pressures	-		+
Resistant to shock and impact loads	-		+
Dirt resistance	-		+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.53	
Colour		black	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.3	
Coefficient of friction, dynamic, against steel	μ	0.08-0.15	
pv value, max. (dry)	MPa · m/s	4.00	
Mechanical properties			
Flexural modulus	MPa	12,015	DIN 53457
Flexural strength at +20°C	MPa	201	DIN 53452
Compressive strength	MPa	70	
Max. permissible surface pressure (+20°C)	MPa	70	
Shore D hardness		81	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+250	
Max. application temperature short-term	°C	+315	
Min. application temperature	°C	-100	
Thermal conductivity	W/m · K	0.45	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	6	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹⁰	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

Table 01: Material properties

iglidur® L500 is a plain bearing material for high speeds and fast sliding movements with low loads. Due to the low thermal expansion and low moisture absorption, bearings can be manufactured with very little clearance. Applications which feature these advantages are fans, small motors, fast-running sensors or the magnet technology.

Moisture absorption

The very low moisture absorption of 0.1% weight in standard climatic conditions and 1.4% weight at maximum water absorption also enables continuous operation in high humidity or in liquid media.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance

Plain bearings made from iglidur® L500 are resistant up to a radiation intensity of 3 · 10² Gy. Higher radiation weakens the material and may result in a significant decrease in mechanical properties.

Resistance to weathering

iglidur® L500 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® L500 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® L500 under different loads. At the recommended maximum surface pressure of 70MPa the deformation is less than 2.5% at room temperature. A plastic deformation can be negligible up to this value. It is however also dependent on the duty cycle of the load.

Surface pressure, page 45



-100°C up to +250°C



70MPa



Permissible surface speeds

iglidur® L500 has been developed especially for high surface speeds with low loads. Due to the high temperature resistance of iglidur® L500, the physical limit created from heating of the bearing has been increased significantly. In addition, the extremely low wear allows the high acceleration speeds to be reached and maintained. The maximum speeds are shown in table 03.

Surface speed, page 48

Temperature

iglidur® L250 plain bearings can be used at temperatures up to +315°C for short periods. For temperatures over +135°C an additional securing is required. Higher temperatures can also cause the plain bearing to lose its press-fit and move in the hole.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The excellent coefficient of friction level of iglidur® L500 in dry operation decreases considerably with speed. Diagram 04 shows this with respect to a steel shaft. As the load increases, the coefficient of friction decreases, especially in the range up to 20MPa (diagram 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 07 shows the result of a comparison test between iglidur® L500 and a sintered bearing. The wear of the sintered bearing increases exponentially above 1.5m/s, while the iglidur® L500 plain bearing retains a near constant wear rate up to and above 4m/s.

Shaft materials, page 56

Installation tolerances

iglidur® L500 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	+
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	+
Strong alkalines	+

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 4.0	1.5	5.0
Short-term	m/s 5.0	3.0	8.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.08-0.15	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	F10 [mm]	F10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.006	+0.046	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.010	+0.058	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.013	+0.071	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.016	+0.086	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.020	+0.104	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.025	+0.125	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.030	+0.150	-0.074	+0.000
> 80-120	+0.000	+0.035	-0.036	+0.176	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

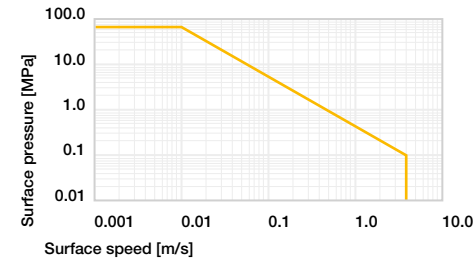


Diagram 01: Permissible pv values for iglidur® L500 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

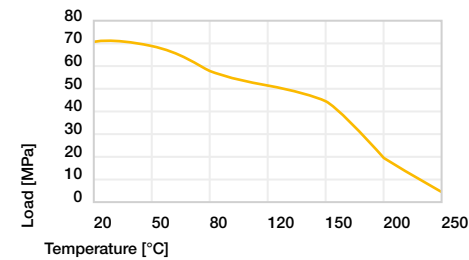


Diagram 02: Maximum recommended surface pressure as a function of temperature (70MPa at +20°C)

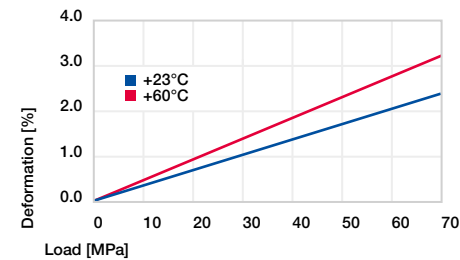


Diagram 03: Deformation under pressure and temperature

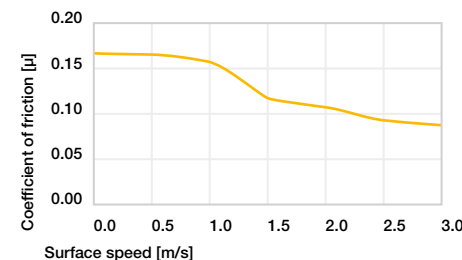


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

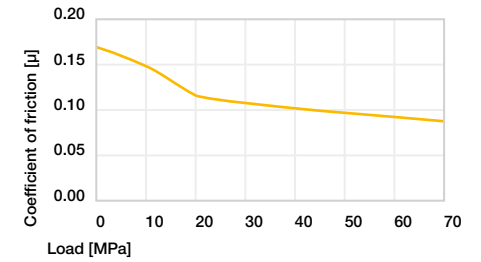


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

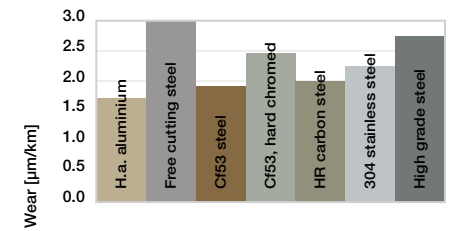


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

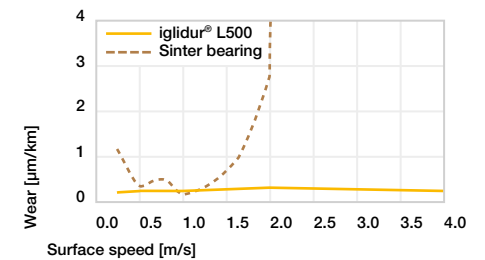
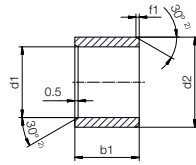


Diagram 07: Rotating wear against Cf53, p = 0.25MPa, T = +23°C

Bearing technology | Plain bearings | iglidur® L500

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12
f1 [mm]	0.3	0.5



Order example: L500SM-0304-03 – no minimum order quantity.

L500 iglidur® material S Cylindrical M Metric 03 Inner Ø d1 04 Outer Ø d2 03 Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
3.0	+0.006 +0.046	4.5	3.0	L500SM-0304-03
4.0		5.5	4.0	L500SM-0405-04
5.0	+0.010 +0.058	7.0	5.0	L500SM-0507-05
6.0		8.0	6.0	L500SM-0608-06
8.0	+0.013 +0.071	10.0	10.0	L500SM-0810-10
10.0		12.0	10.0	L500SM-1012-10

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

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Ordering note

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1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

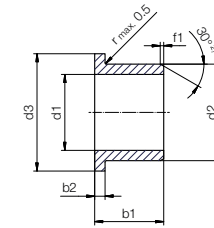
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EN 06/2023

Bearing technology | Plain bearings | iglidur® L500

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12
f1 [mm]	0.3	0.5



Order example: L500FM-0304-05 – no minimum order quantity.

L500 iglidur® material F With flange M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾ [mm]	h13 [mm]	h13 [mm]	
3.0	+0.006 +0.046	4.5	7.5	5.0	0.75	L500FM-0304-05
4.0		5.0	9.5	4.0	0.75	L500FM-0405-04
5.0	+0.010 +0.058	7.0	11.0	7.0	1.00	L500FM-0507-07
6.0		8.0	12.0	8.0	1.00	L500FM-0608-08
8.0	+0.013 +0.071	10.0	15.0	9.5	1.00	L500FM-0810-09
10.0		12.0	18.0	9.5	1.00	L500FM-1012-09

³⁾ After press-fit. *Testing methods, page 61*



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Ordering note

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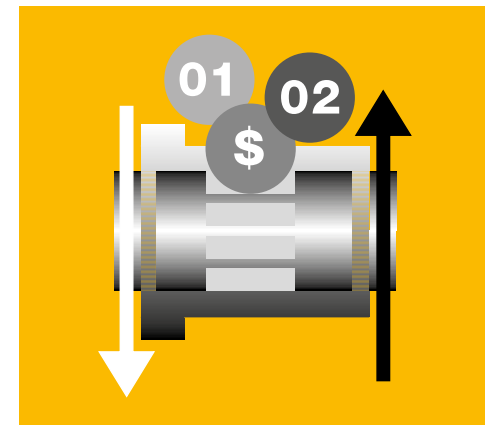
Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

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Low-cost Abrasion-resistant igidur® R



When to use it?

- When high wear resistance at low loads is required
- When a cost-effective plain bearing is required
- When very low coefficient of friction in dry operation are required
- When high edge loads occur
- When you are looking for low water absorption
- When PTFE and silicone are not allowed in your application



When not to use it?

- When high pressure occurs
igidur® G
- When continuous operating temperatures are higher than +90°C
igidur® G, iglidur® P
- When the best wear resistance is required
igidur® J

Bearing technology | Plain bearings | iglidur® R



Ø
2.0-35.0mm



Also available as:



Bar stock, round bar
Page 743

Low-cost Abrasion-resistant

Low-cost material with low coefficient of friction and good wear resistance at low to medium loads.

- High wear resistance
- Low coefficient of friction
- Cost-effective
- Low moisture absorption
- Lubrication-free
- Maintenance-free



Bar stock, plate
Page 773

Typical application areas

- Sports and leisure
- Model making
- Furniture industry
- Mechatronics



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 846

Descriptive technical specifications

Wear resistance at +23°C	-	■ ■ ■ ■ ■	+
Wear resistance at +90°C	-	■ ■ ■ ■ ■	+
Wear resistance at +150°C	-	■ ■ ■ ■ ■	+
Slide property	-	■ ■ ■ ■ ■	+
Wear resistance under water	-	■ ■ ■ ■ ■	+
Media resistance	-	■ ■ ■ ■ ■	+
Resistant to edge pressures	-	■ ■ ■ ■ ■	+
Resistant to shock and impact loads	-	■ ■ ■ ■ ■	+
Dirt resistance	-	■ ■ ■ ■ ■	+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.39	
Colour		dark red	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	1.1	
Coefficient of friction, dynamic, against steel	μ	0.09-0.25	
pv value, max. (dry)	MPa · m/s	0.27	
Mechanical properties			
Flexural modulus	MPa	1,950	DIN 53457
Flexural strength at +20°C	MPa	70	DIN 53452
Compressive strength	MPa	68	
Max. permissible surface pressure (+20°C)	MPa	23	
Shore D hardness		77	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+110	
Min. application temperature	°C	-50	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	11	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

Table 01: Material properties

The development of the iglidur® R as a bearing material focused on high performance and very low cost. Especially in the dry operation, low coefficient of friction and wear were to be achieved. Plain bearings made from iglidur® R are supported by a combination of solid lubricants. The PTFE and silicon-free material achieves extremely low coefficient of friction in dry operation and runs largely free of stick-slip effects.

Moisture absorption

The moisture absorption of iglidur® R plain bearings in ambient conditions is approximately 0.2% weight. The saturation limit submerged in water is 1.1% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® R are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

iglidur® R plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® R plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® R at radial loads. At the maximum recommended surface pressure of 23MPa the deformation is about 4% at room temperature. A plastic deformation can be negligible up to this value. However, it is also dependent on the service time.

Surface pressure, page 45



-50°C up to +90°C



23MPa



Permissible surface speeds

iglidur® R plain bearings are suitable for high surface speeds. Speeds of up to 5.0m/s are permitted in linear motions. The maximum values shown in table 03 can only be achieved at low pressures. The specified values show the speed at which due to friction an increase in temperature up to the long-term permitted value can occur.

Surface speed, page 48

Temperature

With increasing temperatures, the compressive strength of iglidur® R plain bearings decreases. Diagram 02 shows this inverse relationship. The temperatures prevailing in the bearing system also have an influence on the wear. For temperatures over +50°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagram 04 and 05). iglidur® R is especially suitable for applications in which high pv values are induced mainly through the high surface speed rather than surface pressure. Less distinct is the dependency of the coefficient of friction of the iglidur® R plain bearings on the shaft surface.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® R. At 0.3m/s and 1MPa, the high grade steel and Cf53 shafts are the best materials. With increasing loads the iglidur® R bearings feature the best wear behaviour with Cf53 and 304 stainless steel shafts. In pivoting applications, the hard-chromed shaft proves to be the ideal mating surface. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 56

Installation tolerances

iglidur® R plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	+ up to 0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	0.8	0.6	3.5
Short-term m/s	1.2	1.0	5.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.09-0.25	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

\varnothing d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]		
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

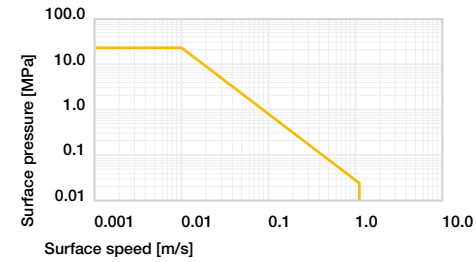


Diagram 01: Permissible pv values for iglidur® R plain bearing with a wall thickness of 1 mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

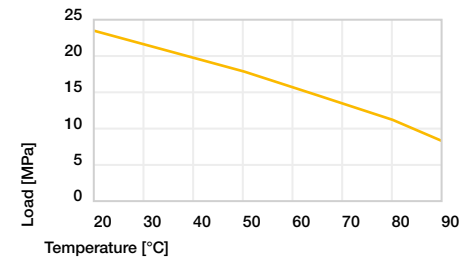


Diagram 02: Maximum recommended surface pressure as a function of temperature (23MPa at +20°C)

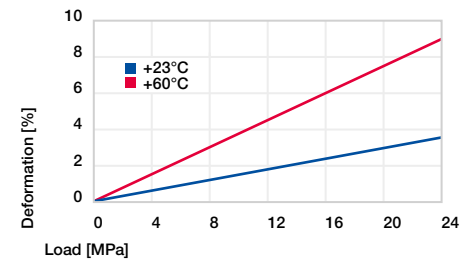


Diagram 03: Deformation under pressure and temperature

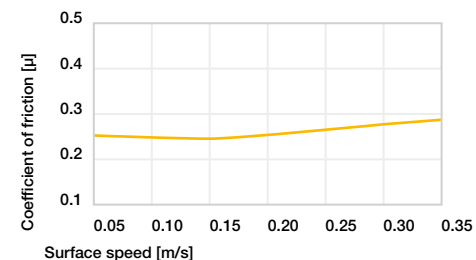


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

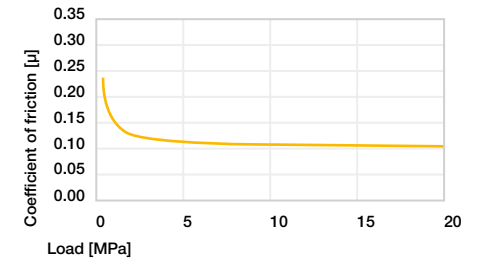


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

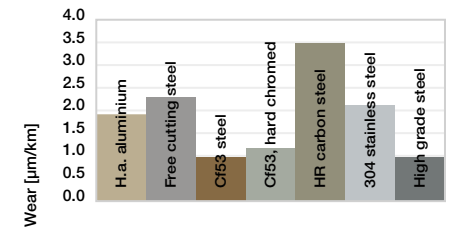


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

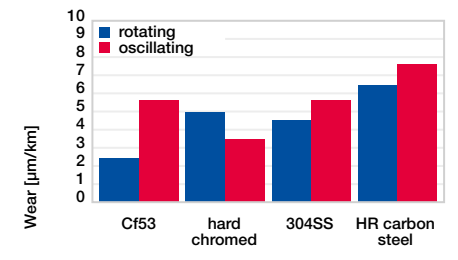
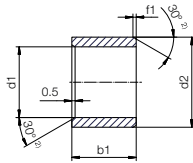


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

Bearing technology | Plain bearings | iglidur® R

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions

Order example: RSM-0203-07 – no minimum order quantity.

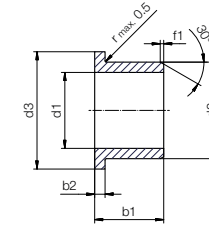
R iglidur® material S Cylindrical M Metric 02 Inner Ø d1 03 Outer Ø d2 07 Total length b1

d1 [mm]	d1 Tolerance ³⁾	d2 [mm]	b1 h13 [mm]	Part No.
2.0	+0.014 +0.054	3.6	7.0	RSM-0203-07
4.0		5.5	4.0	RSM-0405-04
5.0	+0.020 +0.068	7.0	5.0	RSM-0507-05
6.0		8.0	6.0	RSM-0608-06
8.0		10.0	10.0	RSM-0810-10
10.0	+0.025 +0.083	12.0	5.0	RSM-1012-05
10.0		12.0	10.0	RSM-1012-10
10.0		12.0	15.0	RSM-1012-15
12.0		14.0	12.0	RSM-1214-12
14.0		16.0	15.0	RSM-1416-15
15.0	+0.032 +0.102	17.0	15.0	RSM-1517-15
16.0		18.0	15.0	RSM-1618-15
18.0		20.0	25.0	RSM-1820-25
20.0		23.0	15.0	RSM-2023-15
20.0		23.0	20.0	RSM-2023-20
25.0		28.0	25.0	RSM-2528-25
28.0	+0.040 +0.124	32.0	12.0	RSM-2832-12
30.0		34.0	25.0	RSM-3034-25
30.0		34.0	30.0	RSM-3034-30
35.0	+0.050 +0.150	39.0	30.0	RSM-3539-30

³⁾ After press-fit. *Testing methods, page 61*

Bearing technology | Plain bearings | iglidur® R

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8

i Dimensions according to ISO 3547-1 and special dimensions

Order example: RFM-0405-03 – no minimum order quantity.

R iglidur® material F With flange M Metric 04 Inner Ø d1 05 Outer Ø d2 03 Total length b1

d1 [mm]	d1 Tolerance ³⁾	d2 [mm]	d3 d13 ³⁾ [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
4.0		5.5	9.5	3.0	0.75	RFM-0405-03
4.0	+0.020 +0.068	5.5	9.5	4.0	0.75	RFM-0405-04
5.0		7.0	11.0	5.0	1.00	RFM-0507-05
6.0		8.0	12.0	6.0	1.00	RFM-0608-06
8.0		10.0	15.0	5.0	1.00	RFM-0810-05
8.0	+0.025 +0.083	10.0	15.0	10.0	1.00	RFM-0810-10
10.0		12.0	18.0	10.0	1.00	RFM-1012-10
10.0		12.0	18.0	18.0	1.00	RFM-1012-18
12.0		14.0	20.0	10.0	1.00	RFM-1214-10
12.0		14.0	20.0	12.0	1.00	RFM-1214-12
14.0	+0.032 +0.102	16.0	22.0	17.0	1.00	RFM-1416-17
15.0		17.0	23.0	17.0	1.00	RFM-1517-17
16.0		18.0	24.0	17.0	1.00	RFM-1618-17
18.0		20.0	26.0	17.0	1.00	RFM-1820-17
20.0		23.0	30.0	21.5	1.50	RFM-2023-21
22.0	+0.040 +0.124	25.0	29.0	4.5	1.50	RFM-222529-045
25.0		28.0	35.0	21.5	1.50	RFM-2528-21

³⁾ After press-fit. *Testing methods, page 61*

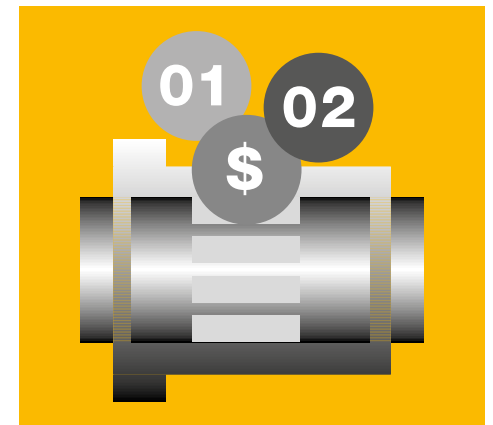
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Detailed information about delivery time online.
www.igus.eu/24

Order online
including delivery times, prices, online tools
www.igus.eu/R

Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.
No low-quantity surcharges.
Free shipping within Germany for orders above €150.



Low-cost with silicone

Abrasion-resistant igidur® D



When to use it?

- When low coefficient of friction is required
- For high speeds
- For low load
- When a cost-effective plain bearing is required



When not to use it?

- When high pressure occurs
igidur® G
- When the part should be free of silicone
igidur® J, iglidur® R
- When continuous operating temperatures are higher than +90°C
igidur® G, iglidur® P

Bearing technology | Plain bearings | iglidur® D



∅
-



Also available as:



Bar stock, round bar
Page 743

Low-cost with silicone Abrasion-resistant

Low-cost-material with low coefficient of friction and good wear resistance at low loads.

- Low coefficient of friction
- For low loads
- Cost-effective
- Vibration-dampening
- Low moisture absorption
- Lubrication-free
- Suitable for high surface speeds



Bar stock, plate
Page 773

Typical application areas

- Sports and leisure
- Model making
- Furniture industry
- Mechatronics



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

Descriptive technical specifications				
Wear resistance at +23°C	-	■ ■ ■ ■ ■		+
Wear resistance at +90°C	-	■ ■ ■ ■ ■		+
Wear resistance at +150°C	-	■ ■ ■ ■ ■		+
Slide property	-	■ ■ ■ ■ ■		+
Wear resistance under water	-	■ ■ ■ ■ ■		+
Media resistance	-	■ ■ ■ ■ ■		+
Resistant to edge pressures	-	■ ■ ■ ■ ■		+
Resistant to shock and impact loads	-	■ ■ ■ ■ ■		+
Dirt resistance	-	■ ■ ■ ■ ■		+

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Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.40	
Colour		green	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.3	DIN 53495
Max. moisture absorption	% weight	1.1	
Coefficient of friction, dynamic, against steel	μ	0.08-0.26	
pv value, max. (dry)	MPa · m/s	0.27	
Mechanical properties			
Flexural modulus	MPa	2,000	DIN 53457
Flexural strength at +20°C	MPa	72	DIN 53452
Compressive strength	MPa	70	
Max. permissible surface pressure (+20°C)	MPa	23	
Shore D hardness		78	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+110	
Min. application temperature	°C	-50	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	11	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹⁴	DIN IEC 93
Surface resistance	Ω	> 10 ¹⁴	DIN 53482

Table 01: Material properties

During the development process of iglidur® D as a bearing material, high performance and low price were the top requirements. In particular, low coefficient of friction was required at high speeds in dry operation. This material containing silicone achieves low coefficient of friction in dry operation and runs with virtually no stick-slip.

Moisture absorption

The moisture absorption of iglidur® D plain bearings in ambient conditions is approximately 0.3% weight. The saturation limit submerged in water is 1.1% weight. This low moisture absorption allows its use in wet environments.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® D are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

iglidur® D plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® D plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

iglidur® D plain bearings were specially developed for low radial loads. Diagram 03 shows the elastic deformation of iglidur® D at radial loads. At the maximum recommended surface pressure of 23MPa, the deformation is less than 3%. A plastic deformation can be negligible up to this value. However, it is also dependent on the service time.

Surface pressure, page 45



-50°C up to +90°C



23MPa



Permissible surface speeds

iglidur® D plain bearings are suitable for high surface speeds. Speeds of up to 10.0m/s are permitted in linear motions. The maximum values shown in table 03 can only be achieved at low pressures. The specified values show the speed at which due to friction an increase in temperature up to the long-term permitted value can occur.

Surface speed, page 48

Temperature

With increasing temperatures, the compressive strength of iglidur® D plain bearings decreases. Diagram 02 shows this inverse relationship. The temperatures prevailing in the bearing system also have an influence on the wear. For temperatures over +50°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagram 04 and 05). In the Ra range between 0.4-0.6 μ m, the coefficient of friction attains its optimum value.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® D. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 56

Installation tolerances

iglidur® D plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Product range

iglidur® D plain bearings are manufactured to special order.

Chemicals	Resistance
Alcohols	+
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	+ up to 0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 1.5	1.1	8.0
Short-term	m/s 3.0	2.1	10.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.08-0.26	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

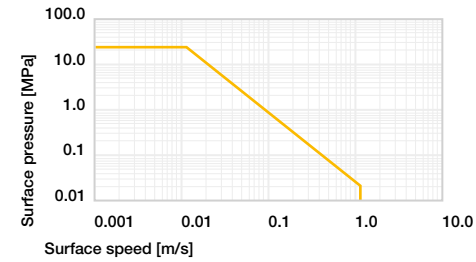


Diagram 01: Permissible pv values for iglidur® D plain bearing with a wall thickness of 1 mm dry operation against a steel shaft at +20°C, mounted in a steel housing

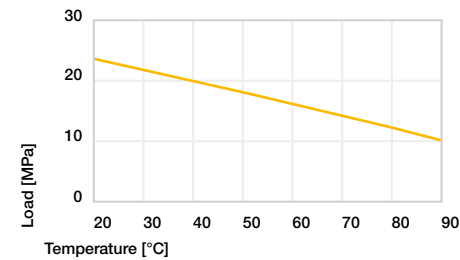


Diagram 02: Maximum recommended surface pressure as a function of temperature (23MPa at +20°C)

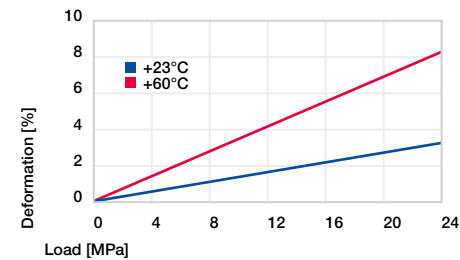


Diagram 03: Deformation under pressure and temperature

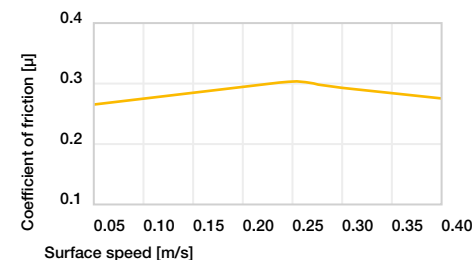


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

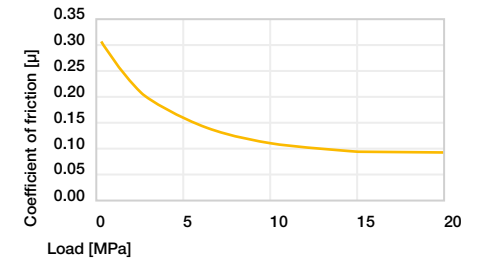


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

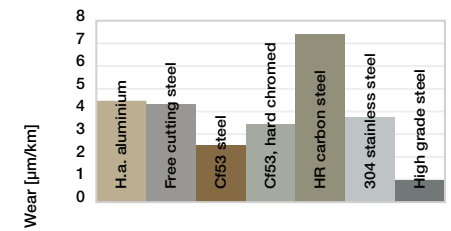


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

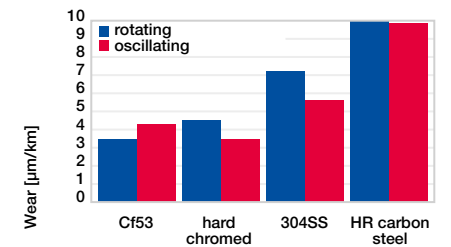
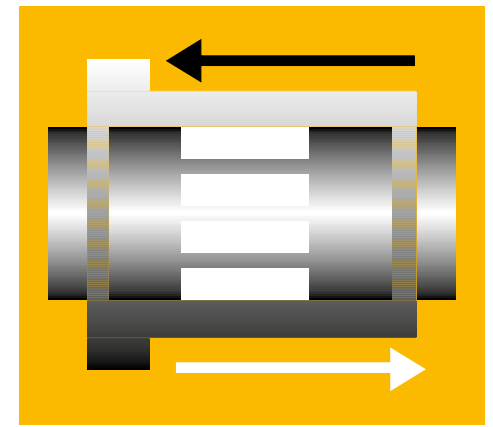


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa



Specialist for linear movement

Low wear with low coefficient of friction

igidur® J200



When to use it?

- For applications with hard-anodised shafts
- When lowest coefficient of friction is required
- When long service life at low loads is required



When not to use it?

- For steel shafts
igidur® J, iglidur® W300
- When continuous operating temperatures are higher than +90°C
igidur® V400
- When a cost-effective universal plain bearing is required
igidur® G, iglidur® P

Bearing technology | Plain bearings | iglidur® J200



∅
-



Also available as:



Bar stock, round bar
Page 743

Specialist for linear movement Low wear with low coefficient of friction

The specialist for low coefficient of friction and minimal wear with hard-anodised aluminium shafts.

- Recommended for hard-anodised aluminium shafts
- Low coefficient of friction
- High wear resistance
- For low and medium loads
- Lubrication-free
- Maintenance-free



Bar stock, plate
Page 773

Typical application areas

- Automation
- Linear technology
- Actuator



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>	+
Wear resistance at +90°C	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>	+
Wear resistance at +150°C	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>	+
Slide property	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>	+
Wear resistance under water	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>	+
Media resistance	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>	+
Resistant to edge pressures	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>	+
Dirt resistance	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>	+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.72	
Colour		matt grey	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	0.7	
Coefficient of friction, dynamic, against steel	μ	0.11-0.17	
pv value, max. (dry)	MPa · m/s	0.30	
Mechanical properties			
Flexural modulus	MPa	2,800	DIN 53457
Flexural strength at +20°C	MPa	58	DIN 53452
Compressive strength	MPa	43	
Max. permissible surface pressure (+20°C)	MPa	23	
Shore D hardness		70	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+120	
Min. application temperature	°C	-50	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	8 DIN 53752	
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ⁸	DIN IEC 93
Surface resistance	Ω	> 10 ⁸ DIN 53482	

Table 01: Material properties

iglidur® J200 is the result of the development of extremely low friction plain bearing materials. When using plain bearings in linear motion, friction can be critical. Many materials can give low coefficient of friction under high loads, but iglidur® J200 can give excellent friction values even at low loads.

Moisture absorption

The moisture absorption of iglidur® J200 plain bearings in ambient conditions is approximately 0.2% weight. The saturation limit submerged in water is 0.7% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® J200 are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

Resistance to weathering

iglidur® J3 plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® J200 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

At the maximum permissible load of 23MPa, the deformation is approximately 3.5% (diagram 03). A plastic deformation can be negligible up to this value. However, it is also dependent on the service time.

Surface pressure, page 45



-50°C up to +90°C



23MPa



Permissible surface speeds

iglidur® J200 allows high surface speeds due to its excellent coefficient of friction. Continuous rotation speeds of 1.0m/s are possible. The permitted speeds are clearly higher yet in linear movements or in short-term operation. Speeds of over 15.0m/s have already been successfully tested in linear applications.

Surface speed, page 48

Temperature

The maximum permissible temperature of +120°C should not be exceeded. Therefore the ambient temperature generated by friction has to be added. From +60°C upwards, the bearing should be mechanically retained, so as to avoid the bearing moving out of the hole. The wear resistance also decreases exponentially from +70°C upwards.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Among all the iglidur® materials, iglidur® J200 exhibits the lowest coefficient of friction. The average coefficient of friction of all measurements, even with different shaft materials, is 0.11 µ. The use of hard-anodised aluminium as a shaft material is also of importance. The comparison with the rest of the iglidur® materials shows that iglidur® J200 plain bearings are suitable for rather low loads. The influence of surface speed and load on the coefficient of friction is small. The change of the coefficient of friction at high loads is in the normal range (diagrams 04 and 05). Surface finishes (Ra) of the shaft between 0.2-0.4 µm are ideal. The influence of the shaft material on the wear resistance is significant. Even at low loads, we recommend to have a closer look into the wear database.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

The shaft material has a great impact on the wear resistance. In fact, all shaft materials (smooth or hardened) are suitable for use with iglidur® J200, but the best results are achieved with hard-anodised aluminium. In particular when used in linear motion, this running surface has proven its value.

Shaft materials, page 56

Installation tolerances

iglidur® J200 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Product range

iglidur® J200 plain bearings are manufactured to special order.

Chemicals	Resistance
Alcohols	+
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	+ up to 0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

		Rotating	Oscillating	linear
Long-term	m/s	1.0	0.7	10.0
Short-term	m/s	1.5	1.1	15.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction µ	0.11-0.17	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 µm, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	H7 [mm]	E10 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

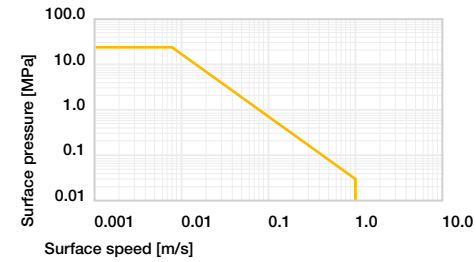


Diagram 01: Permissible pv values for iglidur® J200 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

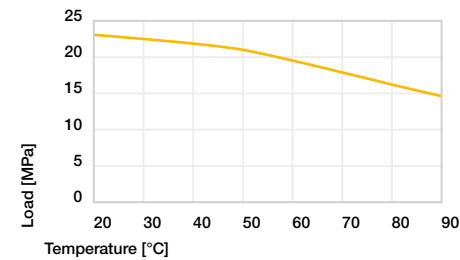


Diagram 02: Maximum recommended surface pressure as a function of temperature (23MPa at +20°C)

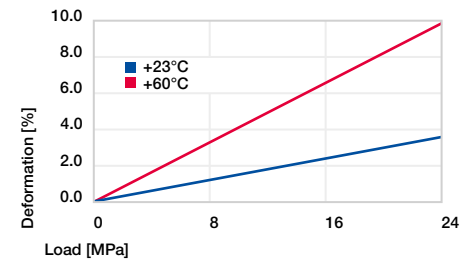


Diagram 03: Deformation under pressure and temperature

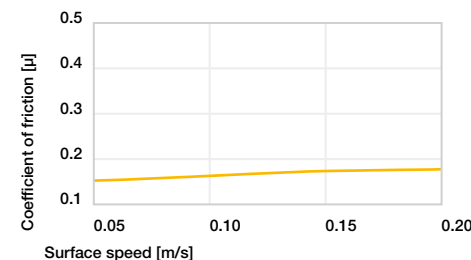


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

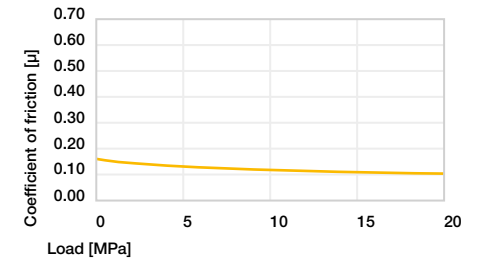


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

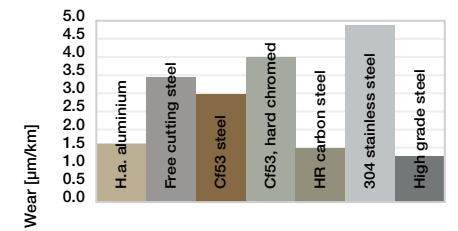


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

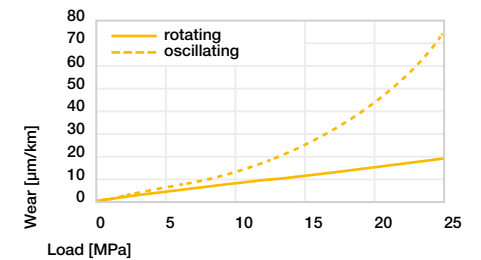
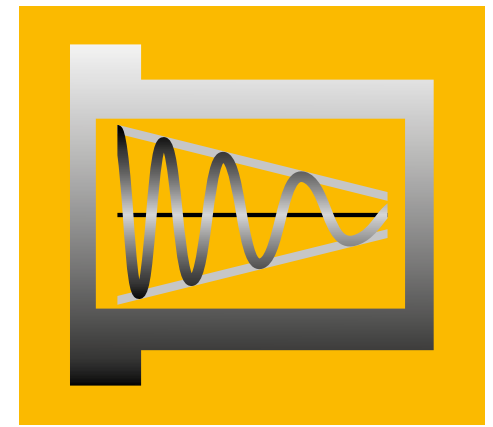


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load



Ideal for pivoting movement

Vibration-dampening with low coefficient of friction for low or medium loads

igidur® E7



When to use it?

- When good dampening properties and quiet operation are required
- When a low coefficient of friction in a pivoting movement is required
- When a tough material is required



When not to use it?

- When high pressures occur
igidur® G, iglidur® Z
- When continuous operating temperatures are higher than +70°C
igidur® J350
- When universal wear resistance is required
igidur® J

Bearing technology | Plain bearings | iglidur® E7



Ø
6.0-20.0mm



Also available as:



Bar stock, round bar
Page 743

Ideal for pivoting movement
Vibration-dampening with low coefficient of friction for low or medium loads

For the first time, the material iglidur® E7, well-known from drylin® linear technology, is also available as a plain bearing. Plain bearings made of the material offer excellent coefficient of friction and wear with low to medium loads.

- Noise-dampening
- Low coefficient of friction
- Lubrication-free
- Corrosion-free

Typical application areas

- Packaging industry
- Textile industry
- Furniture/Industrial design



Bar stock, plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696

Descriptive technical specifications				
Wear resistance at +23°C	-			+
Wear resistance at +90°C	-			+
Wear resistance at +150°C	-			+
Slide property	-			+
Wear resistance under water	-			+
Media resistance	-			+
Resistant to edge pressures	-			+
Resistant to shock and impact loads	-			+
Dirt resistance	-			+



igubal® spherical balls
Page 993

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert



EN 06/2023

Technical data

General properties		Testing method	
Density	g/cm³	1.05	
Colour		dark grey	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.1	
Coefficient of friction, dynamic, against steel	μ	0.09-0.23	
pv value, max. (dry)	MPa · m/s	0.22	
Mechanical properties			
Flexural modulus	MPa	1,477	DIN 53457
Flexural strength at +20°C	MPa	22	DIN 53452
Compressive strength	MPa	18	
Max. permissible surface pressure (+20°C)	MPa	18	
Shore D hardness		61	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+70	
Max. application temperature short-term	°C	+90	
Min. application temperature	°C	-50	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	25	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	>10 ⁹	DIN IEC 93
Surface resistance	Ω	>10 ⁹	DIN 53482

Table 01: Material properties

The material E7 offers good vibration-dampening properties. With low coefficient of friction at low and medium loads, the material is a suitable partner for almost all shaft materials.

Moisture absorption

The moisture absorption of iglidur® E7 plain bearings in ambient conditions is approximately 0.1% weight. The saturation limit submerged in water is 0.1% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance

Plain bearings made from iglidur® E7 are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

iglidur® E7 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® E7 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this. At the maximum permissible load of 18MPa, the deformation is approximately 3.5% (diagram 03). A plastic deformation can be negligible up to this value. However, it is also dependent on the service time.

Surface pressure, page 45



-50°C up to +70°C



18MPa



HB



RoHS



ISO 35474

Permissible surface speeds

iglidur® E7 allows high surface speeds due to its excellent coefficient of friction. Continuous rotation speeds of 0.5m/s are possible. The permitted speeds are clearly higher yet in linear movements or in short-term operation. Speeds of over 3.0m/s have already been successfully tested in linear applications.

Surface speed, page 48

Temperature

The maximum permissible temperature of +90°C should not be exceeded. Therefore the ambient temperature generated by friction has to be added. From +30°C upwards, the bearing should be mechanically retained, so as to avoid the bearing moving out of the hole. The wear resistance also decreases exponentially from +90°C upwards.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Among all the iglidur® materials, iglidur® E7 exhibits the lowest coefficient of friction. The average coefficient of friction of all measurements, even with different shaft materials, is 0.11µ. The use of hard-anodised aluminium as a shaft material is also of importance. The comparison with the rest of the iglidur® materials shows that iglidur® E7 plain bearings are suitable for rather low loads. The influence of surface speed and load on the coefficient of friction is small. The change of the coefficient of friction at high loads is in the normal range (diagrams 04 and 05). Surface finishes (Ra) of the shaft between 0.8µm are ideal. The influence of the shaft material on the wear resistance is significant. Even at low loads, we recommend to have a closer look into the wear database.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

The shaft material has a great impact on the wear resistance. In fact, all shaft materials (smooth or hardened) are suitable for use with iglidur® E7, but the best results are achieved with hard-anodised aluminium. In particular when used in linear motion, this running surface has proven its value.

Shaft materials, page 56

Installation tolerances

iglidur® E7 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	+ up to 0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 0.5	0.4	2.0
Short-term	m/s 0.8	0.6	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction µ	0.09-0.23	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

	Housing	Plain bearings	Shaft
Ø d1 [mm]	H7 [mm]	E10 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.014 +0.054 -0.025 +0.000
> 3-6	+0.000	+0.012	+0.020 +0.068 -0.030 +0.000
> 6-10	+0.000	+0.015	+0.025 +0.083 -0.036 +0.000
> 10-18	+0.000	+0.018	+0.032 +0.102 -0.043 +0.000
> 18-30	+0.000	+0.021	+0.040 +0.124 -0.052 +0.000
> 30-50	+0.000	+0.025	+0.050 +0.150 -0.062 +0.000
> 50-80	+0.000	+0.030	+0.060 +0.180 -0.074 +0.000
> 80-120	+0.000	+0.035	+0.072 +0.212 -0.087 +0.000
> 120-180	+0.000	+0.040	+0.085 +0.245 -0.100 +0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

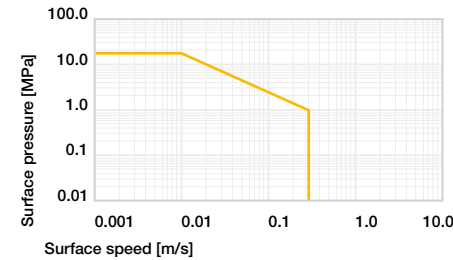


Diagram 01: Permissible pv values for iglidur® E7 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

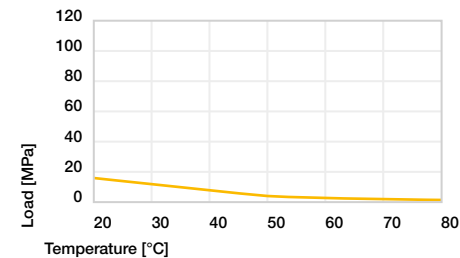


Diagram 02: Maximum recommended surface pressure as a function of temperature (18MPa at +20°C)

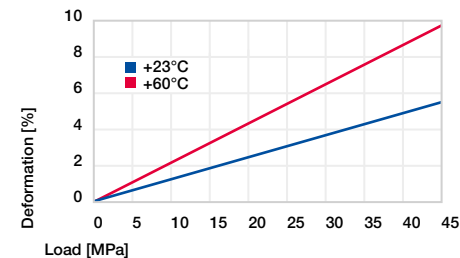


Diagram 03: Deformation under pressure and temperature

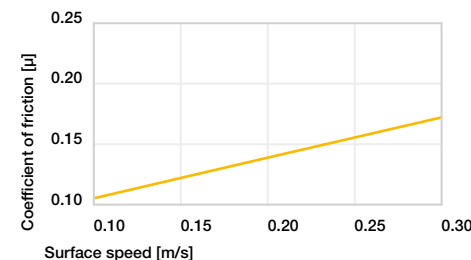


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

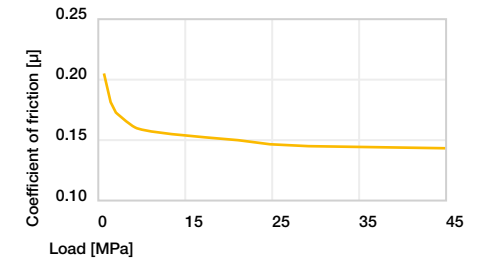


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

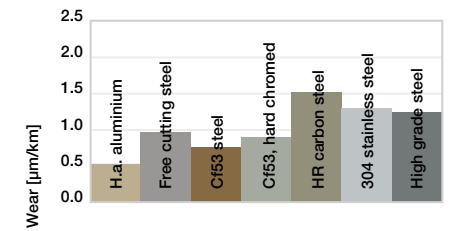


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

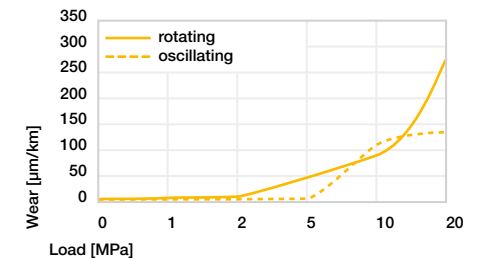
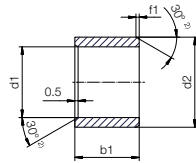


Diagram 07: Wear for oscillating and rotating applications with shaft material Cr53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® E7

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8



Order example: E7SM-0608-06 – no minimum order quantity.

E7 iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
6.0	+0.020 +0.068	8.0	6.0	E7SM-0608-06
8.0	+0.025 +0.083	10.0	10.0	E7SM-0810-10
10.0		12.0	10.0	E7SM-1012-10
12.0		14.0	12.0	E7SM-1214-12
16.0	+0.032 +0.102	18.0	15.0	E7SM-1618-15
20.0	+0.040 +0.124	23.0	20.0	E7SM-2023-20

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/E7



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

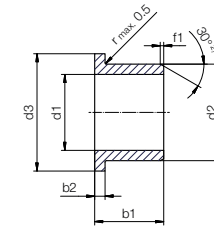
No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Bearing technology | Plain bearings | iglidur® E7

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8



Order example: E7FM-0608-06 – no minimum order quantity.

E7 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾ [mm]	h13 [mm]	h13 [mm]	
6.0	+0.020 +0.068	8.0	12.0	6.0	1.00	E7FM-0608-06
8.0	+0.025 +0.083	10.0	15.0	10.0	1.00	E7FM-0810-10
10.0		12.0	18.0	10.0	1.00	E7FM-1012-10
12.0		14.0	20.0	12.0	1.00	E7FM-1214-12
16.0	+0.032 +0.102	18.0	24.0	17.0	1.00	E7FM-1618-17
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	E7FM-2023-21

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/E7



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.



Extremely wear-resistant

Strong performer on most shafts,
very low coefficient of friction

iglidur® E



When to use it?

- For high speeds
- When highest wear resistance at low to medium pressures is required
- Low wear against different shafts
- When a low coefficient of friction in dry operation is requested
- For vibration dampening
- When good chemical resistance is required
- For best performance with soft shaft materials
- Low moisture absorption



When not to use it?

- When high pressures occur
iglidur® G, iglidur® W300
- When temperatures higher than +120°C occur
iglidur® G, iglidur® Z
- When a cost-effective plain bearing for occasional movements is necessary
iglidur® G

Bearing technology | Plain bearings | iglidur® E



Ø
6.0 - 20.0mm



Also available as:



Bar stock, round bar
Page 743

Extremely wear-resistant Strong performer on most shafts, very low coefficient of friction

iglidur® E is especially characterised by its long service life in combination with hard-anodised aluminium shafts. Especially in linear and pivoting movement, iglidur® E offers particularly good wear-resistant properties.

- Low coefficient of friction
- Wear-resistant material for continuous operation
- Vibration-dampening



Bar stock, plate
Page 773

Typical application areas

- Textile industry
- Packaging industry
- Printing industry
- Vending machinery



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 848

Descriptive technical specifications				
Wear resistance at +23°C	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>		+
Wear resistance at +90°C	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>		+
Wear resistance at +150°C	-	<div style="width: 10%; height: 10px; background-color: yellow;"></div>	<div style="width: 90%; height: 10px; background-color: white;"></div>	+
Slide property	-	<div style="width: 100%; height: 10px; background-color: yellow;"></div>		+
Wear resistance under water	-	<div style="width: 75%; height: 10px; background-color: yellow;"></div>	<div style="width: 25%; height: 10px; background-color: white;"></div>	+
Media resistance	-	<div style="width: 75%; height: 10px; background-color: yellow;"></div>	<div style="width: 25%; height: 10px; background-color: white;"></div>	+
Resistant to edge pressures	-	<div style="width: 75%; height: 10px; background-color: yellow;"></div>	<div style="width: 25%; height: 10px; background-color: white;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 75%; height: 10px; background-color: yellow;"></div>	<div style="width: 25%; height: 10px; background-color: white;"></div>	+
Dirt resistance	-	<div style="width: 75%; height: 10px; background-color: yellow;"></div>	<div style="width: 25%; height: 10px; background-color: white;"></div>	+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert



EN 06/2023

Technical data

General properties		Testing method	
Density	g/cm ³	1.50	
Colour		beige	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	1.7	
Coefficient of friction, dynamic, against steel	μ	0.08-0.23	
pv value, max. (dry)	MPa · m/s	0.25	
Mechanical properties			
Flexural modulus	MPa	2,975	DIN 53457
Flexural strength at +20°C	MPa	79	DIN 53452
Compressive strength	MPa	n.s.	
Max. permissible surface pressure (+20°C)	MPa	37	
Shore D hardness		78	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+120	
Min. application temperature	°C	up to -50	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	10	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	n.s.	
Surface resistance	Ω	> 10 ¹²	DIN 53482

Table 01: Material properties

One main advantage of iglidur® E plain bearings is the combination of a low coefficient of friction in dry operation and the low stick-slip tendency.

Moisture absorption

The moisture absorption of iglidur® E plain bearings in ambient conditions is approximately 0.2% weight. The saturation limit submerged in water is 1.7% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® E bearings.

Radiation resistance

Plain bearings made from iglidur® E are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

iglidur® E plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® E plain bearings decreases. Diagram 02 shows this inverse relationship. With the long-term permitted application temperature of +90°C, the permitted surface pressure still amounts to 20MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

With a maximum recommended surface pressure of 37MPa, iglidur® E plain bearings are not suitable for extreme loads. Diagram 03 shows the elastic deformation of iglidur® E at radial loads.

Surface pressure, page 45



-50°C up to +90°C



37MPa



HB



EN 06/2023



Permissible surface speeds

The low coefficient of friction and no stick-slip tendency of iglidur® E plain bearings are particularly important at very low speeds. However, iglidur® E can also be used for high speeds of over 1m/s. In both cases the static friction is very low and stick slip does not occur. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 18

Temperature

iglidur® E plain bearings can be used between -50°C and +90°C; the short-term maximum permissible temperature is +120°C. Wear increases significantly at temperatures above +80°C. For temperatures over +60°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. With increasing shaft surface finish, the coefficient of friction also increases. For iglidur® E a ground surface with an average surface finish $R_a = 0.1-0.3\mu\text{m}$ is recommended. Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® E. When compared to most other iglidur® materials, iglidur® E plain bearings have very low wear results at low loads compared with all shaft materials tested. Also, for increasing loads up to 5 MPa, the wear resistance of iglidur® E plain bearings is excellent. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 56

Installation tolerances

iglidur® E plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	+ up to 0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	1.0	0.7	2.0
Short-term m/s	1.5	1.1	4.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.08-0.23	0.09	0.04	0.04

Table 04: Coefficient of friction against steel ($R_a = 1\mu\text{m}$, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]		
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

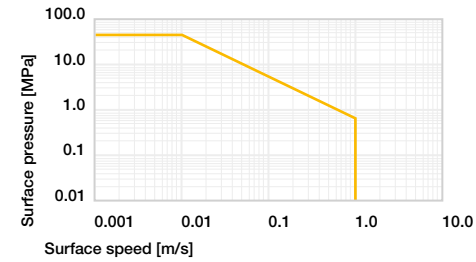


Diagram 01: Permissible pv values for iglidur® E plain bearing with a wall thickness of 1 mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

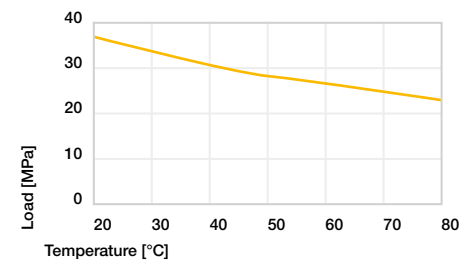


Diagram 02: Maximum recommended surface pressure as a function of temperature (35MPa at +20°C)

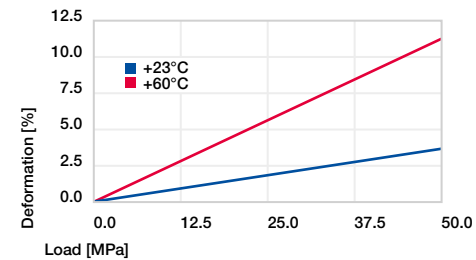


Diagram 03: Deformation under pressure and temperature

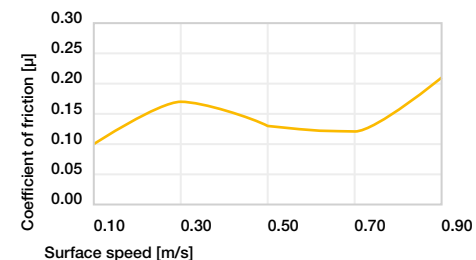


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1 MPa

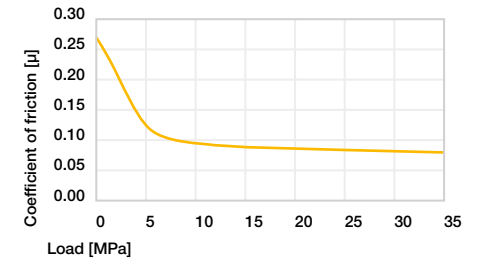


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

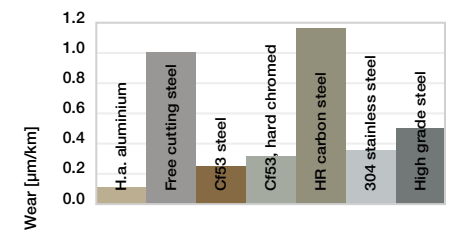


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1 MPa, v = 0.3 m/s

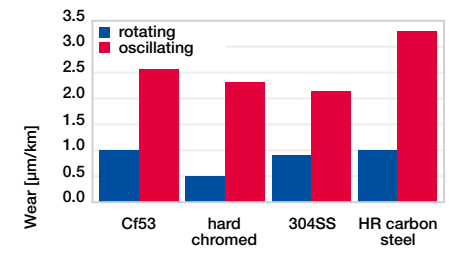
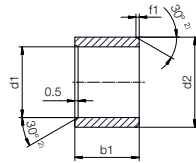


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2 MPa

Bearing technology | Plain bearings | iglidur® E

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30	Dimensions according to ISO 3547-1 and special dimensions
f1 [mm]	0.3	0.5	0.8	1.2	



Order example: **ESM-0608-06** - no minimum order quantity.

E iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
6.0	+0.020 +0.068	8.0	6.0	ESM-0608-06
8.0	+0.025 +0.083	10.0	10.0	ESM-0810-10
10.0	+0.025 +0.083	12.0	10.0	ESM-1012-10
12.0	+0.032 +0.102	14.0	12.0	ESM-1214-12
16.0	+0.032 +0.102	18.0	15.0	ESM-1618-15
16.0	+0.032 +0.102	18.0	17.0	ESM-1618-17
20.0	+0.040 +0.124	23.0	20.0	ESM-2023-20
20.0	+0.040 +0.124	23.0	21.0	ESM-2023-21

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

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Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
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25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

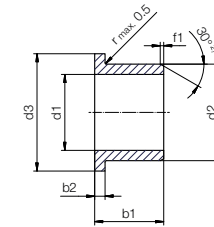
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Bearing technology | Plain bearings | iglidur® E

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30	Dimensions according to ISO 3547-1 and special dimensions
f1 [mm]	0.3	0.5	0.8	1.2	



Order example: **EFM-0608-06** - no minimum order quantity.

E iglidur® material F With Flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1	d1 Tolerance ³⁾	d2	d3	b1 h13	b2 h13	Part No.
[mm]		[mm]	[mm]	[mm]	[mm]	
6.0	+0.020 +0.068	8.0	12.0	6.0	1.00	EFM-0608-06
8.0	+0.025 +0.083	10.0	15.0	9.5	1.00	EFM-0810-10
10.0	+0.025 +0.083	12.0	18.0	9.0	1.00	EFM-1012-10
12.0	+0.032 +0.102	14.0	20.0	12.0	1.00	EFM-1214-12
16.0	+0.032 +0.102	18.0	24.0	17.0	1.00	EFM-1618-17
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	EFM-2023-21

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

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Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

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Plain bearing materials for high temperatures

Plain bearing materials for high temperatures

Here you will find high-temperature specialists for continuous operating temperatures up to +250°C (exception: iglidur® V400 with +200°C).





In the meantime, the iglidur® X6 surpasses the standard iglidur® X here in many rotating and pivoting applications.

igidur® Z has also been long established as standard with extremely low wear rates under high loads and/or temperatures.

igidur® V400 is characterised as a problem solver in many special cases, and iglidur® UW500 is the specialist for hot liquids.

 **Online product finder**
www.igus.eu/igidur-finder

 **Online service life calculation**
www.igus.eu/igidur-expert

	igidur® X The chemical and temperature specialist	Temperature [°C] ¹²³⁾	+250	-	■	■	■	■	■	+
		Surface pressure [MPa] ¹²⁴⁾	150	-	■	■	■	■	■	+
		Coefficient of friction [μ] ¹²⁵⁾	0.31	-	■	■	■	■	■	+
		Wear [μm/km] ¹²⁵⁾	6.30	-	■	■	■	■	■	+
		Price index	-	-	■	■	■	■	■	+
	igidur® Z Long service life under extreme conditions	Temperature [°C] ¹²³⁾	+250	-	■	■	■	■	■	+
		Surface pressure [MPa] ¹²⁴⁾	150	-	■	■	■	■	■	+
		Coefficient of friction [μ] ¹²⁵⁾	0.18	-	■	■	■	■	■	+
		Wear [μm/km] ¹²⁵⁾	1.00	-	■	■	■	■	■	+
	igidur® X6 The high-temperature specialist up to +250°C	Temperature [°C] ¹²³⁾	+250	-	■	■	■	■	■	+
		Surface pressure [MPa] ¹²⁴⁾	150	-	■	■	■	■	■	+
		Coefficient of friction [μ] ¹²⁵⁾	-	-	■	■	■	■	■	+
		Wear [μm/km] ¹²⁵⁾	-	-	■	■	■	■	■	+
	igidur® V400 For soft shafts and high temperatures	Temperature [°C] ¹²³⁾	+200	-	■	■	■	■	■	+
		Surface pressure [MPa] ¹²⁴⁾	45	-	■	■	■	■	■	+
		Coefficient of friction [μ] ¹²⁵⁾	0.19	-	■	■	■	■	■	+
		Wear [μm/km] ¹²⁵⁾	0.30	-	■	■	■	■	■	+
		Price index	-	-	■	■	■	■	+	

¹²³⁾ Upper long-term application temperature ¹²⁴⁾ Max. recommended surface pressure at +20°C ¹²⁵⁾ Best pairing for p = 1 MPa, v = 0.3m/s, rotating

High temperatures



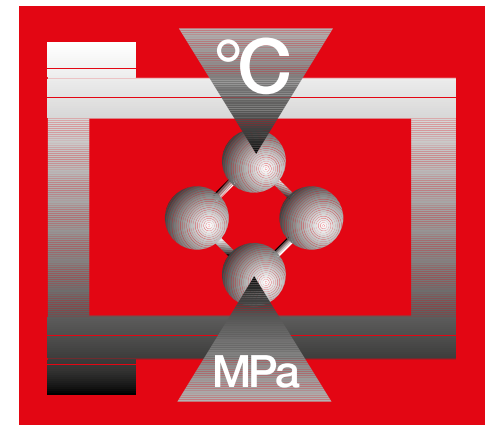
igidur® HSD350
All-rounder for steam sterilisation

Temperature [°C] ¹²³⁾	+180	-	■	■	■	■	■	+
Surface pressure [MPa] ¹²⁴⁾	30	-	■	■	■	■	■	+
Coefficient of friction [μ] ¹²⁵⁾	1.15	-	■	■	■	■	■	+
Wear [μm/km] ¹²⁵⁾	2.00	-	■	■	■	■	■	+
Price index	-	-	■	■	■	■	■	+



igidur® UW500
For hot liquids

Temperature [°C] ¹²³⁾	+250	-	■	■	■	■	■	+
Surface pressure [MPa] ¹²⁴⁾	140	-	■	■	■	■	■	+
Coefficient of friction [μ] ¹²⁵⁾	0.33	-	■	■	■	■	■	+
Wear [μm/km] ¹²⁵⁾	2.20	-	■	■	■	■	■	+
Price index	-	-	■	■	■	■	■	+



The chemical and temperature specialist

Up to 150MPa

igidur® X



When to use it?

- For pressure loads up to 150MPa
- For linear movements with stainless steel at high temperatures
- Universal chemical resistance
- For temperature resistance from -100°C to +250°C (short-term up to +315°C)
- For very low moisture absorption
- For high wear resistance over the entire temperature range



When not to use it?

- For very low wear at high loads
igidur® Q, iglidur® Z
- When a cost-effective plain bearing for underwater use is required
igidur® H, iglidur® H370
- For edge loads
igidur® Z

Bearing technology | Plain bearings | iglidur® X



Ø
2.0-120.0mm



Also available
as:



Bar stock,
round bar
Page 743

The chemical and temperature specialist Up to 150MPa

iglidur® X is defined by its combination of very high temperature resistance with high compressive strength, along with high resistance to chemicals. iglidur® X is designed for higher speeds than other iglidur® bearings.

- Continuous operating temperature from -100°C to +250°C
- Extremely high chemical resistance
- High compressive strength
- Low moisture absorption
- High wear resistance



Bar stock,
plate
Page 773

Typical application areas

- Beverage industry
- Woodworking
- Plastic processing industry
- Aerospace engineering
- Cleanroom



tribo-tape liner
Page 781



Guide rings
Page 641

Descriptive technical specifications

Wear resistance at +23°C	-	■	■	■	■	■	+
Wear resistance at +90°C	-	■	■	■	■	■	+
Wear resistance at +150°C	-	■	■	■	■	■	+
Slide property	-	■	■	■	■	■	+
Wear resistance under water	-	■	■	■	■	■	+
Media resistance	-	■	■	■	■	■	+
Resistant to edge pressures	-	■	■	■	■	■	+
Resistant to shock and impact loads	-	■	■	■	■	■	+
Dirt resistance	-	■	■	■	■	■	+



Two hole
flange
bearings
Page 667



Moulded
special parts
Page 696



igubal®
spherical balls
Page 847

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Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.44	
Colour		black	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.5	
Coefficient of friction, dynamic, against steel	μ	0.09-0.27	
pv value, max. (dry)	MPa · m/s	1.32	
Mechanical properties			
Flexural modulus	MPa	8,100	DIN 53457
Flexural strength at +20°C	MPa	170	DIN 53452
Compressive strength	MPa	100	
Max. permissible surface pressure (+20°C)	MPa	150	
Shore D hardness		85	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+250	
Max. application temperature short-term	°C	+315	
Min. application temperature	°C	-100	
Thermal conductivity	W/m · K	0.60	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	5	DIN 53752
Electrical properties ⁹⁾			
Specific transitional resistance	Ωcm	< 10 ⁵	DIN IEC 93
Surface resistance	Ω	< 10 ³	DIN 53482

⁹⁾ The good conductivity of this material can favour the generation of corrosion on the metallic contact components.

Table 01: Material properties

iglidur® X has an excellent combination of high temperature resistance, high compressive strength, and excellent resistance to chemicals. The aspect of temperature resistance and pressure susceptibility is also reflected in the pv graph.

Moisture absorption

The moisture absorption of iglidur® X plain bearings is very low. It is approximately 0.1% weight under standard climatic conditions. The maximum moisture absorption is 0.5% weight.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance

Plain bearings made from iglidur® X are resistant up to a radiation intensity of 1 · 10⁵ Gy.

Resistance to weathering

iglidur® X plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® X plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® X at radial loads.

Surface pressure, page 45



-100°C up to
+250°C



150MPa



Permissible surface speeds

iglidur® X is designed for higher speeds than other iglidur® bearings. This is enabled by its high temperature resistance and excellent thermal conductivity. This is also made clear by the max. pv value of 1.32MPa. However, in this case, only the smallest radial loads may act on the bearings. At the given speeds, friction can cause a temperature increase to maximum permissible levels.

Surface speed, page 48

Temperature

In the case of a permissible long-term application temperature of +250°C, iglidur® X will even withstand +315°C for short periods. As in the case of all thermoplastics, the compression strength of iglidur® X decreases when temperatures rise. For temperatures over +135°C an additional securing is required. At temperatures over +170°C the axial security of the bearing in the housing needs to be tested. Please contact us if you have questions on bearing use.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. For iglidur® X a ground surface with an average surface finish $R_a = 0.6-0.8\mu\text{m}$ is recommended. Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® X. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 56

Installation tolerances

iglidur® X plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	+
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	0 up to -
Strong alkalines	+

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	1.5	1.1	5.0
Short-term m/s	3.5	2.5	10.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.09-0.27	0.09	0.04	0.04

Table 04: Coefficient of friction against steel ($R_a = 1\mu\text{m}$, 50HRC)

$\varnothing d1$ [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	F10 [mm]	F10 [mm]	h9 [mm]		
0-3	+0.000	+0.010	+0.006	+0.046	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.010	+0.058	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.013	+0.071	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.016	+0.086	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.020	+0.104	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.025	+0.125	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.030	+0.150	-0.074	+0.000
> 80-120	+0.000	+0.035	-0.036	+0.176	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

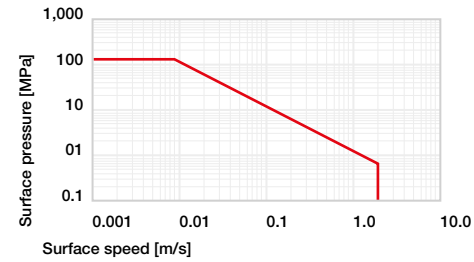


Diagram 01: Permissible pv values for iglidur® X plain bearing with a wall thickness of 1 mm dry operation against a steel shaft at +20°C, mounted in a steel housing

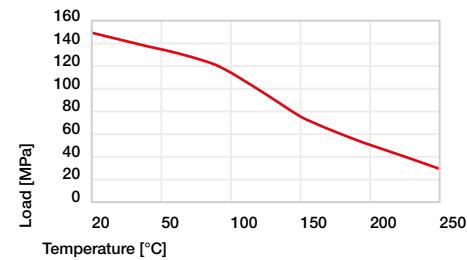


Diagram 02: Maximum recommended surface pressure as a function of temperature (150MPa at +20°C)

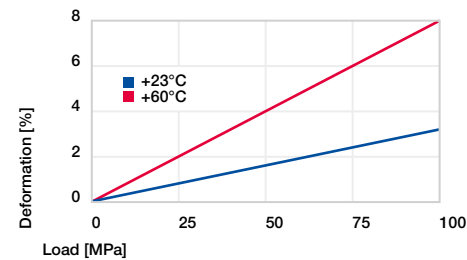


Diagram 03: Deformation under pressure and temperature

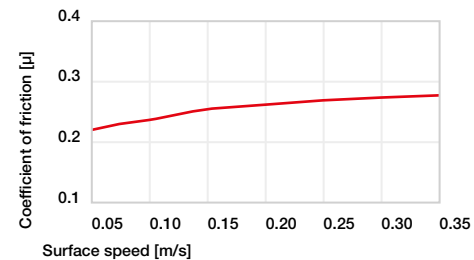


Diagram 04: Coefficient of friction as a function of the surface speed, $v = 0.01\text{m/s}$

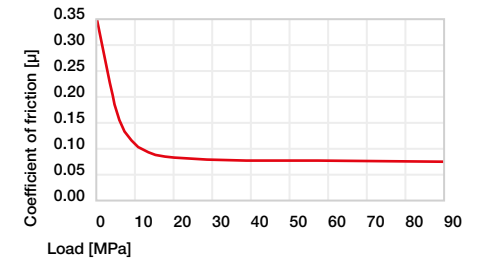


Diagram 05: Coefficient of friction as a function of the pressure, $v = 0.01\text{m/s}$

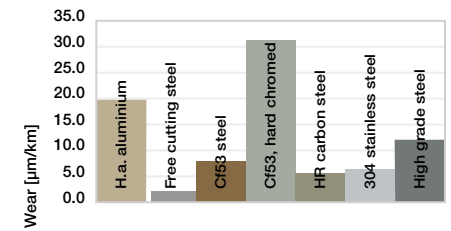


Diagram 06: Wear, rotating with different shaft materials, pressure, $p = 1\text{MPa}$, $v = 0.3\text{m/s}$

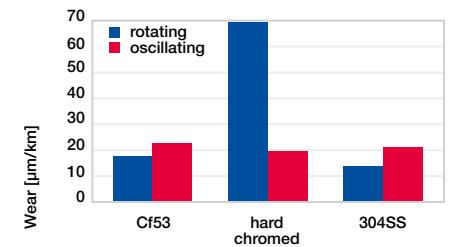
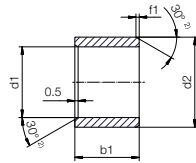


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, $p = 2\text{MPa}$

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions



Order example: **XSM-0203-03** – no minimum order quantity.

X iglidur® material **S** Cylindrical **M** Metric **02** Inner Ø d1 **03** Outer Ø d2 **03** Total length b1

d1	d1	d2	b1	Part No.	d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13		[mm]	Tolerance ³⁾	[mm]	h13	
2.0	+0.006	3.5	3.0	XSM-0203-03	12.0		14.0	3.5	XSM-1214-035
3.0	+0.046	4.5	3.0	XSM-0304-03	12.0		14.0	6.0	XSM-1214-06
3.0		4.5	6.0	XSM-0304-06	12.0		14.0	8.0	XSM-1214-08
4.0		5.5	4.0	XSM-0405-04	12.0		14.0	10.0	XSM-1214-10
4.0		5.5	6.0	XSM-0405-06	12.0		14.0	12.0	XSM-1214-12
4.0		5.5	9.0	XSM-0405-09	12.0		14.0	15.0	XSM-1214-15
4.0		5.5	10.0	XSM-0405-10	12.0		14.0	20.0	XSM-1214-20
5.0		7.0	3.5	XSM-0507-035	12.0		14.0	25.0	XSM-1214-25
5.0	+0.010	7.0	5.0	XSM-0507-05	13.0		15.0	10.0	XSM-1315-10
5.0	+0.058	7.0	8.0	XSM-0507-08	13.0		15.0	20.0	XSM-1315-20
5.0		7.0	10.0	XSM-0507-10	14.0		16.0	12.0	XSM-1416-12
6.0		8.0	6.0	XSM-0608-06	14.0		16.0	15.0	XSM-1416-15
6.0		8.0	8.0	XSM-0608-08	14.0		16.0	20.0	XSM-1416-20
6.0		8.0	10.0	XSM-0608-10	14.0		16.0	25.0	XSM-1416-25
6.0		8.0	13.8	XSM-0608-13	15.0	+0.016	17.0	7.0	XSM-1517-07
7.0		9.0	10.0	XSM-0709-10	15.0	+0.086	17.0	10.0	XSM-1517-10
7.0		9.0	12.0	XSM-0709-12	15.0		17.0	15.0	XSM-1517-15
8.0		10.0	6.0	XSM-0810-06	15.0		17.0	20.0	XSM-1517-20
8.0		10.0	8.0	XSM-0810-08	15.0		17.0	25.0	XSM-1517-25
8.0		10.0	10.0	XSM-0810-10	16.0		18.0	10.0	XSM-1618-10
8.0		10.0	12.0	XSM-0810-12	16.0		18.0	12.0	XSM-1618-12
8.0	+0.013	10.0	15.0	XSM-0810-15	16.0		18.0	15.0	XSM-1618-15
10.0	+0.071	12.0	3.5	XSM-1012-035	16.0		18.0	20.0	XSM-1618-20
10.0		12.0	6.0	XSM-1012-06	16.0		18.0	25.0	XSM-1618-25
10.0		12.0	8.0	XSM-1012-08	16.0		18.0	35.0	XSM-1618-35
10.0		12.0	10.0	XSM-1012-10	17.0		19.0	20.0	XSM-1719-20
10.0		12.0	12.0	XSM-1012-12	18.0		20.0	15.0	XSM-1820-15
10.0		12.0	15.0	XSM-1012-15	18.0		20.0	20.0	XSM-1820-20
10.0		12.0	20.0	XSM-1012-20	18.0		20.0	25.0	XSM-1820-25

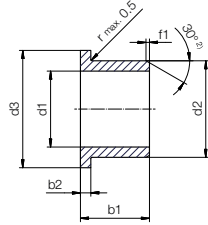
³⁾ After press-fit. Testing methods, page 61

Product range

d1	d1	d2	b1	Part No.	d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13		[mm]	Tolerance ³⁾	[mm]	h13	
20.0	+0.016 +0.086	22.0	14.0	XSM-2022-140	30.0		34.0	20.0	XSM-3034-20
20.0		22.0	14.5	XSM-2022-145	30.0	+0.020	34.0	25.0	XSM-3034-25
20.0		22.0	17.0	XSM-2022-17	30.0	+0.104	34.0	30.0	XSM-3034-30
20.0		22.0	18.0	XSM-2022-18	30.0		34.0	40.0	XSM-3034-40
20.0		22.0	20.0	XSM-2022-20	32.0		36.0	20.0	XSM-3236-20
20.0		23.0	7.0	XSM-2023-07	32.0		36.0	25.0	XSM-3236-25
20.0		23.0	10.0	XSM-2023-10	32.0		36.0	30.0	XSM-3236-30
20.0		23.0	15.0	XSM-2023-15	32.0		36.0	35.0	XSM-3236-35
20.0		23.0	20.0	XSM-2023-20	32.0		36.0	40.0	XSM-3236-40
20.0		23.0	25.0	XSM-2023-25	32.0		36.0	54.0	XSM-3236-54
20.0		23.0	30.0	XSM-2023-30	35.0		39.0	20.0	XSM-3539-20
22.0		25.0	15.0	XSM-2225-15	35.0		39.0	30.0	XSM-3539-30
22.0		25.0	20.0	XSM-2225-20	35.0		39.0	40.0	XSM-3539-40
22.0		25.0	25.0	XSM-2225-25	35.0		39.0	50.0	XSM-3539-50
22.0		25.0	30.0	XSM-2225-30	40.0		44.0	20.0	XSM-4044-20
24.0		26.0	20.0	XSM-2426-20	40.0	+0.025 +0.125	44.0	30.0	XSM-4044-30
24.0		27.0	6.0	XSM-2427-06	40.0		44.0	40.0	XSM-4044-40
24.0		27.0	15.0	XSM-2427-15	40.0		44.0	50.0	XSM-4044-50
24.0		27.0	20.0	XSM-2427-20	45.0		50.0	20.0	XSM-4550-20
24.0	+0.020 +0.104	27.0	25.0	XSM-2427-25	45.0		50.0	30.0	XSM-4550-30
24.0		27.0	30.0	XSM-2427-30	45.0		50.0	50.0	XSM-4550-50
25.0		28.0	7.7	XSM-2528-077	50.0		55.0	20.0	XSM-5055-20
25.0		28.0	9.0	XSM-2528-09	50.0		55.0	30.0	XSM-5055-30
25.0		28.0	12.0	XSM-2528-12	50.0		55.0	40.0	XSM-5055-40
25.0		28.0	13.0	XSM-2528-13	50.0		55.0	50.0	XSM-5055-50
25.0		28.0	15.0	XSM-2528-15	50.0		55.0	60.0	XSM-5055-60
25.0		28.0	20.0	XSM-2528-20	55.0		60.0	50.0	XSM-5560-50
25.0		28.0	25.0	XSM-2528-25	60.0		65.0	45.0	XSM-6065-45
25.0		28.0	30.0	XSM-2528-30	60.0		65.0	60.0	XSM-6065-60
25.0		28.0	35.0	XSM-2528-35	65.0	+0.030 +0.150	70.0	50.0	XSM-6570-50
26.0		28.0	10.0	XSM-2628-10	70.0		75.0	70.0	XSM-7075-70
27.0		30.0	5.7	XSM-2730-05	75.0		80.0	60.0	XSM-7580-60
28.0		32.0	20.0	XSM-2832-20	80.0		85.0	100.0	XSM-8085-100
28.0		32.0	25.0	XSM-2832-25	90.0		95.0	100.0	XSM-9095-100
28.0		32.0	30.0	XSM-2832-30	100.0	+0.036	105.0	100.0	XSM-100105-100
28.0		32.0	69.0	XSM-2832-69	110.0	+0.176	115.0	100.0	XSM-110115-100
30.0		34.0	10.0	XSM-3034-10	120.0		125.0	100.0	XSM-120125-100
30.0		34.0	15.0	XSM-3034-15					

³⁾ After press-fit. Testing methods, page 61

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2



Dimensions according to ISO 3547-1 and special dimensions



Order example: **XF**M-0304-05 – no minimum order quantity.

X iglidur® material **F** With flange **M** Metric **03** Inner Ø d1 **04** Outer Ø d2 **05** Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	[mm]	[mm]	
2.0	+0.006	4.0	6.0	3.0	1.00	XFM-020406-03
3.0	+0.046	4.5	7.5	5.0	0.75	XFM-0304-05
4.0		5.5	9.5	4.0	0.75	XFM-0405-04
4.0		5.5	9.5	6.0	0.75	XFM-0405-06
4.0	+0.010	5.5	8.0	6.0	0.75	XFM-040508-06
5.0	+0.058	7.0	11.0	5.0	1.00	XFM-0507-05
6.0		8.0	12.0	4.0	1.00	XFM-0608-04
6.0		8.0	12.0	8.0	1.00	XFM-0608-08
6.0		8.0	12.0	10.0	1.00	XFM-0608-10
8.0		10.0	12.0	4.0	1.00	XFM-081012-04
8.0		10.0	15.0	5.5	1.00	XFM-0810-05
8.0		10.0	15.0	7.5	1.00	XFM-0810-07
8.0		10.0	15.0	8.0	1.00	XFM-0810-08
8.0		10.0	15.0	9.5	1.00	XFM-0810-09
8.0		10.0	14.0	31.5	1.00	XFM-081014-31
9.0		11.0	15.0	18.0	1.00	XFM-0911-18
10.0		12.0	18.0	5.0	1.00	XFM-1012-05
10.0	+0.013	12.0	18.0	6.0	1.00	XFM-1012-06
10.0	+0.071	12.0	18.0	7.0	1.00	XFM-1012-07
10.0		12.0	15.0	8.0	1.00	XFM-1012-08
10.0		12.0	18.0	9.0	1.00	XFM-1012-09
10.0		12.0	18.0	12.0	1.00	XFM-1012-12
10.0		12.0	18.0	15.0	1.00	XFM-1012-15
10.0		12.0	18.0	17.0	1.00	XFM-1012-17
10.0		12.0	18.0	18.0	1.00	XFM-1012-18
10.0		12.0	15.0	22.0	1.00	XFM-1012-22
10.0		12.0	18.0	25.0	1.00	XFM-1012-25

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	[mm]	[mm]	
12.0		14.0	18.0	3.9	1.00	XFM-121418-039
12.0		14.0	20.0	5.5	1.00	XFM-1214-055
12.0		14.0	18.0	5.9	1.00	XFM-121418-059
12.0		14.0	20.0	9.0	1.00	XFM-1214-09
12.0		14.0	20.0	12.0	1.00	XFM-1214-12
12.0		14.0	20.0	15.0	1.00	XFM-1214-15
12.0		14.0	20.0	17.0	1.00	XFM-1214-17
14.0		16.0	22.0	10.0	1.00	XFM-1416-10
14.0		16.0	22.0	12.0	1.00	XFM-1416-12
14.0	+0.016	16.0	22.0	17.0	1.00	XFM-1416-17
15.0	+0.086	17.0	23.0	6.0	1.00	XFM-1517-06
15.0		17.0	23.0	9.0	1.00	XFM-1517-09
15.0		17.0	23.0	12.0	1.00	XFM-1517-12
15.0		17.0	23.0	17.0	1.00	XFM-1517-17
16.0		18.0	24.0	12.0	1.00	XFM-1618-12
16.0		18.0	24.0	17.0	1.00	XFM-1618-17
18.0		20.0	26.0	12.0	1.00	XFM-1820-12
18.0		20.0	26.0	17.0	1.00	XFM-1820-17
18.0		20.0	26.0	22.0	1.00	XFM-1820-22
20.0		23.0	30.0	6.5	1.50	XFM-2023-065
20.0		23.0	30.0	7.5	1.50	XFM-2023-075
20.0		23.0	30.0	11.5	1.50	XFM-2023-11
20.0		23.0	30.0	16.5	1.50	XFM-2023-16
20.0	+0.020	23.0	30.0	21.0	1.50	XFM-2023-21
20.0	+0.104	28.0	33.0	8.0	1.00	XFM-252833-08
25.0		28.0	35.0	11.5	1.50	XFM-2528-11
25.0		28.0	35.0	13.5	1.50	XFM-2528-13
25.0		28.0	35.0	16.5	1.50	XFM-2528-16

³⁾ After press-fit. *Testing methods, page 61*

Product range

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	[mm]	[mm]	
25.0		28.0	35.0	21.0	1.50	XFM-2528-21
27.0		30.0	38.0	20.0	1.50	XFM-2730-20
30.0	+0.020	34.0	42.0	16.0	2.00	XFM-3034-16
30.0	+0.104	34.0	42.0	26.0	2.00	XFM-3034-26
30.0		34.0	42.0	40.0	2.00	XFM-3034-40
32.0		36.0	45.0	15.0	2.00	XFM-3236-15
32.0	+0.025	36.0	45.0	26.0	2.00	XFM-3236-26
35.0	+0.125	39.0	47.0	16.0	2.00	XFM-3539-16
35.0		39.0	47.0	26.0	2.00	XFM-3539-26

³⁾ After press-fit. *Testing methods, page 61*

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	[mm]	[mm]	
40.0		44.0	52.0	22.0	2.00	XFM-4044-22
40.0	+0.025	44.0	52.0	30.0	2.00	XFM-4044-30
40.0	+0.125	44.0	52.0	40.0	2.00	XFM-4044-40
45.0		50.0	58.0	50.0	2.00	XFM-4550-50
50.0		55.0	63.0	40.0	2.00	XFM-5055-40
60.0		65.0	73.0	40.0	2.00	XFM-6065-40
60.0	+0.030	65.0	73.0	40.0	2.00	XFM-6065-40
70.0	+0.150	75.0	83.0	40.0	2.00	XFM-7075-40
75.0		80.0	88.0	50.0	2.00	XFM-7580-50



Available from stock

Detailed information about delivery time online.

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Order online

including delivery times, prices, online tools

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Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling

1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

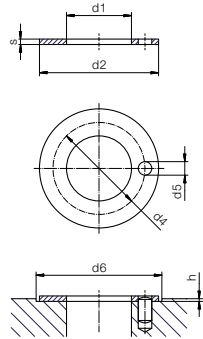
No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Bearing technology | Plain bearings | iglidur® X

Thrust washer (form T)

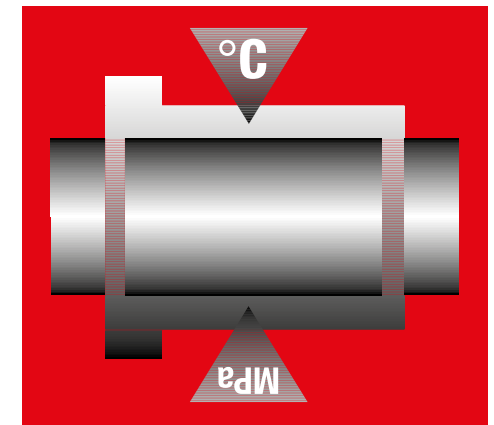


i Dimensions according to ISO 3547-1 and special dimensions

i Order example: **XTM-0620-015** – no minimum order quantity.
X iglidur® material T Thrust washer M Metric 06 Inner Ø d1 20 Outer Ø d2 015 Height s

d1	d2	d4	d5	h	d6	Øs	Part No.
+0.25	-0.25	-0.12 +0.12	+0.375 +0.125	+0.2/-0.2	+0.12	-0.05	
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
6	20	13	1.5	1	20	1.5	XTM-0620-015
8	18	13	1.5	1	18	1.5	XTM-0818-015
8	29	⁴⁾	⁴⁾	1	29	1.5	XTM-0829-015
8	30	⁴⁾	⁴⁾	1	30	1.5	XTM-0830-015
10	18	⁴⁾	⁴⁾	0.7	18	1	XTM-1018-010
12	24	18	1.5	1	24	1.5	XTM-1224-015
14	26	20	2	1	26	1.5	XTM-1426-015
15	22	⁴⁾	⁴⁾	0.5	22	0.8	XTM-1522-008
15	24	19.5	1.5	1	24	1.5	XTM-1524-015
16	30	22	2	1	30	1.5	XTM-1630-015
18	32	25	2	1	32	1.5	XTM-1832-015
20	36	28	3	1	36	1.5	XTM-2036-015
22	38	30	3	1	38	1.5	XTM-2238-015
24	42	33	3	1	42	1.5	XTM-2442-015
26	44	35	3	1	44	1.5	XTM-2644-015
28	48	38	4	1	48	1.5	XTM-2848-015
32	54	43	4	1	54	1.5	XTM-3254-015
38	62	50	4	1	62	1.5	XTM-3862-015
42	66	54	4	1	66	1.5	XTM-4266-015
48	74	61	4	1.5	74	2	XTM-4874-020
52	78	65	4	1.5	78	2	XTM-5278-020
62	90	76	4	1.5	90	2	XTM-6290-020

⁴⁾ Design without fixing hole



Long service life under extreme conditions

Resistant to wear and impact even at high loads and temperatures

iglidur® Z



When to use it?

- For temperatures up to +250°C long-term or +310°C short-term
- When low wear is required especially under high radial loads
- For high surface speeds
- For edge pressure in connection with high surface pressures



When not to use it?

- For low loads and temperatures
iglidur® P
- When a cost-effective all-round plain bearing is required
iglidur® G
- When electrically conductive plain bearings are required
iglidur® F, iglidur® H, iglidur® H370

Bearing technology | Plain bearings | iglidur® Z



Ø
4.0-120.0mm



Also available as:



Bar stock, round bar
Page 743

Long service life under extreme conditions Resistant to wear and impact even at high loads and temperatures

Extremely high compressive strength coupled with high flexibility enables iglidur® Z bearings to attain their prominent properties in association with soft shafts, edge loads and impacts. At the same time the bearings suitable for temperatures up to +250°C.

- Excellent wear resistance especially with high loads
- High temperature resistance
- Suitable for very high loads
- Suitable for high surface speeds
- Suitable for high edge pressures
- Lubrication-free
- Maintenance-free



Bar stock, plate
Page 773



tribo-tape liner
Page 781

Typical application areas

- Construction machinery industry
- Mechanical engineering
- Textile industry
- Aerospace engineering
- Glass industry



Guide rings
Page 641

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 100%; height: 10px; background-color: red;"></div>	+
Wear resistance at +90°C	-	<div style="width: 90%; height: 10px; background-color: red;"></div>	+
Wear resistance at +150°C	-	<div style="width: 80%; height: 10px; background-color: red;"></div>	+
Slide property	-	<div style="width: 100%; height: 10px; background-color: red;"></div>	+
Wear resistance under water	-	<div style="width: 20%; height: 10px; background-color: red;"></div>	+
Media resistance	-	<div style="width: 90%; height: 10px; background-color: red;"></div>	+
Resistant to edge pressures	-	<div style="width: 100%; height: 10px; background-color: red;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 100%; height: 10px; background-color: red;"></div>	+
Dirt resistance	-	<div style="width: 100%; height: 10px; background-color: red;"></div>	+



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

EN 06/2023



Technical data

General properties		Testing method	
Density	g/cm ³	1.40	
Colour		brown	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.3	DIN 53495
Max. moisture absorption	% weight	1.1	
Coefficient of friction, dynamic, against steel	μ	0.06-0.14	
pv value, max. (dry)	MPa · m/s	0.84	
Mechanical properties			
Flexural modulus	MPa	2,400	DIN 53457
Flexural strength at +20°C	MPa	95	DIN 53452
Compressive strength	MPa	65	
Max. permissible surface pressure (+20°C)	MPa	150	
Shore D hardness		81	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+250	
Max. application temperature short-term	°C	+310	
Min. application temperature	°C	-100	
Thermal conductivity	W/m · K	0.62	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	4	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹¹	DIN IEC 93
Surface resistance	Ω	> 10 ¹¹	DIN 53482

Table 01: Material properties

In addition to iglidur® X, iglidur® Z is among the best-selling iglidur® high-temperature materials. Specifically worth noting is the outstanding wear behaviour under extreme conditions (high loads and temperatures).

Moisture absorption

The moisture absorption of iglidur® Z plain bearings in ambient conditions is approximately 0.3% weight. The saturation limit submerged in water is 1.1% weight.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® Z bearings.

Radiation resistance

Plain bearings made from iglidur® Z are resistant up to a radiation intensity of 1 · 10⁵ Gy.

Resistance to weathering

igidur® Z plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® Z plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this. iglidur® Z is suitable for both medium and - due to its high heat resistance - high speeds. Diagram 03 shows the elastic deformation of iglidur® Z at radial loads. At the maximum recommended surface pressure of 23MPa the deformation is about 5.5% at room temperature.

Surface pressure, page 45



-100°C up to +250°C



150MPa



Permissible surface speeds

iglidur® Z is a high temperature material that is suitable for applications involving very high specific loads. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

The iglidur® Z plain bearings can be used at temperatures up to +310°C for short periods. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. At high temperatures iglidur® Z is also the most wear-resistant material in dry operation. For temperatures over +145°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The coefficient of friction declines just as the wear resistance with increasing load (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 shows wear rates in the lower load range, which are very similar to those of other wear-resistant iglidur® materials. However, in the upper load range iglidur® Z outperforms all other materials in wear resistance. Provided a Cf53 hardened and ground steel shaft is used, the wear is still only 15µm/km at 45MPa. At low loads the wear is still only 15µm/km at 45MPa. At low loads iglidur® Z plain bearings wear less in pivoting applications than in rotating applications. 304 stainless steel and hard-chromed shafts are of interest here.

Shaft materials, page 56

Installation tolerances

iglidur® Z plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	0
Diluted acids	+
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	-

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 1.5	1.1	5.0
Short-term	m/s 3.5	2.5	6.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.06-0.14	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	F10 [mm]	F10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.006	+0.046	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.010	+0.058	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.013	+0.071	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.016	+0.086	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.020	+0.104	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.025	+0.125	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.030	+0.150	-0.074	+0.000
> 80-120	+0.000	+0.035	-0.036	+0.176	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

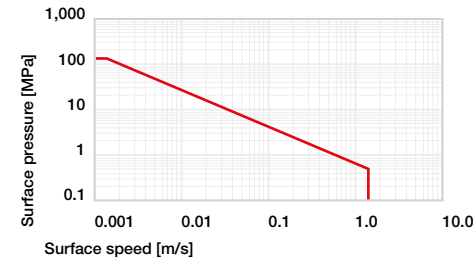


Diagram 01: Permissible pv values for iglidur® Z plain bearing with a wall thickness of 1 mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

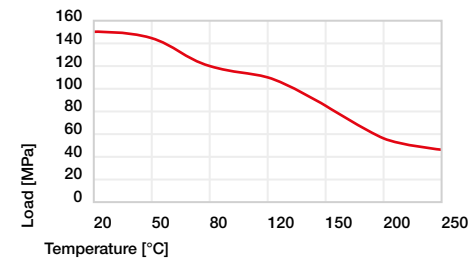


Diagram 02: Maximum recommended surface pressure as a function of temperature (150MPa at +20°C)

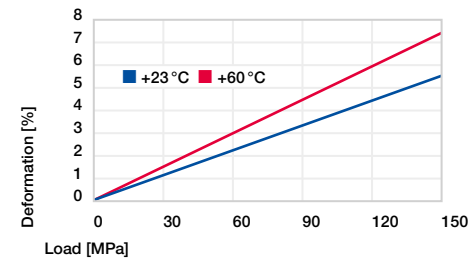


Diagram 03: Deformation under pressure and temperature

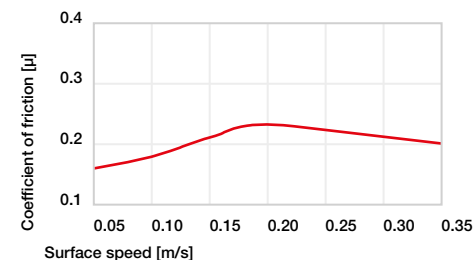


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

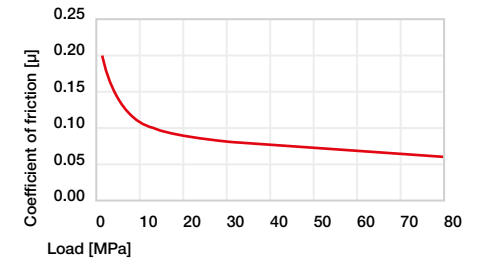


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

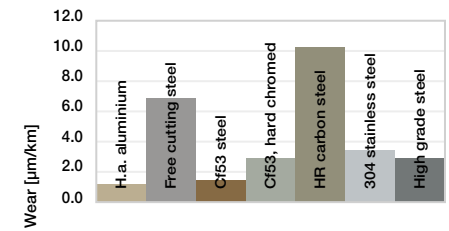


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

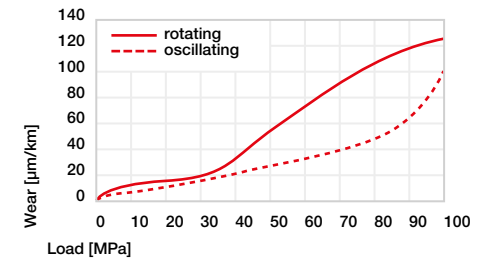
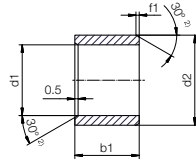


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions



Order example: **ZSM-0405-04** – no minimum order quantity.

Z iglidur® material **S** Cylindrical **M** Metric **04** Inner Ø d1 **05** Outer Ø d2 **04** Total length b1

d1	d1	d2	b1	Part No.	d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13		[mm]	Tolerance ³⁾	[mm]	h13	
4.0		5.5	8.0	ZSM-0405-08	14.0		16.0	25.0	ZSM-1416-25
4.0		5.5	4.0	ZSM-0405-04	15.0		17.0	15.0	ZSM-1517-15
4.0		5.5	6.0	ZSM-0405-06	15.0		17.0	20.0	ZSM-1517-20
5.0		7.0	5.0	ZSM-0507-05	15.0		17.0	22.0	ZSM-1517-22
5.0		7.0	9.0	ZSM-0507-09	15.0		17.0	25.0	ZSM-1517-25
5.0	+0.010	7.0	10.0	ZSM-0507-10	16.0	+0.016	18.0	12.0	ZSM-1618-12
6.0	+0.058	8.0	6.0	ZSM-0608-06	16.0	+0.086	18.0	15.0	ZSM-1618-15
6.0		8.0	8.0	ZSM-0608-08	16.0		18.0	20.0	ZSM-1618-20
6.0		8.0	10.0	ZSM-0608-10	16.0		18.0	25.0	ZSM-1618-25
6.0		8.0	12.0	ZSM-0608-12	18.0		20.0	15.0	ZSM-1820-15
6.0		10.0	6.0	ZSM-0610-06	18.0		20.0	20.0	ZSM-1820-20
8.0		10.0	6.0	ZSM-0810-06	18.0		20.0	24.0	ZSM-1820-24
8.0		10.0	8.0	ZSM-0810-08	18.0		20.0	25.0	ZSM-1820-25
8.0		10.0	10.0	ZSM-0810-10	20.0		23.0	10.0	ZSM-2023-10
8.0		10.0	12.0	ZSM-0810-12	20.0		23.0	15.0	ZSM-2023-15
10.0	+0.013	12.0	8.0	ZSM-1012-08	20.0		23.0	20.0	ZSM-2023-20
10.0	+0.071	12.0	10.0	ZSM-1012-10	20.0		23.0	25.0	ZSM-2023-25
10.0		12.0	12.0	ZSM-1012-12	20.0		23.0	30.0	ZSM-2023-30
10.0		12.0	15.0	ZSM-1012-15	20.0		23.0	35.0	ZSM-2023-35
10.0		12.0	20.0	ZSM-1012-20	22.0		24.0	30.0	ZSM-2224-30
12.0		14.0	8.0	ZSM-1214-08	22.0	+0.020	25.0	15.0	ZSM-2225-15
12.0		14.0	10.0	ZSM-1214-10	22.0	+0.104	25.0	20.0	ZSM-2225-20
12.0		14.0	12.0	ZSM-1214-12	22.0		25.0	25.0	ZSM-2225-25
12.0		14.0	15.0	ZSM-1214-15	22.0		25.0	30.0	ZSM-2225-30
12.0	+0.016	14.0	20.0	ZSM-1214-20	24.0		27.0	15.0	ZSM-2427-15
13.0	+0.086	15.0	10.0	ZSM-1315-10	24.0		27.0	20.0	ZSM-2427-20
13.0		15.0	20.0	ZSM-1315-20	24.0		27.0	25.0	ZSM-2427-25
14.0		16.0	15.0	ZSM-1416-15	24.0		27.0	30.0	ZSM-2427-30
14.0		16.0	20.0	ZSM-1416-20	25.0		28.0	15.0	ZSM-2528-15

³⁾ After press-fit. *Testing methods, page 61*

Product range

d1	d1	d2	b1	Part No.	d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13		[mm]	Tolerance ³⁾	[mm]	h13	
25.0		28.0	20.0	ZSM-2528-20	40.0		44.0	40.0	ZSM-4044-40
25.0		28.0	25.0	ZSM-2528-25	40.0		44.0	47.0	ZSM-4044-47
25.0		28.0	30.0	ZSM-2528-30	40.0		44.0	50.0	ZSM-4044-50
25.0		28.0	48.0	ZSM-2528-48	45.0		50.0	20.0	ZSM-4550-20
25.0		30.0	20.0	ZSM-2530-20	45.0		50.0	30.0	ZSM-4550-30
26.0		30.0	34.0	ZSM-2630-34	45.0	+0.025	50.0	40.0	ZSM-4550-40
28.0	+0.020	32.0	20.0	ZSM-2832-20	45.0	+0.125	50.0	50.0	ZSM-4550-50
28.0	+0.104	32.0	25.0	ZSM-2832-25	50.0		55.0	20.0	ZSM-5055-20
28.0		32.0	30.0	ZSM-2832-30	50.0		55.0	30.0	ZSM-5055-30
28.0		34.0	29.0	ZSM-2834-29	50.0		55.0	40.0	ZSM-5055-40
30.0		34.0	20.0	ZSM-3034-20	50.0		55.0	50.0	ZSM-5055-50
30.0		34.0	25.0	ZSM-3034-25	50.0		55.0	60.0	ZSM-5055-60
30.0		34.0	30.0	ZSM-3034-30	55.0		60.0	60.0	ZSM-5560-60
30.0		34.0	40.0	ZSM-3034-40	60.0	+0.030	65.0	60.0	ZSM-6065-60
32.0		35.0	44.0	ZSM-3235-44	70.0	+0.150	75.0	70.0	ZSM-7075-70
32.0		36.0	20.0	ZSM-3236-20	80.0		85.0	60.0	ZSM-8085-60
32.0		36.0	30.0	ZSM-3236-30	80.0		85.0	80.0	ZSM-8085-80
32.0		36.0	40.0	ZSM-3236-40	85.0	+0.036	90.0	60.0	ZSM-8590-60
35.0	+0.025	39.0	20.0	ZSM-3539-20	85.0	+0.176	90.0	100.0	ZSM-8590-100
35.0	+0.125	39.0	30.0	ZSM-3539-30	95.0		100.0	60.0	ZSM-95100-60
35.0		39.0	40.0	ZSM-3539-40	100.0	+0.072	105.0	100.0	ZSM-100105-100
35.0		39.0	50.0	ZSM-3539-50	120.0	+0.212	125.0	100.0	ZSM-120125-100
40.0		44.0	15.0	ZSM-4044-15		+0.043			
40.0		44.0	20.0	ZSM-4044-20		+0.203			
40.0		44.0	30.0	ZSM-4044-30					

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/Z



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling

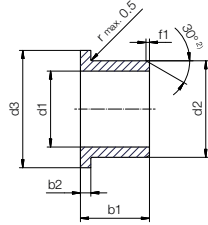
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions



Order example: **ZFM-0405-04** – no minimum order quantity.

Z iglidur® material **F** With flange **M** Metric **04** Inner Ø d1 **05** Outer Ø d2 **04** Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
4.0		5.5	9.5	4.0	0.75	ZFM-0405-04
5.0	+0.010	7.0	11.0	5.0	1.00	ZFM-0507-05
6.0	+0.058	8.0	12.0	4.0	1.00	ZFM-0608-04
6.0		8.0	12.0	8.0	1.00	ZFM-0608-08
8.0		10.0	15.0	5.0	1.00	ZFM-0810-05
8.0		10.0	15.0	7.5	1.00	ZFM-0810-07
8.0		10.0	15.0	9.0	1.00	ZFM-0810-09
9.0		11.0	17.0	20.0	1.00	ZFM-091117-20
10.0		12.0	18.0	5.0	1.00	ZFM-1012-05
10.0	+0.013	12.0	18.0	7.0	1.00	ZFM-1012-07
10.0	+0.071	12.0	18.0	9.0	1.00	ZFM-1012-09
10.0		12.0	18.0	12.0	1.00	ZFM-1012-12
10.0		12.0	18.0	15.0	1.00	ZFM-1012-15
10.0		12.0	18.0	17.0	1.00	ZFM-1012-17
10.0		13.0	15.0	5.5	1.50	ZFM-101315-05
12.0		14.0	20.0	7.0	1.00	ZFM-1214-07
12.0		14.0	20.0	9.0	1.00	ZFM-1214-09
12.0		14.0	20.0	12.0	1.00	ZFM-1214-12
12.0		14.0	20.0	17.0	1.00	ZFM-1214-17
12.0		14.0	20.0	20.0	1.00	ZFM-1214-20
14.0		16.0	22.0	12.0	1.00	ZFM-1416-12
14.0	+0.016	16.0	22.0	17.0	1.00	ZFM-1416-17
15.0	+0.086	17.0	23.0	9.0	1.00	ZFM-1517-09
15.0		17.0	23.0	11.0	1.00	ZFM-1517-11
15.0		17.0	23.0	12.0	1.00	ZFM-1517-12
15.0		17.0	23.0	15.0	1.00	ZFM-1517-15
15.0		17.0	23.0	17.0	1.00	ZFM-1517-17
15.0		17.0	23.0	23.0	1.00	ZFM-151723-23

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
16.0		18.0	24.0	12.0	1.00	ZFM-1618-12
16.0		18.0	24.0	17.0	1.00	ZFM-1618-17
18.0	+0.016	20.0	26.0	4.0	1.00	ZFM-1820-04
18.0	+0.086	20.0	26.0	12.0	1.00	ZFM-1820-12
18.0		20.0	26.0	17.0	1.00	ZFM-1820-17
18.0		20.0	26.0	22.0	1.00	ZFM-1820-22
20.0		22.0	30.0	21.0	1.00	ZFM-2022-21
20.0		23.0	30.0	11.5	1.50	ZFM-2023-11
20.0		23.0	30.0	15.5	1.50	ZFM-2023-155
20.0		23.0	30.0	16.5	1.50	ZFM-2023-16
20.0		23.0	30.0	21.5	1.50	ZFM-2023-21
20.0		23.0	30.0	31.5	1.50	ZFM-2023-31
25.0	+0.020	28.0	35.0	11.5	1.50	ZFM-2528-11
25.0	+0.104	28.0	35.0	16.5	1.50	ZFM-2528-16
25.0		28.0	35.0	21.5	1.50	ZFM-2528-21
25.0		28.0	35.0	31.5	1.50	ZFM-2528-31
30.0		34.0	42.0	13.0	2.00	ZFM-3034-13
30.0		34.0	42.0	16.0	2.00	ZFM-3034-16
30.0		34.0	42.0	20.0	2.00	ZFM-3034-20
30.0		34.0	42.0	26.0	2.00	ZFM-3034-26
30.0		34.0	42.0	37.0	2.00	ZFM-3034-37
35.0		39.0	47.0	16.0	2.00	ZFM-3539-16
35.0		39.0	47.0	26.0	2.00	ZFM-3539-26
40.0	+0.025	44.0	52.0	20.0	2.00	ZFM-4044-20
40.0	+0.125	44.0	52.0	30.0	2.00	ZFM-4044-30
40.0		44.0	52.0	40.0	2.00	ZFM-4044-40
45.0		50.0	58.0	50.0	2.00	ZFM-4550-50
50.0		55.0	63.0	20.0	2.00	ZFM-5055-20

³⁾ After press-fit. *Testing methods, page 61*

Product range

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
50.0	+0.025 +0.125	55.0	63.0	50.0	2.00	ZFM-5055-50

³⁾ After press-fit. *Testing methods, page 61*

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
60.0	+0.030	65.0	73.0	50.0	2.00	ZFM-6065-50
75.0	+0.150	80.0	88.0	50.0	2.50	ZFM-7580-50
75.0		80.0	94.0	65.0	2.00	ZFM-758094-65



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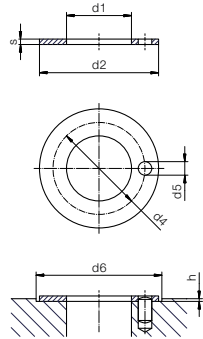
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Thrust washer (form T)



i Dimensions according to ISO 3547-1 and special dimensions

i Order example: **ZTM-1430-015** – no minimum order quantity.
Z iglidur® material T Thrust washer M Metric 14 Inner Ø d1 30 Outer Ø d2 015 Height s

d1	d2	d4	d5	h	d6	Øs	Part No.
+0.25	-0.25	-0.12 +0.12	+0.375 +0.125	+0.2/-0.2	+0.12	-0.05	
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
14	30	25	2	1.0	30	1.5	ZTM-1430-015 ¹⁴⁶⁾
15	27	⁴⁾	⁴⁾	1.0	27	1.5	ZTM-1527-015
15	35	⁴⁾	⁴⁾	1.0	35	1.5	ZTM-1535-015
15	40	⁴⁾	⁴⁾	1.0	35	1.5	ZTM-1540-015
16	23	⁴⁾	⁴⁾	1.0	23	1.5	ZTM-1623-015
20	36	28	3	1.0	36	1.5	ZTM-2036-015
22	38	30	3	1.0	38	1.5	ZTM-2238-015
22	50	30	3	1.0	38	0.5	ZTM-2250-005
22	50	30	3	1.0	38	1.5	ZTM-2250-015
28	38	⁴⁾	⁴⁾	1.0	38	1.5	ZTM-2838-015
32	54	43	4	1.0	54	1.5	ZTM-3254-015
62	90	⁴⁾	⁴⁾	1.5	90	2.0	ZTM-6290-020

⁴⁾ Design without fixing hole ¹⁴⁶⁾ d4 +/-0.2, d5 +/-0.1

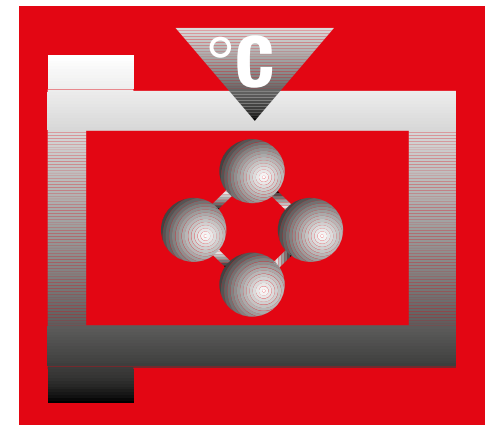
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No minimum order value.
No low-quantity surcharges.
Free shipping within Germany for orders above €150.



The high-temperature specialist up to +250°C Up to six times more wear-resistant than iglidur® X iglidur® X6



When to use it?

- When temperatures are higher than +150°C
- When the wear resistance of iglidur® X in pivoting and rotating applications is not sufficient
- When the press-fit should be improved over iglidur® X
- When high media resistance is required
- When a bearing which is free of PTFE is required



When not to use it?

- When a cost-effective universal plain bearing is required
iglidur® G
- When a plain bearing for underwater use is required
iglidur® UW500, iglidur® H370
- When a wear-resistant high-temperature plain bearing for linear motion is required
iglidur® Z

Bearing technology | Plain bearings | iglidur® X6



Ø
3.0-50.0mm



Also available as:



Bar stock, round bar
Page 743



Bar stock, plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

The high-temperature specialist up to +250°C Up to six times more wear-resistant than iglidur® X

Due to nanotechnology, iglidur® X6 shows up to six longer service life than iglidur® X in many pivoting and rotating applications - even at temperatures over +100°C.

- Continuous operating temperatures up to +250°C
- Up to 50% better press-fit than iglidur® X
- High compressive strength
- Extremely high chemical resistance
- PTFE-free
- Lubrication-free
- Maintenance-free

Typical application areas

- Glass industry
- Food industry
- Fluid technology
- Textile industry
- Mechanical engineering

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 100%; height: 10px; background-color: red; position: relative;"> 100% 0% </div>	+
Wear resistance at +90°C	-	<div style="width: 100%; height: 10px; background-color: red; position: relative;"> 100% 0% </div>	+
Wear resistance at +150°C	-	<div style="width: 100%; height: 10px; background-color: red; position: relative;"> 100% 0% </div>	+
Slide property	-	<div style="width: 100%; height: 10px; background-color: red; position: relative;"> 100% 0% </div>	+
Wear resistance under water	-	<div style="width: 100%; height: 10px; background-color: red; position: relative;"> 100% 0% </div>	+
Media resistance	-	<div style="width: 100%; height: 10px; background-color: red; position: relative;"> 100% 0% </div>	+
Resistant to edge pressures	-	<div style="width: 100%; height: 10px; background-color: red; position: relative;"> 100% 0% </div>	+
Resistant to shock and impact loads	-	<div style="width: 100%; height: 10px; background-color: red; position: relative;"> 100% 0% </div>	+
Dirt resistance	-	<div style="width: 100%; height: 10px; background-color: red; position: relative;"> 100% 0% </div>	+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.53	
Colour		dark blue	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.5	
Coefficient of friction, dynamic, against steel	μ	0.09-0.25	
pv value, max. (dry)	MPa · m/s	1.35	
Mechanical properties			
Flexural modulus	MPa	16,000	DIN 53457
Flexural strength at +20°C	MPa	290	DIN 53452
Compressive strength	MPa	190	
Max. permissible surface pressure (+20°C)	MPa	150	
Shore D hardness		89	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+250	
Max. application temperature short-term	°C	+315	
Min. application temperature	°C	-100	
Thermal conductivity	W/m · K	0.55	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	1.1	DIN 53752
Electrical properties ⁹⁾			
Specific transitional resistance	Ωcm	< 10 ⁵	DIN IEC 93
Surface resistance	Ω	< 10 ³	DIN 53482

⁹⁾ The good conductivity of this material can favour the generation of corrosion on the metallic contact components.

Table 01: Material properties

With respect to its general mechanical and thermal specifications, iglidur® X6 is directly comparable to our high-temperature classic, iglidur® X, and may even provide advantages, such as its wear behaviour.

Moisture absorption

The moisture absorption of iglidur® X6 plain bearings in ambient conditions is approximately 0.1% weight. The saturation limit submerged in water is 0.5% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance

They are resistant up to a radiation intensity of 2 · 10⁵ Gy.

Resistance to weathering

igidur® X6 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® X6 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® X6 at radial loads. At the maximum recommended surface pressure of 150MPa, the deformation is less than 2%. A possible deformation could be, among others, dependant on the duty cycle of the load.

Surface pressure, page 45



-100°C up to +250°C



150MPa



V-0



ISO 35474

Permissible surface speeds

The high temperature resistance and good thermal conductivity values mean that iglidur® X6 is suitable for high-speed applications. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

The ambient temperatures strongly influence the properties of plain bearings. With regard to temperature resistance, iglidur® X6 is among the highest in the iglidur® range. In many tests it has shown a six times higher wear resistance compared to the established high-temperature specialist iglidur® X. For temperatures over +165°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the load. The coefficient of friction of iglidur® X6 declines with higher pressure and is practically constant for pressures above 30MPa. A higher speed of the shaft also results in a lower coefficient of friction (diagram 04 and 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. The best case for iglidur® X6 is a ground surface with an average surface finish $R_a = 0.4\text{-}0.7\mu\text{m}$. Diagram 06 shows a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® X6. The best performance is achieved with the plain shaft materials free cutting steel and plain steel 1.0037. At higher loads, we recommend harder steel qualities. Non-hardened steel shafts can be worn by the bearing at pressures over 2MPa. The wear database shows that iglidur® X6 is more suitable for rotating than for pivoting applications (diagram 07). If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 56

Installation tolerances

iglidur® X6 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table). In relation to the installation tolerance, the inner diameter changes with the absorption of humidity.

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	+
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	+
Strong alkalines	+

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	1.5	1.1	5.0
Short-term m/s	3.5	2.5	10.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.09-0.25	0.09	0.04	0.04

Table 04: Coefficient of friction against steel ($R_a = 1\mu\text{m}$, 50HRC)

\varnothing d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	F10 [mm]	F10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.006	+0.046	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.010	+0.058	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.013	+0.071	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.016	+0.086	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.020	+0.104	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.025	+0.125	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.030	+0.150	-0.074	+0.000
> 80-120	+0.000	+0.035	-0.036	+0.176	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

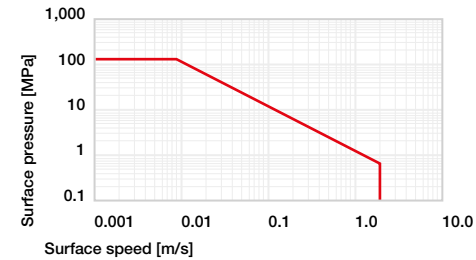


Diagram 01: Permissible pv values for iglidur® X6 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

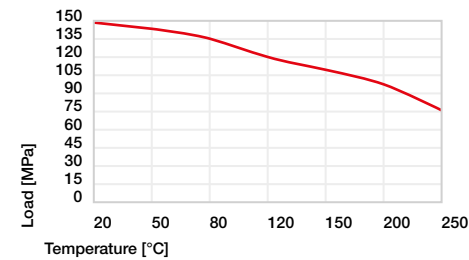


Diagram 02: Maximum recommended surface pressure as a function of temperature (150MPa at +20°C)

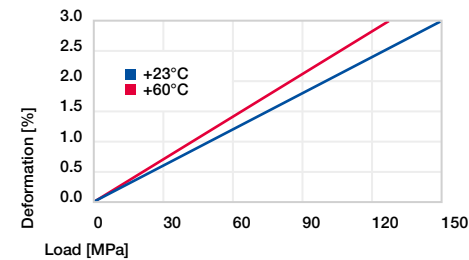


Diagram 03: Deformation under pressure and temperature

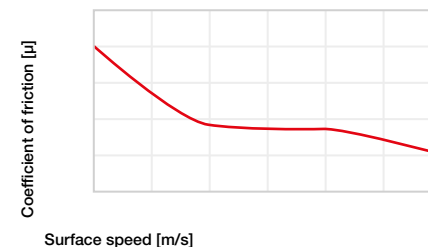


Diagram 04: Coefficient of friction as a function of the surface speed, $p = 0.75\text{MPa}$

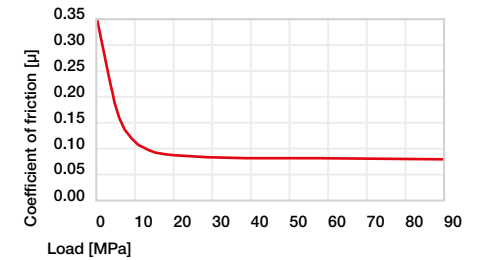


Diagram 05: Coefficient of friction as a function of the pressure, $v = 0.01\text{m/s}$

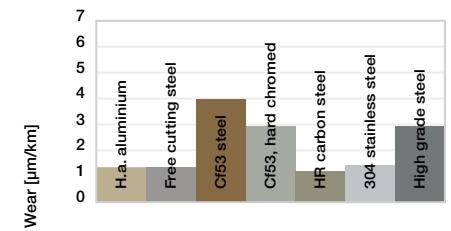


Diagram 06: Wear, rotating with different shaft materials, pressure, $p = 1\text{MPa}$, $v = 0.3\text{m/s}$

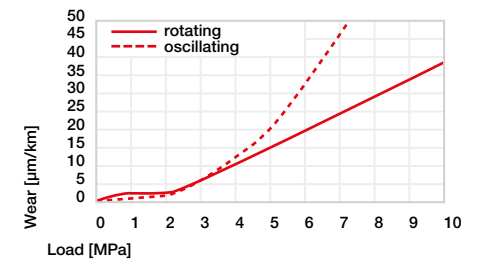
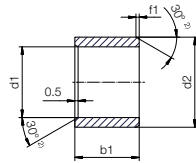


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® X6

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2



Dimensions according to ISO 3547-1 and special dimensions



Order example: **X6SM-0304-03** – no minimum order quantity.

X6 iglidur® material **S** Cylindrical **M** Metric **03** Inner Ø d1 **04** Outer Ø d2 **03** Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
3.0		4.5	3.0	X6SM-0304-03
5.0	+0.010 +0.058	7.0	5.0	X6SM-0507-05
6.0		8.0	6.0	X6SM-0608-06
8.0	+0.013 +0.071	10.0	10.0	X6SM-0810-10
10.0		12.0	10.0	X6SM-1012-10
12.0	+0.016 +0.086	14.0	12.0	X6SM-1214-12
16.0		18.0	15.0	X6SM-1618-15
20.0		23.0	20.0	X6SM-2023-20
25.0	+0.020 +0.104	28.0	30.0	X6SM-2528-30
30.0		34.0	30.0	X6SM-3034-30
35.0		39.0	40.0	X6SM-3539-40
40.0	+0.025 +0.125	44.0	40.0	X6SM-4044-40
50.0		55.0	40.0	X6SM-5055-40

³⁾ After press-fit. *Testing methods, page 61*



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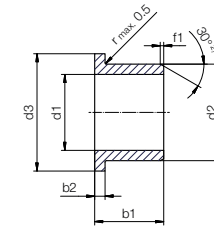
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Bearing technology | Plain bearings | iglidur® X6

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2



Dimensions according to ISO 3547-1 and special dimensions



Order example: **X6FM-0304-05** – no minimum order quantity.

X6 iglidur® material **F** With flange **M** Metric **03** Inner Ø d1 **04** Outer Ø d2 **05** Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾ [mm]	h13 [mm]	h13 [mm]	
3.0		4.5	7.5	5.0	0.75	X6FM-0304-05
5.0	+0.010 +0.058	7.0	11.0	5.0	1.00	X6FM-0507-05
6.0		8.0	12.0	6.0	1.00	X6FM-0608-06
8.0	+0.013 +0.071	10.0	15.0	10.0	1.00	X6FM-0810-10
10.0		12.0	18.0	10.0	1.00	X6FM-1012-10
10.0		12.0	18.0	25.0	1.00	X6FM-1012-25
12.0		14.0	20.0	12.0	1.00	X6FM-1214-12
16.0	+0.016 +0.086	18.0	24.0	12.0	1.00	X6FM-1618-12
16.0		18.0	24.0	17.0	1.00	X6FM-1618-17
20.0		23.0	30.0	21.5	1.50	X6FM-2023-21
25.0	+0.020 +0.104	28.0	35.0	21.5	1.50	X6FM-2528-21
30.0		34.0	42.0	40.0	2.00	X6FM-3034-40
35.0		39.0	47.0	26.0	2.00	X6FM-3539-26
40.0	+0.025 +0.125	44.0	52.0	40.0	2.00	X6FM-4044-40

³⁾ After press-fit. *Testing methods, page 61*



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For soft shafts and high temperatures

Wear and media-resistant

iglidur® V400



When to use it?

- When extreme wear resistance is required with soft shafts
- When the highest wear resistance at temperatures above +100°C is required
- When vibrations and edge loads are present
- When the bearing should be resistant to chemicals



When not to use it?

- For hardened shafts
iglidur® W300
- For applications at normal temperatures
iglidur® G, iglidur® J, iglidur® W300
- When a cost-effective universal plain bearing is required
iglidur® G

Bearing technology | Plain bearings | iglidur® V400



Ø
6.0-20.0mm



Also available
as:



Bar stock,
round bar
Page 743



Bar stock,
plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole
flange
bearings
Page 667



Moulded
special parts
Page 696



igubal®
spherical balls
Page 993

For soft shafts and high temperatures Wear and media-resistant

Highly wear-resistant bearings for soft shafts and temperatures up to +200°C with low moisture absorption and excellent resistance to chemicals.

- Excellent wear resistance with soft shaft materials and for temperatures up to +200°C
- Chemical-resistant
- High elasticity
- Lubrication-free
- Maintenance-free

Typical application areas

- Plant construction
- Automotive industry
- Automation
- Aerospace engineering
- Mechatronics

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 100%; height: 10px; background-color: red;"></div>	+
Wear resistance at +90°C	-	<div style="width: 100%; height: 10px; background-color: red;"></div>	+
Wear resistance at +150°C	-	<div style="width: 100%; height: 10px; background-color: red;"></div>	+
Slide property	-	<div style="width: 100%; height: 10px; background-color: red;"></div>	+
Wear resistance under water	-	<div style="width: 100%; height: 10px; background-color: red;"></div>	+
Media resistance	-	<div style="width: 100%; height: 10px; background-color: red;"></div>	+
Resistant to edge pressures	-	<div style="width: 100%; height: 10px; background-color: red;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 100%; height: 10px; background-color: red;"></div>	+
Dirt resistance	-	<div style="width: 100%; height: 10px; background-color: red;"></div>	+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.51	
Colour		cream	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.2	
Coefficient of friction, dynamic, against steel	μ	0.15-0.20	
pv value, max. (dry)	MPa · m/s	0.50	
Mechanical properties			
Flexural modulus	MPa	4,500	DIN 53457
Flexural strength at +20°C	MPa	95	DIN 53452
Compressive strength	MPa	47	
Max. permissible surface pressure (+20°C)	MPa	45	
Shore D hardness		74	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+200	
Max. application temperature short-term	°C	+240	
Min. application temperature	°C	-50	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	3	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

Table 01: Material properties

iglidur® V400 plain bearings are not suitable for high pressures or static high loads. However they are characterised by a high wear resistance all the way up to the maximum recommended surface pressure.

Moisture absorption

The moisture absorption of iglidur® V400 plain bearings is only 0.2% weight after saturation in water.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® V400 are resistant up to a radiation intensity of 2 · 10⁴ Gy. Higher radiation affects their mechanical properties.

Resistance to weathering

iglidur® V400 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® V400 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Moreover the limit of the permitted loads at +100°C is still very high with 20MPa. The high flexibility is shown in diagram 03.

Surface pressure, page 45



-50°C up to
+200°C



45MPa



V-0



Permissible surface speeds

iglidur® V400 also permits high surface speeds due to the high temperature resistance. The very favourable coefficient of friction of the bearing enables maximum surface speeds up to 1.3m/s. In linear applications, the permissible speeds are even higher and can be up to 3.0m/s.

Surface speed, page 48

Temperature

The maximum long-term application temperature is +200°C. For temperatures over +100°C an additional securing is required. Then, however, the wear resistance of the bearings is very good and adopts a leading position among all iglidur® materials. When temperatures increase, the compressive strength of iglidur® V400 plain bearings decreases. Diagram 02 shows this inverse relationship.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The coefficient of friction is dependent on the bearing's stressing capacity (diagrams 04 and 05). The coefficient of friction of iglidur® V400 is very constant. No other iglidur® plain bearing material exhibits a lower variance in the coefficients of friction, even when the shaft material is altered.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

The influence of the shaft material on the wear resistance is bigger than on the friction. Here, even at low loads (0.75MPa), significant differences occur, as shown in diagram 06. With regard to wear, iglidur® V400 plain bearings show better values in rotating applications than in pivoting movements (diagram 07).

Shaft materials, page 56

Installation tolerances

iglidur® V400 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	+
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	+
Strong alkalines	-

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 0.9	0.6	2.0
Short-term	m/s 1.3	0.9	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.15-0.20	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

\varnothing d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	F10 [mm]	F10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.006	+0.046	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.010	+0.058	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.013	+0.071	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.016	+0.086	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.020	+0.104	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.025	+0.125	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.030	+0.150	-0.074	+0.000
> 80-120	+0.000	+0.035	-0.036	+0.176	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

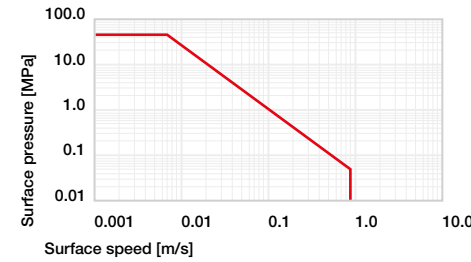


Diagram 01: Permissible pv values for iglidur® V400 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

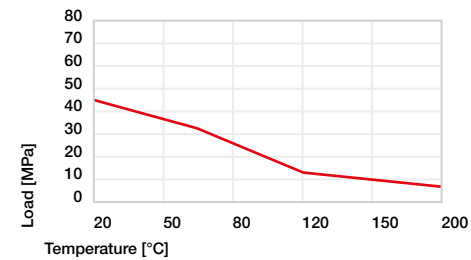


Diagram 02: Maximum recommended surface pressure as a function of temperature (45MPa at +20°C)

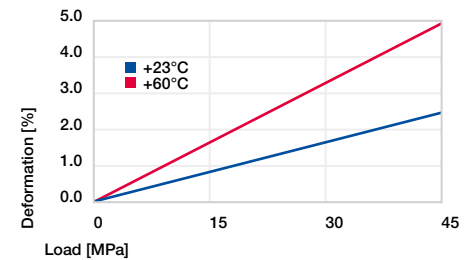


Diagram 03: Deformation under pressure and temperature

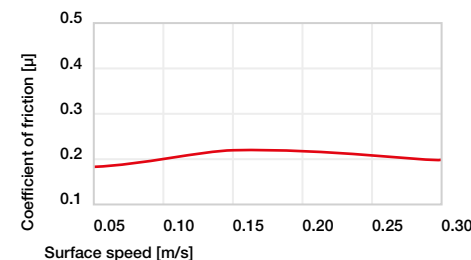


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

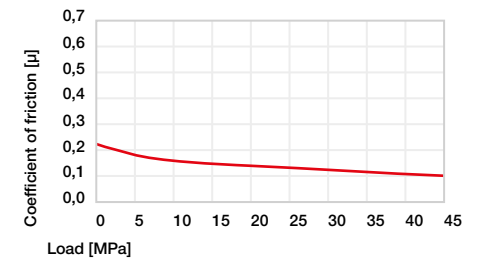


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

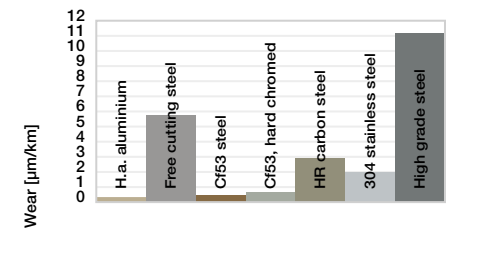


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

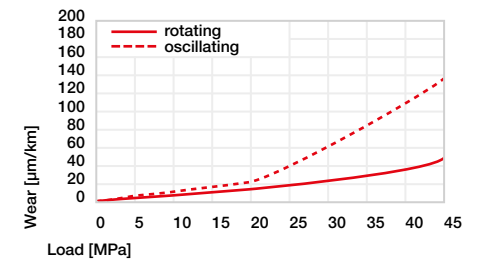
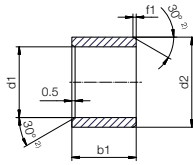


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® V400

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8



Order example: **VSM-0608-06** – no minimum order quantity.

V400 iglidur® material **S** Cylindrical **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **06** Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
6.0	+0.010 +0.058	8.0	6.0	VSM-0608-06
8.0	+0.013 +0.071	10.0	10.0	VSM-0810-10
10.0		12.0	10.0	VSM-1012-10
12.0		14.0	12.0	VSM-1214-12
16.0	+0.016 +0.086	18.0	15.0	VSM-1618-15
20.0	+0.020 +0.104	23.0	20.0	VSM-2023-20

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/V400



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

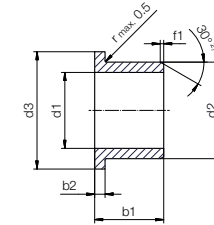
No low-quantity surcharges.

Free shipping within Germany for orders above €150.

EN 06/2023

Bearing technology | Plain bearings | iglidur® V400

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8



Order example: **VFM-0608-06** – no minimum order quantity.

V400 iglidur® material **F** With flange **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **06** Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾ [mm]	h13 [mm]	h13 [mm]	
6.0	+0.010 +0.058	8.0	12.0	6.0	1.00	VFM-0608-06
8.0	+0.013 +0.071	10.0	15.0	10.0	1.00	VFM-0810-10
10.0		12.0	18.0	10.0	1.00	VFM-1012-10
12.0		14.0	20.0	12.0	1.00	VFM-1214-12
16.0	+0.016 +0.086	18.0	24.0	17.0	1.00	VFM-1618-17
18.0		20.0	26.0	20.0	1.00	VFM-1820-20
20.0	+0.020 +0.104	23.0	30.0	21.5	1.50	VFM-2023-21

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/V400



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

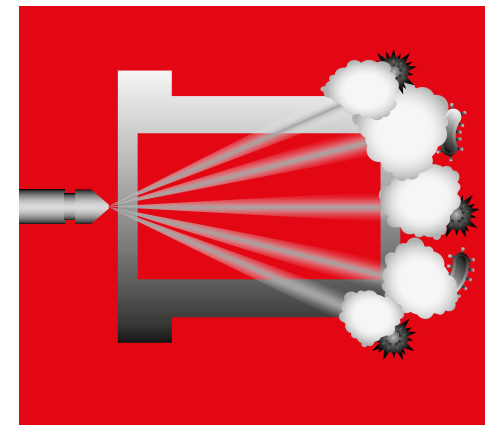
Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

EN 06/2023



All-rounder for steam sterilisation

Low-cost, media-resistant and hygienic
igidur® HSD350



When to use it?

- If the bearing point is regularly sterilised with hot steam
- When a low-cost material is required at the same time
- When good chemical resistance is required
- Low moisture absorption



When not to use it?

- When high pressures occur
igidur® G, iglidur® W300
- When continuous operating temperatures are higher than +180°C
igidur® G, iglidur® Z
- When a cost-effective bearing for occasional movements is necessary
igidur® G

Bearing technology | Plain bearings | iglidur® HSD350



Ø
6.0-20.0mm



Also available
as:



Bar stock,
round bar
Page 743

All-rounder for steam sterilisation Low-cost, media-resistant and hygienic

The new material enables continuous operation where hygiene is important, including regular sterilisation, with an outstanding price-performance ratio.

- Temperature-resistant up to +180°C
- Suitable for wet environments
- High media resistance
- Corrosion-free
- Lubrication-free
- Sterilisable
- Maintenance-free



Bar stock,
plate
Page 773

Typical application areas

- Filling technology
- Medical and laboratory technology



tribo-tape liner
Page 781



Guide rings
Page 641

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 100%; height: 10px; background-color: red;"></div>	+
Wear resistance at +90°C	-	<div style="width: 90%; height: 10px; background-color: red;"></div>	+
Wear resistance at +150°C	-	<div style="width: 80%; height: 10px; background-color: red;"></div>	+
Slide property	-	<div style="width: 100%; height: 10px; background-color: red;"></div>	+
Wear resistance under water	-	<div style="width: 100%; height: 10px; background-color: red;"></div>	+
Media resistance	-	<div style="width: 100%; height: 10px; background-color: red;"></div>	+
Resistant to edge pressures	-	<div style="width: 100%; height: 10px; background-color: red;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 100%; height: 10px; background-color: red;"></div>	+
Dirt resistance	-	<div style="width: 100%; height: 10px; background-color: red;"></div>	+



Two hole
flange
bearings
Page 667



Moulded
special parts
Page 696



igubal®
spherical balls
Page 993

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

EN 06/2023



Technical data

General properties		Testing method	
Density	g/cm ³	1.39	
Colour		beige	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.6	ISO 175
Max. moisture absorption	% weight	1.2	ISO 62
Coefficient of friction, dynamic, against steel	μ	0.07-0.23	
pv value, max. (dry)	MPa · m/s	0.30	
Mechanical properties			
Flexural modulus	MPa	2,150	DIN EN ISO 178
Flexural strength at +20°C	MPa	67	DIN EN ISO 178
Compressive strength	MPa	44	
Max. permissible surface pressure (+20°C)	MPa	30	
Shore D hardness		77	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+180	
Max. application temperature short-term	°C	+210	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	7	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹³	DIN IEC 93
Surface resistance	Ω	> 10 ¹⁴	DIN 53482

Table 01: Material properties

iglidur® HSD350 was specially developed for use in applications where decontamination by steam (e.g. in autoclaves) is necessary. iglidur® HSD350 offers an excellent price-performance ratio.

Moisture absorption

The moisture absorption of iglidur® HSD350 plain bearings is approximately 0.6% weight in standard climatic conditions. The saturation limit submerged in water is 1.2% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

Vacuum

In vacuum, the moisture content is released as vapour. Due to its low moisture absorption, use in a vacuum is possible.

Radiation resistance

Plain bearings made from iglidur® HSD350 are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

iglidur® HSD350 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® HSD350 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® HSD350 under different loads. At the maximum recommended surface pressure of 30MPa, the deformation is less than 2%. A possible deformation could be, among others, dependant on the duty cycle of the load.

Surface pressure, page 45



-40°C up to
+180°C



30MPa



V-0



Permissible surface speeds

Due to its rather good thermal conductivity and thermal resistance, iglidur® HSD350 is suitable for speeds in the medium range. The permissible surface speed decreases with increasing surface pressure.

Surface speed, page 48

Temperature

The ambient temperatures strongly influence the properties of plain bearings. According to its field of application as autoclavable material, iglidur® HSD350 offers good thermal resistance. For temperatures over +130°C an axial securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The coefficient of friction increases constantly and slowly over the speed, but remains below 0.3μ up to a speed of 2.0m/s.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 and 07 display a summary of the test results with different shaft materials conducted with plain bearings made from iglidur® HSD350. At 0.3 m/s and 1 MPa surface pressure, a wide variety of shafts are suitable and provide good wear results. Hard-anodised aluminium, free cutting steel, hard-chromed Cf53, 304 stainless steel and high grade steel exhibit low wear. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 56

Installation tolerances

iglidur® HSD350 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table). In relation to the installation tolerance, the inner diameter changes with the absorption of humidity.

Testing methods, page 61

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	+
Diluted alkalines	+
Fuels	+ up to 0
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	0
Strong alkalines	0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	1.1	0.8	3.0
Short-term m/s	1.2	1.0	3.2

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.07-0.23	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μm, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	F10 [mm]	F10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.006	+0.046	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.010	+0.058	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.013	+0.071	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.016	+0.086	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.020	+0.104	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.025	+0.125	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.030	+0.150	-0.074	+0.000
> 80-120	+0.000	+0.035	-0.036	+0.176	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

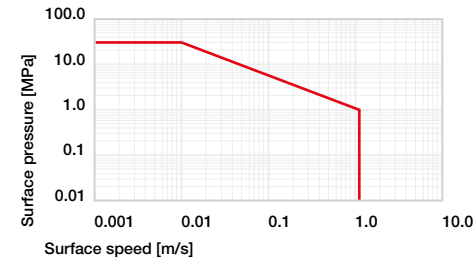


Diagram 01: Permissible pv values for iglidur® HSD350 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

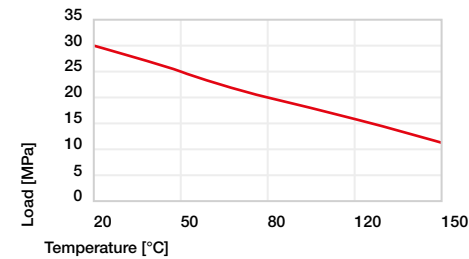


Diagram 02: Maximum recommended surface pressure as a function of temperature (30MPa at +20°C)

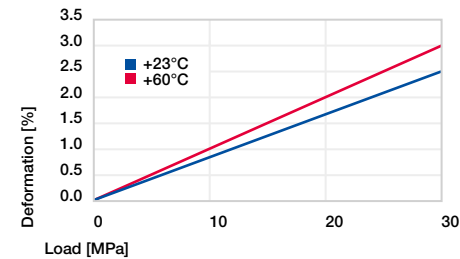


Diagram 03: Deformation under pressure and temperature

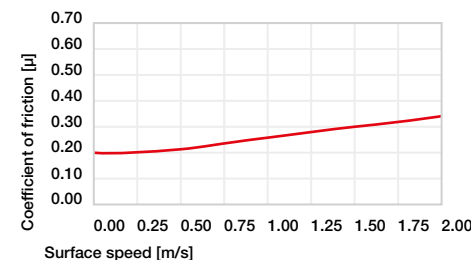


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

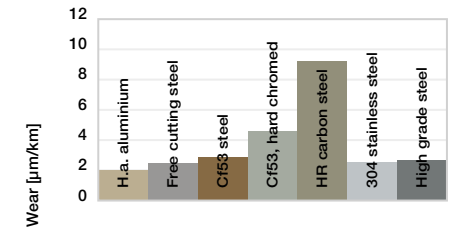


Diagram 05: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

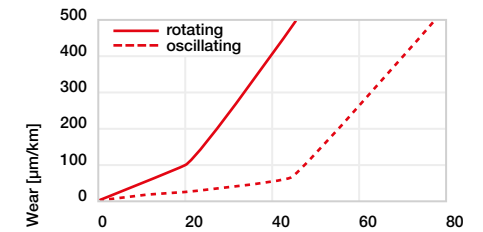
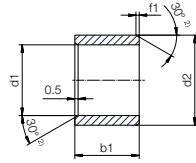


Diagram 06: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® HSD350

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 6-12	Ø 12-30
f1 [mm]	0.5	0.8



Order example: **HSD350SM-0608-06** – no minimum order quantity.

HSD350 iglidur® material **S** Cylindrical **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **06** Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
6.0	+0.010 +0.058	8.0	6.0	HSD350SM-0608-06
8.0	+0.013 +0.071	10.0	10.0	HSD350SM-0810-10
10.0		12.0	10.0	HSD350SM-1012-10
12.0		14.0	12.0	HSD350SM-1214-12
16.0	+0.016 +0.086	18.0	15.0	HSD350SM-1618-15
20.0	+0.020 +0.104	23.0	20.0	HSD350SM-2023-20

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/HSD350



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

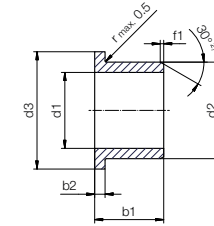
No low-quantity surcharges.

Free shipping within Germany for orders above €150.

EN 06/2023

Bearing technology | Plain bearings | iglidur® HSD350

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 6-12	Ø 12-30
f1 [mm]	0.5	0.8



Order example: **HSD350FM-0608-06** – no minimum order quantity.

HSD350 iglidur® material **F** With flange **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **06** Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾ [mm]	h13 [mm]	h13 [mm]	
6.0	+0.010 +0.058	8.0	12.0	6.0	1.00	HSD350FM-0608-06
8.0	+0.013 +0.071	10.0	15.0	10.0	1.00	HSD350FM-0810-09
10.0		12.0	18.0	9.0	1.00	HSD350FM-1012-09
12.0		14.0	20.0	12.0	1.00	HSD350FM-1214-12
16.0	+0.016 +0.086	18.0	24.0	17.0	1.00	HSD350FM-1618-17
20.0	+0.020 +0.104	23.0	30.0	21.5	1.50	HSD350FM-2023-21

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

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Order online

including delivery times, prices, online tools

www.igus.eu/HSD350



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

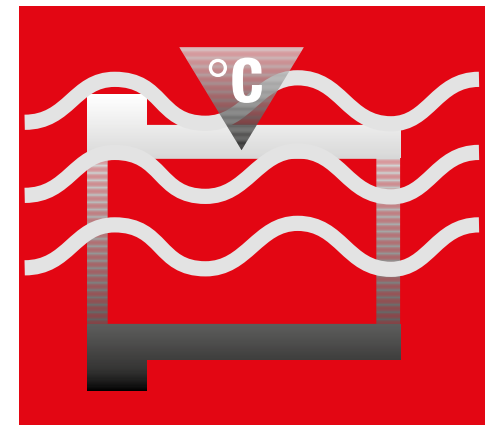
Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

EN 06/2023



For hot liquids

Continuous wear resistance in liquids

iglidur® UW500



When to use it?

- When plain bearings need to be used in liquids
- For high speeds
- For high temperatures
- When a high chemical resistance is required



When not to use it?

- When a cost-effective underwater plain bearing for the standard temperature range is required
iglidur® UW
- When a cost-effective underwater plain bearing is required for rare operations
iglidur® H
- When a cost-effective universal plain bearing is required
iglidur® G

Bearing technology | Plain bearings | iglidur® UW500



∅
-



Also available
as:



Bar stock,
round bar
Page 743

For hot liquids Continuous wear resistance in liquids

iglidur® UW500 was developed for underwater applications at higher temperatures up to +250°C. In addition, the plain bearings will run in chemicals which would act as a lubricant.

- High temperature resistance
- Suitable for high surface speeds
- Lubrication-free
- Suitable for underwater applications
- Maintenance-free



Bar stock,
plate
Page 773

Typical application areas

- Plant construction
- Pumps
- Chemical industry



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole
flange
bearings
Page 667



Moulded
special parts
Page 696



igubal®
spherical balls
Page 993

Descriptive technical specifications				
Wear resistance at +23°C	-	<div style="display: inline-block; width: 100px; height: 10px; background-color: red; border: 1px solid black;"></div>		+
Wear resistance at +90°C	-	<div style="display: inline-block; width: 100px; height: 10px; background-color: red; border: 1px solid black;"></div>		+
Wear resistance at +150°C	-	<div style="display: inline-block; width: 100px; height: 10px; background-color: red; border: 1px solid black;"></div>		+
Slide property	-	<div style="display: inline-block; width: 100px; height: 10px; background-color: red; border: 1px solid black;"></div>		+
Wear resistance under water	-	<div style="display: inline-block; width: 100px; height: 10px; background-color: red; border: 1px solid black;"></div>		+
Media resistance	-	<div style="display: inline-block; width: 100px; height: 10px; background-color: red; border: 1px solid black;"></div>		+
Resistant to edge pressures	-	<div style="display: inline-block; width: 100px; height: 10px; background-color: red; border: 1px solid black;"></div>		+
Resistant to shock and impact loads	-	<div style="display: inline-block; width: 100px; height: 10px; background-color: red; border: 1px solid black;"></div>		+
Dirt resistance	-	<div style="display: inline-block; width: 100px; height: 10px; background-color: red; border: 1px solid black;"></div>		+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties			Testing method
Density	g/cm³	1.49	
Colour		black	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption ⁹⁾	% weight	0.5	
Coefficient of friction, dynamic, against steel	μ	0.20-0.36	
pv value, max. (dry)	MPa · m/s	0.35	
Mechanical properties			
Flexural modulus	MPa	16,000	DIN 53457
Flexural strength at +20°C	MPa	260	DIN 53452
Compressive strength	MPa	140	
Max. permissible surface pressure (+20°C)	MPa	140	
Shore D hardness		86	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+250	
Max. application temperature short-term	°C	+300	
Min. application temperature	°C	-100	
Thermal conductivity	W/m · K	0.60	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	4	DIN 53752
Electrical properties ⁹⁾			
Specific transitional resistance	Ωcm	< 10 ⁹	DIN IEC 93
Surface resistance	Ω	< 10 ⁹	DIN 53482

⁹⁾ The good conductivity of this material can favour the generation of corrosion on the metallic contact components.

⁹⁾ All results were obtained under laboratory conditions with demineralised water. For application with direct water contact, we recommend tests under real application conditions.

Table 01: Material properties

The plain bearings made from iglidur® UW500 were developed for underwater applications with high temperatures. Examples for this are water pumps in automotive engineering, but also the field of medical engineering and related sectors. Unless the underwater operation is explicitly stated, the information in this chapter describes iglidur® UW500 in dry operation.

Moisture absorption

The moisture absorption of iglidur® UW500 plain bearings is below 0.1% weight in ambient conditions. The maximum moisture absorption is 0.5% weight. iglidur® UW500 plain bearings can be used for underwater applications.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance

Plain bearings made from iglidur® UW500 are resistant up to a radiation intensity of 1 · 10⁵ Gy. They resist to hard gamma radiation (1,000Mrad) and alpha or beta radiation (10,000Mrad).

Resistance to weathering

iglidur® UW500 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® UW500 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this. Diagram 03 shows the elastic deformation of iglidur® UW500 under different loads.

Surface pressure, page 45



-100°C up to
+250°C



140 MPa



Permissible surface speeds

iglidur® UW500 plain bearings can be used in applications involving dry operation as well as in liquids in a wide variety of applications. Due to hydrodynamic lubrication at high speeds, surface speeds far above 1.5m/s can be achieved.

Surface speed, page 48

Temperature

iglidur® UW500 can be used in applications where there are continuous temperatures of +150°C. If the bearings are mechanically secured, these temperatures can be even higher than +200°C. iglidur® UW500 belongs to the most temperature-resistant iglidur® materials. For temperatures over +150°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Diagrams 04 and 05 show the coefficient of friction of iglidur® UW500 plain bearings as a function of surface speed and pressure. The friction and wear are also dependent, to a large degree, on the mating partner. Ground surfaces with an average surface finish Ra of 0.1 to 0.4µm are ideal.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® UW500.

Shaft materials, page 56

Installation tolerances

iglidur® UW500 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Product range

iglidur® UW500 plain bearings are manufactured to special order.

Chemicals	Resistance
Alcohols	+
Diluted acids	+
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	+
Strong alkalines	+

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 0.8	0.6	2.0
Short-term	m/s 1.5	1.1	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.20-0.36	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	F10 [mm]	F10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.006	+0.046	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.010	+0.058	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.013	+0.071	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.016	+0.086	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.020	+0.104	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.025	+0.125	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.030	+0.150	-0.074	+0.000
> 80-120	+0.000	+0.035	-0.036	+0.176	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

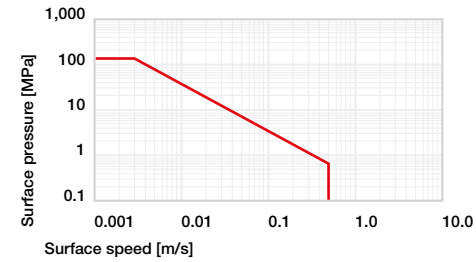


Diagram 01: Permissible pv values for iglidur® UW500 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

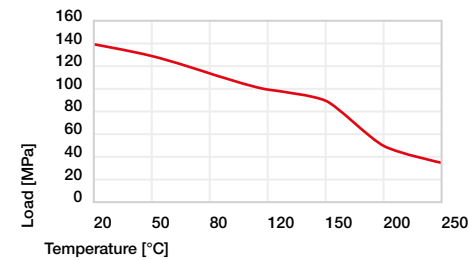


Diagram 02: Maximum recommended surface pressure as a function of temperature (140MPa at +20°C)

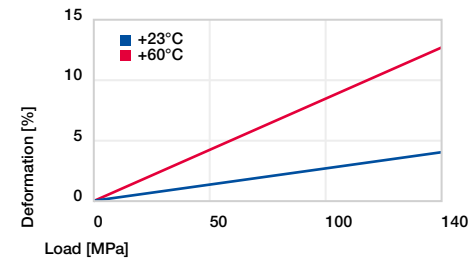


Diagram 03: Deformation under pressure and temperature

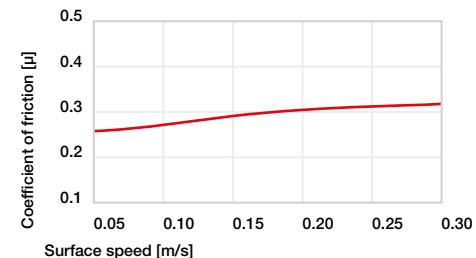


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

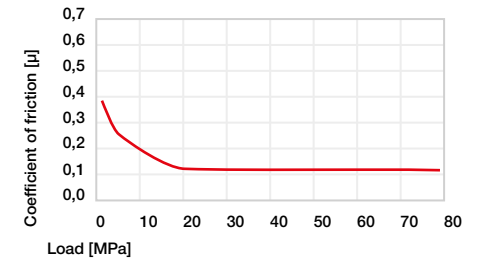


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

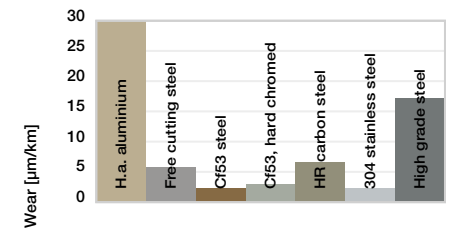


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

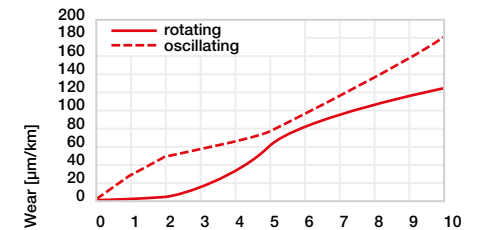


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load



Plain bearing materials with good media resistance





Plain bearing materials with good media resistance

Almost at the same level as the previous group in terms of temperatures, the "igidur® H family" is characterised by a high media resistance and a wide range of applications in wet areas.

igidur® H370 is the specialist for underwater applications, iglidur® H2 is the media-resistant, low-cost bearing solution for high-volume production with low running performance and iglidur® H1, the endurance runner of this group.

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 **Online service life calculation**
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	igidur® H1 Endurance runner with high media resistance	Temperature [°C] ¹²³⁾	+200	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
		Surface pressure [MPa] ¹²⁴⁾	80	-	<div style="width: 75%; height: 10px; background-color: #008080;"></div>	+
		Coefficient of friction [μ] ¹²⁵⁾	0.17	-	<div style="width: 25%; height: 10px; background-color: #008080;"></div>	+
		Wear [μm/km] ¹²⁵⁾	0.29	-	<div style="width: 10%; height: 10px; background-color: #008080;"></div>	+
		Price index	-	-	<div style="width: 25%; height: 10px; background-color: #008080;"></div>	+
	igidur® H370 Long service life under water	Temperature [°C] ¹²³⁾	+200	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
		Surface pressure [MPa] ¹²⁴⁾	75	-	<div style="width: 75%; height: 10px; background-color: #008080;"></div>	+
		Coefficient of friction [μ] ¹²⁵⁾	0.17	-	<div style="width: 25%; height: 10px; background-color: #008080;"></div>	+
		Wear [μm/km] ¹²⁵⁾	1.20	-	<div style="width: 25%; height: 10px; background-color: #008080;"></div>	+
	igidur® H The classic with high resistance to media and temperature	Temperature [°C] ¹²³⁾	+200	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
		Surface pressure [MPa] ¹²⁴⁾	90	-	<div style="width: 75%; height: 10px; background-color: #008080;"></div>	+
		Coefficient of friction [μ] ¹²⁵⁾	0.17	-	<div style="width: 25%; height: 10px; background-color: #008080;"></div>	+
		Wear [μm/km] ¹²⁵⁾	2.10	-	<div style="width: 25%; height: 10px; background-color: #008080;"></div>	+
	igidur® C500 High temperature endurance runner	Temperature [°C] ¹²³⁾	+250	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
		Surface pressure [MPa] ¹²⁴⁾	80	-	<div style="width: 75%; height: 10px; background-color: #008080;"></div>	+
		Coefficient of friction [μ] ¹²⁵⁾	0.19	-	<div style="width: 25%; height: 10px; background-color: #008080;"></div>	+
		Wear [μm/km] ¹²⁵⁾	0.48	-	<div style="width: 10%; height: 10px; background-color: #008080;"></div>	+
		Price index	-	-	<div style="width: 75%; height: 10px; background-color: #008080;"></div>	+

¹²³⁾ Upper long-term application temperature ¹²⁴⁾ Max. recommended surface pressure at +20°C ¹²⁵⁾ Best pairing for p = 1 MPa, v = 0.3m/s, rotating

High media resistance



igidur® H2
The low-cost specialist for chemicals and temperatures

Temperature [°C] ¹²³⁾	+200	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
Surface pressure [MPa] ¹²⁴⁾	110	-	<div style="width: 75%; height: 10px; background-color: #008080;"></div>	+
Coefficient of friction [μ] ¹²⁵⁾	0.32	-	<div style="width: 25%; height: 10px; background-color: #008080;"></div>	+
Wear [μm/km] ¹²⁵⁾	4.80	-	<div style="width: 25%; height: 10px; background-color: #008080;"></div>	+
Price index	-	-	<div style="width: 25%; height: 10px; background-color: #008080;"></div>	+



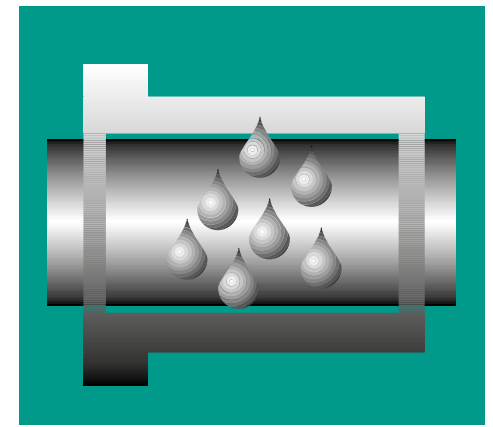
igidur® H3
Chemical resistance

Temperature [°C] ¹²³⁾	+200	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
Surface pressure [MPa] ¹²⁴⁾	40	-	<div style="width: 50%; height: 10px; background-color: #008080;"></div>	+
Coefficient of friction [μ] ¹²⁵⁾	0.17	-	<div style="width: 25%; height: 10px; background-color: #008080;"></div>	+
Wear [μm/km] ¹²⁵⁾	0.14	-	<div style="width: 10%; height: 10px; background-color: #008080;"></div>	+
Price index	-	-	<div style="width: 25%; height: 10px; background-color: #008080;"></div>	+



igidur® H5
Resistant to temperature and chemicals

Temperature [°C] ¹²³⁾	+200	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
Surface pressure [MPa] ¹²⁴⁾	80	-	<div style="width: 75%; height: 10px; background-color: #008080;"></div>	+
Coefficient of friction [μ] ¹²⁵⁾	0.23	-	<div style="width: 25%; height: 10px; background-color: #008080;"></div>	+
Wear [μm/km] ¹²⁵⁾	1.82	-	<div style="width: 25%; height: 10px; background-color: #008080;"></div>	+
Price index	-	-	<div style="width: 25%; height: 10px; background-color: #008080;"></div>	+



Endurance runner with high media resistance

Excellent coefficient of friction and wear
igidur® H1



When to use it?

- When extreme service life is required under the influence of temperature and humidity
- When low coefficient of friction at high temperature is important
- When aggressive cleaning is required
- For under bonnet applications



When not to use it?

- When high surface pressures occur
igidur® Z
- When the best universal chemical resistance is required
igidur® X
- When a cost-effective high-temperature plain bearing is required, not the ideal wear resistance
igidur® H2
- When an FDA-compliant plain bearing with high temperature resistance is required
igidur® A500

Bearing technology | Plain bearings | iglidur® H1



Ø
3.0-50.0mm



Also available as:



Bar stock, round bar
Page 743



Bar stock, plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

Endurance runner with high media resistance Excellent coefficient of friction and wear

iglidur® H1 is the first choice when long service life is required in extreme environmental conditions. Extreme wear resistance is coupled with excellent resistance to temperature and media - not only in the food and packaging industries or the automotive industry.

- High wear resistance in extreme ambient conditions
- Low coefficient of friction
- High temperature resistance
- For underbonnet applications
- Lubrication-free
- Chemical-resistant
- Maintenance-free

Typical application areas

- Beverage industry
- Automation
- Packaging
- Textile industry
- Optical industry

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
Wear resistance at +90°C	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
Wear resistance at +150°C	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
Slide property	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
Wear resistance under water	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
Media resistance	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
Resistant to edge pressures	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
Dirt resistance	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.53	
Colour		cream	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.3	
Coefficient of friction, dynamic, against steel	μ	0.06-0.20	
pv value, max. (dry)	MPa · m/s	0.80	
Mechanical properties			
Flexural modulus	MPa	2,800	DIN 53457
Flexural strength at +20°C	MPa	55	DIN 53452
Compressive strength	MPa	78	
Max. permissible surface pressure (+20°C)	MPa	80	
Shore D hardness		77	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+200	
Max. application temperature short-term	°C	+240	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	6	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹¹	DIN 53482

Table 01: Material properties

iglidur® H1 plain bearings have been specially developed for use under extreme environmental conditions. Their strengths are the extremely high wear resistance and the excellent coefficient of friction even in applications in which the bearing is exposed to extreme temperatures and/or aggressive chemicals. iglidur® H1 plain bearings can be used completely free of lubrication; in wet area applications, the surrounding medium acts as additional lubricant.

Moisture absorption

The moisture absorption of iglidur® H1 plain bearings in ambient conditions is approximately 0.1% weight. The saturation limit submerged in water is 0.3% weight. Therefore iglidur® H1 is very well suited for use in wet environments.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance

They are resistant up to a radiation intensity of 2 · 10² Gy.

Resistance to weathering

iglidur® H1 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® H1 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® H1 at radial loads. Among the iglidur® H materials, iglidur® H1 material has the greatest flexibility. This must be considered for applications with high surface pressure or edge loads.

Surface pressure, page 45



-40°C up to +200°C



80MPa



V-0



Permissible surface speeds

Due to their excellent coefficient of friction, rotating surface speeds of up to 2.0m/s are possible with iglidur® H1 plain bearings in dry operation. Linear speeds up to 5.0m/s can be attained. The speeds stated in table 03 are limit values for the lowest bearing loads. With higher loads, the permitted speed drops with the extent of the load due to the limitations by the pv value.

Surface speed, page 48

Temperature

iglidur® H1 is an extremely temperature-resistant material. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. In the case of iglidur® H1 in particular, however, this increase is very small. For temperatures over +80°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The coefficient of friction alters similarly to the wear resistance with increasing load and surface speed (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® H1. The iglidur® H1 plain bearings display excellent wear behaviour in combination with a wide variety of shaft materials both in rotating and pivoting applications. On the 304 stainless steel shafts in particular, iglidur® H1 attains very low wear rates both in rotating and pivoting operations. Even on hard-anodised aluminium shafts, iglidur® H1 plain bearings attain long service life in rotating applications with low to medium loads.

Shaft materials, page 56

Installation tolerances

iglidur® H1 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	+ up to 0
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	+ up to -
Strong alkalines	+ up to -

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 2.0	1.0	5.0
Short-term	m/s 2.5	1.5	7.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.06-0.20	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	F10 [mm]	F10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.006	+0.046	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.010	+0.058	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.013	+0.071	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.016	+0.086	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.020	+0.104	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.025	+0.125	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.030	+0.150	-0.074	+0.000
> 80-120	+0.000	+0.035	-0.036	+0.176	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

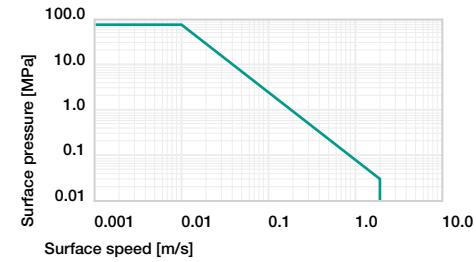


Diagram 01: Permissible pv values for iglidur® H1 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

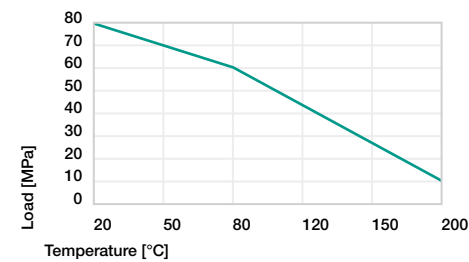


Diagram 02: Maximum recommended surface pressure as a function of temperature (80MPa at +20°C)

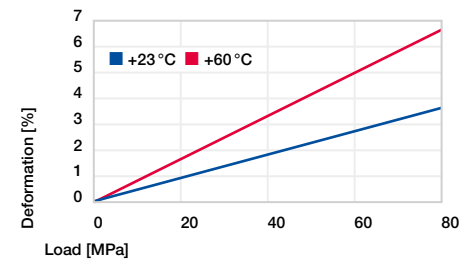


Diagram 03: Deformation under pressure and temperature

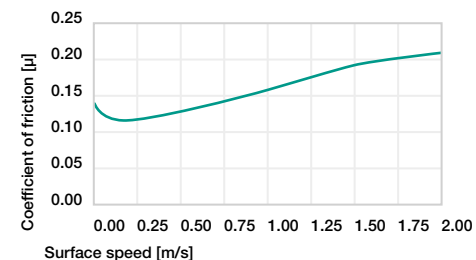


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

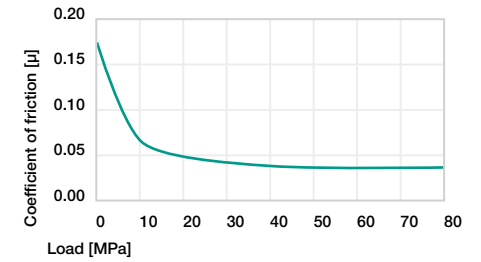


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

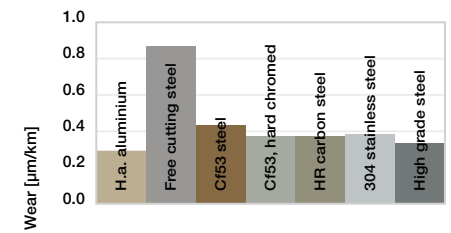


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

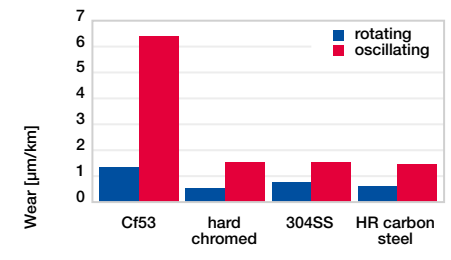
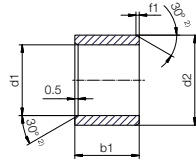


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2



Dimensions according to ISO 3547-1 and special dimensions



Order example: **H1SM-0304-05** – no minimum order quantity.

H1 iglidur® material **S** Cylindrical **M** Metric **03** Inner Ø d1 **04** Outer Ø d2 **05** Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
3.0	+0.006 +0.046	4.5	5.0	H1SM-0304-05
4.0		5.5	4.0	H1SM-0405-04
4.0		5.5	6.0	H1SM-0405-06
5.0	+0.010	7.0	5.0	H1SM-0507-05
5.0		7.0	10.0	H1SM-0507-10
6.0	+0.058	8.0	6.0	H1SM-0608-06
6.0		8.0	8.0	H1SM-0608-08
6.0		8.0	10.0	H1SM-0608-10
8.0	+0.013 +0.071	10.0	8.0	H1SM-0810-08
8.0		10.0	10.0	H1SM-0810-10
8.0		10.0	12.0	H1SM-0810-12
8.0		10.0	15.0	H1SM-0810-15
10.0		12.0	8.0	H1SM-1012-08
10.0		12.0	10.0	H1SM-1012-10
10.0		12.0	12.0	H1SM-1012-12
10.0		12.0	15.0	H1SM-1012-15
10.0		12.0	20.0	H1SM-1012-20
12.0		14.0	10.0	H1SM-1214-10
12.0	14.0	12.0	H1SM-1214-12	
12.0	14.0	15.0	H1SM-1214-15	
12.0	14.0	20.0	H1SM-1214-20	
13.0	+0.016	15.0	10.0	H1SM-1315-10
13.0		15.0	20.0	H1SM-1315-20
14.0	+0.086	16.0	15.0	H1SM-1416-15
14.0		16.0	20.0	H1SM-1416-20
14.0		16.0	25.0	H1SM-1416-25
15.0		17.0	15.0	H1SM-1517-15
15.0		17.0	20.0	H1SM-1517-20

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
15.0		17.0	25.0	H1SM-1517-25
16.0		18.0	15.0	H1SM-1618-15
16.0		18.0	20.0	H1SM-1618-20
16.0	+0.016	18.0	25.0	H1SM-1618-25
16.0		18.0	15.0	H1SM-1820-15
18.0	+0.086	20.0	20.0	H1SM-1820-20
18.0		20.0	25.0	H1SM-1820-25
20.0		23.0	10.0	H1SM-2023-10
20.0		23.0	15.0	H1SM-2023-15
20.0		23.0	20.0	H1SM-2023-20
20.0		23.0	25.0	H1SM-2023-25
20.0		23.0	30.0	H1SM-2023-30
22.0		25.0	15.0	H1SM-2225-15
22.0		25.0	20.0	H1SM-2225-20
22.0		25.0	25.0	H1SM-2225-25
22.0		25.0	30.0	H1SM-2225-30
24.0		27.0	15.0	H1SM-2427-15
24.0	+0.020	27.0	20.0	H1SM-2427-20
24.0		27.0	25.0	H1SM-2427-25
24.0	+0.104	27.0	30.0	H1SM-2427-30
25.0		28.0	15.0	H1SM-2528-15
25.0		28.0	20.0	H1SM-2528-20
25.0		28.0	25.0	H1SM-2528-25
25.0		28.0	30.0	H1SM-2528-30
28.0		32.0	20.0	H1SM-2832-20
28.0		32.0	25.0	H1SM-2832-25
28.0		32.0	30.0	H1SM-2832-30
30.0		34.0	30.0	H1SM-3034-30
30.0		34.0	40.0	H1SM-3034-40

³⁾ After press-fit. *Testing methods, page 61*

Product range

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
32.0		36.0	20.0	H1SM-3236-20
32.0		36.0	30.0	H1SM-3236-30
32.0		36.0	40.0	H1SM-3236-40
35.0		39.0	20.0	H1SM-3539-20
35.0	+0.025	39.0	30.0	H1SM-3539-30
35.0	+0.125	39.0	40.0	H1SM-3539-40
35.0		39.0	50.0	H1SM-3539-50
40.0		44.0	20.0	H1SM-4044-20
40.0		44.0	30.0	H1SM-4044-30
40.0		44.0	40.0	H1SM-4044-40

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
40.0		44.0	50.0	H1SM-4044-50
45.0		50.0	20.0	H1SM-4550-20
45.0		50.0	30.0	H1SM-4550-30
45.0		50.0	40.0	H1SM-4550-40
45.0	+0.025	50.0	50.0	H1SM-4550-50
50.0	+0.125	55.0	20.0	H1SM-5055-20
50.0		55.0	30.0	H1SM-5055-30
50.0		55.0	40.0	H1SM-5055-40
50.0		55.0	50.0	H1SM-5055-50
50.0		55.0	60.0	H1SM-5055-60

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/H1



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling

1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

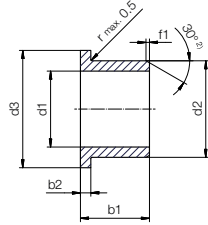
No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Bearing technology | Plain bearings | iglidur® H1

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions

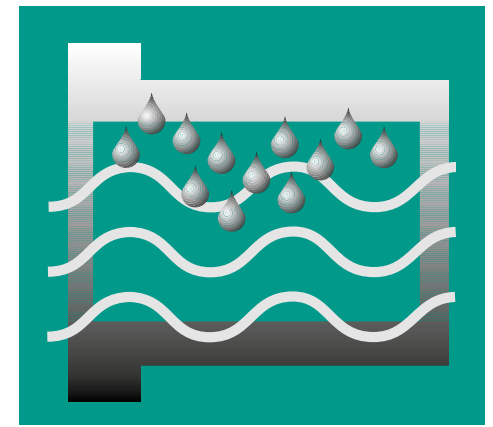
? Order example: **H1FM-0304-05** – no minimum order quantity.

H1 iglidur® material **F** With flange **M** Metric **03** Inner Ø d1 **04** Outer Ø d2 **05** Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
3.0	+0.006 +0.046	4.5	7.5	5.0	0.75	H1FM-0304-05
4.0	+0.010 +0.058	5.5	9.5	6.0	0.75	H1FM-0405-06
5.0	+0.010 +0.058	7.0	11.0	5.0	1.00	H1FM-0507-05
6.0	+0.013 +0.071	8.0	12.0	4.0	1.00	H1FM-0608-04
6.0	+0.010	8.0	12.0	6.0	1.00	H1FM-0608-06
6.0	+0.058	8.0	12.0	8.0	1.00	H1FM-0608-08
6.0		8.0	12.0	10.0	1.00	H1FM-0608-10
8.0		10.0	15.0	5.5	1.00	H1FM-0810-05
8.0		10.0	15.0	6.5	1.00	H1FM-0810-065
8.0		10.0	15.0	7.5	1.00	H1FM-0810-07
8.0		10.0	15.0	9.5	1.00	H1FM-0810-09
8.0	+0.013	10.0	15.0	10.0	1.00	H1FM-0810-10
10.0	+0.071	12.0	18.0	7.0	1.00	H1FM-1012-07
10.0		12.0	18.0	9.0	1.00	H1FM-1012-09
10.0		12.0	18.0	10.0	1.00	H1FM-1012-10
10.0		12.0	18.0	12.0	1.00	H1FM-1012-12
10.0		12.0	18.0	17.0	1.00	H1FM-1012-17
12.0		14.0	20.0	7.0	1.00	H1FM-1214-07
12.0		14.0	20.0	9.0	1.00	H1FM-1214-09
12.0	+0.016	14.0	20.0	12.0	1.00	H1FM-1214-12
12.0	+0.086	14.0	20.0	17.0	1.00	H1FM-1214-17
12.0		14.0	20.0	20.0	1.00	H1FM-1214-20

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
14.0		16.0	22.0	12.0	1.00	H1FM-1416-12
14.0		16.0	22.0	17.0	1.00	H1FM-1416-17
15.0		17.0	23.0	9.0	1.00	H1FM-1517-09
15.0		17.0	23.0	12.0	1.00	H1FM-1517-12
15.0		17.0	23.0	17.0	1.00	H1FM-1517-17
16.0	+0.016	18.0	24.0	12.0	1.00	H1FM-1618-12
16.0	+0.086	18.0	24.0	17.0	1.00	H1FM-1618-17
16.0		18.0	24.0	25.0	1.00	H1FM-1618-25
18.0		20.0	26.0	12.0	1.00	H1FM-1820-12
18.0		20.0	26.0	17.0	1.00	H1FM-1820-17
18.0		20.0	26.0	22.0	1.00	H1FM-1820-22
20.0		23.0	30.0	11.5	1.50	H1FM-2023-11
20.0		23.0	30.0	16.5	1.50	H1FM-2023-16
20.0		23.0	30.0	21.5	1.50	H1FM-2023-21
20.0		23.0	30.0	30.0	1.50	H1FM-2023-30
25.0	+0.020	28.0	35.0	11.5	1.50	H1FM-2528-11
25.0	+0.104	28.0	35.0	16.5	1.50	H1FM-2528-16
25.0		28.0	35.0	21.5	1.50	H1FM-2528-21
30.0		34.0	42.0	16.0	2.00	H1FM-3034-16
30.0		34.0	42.0	26.0	2.00	H1FM-3034-26
35.0		39.0	47.0	16.0	2.00	H1FM-3539-16
35.0		39.0	47.0	26.0	2.00	H1FM-3539-26
40.0	+0.025	44.0	52.0	30.0	2.00	H1FM-4044-30
40.0	+0.125	44.0	52.0	40.0	2.00	H1FM-4044-40
45.0		50.0	58.0	50.0	2.00	H1FM-4550-50

³⁾ After press-fit. *Testing methods, page 61*



Long service life under water High media resistance iglidur® H370



When to use it?

- For underwater applications
- When high temperature resistance is required
- When high mechanical loading and wear resistance is required
- When good chemical resistance is required



When not to use it?

- When mechanical reaming of the bore is necessary
iglidur® M250
- When high wear resistance in temperatures is required
iglidur® H1
- For use in dirty surroundings
iglidur® Z
- When a cost-effective, large-volume solution is required
iglidur® H2

Bearing technology | Plain bearings | iglidur® H370



Ø
3.0-75.0mm



Also available as:



Bar stock,
round bar
Page 743



Bar stock,
plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole
flange
bearings
Page 667



Moulded
special parts
Page 696



igubal®
spherical balls
Page 993

Long service life under water High media resistance

iglidur® H370 is the right solution for underwater applications. The bearings absorb extremely high loads, are resistant to chemicals and can be used at temperatures up to +200°C.

- Suitable for underwater applications
- Temperature-resistant from -40°C to +200°C
- Chemical-resistant
- Lubrication-free
- Maintenance-free

Typical application areas

- Offshore
- Ship building
- Fluid technology
- Packaging
- Plant construction

Descriptive technical specifications				
Wear resistance at +23°C	-	<div style="width: 25%;"></div>		+
Wear resistance at +90°C	-	<div style="width: 25%;"></div>		+
Wear resistance at +150°C	-	<div style="width: 50%;"></div>		+
Slide property	-	<div style="width: 75%;"></div>		+
Wear resistance under water	-	<div style="width: 100%;"></div>		+
Media resistance	-	<div style="width: 100%;"></div>		+
Resistant to edge pressures	-	<div style="width: 50%;"></div>		+
Resistant to shock and impact loads	-	<div style="width: 25%;"></div>		+
Dirt resistance	-	<div style="width: 25%;"></div>		+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.66	
Colour		grey	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.1	
Coefficient of friction, dynamic, against steel	μ	0.07-0.17	
pv value, max. (dry)	MPa · m/s	0.74	
Mechanical properties			
Flexural modulus	MPa	11,100	DIN 53457
Flexural strength at +20°C	MPa	135	DIN 53452
Compressive strength	MPa	79	
Max. permissible surface pressure (+20°C)	MPa	75	
Shore D hardness		82	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+200	
Max. application temperature short-term	°C	+240	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.50	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	5	DIN 53752
Electrical properties ⁹⁾			
Specific transitional resistance	Ωcm	< 10 ⁵	DIN IEC 93
Surface resistance	Ω	< 10 ⁵	DIN 53482

⁹⁾ The good conductivity of this material can favour the generation of corrosion on the metallic contact components.

Table 01: Material properties

iglidur® H370 is an advanced development of the iglidur® H series. The material is characterised by particularly low moisture absorption and clearly enhanced wear resistance. With regard to the mechanical and thermal characteristic values, iglidur® H370 shows the same features as iglidur® H.

Moisture absorption

The moisture absorption of iglidur® H370 plain bearings is below 0.1% weight in ambient conditions. The saturation limit submerged in water is also 0.1% weight. For this reason, iglidur® H370 plain bearings are often used for underwater applications.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance

iglidur® H370 withstands neutron and gamma particle radiation. Plain bearings made from iglidur® H370 are resistant up to a radiation intensity of 2 · 10² Gy.

Resistance to weathering

iglidur® H370 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® H370 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® H370 under different loads. At the recommended maximum surface pressure of 75MPa the deformation is less than 2.5% at room temperature.

Surface pressure, page 45



-40°C up to
+200°C



75MPa



V-0



ISO
35474

Permissible surface speeds

The maximum permitted surface speed is dependent on whether the temperature at the bearing point becomes too high or not. iglidur® H370 is suitable for surface speeds of 1.2m/s (rotating) or 4m/s (linear). The maximum values stated in table 03 are valid only with minimum pressure loads and are often not attained in practice.

Surface speed, page 48

Temperature

With increasing temperatures, the compressive strength of iglidur® H370 plain bearings decreases. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. For temperatures over +100°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The coefficient of friction alters only little, like the wear resistance with increasing load and surface speed (diagram 04 and 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® H370. For loads up to 2MPa in rotating applications, the hard-chromed shaft is the best material for the iglidur® H370 plain bearings. The high coefficient of wear with 304 stainless steel shafts, which due to their extremely ground surfaces are prone to the stick-slip effect, is striking. Despite same values in the lowest range, the HR carbon steel shaft shows already better values than Cf53 with loads of 2MPa. On the other hand, the 304 stainless steel shaft shows a clear advantage in pivoting movements.

Shaft materials, page 56

Installation tolerances

iglidur® H370 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	+ up to 0
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	+ up to -
Strong alkalines	+

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 1.2	0.8	4.0
Short-term	m/s 1.5	1.1	5.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.07-0.17	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

\varnothing d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	F10 [mm]	F10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.006	+0.046	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.010	+0.058	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.013	+0.071	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.016	+0.086	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.020	+0.104	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.025	+0.125	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.030	+0.150	-0.074	+0.000
> 80-120	+0.000	+0.035	-0.036	+0.176	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

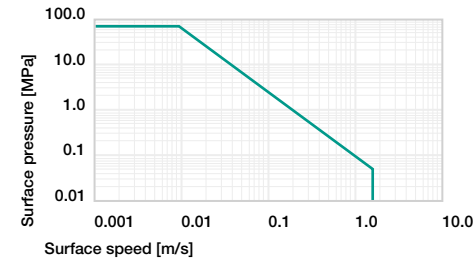


Diagram 01: Permissible pv values for iglidur® H370 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

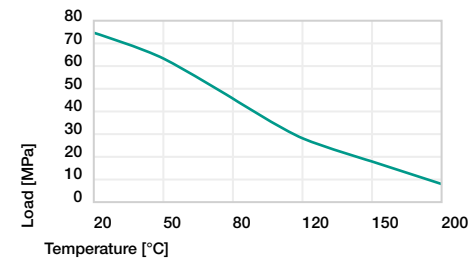


Diagram 02: Maximum recommended surface pressure as a function of temperature (75MPa at +20°C)

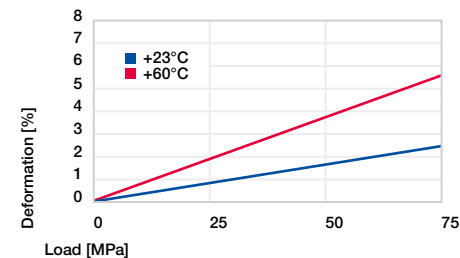


Diagram 03: Deformation under pressure and temperature

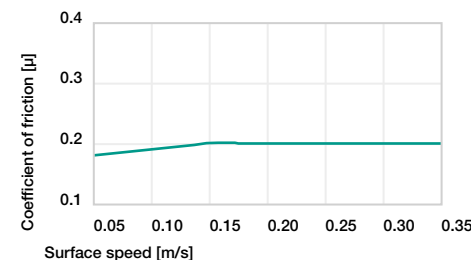


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

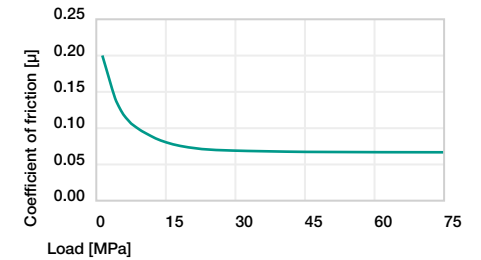


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

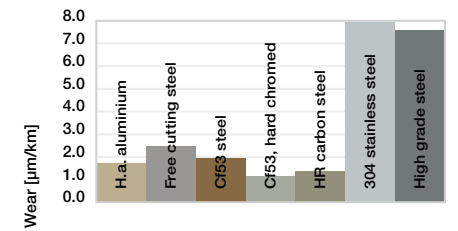


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

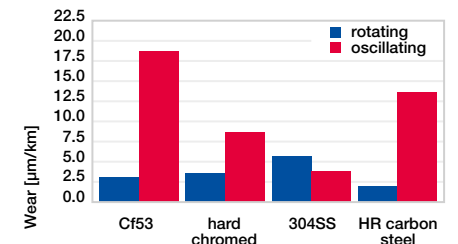
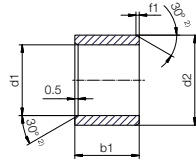


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions



Order example: **H370SM-0304-03** – no minimum order quantity.

H370 iglidur® material **S** Cylindrical **M** Metric **03** Inner Ø d1 **04** Outer Ø d2 **03** Total length b1

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
3.0	+0.006	4.5	3.0	H370SM-0304-03
	+0.046			
4.0		5.5	4.0	H370SM-0405-04
4.0		5.5	6.0	H370SM-0405-06
4.0		5.5	12.0	H370SM-0405-12
5.0	+0.010	7.0	5.0	H370SM-0507-05
5.0	+0.058	7.0	10.0	H370SM-0507-10
6.0		8.0	6.0	H370SM-0608-06
6.0		8.0	8.0	H370SM-0608-08
6.0		8.0	10.0	H370SM-0608-10
8.0		10.0	8.0	H370SM-0810-08
8.0		10.0	10.0	H370SM-0810-10
8.0		10.0	12.0	H370SM-0810-12
8.0		10.0	15.0	H370SM-0810-15
10.0	+0.013	12.0	8.0	H370SM-1012-08
10.0	+0.071	12.0	10.0	H370SM-1012-10
10.0		12.0	12.0	H370SM-1012-12
10.0		12.0	15.0	H370SM-1012-15
10.0		12.0	20.0	H370SM-1012-20
12.0		14.0	10.0	H370SM-1214-10
12.0		14.0	12.0	H370SM-1214-12
12.0		14.0	15.0	H370SM-1214-15
12.0		14.0	20.0	H370SM-1214-20
13.0	+0.016	15.0	10.0	H370SM-1315-10
13.0	+0.086	15.0	20.0	H370SM-1315-20
14.0		16.0	15.0	H370SM-1416-15
14.0		16.0	20.0	H370SM-1416-20
14.0		16.0	25.0	H370SM-1416-25
15.0		17.0	15.0	H370SM-1517-15

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
15.0		17.0	20.0	H370SM-1517-20
15.0		17.0	25.0	H370SM-1517-25
16.0		18.0	15.0	H370SM-1618-15
16.0	+0.016	18.0	20.0	H370SM-1618-20
16.0	+0.086	18.0	25.0	H370SM-1618-25
18.0		20.0	15.0	H370SM-1820-15
18.0		20.0	20.0	H370SM-1820-20
18.0		20.0	25.0	H370SM-1820-25
20.0		23.0	10.0	H370SM-2023-10
20.0		23.0	15.0	H370SM-2023-15
20.0		23.0	20.0	H370SM-2023-20
20.0		23.0	25.0	H370SM-2023-25
20.0		23.0	30.0	H370SM-2023-30
22.0		25.0	15.0	H370SM-2225-15
22.0		25.0	20.0	H370SM-2225-20
22.0		25.0	25.0	H370SM-2225-25
22.0		25.0	30.0	H370SM-2225-30
24.0		27.0	15.0	H370SM-2427-15
24.0	+0.020	27.0	20.0	H370SM-2427-20
24.0	+0.104	27.0	25.0	H370SM-2427-25
24.0		27.0	30.0	H370SM-2427-30
25.0		28.0	15.0	H370SM-2528-15
25.0		28.0	20.0	H370SM-2528-20
25.0		28.0	25.0	H370SM-2528-25
25.0		28.0	30.0	H370SM-2528-30
28.0		32.0	20.0	H370SM-2832-20
28.0		32.0	25.0	H370SM-2832-25
28.0		32.0	30.0	H370SM-2832-30
30.0		34.0	20.0	H370SM-3034-20

³⁾ After press-fit. *Testing methods, page 61*

Product range

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
30.0	+0.020	34.0	25.0	H370SM-3034-25
30.0	+0.104	34.0	30.0	H370SM-3034-30
30.0		34.0	40.0	H370SM-3034-40
32.0		36.0	20.0	H370SM-3236-20
32.0		36.0	30.0	H370SM-3236-30
32.0		36.0	40.0	H370SM-3236-40
35.0		39.0	20.0	H370SM-3539-20
35.0	+0.025	39.0	30.0	H370SM-3539-30
35.0	+0.125	39.0	40.0	H370SM-3539-40
35.0		39.0	50.0	H370SM-3539-50
40.0		44.0	20.0	H370SM-4044-20
40.0		44.0	30.0	H370SM-4044-30
40.0		44.0	40.0	H370SM-4044-40

³⁾ After press-fit. *Testing methods, page 61*

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
40.0		44.0	50.0	H370SM-4044-50
45.0	+0.025	50.0	20.0	H370SM-4550-20
45.0	+0.125	50.0	30.0	H370SM-4550-30
45.0		50.0	40.0	H370SM-4550-40
45.0		50.0	50.0	H370SM-4550-50
50.0		55.0	20.0	H370SM-5055-20
50.0	+0.000	55.0	30.0	H370SM-5055-30
50.0	+0.100	55.0	40.0	H370SM-5055-40
50.0		55.0	50.0	H370SM-5055-50
50.0		55.0	60.0	H370SM-5055-60
55.0	+0.030	60.0	26.0	H370SM-5560-26
60.0	+0.150	65.0	60.0	H370SM-6065-60
75.0		80.0	60.0	H370SM-7580-60



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Ordering note

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Discount scaling

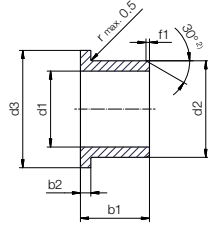
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2



Dimensions according to ISO 3547-1 and special dimensions



Order example: **H370FM-0405-04** – no minimum order quantity.

H370 iglidur® material **F** With flange **M** Metric **04** Inner Ø d1 **05** Outer Ø d2 **04** Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	[mm]	[mm]	
4.0		5.5	9.5	4.0	0.75	H370FM-0405-04
5.0		7.0	11.0	5.0	1.00	H370FM-0507-05
6.0	+0.010	8.0	12.0	4.0	1.00	H370FM-0608-04
6.0	+0.058	8.0	12.0	6.0	1.00	H370FM-0608-06
6.0		8.0	12.0	8.0	1.00	H370FM-0608-08
8.0		10.0	15.0	5.5	1.00	H370FM-0810-05
8.0		10.0	15.0	6.0	1.00	H370FM-0810-06
8.0		10.0	15.0	7.5	1.00	H370FM-0810-07
8.0		10.0	15.0	9.5	1.00	H370FM-0810-09
8.0		10.0	15.0	10.0	1.00	H370FM-0810-10
8.0		10.0	15.0	15.0	1.00	H370FM-0810-15
10.0	+0.013	12.0	18.0	7.0	1.00	H370FM-1012-07
10.0	+0.071	12.0	18.0	9.0	1.00	H370FM-1012-09
10.0		12.0	18.0	10.0	1.00	H370FM-1012-10
10.0		12.0	18.0	12.0	1.00	H370FM-1012-12
10.0		12.0	18.0	14.5	1.00	H370FM-1012-145
10.0		12.0	18.0	17.0	1.00	H370FM-1012-17
10.0		12.0	18.0	20.0	1.00	H370FM-1012-20
12.0		14.0	20.0	7.0	1.00	H370FM-1214-07
12.0		14.0	20.0	9.0	1.00	H370FM-1214-09
12.0		14.0	20.0	12.0	1.00	H370FM-1214-12
12.0	+0.016	14.0	20.0	15.0	1.00	H370FM-1214-15
12.0	+0.086	14.0	20.0	17.0	1.00	H370FM-1214-17
12.0		14.0	20.0	20.0	1.00	H370FM-1214-20
14.0		16.0	22.0	12.0	1.00	H370FM-1416-12
14.0		16.0	22.0	17.0	1.00	H370FM-1416-17

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	[mm]	[mm]	
15.0		17.0	23.0	9.0	1.00	H370FM-1517-09
15.0		17.0	23.0	12.0	1.00	H370FM-1517-12
15.0		17.0	23.0	17.0	1.00	H370FM-1517-17
16.0		18.0	24.0	10.0	1.00	H370FM-1618-10
16.0		18.0	22.0	10.0	1.00	H370FM-161822-10
16.0	+0.016	18.0	24.0	12.0	1.00	H370FM-1618-12
16.0	+0.086	18.0	24.0	17.0	1.00	H370FM-1618-17
16.0		18.0	24.0	25.0	1.00	H370FM-1618-25
18.0		20.0	26.0	12.0	1.00	H370FM-1820-12
18.0		20.0	26.0	17.0	1.00	H370FM-1820-17
18.0		20.0	26.0	22.0	1.00	H370FM-1820-22
20.0		23.0	30.0	11.5	1.50	H370FM-2023-11
20.0		23.0	30.0	16.5	1.50	H370FM-2023-16
20.0		23.0	30.0	21.5	1.50	H370FM-2023-21
20.0		23.0	30.0	30.0	1.50	H370FM-2023-30
22.0		25.0	32.0	21.5	1.50	H370FM-222532-215
25.0	+0.020	28.0	35.0	11.5	1.50	H370FM-2528-11
25.0	+0.104	28.0	35.0	16.5	1.50	H370FM-2528-16
25.0		28.0	35.0	21.5	1.50	H370FM-2528-21
25.0		28.0	35.0	30.0	1.50	H370FM-2528-30
30.0		34.0	42.0	16.0	2.00	H370FM-3034-16
30.0		34.0	42.0	26.0	2.00	H370FM-3034-26
30.0		34.0	42.0	40.0	2.00	H370FM-3034-40
35.0		39.0	47.0	16.0	2.00	H370FM-3539-16
35.0	+0.025	39.0	47.0	26.0	2.00	H370FM-3539-26
40.0	+0.125	44.0	52.0	30.0	2.00	H370FM-4044-30

³⁾ After press-fit. Testing methods, page 61

Product range

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	[mm]	[mm]	
40.0		44.0	52.0	40.0	2.00	H370FM-4044-40
45.0	+0.025	50.0	58.0	50.0	2.00	H370FM-4550-50
50.0	+0.125	55.0	63.0	50.0	2.00	H370FM-5055-50

³⁾ After press-fit. Testing methods, page 61

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	[mm]	[mm]	
60.0	+0.030	65.0	73.0	50.0	2.00	H370FM-6065-50
70.0	+0.150	75.0	83.0	50.0	2.00	H370FM-7075-50



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Order online

including delivery times, prices, online tools

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Ordering note

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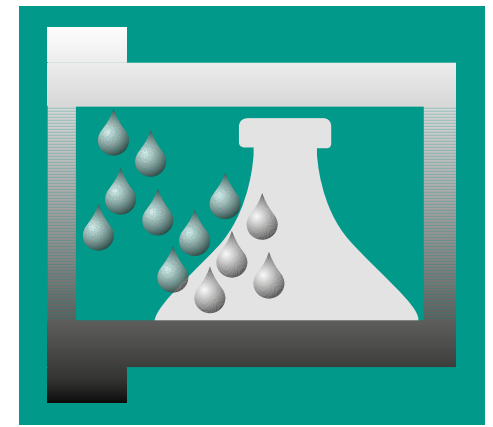
Discount scaling

1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.



The classic with high resistance to media and temperature

Up to +200°C

iglidur® H



When to use it?

- For underwater applications
- When high temperature resistance is required
- For high mechanical loading
- For applications in contact with chemicals



When not to use it?

- When extremely high wear resistance under water is required
iglidur® H370
- When the best universal resistance to chemicals is required
iglidur® X
- For the maximum compressive strength at higher temperatures
iglidur® X, iglidur® Z

Bearing technology | Plain bearings | iglidur® H



Ø
3.0-70.0mm



Also available as:



Bar stock, round bar
Page 743

The classic with high resistance to media and temperature Up to +200°C

Suitable for temperatures up to +200°C. Very low coefficient of friction when used with hardened shafts.

- Suitable for underwater applications
- High temperature resistance
- Chemical resistance
- Lubrication-free
- Maintenance-free



Bar stock, plate
Page 773

Typical application areas

- Offshore
- Ship building
- Beverage industry
- Medical technology
- Mechatronics



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

Descriptive technical specifications				
Wear resistance at +23°C	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>		+
Wear resistance at +90°C	-	<div style="width: 90%; height: 10px; background-color: #008080;"></div>		+
Wear resistance at +150°C	-	<div style="width: 80%; height: 10px; background-color: #008080;"></div>		+
Slide property	-	<div style="width: 70%; height: 10px; background-color: #008080;"></div>		+
Wear resistance under water	-	<div style="width: 60%; height: 10px; background-color: #008080;"></div>		+
Media resistance	-	<div style="width: 50%; height: 10px; background-color: #008080;"></div>		+
Resistant to edge pressures	-	<div style="width: 40%; height: 10px; background-color: #008080;"></div>		+
Resistant to shock and impact loads	-	<div style="width: 30%; height: 10px; background-color: #008080;"></div>		+
Dirt resistance	-	<div style="width: 20%; height: 10px; background-color: #008080;"></div>		+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

EN 06/2023



Technical data

General properties		Testing method	
Density	g/cm ³	1.71	
Colour		grey	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.3	
Coefficient of friction, dynamic, against steel	μ	0.07-0.20	
pv value, max. (dry)	MPa · m/s	1.37	
Mechanical properties			
Flexural modulus	MPa	12,500	DIN 53457
Flexural strength at +20°C	MPa	175	DIN 53452
Compressive strength	MPa	81	
Max. permissible surface pressure (+20°C)	MPa	90	
Shore D hardness		87	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+200	
Max. application temperature short-term	°C	+240	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.60	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	4	DIN 53752
Electrical properties ⁹⁾			
Specific transitional resistance	Ωcm	< 10 ⁵	DIN IEC 93
Surface resistance	Ω	< 10 ²	DIN 53482

⁹⁾ The good conductivity of this material can favour the generation of corrosion on the metallic contact components.

Table 01: Material properties

iglidur® H is a fibre-reinforced thermoplastic material especially developed for applications in high atmospheric humidity or under water. Plain bearings made from iglidur® H can be used completely free of lubrication; in wet applications, the surrounding media acts as additional lubricant.

Moisture absorption

The moisture absorption of iglidur® H plain bearings is below 0.1% weight in ambient conditions. The saturation limit submerged in water is 0.3% weight. iglidur® H is very well suited for use in wet environments.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance

iglidur® H withstands neutron and gamma particle radiation. Plain bearings made from iglidur® H are resistant up to a radiation intensity of 2 · 10² Gy.

Resistance to weathering

iglidur® H plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® H plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® H at radial loads. At the maximum recommended surface pressure of 90MPa the deformation is about 2.5% at room temperature.

Surface pressure, page 45



-40°C up to +200°C



90 MPa



V-0



ISO 35474

Permissible surface speeds

The maximum permitted surface speed is dependent on whether the temperature at the bearing point becomes too high or not. iglidur® H is suitable for maximum surface speeds of 1.0m/s (rotating) and 3.0m/s (linear) in dry operation. Linear movements enable higher surface speeds, as a large area of the shaft contributes to the cooling.

Surface speed, page 48

Temperature

With increasing temperatures, the compressive strength of iglidur® H plain bearings decreases. Diagram 02 shows this inverse relationship. The temperatures prevailing in the bearing system also have an influence on the wear. For temperatures over +120°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Both the wear resistance and the coefficient of friction change depending on the load. Interestingly, the coefficient of friction μ lowers slightly with the increase of surface speed at constant load (see diagram 04 and 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® H. The iglidur® H plain bearings give different results when used in rotating and pivoting applications on different shaft materials. The Cf53 and HR carbon steel shafts give the best wear values in rotating applications, whereas the 304 stainless steel shafts (which are not so good for rotation) give the best results in pivoting applications. Hard-chromed shafts only give an advantage at low pressures when used with iglidur® H bearings.

Shaft materials, page 56

Installation tolerances

iglidur® H plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	+ up to 0
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	+ up to -
Strong alkalines	+

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	1.0	0.7	3.0
Short-term m/s	1.5	1.1	4.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.07-0.20	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

\varnothing d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	F10 [mm]	F10 [mm]	h9 [mm]		
0-3	+0.000	+0.010	+0.006	+0.046	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.010	+0.058	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.013	+0.071	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.016	+0.086	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.020	+0.104	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.025	+0.125	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.030	+0.150	-0.074	+0.000
> 80-120	+0.000	+0.035	-0.036	+0.176	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

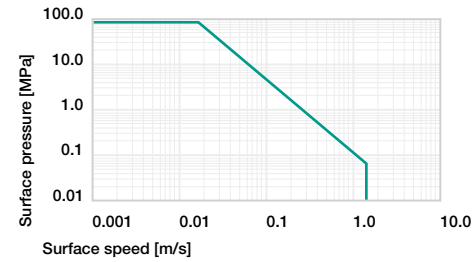


Diagram 01: Permissible pv values for iglidur® H plain bearing with a wall thickness of 1 mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

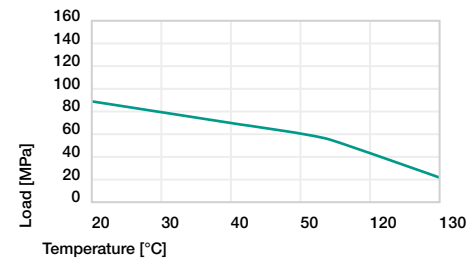


Diagram 02: Maximum recommended surface pressure as a function of temperature (90MPa at +20°C)

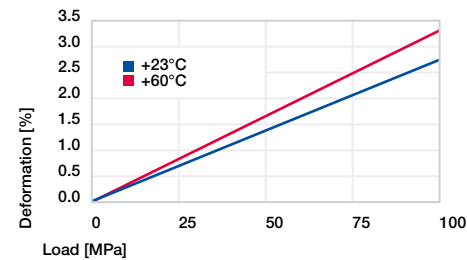


Diagram 03: Deformation under pressure and temperature

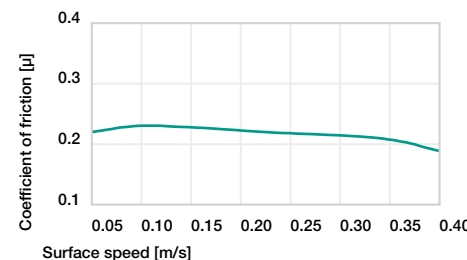


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

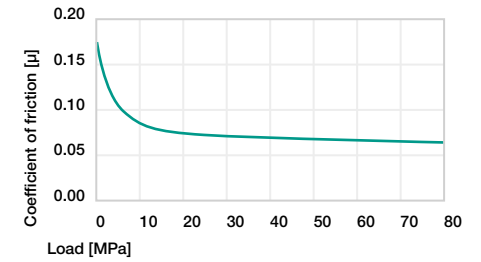


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

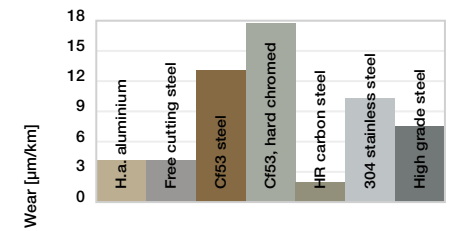


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

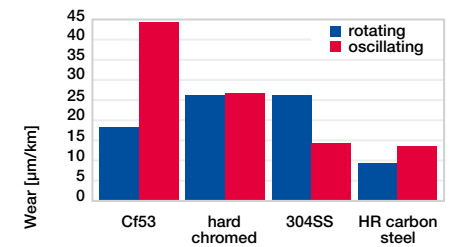
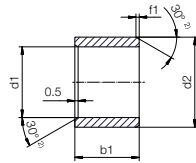


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

Bearing technology | Plain bearings | iglidur® H

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions

i Order example: **HSM-0304-03** – no minimum order quantity.

H iglidur® material S Cylindrical M Metric 03 Inner Ø d1 04 Outer Ø d2 03 Total length b1

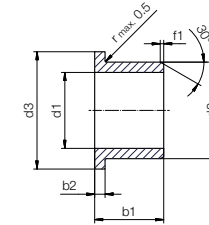
d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13	
3.0	+0.006 +0.046	4.5	3.0	HSM-0304-03
4.0		5.5	4.0	HSM-0405-04
5.0	+0.010	7.0	5.0	HSM-0507-05
6.0	+0.058	8.0	3.0	HSM-0608-03
6.0		8.0	6.0	HSM-0608-06
8.0		10.0	8.0	HSM-0810-08
8.0	+0.013	10.0	10.0	HSM-0810-10
10.0	+0.071	12.0	6.0	HSM-1012-06
10.0		12.0	10.0	HSM-1012-10
12.0		14.0	10.0	HSM-1214-10
12.0		14.0	12.0	HSM-1214-12
12.0		14.0	15.0	HSM-1214-15
12.0		14.0	20.0	HSM-1214-20
14.0	+0.016 +0.086	16.0	20.0	HSM-1416-20
15.0		17.0	15.0	HSM-1517-15
16.0		18.0	15.0	HSM-1618-15
16.0		18.0	20.0	HSM-1618-20
16.0		18.0	25.0	HSM-1618-25

³⁾ After press-fit. *Testing methods, page 61*

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13	
18.0	+0.016	20.0	15.0	HSM-1820-15
18.0	+0.086	20.0	25.0	HSM-1820-25
20.0		23.0	20.0	HSM-2023-20
20.0		23.0	30.0	HSM-2023-30
22.0		25.0	20.0	HSM-2225-20
25.0	+0.020	28.0	15.0	HSM-2528-15
25.0	+0.104	28.0	20.0	HSM-2528-20
30.0		34.0	20.0	HSM-3034-20
30.0		34.0	30.0	HSM-3034-30
30.0		34.0	40.0	HSM-3034-40
32.0		36.0	30.0	HSM-3236-30
35.0		39.0	40.0	HSM-3539-40
40.0	+0.025	44.0	20.0	HSM-4044-20
40.0	+0.125	44.0	50.0	HSM-4044-50
45.0		50.0	30.0	HSM-4550-30
50.0		55.0	40.0	HSM-5055-40
55.0	+0.030	60.0	26.0	HSM-5560-26
60.0	+0.150	65.0	60.0	HSM-6065-60
70.0		75.0	50.0	HSM-7075-50

Bearing technology | Plain bearings | iglidur® H

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions

i Order example: **HFM-0405-04** – no minimum order quantity.

H iglidur® material F With flange M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
4.0		5.5	9.5	4.0	0.75	HFM-0405-04
5.0		7.0	11.0	5.0	1.00	HFM-0507-05
5.0	+0.010	7.0	11.0	8.0	1.00	HFM-0507-08
6.0	+0.058	8.0	12.0	4.0	1.00	HFM-0608-04
6.0		8.0	12.0	6.0	1.00	HFM-0608-06
6.0		8.0	12.0	10.0	1.00	HFM-0608-10
8.0		10.0	15.0	7.0	1.00	HFM-0810-07
8.0		10.0	15.0	10.0	1.00	HFM-0810-10
8.0	+0.013	10.0	15.0	15.0	1.00	HFM-0810-15
10.0	+0.071	12.0	18.0	4.0	1.00	HFM-1012-04
10.0		12.0	18.0	9.0	1.00	HFM-1012-09
10.0		12.0	18.0	15.0	1.00	HFM-1012-15
10.0		12.0	18.0	20.0	1.00	HFM-1012-20
12.0		14.0	20.0	7.0	1.00	HFM-1214-07
12.0	+0.016	14.0	20.0	10.0	1.00	HFM-1214-10
12.0	+0.086	14.0	20.0	15.0	1.00	HFM-1214-15
14.0		16.0	22.0	12.0	1.00	HFM-1416-12

³⁾ After press-fit. *Testing methods, page 61*

i Available from stock
Detailed information about delivery time online.

www.igus.eu/24

i Order online
including delivery times, prices, online tools
www.igus.eu/H

i Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

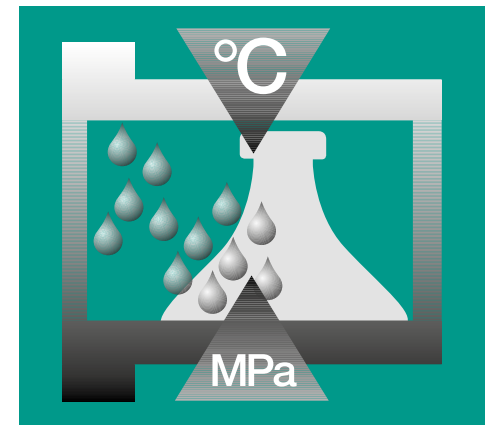
Discount scaling

1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.



High temperature endurance runner

Extreme wear and media resistance
up to +250°C

iglidur® C500



When to use it?

- When an extremely media-resistant plain bearing with high flexibility is required
- When you need a highly wear-resistant and media-resistant plain bearing



When not to use it?

- When an FDA-compliant high-temperature plain bearing is required
iglidur® A500
- When a media-resistant, high-temperature plain bearing with the largest possible range of dimensions is required
iglidur® X

Bearing technology | Plain bearings | iglidur® C500



Ø
6.0-40.0mm



Also available as:



Bar stock, round bar
Page 743



Bar stock, plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

High temperature endurance runner Extreme wear and media resistance up to +250°C

iglidur® C500 can be used up to +250°C and is extremely media-resistant (even in cleaning processes using hydrogen peroxide). It is also wear-resistant and has low coefficient of friction. Also suitable for various special designs. The colour shows the use under extreme environmental influences.

- High temperature resistance
- Resistant to water vapour
- Low coefficient of friction
- Lubrication-free
- High wear resistance
- High media resistance
- Maintenance-free

Typical application areas

- Plant construction
- Valves
- Chemical industry
- Process technology

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
Wear resistance at +90°C	-	<div style="width: 90%; height: 10px; background-color: #008080;"></div>	+
Wear resistance at +150°C	-	<div style="width: 80%; height: 10px; background-color: #008080;"></div>	+
Slide property	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
Wear resistance under water	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
Media resistance	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
Resistant to edge pressures	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
Dirt resistance	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.37	
Colour		magenta	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.3	DIN 53495
Max. moisture absorption	% weight	0.5	
Coefficient of friction, dynamic, against steel	μ	0.07-0.19	
pv value, max. (dry)	MPa · m/s	0.70	
Mechanical properties			
Flexural modulus	MPa	3,300	DIN 53457
Flexural strength at +20°C	MPa	100	DIN 53452
Compressive strength	MPa	110	
Max. permissible surface pressure (+20°C)	MPa	80	
Shore D hardness		80	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+250	
Max. application temperature short-term	°C	+300	
Min. application temperature	°C	-100	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	9	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹⁴	DIN IEC 93
Surface resistance	Ω	> 10 ¹³	DIN 53482

Table 01: Material properties

iglidur® C500 is a member of the family of extremely media and temperature-resistant iglidur® materials X, X6 and A500. This material is characterised by improved wear resistance and increased design freedom.

Moisture absorption

The moisture absorption of iglidur® C500 plain bearings is below 0.3% weight in ambient conditions. The saturation limit submerged in water is 0.5% weight.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance

iglidur® C500 withstands neutron and gamma particle radiation without detectable losses of its excellent mechanical properties. Plain bearings made from iglidur® C500 are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

Resistance to weathering

iglidur® C500 plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® C500 plain bearings decreases. Diagram 02 shows this inverse relationship. However, at an operation temperature of +200°C the permissible surface pressure is close to 20MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® C500 under different loads. At the maximum recommended surface pressure of 80MPa, the deformation is less than 4.5%.

Surface pressure, page 45



-100°C up to +250°C



80MPa



V-0



ISO 35474

Bearing technology | Plain bearings | iglidur® C500

Permissible surface speeds

The maximum recommended surface speed is based on the frictional heat generated at the bearing surface. The temperature should only be permitted to increase to a value that will ensure a sustainable use of the bearing with respect to wear and dimensional integrity. The maximum values stated in table 03 are valid only with minimum pressure loads and are often not attained in practice.

Surface speed, page 48

Temperature

iglidur® C500 belongs to the most temperature resistant iglidur® materials. As in the case of all thermoplastics, the compressive strength of iglidur® C500 bearings decreases when temperatures rise. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. For temperatures over +130°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The coefficient of friction and wear in iglidur® C500 are more favourable than in the other high temperature materials iglidur® X and A500. The coefficient of friction increases moderately as the sliding speed increases. The coefficient of friction initially drops rapidly to less than 0.1 under loads of up to approximately 20MPa, and then only marginally increases as loads continue to increase. The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. Ground surfaces with an average surface finish Ra of 0.6 to 0.8µm are ideal.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 shows a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® C500. Using the example of a rotating motion at 1MPa and a speed of 0.3m/s, it becomes apparent that iglidur® C500 has consistent wear characteristics across a variety of shaft types. This wear rate spikes in combination with free cutting steel, and, notably so, reduces in combination with HC aluminium. The wear under rotational loads is higher, specifically with increasing radial loads as compared to pivoting movements (diagram 07).

Shaft materials, page 56

Installation tolerances

iglidur® C500 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances.

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	+
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	+
Strong alkalines	+

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	0.9	0.7	2.4
Short-term m/s	1.1	1.0	2.8

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.07-0.19	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	F10 [mm]	F10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.006	+0.046	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.010	+0.058	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.013	+0.071	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.016	+0.086	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.020	+0.104	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.025	+0.125	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.030	+0.150	-0.074	+0.000
> 80-120	+0.000	+0.035	-0.036	+0.176	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

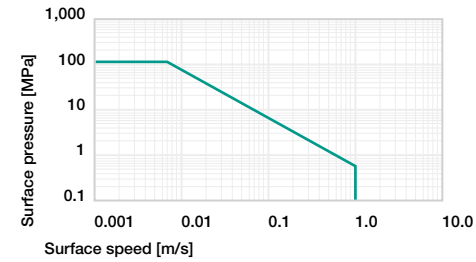


Diagram 01: Permissible pv values for iglidur® C500 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

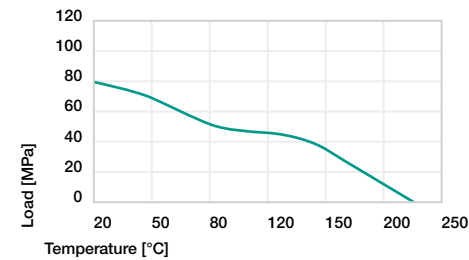


Diagram 02: Maximum recommended surface pressure as a function of temperature (80MPa at +20°C)

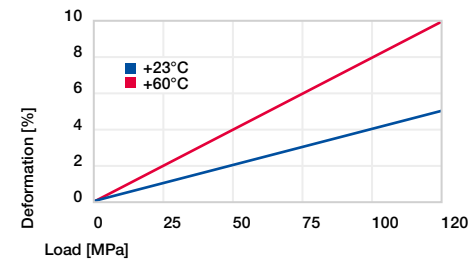


Diagram 03: Deformation under pressure and temperature

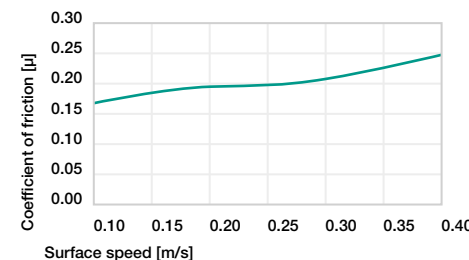


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

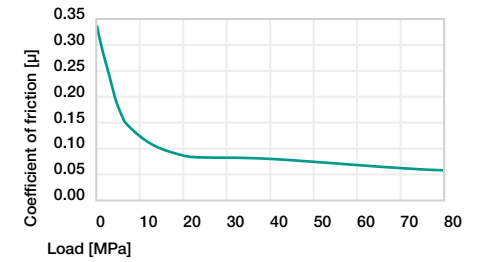


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

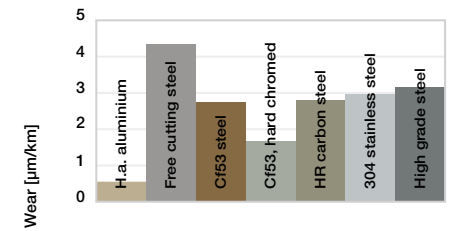


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

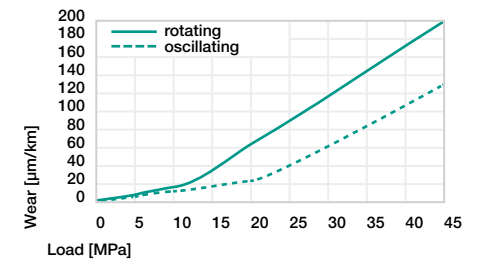
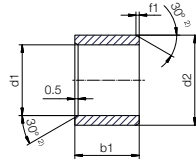


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® C500

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2



Dimensions according to ISO 3547-1 and special dimensions



Order example: **C500SM-0608-06** – no minimum order quantity.

C500 iglidur® material **S** Cylindrical **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **06** Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13	
6.0	+0.010 +0.058	8.0	6.0	C500SM-0608-06
8.0	+0.013 +0.071	10.0	10.0	C500SM-0810-10
10.0		12.0	10.0	C500SM-1012-10
12.0		14.0	12.0	C500SM-1214-12
16.0	+0.016 +0.086	18.0	15.0	C500SM-1618-15
20.0	+0.020 +0.104	23.0	20.0	C500SM-2023-20
40.0	+0.025 +0.125	44.0	30.0	C500SM-4044-30

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/C500



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

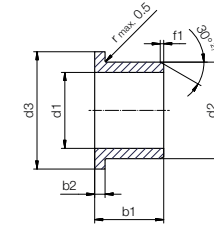
No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Bearing technology | Plain bearings | iglidur® C500

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 6-12	Ø 12-30
f1 [mm]	0.5	0.8



Dimensions according to ISO 3547-1 and special dimensions



Order example: **C500FM-0608-06** – no minimum order quantity.

C500 iglidur® material **F** With flange **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **06** Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
6.0	+0.010 +0.058	8.0	12.0	6.0	1.00	C500FM-0608-06
8.0	+0.013 +0.071	10.0	15.0	10.0	1.00	C500FM-0810-10
10.0		12.0	18.0	10.0	1.00	C500FM-1012-10
12.0		14.0	20.0	12.0	1.00	C500FM-1214-12
16.0	+0.016 +0.086	18.0	24.0	17.0	1.00	C500FM-1618-17
20.0	+0.020 +0.104	23.0	30.0	21.5	1.50	C500FM-2023-21

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

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including delivery times, prices, online tools

www.igus.eu/C500



Ordering note

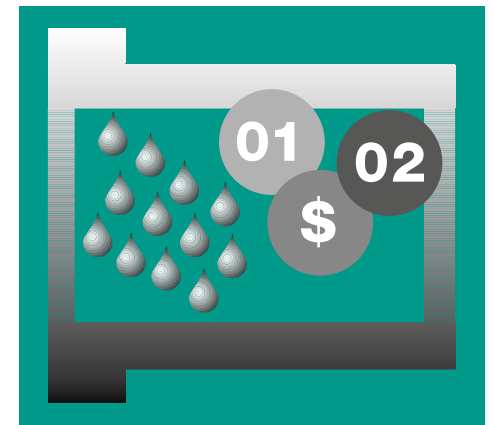
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.



The low-cost specialist for chemicals and temperatures

Up to +200°C, most capable under static load

iglidur® H2



When to use it?

- For underwater applications
- When a cost-effective plain bearing for high temperatures is required
- For applications with fuels, oils, etc.



When not to use it?

- When the highest wear resistance is required
iglidur® H1, iglidur® H4, iglidur® W300
- When vibration dampening is necessary
iglidur® B, iglidur® M250
- When neither increased temperatures nor media contact occur
iglidur® GLW

Bearing technology | Plain bearings | iglidur® H2



∅
-



Also available as:



Bar stock, round bar
Page 743

The low-cost specialist for chemicals and temperatures Up to +200°C, most capable under static load

For applications with high temperature requirements. Can be conditionally used in dry operation; excellent properties with additional lubrication.

- Suitable for underwater applications
- Cost-effective
- Chemical resistance
- High temperature resistance
- Lubrication-free
- Maintenance-free



Bar stock, plate
Page 773



tribo-tape liner
Page 781

Typical application areas

- Automotive industry
- Actuator
- Bicycle industry



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

Descriptive technical specifications				
Wear resistance at +23°C	-	<div style="width: 25%; background-color: #008080;"></div>		+
Wear resistance at +90°C	-	<div style="width: 35%; background-color: #008080;"></div>		+
Wear resistance at +150°C	-	<div style="width: 45%; background-color: #008080;"></div>		+
Slide property	-	<div style="width: 25%; background-color: #008080;"></div>		+
Wear resistance under water	-	<div style="width: 35%; background-color: #008080;"></div>		+
Media resistance	-	<div style="width: 75%; background-color: #008080;"></div>		+
Resistant to edge pressures	-	<div style="width: 25%; background-color: #008080;"></div>		+
Resistant to shock and impact loads	-	<div style="width: 25%; background-color: #008080;"></div>		+
Dirt resistance	-	<div style="width: 35%; background-color: #008080;"></div>		+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert



EN 06/2023

Technical data

General properties		Testing method	
Density	g/cm ³	1.72	
Colour		brown	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.2	
Coefficient of friction, dynamic, against steel	μ	0.07-0.30	
pv value, max. (dry)	MPa · m/s	0.58	
Mechanical properties			
Flexural modulus	MPa	10,300	DIN 53457
Flexural strength at +20°C	MPa	210	DIN 53452
Compressive strength	MPa	109	
Max. permissible surface pressure (+20°C)	MPa	110	
Shore D hardness		88	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+200	
Max. application temperature short-term	°C	+240	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	4	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹⁵	DIN IEC 93
Surface resistance	Ω	> 10 ¹⁴	DIN 53482

Table 01: Material properties

In applications with iglidur® H2 plain bearings, economical aspects are in focus. It is the first time that it is possible to offer such a high-performance bearing for high volume applications with these technical advantages at such a low price: temperatures up to +200°C, permitted surface pressure up to 110N/mm², and excellent chemical resistance. The iglidur® H2 plain bearings are self-lubricating and suitable for all motions.

Moisture absorption

The moisture absorption of iglidur® H2 plain bearings is below 0.1% weight in ambient conditions. The saturation limit submerged in water is 0.2% weight. iglidur® H2 is an ideal material for wet environments.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance

iglidur® H2 withstands neutron and gamma particle radiation. Plain bearings made from iglidur® H2 are resistant up to a radiation intensity of 2 · 10² Gy.

Resistance to weathering

iglidur® H2 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® H2 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® H2 at radial loads. At the recommended maximum surface pressure of 110MPa the deformation is less than 3% at room temperature. The values for tensile and compressive strength are higher than those of iglidur® H at room temperature.

Surface pressure, page 45



-40°C up to +200°C



110MPa



V-0



Permissible surface speeds

During the development of iglidur® H2, costs and mechanical stability were the main considerations. The permitted surface speeds of this bearing are rather low, which primarily permits an application with slow movements or in intermittent service.

Surface speed, page 48

Temperature

iglidur® H2 is an extremely temperature-resistant material. The short-term maximum temperature permitted is +240°C and allows the use of iglidur® H2 plain bearings in applications where the bearings are not subjected to any additional load such as a paint drying process. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. For temperatures over +110°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The coefficient of friction of iglidur® H2 plain bearings change with different surface speeds, loads and surface finishes, as indicated in the diagrams 04 and 05.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Regarding the wear resistance of combinations with iglidur® H2, it must be indicated once again that this bearing was developed for statically high mechanical stability. The wear resistance however does not attain, with none of the bearing-shaft combinations, the values of iglidur® H370 with the corresponding shaft. When the iglidur® H2 bearings are used, they should not be combined with hard-chromed shafts. Shafts made from Cf53 steel and 304 stainless steel are essentially better, as is found in diagrams 06 and 07.

Shaft materials, page 56

Installation tolerances

iglidur® H2 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Product range

iglidur® H2 plain bearings are manufactured to special order. Please request iglidur® H2 plain bearings as an alternative to iglidur® H and iglidur® H4 bearings in high volume applications.

Chemicals	Resistance
Alcohols	+
Diluted acids	+ up to 0
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	0 up to -
Strong alkalines	+

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 0.9	0.6	2.5
Short-term	m/s 1.0	0.7	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.07-0.30	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	F10 [mm]	F10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.006	+0.046	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.010	+0.058	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.013	+0.071	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.016	+0.086	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.020	+0.104	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.025	+0.125	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.030	+0.150	-0.074	+0.000
> 80-120	+0.000	+0.035	-0.036	+0.176	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

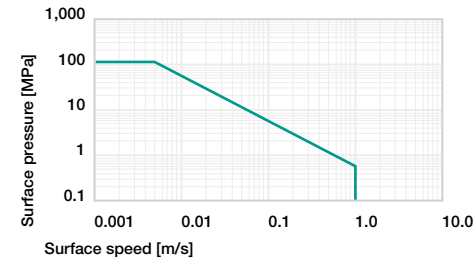


Diagram 01: Permissible pv values for iglidur® H2 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

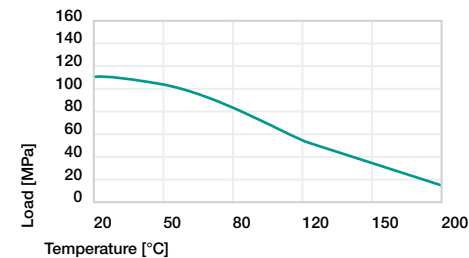


Diagram 02: Maximum recommended surface pressure as a function of temperature (110MPa at +20°C)

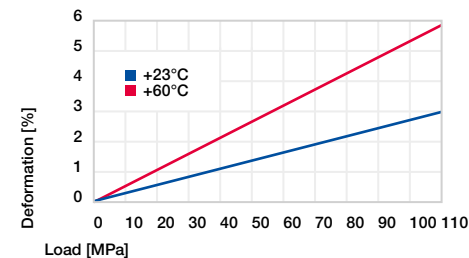


Diagram 03: Deformation under pressure and temperature

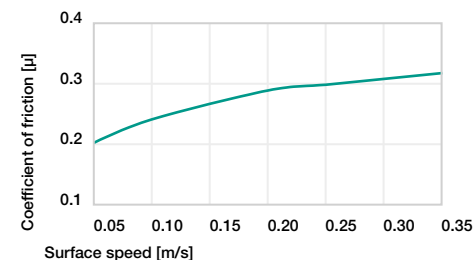


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

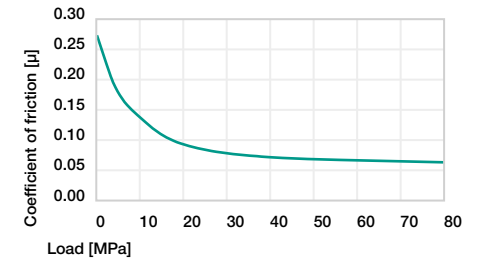


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

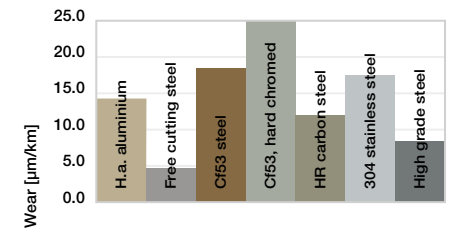


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

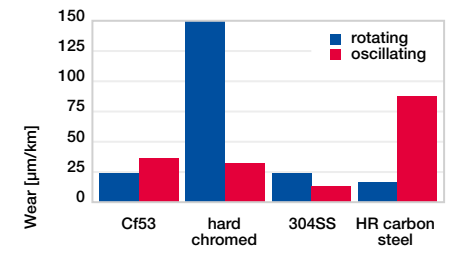
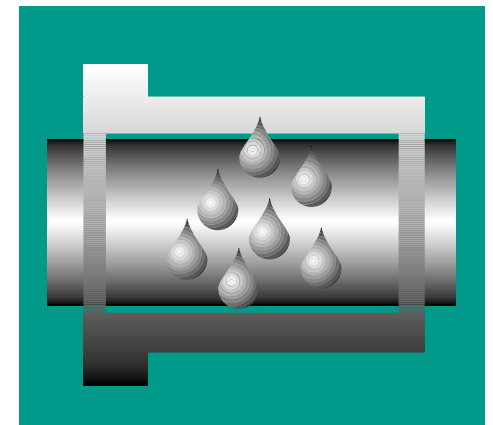


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa



Chemical resistance

Excellent coefficient of friction and wear
igidur® H3



When to use it?

- When extreme service life is required under the influence of temperature and humidity
- When low coefficient of friction at high temperature is important
- When aggressive cleaning is required
- For under bonnet applications



When not to use it?

- When high surface pressures occur

igidur® Z

- When the best universal chemical resistance is required

igidur® X

- When a cost-effective high-temperature plain bearing is required, not the ideal wear resistance

igidur® H2

- When an FDA-compliant plain bearing with high temperature resistance is required

igidur® A500

Bearing technology | Plain bearings | iglidur® H3



Ø
3.0-50.0mm



Also available
as:



Bar stock,
round bar
Page 743



Bar stock,
plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole
flange
bearings
Page 667



Moulded
special parts
Page 696



igubal®
spherical balls
Page 993

Chemical resistance Excellent coefficient of friction and wear

iglidur® H3 is the first choice when long service life is required in extreme environmental conditions. Extreme wear resistance is coupled with excellent resistance to temperature and media - not only in the food and packaging industries or the automotive industry.

- More wear-resistant than iglidur® H1
- Low moisture absorption
- Resistant to many chemicals

Typical application areas

- Beverage industry
- Automation
- Packaging
- Textile industry
- Optical industry

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
Wear resistance at +90°C	-	<div style="width: 90%; height: 10px; background-color: #008080;"></div>	+
Wear resistance at +150°C	-	<div style="width: 80%; height: 10px; background-color: #008080;"></div>	+
Slide property	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
Wear resistance under water	-	<div style="width: 70%; height: 10px; background-color: #008080;"></div>	+
Media resistance	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
Resistant to edge pressures	-	<div style="width: 80%; height: 10px; background-color: #008080;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 80%; height: 10px; background-color: #008080;"></div>	+
Dirt resistance	-	<div style="width: 80%; height: 10px; background-color: #008080;"></div>	+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.41	
Colour		grey	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	0.5	
Coefficient of friction, dynamic, against steel	μ	0.08-0.17	
pv value, max. (dry)	MPa · m/s	0.7	
Mechanical properties			
Flexural modulus	MPa	2,760	DIN 53457
Flexural strength at +20°C	MPa	68	DIN 53452
Compressive strength	MPa	n.s.	
Max. permissible surface pressure (+20°C)	MPa	40	
Shore D hardness		75	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+200	
Max. application temperature short-term	°C	+240	
Min. application temperature	°C	up to -40	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	6	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	n.s.	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

Table 01: Material properties

iglidur® H3 plain bearings have been specially developed for use under extreme environmental conditions. Their strengths are the extremely high wear resistance and the excellent coefficient of friction even in applications in which the bearing is exposed to extreme temperatures and/or aggressive chemicals. iglidur® H3 plain bearings can be used completely free of lubrication; in wet area applications, the surrounding medium acts as additional lubricant.

Moisture absorption

The moisture absorption of iglidur® H3 plain bearings in ambient conditions is approximately 0.2% weight. The saturation limit submerged in water is 0.5% weight. Therefore iglidur® H3 is very well suited for use in wet environments.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance

Plain bearings made from iglidur® H3 are resistant up to a radiation intensity of 2 · 10² Gy.

Resistance to weathering

iglidur® H3 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® H3 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® H3 at radial loads. Among the iglidur® H materials, iglidur® H3 material has the greatest flexibility. This must be considered for applications with high surface pressure or edge loads.

Surface pressure, page 45



-40°C up to
+200°C



40MPa



Permissible surface speeds

Due to their excellent coefficient of friction, rotating surface speeds of up to 2.0m/s are possible with iglidur® H3 plain bearings in dry operation. Linear speeds up to 5.0m/s can be attained. The speeds stated in table 03 are limit values for the lowest bearing loads. With higher loads, the permitted speed drops with the extent of the load due to the limitations by the pv value.

Surface speed, page 48

Temperature

iglidur® H3 is an extremely temperature-resistant material. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. In the case of iglidur® H3 in particular, however, this increase is very small. For temperatures over +80°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The coefficient of friction alters similarly to the wear resistance with increasing load and surface speed (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® H3. The iglidur® H3 plain bearings display excellent wear behaviour in combination with a wide variety of shaft materials both in rotating and pivoting applications. On the 304 stainless steel shafts in particular, iglidur® H3 attains very low wear rates both in rotating and pivoting operations. Even on hard-anodised aluminium shafts, iglidur® H3 plain bearings attain long service life in rotating applications with low to medium loads.

Shaft materials, page 56

Installation tolerances

iglidur® H3 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	+ up to 0
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	+ up to -
Strong alkalines	+ up to -

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 1.0	0.7	4.0
Short-term	m/s 1.5	1.1	6.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.08-0.17	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	F10 [mm]	F10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.006	+0.046	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.010	+0.058	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.013	+0.071	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.016	+0.086	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.020	+0.104	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.025	+0.125	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.030	+0.150	-0.074	+0.000
> 80-120	+0.000	+0.035	-0.036	+0.176	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

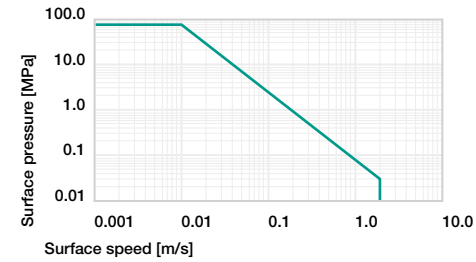


Diagram 01: Permissible pv values for iglidur® H3 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

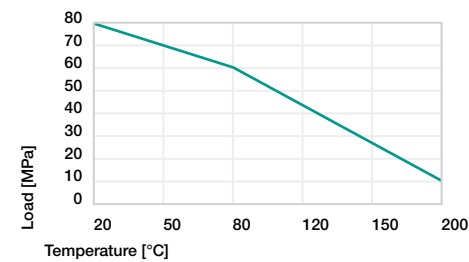


Diagram 02: Maximum recommended surface pressure as a function of temperature (80MPa at +20°C)

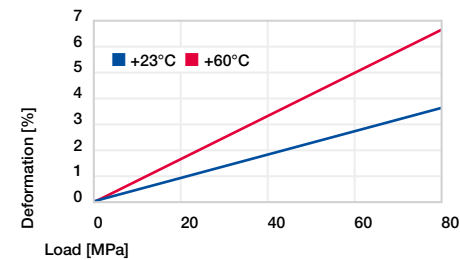


Diagram 03: Deformation under pressure and temperature

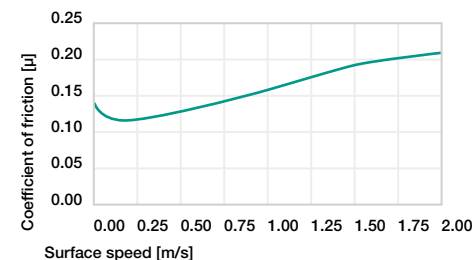


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

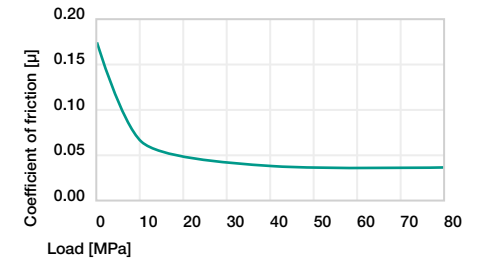


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

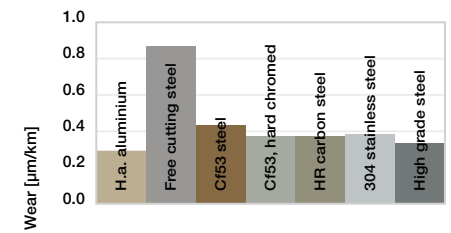


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

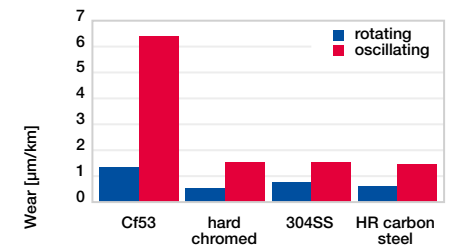
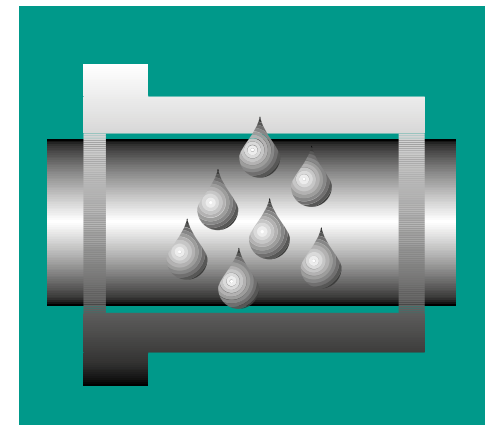


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa



Resistant to temperature and chemicals

Robust media resistance

iglidur® H5



When to use it?

- When extreme service life is required under the influence of temperature and humidity
- When low coefficient of friction at high temperature is important
- When aggressive cleaning is required
- For under bonnet applications



When not to use it?

- When high surface pressures occur
iglidur® Z
- When the best universal chemical resistance is required
iglidur® X
- When a cost-effective high-temperature plain bearing is required, not the ideal wear resistance
iglidur® H2
- When an FDA-compliant plain bearing with high temperature resistance is required
iglidur® A500

Bearing technology | Plain bearings | iglidur® H5



Ø
3.0-50.0mm



Also available
as:



Bar stock,
round bar
Page 743



Bar stock,
plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole
flange
bearings
Page 667



Moulded
special parts
Page 696



igubal®
spherical balls
Page 993

Resistant to temperature and chemicals Robust media resistance

iglidur® H5 was especially developed for the application in corrosive environments, in which high edge pressures and impact loads occur.

- Good media-resistance
- Resistant to impacts and shocks
- Resistant to edge pressures

Typical application areas

- Automotive industry
- Automation
- Packaging

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
Wear resistance at +90°C	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
Wear resistance at +150°C	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
Slide property	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
Wear resistance under water	-	<div style="width: 25%; height: 10px; background-color: #008080;"></div>	+
Media resistance	-	<div style="width: 100%; height: 10px; background-color: #008080;"></div>	+
Resistant to edge pressures	-	<div style="width: 75%; height: 10px; background-color: #008080;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 75%; height: 10px; background-color: #008080;"></div>	+
Dirt resistance	-	<div style="width: 50%; height: 10px; background-color: #008080;"></div>	+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.41	
Colour		black	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.7	
Coefficient of friction, dynamic, against steel	μ	0.08-0.24	
pv value, max. (dry)	MPa · m/s	0.7	
Mechanical properties			
Flexural modulus	MPa	6,400	DIN 53457
Flexural strength at +20°C	MPa	150	DIN 53452
Compressive strength	MPa	n.s.	
Max. permissible surface pressure (+20°C)	MPa	80	
Shore D hardness		72	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+200	
Max. application temperature short-term	°C	+240	
Min. application temperature	°C	up to -40	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	7	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	n.s.	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

Table 01: Material properties

iglidur® H5 plain bearings stand for high carrying capacity, good abrasion resistance and good temperature resistance, besides the obvious economic factors. Temperatures up to +200°C, permitted surface pressure up to 65MPa, and excellent chemical resistance are only some of the essential attributes. Solid lubricants reduce the coefficient of friction and support the wear resistance, which has been significantly improved compared to the iglidur® H3 plain bearings, which are also very cost-effective. iglidur® H5 plain bearings are suitable for all sliding surfaces.

Moisture absorption

The moisture absorption of iglidur® H5 plain bearings is below 0.1% weight in ambient conditions. The saturation limit submerged in water is 0.7% weight. iglidur® H5 is therefore an ideal material for wet environments.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance

Plain bearings made from iglidur® H5 are resistant up to a radiation intensity of 2 · 10² Gy.

Resistance to weathering

iglidur® H5 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® H5 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® H5 at radial loads.

Surface pressure, page 45



-40°C up to
+200°C



80MPa



V-0



Permissible surface speeds

In contrast to the similarly cost-effective iglidur® H3 plain bearings, iglidur® H5 has a favourable coefficient of friction. This accounts for the higher permitted surface speeds that can be attained with these bearings. The speeds stated in table 03 are limit values for the lowest bearing loads. With higher loads, the permitted speed drops with the extent of the load due to the limitations by the pv value.

Surface speed, page 48

Temperature

iglidur® H5 is an extremely temperature-resistant material. With increasing temperatures, the compressive strength of iglidur® H5 plain bearings decreases. When considering temperatures, the additional frictional heat in the bearing system must be taken into account. For temperatures over +80°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The coefficient of friction of the iglidur® H5 plain bearings is very low (diagrams 04 and 05). Please note that a sliding surface with a rough surface finish will increase the friction.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

With many of the suitable shaft materials, iglidur® H5 is the economical alternative to many other high-temperature bearings. The important thing is however the selection of the suitable shaft material. It cannot be generally stated that iglidur® H5 is suitable for use with hard or soft shafts. Tests have however shown that pivoting applications yield better wear data. In rotating applications, the wear increases markedly from 10MPa.

Shaft materials, page 56

Installation tolerances

iglidur® H5 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	+ up to 0
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	0 up to -
Strong alkalines	+

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	1.0	0.7	4.0
Short-term m/s	1.5	1.1	6.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.08-0.24	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	F10 [mm]	F10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.006	+0.046	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.010	+0.058	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.013	+0.071	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.016	+0.086	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.020	+0.104	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.025	+0.125	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.030	+0.150	-0.074	+0.000
> 80-120	+0.000	+0.035	-0.036	+0.176	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

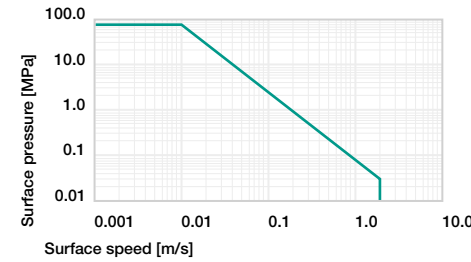


Diagram 01: Permissible pv values for iglidur® H5 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

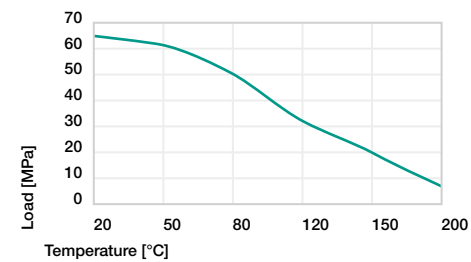


Diagram 02: Maximum recommended surface pressure as a function of temperature (65MPa at +20°C)

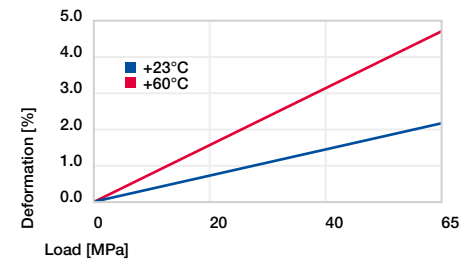


Diagram 03: Deformation under pressure and temperature

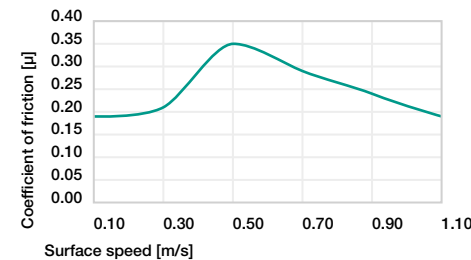


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

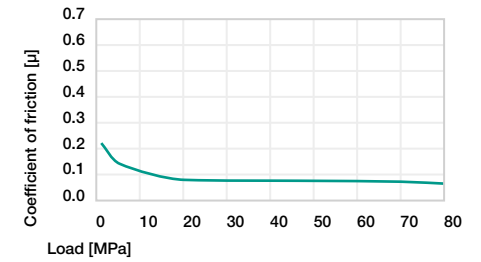


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

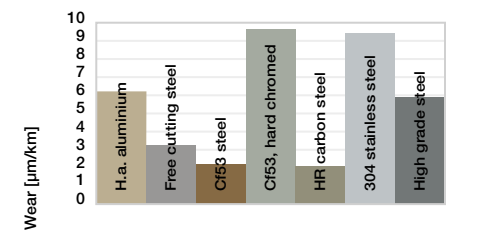


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

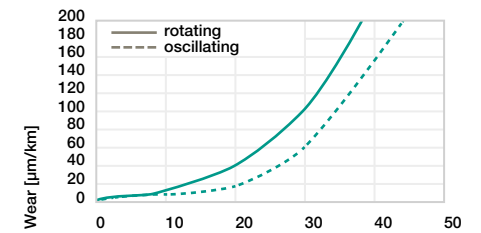


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load



Plain bearing materials
for contact with food





Plain bearing materials for contact with food

The iglidur® materials are most at home when they are not lubricated and the highest hygiene is required. Where is this more true than in food handling and processing?

This group comprises FDA-compliant materials for the most varied operating conditions in terms of moisture and temperature, including iglidur® T220, a material suitable even for the tobacco industry.






 **Online product finder**
www.igus.eu/igidur-finder

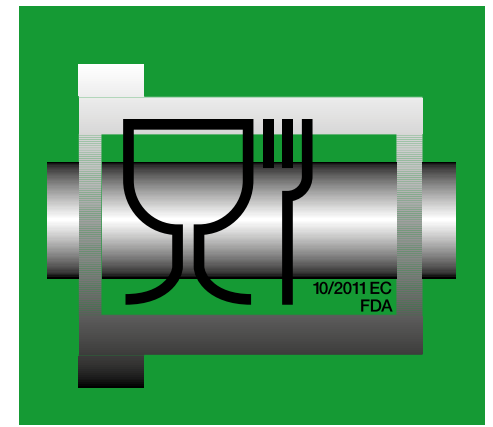
 **Online service life calculation**
www.igus.eu/igidur-expert

	igidur® A181 The universal bearing for food contact	Temperature [°C] ¹²³⁾	+90	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Surface pressure [MPa] ¹²⁴⁾	31	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Coefficient of friction [μ] ¹²⁵⁾	0.18	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Wear [μm/km] ¹²⁵⁾	0.48	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Price index	-	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
	igidur® A350 The endurance runner at higher temperatures in the food sector	Temperature [°C] ¹²³⁾	+180	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Surface pressure [MPa] ¹²⁴⁾	60	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Coefficient of friction [μ] ¹²⁵⁾	0.17	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Wear [μm/km] ¹²⁵⁾	1.79	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Price index	-	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
	igidur® A500 The media and temperature specialist in the food sector	Temperature [°C] ¹²³⁾	+250	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Surface pressure [MPa] ¹²⁴⁾	120	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Coefficient of friction [μ] ¹²⁵⁾	0.36	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Wear [μm/km] ¹²⁵⁾	4.10	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Price index	-	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
	igidur® A180 The all-rounder for food	Temperature [°C] ¹²³⁾	+90	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Surface pressure [MPa] ¹²⁴⁾	28	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Coefficient of friction [μ] ¹²⁵⁾	0.17	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Wear [μm/km] ¹²⁵⁾	0.50	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Price index	-	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+

¹²³⁾ Upper long-term application temperature ¹²⁴⁾ Max. recommended surface pressure at +20°C ¹²⁵⁾ Best pairing for p = 1 MPa, v = 0.3m/s, rotating

Contact with food

	igidur® A200 The "food-classic" for low duty	Temperature [°C] ¹²³⁾	+80	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Surface pressure [MPa] ¹²⁴⁾	18	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Coefficient of friction [μ] ¹²⁵⁾	0.45	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Wear [μm/km] ¹²⁵⁾	1.62	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Price index	-	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
	igidur® A160 "Food" bearing with media resistance up to +90°C	Temperature [°C] ¹²³⁾	+90	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Surface pressure [MPa] ¹²⁴⁾	14	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Coefficient of friction [μ] ¹²⁵⁾	0.09	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Wear [μm/km] ¹²⁵⁾	0.33	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Price index	-	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
	igidur® UW160 Suitable for contact with drinking water	Temperature [°C] ¹²³⁾	+90	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Surface pressure [MPa] ¹²⁴⁾	20	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Coefficient of friction [μ] ¹²⁵⁾	0.17	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Wear [μm/km] ¹²⁵⁾	2.00	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Price index	-	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
	igidur® T220 For the tobacco industry	Temperature [°C] ¹²³⁾	+100	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Surface pressure [MPa] ¹²⁴⁾	40	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Coefficient of friction [μ] ¹²⁵⁾	0.36	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Wear [μm/km] ¹²⁵⁾	0.80	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Price index	-	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
	igidur® AX500 Conductive and resistant	Temperature [°C] ¹²³⁾	+250	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Surface pressure [MPa] ¹²⁴⁾	69	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Coefficient of friction [μ] ¹²⁵⁾	0.22	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Wear [μm/km] ¹²⁵⁾	0.24	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
		Price index	-	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+



The universal bearing for food contact Compliant with Regulation (EU) No. 10/2011 and FDA guidelines **iglidur® A181**



When to use it?

- When FDA compliance is required
- When a material compliant in accordance with Regulation (EU) No. 10/2011 is required
- When an universal material suitable for direct contact with food is required



When not to use it?

- When Regulation (EU) No. 10/2011 and FDA compliance are not required
iglidur® J
- When continuous operating temperatures are higher than +90°C
iglidur® A350
- When a cost-effective universal plain bearing is required
iglidur® G, iglidur® P

Bearing technology | Plain bearings | iglidur® A181



Ø
4.0-50.0mm



Also available as:



Bar stock, round bar
Page 743

The universal bearing for food contact Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

The iglidur® A181 material is compliant with Regulation (EU) No. 10/2011 and also with FDA specifications. The blue colour also facilitates the "optical detectability" often desired in the food sector.

- Compliant with Regulation (EU) No. 10/2011
- FDA-compliant
- Universal installation
- High media resistance
- Wear-resistant
- Lubrication-free
- Maintenance-free



Bar stock, plate
Page 773



tribo-tape liner
Page 781

Typical application areas

- Food industry
- Beverage technology
- Medical technology



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
Wear resistance at +90°C	-	<div style="width: 75%; height: 10px; background-color: green;"></div>	+
Wear resistance at +150°C	-	<div style="width: 50%; height: 10px; background-color: green;"></div>	+
Slide property	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
Wear resistance under water	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
Media resistance	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
Resistant to edge pressures	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
Dirt resistance	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.38	
Colour		blue	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	1.3	
Coefficient of friction, dynamic, against steel	μ	0.10-0.21	
pv value, max. (dry)	MPa · m/s	0.31	
Mechanical properties			
Flexural modulus	MPa	1,913	DIN 53457
Flexural strength at +20°C	MPa	48	DIN 53452
Compressive strength	MPa	60	
Max. permissible surface pressure (+20°C)	MPa	31	
Shore D hardness		76	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+110	
Min. application temperature	°C	-50	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	11	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

Table 01: Material properties

Due to their technical specifications and their conformity with the relevant regulations, iglidur® A181 plain bearings are predestined for applications in food technology. Compared to iglidur® A180 with regard to the mechanical properties, temperature and media resistance, iglidur® A181 is more suitable with respect to the wear resistance in most cases.

Moisture absorption

The moisture absorption of iglidur® A181 plain bearings is approximately 0.2% weight in standard climatic conditions. The saturation limit submerged in water is 1.3% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® A181 bearings.

Radiation resistance

Plain bearings made from iglidur® A181 are resistant up to a radiation intensity of 2 · 10² Gy.

Resistance to weathering

igidur® A181 plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® A181 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® A181 at radial loads.

Surface pressure, page 45

Permissible surface speeds

igidur® A181 was developed for low surface speeds. Maximum speeds of up to 0.8m/s (rotating) and 3.5m/s (linear), respectively, are permissible during continuous dry operation. The given values in table 03 indicate the limits at which an increase up to the continuous permissible temperature occurs. This increase is a result of friction. In practice, though, this level is rarely reached, due to varying application conditions.

Surface speed, page 48



-50°C up to
+90°C



31MPa



HB



Food



RoHS



ISO 35474

Temperature

The long-term upper temperature limit of +90°C permits the broad use in applications with direct contact with food. As shown in diagram 02, with increasing temperatures, the compressive strength decreases. When considering temperatures, the additional frictional heat in the bearing system must be taken into account. For temperatures over +60°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagram 04 and 05). For iglidur® A181 plain bearings, the alteration of the coefficient of friction μ depends on surface speed and the shaft surface finish.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® A181. Particular attention is paid in the food industry to the corrosion-resistant shaft types. Diagram 06 shows that very low wear rates can be achieved in combination with these shafts. As with many of the iglidur® materials, wear rate increases with otherwise identical parameters in rotation (diagram 07).

Shaft materials, page 56

Installation tolerances

iglidur® A181 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances.

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	+ up to 0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	0.8	0.6	3.5
Short-term m/s	1.2	1.0	5.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.10-0.21	0.08	0.03	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

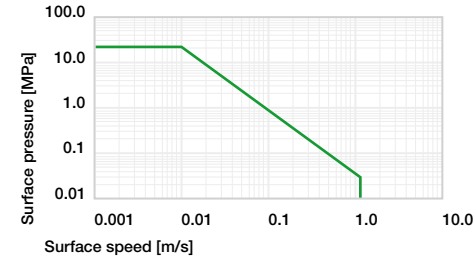


Diagram 01: Permissible pv values for iglidur® A181 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

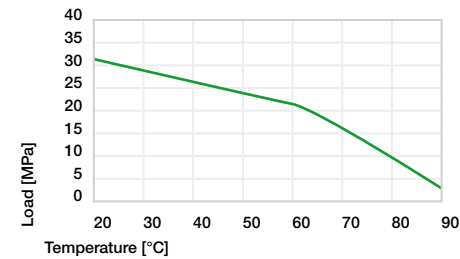


Diagram 02: Maximum recommended surface pressure as a function of temperature (31MPa at +20°C)

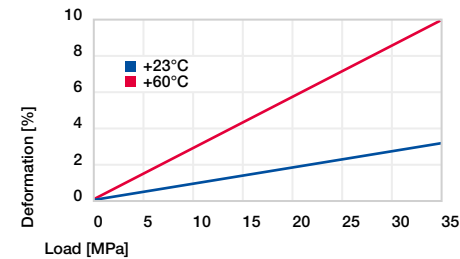


Diagram 03: Deformation under pressure and temperature

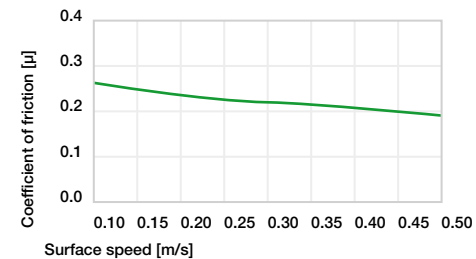


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

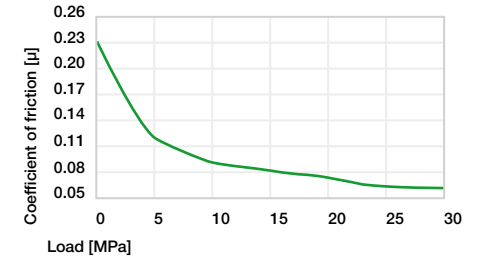


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

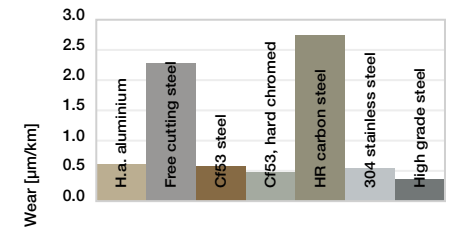


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

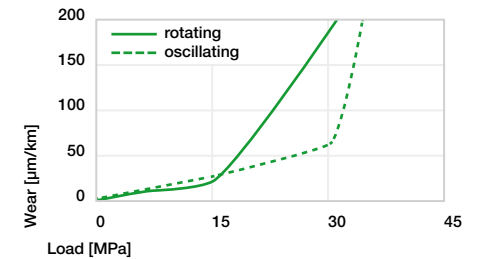
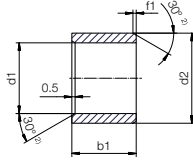


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2



Dimensions according to ISO 3547-1 and special dimensions



Order example: **A181SM-0405-04** – no minimum order quantity.

A181 iglidur® material **S** Cylindrical **M** Metric **04** Inner Ø d1 **05** Outer Ø d2 **04** Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
4.0		5.5	4.0	A181SM-0405-04
4.0		5.5	6.0	A181SM-0405-06
5.0	+0.020	7.0	5.0	A181SM-0507-05
5.0		7.0	10.0	A181SM-0507-10
6.0	+0.068	8.0	6.0	A181SM-0608-06
6.0		8.0	8.0	A181SM-0608-08
6.0		8.0	10.0	A181SM-0608-10
8.0		10.0	8.0	A181SM-0810-08
8.0		10.0	10.0	A181SM-0810-10
8.0		10.0	12.0	A181SM-0810-12
10.0	+0.025	12.0	8.0	A181SM-1012-08
10.0	+0.083	12.0	10.0	A181SM-1012-10
10.0		12.0	12.0	A181SM-1012-12
10.0		12.0	15.0	A181SM-1012-15
10.0		12.0	20.0	A181SM-1012-20
12.0		14.0	12.0	A181SM-1214-12
12.0		14.0	15.0	A181SM-1214-15
12.0		14.0	20.0	A181SM-1214-20
13.0		15.0	10.0	A181SM-1315-10
13.0		15.0	20.0	A181SM-1315-20
14.0		16.0	15.0	A181SM-1416-15
14.0	+0.032	16.0	20.0	A181SM-1416-20
14.0	+0.102	16.0	25.0	A181SM-1416-25
15.0		17.0	15.0	A181SM-1517-15
15.0		17.0	20.0	A181SM-1517-20
15.0		17.0	25.0	A181SM-1517-25
16.0		18.0	15.0	A181SM-1618-15
16.0		18.0	20.0	A181SM-1618-20
16.0		18.0	25.0	A181SM-1618-25

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
18.0		20.0	15.0	A181SM-1820-15
18.0	+0.032	20.0	20.0	A181SM-1820-20
18.0		+0.102	20.0	25.0
20.0		23.0	10.0	A181SM-2023-10
20.0		23.0	15.0	A181SM-2023-15
20.0		23.0	20.0	A181SM-2023-20
20.0		23.0	25.0	A181SM-2023-25
20.0		23.0	30.0	A181SM-2023-30
22.0		25.0	15.0	A181SM-2225-15
22.0		25.0	20.0	A181SM-2225-20
22.0		25.0	25.0	A181SM-2225-25
22.0		25.0	30.0	A181SM-2225-30
24.0		27.0	15.0	A181SM-2427-15
24.0		27.0	20.0	A181SM-2427-20
24.0	+0.040	27.0	25.0	A181SM-2427-25
24.0		+0.124	27.0	30.0
25.0		28.0	15.0	A181SM-2528-15
25.0		28.0	20.0	A181SM-2528-20
25.0		28.0	25.0	A181SM-2528-25
25.0		28.0	30.0	A181SM-2528-30
28.0		32.0	20.0	A181SM-2832-20
28.0		32.0	20.0	A181SM-3034-20
28.0		32.0	25.0	A181SM-2832-25
28.0		32.0	30.0	A181SM-2832-30
30.0		34.0	25.0	A181SM-3034-25
30.0		34.0	30.0	A181SM-3034-30
30.0		34.0	40.0	A181SM-3034-40
32.0	+0.050	36.0	20.0	A181SM-3236-20
32.0	+0.150	36.0	30.0	A181SM-3236-30

³⁾ After press-fit. *Testing methods, page 61*

Product range

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
32.0		36.0	40.0	A181SM-3236-40
35.0		39.0	20.0	A181SM-3539-20
35.0		39.0	30.0	A181SM-3539-30
35.0	+0.050	39.0	40.0	A181SM-3539-40
35.0		+0.150	39.0	50.0
40.0		44.0	20.0	A181SM-4044-20
40.0		44.0	30.0	A181SM-4044-30
40.0		44.0	40.0	A181SM-4044-40
40.0		44.0	50.0	A181SM-4044-50

³⁾ After press-fit. *Testing methods, page 61*

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
45.0		50.0	20.0	A181SM-4550-20
45.0		50.0	30.0	A181SM-4550-30
45.0		50.0	40.0	A181SM-4550-40
45.0	+0.050	50.0	50.0	A181SM-4550-50
45.0		+0.150	55.0	20.0
50.0		55.0	30.0	A181SM-5055-30
50.0		55.0	40.0	A181SM-5055-40
50.0		55.0	50.0	A181SM-5055-50
50.0		55.0	60.0	A181SM-5055-60



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/A181



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling

1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

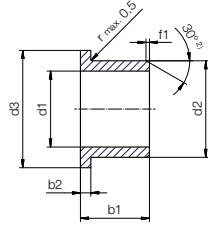
No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Bearing technology | Plain bearings | iglidur® A181

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

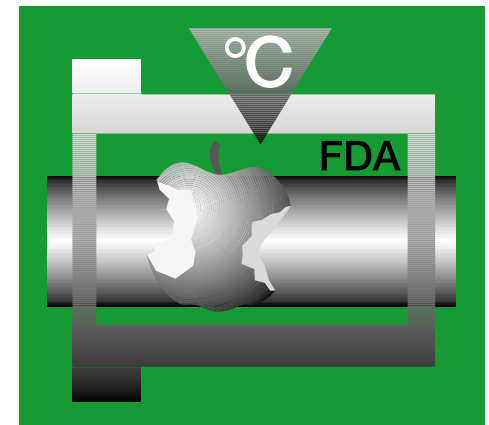
d1 [mm]	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.5	0.8	1.2

i Order example: **A181FM-0608-04** – no minimum order quantity.
A181 iglidur® material **F** With flange **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **04** Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
6.0		8.0	12.0	4.0	1.00	A181FM-0608-04
6.0	+0.020	8.0	12.0	6.0	1.00	A181FM-0608-06
6.0	+0.068	8.0	12.0	8.0	1.00	A181FM-0608-08
8.0		10.0	15.0	5.5	1.00	A181FM-0810-05
8.0		10.0	15.0	7.5	1.00	A181FM-0810-07
8.0		10.0	15.0	9.5	1.00	A181FM-0810-09
8.0		10.0	15.0	10.0	1.00	A181FM-0810-10
10.0	+0.025	12.0	18.0	7.0	1.00	A181FM-1012-07
10.0	+0.083	12.0	18.0	9.0	1.00	A181FM-1012-09
10.0		12.0	18.0	10.0	1.00	A181FM-1012-10
10.0		12.0	18.0	12.0	1.00	A181FM-1012-12
10.0		12.0	18.0	17.0	1.00	A181FM-1012-17
12.0		14.0	20.0	7.0	1.00	A181FM-1214-07
12.0		14.0	20.0	9.0	1.00	A181FM-1214-09
12.0		14.0	20.0	12.0	1.00	A181FM-1214-12
12.0	+0.032	14.0	20.0	17.0	1.00	A181FM-1214-17
14.0	+0.102	16.0	22.0	12.0	1.00	A181FM-1416-12
14.0		16.0	22.0	17.0	1.00	A181FM-1416-17
15.0		17.0	23.0	9.0	1.00	A181FM-1517-09

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
15.0		17.0	23.0	12.0	1.00	A181FM-1517-12
15.0		17.0	23.0	17.0	1.00	A181FM-1517-17
16.0		18.0	24.0	12.0	1.00	A181FM-1618-12
16.0	+0.032	18.0	24.0	17.0	1.00	A181FM-1618-17
18.0	+0.102	20.0	26.0	12.0	1.00	A181FM-1820-12
18.0		20.0	26.0	17.0	1.00	A181FM-1820-17
18.0		20.0	26.0	22.0	1.00	A181FM-1820-22
20.0		23.0	30.0	11.5	1.50	A181FM-2023-11
20.0		23.0	30.0	16.5	1.50	A181FM-2023-16
20.0		23.0	30.0	21.5	1.50	A181FM-2023-21
25.0		28.0	35.0	11.5	1.50	A181FM-2528-11
25.0		28.0	35.0	16.5	1.50	A181FM-2528-16
25.0		28.0	35.0	21.5	1.50	A181FM-2528-21
30.0	+0.040	34.0	42.0	16.0	2.00	A181FM-3034-16
30.0	+0.124	34.0	42.0	26.0	2.00	A181FM-3034-26
35.0		39.0	47.0	16.0	2.00	A181FM-3539-16
35.0		39.0	47.0	26.0	2.00	A181FM-3539-26
40.0		44.0	52.0	30.0	2.00	A181FM-4044-30
40.0		44.0	52.0	40.0	2.00	A181FM-4044-40
45.0		50.0	58.0	50.0	2.50	A181FM-4550-50

³⁾ After press-fit. Testing methods, page 61



The endurance runner at higher temperatures in the food sector

Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

iglidur® A350



When to use it?

- When FDA compliance is required
- When wear resistance and FDA-compliance are necessary at high loads
- When the bearing is used in acid environments



When not to use it?

- When temperatures are continuously higher than +180°C
iglidur® A500
- When the maximum wear resistance is necessary
iglidur® J
- When a cost-effective FDA-compliant plain bearing is required
iglidur® A200, iglidur® A180
- For high speeds
iglidur® J

Bearing technology | Plain bearings | iglidur® A350



Ø
4.0-50.0mm



Also available
as:



Bar stock,
round bar
Page 743



Bar stock,
plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole
flange
bearings
Page 667



Moulded
special parts
Page 696



igubal®
spherical balls
Page 993

The endurance runner at higher temperatures in the food sector

Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

A universal plain bearing for use in the area of food and pharmaceutical industries. Composition of FDA-compliant materials allows the use in areas where other plain bearings cannot be used due to the contact with food. With good tribological and mechanical properties, iglidur® A350 plain bearings are suitable for all-round use in and around food machinery.

- Compliant with Regulation (EU) No. 10/2011
- FDA-compliant
- Temperature-resistant up to +180°C
- Suitable for medium and high loads
- Suitable for pivoting applications
- Lubrication-free
- Standard range from stock
- Suitable for rotating applications
- Maintenance-free

Typical application areas

- Food industry
- Beverage technology
- Medical technology

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
Wear resistance at +90°C	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
Wear resistance at +150°C	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
Slide property	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
Wear resistance under water	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
Media resistance	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
Resistant to edge pressures	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
Dirt resistance	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.42	
Colour		blue	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.6	DIN 53495
Max. moisture absorption	% weight	1.9	
Coefficient of friction, dynamic, against steel	μ	0.10-0.20	
pv value, max. (dry)	MPa · m/s	0.40	
Mechanical properties			
Flexural modulus	MPa	2,000	DIN 53457
Flexural strength at +20°C	MPa	110	DIN 53452
Compressive strength	MPa	78	
Max. permissible surface pressure (+20°C)	MPa	60	
Shore D hardness		76	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+180	
Max. application temperature short-term	°C	+210	
Min. application temperature	°C	-100	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	8	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹¹	DIN IEC 93
Surface resistance	Ω	> 10 ¹¹	DIN 53482

Table 01: Material properties

iglidur® A350 plain bearings are made for practically all loads in food and packaging machinery. Even high loads, often seen in lifting equipment, are taken easily and the bearings work flawlessly without any external lubrication.

Moisture absorption

The moisture absorption of iglidur® A350 is low and can be ignored when using standard plain bearings. Even when saturated with water, iglidur® A350 does not absorb more than 1.9% weight of water (by weight).

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® A350 bearings.

Radiation resistance

Plain bearings made from iglidur® A350 are resistant up to a radiation intensity of 2 · 10² Gy.

Resistance to weathering

iglidur® A350 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® A350 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® A350 under different loads. At the recommended maximum surface pressure of 60MPa the deformation is less than 5% at room temperature.

Surface pressure, page 45



-100 °C up to
+180 °C



60MPa



Permissible surface speeds

iglidur® A350 plain bearings are suitable for low and medium speeds in rotating and oscillating applications. Good bearing support for linear movements is also possible with iglidur® A350. In the case of high surface speeds it should be tested whether iglidur® J or iglidur® L250 can be used, as the wear rate of these bearings is lower.

Surface speed, page 48

Temperature

Its temperature resistance makes iglidur® A350 the ideal material for plain bearing used in the food area. For temperatures over +140°C an additional securing is required. The wear rate of iglidur® A350 plain bearings rises only little with higher temperatures. Tests have shown good wear results at +100°C on all tested shaft materials.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The coefficient of friction of iglidur® A350 on a steel shaft is in the mid range (diagrams 04 and 05).

Coefficient of friction and surfaces, page 19

Wear resistance, page 54

Shaft materials

The corrosion-resistant steels are rather considered a natural choice for use in the food industry. The trials were therefore carried out especially on such materials. It has been shown that there is no clear favourite and 304 stainless steel, high grade steel and hard-chromed steel are all suitable. Hard-anodised aluminium is also well suited for both linear and rotational movements.

Shaft materials, page 56

Installation tolerances

iglidur® A350 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	+
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+ up to 0
Strong acids	+
Strong alkalines	+

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 1.0	0.8	2.5
Short-term	m/s 1.2	0.9	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.10-0.20	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	F10 [mm]	F10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.006	+0.046	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.010	+0.058	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.013	+0.071	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.016	+0.086	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.020	+0.104	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.025	+0.125	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.030	+0.150	-0.074	+0.000
> 80-120	+0.000	+0.035	-0.036	+0.176	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

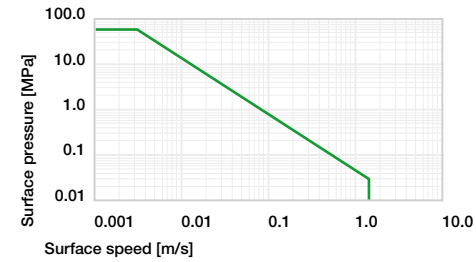


Diagram 01: Permissible pv values for iglidur® A350 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

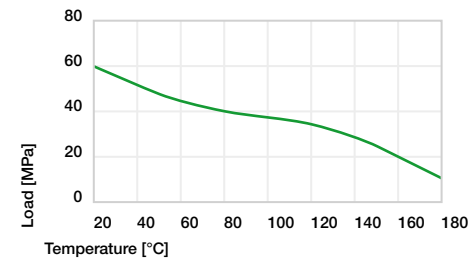


Diagram 02: Maximum recommended surface pressure as a function of temperature (60MPa at +20°C)

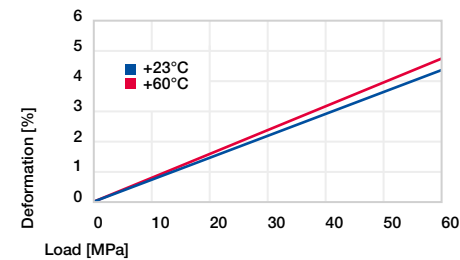


Diagram 03: Deformation under pressure and temperature

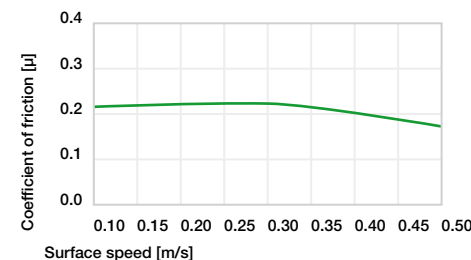


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

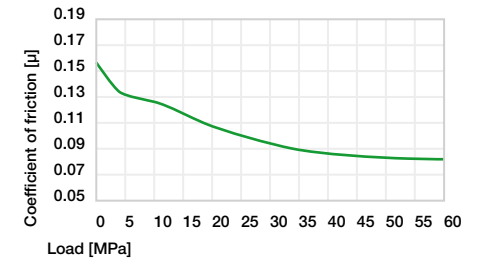


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

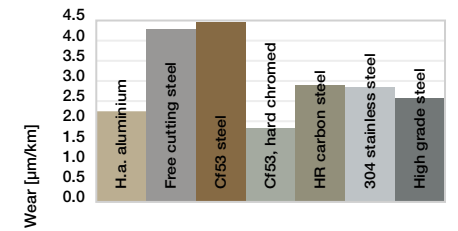


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

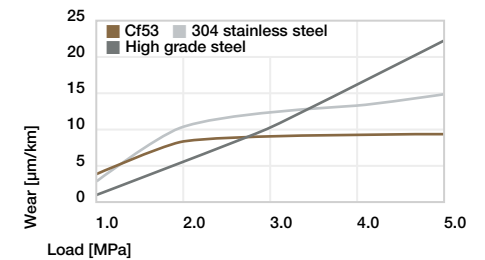
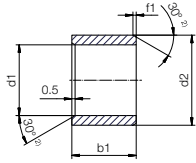


Diagram 07: Wear, rotating with different shaft materials, as a function of the load

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2



Dimensions according to ISO 3547-1 and special dimensions



Order example: **A350SM-0405-04** – no minimum order quantity.

A350 iglidur® material **S** Cylindrical **M** Metric **04** Inner Ø d1 **05** Outer Ø d2 **04** Total length b1

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
4.0		5.5	4.0	A350SM-0405-04
4.0		5.5	6.0	A350SM-0405-06
5.0	+0.010	7.0	5.0	A350SM-0507-05
5.0	+0.058	7.0	10.0	A350SM-0507-10
6.0		8.0	6.0	A350SM-0608-06
6.0		8.0	8.0	A350SM-0608-08
6.0		8.0	10.0	A350SM-0608-10
8.0		10.0	8.0	A350SM-0810-08
8.0		10.0	10.0	A350SM-0810-10
8.0		10.0	12.0	A350SM-0810-12
10.0	+0.013	12.0	8.0	A350SM-1012-08
10.0	+0.071	12.0	10.0	A350SM-1012-10
10.0		12.0	12.0	A350SM-1012-12
10.0		12.0	15.0	A350SM-1012-15
10.0		12.0	20.0	A350SM-1012-20
12.0		14.0	10.0	A350SM-1214-10
12.0		14.0	12.0	A350SM-1214-12
12.0		14.0	15.0	A350SM-1214-15
12.0		14.0	20.0	A350SM-1214-20
13.0		15.0	10.0	A350SM-1315-10
13.0		15.0	20.0	A350SM-1315-20
14.0	+0.016	16.0	15.0	A350SM-1416-15
14.0	+0.086	16.0	20.0	A350SM-1416-20
14.0		16.0	25.0	A350SM-1416-25
15.0		17.0	15.0	A350SM-1517-15
15.0		17.0	20.0	A350SM-1517-20
15.0		17.0	25.0	A350SM-1517-25
16.0		18.0	15.0	A350SM-1618-15
16.0		18.0	20.0	A350SM-1618-20

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
16.0		18.0	25.0	A350SM-1618-25
18.0	+0.016	20.0	15.0	A350SM-1820-15
18.0	+0.086	20.0	20.0	A350SM-1820-20
18.0		20.0	25.0	A350SM-1820-25
20.0		23.0	10.0	A350SM-2023-10
20.0		23.0	15.0	A350SM-2023-15
20.0		23.0	20.0	A350SM-2023-20
20.0		23.0	25.0	A350SM-2023-25
20.0		23.0	30.0	A350SM-2023-30
22.0		25.0	15.0	A350SM-2225-15
22.0		25.0	20.0	A350SM-2225-20
22.0		25.0	25.0	A350SM-2225-25
22.0		25.0	30.0	A350SM-2225-30
24.0		27.0	15.0	A350SM-2427-15
24.0		27.0	20.0	A350SM-2427-20
24.0		27.0	25.0	A350SM-2427-25
24.0	+0.020	27.0	30.0	A350SM-2427-30
24.0	+0.104	28.0	30.0	A350SM-2428-30
25.0		28.0	15.0	A350SM-2528-15
25.0		28.0	20.0	A350SM-2528-20
25.0		28.0	25.0	A350SM-2528-25
25.0		28.0	30.0	A350SM-2528-30
28.0		32.0	20.0	A350SM-2832-20
28.0		32.0	25.0	A350SM-2832-25
28.0		32.0	30.0	A350SM-2832-30
30.0		34.0	20.0	A350SM-3034-20
30.0		34.0	25.0	A350SM-3034-25
30.0		34.0	30.0	A350SM-3034-30
30.0		34.0	40.0	A350SM-3034-40

³⁾ After press-fit. Testing methods, page 61

Product range

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
32.0		36.0	20.0	A350SM-3236-20
32.0		36.0	30.0	A350SM-3236-30
32.0		36.0	40.0	A350SM-3236-40
35.0		39.0	20.0	A350SM-3539-20
35.0	+0.025	39.0	30.0	A350SM-3539-30
35.0	+0.125	39.0	40.0	A350SM-3539-40
35.0		39.0	50.0	A350SM-3539-50
40.0		44.0	20.0	A350SM-4044-20
40.0		44.0	30.0	A350SM-4044-30
40.0		44.0	40.0	A350SM-4044-40

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
40.0		44.0	50.0	A350SM-4044-50
45.0		50.0	20.0	A350SM-4550-20
45.0		50.0	30.0	A350SM-4550-30
45.0		50.0	40.0	A350SM-4550-40
45.0	+0.025	50.0	50.0	A350SM-4550-50
50.0	+0.125	55.0	20.0	A350SM-5055-20
50.0		55.0	30.0	A350SM-5055-30
50.0		55.0	40.0	A350SM-5055-40
50.0		55.0	50.0	A350SM-5055-50
50.0		55.0	60.0	A350SM-5055-60

³⁾ After press-fit. Testing methods, page 61



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/A350



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling

1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

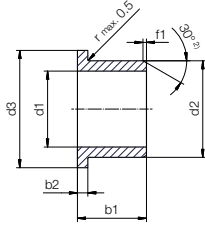
No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Bearing technology | Plain bearings | iglidur® A350

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

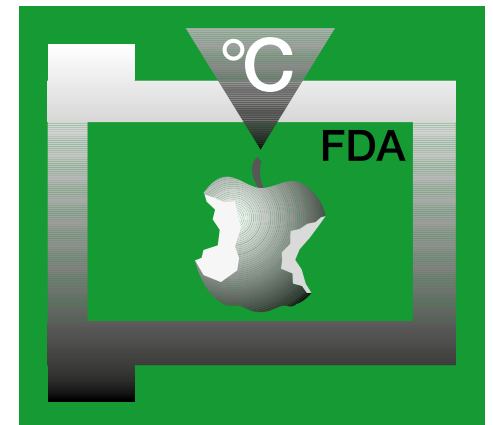
i Dimensions according to ISO 3547-1 and special dimensions

? Order example: **A350FM-0507-05** – no minimum order quantity.
A350 iglidur® material **F** With flange **M** Metric **05** Inner Ø d1 **07** Outer Ø d2 **05** Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
5.0		7.0	11.0	5.0	1.00	A350FM-0507-05
6.0	+0.010	8.0	12.0	4.0	1.00	A350FM-0608-04
6.0	+0.058	8.0	12.0	6.0	1.00	A350FM-0608-06
6.0		8.0	12.0	8.0	1.00	A350FM-0608-08
8.0		10.0	15.0	5.5	1.00	A350FM-0810-05
8.0		10.0	15.0	7.5	1.00	A350FM-0810-07
8.0		10.0	15.0	9.5	1.00	A350FM-0810-09
10.0		10.0	15.0	10.0	1.00	A350FM-0810-10
10.0	+0.013	12.0	18.0	7.0	1.00	A350FM-1012-07
10.0	+0.071	12.0	18.0	9.0	1.00	A350FM-1012-09
10.0		12.0	18.0	10.0	1.00	A350FM-1012-10
10.0		12.0	18.0	12.0	1.00	A350FM-1012-12
10.0		12.0	18.0	17.0	1.00	A350FM-1012-17
12.0		14.0	20.0	7.0	1.00	A350FM-1214-07
12.0		14.0	20.0	9.0	1.00	A350FM-1214-09
12.0	+0.016	14.0	20.0	12.0	1.00	A350FM-1214-12
12.0	+0.086	14.0	20.0	17.0	1.00	A350FM-1214-17
14.0		16.0	22.0	12.0	1.00	A350FM-1416-12
14.0		16.0	22.0	17.0	1.00	A350FM-1416-17

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
15.0		17.0	23.0	9.0	1.00	A350FM-1517-09
15.0		17.0	23.0	12.0	1.00	A350FM-1517-12
15.0		17.0	23.0	17.0	1.00	A350FM-1517-17
16.0	+0.016	18.0	24.0	12.0	1.00	A350FM-1618-12
16.0	+0.086	18.0	24.0	17.0	1.00	A350FM-1618-17
18.0		20.0	26.0	12.0	1.00	A350FM-1820-12
18.0		20.0	26.0	17.0	1.00	A350FM-1820-17
20.0		23.0	30.0	11.5	1.50	A350FM-2023-11
20.0		23.0	30.0	16.5	1.50	A350FM-2023-16
20.0		23.0	30.0	21.5	1.50	A350FM-2023-21
25.0	+0.020	28.0	35.0	11.5	1.50	A350FM-2528-11
25.0	+0.104	28.0	35.0	16.5	1.50	A350FM-2528-16
25.0		28.0	35.0	21.5	1.50	A350FM-2528-21
30.0		34.0	42.0	16.0	2.00	A350FM-3034-16
30.0		34.0	42.0	26.0	2.00	A350FM-3034-26
35.0		39.0	47.0	16.0	2.00	A350FM-3539-16
35.0		39.0	47.0	26.0	2.00	A350FM-3539-26
40.0	+0.025	44.0	52.0	30.0	2.00	A350FM-4044-30
40.0	+0.125	44.0	52.0	40.0	2.00	A350FM-4044-40
45.0		50.0	58.0	50.0	2.00	A350FM-4550-50

³⁾ After press-fit. Testing methods, page 61



The media and temperature specialist in the food sector

Compliant with Regulation (EU) No. 10/2011 and FDA guidelines
iglidur® A500



When to use it?

- When FDA compliance is required
- When a high chemical resistance is required
- Abrasion-resistant
- Temperature-resistant from -100°C to +250°C



When not to use it?

- When the highest wear resistance is required
iglidur® X6, iglidur® Z
- When no resistance to temperature or chemicals is required
iglidur® A180, iglidur® A200
- When a cost-effective universal plain bearing is required
iglidur® G, iglidur® P

Bearing technology | Plain bearings | iglidur® A500



Ø
4.0-50.0mm



Also available
as:



Bar stock,
round bar
Page 743

The media and temperature specialist in the food sector

Compliant with Regulation (EU) No. 10/2011 and FDA guidelines



Bar stock,
plate
Page 773

Plain bearings made from iglidur® A500 can be exposed to extremely high temperatures and are suitable for direct contact with food (FDA-compliant).

- Compliant with Regulation (EU) No. 10/2011
- FDA-compliant
- Temperature-resistant from -100°C to +250°C
- Chemical-resistant
- Lubrication-free
- Maintenance-free



tribo-tape liner
Page 781

Typical application areas

- Food industry
- Beverage technology
- Medical technology



Guide rings
Page 641

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 25%; background-color: green;"></div>	+
Wear resistance at +90°C	-	<div style="width: 25%; background-color: green;"></div>	+
Wear resistance at +150°C	-	<div style="width: 33%; background-color: green;"></div>	+
Slide property	-	<div style="width: 25%; background-color: green;"></div>	+
Wear resistance under water	-	<div style="width: 50%; background-color: green;"></div>	+
Media resistance	-	<div style="width: 75%; background-color: green;"></div>	+
Resistant to edge pressures	-	<div style="width: 50%; background-color: green;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 50%; background-color: green;"></div>	+
Dirt resistance	-	<div style="width: 25%; background-color: green;"></div>	+



Two hole
flange
bearings
Page 667



Moulded
special parts
Page 696



igubal®
spherical balls
Page 993

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.28	
Colour		brown	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.3	DIN 53495
Max. moisture absorption	% weight	0.5	
Coefficient of friction, dynamic, against steel	μ	0.26-0.41	
pv value, max. (dry)	MPa · m/s	0.28	
Mechanical properties			
Flexural modulus	MPa	3,600	DIN 53457
Flexural strength at +20°C	MPa	140	DIN 53452
Compressive strength	MPa	118	
Max. permissible surface pressure (+20°C)	MPa	120	
Shore D hardness		83	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+250	
Max. application temperature short-term	°C	+300	
Min. application temperature	°C	-100	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	9	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹⁴	DIN IEC 93
Surface resistance	Ω	> 10 ¹³	DIN 53482

Table 01: Material properties

Plain bearings made from iglidur® A500 can be used at high temperatures and are permitted for use in direct contact with food (FDA-compliant). They exhibit an exceptionally good chemical resistance and are suitable for heavy-duty use in and around machinery for the food industry. Though iglidur® A500 is a soft material, it possesses an excellent compressive strength even at high temperatures.

Moisture absorption

The moisture absorption of iglidur® A500 plain bearings is only 0.5% weight after saturation in water.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® A500 are resistant up to a radiation intensity of 2 · 10⁶ Gy.

Resistance to weathering

iglidur® A500 plain bearings are resistant to weathering. The material properties are significantly affected. Discolouration occurs. Practical tests under real application conditions are strongly recommended.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® A500 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 02 shows the maximum recommended surface pressure of the bearing as a function of the temperature. The combination of high stability and high flexibility acts very positively during vibrations and edge loads. As the wear of the plain bearing rapidly escalates from pressures of 10 to 20MPa, we recommend a particularly accurate testing of the application above these limits.

Surface pressure, page 45

Permissible surface speeds



-100°C up to
+250°C



120MPa



iglidur® A500 also permits high surface speeds due to its high temperature resistance. The coefficient of friction rises however by these high speeds leading to a higher heating up of the bearing. Tests show that plain bearings made from iglidur® A500 are more wear-resistant in the case of pivoting movements, and the permissible pv values are also higher in pivoting applications.

Surface speed, page 48

Temperature

iglidur® A500 plain bearings can be used at temperatures up to +300°C for short periods. When temperatures increase, the compressive strength of iglidur® A500 plain bearings decreases. Diagram 02 shows this inverse relationship. The temperatures prevailing in the bearing system also have an influence on the wear. For temperatures over +130°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The coefficient of friction is dependent on the load that acts on the bearing (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® A500. The combination "iglidur® A500/hard-chromed shaft" clearly stands out in rotating application. Up to about 2.0MPa, the wear of this combination remains largely independent of load. In pivoting applications with Cf53 shafts, the wear resistance is better than in rotations under equal load. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 56

Installation tolerances

iglidur® A500 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	+
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	+
Strong alkalines	+

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 0.6	0.4	1.0
Short-term	m/s 1.0	0.7	2.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.26-0.41	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	F10 [mm]	F10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.006	+0.046	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.010	+0.058	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.013	+0.071	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.016	+0.086	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.020	+0.104	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.025	+0.125	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.030	+0.150	-0.074	+0.000
> 80-120	+0.000	+0.035	-0.036	+0.176	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

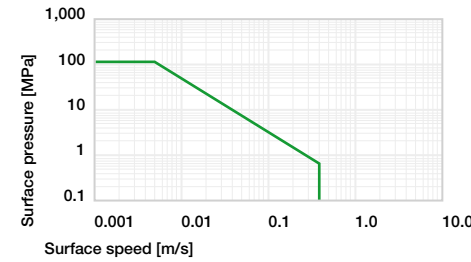


Diagram 01: Permissible pv values for iglidur® A500 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

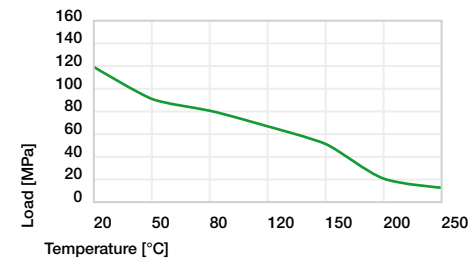


Diagram 02: Maximum recommended surface pressure as a function of temperature (120MPa at +20°C)

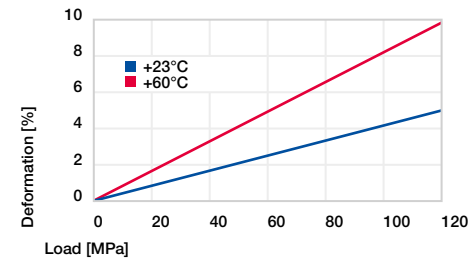


Diagram 03: Deformation under pressure and temperature

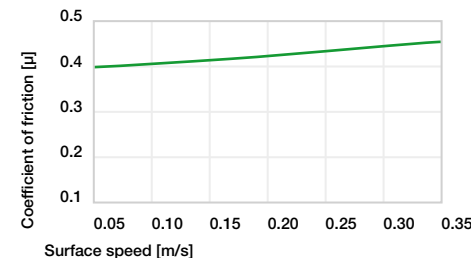


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

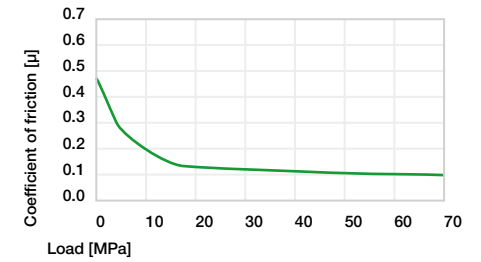


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

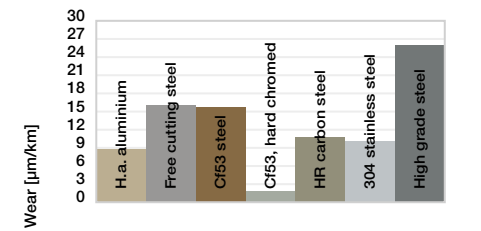


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

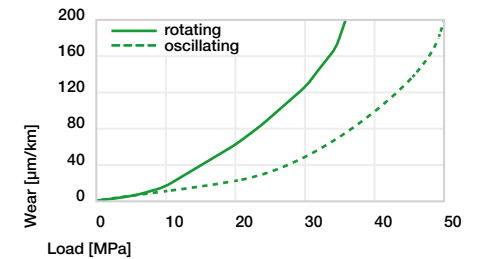
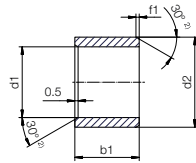


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions



Order example: **A500SM-0405-04** – no minimum order quantity.

A500 iglidur® material **S** Cylindrical **M** Metric **04** Inner Ø d1 **05** Outer Ø d2 **04** Total length b1

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
4.0		5.5	4.0	A500SM-0405-04
4.0		5.5	6.0	A500SM-0405-06
5.0	+0.010	7.0	5.0	A500SM-0507-05
5.0	+0.058	7.0	10.0	A500SM-0507-10
6.0		8.0	6.0	A500SM-0608-06
6.0		8.0	8.0	A500SM-0608-08
6.0		8.0	10.0	A500SM-0608-10
8.0		10.0	6.0	A500SM-0810-06
8.0		10.0	8.0	A500SM-0810-08
8.0		10.0	10.0	A500SM-0810-10
8.0	+0.013	10.0	12.0	A500SM-0810-12
10.0	+0.071	12.0	8.0	A500SM-1012-08
10.0		12.0	10.0	A500SM-1012-10
10.0		12.0	12.0	A500SM-1012-12
10.0		12.0	15.0	A500SM-1012-15
10.0		12.0	20.0	A500SM-1012-20
12.0		14.0	10.0	A500SM-1214-10
12.0		14.0	12.0	A500SM-1214-12
12.0		14.0	15.0	A500SM-1214-15
12.0		14.0	20.0	A500SM-1214-20
12.0		15.0	15.0	A500SM-1215-15
13.0	+0.016	15.0	10.0	A500SM-1315-10
13.0	+0.086	15.0	20.0	A500SM-1315-20
14.0		16.0	15.0	A500SM-1416-15
14.0		16.0	16.0	A500SM-1416-16
14.0		16.0	20.0	A500SM-1416-20
14.0		16.0	25.0	A500SM-1416-25
15.0		17.0	15.0	A500SM-1517-15
15.0		17.0	20.0	A500SM-1517-20

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
15.0		17.0	25.0	A500SM-1517-25
16.0		18.0	15.0	A500SM-1618-15
16.0	+0.016	18.0	20.0	A500SM-1618-20
16.0	+0.086	18.0	25.0	A500SM-1618-25
18.0		20.0	15.0	A500SM-1820-15
18.0		20.0	20.0	A500SM-1820-20
18.0		20.0	25.0	A500SM-1820-25
20.0		23.0	10.0	A500SM-2023-10
20.0		23.0	15.0	A500SM-2023-15
20.0		23.0	20.0	A500SM-2023-20
20.0		23.0	25.0	A500SM-2023-25
20.0		23.0	30.0	A500SM-2023-30
22.0		25.0	15.0	A500SM-2225-15
22.0		25.0	20.0	A500SM-2225-20
22.0		25.0	25.0	A500SM-2225-25
22.0		25.0	30.0	A500SM-2225-30
24.0		27.0	15.0	A500SM-2427-15
24.0	+0.020	27.0	20.0	A500SM-2427-20
24.0	+0.104	27.0	25.0	A500SM-2427-25
24.0		27.0	30.0	A500SM-2427-30
25.0		28.0	15.0	A500SM-2528-15
25.0		28.0	20.0	A500SM-2528-20
25.0		28.0	25.0	A500SM-2528-25
25.0		28.0	30.0	A500SM-2528-30
28.0		32.0	20.0	A500SM-2832-20
28.0		32.0	25.0	A500SM-2832-25
28.0		32.0	30.0	A500SM-2832-30
30.0		34.0	20.0	A500SM-3034-20
30.0		34.0	25.0	A500SM-3034-25

³⁾ After press-fit. Testing methods, page 61

Product range

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
30.0	+0.020	34.0	30.0	A500SM-3034-30
30.0	+0.104	34.0	40.0	A500SM-3034-40
32.0		36.0	20.0	A500SM-3236-20
32.0		36.0	30.0	A500SM-3236-30
32.0		36.0	40.0	A500SM-3236-40
35.0	+0.025	39.0	20.0	A500SM-3539-20
35.0	+0.125	39.0	30.0	A500SM-3539-30
35.0		39.0	40.0	A500SM-3539-40
35.0		39.0	50.0	A500SM-3539-50
40.0		44.0	20.0	A500SM-4044-20
40.0		44.0	30.0	A500SM-4044-30

³⁾ After press-fit. Testing methods, page 61

d1	d1 Tolerance ³⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
40.0		44.0	40.0	A500SM-4044-40
40.0		44.0	50.0	A500SM-4044-50
45.0		50.0	20.0	A500SM-4550-20
45.0		50.0	30.0	A500SM-4550-30
45.0		50.0	40.0	A500SM-4550-40
45.0	+0.025	50.0	50.0	A500SM-4550-50
45.0	+0.125	50.0	50.0	A500SM-4550-50
50.0		55.0	20.0	A500SM-5055-20
50.0		55.0	30.0	A500SM-5055-30
50.0		55.0	40.0	A500SM-5055-40
50.0		55.0	50.0	A500SM-5055-50
50.0		55.0	60.0	A500SM-5055-60



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/A500



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling

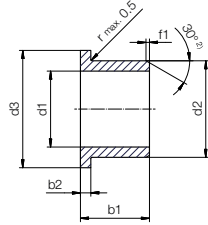
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions



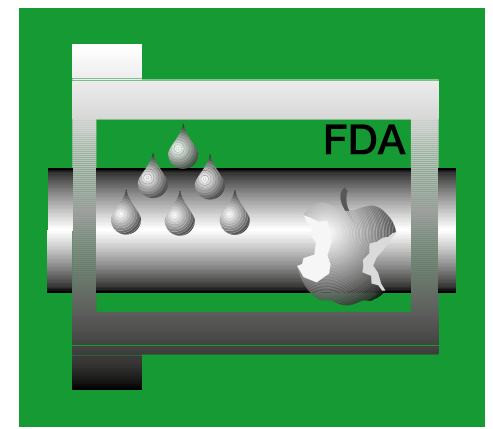
Order example: **A500FM-0405-04** – no minimum order quantity.

A500 iglidur® material **F** With flange **M** Metric **04** Inner Ø d1 **05** Outer Ø d2 **04** Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
4.0		5.5	9.5	4.0	0.75	A500FM-0405-04
4.0		8.0	12.0	6.0	2.00	A500FM-0408-06
6.0	+0.010	8.0	12.0	4.0	1.00	A500FM-0608-04
6.0	+0.058	8.0	12.0	6.0	1.00	A500FM-0608-06
6.0		8.0	12.0	8.0	1.00	A500FM-0608-08
8.0		10.0	15.0	5.5	1.00	A500FM-0810-05
8.0		10.0	15.0	7.5	1.00	A500FM-0810-07
8.0		10.0	15.0	9.5	1.00	A500FM-0810-09
8.0		10.0	15.0	10.0	1.00	A500FM-0810-10
10.0	+0.013	12.0	18.0	7.0	1.00	A500FM-1012-07
10.0	+0.071	12.0	18.0	9.0	1.00	A500FM-1012-09
10.0		12.0	18.0	12.0	1.00	A500FM-1012-12
10.0		12.0	18.0	15.0	1.00	A500FM-1012-15
10.0		12.0	18.0	17.0	1.00	A500FM-1012-17
12.0		14.0	20.0	7.0	1.00	A500FM-1214-07
12.0		14.0	20.0	9.0	1.00	A500FM-1214-09
12.0		14.0	20.0	12.0	1.00	A500FM-1214-12
12.0		14.0	20.0	13.0	1.00	A500FM-1214-13
12.0	+0.016	14.0	20.0	15.0	1.00	A500FM-1214-15
12.0	+0.086	14.0	20.0	17.0	1.00	A500FM-1214-17
14.0		16.0	22.0	12.0	1.00	A500FM-1416-12
14.0		16.0	22.0	17.0	1.00	A500FM-1416-17
15.0		17.0	23.0	9.0	1.00	A500FM-1517-09

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
15.0		17.0	23.0	12.0	1.00	A500FM-1517-12
15.0		17.0	23.0	17.0	1.00	A500FM-1517-17
16.0		18.0	24.0	12.0	1.00	A500FM-1618-12
16.0	+0.016	18.0	24.0	17.0	1.00	A500FM-1618-17
18.0	+0.086	20.0	26.0	12.0	1.00	A500FM-1820-12
18.0		20.0	26.0	17.0	1.00	A500FM-1820-17
18.0		20.0	26.0	22.0	1.00	A500FM-1820-22
20.0		23.0	30.0	11.5	1.50	A500FM-2023-11
20.0		23.0	30.0	16.5	1.50	A500FM-2023-16
20.0		23.0	30.0	21.5	1.50	A500FM-2023-21
25.0		28.0	35.0	11.5	1.50	A500FM-2528-11
25.0	+0.020	28.0	35.0	16.5	1.50	A500FM-2528-16
25.0	+0.104	28.0	35.0	21.5	1.50	A500FM-2528-21
30.0		34.0	42.0	16.0	2.00	A500FM-3034-16
30.0		34.0	42.0	26.0	2.00	A500FM-3034-26
30.0		34.0	42.0	40.0	2.00	A500FM-3034-40
35.0		39.0	47.0	16.0	2.00	A500FM-3539-16
35.0		39.0	47.0	26.0	2.00	A500FM-3539-26
35.0	+0.025	39.0	47.0	40.0	2.00	A500FM-3539-40
40.0	+0.125	44.0	52.0	30.0	2.00	A500FM-4044-30
40.0		44.0	52.0	40.0	2.00	A500FM-4044-40
45.0		50.0	58.0	50.0	2.00	A500FM-4550-50

³⁾ After press-fit. Testing methods, page 61



The all-rounder for food FDA-compliant iglidur® A180



When to use it?

- When the bearings have direct contact with food
- When FDA compliance is required
- When a low noise level is required
- When low moisture absorption is fundamental



When not to use it?

- When the maximum wear resistance is necessary
iglidur® J
- When temperatures are continuously higher than +80°C
iglidur® A350, iglidur® A500
- When a cost-effective universal plain bearing is required
iglidur® G, iglidur® P

Bearing technology | Plain bearings | iglidur® A180



Ø
6.0-30.0mm



Also available
as:



Bar stock,
round bar
Page 743

The all-rounder for food FDA-compliant

FDA-compliant material for applications with low to medium loads in immediate environments of (or contact with) food or drugs, as well as humidity.

- FDA-compliant
- Compliant with Regulation (EU) No. 10/2011
- High media resistance
- Suitable for wet environments
- High wear resistance
- Lubrication-free
- Maintenance-free



Bar stock,
plate
Page 773

Typical application areas

- Food industry
- Beverage technology
- Medical technology



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole
flange
bearings
Page 667



Moulded
special parts
Page 696

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
Wear resistance at +90°C	-	<div style="width: 25%; height: 10px; background-color: green;"></div>	+
Wear resistance at +150°C	-	<div style="width: 10%; height: 10px; background-color: green;"></div>	+
Slide property	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
Wear resistance under water	-	<div style="width: 75%; height: 10px; background-color: green;"></div>	+
Media resistance	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
Resistant to edge pressures	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
Dirt resistance	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+



igubal®
spherical balls
Page 993

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.46	
Colour		white	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	1.3	
Coefficient of friction, dynamic, against steel	μ	0.05-0.23	
pv value, max. (dry)	MPa · m/s	0.31	
Mechanical properties			
Flexural modulus	MPa	2,300	DIN 53457
Flexural strength at +20°C	MPa	88	DIN 53452
Compressive strength	MPa	78	
Max. permissible surface pressure (+20°C)	MPa	28	
Shore D hardness		76	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+110	
Min. application temperature	°C	-50	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	11	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹¹	DIN 53482

Table 01: Material properties

Plain bearings made from iglidur® A180 are suitable for application in direct contact with food. They are the ideal solution for bearing points on machines for the food and packaging industry, medical equipment manufacturing, small household appliances, etc. Even where wet cleaning contact occurs, the iglidur® A180 is characterised by the lowest moisture absorption.

Moisture absorption

The moisture absorption of iglidur® A180 plain bearings is approximately 0.2% weight in standard climatic conditions. The saturation limit submerged in water is 1.3% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® A180 bearings.

Radiation resistance

Plain bearings made from iglidur® A180 are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

iglidur® A180 plain bearings are resistant to weathering. The material properties are significantly affected. Severe discolouration occurs. Applications with this material under weathering conditions are not recommended.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® A180 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® A180 at radial loads. At the maximum recommended surface pressure of 28MPa, the deformation is less than 2.5%. A plastic deformation can be negligible up to this value. However, it is also dependent on the service time.

Surface pressure, page 45



-50°C up to
+90°C



28MPa



Permissible surface speeds

iglidur® A180 was developed for low surface speeds. The given values in table 03 indicate the limits at which an increase up to the continuous permissible temperature occurs. This increase is a result of friction. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

The iglidur® A180 plain bearings can be used at temperatures up to +110°C for short periods. With increasing temperatures, the compressive strength of iglidur® A180 plain bearings decreases. Diagram 02 shows this inverse relationship. The temperatures prevailing in the bearing system also have an influence on the wear. For temperatures over +60°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagram 04 and 05). The coefficient of friction decreases with increasing load.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 shows a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® A180. The combination "iglidur® A180 against hard-anodised aluminium shaft" clearly stands out. It attains good to excellent wear rates also with other shafts. With Cf53 shafts, the higher wear in pivoting applications is exemplary compared to rotating applications (diagram 07).

Shaft materials, page 56

Installation tolerances

iglidur® A180 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	+ up to 0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 0.8	0.6	3.5
Short-term	m/s 1.2	1.0	5.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.05-0.23	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

\varnothing d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

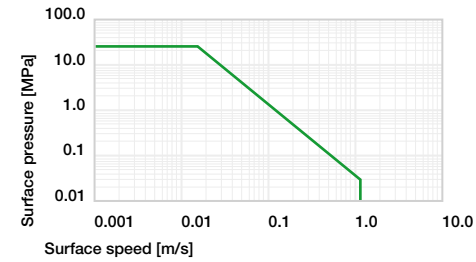


Diagram 01: Permissible pv values for iglidur® A180 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

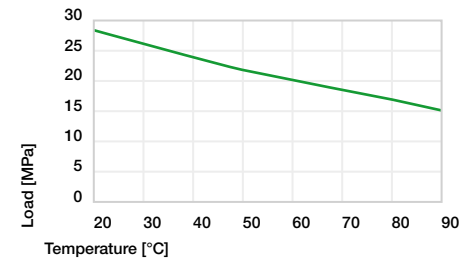


Diagram 02: Maximum recommended surface pressure as a function of temperature (28MPa at +20°C)

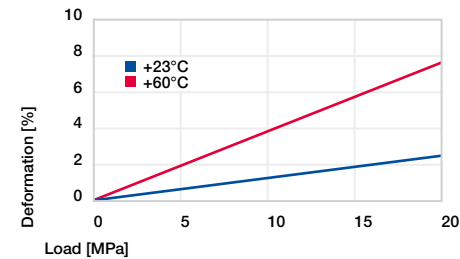


Diagram 03: Deformation under pressure and temperature

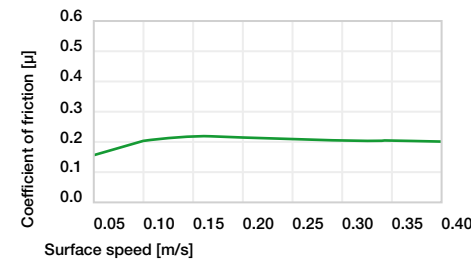


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

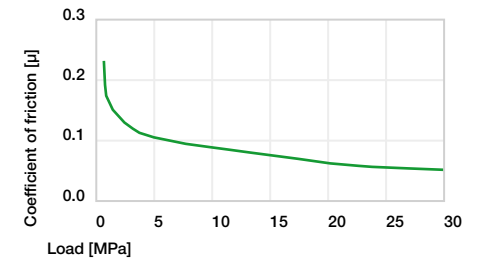


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

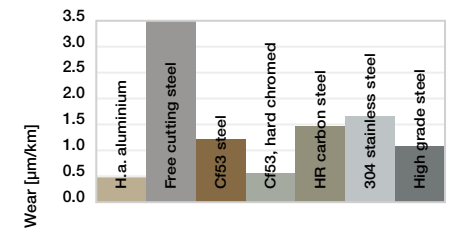


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

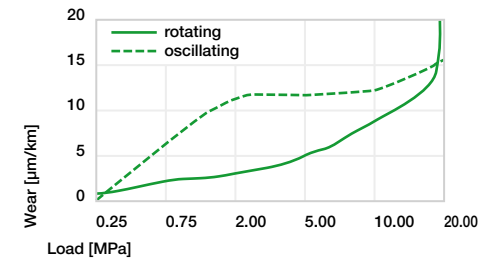
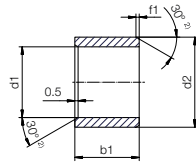


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® A180

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 6-12	Ø 12-30
f1 [mm]	0.5	0.8



Order example: **A180SM-0608-10** – no minimum order quantity.

A180 iglidur® material **S** Cylindrical **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **10** Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
6.0	+0.020 +0.068	8.0	10.0	A180SM-0608-10
8.0	+0.025 +0.083	10.0	10.0	A180SM-0810-10
10.0		12.0	10.0	A180SM-1012-10
12.0		14.0	15.0	A180SM-1214-15
16.0	+0.032 +0.102	18.0	15.0	A180SM-1618-15
20.0		23.0	20.0	A180SM-2023-20
25.0	+0.040 +0.124	28.0	30.0	A180SM-2528-30
30.0		34.0	20.0	A180SM-3034-20

³⁾ After press-fit. *Testing methods, page 61*



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Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

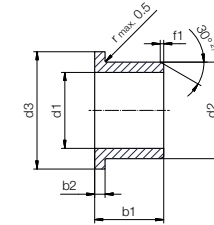
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No low-quantity surcharges.

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Bearing technology | Plain bearings | iglidur® A180

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8



Order example: **A180FM-0608-06** – no minimum order quantity.

A180 iglidur® material **F** With flange **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **06** Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾ [mm]	h13 [mm]	h13 [mm]	
6.0	+0.020 +0.068	8.0	12.0	6.0	1.00	A180FM-0608-06
8.0	+0.025 +0.083	10.0	15.0	10.0	1.00	A180FM-0810-10
10.0		12.0	18.0	10.0	1.00	A180FM-1012-10
12.0		14.0	20.0	15.0	1.00	A180FM-1214-15
16.0	+0.032 +0.102	18.0	24.0	17.0	1.00	A180FM-1618-17
20.0		23.0	30.0	21.5	1.50	A180FM-2023-21
25.0	+0.040 +0.124	28.0	35.0	21.5	1.50	A180FM-2528-21
30.0		34.0	42.0	26.0	2.00	A180FM-3034-26

³⁾ After press-fit. *Testing methods, page 61*



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including delivery times, prices, online tools

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Ordering note

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Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.



The "food-classic" for low duty FDA-compliant iglidur® A200



When to use it?

- Suitable for contact with food
- When a low noise level is required
- When dirt needs to become embedded
- When FDA compliance is required



When not to use it?

- When the maximum wear resistance is necessary
iglidur® W300
- When temperatures are continuously higher than +80°C
iglidur® A350, iglidur® A500
- When a cost-effective universal plain bearing is required
iglidur® G
- For operations in wet environments
iglidur® A180

Bearing technology | Plain bearings | iglidur® A200



Ø
1.0-32.0mm



Also available as:



Bar stock, round bar
Page 743



Bar stock, plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

The "food-classic" for low duty FDA-compliant

FDA-compliant material for applications with low to medium loads in immediate environs of (or contact) with food or drugs.

- FDA-compliant
- Suitable for contact with food
- Suitable for low surface speeds
- Lubrication-free
- Standard range from stock
- Maintenance-free
- Thrust washers available only in imperial sizes, from page 1601

Typical application areas

- Food industry

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 25%; background-color: green;"></div>	+
Wear resistance at +90°C	-	<div style="width: 10%; background-color: green;"></div>	+
Wear resistance at +150°C	-	<div style="width: 10%; background-color: green;"></div>	+
Slide property	-	<div style="width: 25%; background-color: green;"></div>	+
Wear resistance under water	-	<div style="width: 10%; background-color: green;"></div>	+
Media resistance	-	<div style="width: 25%; background-color: green;"></div>	+
Resistant to edge pressures	-	<div style="width: 75%; background-color: green;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 75%; background-color: green;"></div>	+
Dirt resistance	-	<div style="width: 75%; background-color: green;"></div>	+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.14	
Colour		white	
Max. moisture absorption at +23°C/50% r.h.	% weight	1.5	DIN 53495
Max. moisture absorption	% weight	7.6	
Coefficient of friction, dynamic, against steel	μ	0.10-0.40	
pv value, max. (dry)	MPa · m/s	0.09	
Mechanical properties			
Flexural modulus	MPa	2,500	DIN 53457
Flexural strength at +20°C	MPa	116	DIN 53452
Compressive strength	MPa	54	
Max. permissible surface pressure (+20°C)	MPa	18	
Shore D hardness		81	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+80	
Max. application temperature short-term	°C	+170	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	10	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹³	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

Table 01: Material properties

Plain bearings made from iglidur® A200 are suitable for application in direct contact with food. Hence they are the ideal solution for bearing requirements in machines for the food industry, medical equipment manufacturing, for small equipment for households, etc. As the incorporation of solid lubricants is dispensed with in favour of food compatibility, the thermoplastic composition of iglidur® A200 is especially adjusted for abrasion resistance. In addition the iglidur® A200 is characterised by its capacity to embed dirt and by its quiet operating behaviour. The good wear properties, dirt resistance and the possibility for dry operation allow to replace elaborately sealed, lubricated bearings for little costs.

Moisture absorption

The humidity absorption of iglidur® A200 bearings amounts to about 1.5% weight in standard climatic conditions. The saturation limit submerged in water is 7.6% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® A200 are resistant up to a radiation intensity of 1 · 10⁴ Gy.

Resistance to weathering

iglidur® A200 plain bearings are resistant to weathering. The material properties are significantly affected. Severe discolouration occurs. Applications with this material under weathering conditions are not recommended.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® A200 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® A200 under different loads. At the maximum recommended surface pressure of 18MPa, the deformation is less than 2%. A plastic deformation can be negligible up to this value. However, it is also dependent on the service time.

Surface pressure, page 45



-40 °C up to +80 °C



18MPa



Permissible surface speeds

iglidur® A2000 was developed for low surface speeds. The given values in table 03 indicate the limits at which an increase up to the continuous permissible temperature occurs. This increase is a result of friction. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

iglidur® A200 plain bearings can be used at temperatures up to +170°C for short periods. The temperatures prevailing in the bearing system also have an influence on the wear. For temperatures over +50°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05).

Coefficient of friction and surfaces, page 19

Wear resistance, page 54

Shaft materials

Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® A200. In pivoting applications below a load of 2MPa, the wear of iglidur® A200 plain bearings is higher than in rotating applications with equal load. Here the HR carbon steel shaft is a positive exception.

Shaft materials, page 56

Installation tolerances

iglidur® A200 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the D11 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 0.8	0.6	2.0
Short-term	m/s 1.5	1.1	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.10-0.40	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	D11 [mm]	D11 [mm]	h9 [mm]		
0-3	+0.000	+0.010	+0.020	+0.080	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.030	+0.105	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.040	+0.130	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.050	+0.160	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.065	+0.195	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.080	+0.240	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.100	+0.290	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.120	+0.340	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.145	+0.395	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

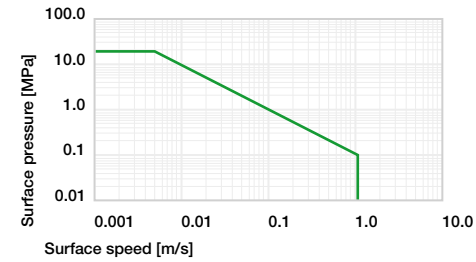


Diagram 01: Permissible pv values for iglidur® A200 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

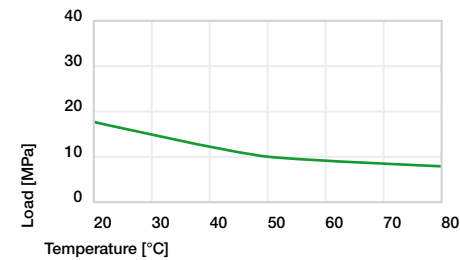


Diagram 02: Maximum recommended surface pressure as a function of temperature (18MPa at +20°C)

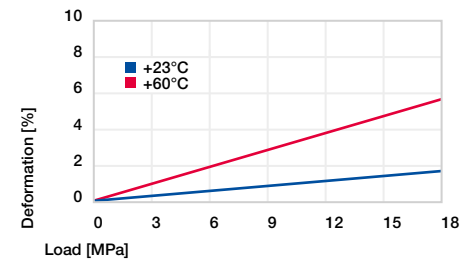


Diagram 03: Deformation under pressure and temperature

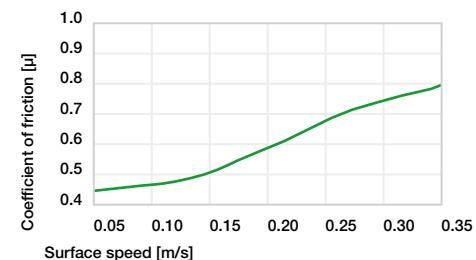


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

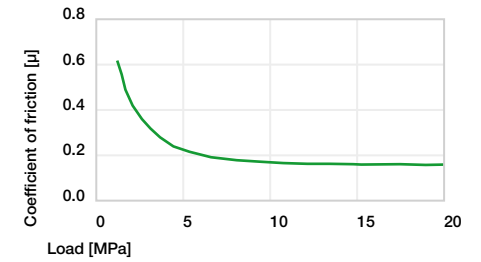


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

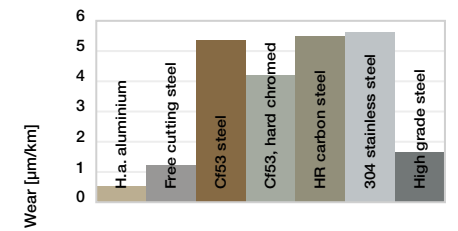


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

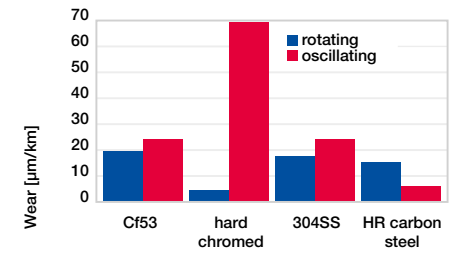
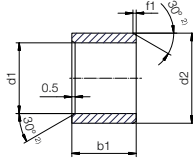


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 2795 and special dimensions



Order example: **ASM-0103-02** – no minimum order quantity.

A200 iglidur® material **S** Cylindrical **M** Metric **01** Inner Ø d1 **03** Outer Ø d2 **02** Total length b1

d1	d1	d2	b1	Part No.	d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	[mm]		[mm]	Tolerance ³⁾	[mm]	[mm]	
1.0		3.0	2.0	ASM-0103-02	8.0		10.0	10.0	ASM-0810-10
1.5		4.0	2.0	ASM-0104-02	8.0		11.0	8.0	ASM-0811-08
2.0		5.0	2.0	ASM-0205-02	8.0		11.0	12.0	ASM-0811-12
2.0		5.0	3.0	ASM-0205-03	8.0		12.0	6.0	ASM-0812-06
2.5	+0.020	6.0	3.0	ASM-0206-03	8.0		12.0	8.0	ASM-0812-08
3.0	+0.080	5.0	3.0	ASM-0305-03	8.0		12.0	10.0	ASM-0812-10
3.0		5.0	4.0	ASM-0305-04	8.0		12.0	12.0	ASM-0812-12
3.0		6.0	3.0	ASM-0306-03	8.0		14.0	6.0	ASM-0814-06
3.0		6.0	4.0	ASM-0306-04	8.0	+0.040	14.0	10.0	ASM-0814-10
4.0		7.0	3.0	ASM-0407-03	9.0	+0.130	12.0	14.0	ASM-0912-14
4.0		7.0	4.0	ASM-0407-04	10.0		12.0	10.0	ASM-1012-10
4.0		7.0	6.0	ASM-0407-06	10.0		14.0	6.0	ASM-1014-06
4.0		8.0	6.0	ASM-0408-06	10.0		14.0	8.0	ASM-1014-08
5.0		8.0	4.0	ASM-0508-04	10.0		14.0	10.0	ASM-1014-10
5.0		8.0	5.0	ASM-0508-05	10.0		14.0	16.0	ASM-1014-16
5.0		8.0	8.0	ASM-0508-08	10.0		16.0	6.0	ASM-1016-06
5.0	+0.030	9.0	5.0	ASM-0509-05	10.0		16.0	10.0	ASM-1016-10
5.0	+0.105	9.0	8.0	ASM-0509-08	10.0		16.0	16.0	ASM-1016-16
6.0		8.0	10.0	ASM-0608-10	12.0		14.0	20.0	ASM-1214-20
6.0		9.0	6.0	ASM-0609-06	12.0		16.0	15.0	ASM-1216-15
6.0		10.0	4.0	ASM-0610-04	12.0		16.0	20.0	ASM-1216-20
6.0		10.0	6.0	ASM-0610-06	12.0		18.0	8.0	ASM-1218-08
6.0		10.0	10.0	ASM-0610-10	12.0		18.0	10.0	ASM-1218-10
6.0		12.0	6.0	ASM-0612-06	12.0	+0.050	18.0	15.0	ASM-1218-15
6.0		12.0	10.0	ASM-0612-10	12.0	+0.160	18.0	20.0	ASM-1218-20
7.0		10.0	5.0	ASM-0710-05	14.0		16.0	10.0	ASM-1416-10
7.0	+0.040	10.0	8.0	ASM-0710-08	14.0		16.0	15.0	ASM-1416-15
8.0	+0.130	10.0	6.0	ASM-0810-06	14.0		16.0	20.0	ASM-1416-20
8.0		10.0	8.0	ASM-0810-08	14.0		20.0	10.0	ASM-1420-10

³⁾ After press-fit. Testing methods, page 61

Product range

d1	d1	d2	b1	Part No.	d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	[mm]		[mm]	Tolerance ³⁾	[mm]	[mm]	
14.0		20.0	15.0	ASM-1420-15	22.0		28.0	15.0	ASM-2228-15
14.0		20.0	20.0	ASM-1420-20	22.0		28.0	20.0	ASM-2228-20
15.0		17.0	10.0	ASM-1517-10	22.0		28.0	30.0	ASM-2228-30
15.0		17.0	15.0	ASM-1517-15	24.0		30.0	15.0	ASM-2430-15
15.0		21.0	10.0	ASM-1521-10	24.0		30.0	20.0	ASM-2430-20
15.0		21.0	15.0	ASM-1521-15	24.0		30.0	30.0	ASM-2430-30
15.0		21.0	20.0	ASM-1521-20	25.0		28.0	12.0	ASM-2528-12
16.0		18.0	12.0	ASM-1618-12	25.0		28.0	20.0	ASM-2528-20
16.0		18.0	20.0	ASM-1618-20	25.0		30.0	20.0	ASM-2530-20
16.0	+0.050	20.0	20.0	ASM-1620-20	25.0		30.0	30.0	ASM-2530-30
16.0	+0.160	20.0	25.0	ASM-1620-25	25.0		30.0	40.0	ASM-2530-40
16.0		22.0	12.0	ASM-1622-12	25.0		32.0	20.0	ASM-2532-20
16.0		22.0	15.0	ASM-1622-15	25.0	+0.065	32.0	30.0	ASM-2532-30
16.0		22.0	16.0	ASM-1622-16	25.0	+0.195	32.0	40.0	ASM-2532-40
16.0		22.0	20.0	ASM-1622-20	26.0		30.0	20.0	ASM-2630-20
16.0		22.0	25.0	ASM-1622-25	26.0		32.0	30.0	ASM-2632-30
18.0		24.0	12.0	ASM-1824-12	27.0		34.0	20.0	ASM-2734-20
18.0		24.0	20.0	ASM-1824-20	27.0		34.0	30.0	ASM-2734-30
18.0		24.0	30.0	ASM-1824-30	27.0		34.0	40.0	ASM-2734-40
20.0		23.0	15.0	ASM-2023-15	28.0		33.0	20.0	ASM-2833-20
20.0		23.0	20.0	ASM-2023-20	28.0		36.0	20.0	ASM-2836-20
20.0		25.0	15.0	ASM-2025-15	28.0		36.0	30.0	ASM-2836-30
20.0		25.0	20.0	ASM-2025-20	28.0		36.0	40.0	ASM-2836-40
20.0	+0.065	25.0	30.0	ASM-2025-30	30.0		38.0	20.0	ASM-3038-20
20.0	+0.195	26.0	15.0	ASM-2026-15	30.0		38.0	30.0	ASM-3038-30
20.0		26.0	20.0	ASM-2026-20	30.0		38.0	40.0	ASM-3038-40
20.0		26.0	30.0	ASM-2026-30	32.0		40.0	20.0	ASM-3240-20
22.0		26.0	15.0	ASM-2226-15	32.0	+0.080	40.0	30.0	ASM-3240-30
22.0		28.0	10.0	ASM-2228-10	32.0	+0.240	40.0	40.0	ASM-3240-40

³⁾ After press-fit. Testing methods, page 61



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including delivery times, prices, online tools

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Discount scaling

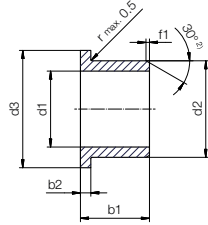
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Flange bearings (form F)



³⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2



Dimensions according to ISO 2795 and special dimensions



Order example: **AFM-0103-02** – no minimum order quantity.

A200 iglidur® material **F** With flange **M** Metric **01** Inner Ø d1 **03** Outer Ø d2 **02** Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	[mm]	[mm]	
1.0		3.0	5.0	2.0	1.00	AFM-0103-02
1.5	+0.020	4.0	6.0	2.0	1.00	AFM-0104-02
2.0	+0.080	5.0	8.0	3.0	1.50	AFM-0205-03
2.5		6.0	9.0	3.0	1.50	AFM-0206-03
3.0		6.0	9.0	4.0	1.50	AFM-0306-04
4.0		8.0	12.0	4.0	2.00	AFM-0408-04
4.0		8.0	12.0	6.0	2.00	AFM-0408-06
5.0		7.0	11.0	5.0	1.00	AFM-0507-05
5.0		9.0	13.0	5.0	2.00	AFM-0509-05
5.0	+0.030	9.0	13.0	6.0	2.00	AFM-0509-06
5.0	+0.105	9.0	13.0	8.0	2.00	AFM-0509-08
6.0		10.0	14.0	4.0	2.00	AFM-0610-04
6.0		10.0	14.0	6.0	2.00	AFM-0610-06
6.0		10.0	14.0	10.0	2.00	AFM-0610-10
6.0	+0.050	12.0	14.0	6.0	3.00	AFM-0612-06
6.0	+0.160	12.0	14.0	10.0	3.00	AFM-0612-10
7.0		11.0	15.0	8.0	2.00	AFM-0711-08
8.0		11.0	13.0	8.0	2.00	AFM-0811-08
8.0		12.0	16.0	6.0	2.00	AFM-0812-06
8.0		12.0	16.0	8.0	2.00	AFM-0812-08
8.0		12.0	16.0	12.0	2.00	AFM-0812-12
8.0	+0.040	12.0	16.0	22.0	2.00	AFM-0812-22
8.0	+0.130	14.0	18.0	6.0	3.00	AFM-0814-06
8.0		14.0	18.0	10.0	3.00	AFM-0814-10
9.0		14.0	19.0	6.0	2.00	AFM-0914-06
9.0		14.0	19.0	10.0	2.00	AFM-0914-10
9.0		14.0	19.0	14.0	2.00	AFM-0914-14
10.0		16.0	22.0	6.0	3.00	AFM-1016-06

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	[mm]	[mm]	
10.0		16.0	22.0	8.0	3.00	AFM-1016-08
10.0	+0.040	16.0	22.0	10.0	3.00	AFM-1016-10
10.0	+0.130	16.0	20.0	10.0	3.00	AFM-101620-10
10.0		16.0	22.0	16.0	3.00	AFM-1016-16
12.0		14.0	20.0	12.0	1.00	AFM-1214-12
12.0		18.0	24.0	8.0	3.00	AFM-1218-08
12.0		18.0	22.0	10.0	3.00	AFM-1218-10
12.0		18.0	24.0	12.0	3.00	AFM-1218-12
12.0		18.0	22.0	15.0	3.00	AFM-1218-15
12.0		18.0	22.0	20.0	3.00	AFM-1218-20
14.0		20.0	25.0	10.0	3.00	AFM-1420-10
14.0		20.0	25.0	15.0	3.00	AFM-1420-15
14.0		20.0	25.0	20.0	3.00	AFM-1420-20
15.0	+0.050	21.0	27.0	10.0	3.00	AFM-1521-10
15.0	+0.160	21.0	27.0	15.0	3.00	AFM-1521-15
15.0		21.0	27.0	20.0	3.00	AFM-1521-20
15.0		21.0	27.0	25.0	3.00	AFM-1521-25
16.0		22.0	28.0	12.0	3.00	AFM-1622-12
16.0		22.0	28.0	15.0	3.00	AFM-1622-15
16.0		22.0	28.0	20.0	3.00	AFM-1622-20
16.0		22.0	28.0	25.0	3.00	AFM-1622-25
18.0		24.0	30.0	12.0	3.00	AFM-1824-12
18.0		24.0	30.0	18.0	3.00	AFM-1824-18
18.0		24.0	30.0	20.0	3.00	AFM-1824-20
18.0		24.0	30.0	30.0	3.00	AFM-1824-30
20.0	+0.065	26.0	32.0	15.0	3.00	AFM-2026-15
20.0	+0.195	26.0	32.0	20.0	3.00	AFM-2026-20
20.0		26.0	32.0	30.0	3.00	AFM-2026-30

³⁾ After press-fit. *Testing methods, page 61*

Product range

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	[mm]	[mm]	
22.0		28.0	34.0	15.0	3.00	AFM-2228-15
22.0		28.0	34.0	20.0	3.00	AFM-2228-20
22.0		28.0	34.0	30.0	3.00	AFM-2228-30
24.0		30.0	36.0	15.0	3.00	AFM-2430-15
24.0	+0.065	30.0	36.0	20.0	3.00	AFM-2430-20
24.0	+0.195	30.0	36.0	30.0	3.00	AFM-2430-30
25.0		32.0	38.0	20.0	4.00	AFM-2532-20
25.0		32.0	38.0	30.0	4.00	AFM-2532-30
25.0		32.0	38.0	40.0	4.00	AFM-2532-40
27.0		34.0	40.0	20.0	4.00	AFM-2734-20
27.0		34.0	40.0	30.0	4.00	AFM-2734-30

³⁾ After press-fit. *Testing methods, page 61*

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	[mm]	[mm]	
27.0		34.0	40.0	40.0	4.00	AFM-2734-40
28.0		36.0	42.0	20.0	4.00	AFM-2836-20
28.0		36.0	42.0	30.0	4.00	AFM-2836-30
28.0	+0.065	36.0	42.0	40.0	4.00	AFM-2836-40
28.0	+0.195	38.0	44.0	20.0	4.00	AFM-3038-20
30.0		38.0	44.0	30.0	4.00	AFM-3038-30
30.0		38.0	44.0	40.0	4.00	AFM-3038-40
32.0	+0.080	40.0	46.0	20.0	4.00	AFM-3240-20
32.0	+0.240	40.0	46.0	30.0	4.00	AFM-3240-30
32.0		40.0	46.0	40.0	4.00	AFM-3240-40



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/A200



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling

1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.



Food bearing with media resistance up to +90°C

Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

iglidur® A160



When to use it?

- When a plain bearing with maximum media resistance is required
- When a cost-effective plain bearing with high media resistance is required
- When a material compliant in accordance with Regulation (EU) No. 10/2011 is required



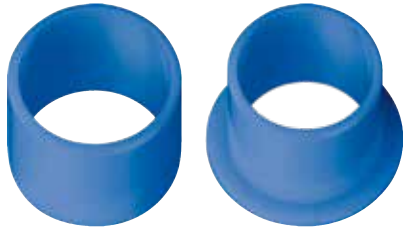
When not to use it?

- When a universal material for the food industry is required
iglidur® A180, iglidur® A181
- When a media-resistant plain bearing is required for applications at more than +90°C
iglidur® A500, iglidur® X
- When a low-cost material with high wear resistance is required for dry operation
iglidur® R

Bearing technology | Plain bearings | iglidur® A160



Ø
6.0-20.0mm



Also available as:



Bar stock, round bar
Page 743

Food bearing with media resistance up to +90°C

Compliant with Regulation (EU) No. 10/2011 and FDA guidelines



Bar stock, plate
Page 773

iglidur® A160 offers maximum media resistance in the medium temperature range and is therefore a true low-cost iglidur®. The profile of properties is completed by the suitability for applications in the food industry.

● Compliant with Regulation (EU) No. 10/2011

- FDA-compliant
- High media resistance
- Cost-effective
- Lubrication-free
- Maintenance-free



tribo-tape liner
Page 781

Typical application areas

- Food industry
- Beverage technology
- Medical technology



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
Wear resistance at +90°C	-	<div style="width: 25%; height: 10px; background-color: green;"></div>	+
Wear resistance at +150°C	-	<div style="width: 10%; height: 10px; background-color: green;"></div>	+
Slide property	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
Wear resistance under water	-	<div style="width: 75%; height: 10px; background-color: green;"></div>	+
Media resistance	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
Resistant to edge pressures	-	<div style="width: 75%; height: 10px; background-color: green;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+
Dirt resistance	-	<div style="width: 100%; height: 10px; background-color: green;"></div>	+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.00	
Colour		blue	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.1	
Coefficient of friction, dynamic, against steel	μ	0.09-0.19	
pv value, max. (dry)	MPa · m/s	0.25	
Mechanical properties			
Flexural modulus	MPa	1,151	DIN 53457
Flexural strength at +20°C	MPa	19	DIN 53452
Compressive strength	MPa	37	
Max. permissible surface pressure (+20°C)	MPa	14	
Shore D hardness		60	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+100	
Min. application temperature	°C	-50	
Thermal conductivity	W/m · K	0.30	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	11	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

Table 01: Material properties

iglidur® A160 plain bearings are characterised by extreme media resistance at a low cost. Tribologically optimised, the material can be used in temperatures up to +90°C and also conforms to demands of the food processing sector. The profile of properties is completed by the "optical detectability", i.e. the blue colour, often required in the industry.

Moisture absorption

The moisture absorption of iglidur® A160 plain bearings in ambient conditions is approximately 0.1% weight. The saturation limit submerged in water is also approximately 0.1% weight.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® A160 bearings.

Radiation resistance

Plain bearings made from iglidur® A160 are resistant up to a radiation intensity of 1 · 10⁶ Gy.

Resistance to weathering

iglidur® A160 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® A160 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® A160 under different loads. Plastic deformation is minimal up to a radial load of 15MPa. However, it is also dependent on the service time.

Surface pressure, page 45



-50°C up to +90°C



15MPa



HB



Permissible surface speeds

iglidur® A160 was developed for low surface speeds. Maximum speeds of up to 0.5m/s (rotating) and 2.0m/s (linear), respectively, are permissible during continuous dry operation. The given values in table 03 indicate the limits at which an increase up to the continuous permissible temperature occurs. This increase is a result of friction. In practice, though, this level is rarely reached, due to varying application conditions.

Surface speed, page 48

Temperature

The temperatures prevailing in the bearing system also have an influence on the wear. For temperatures over +60°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Coefficient of friction and wear resistance are dependent on the application parameters (diagrams 04 and 05). For iglidur® A160 plain bearings, altering the coefficient of friction μ as a function of surface speed has less effect. The coefficient of friction decreases with increasing load. Surface finishes (Ra) of the shaft between 0.6-0.7 μ m are ideal.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® A160. For rotational applications with low loads, the most interesting, media and corrosion-resistant shaft materials 304 stainless steel, high grade steel and hard-chromed steel reveal themselves as particularly good mating partners. On high grade steel shafts, however, the wear increases the fastest with the load (diagram 06). With Cf53 shafts, the wear in pivoting applications is exemplary compared to rotating applications. In rotation the wear, as with many other iglidur® materials, is higher than when pivoting (diagram 07).

Shaft materials, page 56

Installation tolerances

iglidur® A160 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances.

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	+
Diluted alkalines	+
Fuels	+ up to 0
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	+
Strong alkalines	+

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 0.5	0.4	2.0
Short-term	m/s 0.7	0.6	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.09-0.19	0.08	0.03	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

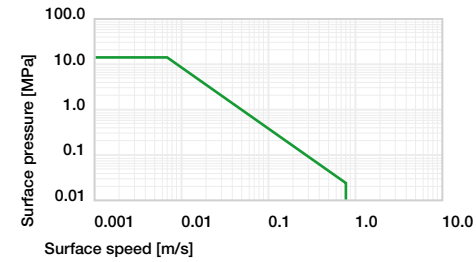


Diagram 01: Permissible pv values for iglidur® A160 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

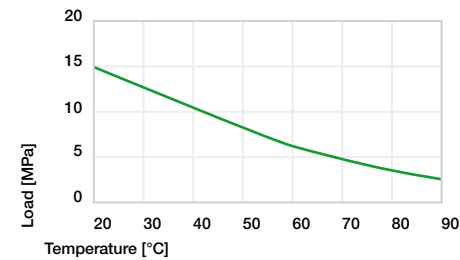


Diagram 02: Maximum recommended surface pressure as a function of temperature (15MPa at +20°C)

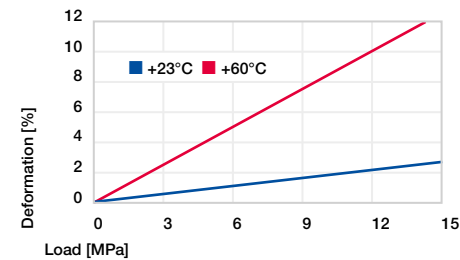


Diagram 03: Deformation under pressure and temperature

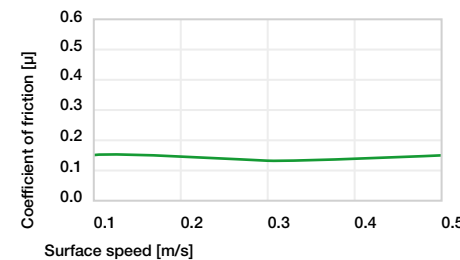


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

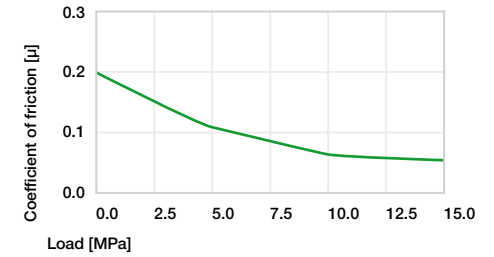


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

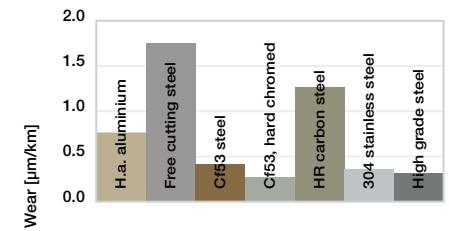


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

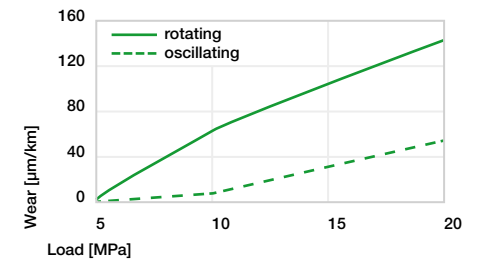
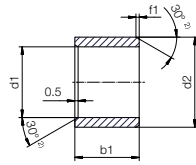


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® A160

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 6-12	Ø 12-30
f1 [mm]	0.5	0.8



Order example: A160SM-0608-06 – no minimum order quantity.

A160 iglidur® material **S** Cylindrical **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **06** Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
6.0	+0.020 +0.068	8.0	6.0	A160SM-0608-06
8.0	+0.025 +0.083	10.0	10.0	A160SM-0810-10
10.0		12.0	10.0	A160SM-1012-10
12.0		14.0	12.0	A160SM-1214-12
16.0	+0.032 +0.102	18.0	15.0	A160SM-1618-15
20.0	+0.040 +0.124	23.0	20.0	A160SM-2023-20

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

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Order online

including delivery times, prices, online tools

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Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

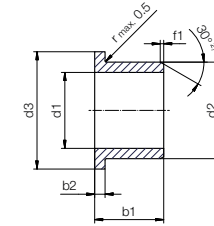
No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Bearing technology | Plain bearings | iglidur® A160

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 6-12	Ø 12-30
f1 [mm]	0.5	0.8



Order example: A160FM-0608-06 – no minimum order quantity.

A160 iglidur® material **F** With flange **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **06** Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾ [mm]	h13 [mm]	h13 [mm]	
6.0	+0.020 +0.068	8.0	12.0	6.0	1.00	A160FM-0608-06
8.0	+0.025 +0.083	10.0	15.0	10.0	1.00	A160FM-0810-10
10.0		12.0	18.0	10.0	1.00	A160FM-1012-10
12.0		14.0	20.0	12.0	1.00	A160FM-1214-12
16.0	+0.032 +0.102	18.0	24.0	17.0	1.00	A160FM-1618-17
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	A160FM-2023-21

³⁾ After press-fit. *Testing methods, page 61*



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including delivery times, prices, online tools

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Ordering note

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Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.



Suitable for contact with drinking water

KTW-compliant

iglidur® UW160



When to use it?

- When a KTW-compliant material is required
- When a wear-resistant material for continuous operation in liquid is required



When not to use it?

- When a recurring media-resistant plain bearing with intermittent dry operation is required

iglidur® A160

- When a media and temperature-resistant universal plain bearing is required

iglidur® X

- When a standard plain bearing is required for use in a moist environment

iglidur® P

Bearing technology | Plain bearings | iglidur® UW160



Ø
3.0-10.0mm



Also available
as:



Bar stock,
round bar
Page 743

Suitable for contact with drinking water KTW-compliant

iglidur® UW160 is tribologically optimised for continuous operation in liquid media. Its superior media resistance not only permits uses with potable water contact.

- Suitable for applications in liquids
- Suitable for contact with drinking water (KTW-compliant)
- High media resistance
- Lubrication-free
- Maintenance-free



Bar stock,
plate
Page 773

Typical application areas

- Fluid technology
- Pumps
- Water meters



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole
flange
bearings
Page 667



Moulded
special parts
Page 696



igubal®
spherical balls
Page 993

Descriptive technical specifications					
Wear resistance at +23°C	-	<div style="width: 100%; height: 10px; background-color: #008000;"></div>			+
Wear resistance at +90°C	-	<div style="width: 25%; height: 10px; background-color: #008000;"></div>			+
Wear resistance at +150°C	-	<div style="width: 15%; height: 10px; background-color: #008000;"></div>			+
Slide property	-	<div style="width: 75%; height: 10px; background-color: #008000;"></div>			+
Wear resistance under water	-	<div style="width: 100%; height: 10px; background-color: #008000;"></div>			+
Media resistance	-	<div style="width: 85%; height: 10px; background-color: #008000;"></div>			+
Resistant to edge pressures	-	<div style="width: 75%; height: 10px; background-color: #008000;"></div>			+
Resistant to shock and impact loads	-	<div style="width: 75%; height: 10px; background-color: #008000;"></div>			+
Dirt resistance	-	<div style="width: 75%; height: 10px; background-color: #008000;"></div>			+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties			Testing method
Density	g/cm³	1.04	
Colour		grey	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.1	
Coefficient of friction, dynamic, against steel	μ	0.17-0.31	
pv value, max. (dry)	MPa · m/s	0.22	
Mechanical properties			
Flexural modulus	MPa	1,349	DIN 53457
Flexural strength at +20°C	MPa	22	DIN 53452
Compressive strength	MPa	32	
Max. permissible surface pressure (+20°C)	MPa	20	
Shore D hardness		60	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+100	
Min. application temperature	°C	-50	
Thermal conductivity	W/m · K	0.50	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	18	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

Table 01: Material properties

iglidur® UW160 was developed quite specifically with regard to maximum wear resistance in media-based continuous operation. In such applications, low radial loads and medium temperatures usually occur. The suitability for contact with drinking water and very good durability complete the profile of properties.

Moisture absorption

The moisture absorption of iglidur® UW160 plain bearings in ambient conditions is approximately 0.1% weight. The saturation limit submerged in water is 0.1% weight.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® UW160 bearings.

Radiation resistance

Plain bearings made from iglidur® UW160 are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

iglidur® UW160 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® UW160 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® UW160 under different loads.

Surface pressure, page 45



-50°C up to
+90°C



15MPa



HB



RoHS



ISO
35474

Permissible surface speeds

The maximum recommended surface speed is based on the frictional heat generated at the bearing surface. The temperature should only be permitted to increase to a value that will ensure a sustainable use of the bearing with respect to wear and dimensional integrity. The maximum values specified in table 03 are for the dry operation. In media-based application, sometimes significantly higher speeds are achieved due to reduced heat generation depending on the installation.

Surface speed, page 48

Temperature

iglidur® UW160 was developed for use in liquid media in the normal and medium temperature range. As in the case of all thermoplastics, the compression strength of iglidur® UW160 decreases when temperatures rise. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. For temperatures over +70°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagram 04 and 05). The influence of surface speed and surface finish of the shaft on the friction coefficient is low, but with increasing radial load the coefficient of friction decreases significantly, mainly in the range of up to 7.5MPa.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® UW160. In the example of a rotational movement with radial loads of 1MPa and a speed of 0.3m/s, it becomes clear that iglidur® UW160 achieves good coefficient of wear with the most varied shafts. It is also clear that there are better iglidur® materials for dry operation. As with many other iglidur® materials in dry operation, diagram 07 shows the significantly higher wear in rotation than in pivoting with otherwise identical parameters.

Shaft materials, page 56

Installation tolerances

iglidur® UW160 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances.

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	+
Diluted alkalines	+
Fuels	+ up to 0
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	+
Strong alkalines	+

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 0.3	0.3	1.0
Short-term	m/s 0.5	0.4	2.5

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.17-0.31	0.08	0.03	0.03

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000 +0.010	+0.014 +0.054	-0.025 +0.000			
> 3-6	+0.000 +0.012	+0.020 +0.068	-0.030 +0.000			
> 6-10	+0.000 +0.015	+0.025 +0.083	-0.036 +0.000			
> 10-18	+0.000 +0.018	+0.032 +0.102	-0.043 +0.000			
> 18-30	+0.000 +0.021	+0.040 +0.124	-0.052 +0.000			
> 30-50	+0.000 +0.025	+0.050 +0.150	-0.062 +0.000			
> 50-80	+0.000 +0.030	+0.060 +0.180	-0.074 +0.000			
> 80-120	+0.000 +0.035	+0.072 +0.212	-0.087 +0.000			
> 120-180	+0.000 +0.040	+0.085 +0.245	-0.100 +0.000			

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

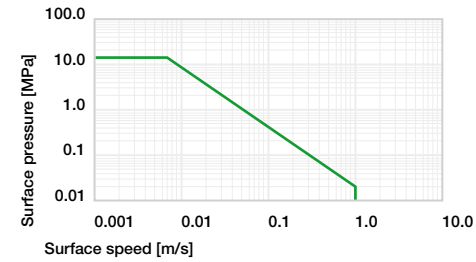


Diagram 01: Permissible pv values for iglidur® UW160 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

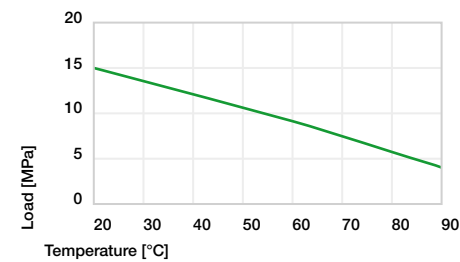


Diagram 02: Maximum recommended surface pressure as a function of temperature (15MPa at +20°C)

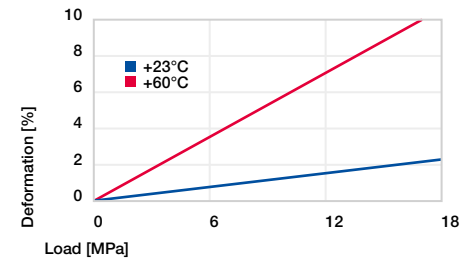


Diagram 03: Deformation under pressure and temperature

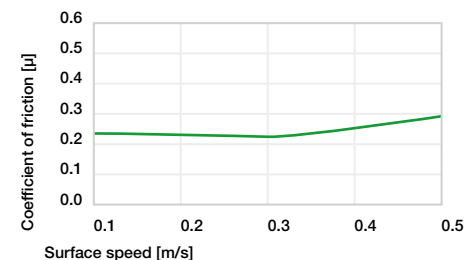


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

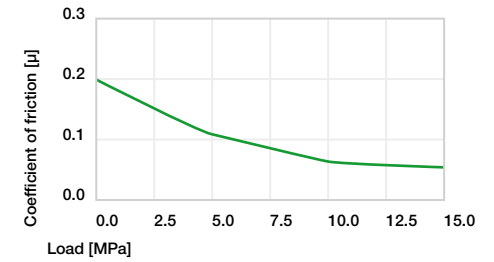


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

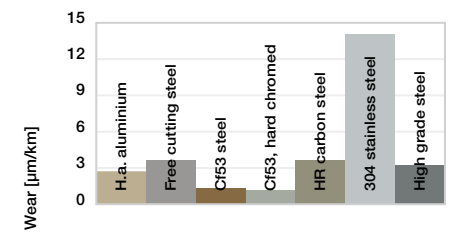


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

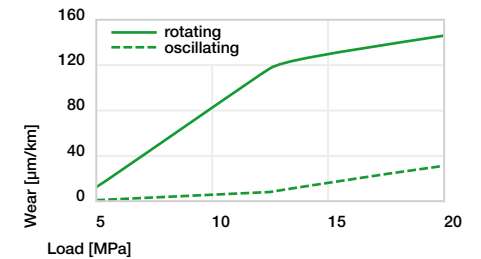
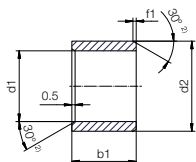


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® UW160

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12
f1 [mm]	0.3	0.5



Order example: **UW160SM-0304-03** – no minimum order quantity.

UW160 iglidur® material **S** Cylindrical **M** Metric **03** Inner Ø d1 **04** Outer Ø d2 **03** Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
3.0		4.0	3.0	UW160SM-0304-03
4.0	+0.014 +0.054	5.0	4.0	UW160SM-0405-04
5.0		7.0	5.0	UW160SM-0507-05
6.0	+0.020 +0.068	8.0	6.0	UW160SM-0608-06
8.0		10.0	10.0	UW160SM-0810-10
10.0	+0.025 +0.083	12.0	10.0	UW160SM-1012-10

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/UW160



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

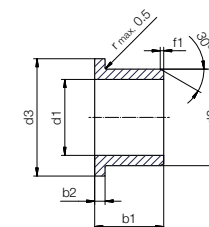
No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Bearing technology | Plain bearings | iglidur® UW160

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12
f1 [mm]	0.3	0.5



Order example: **UW160FM-0304-05** – no minimum order quantity.

UW160 iglidur® material **F** With flange **M** Metric **03** Inner Ø d1 **04** Outer Ø d2 **05** Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾ [mm]	h13 [mm]	h13 [mm]	
3.0		4.5	7.5	5.0	0.75	UW160FM-0304-05
4.0	+0.014 +0.054	5.5	9.5	6.0	0.75	UW160FM-0405-06
5.0		7.0	11.0	7.0	1.00	UW160FM-0507-07
6.0	+0.020 +0.068	8.0	12.0	6.0	1.00	UW160FM-0608-06
8.0		10.0	14.0	10.0	1.00	UW160FM-0810-10
10.0	+0.025 +0.083	12.0	18.0	10.0	1.00	UW160FM-1012-10

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/UW160



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.



For the tobacco industry

FDA-compliant

iglidur® T220



When to use it?

- When you need a bearing free from non-permitted materials in the tobacco industry
- When FDA compliance is required



When not to use it?

- When high surface pressures occur
iglidur® Z
- When a cost-effective all-round plain bearing is required
iglidur® G, iglidur® M250
- When the highest wear resistance at low pressures is required
iglidur® J

Bearing technology | Plain bearings | iglidur® T220



∅
-



Also available as:



Bar stock, round bar
Page 743

For the tobacco industry FDA-compliant

Plain bearings that constitute only materials "recommended" for the tobacco industry. They are free from carcinogenic additives like, for instance, PTFE.

- Free from banned ingredients as requested by main manufacturers of tobacco products
- FDA-compliant
- Lubrication-free
- Maintenance-free

Typical application areas

- Tobacco industry



Bar stock, plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

Descriptive technical specifications				
Wear resistance at +23°C	-	<div style="width: 100%; height: 10px; background-color: green;"></div>		+
Wear resistance at +90°C	-	<div style="width: 100%; height: 10px; background-color: green;"></div>		+
Wear resistance at +150°C	-	<div style="width: 100%; height: 10px; background-color: green;"></div>		+
Slide property	-	<div style="width: 100%; height: 10px; background-color: green;"></div>		+
Wear resistance under water	-	<div style="width: 100%; height: 10px; background-color: green;"></div>		+
Media resistance	-	<div style="width: 100%; height: 10px; background-color: green;"></div>		+
Resistant to edge pressures	-	<div style="width: 100%; height: 10px; background-color: green;"></div>		+
Resistant to shock and impact loads	-	<div style="width: 100%; height: 10px; background-color: green;"></div>		+
Dirt resistance	-	<div style="width: 100%; height: 10px; background-color: green;"></div>		+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert



EN 06/2023

Technical data

General properties		Testing method	
Density	g/cm ³	1.28	
Colour		white	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.3	DIN 53495
Max. moisture absorption	% weight	0.5	
Coefficient of friction, dynamic, against steel	μ	0.20-0.32	
pv value, max. (dry)	MPa · m/s	0.28	
Mechanical properties			
Flexural modulus	MPa	1,800	DIN 53457
Flexural strength at +20°C	MPa	65	DIN 53452
Compressive strength	MPa	55	
Max. permissible surface pressure (+20°C)	MPa	40	
Shore D hardness		76	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+100	
Max. application temperature short-term	°C	+160	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	11	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹⁰	DIN IEC 93
Surface resistance	Ω	> 10 ¹⁰	DIN 53482

Table 01: Material properties

iglidur® T220 is a special material for applications in the tobacco processing industry. It fulfils the demands of the tobacco industry (engineering database). The material is free of undesirable or banned ingredients, as requested by reputed manufacturers from 2004 onward.

Moisture absorption

The humidity absorption of iglidur® T220 bearings amounts to about 0.3% weight in standard climatic conditions. The saturation limit submerged in water is 0.5% weight. These values are so low that consideration of expansion by moisture absorption is only required under extreme circumstances.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® T220 bearings.

Radiation resistance

Plain bearings made from iglidur® T220 are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

iglidur® T220 plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® T220 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

iglidur® T220 plain bearings can be stressed up to the permitted limit of 40MPa, the elastic deformation is less than 2% at room temperature. The permitted load is limited by higher temperatures (diagram 03).

Surface pressure, page 45



-40°C up to +100°C



40MPa



Permissible surface speeds

The maximum speeds of iglidur® T220 plain bearings when rotating continuously is 0.4 m/s. The friction and the associated temperature increase limit the permissible speeds. From this it follows that intermittent service or in linear movements, higher speeds can be attained.

Surface speed, page 48

Temperature

The flexibility of the bearings depends on the temperature. Even temperatures as low as +60°C lead to a considerable increase in flexibility. For temperatures over +50°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

By the observance of the tobacco processing industry specifications, the coefficient of friction and wear of iglidur® T220 plain bearings remain behind those of the best iglidur® plain bearings. The coefficient of friction decreases with the load and increases only slightly with higher speeds.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 shows a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® T220. Diagram 07 shows that the bearings react with a heavy increase in wear when the load is increased. Therefore care should be taken to maintain the loads under 5MPa through adequate dimensioning of the bearing.

Shaft materials, page 56

Installation tolerances

iglidur® T220 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Product range

iglidur® T220 plain bearings are manufactured to special order.

Chemicals	Resistance
Alcohols	+
Diluted acids	0
Diluted alkalines	-
Fuels	+
Greases, oils without additives	+
Hydrocarbons	-
Strong acids	-
Strong alkalines	-

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 0.4	0.3	1.0
Short-term	m/s 1.0	0.7	2.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.20-0.32	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

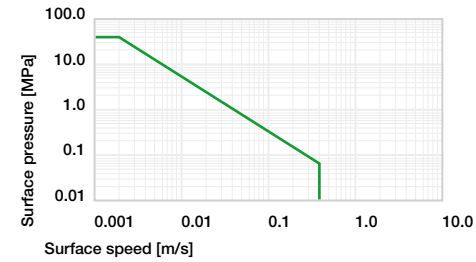


Diagram 01: Permissible pv values for iglidur® T220 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

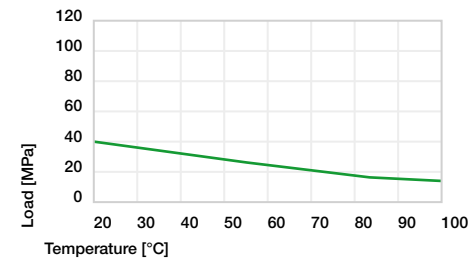


Diagram 02: Maximum recommended surface pressure as a function of temperature (40MPa at +20°C)

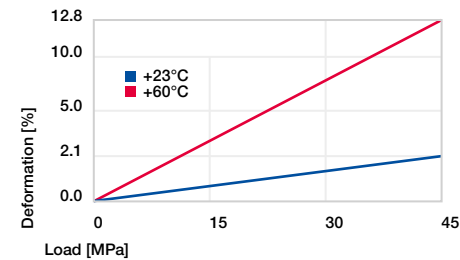


Diagram 03: Deformation under pressure and temperature

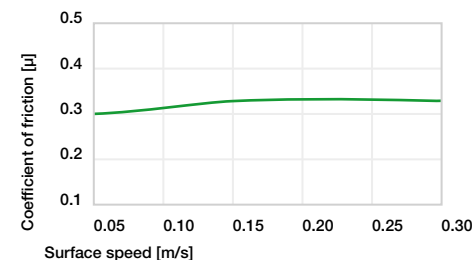


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

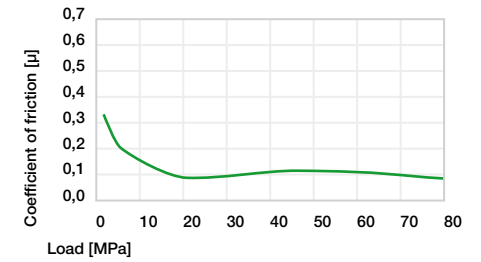


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

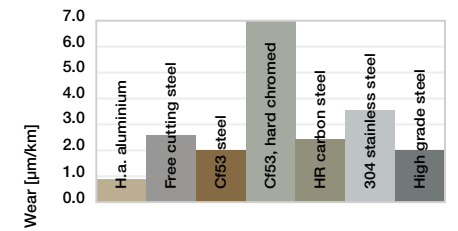


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

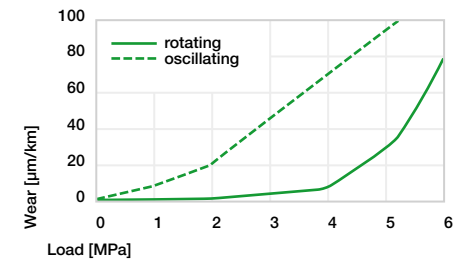


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load



Conductive and resistant ESD material for high temperatures and food contact **igidur® AX500**



When to use it?

- When an extremely media-resistant plain bearing with high flexibility is required
- When you need a highly wear-resistant and media-resistant plain bearing



When not to use it?

- When an FDA-compliant high-temperature plain bearing is required
igidur® A500
- When a media-resistant, high-temperature plain bearing with the largest possible range of dimensions is required
igidur® X

Bearing technology | Plain bearings | iglidur® AX500



Ø
6.0-40.0mm



Also available
as:



Bar stock,
round bar
Page 743

Conductive and resistant ESD material for high temperatures and food contact

iglidur® AX500 is a further development of iglidur® A500, a long-term endurance material. The special feature of AX500 is that it is a conductive material. In addition, AX500 has an even lower coefficient of wear than its predecessor. The material was specially developed for the food industry and can therefore be used in contact with food products.

- Compliant with EU Regulation 10/2011 EC
- Temperature-resistant from -100°C to +250°C
- Chemical-resistant
- Lubrication and maintenance-free
- Standard range from stock



Bar stock,
plate
Page 773



tribo-tape liner
Page 781

Typical application areas

- Beverage industry
- Food industry
- Medical technology



Guide rings
Page 641

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 25%; background-color: green;"></div>	+
Wear resistance at +90°C	-	<div style="width: 25%; background-color: green;"></div>	+
Wear resistance at +150°C	-	<div style="width: 50%; background-color: green;"></div>	+
Slide property	-	<div style="width: 25%; background-color: green;"></div>	+
Wear resistance under water	-	<div style="width: 75%; background-color: green;"></div>	+
Media resistance	-	<div style="width: 100%; background-color: green;"></div>	+
Resistant to edge pressures	-	<div style="width: 75%; background-color: green;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 75%; background-color: green;"></div>	+
Dirt resistance	-	<div style="width: 25%; background-color: green;"></div>	+



Two hole
flange
bearings
Page 667



Moulded
special parts
Page 696



igubal®
spherical balls
Page 993

Online product finder
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Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm³	1.55	
Colour		black	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.3	
Coefficient of friction, dynamic, against steel	μ	0.08-0.22	
pv value, max. (dry)	MPa · m/s	0.9	
Mechanical properties			
Flexural modulus	MPa	6,170	DIN 53457
Flexural strength at +20°C	MPa	115	DIN 53452
Compressive strength	MPa	n.s.	
Max. permissible surface pressure (+20°C)	MPa	69	
Shore D hardness		81	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+250	
Max. application temperature short-term	°C	+300	
Min. application temperature	°C	up to -100	
Thermal conductivity	W/m · K	0.26	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	9	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	n.s.	DIN IEC 93
Surface resistance	Ω	10 ⁵ - 10 ¹¹	DIN 53482

Table 01: Material properties

iglidur® AX500 is a member of the family of extremely media and temperature-resistant iglidur® materials X, X6 and A500. This material is characterised by improved wear resistance and increased design freedom.

Moisture absorption

The moisture absorption of iglidur® AX500 plain bearings is below 0.3% weight in ambient conditions. The saturation limit submerged in water is 0.5% weight.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance

iglidur® AX500 withstands neutron and gamma particle radiation without detectable losses of its excellent mechanical properties. Plain bearings made from iglidur® AX500 are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

iglidur® AX500 plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® AX500 plain bearings decreases. Diagram 02 shows this inverse relationship. However, at an operation temperature of +200°C the permissible surface pressure is close to 20MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® AX500 under different loads. At the maximum recommended surface pressure of 69MPa, the deformation is less than 4.5%.

Surface pressure, page 45



-100°C up to
+250°C



69MPa



Permissible surface speeds

The maximum recommended surface speed is based on the frictional heat generated at the bearing surface. The temperature should only be permitted to increase to a value that will ensure a sustainable use of the bearing with respect to wear and dimensional integrity. The maximum values stated in table 03 are valid only with minimum pressure loads and are often not attained in practice.

Surface speed, page 48

Temperature

iglidur® AX500 belongs to the most temperature resistant iglidur® materials. As in the case of all thermoplastics, the compressive strength of iglidur® AX500 bearings decreases when temperatures rise. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. For temperatures over +130°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The coefficient of friction and wear in iglidur® AX500 are more favourable than in the other high temperature materials iglidur® X and A500. The coefficient of friction increases moderately as the sliding speed increases. The coefficient of friction initially drops rapidly to less than 0.1 under loads of up to approximately 20MPa, and then only marginally increases as loads continue to increase. The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. Ground surfaces with an average surface finish Ra of 0.6 to 0.8µm are ideal.

Coefficient of friction and surfaces, page 54

Wear resistance, page 54

Shaft materials

Diagram 06 shows a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® AX500. Using the example of a rotating motion at 1MPa and a speed of 0.3m/s, it becomes apparent that iglidur® AX500 has consistent wear characteristics across a variety of shaft types. This wear rate spikes in combination with free cutting steel, and, notably so, reduces in combination with HC aluminium. The wear under rotational loads is higher, specifically with increasing radial loads as compared to pivoting movements (diagram 07).

Shaft materials, page 56

Installation tolerances

iglidur® AX500 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances.

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	+
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	0 up to -
Strong alkalines	+

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 1.0	0.4	2.0
Short-term	m/s 1.5	0.6	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.08-0.22	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	F10 [mm]	H7 [mm]	F10 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.006	+0.046	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.010	+0.058	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.013	+0.071	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.016	+0.086	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.020	+0.104	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.025	+0.125	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.030	+0.150	-0.074	+0.000
> 80-120	+0.000	+0.035	-0.036	+0.176	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

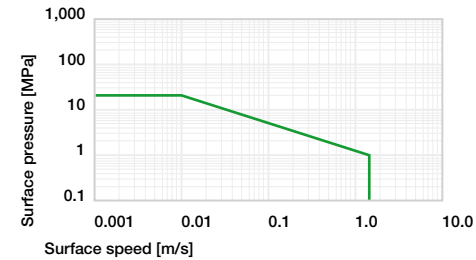


Diagram 01: Permissible pv values for AX500 plain bearings with a wall thickness of 1 mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

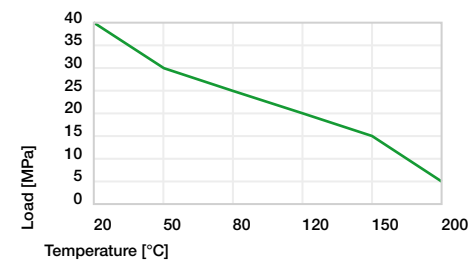


Diagram 02: Maximum recommended surface pressure as a function of temperature (80MPa at +20°C)

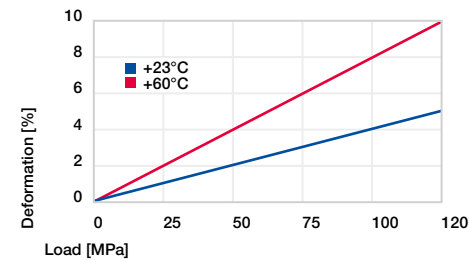


Diagram 03: Deformation under pressure and temperature

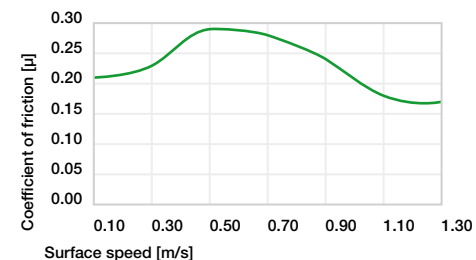


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1 MPa

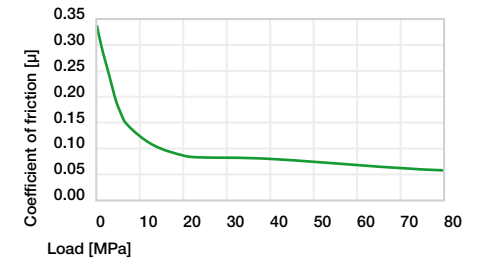


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

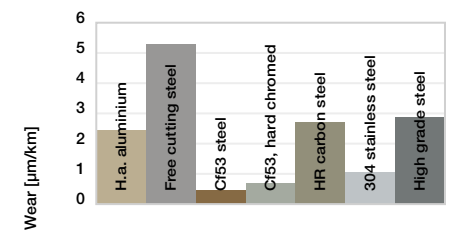


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1 MPa, v = 0.3 m/s

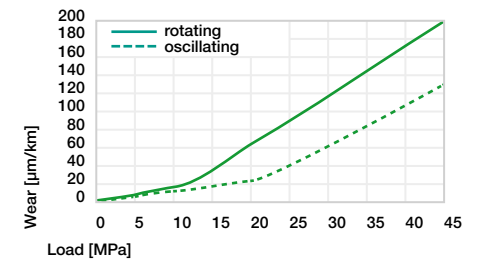
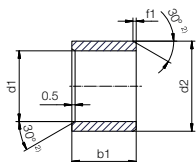


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® AX500

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions

i Order example: **AX500SM-0608-06** - no minimum order quantity.

AX500 iglidur® material **S** Cylindrical **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **06** Total length b1

d1 [mm]	d1 Tolerance ³⁾	d2 [mm]	b1 h13 [mm]	Part No.
6.0	+0.010 +0.058	8.0	6.0	AX500SM-0608-06
8.0	+0.013 +0.071	10.0	10.0	AX500SM-0810-10
10.0		12.0	10.0	AX500SM-1012-10
12.0	+0.016 +0.086	14.0	12.0	AX500SM-1214-12
16.0		18.0	15.0	AX500SM-1618-15
16.0	+0.020 +0.104	18.0	20.0	AX500SM-1618-20
16.0		18.0	25.0	AX500SM-1618-25
20.0		23.0	20.0	AX500SM-2023-20

³⁾ After press-fit. *Testing methods, page 61*

i Available from stock

Detailed information about delivery time online.

www.igus.eu/24

i Order online

including delivery times, prices, online tools

www.igus.eu/AX500

i Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

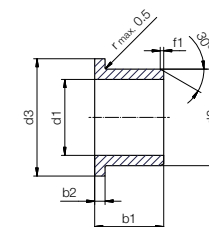
No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Bearing technology | Plain bearings | iglidur® AX500

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 6-12	Ø 12-30
f1 [mm]	0.5	0.8

i Dimensions according to ISO 3547-1 and special dimensions

i Order example: **AX500SM-0608-06** - no minimum order quantity.

AX500 iglidur® material **F** With flange **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **06** Total length b1

d1 [mm]	d1 Tolerance ³⁾	d2 [mm]	d3 d13 ³⁾ [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
6.0	+0.010 +0.058	8.0	12.0	8.0	1.00	AX500FM-0608-06
8.0	+0.013 +0.071	10.0	15.0	9.5	1.00	AX500FM-0810-10
10.0		12.0	18.0	9.0	1.00	AX500FM-1012-10
12.0	+0.016 +0.086	14.0	20.0	12.0	1.00	AX500FM-1214-12
16.0		18.0	24.0	17.0	1.00	AX500FM-1618-17
20.0	+0.020 +0.104	23.0	30.0	21.5	1.50	AX500FM-2023-21

³⁾ After press-fit. *Testing methods, page 61*

i Available from stock

Detailed information about delivery time online.

www.igus.eu/24

i Order online

including delivery times, prices, online tools

www.igus.eu/AX500

i Ordering note

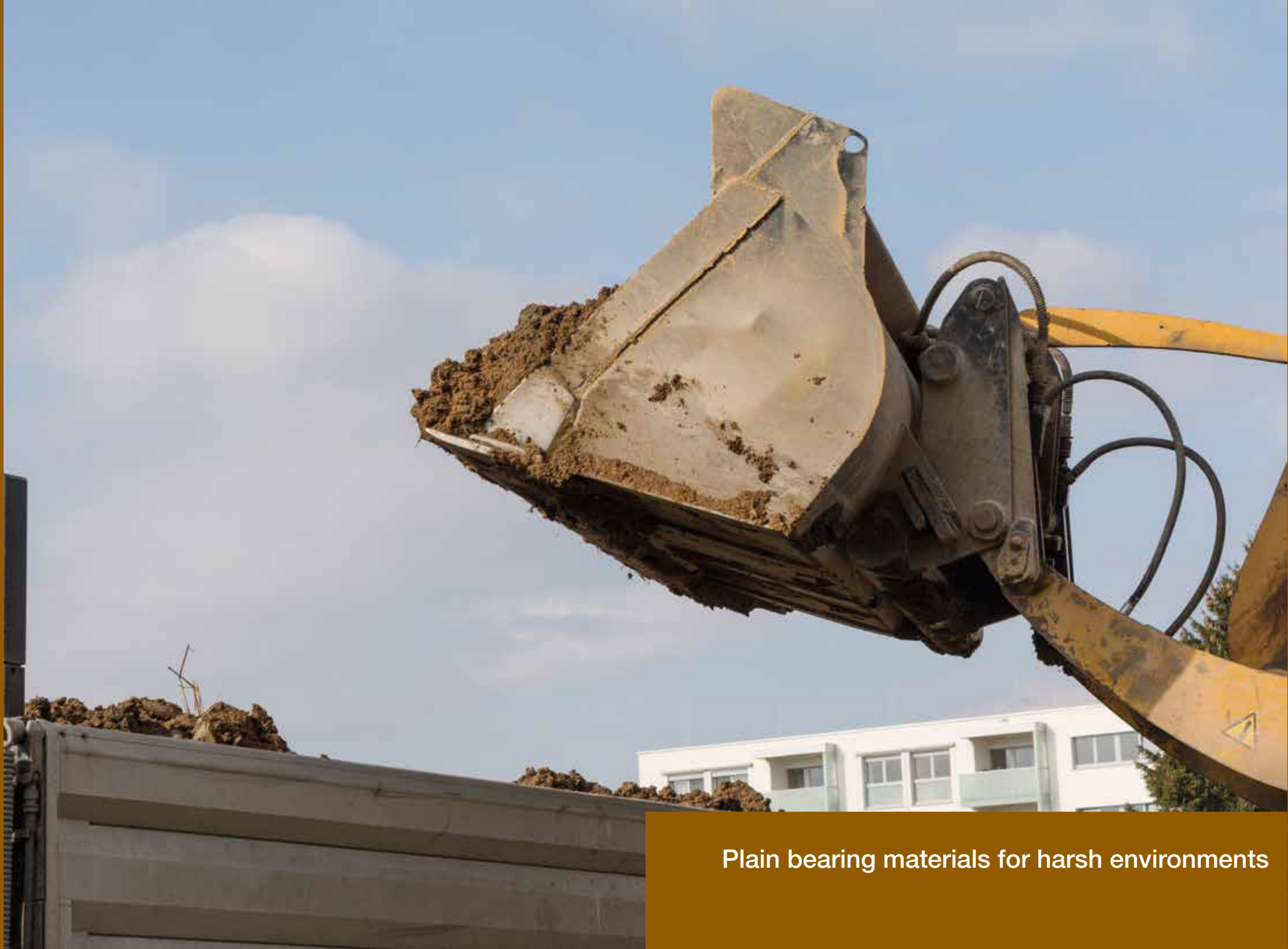
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.



Plain bearing materials for harsh environments





Plain bearing materials for harsh environments

The iglidur® plain bearings for high load combine high wear resistance with the ability to withstand high (static) loads, shocks and edge loads.

Within these properties they all have their own special strengths. Harsh environments mean radial surface pressure starting from 30MPa up to more than 100MPa (100MPa means 1,000kg on a 10 x 10mm plain bearing)

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 **Online service life calculation**
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 iglidur® Q2 The durable heavy-duty bearing	Temperature [°C] ¹²³⁾	+130	-	■	■					+
	Surface pressure [MPa] ¹²⁴⁾	120	-	■	■	■	■	■		+
	Coefficient of friction [μ] ¹²⁵⁾	0.17	-	■	■					+
	Wear [μm/km] ¹²⁵⁾	1.50	-	■	■					+
	Price index	-		■						+
 iglidur® Q3E Cost-effective heavy-duty bearing	Temperature [°C] ¹²³⁾	+100	-	■	■					+
	Surface pressure [MPa] ¹²⁴⁾	135	-	■	■	■	■	■		+
	Coefficient of friction [μ] ¹²⁵⁾	0.17	-	■	■					+
	Wear [μm/km] ¹²⁵⁾	1.50	-	■	■					+
 iglidur® Q The peak of stability	Temperature [°C] ¹²³⁾	+135	-	■	■					+
	Surface pressure [MPa] ¹²⁴⁾	100	-	■	■	■	■	■		+
	Coefficient of friction [μ] ¹²⁵⁾	0.19	-	■	■					+
	Wear [μm/km] ¹²⁵⁾	1.90	-	■	■					+
 iglidur® Q290 Heavy-duty on soft shafts	Temperature [°C] ¹²³⁾	+140	-	■	■					+
	Surface pressure [MPa] ¹²⁴⁾	55	-	■	■					+
	Coefficient of friction [μ] ¹²⁵⁾	0.12	-	■						+
	Wear [μm/km] ¹²⁵⁾	0.48	-	■						+
	Price index	-		■						+

¹²³⁾ Upper long-term application temperature ¹²⁴⁾ Max. recommended surface pressure at +20°C ¹²⁵⁾ Best pairing for p = 1 MPa, v = 0.3m/s, rotating

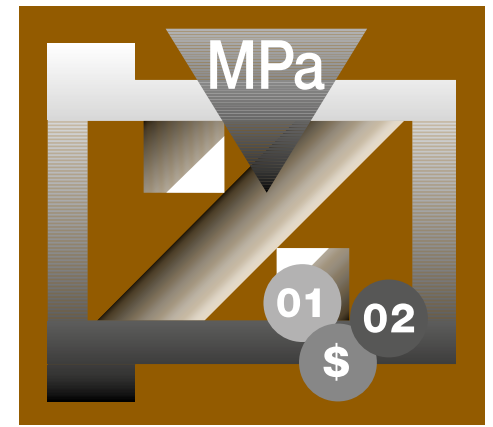
Harsh environments

 **iglidur® M210**
For medium-sized loads

Temperature [°C] ¹²³⁾	+100	-	■	■						+
Surface pressure [MPa] ¹²⁴⁾	50	-	■	■	■	■	■	■		+
Coefficient of friction [μ] ¹²⁵⁾	0.18	-	■	■						+
Wear [μm/km] ¹²⁵⁾	0.38	-	■							+
Price index	-		■	■						+

 **iglidur® M260**
For heavy duty

Temperature [°C] ¹²³⁾	+120	-	■	■						+
Surface pressure [MPa] ¹²⁴⁾	40	-	■	■	■	■	■	■		+
Coefficient of friction [μ] ¹²⁵⁾	0.16	-	■	■						+
Wear [μm/km] ¹²⁵⁾	0.11	-	■							+
Price index	-		■	■						+



The durable heavy-duty bearing

Combined wear resistance and compressive strength at high loads

iglidur® Q2



When to use it?

- When high dynamic loads occur
- When dirt occurs in addition to high shock and impact loads
- For highly loaded pivoting movements



When not to use it?

- When only static loads occur
iglidur® X, iglidur® H2
- When high pv values occur in conjunction with high speeds
iglidur® Z
- When a cost-effective all-round plain bearing is required
iglidur® G
- When soft shafts are in use
iglidur® W300

Bearing technology | Plain bearings | iglidur® Q2



Ø
4.0-120.0mm



Also available
as:



Bar stock,
round bar
Page 743

The durable heavy-duty bearing Combined wear resistance and compressive strength at high loads

Where previous iglidur® bearing solutions are limited within the scope of extreme loads and strong impact forces, the iglidur® Q2 starts. Made for heavy-duty pivoting applications under extreme conditions.

- Wear-resistant
- Good price-performance ratio
- Lubrication-free
- Maintenance-free
- High rigidity
- Suitable for high loads



Bar stock,
plate
Page 773



tribo-tape liner
Page 781

Typical application areas

- Agricultural engineering
- Utility and construction vehicles
- Mechanical engineering



Guide rings
Page 641



Two hole
flange
bearings
Page 667



Moulded
special parts
Page 696

Descriptive technical specifications				
Wear resistance at +23°C	-	■ ■ ■ ■ ■		+
Wear resistance at +90°C	-	■ ■ ■ ■ ■		+
Wear resistance at +150°C	-	■ ■ ■ ■ ■		+
Slide property	-	■ ■ ■ ■ ■		+
Wear resistance under water	-	■ ■ ■ ■ ■		+
Media resistance	-	■ ■ ■ ■ ■		+
Resistant to edge pressures	-	■ ■ ■ ■ ■		+
Resistant to shock and impact loads	-	■ ■ ■ ■ ■		+
Dirt resistance	-	■ ■ ■ ■ ■		+



igubal®
spherical balls
Page 993

Online product finder
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Online service life calculation
www.igus.eu/igidur-expert

EN 06/2023



Technical data

General properties		Testing method	
Density	g/cm ³	1.46	
Colour		beige-brown	
Max. moisture absorption at +23°C/50% r.h.	% weight	1.1	DIN 53495
Max. moisture absorption	% weight	4.6	
Coefficient of friction, dynamic, against steel	μ	0.22-0.42	
pv value, max. (dry)	MPa · m/s	0.70	
Mechanical properties			
Flexural modulus	MPa	8,370	DIN 53457
Flexural strength at +20°C	MPa	240	DIN 53452
Compressive strength	MPa	130	
Max. permissible surface pressure (+20°C)	MPa	120	
Shore D hardness		80	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+130	
Max. application temperature short-term	°C	+200	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	8	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹³	DIN IEC 93
Surface resistance	Ω	> 10 ¹¹	DIN 53482

Table 01: Material properties

iglidur® Q2 plain bearings represent high load capacities and good abrasion resistance at high loads. The price-performance ratio is outstanding. Solid lubricants reduce the coefficient of friction and improve the resistance to wear, which was markedly improved as compared to other iglidur® plain bearings, especially for heavily loaded pivoting applications.

Moisture absorption

The moisture absorption of iglidur® Q2 plain bearings in ambient conditions is approximately 1.1% weight. The saturation limit submerged in water is 4.6% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® Q2 are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

iglidur® Q2 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® Q2 plain bearings decreases. Diagram 02 shows this inverse relationship. With the long-term permitted application temperature of +130°C, the permitted surface pressure still amounts to 20MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® Q2 at radial loads.

Surface pressure, page 45



-40°C up to
+130°C



120MPa



Permissible surface speeds

Typical applications for iglidur® Q2 plain bearings are pivoting movements under high loads at comparatively low speeds. However, relatively high speeds are still attainable. The speeds stated in table 03 are limit values for the lowest bearing loads. With higher loads, the permitted speed drops with the extent of the load due to the limitations by the pv value.

Surface speed, page 48

Temperature

iglidur® Q2 is an extremely temperature-resistant material. The long-term upper temperature limit of +130°C permits the broad use in applications typical for the agricultural, utility vehicle or construction equipment sectors. With increasing temperatures, the compressive strength of iglidur® Q2 plain bearings decreases. For temperatures over +70°C an additional securing is required. When considering temperatures, the additional frictional heat in the bearing system must be taken into account.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The coefficient of friction of iglidur® Q2 is low. Please note that a sliding surface with a rough surface finish will increase the friction. The highest coefficient of friction occur at Ra = 1µm. Surface finishes (Ra) of the shaft between 0.1-0.4µm are ideal. Furthermore, the coefficient of friction of iglidur® Q2 plain bearings largely depends on the speed and load. As the surface speed increases, the coefficient of friction will quickly increase as well. However, as the load is reduced, the coefficient of friction initially drops significantly, then moderately.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

In high load applications, we generally recommend the use of hardened shafts. Furthermore, even at low to medium loads, iglidur® Q2 will attain increased service life with "hard" shafts as compared to "soft" shafts. But for low load applications, the results are outstanding with free cutting steel as well. For high loads, the wear in pivoting applications is much lower than for rotation. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 56

Installation tolerances

iglidur® Q2 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	1.0	0.7	4.0
Short-term m/s	2.0	1.4	5.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction µ	0.22-0.42	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

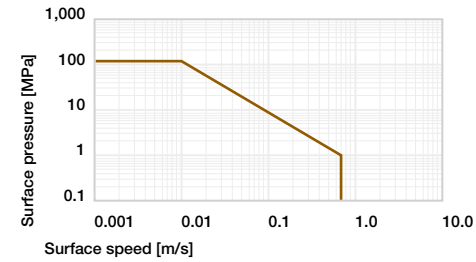


Diagram 01: Permissible pv values for iglidur® Q2 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

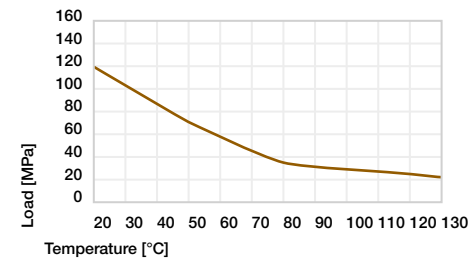


Diagram 02: Maximum recommended surface pressure as a function of temperature (120MPa at +20°C)

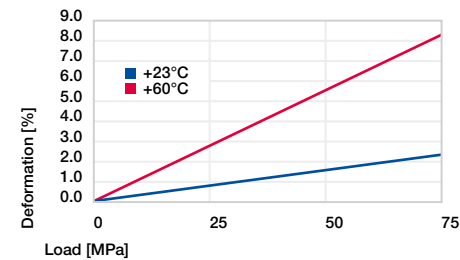


Diagram 03: Deformation under pressure and temperature

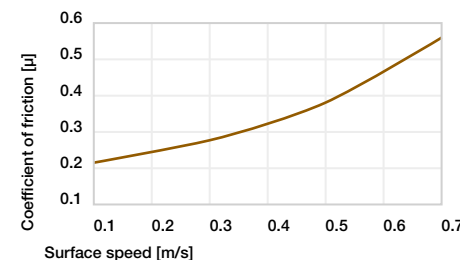


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

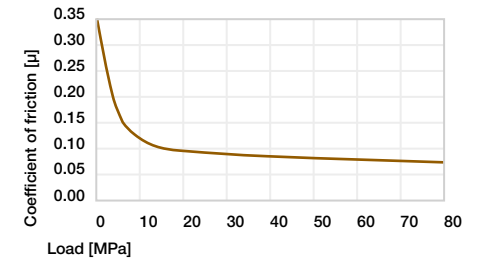


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

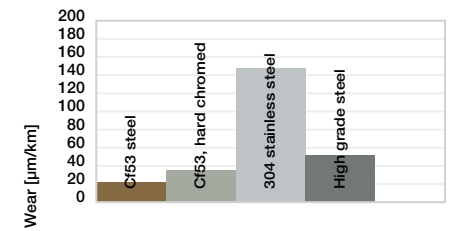


Diagram 06: Wear, pivoting with different shaft materials, pressure p = 45MPa, v = 0.01m/s

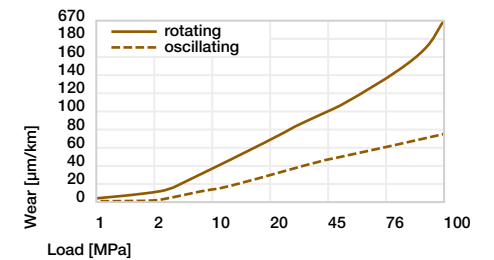
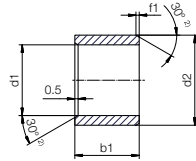


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions



Order example: **Q2SM-0405-04** – no minimum order quantity.

Q2 iglidur® material **S** Cylindrical **M** Metric **04** Inner Ø d1 **05** Outer Ø d2 **04** Total length b1

d1	d1	d2	b1	Part No.	d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13		[mm]	Tolerance ³⁾	[mm]	h13	
4.0		5.5	4.0	Q2SM-0405-04	16.0		18.0	25.0	Q2SM-1618-25
4.0		5.5	6.0	Q2SM-0405-06	18.0	+0.032	20.0	15.0	Q2SM-1820-15
5.0	+0.020	7.0	5.0	Q2SM-0507-05	18.0	+0.102	20.0	20.0	Q2SM-1820-20
5.0	+0.068	7.0	10.0	Q2SM-0507-10	18.0		20.0	25.0	Q2SM-1820-25
6.0		8.0	6.0	Q2SM-0608-06	20.0		23.0	10.0	Q2SM-2023-10
6.0		8.0	8.0	Q2SM-0608-08	20.0		23.0	15.0	Q2SM-2023-15
6.0		8.0	10.0	Q2SM-0608-10	20.0		23.0	20.0	Q2SM-2023-20
8.0		10.0	8.0	Q2SM-0810-08	20.0		23.0	25.0	Q2SM-2023-25
8.0		10.0	10.0	Q2SM-0810-10	20.0		23.0	30.0	Q2SM-2023-30
8.0		10.0	12.0	Q2SM-0810-12	22.0		25.0	15.0	Q2SM-2225-15
10.0	+0.025	12.0	8.0	Q2SM-1012-08	22.0		25.0	20.0	Q2SM-2225-20
10.0	+0.083	12.0	10.0	Q2SM-1012-10	22.0		25.0	25.0	Q2SM-2225-25
10.0		12.0	12.0	Q2SM-1012-12	22.0		25.0	30.0	Q2SM-2225-30
10.0		12.0	15.0	Q2SM-1012-15	24.0		27.0	15.0	Q2SM-2427-15
10.0		12.0	20.0	Q2SM-1012-20	24.0		27.0	20.0	Q2SM-2427-20
12.0		14.0	10.0	Q2SM-1214-10	24.0	+0.040	27.0	25.0	Q2SM-2427-25
12.0		14.0	12.0	Q2SM-1214-12	24.0	+0.124	27.0	30.0	Q2SM-2427-30
12.0		14.0	15.0	Q2SM-1214-15	25.0		28.0	15.0	Q2SM-2528-15
12.0		14.0	20.0	Q2SM-1214-20	25.0		28.0	20.0	Q2SM-2528-20
13.0		15.0	10.0	Q2SM-1315-10	25.0		28.0	25.0	Q2SM-2528-25
13.0		15.0	20.0	Q2SM-1315-20	25.0		28.0	30.0	Q2SM-2528-30
14.0	+0.032	16.0	15.0	Q2SM-1416-15	28.0		32.0	30.0	Q2SM-2832-30
14.0	+0.102	16.0	20.0	Q2SM-1416-20	30.0		34.0	20.0	Q2SM-3034-20
14.0		16.0	25.0	Q2SM-1416-25	30.0		34.0	25.0	Q2SM-3034-25
15.0		17.0	15.0	Q2SM-1517-15	30.0		34.0	30.0	Q2SM-3034-30
15.0		17.0	20.0	Q2SM-1517-20	30.0		34.0	40.0	Q2SM-3034-40
15.0		17.0	25.0	Q2SM-1517-25	30.0		35.0	40.0	Q2SM-3035-40
16.0		18.0	15.0	Q2SM-1618-15	32.0	+0.050	36.0	20.0	Q2SM-3236-20
16.0		18.0	20.0	Q2SM-1618-20	32.0	+0.150	36.0	30.0	Q2SM-3236-30

³⁾ After press-fit. *Testing methods, page 61*

Product range

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13	
32.0		36.0	40.0	Q2SM-3236-40
32.0		40.0	40.0	Q2SM-3240-40
35.0		39.0	20.0	Q2SM-3539-20
35.0		39.0	30.0	Q2SM-3539-30
35.0		39.0	40.0	Q2SM-3539-40
35.0	+0.050	39.0	50.0	Q2SM-3539-50
40.0	+0.150	44.0	20.0	Q2SM-4044-20
40.0		44.0	30.0	Q2SM-4044-30
40.0		44.0	40.0	Q2SM-4044-40
40.0		44.0	50.0	Q2SM-4044-50
45.0		50.0	20.0	Q2SM-4550-20
45.0		50.0	30.0	Q2SM-4550-30

³⁾ After press-fit. *Testing methods, page 61*

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13	
45.0		50.0	40.0	Q2SM-4550-40
45.0		50.0	50.0	Q2SM-4550-50
50.0		55.0	20.0	Q2SM-5055-20
50.0	+0.050	55.0	30.0	Q2SM-5055-30
50.0	+0.150	55.0	40.0	Q2SM-5055-40
50.0		55.0	50.0	Q2SM-5055-50
50.0		55.0	60.0	Q2SM-5055-60
60.0		65.0	60.0	Q2SM-6065-60
65.0	+0.060	70.0	60.0	Q2SM-6570-60
70.0	+0.180	75.0	60.0	Q2SM-7075-60
75.0		80.0	40.0	Q2SM-7580-40



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/Q2



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling

1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

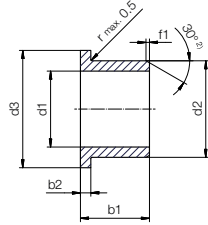
No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Bearing technology | Plain bearings | iglidur® Q2

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions

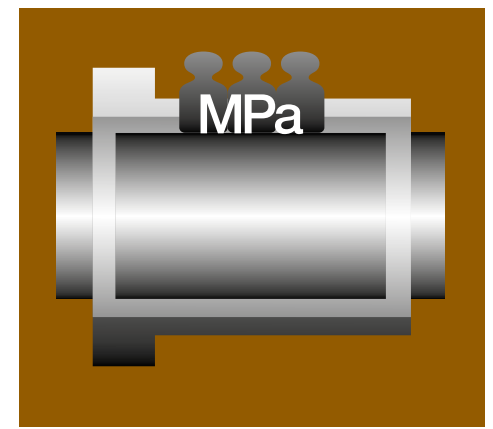


Order example: **Q2FM-0507-05** – no minimum order quantity.

Q2 iglidur® material **F** With flange **M** Metric **05** Inner Ø d1 **07** Outer Ø d2 **05** Total length b1

d1	d1	d2	d3	b1	b2	Part No.	d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13		[mm]	Tolerance ³⁾	[mm]	[mm]	[mm]	[mm]	
5.0		7.0	11.0	5.0	1.00	Q2FM-0507-05	18.0	+0.032	20.0	26.0	17.0	1.00	Q2FM-1820-17
6.0	+0.020	8.0	12.0	4.0	1.00	Q2FM-0608-04	18.0	+0.102	20.0	26.0	22.0	1.00	Q2FM-1820-22
6.0	+0.068	8.0	12.0	6.0	1.00	Q2FM-0608-06	20.0		23.0	30.0	11.5	1.50	Q2FM-2023-11
6.0		8.0	12.0	8.0	1.00	Q2FM-0608-08	20.0		23.0	30.0	12.0	1.50	Q2FM-2023-12
8.0		10.0	15.0	3.0	1.00	Q2FM-0810-03	20.0		23.0	30.0	16.5	1.50	Q2FM-2023-16
8.0		10.0	15.0	5.5	1.00	Q2FM-0810-05	20.0		23.0	30.0	21.5	1.50	Q2FM-2023-21
8.0		10.0	15.0	7.5	1.00	Q2FM-0810-07	25.0	+0.040	28.0	35.0	11.5	1.50	Q2FM-2528-11
8.0		10.0	15.0	9.5	1.00	Q2FM-0810-09	25.0	+0.124	28.0	35.0	16.5	1.50	Q2FM-2528-16
8.0	+0.025	10.0	15.0	10.0	1.00	Q2FM-0810-10	25.0		28.0	35.0	21.5	1.50	Q2FM-2528-21
10.0	+0.083	12.0	18.0	7.0	1.00	Q2FM-1012-07	30.0		34.0	42.0	16.0	2.00	Q2FM-3034-16
10.0		12.0	18.0	9.0	1.00	Q2FM-1012-09	30.0		34.0	42.0	26.0	2.00	Q2FM-3034-26
10.0		12.0	18.0	10.0	1.00	Q2FM-1012-10	30.0		34.0	42.0	37.0	2.00	Q2FM-3034-37
10.0		12.0	18.0	12.0	1.00	Q2FM-1012-12	30.0		34.0	42.0	40.0	2.00	Q2FM-3034-40
10.0		12.0	18.0	17.0	1.00	Q2FM-1012-17	35.0		39.0	47.0	16.0	2.00	Q2FM-3539-16
12.0		14.0	20.0	7.0	1.00	Q2FM-1214-07	35.0		39.0	47.0	26.0	2.00	Q2FM-3539-26
12.0		14.0	20.0	9.0	1.00	Q2FM-1214-09	35.0		39.0	47.0	40.0	2.00	Q2FM-3539-40
12.0		14.0	20.0	12.0	1.00	Q2FM-1214-12	40.0	+0.050	44.0	52.0	30.0	2.00	Q2FM-4044-30
12.0		14.0	20.0	17.0	1.00	Q2FM-1214-17	40.0	+0.150	44.0	52.0	40.0	2.00	Q2FM-4044-40
14.0		16.0	22.0	5.0	1.00	Q2FM-1416-05	45.0		50.0	58.0	50.0	2.00	Q2FM-4550-50
14.0		16.0	22.0	12.0	1.00	Q2FM-1416-12	50.0		55.0	63.0	10.0	2.00	Q2FM-5055-10
14.0	+0.032	16.0	22.0	17.0	1.00	Q2FM-1416-17	50.0		55.0	63.0	50.0	2.00	Q2FM-5055-50
15.0	+0.102	17.0	23.0	9.0	1.00	Q2FM-1517-09	60.0	+0.060	65.0	73.0	60.0	2.00	Q2FM-6065-60
15.0		17.0	23.0	12.0	1.00	Q2FM-1517-12	80.0	+0.180	85.0	93.0	100.0	2.50	Q2FM-8085-100
15.0		17.0	23.0	17.0	1.00	Q2FM-1517-17		+0.072					Q2FM-
16.0		18.0	24.0	12.0	1.00	Q2FM-1618-12		+0.212	105.0	125.0	90.0	2.50	100105125-90
16.0		18.0	24.0	17.0	1.00	Q2FM-1618-17		+0.085					Q2FM-
18.0		20.0	26.0	12.0	1.00	Q2FM-1820-12	120.0	+0.245	125.0	145.0	90.0	2.50	120125145-90

³⁾ After press-fit. Testing methods, page 61



Cost-effective heavy-duty bearing Robust and dimensionally stable iglidur® Q3E



When to use it?

- When a wear-resistant plain bearing at loads up to 130MPa is required
- When a robust and dirt-resistant plain bearing is required
- When a plain bearing with dimensional stability is required



When not to use it?

- When a plain bearing with the highest possible media resistance is required
iglidur® X
- With high rotational speeds
iglidur® J, iglidur® L250
- When a universal standard plain bearing for occasional movements is required
iglidur® G

Bearing technology | Plain bearings | iglidur® Q3E



Ø
20.0-60.0mm



Also available as:



Bar stock, round bar
Page 743



Bar stock, plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

Cost-effective heavy-duty bearing Robust and dimensionally stable

With extreme loads, even high-tech polymers reach their limits. Therefore iglidur® Q3E offers a completely new multi-component design and is able to carry even extreme loads. In addition, thanks to optimised injection moulding technology, it is more cost-effective than comparable fibre composites.

- Lubrication-free
- Wear-resistant up to 130MPa dynamic load
- Resistant to dirt
- Corrosion-free

Typical application areas

- Agricultural machinery
- Construction machinery industry
- Utility and construction vehicles
- Hoisting technology

Descriptive technical specifications

Wear resistance at +23°C	-	■ ■ ■ ■ ■	+
Wear resistance at +90°C	-	■ ■ ■ ■ ■	+
Wear resistance at +150°C	-	■ ■ ■ ■ ■	+
Slide property	-	■ ■ ■ ■ ■	+
Wear resistance under water	-	■ ■ ■ ■ ■	+
Media resistance	-	■ ■ ■ ■ ■	+
Resistant to edge pressures	-	■ ■ ■ ■ ■	+
Resistant to shock and impact loads	-	■ ■ ■ ■ ■	+
Dirt resistance	-	■ ■ ■ ■ ■	+

Online product finder
www.igus.eu/iglidur-finder

Online service life calculation
www.igus.eu/iglidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.46-1.69	
Colour sliding layer		black	
Colour supporting layer		black	
Max. moisture absorption at +23°C/50% r.h.	% weight	1.5	DIN 53495
Max. moisture absorption	% weight	5.0	
Coefficient of friction, dynamic, against steel	μ	0.22-0.42	
pv value, max. (dry)	MPa · m/s	0.70	
Mechanical properties			
Flexural modulus	MPa	n.s.	DIN 53457
Flexural strength at +20°C ¹⁷¹⁾	MPa	235	DIN 53452
Compressive strength	MPa	n.s.	
Max. permissible surface pressure (+20°C)	MPa	135	
Shore D hardness		80	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+100	
Max. application temperature short-term	°C	+140	
Min. application temperature	°C	-30	
Thermal conductivity		n.s.	
Coefficient of thermal expansion		n.s.	
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

¹⁷¹⁾ Valid for the outer shell of the bearing

Table 01: Material properties

The iglidur® Q3E plain bearings defy dirt at the heaviest loads due to their robust design.

Moisture absorption

The humidity absorption of iglidur® Q3E bearings amounts to about 1.5% weight in standard climatic conditions. The saturation limit submerged in water is 5.0% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® Q3E are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

Resistance to weathering

iglidur® Q3E plain bearings have not yet been tested for their resistance to weathering. Please consult igus® if you're planning to use them outdoors.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® Q3E plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® Q3E at radial loads.

Surface pressure, page 45

Permissible surface speeds

Typical applications for iglidur® Q3E plain bearings are pivoting movements under high loads at comparatively low speeds. However, relatively high speeds are still attainable. The speeds stated in table 03 are limit values for the lowest bearing loads. With higher loads, the permitted speed drops with the extent of the load due to the limitations by the pv value.

Surface speed, page 48



-30°C up to
+100°C



135MPa



Temperature

iglidur® Q3E is an extremely temperature-resistant material. The long-term upper temperature limit of +100°C permits the broad use in applications typical for the agricultural, utility vehicle or construction equipment sectors. With increasing temperatures, the compressive strength of iglidur® Q3E plain bearings decreases. For temperatures over +75°C an additional securing is required. When considering temperatures, the additional frictional heat in the bearing system must be taken into account.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The coefficient of friction alters similarly to the wear resistance with increasing load and surface speed (diagrams O4 and O5).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

In high load applications, we generally recommend the use of hardened shafts. Furthermore, even at low to medium loads, iglidur® Q3E will attain increased service life with "hard" shafts as compared to "soft" shafts. But for low load applications, the results are outstanding with free cutting steel as well. For high loads, the wear in pivoting applications is much lower than for rotation. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 56

Installation tolerances

iglidur® Q3E plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. The tolerances are based on class E11. After installing in a nominal size housing, the inner diameter of the bearings is adjusted according to the specifications in the product range.

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	1.0	0.7	4.0
Short-term m/s	2.0	1.4	5.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.22-0.42	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E11 [mm]	E11 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.014	+0.074	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.095	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.115	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.142	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.170	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.210	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.250	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.292	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.335	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

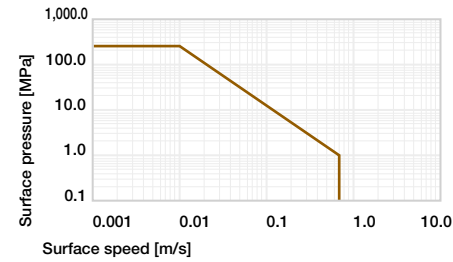


Diagram 01: Permissible pv values for iglidur® Q3E with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

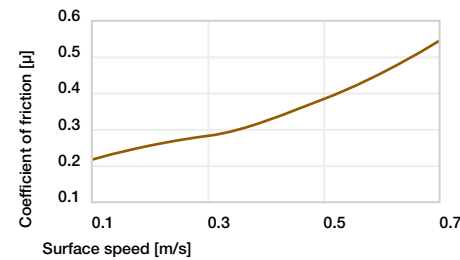


Diagram 02: Coefficient of friction as a function of the surface speed, p = 0.75MPa

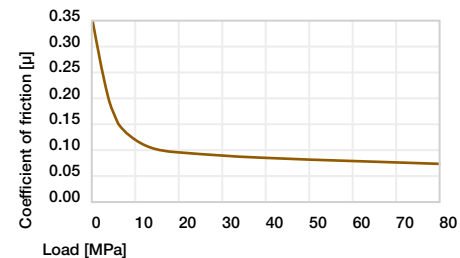


Diagram 03: Coefficient of friction as a function of the pressure, v = 0.01m/s

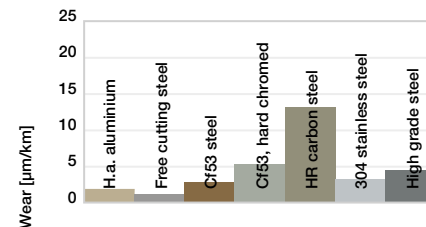


Diagram 04: Wear, pivoting with different shaft materials, p = 1MPa, v = 0.3m/s

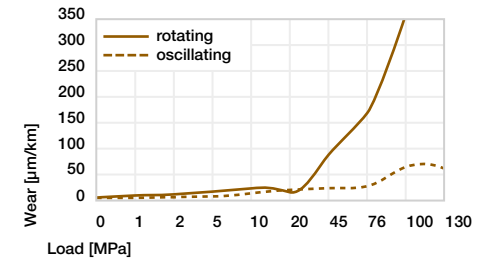
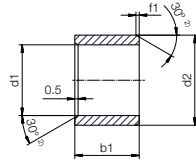


Diagram 05: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® Q3E

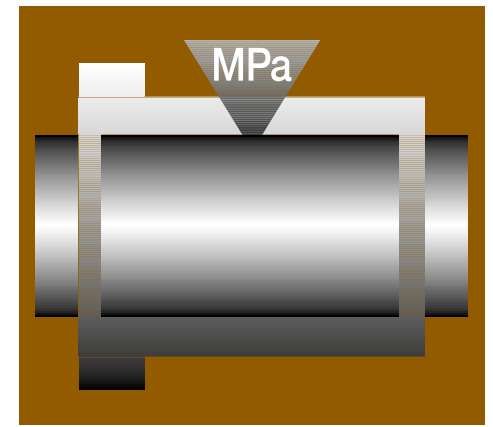
Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 12-30	Ø > 30
f1 [mm]	0.8	1.2



Order example: Q3ESM-2025-20 – no minimum order quantity.
Q3E iglidur® material S Cylindrical M Metric 20 Inner Ø d1 25 Outer Ø d2 20 Total length b1

d1 [mm]	d1 Tolerance ³⁾	d2 [mm]	b1 h13 [mm]	Part No.
20.0	+0.040 +0.164	25.0	20.0	Q3ESM-2025-20
25.0		30.0	30.0	Q3ESM-2530-30
30.0		35.0	30.0	Q3ESM-3035-30
35.0	+0.050 +0.190	40.0	40.0	Q3ESM-3540-40
40.0		45.0	40.0	Q3ESM-4045-40
45.0		50.0	50.0	Q3ESM-4550-50
50.0	+0.060 +0.220	55.0	50.0	Q3ESM-5055-50
60.0		65.0	60.0	Q3ESM-6065-60

³⁾ After press-fit. *Testing methods, page 61*

Available from stock
Detailed information about delivery time online.
www.igus.eu/24

Order online
including delivery times, prices, online tools
www.igus.eu/Q3E

Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.
No low-quantity surcharges.
Free shipping within Germany for orders above €150.

The peak of stability

Long service life at medium to high loads

iglidur® Q



When to use it?

- For pivoting applications
- For excellent wear resistance, especially for extreme loads
- For extreme pv values
- When dirt-resistant bearings is required



When not to use it?

- For underwater applications
iglidur® H370
- When temperatures are constantly higher than +135°C
iglidur® H, iglidur® X, iglidur® Z
- In situations involving high edge loads or strong impact loads
iglidur® Q2

Bearing technology | Plain bearings | iglidur® Q



Ø
6.0-90.0mm



Also available as:



Bar stock, round bar
Page 743



Bar stock, plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

The peak of stability Long service life at medium to high loads

iglidur® Q is the cost-effective solution for heavy-duty cycles with extreme loads. Plain bearings made from this material can be used in all types of motion, but is best suited for pivoting applications.

- Very wear-resistant
- Very high pv values
- Low coefficient of friction
- Resistant to dirt
- Lubrication-free
- Standard range from stock
- Maintenance-free

Typical application areas

- Construction machinery industry
- Sheet metal industry
- Agricultural machines
- Railway technology
- Doors and gates

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 100%; height: 10px; background-color: #8B4513;"></div>	+
Wear resistance at +90°C	-	<div style="width: 90%; height: 10px; background-color: #8B4513;"></div>	+
Wear resistance at +150°C	-	<div style="width: 80%; height: 10px; background-color: #8B4513;"></div>	+
Slide property	-	<div style="width: 100%; height: 10px; background-color: #8B4513;"></div>	+
Wear resistance under water	-	<div style="width: 10%; height: 10px; background-color: #8B4513;"></div>	+
Media resistance	-	<div style="width: 90%; height: 10px; background-color: #8B4513;"></div>	+
Resistant to edge pressures	-	<div style="width: 90%; height: 10px; background-color: #8B4513;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 90%; height: 10px; background-color: #8B4513;"></div>	+
Dirt resistance	-	<div style="width: 90%; height: 10px; background-color: #8B4513;"></div>	+

Online product finder
www.igus.eu/iglidur-finder

Online service life calculation
www.igus.eu/iglidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.40	
Colour		black	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.9	DIN 53495
Max. moisture absorption	% weight	4.9	
Coefficient of friction, dynamic, against steel	μ	0.05-0.15	
pv value, max. (dry)	MPa · m/s	0.55	
Mechanical properties			
Flexural modulus	MPa	4,500	DIN 53457
Flexural strength at +20°C	MPa	120	DIN 53452
Compressive strength	MPa	89	
Max. permissible surface pressure (+20°C)	MPa	100	
Shore D hardness		83	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+135	
Max. application temperature short-term	°C	+155	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.23	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	5	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹⁵	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

Table 01: Material properties

iglidur® Q plain bearings were developed especially for extreme loads. Under high loads, iglidur® Q figures among the iglidur® materials that display the best wear resistance. From a radial load of 25MPa, even plain bearings made from the abrasion-resistant iglidur® W300 are exceeded. Specific solid lubricants, precisely integrated into the material, ensure that the maintenance-free dry operation is guaranteed under any load.

Moisture absorption

The moisture absorption of iglidur® Q plain bearings in ambient conditions is approximately 0.9% weight. The saturation limit submerged in water is 4.9% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® Q bearings.

Radiation resistance

Plain bearings made from iglidur® Q are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

iglidur® Q plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® Q plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

iglidur® Q is a material used when high pv values are reached with high loads. Diagram 03 shows the elastic deformation of iglidur® Q at radial loads. At the maximum recommended surface pressure of 100MPa, the deformation is less than 3%.

Surface pressure, page 45



-40°C up to
+135°C



100MPa



HB



RoHS



ISO 35474

Permissible surface speeds

Under extreme radial loads, the iglidur® Q plain bearings can reach the maximum pv values which are possible during dry operation with plain bearings. Although iglidur® Q plain bearings have the greatest advantages under high loads and at low speeds, high surface speeds are also attainable due to the excellent coefficient of friction of these bearings. The given values in table 03 indicate the limits at which an increase up to the continuous permissible temperature occurs. This increase is a result of friction.

Surface speed, page 48

Temperature

Plain bearings made from iglidur® Q retain their excellent wear resistance even at high temperatures. For temperatures over +50°C an additional securing is required. It should also be noted that the coefficient of friction increases considerably at temperatures above approximately +100°C.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Many plastic bearings feature decreasing coefficient of friction with increasing pressure in dry operation. iglidur® Q goes further than most, under high pressures the material gives excellent low coefficient of friction (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® Q. The strengths offered by iglidur® heavy-duty materials become clear from 30MPa. iglidur® Q stands out in particular. Other heavy-duty materials such as iglidur® Q2 and TX1 only offer the best performances in terms of wear when subjected to even higher loads. iglidur® Q offers strikingly good wear properties on many different shaft materials.

Shaft materials, page 56

Installation tolerances

iglidur® Q plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 1.0	0.7	5.0
Short-term	m/s 2.0	1.4	6.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.05-0.15	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

\varnothing d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

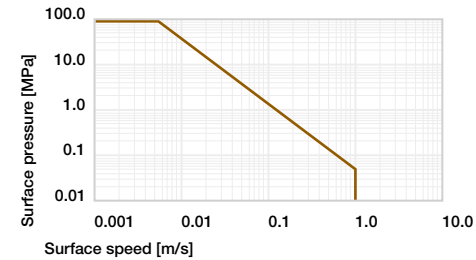


Diagram 01: Permissible pv values for iglidur® Q plain bearing with a wall thickness of 1 mm dry operation against a steel shaft at +20°C, mounted in a steel housing

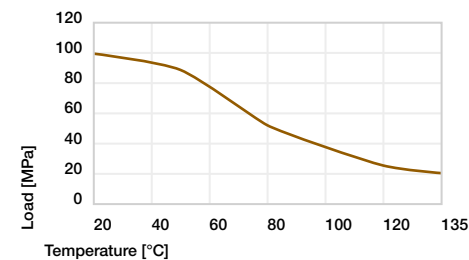


Diagram 02: Maximum recommended surface pressure as a function of temperature (100MPa at +20°C)

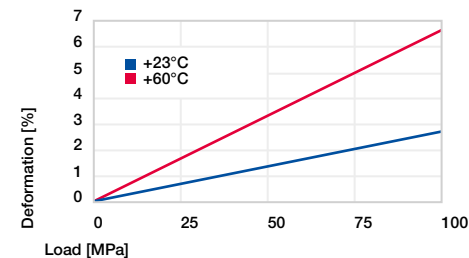


Diagram 03: Deformation under pressure and temperature

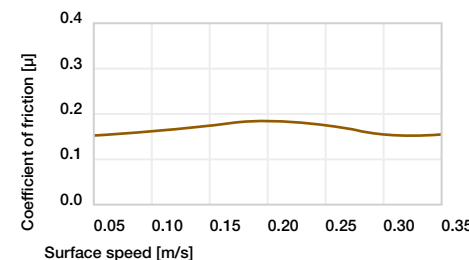


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

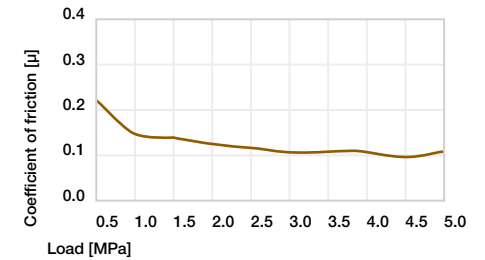


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

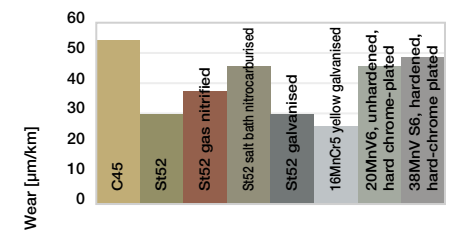


Diagram 06: wear, pivoting with different shaft materials, pressure p = 30MPa, v = 0.01m/s

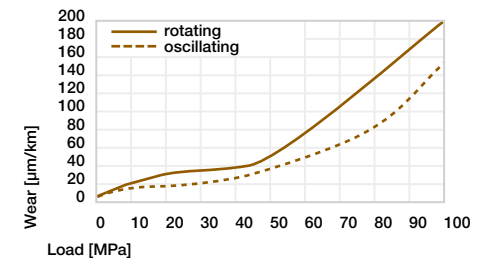
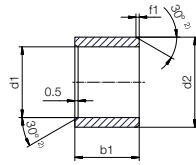


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® Q

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions



Order example: **QSM-0608-10** – no minimum order quantity.

Q iglidur® material **S** Cylindrical **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **10** Total length b1

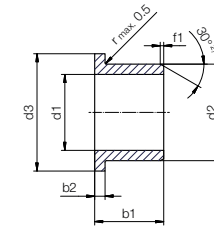
d1 [mm]	d1 Tolerance ³⁾	d2 [mm]	b1 [mm]	Part No.
6.0	+0.020	8.0	10.0	QSM-0608-10
8.0	+0.025	10.0	8.0	QSM-0810-08
10.0	+0.083	12.0	10.0	QSM-1012-10
12.0		14.0	10.0	QSM-1214-10
12.0		14.0	20.0	QSM-1214-20
16.0	+0.032	18.0	8.0	QSM-1618-08
16.0	+0.102	18.0	12.5	QSM-1618-12
16.0		18.0	20.0	QSM-1618-20
18.0		20.0	20.0	QSM-1820-20
20.0		22.0	15.0	QSM-2022-15
20.0		23.0	15.0	QSM-2023-15
20.0		23.0	20.0	QSM-2023-20
20.0		23.0	25.0	QSM-2023-25
20.0	+0.040	23.0	30.0	QSM-2023-30
25.0	+0.124	28.0	25.0	QSM-2528-25
25.0		28.0	48.0	QSM-2528-48
30.0		34.0	20.0	QSM-3034-20
30.0		34.0	35.0	QSM-3034-35
30.0		34.0	40.0	QSM-3034-40

³⁾ After press-fit. *Testing methods, page 61*

d1 [mm]	d1 Tolerance ³⁾	d2 [mm]	b1 [mm]	Part No.
35.0		39.0	15.0	QSM-3539-15
35.0		39.0	30.0	QSM-3539-30
35.0		39.0	35.0	QSM-3539-35
35.0		39.0	50.0	QSM-3539-50
40.0		44.0	30.0	QSM-4044-30
40.0	+0.050	44.0	40.0	QSM-4044-40
40.0	+0.150	44.0	47.0	QSM-4044-47
45.0		50.0	25.2	QSM-4550-252
45.0		50.0	50.0	QSM-4550-50
50.0		55.0	50.0	QSM-5055-50
50.0		55.0	60.0	QSM-5055-60
50.0		55.0	80.0	QSM-5055-80
55.0		60.0	50.0	QSM-5560-50
60.0		65.0	50.0	QSM-6065-50
65.0	+0.060	70.0	34.0	QSM-6570-34
70.0	+0.180	75.0	50.0	QSM-7075-50
75.0		80.0	40.0	QSM-7580-40
80.0		85.0	60.0	QSM-8085-60
90.0	+0.072	95.0	50.0	QSM-9095-50
	+0.212			

Bearing technology | Plain bearings | iglidur® Q

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions



Order example: **QFM-0608-03** – no minimum order quantity.

Q iglidur® material **F** With flange **M** Metric **06** Inner Ø d1 **08** Outer Ø d2 **03** Total length b1

d1 [mm]	d1 Tolerance ³⁾	d2 [mm]	d3 [mm]	b1 [mm]	b2 [mm]	Part No.
6.0		8.0	12.0	3.0	1.00	QFM-0608-03
6.0	+0.020	8.0	12.0	4.0	1.00	QFM-0608-04
6.0	+0.068	8.0	12.0	8.0	1.00	QFM-0608-08
8.0		10.0	15.0	5.5	1.00	QFM-0810-05
8.0		10.0	15.0	6.0	1.00	QFM-0810-06
10.0	+0.025	12.0	15.0	3.5	1.00	QFM-101215-035
10.0	+0.083	12.0	18.0	6.0	1.00	QFM-1012-06
10.0		12.0	15.0	8.0	1.00	QFM-101215-08
10.0		12.0	18.0	10.0	1.00	QFM-1012-10
12.0		14.0	20.0	8.0	1.00	QFM-1214-08
12.0		14.0	20.0	12.0	1.00	QFM-1214-12
12.0	+0.032	14.0	20.0	20.0	1.00	QFM-1214-20
14.0	+0.102	16.0	22.0	12.0	1.00	QFM-1416-12
16.0		18.0	24.0	17.0	1.00	QFM-1618-17

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/Q



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling

1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

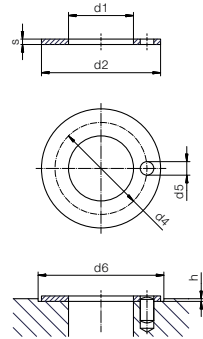
No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Bearing technology | Plain bearings | iglidur® Q

Thrust washer (form T)



i Dimensions according to ISO 3547-1 and special dimensions

? Order example: **QTM-2842-015** – no minimum order quantity.
Q iglidur® material T Thrust washer M Metric 28 Inner Ø d1 42 Outer Ø d2 015 Height s

d1	d2	d4	d5	h	d6	Øs	Part No.
+0.25	-0.25	-0.12 +0.12	+0.375 +0.125	+0.2/-0.2	+0.12	-0.05	
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	
28	42	35	4	1	42	1.5	QTM-2842-015
32	54	⁴⁾	4	1	54	1.5	QTM-3254-015

⁴⁾ Design without fixing hole

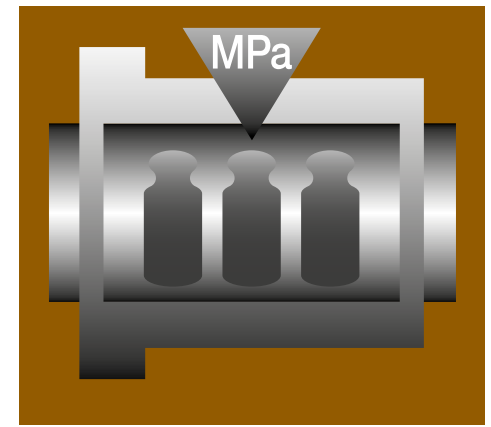
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🛒 Order online
including delivery times, prices, online tools
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🛒 Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.
No low-quantity surcharges.
Free shipping within Germany for orders above €150.



Heavy-duty on soft shafts

For medium to high loads, especially on soft shafts

iglidur® Q290



When to use it?

- When a long-lasting plain bearing is required for tough operating conditions (agricultural equipment, construction machinery, etc.) with medium to high dynamic loads on "soft" shafts



When not to use it?

- When permanent static loads higher than 55MPa occur
iglidur® G, iglidur® Q, iglidur® Q2
- When an very wear-resistant plain bearing is required on "soft" shafts for minor loads
iglidur® J, iglidur® J3
- When continuous operating temperatures are higher than +140°C
iglidur® J350, iglidur® Z

Bearing technology | Plain bearings | iglidur® Q290



Ø 20.0-80.0mm



Also available as:



Bar stock, round bar
Page 743



Bar stock, plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

Heavy-duty on soft shafts For medium to high loads, especially on soft shafts

iglidur® Q290 shows outstanding service life in tough pivoting applications, as they are frequently found in agricultural machinery, especially on "soft" coated shafts (e.g. galvanised). The wear on the shafts is minimal.

- Recommended for soft shafts
- Suitable for high edge pressures
- Temperature-resistant up to +140°C
- Good price-performance ratio
- Lubrication-free
- Maintenance-free

Typical application areas

- Agricultural engineering
- Utility and construction vehicles

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 100%; height: 10px; background-color: #8B4513;"></div>	+
Wear resistance at +90°C	-	<div style="width: 80%; height: 10px; background-color: #8B4513;"></div>	+
Wear resistance at +150°C	-	<div style="width: 60%; height: 10px; background-color: #8B4513;"></div>	+
Slide property	-	<div style="width: 100%; height: 10px; background-color: #8B4513;"></div>	+
Wear resistance under water	-	<div style="width: 10%; height: 10px; background-color: #8B4513;"></div>	+
Media resistance	-	<div style="width: 80%; height: 10px; background-color: #8B4513;"></div>	+
Resistant to edge pressures	-	<div style="width: 100%; height: 10px; background-color: #8B4513;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 100%; height: 10px; background-color: #8B4513;"></div>	+
Dirt resistance	-	<div style="width: 100%; height: 10px; background-color: #8B4513;"></div>	+

Online product finder
www.igus.eu/iglidur-finder

Online service life calculation
www.igus.eu/iglidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.27	
Colour		black	
Max. moisture absorption at +23°C/50% r.h.	% weight	3	DIN 53495
Max. moisture absorption	% weight	9.3	
Coefficient of friction, dynamic, against steel	μ	0.14-0.26	
pv value, max. (dry)	MPa · m/s	0.70	
Mechanical properties			
Flexural modulus	MPa	3,074	DIN 53457
Flexural strength at +20°C	MPa	97	DIN 53452
Compressive strength	MPa	68	
Max. permissible surface pressure (+20°C)	MPa	55	
Shore D hardness		80	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+140	
Max. application temperature short-term	°C	+180	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	7	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

Table 01: Material properties

iglidur® Q290 plain bearings do not have the highest static load capacity within the iglidur® product range, instead the material shows its strengths at medium to high dynamic loads: outstanding service life is achieved for tough pivoting applications, e.g. in agricultural or construction machinery, and especially on "soft" shafts, for both the shafts and bearings!

Moisture absorption

The humidity absorption of iglidur® Q290 bearings amounts to about 0.3% weight in standard climatic conditions. The saturation limit submerged in water is 9.3% weight.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® Q290 are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

iglidur® Q290 plain bearings are resistant to weathering. The material properties are significantly affected. Severe discolouration occurs. Applications with this material under weathering conditions are not recommended.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® Q290 plain bearings decreases. Diagram 02 shows this inverse relationship. At the short-term permitted application temperature of +180°C, the permitted surface pressure is still 10MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® Q290 under different loads. These high elastic deformation values, even for loads of more than 50MPa, contribute significantly to the long service life under tough environmental conditions such as edge loads, collisions and impacts.

Surface pressure, page 45



-40°C up to +140°C



55MPa



HB



Permissible surface speeds

Typical applications for iglidur® Q290 plain bearings are pivoting movements under medium to high loads at comparatively low speeds. However, relatively high speeds are still attainable. The speeds shown in table 03 are threshold values for low bearing loads. They do not provide any indication of the wear resistance under these parameters.

Surface speed, page 48

Temperature

The long-term upper temperature limit of +140°C permits the broad use in applications typical for the agricultural, utility vehicle or construction equipment sectors. For temperatures over +80°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Please note that a sliding surface with a rough surface finish will increase the friction. The coefficient of friction of iglidur® Q290 increases as the speed increases (diagram 04). In contrast, the coefficient of friction drops continually with the radial load, as illustrated by diagram 05.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Generally, the use of hardened shafts is recommended for higher loads starting at approximately 10MPa. This is, however, often not the case in practice, especially in connection with corrosion-resistant coating methods. Thus, the iglidur® Q290 material has a lot of importance in such applications. Diagram 08 shows this very clearly in connection with galvanised shafts. The special suitability for pivoting applications is shown in diagram 07.

Shaft materials, page 56

Installation tolerances

iglidur® Q290 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	+ up to 0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 0.8	0.6	1.0
Short-term	m/s 2.0	1.4	2.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.14-0.26	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

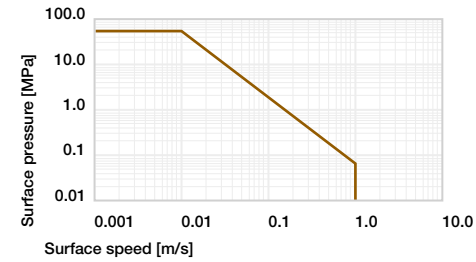


Diagram 01: Permissible pv values for iglidur® Q290 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

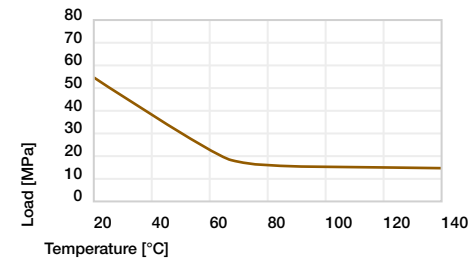


Diagram 02: Maximum recommended surface pressure as a function of temperature (55MPa at +20°C)

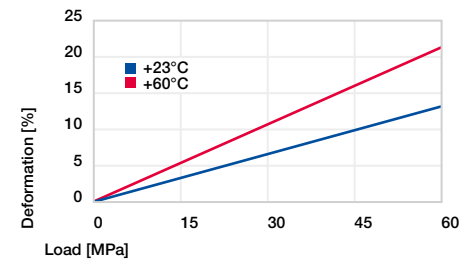


Diagram 03: Deformation under pressure and temperature

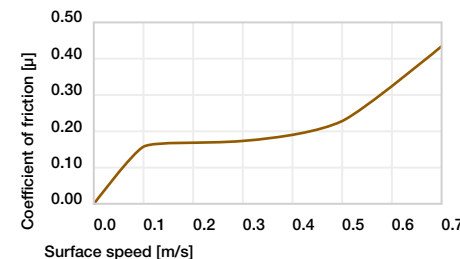


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

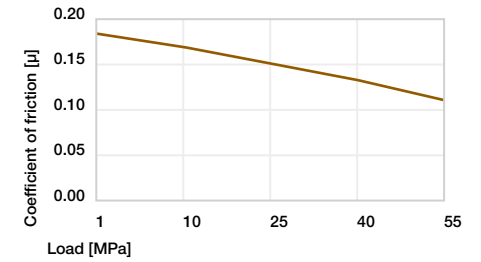


Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s against Cf53

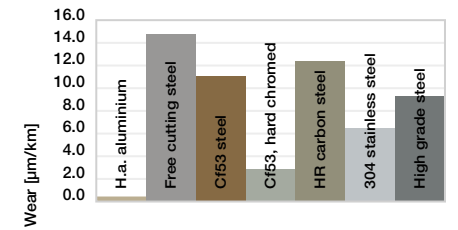


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

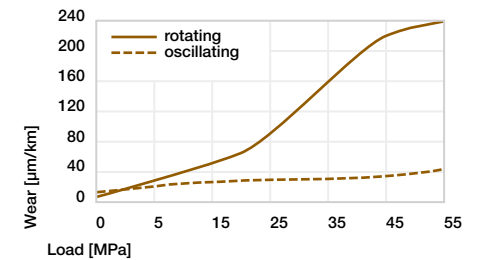


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

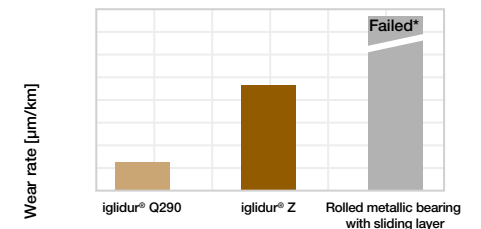
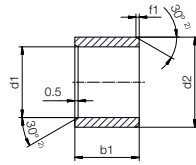


Diagram 08: Wear, pivoting applications on galvanised shafts, p > 50MPa, v = 0.01m/s

* Shaft St52 galvanised. Cycle frequency 60,000. Tested with bearing diameter 20mm and 20mm length. The force in the test was 30,400N

Bearing technology | Plain bearings | iglidur® Q290

Sleeve bearings (form S)



^{a)} Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 12-30	Ø > 30
f1 [mm]	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions

i Order example: **Q290SM-2023-20** – no minimum order quantity.
Q290 iglidur® material **S** Cylindrical **M** Metric **20** Inner Ø d1 **23** Outer Ø d2 **20** Total length b1

d1 [mm]	d1 Tolerance ^{a)}	d2 [mm]	b1 h13 [mm]	Part No.
20.0		23.0	20.0	Q290SM-2023-20
25.0	+0.040 +0.124	28.0	30.0	Q290SM-2528-30
30.0		34.0	30.0	Q290SM-3034-30
30.0		34.0	40.0	Q290SM-3034-40
35.0	+0.050 +0.150	39.0	30.0	Q290SM-3539-30
35.0		39.0	40.0	Q290SM-3539-40
35.0		39.0	50.0	Q290SM-3539-50
40.0	+0.060 +0.180	44.0	40.0	Q290SM-4044-40
50.0		55.0	50.0	Q290SM-5055-50
60.0		65.0	60.0	Q290SM-6065-60
65.0	+0.060 +0.180	70.0	60.0	Q290SM-6570-60
70.0		75.0	60.0	Q290SM-7075-60
80.0		85.0	100.0	Q290SM-8085-100

^{a)} After press-fit. Testing methods, page 61

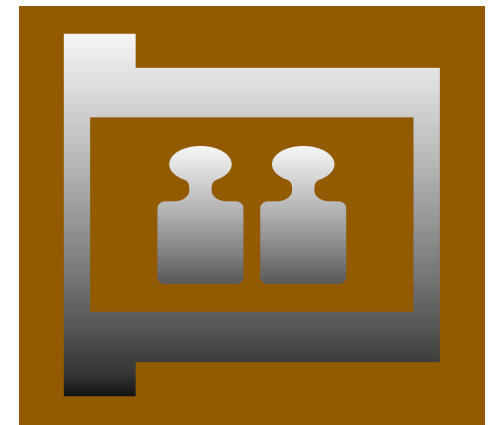
i Available from stock
Detailed information about delivery time online.
www.igus.eu/24

i Order online
including delivery times, prices, online tools
www.igus.eu/Q290

i Ordering note
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.
No low-quantity surcharges.
Free shipping within Germany for orders above €150.



For medium-sized loads

Low coefficient of friction and wear on almost every shaft

iglidur® M210



When to use it?

- When a universal plain bearing for use in a wet environment is required
- When a wear-resistant plain bearing for pivoting applications at medium loads is required
- When edge loads and shocks occur
- When the surface pressure of iglidur® J is insufficient



When not to use it?

- When a universal plain bearing with the largest possible range of dimensions is required
iglidur® G
- When a plain bearing for highly loaded pivoting applications is required
iglidur® Q, iglidur® Q2
- When temperatures are higher than +100°C
iglidur® G, iglidur® J350

Bearing technology | Plain bearings | iglidur® M210



Ø
20.0-60.0mm



Also available as:



Bar stock, round bar
Page 743

For medium-sized loads Low coefficient of friction and wear on almost every shaft

iglidur® M210 was specifically developed for the application for medium pivoting loads. Special attention was paid during development to ensure the material can be used for injection-moulded thick-walled bearings. Therefore iglidur® M210 is well-suited for applications in which thick-walled bearings are used or replaced, which are at the same robust.

- Good wear resistance at room temperature
- Excellent friction coefficients
- Low moisture absorption
- Extremely resistant to edge pressure
- Resistant to shocks and impact
- Resistant to dirt and dust
- Fogging behaviour according to DIN 75201-B



Bar stock, plate
Page 773



tribo-tape liner
Page 781

Typical application areas

- Agricultural engineering
- Mechanical engineering
- Furniture / Industrial design
- Textile industry



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 80%; background-color: #8B4513;"></div>	+
Wear resistance at +90°C	-	<div style="width: 70%; background-color: #8B4513;"></div>	+
Wear resistance at +150°C	-	<div style="width: 60%; background-color: #8B4513;"></div>	+
Slide property	-	<div style="width: 90%; background-color: #8B4513;"></div>	+
Wear resistance under water	-	<div style="width: 85%; background-color: #8B4513;"></div>	+
Media resistance	-	<div style="width: 80%; background-color: #8B4513;"></div>	+
Resistant to edge pressures	-	<div style="width: 95%; background-color: #8B4513;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 95%; background-color: #8B4513;"></div>	+
Dirt resistance	-	<div style="width: 90%; background-color: #8B4513;"></div>	+

igubal® spherical balls
Page 993

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

EN 06/2023



EN 06/2023



Lubrication-free made easy ... from stock ... no minimum order quantity 507

Technical data

General properties		Testing method	
Density	g/cm ³	1.40	
Colour		black	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.3	DIN 53495
Max. moisture absorption	% weight	0.5	
Coefficient of friction, dynamic, against steel	μ	0.08-0.20	
pv value, max. (dry)	MPa · m/s	0.5	
Mechanical properties			
Flexural modulus	MPa	2,200	DIN 53457
Flexural strength at +20°C	MPa	65	DIN 53452
Compressive strength	MPa	50	
Max. permissible surface pressure (+20°C)	MPa	50	
Shore D hardness		75	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+100	
Max. application temperature short-term	°C	+160	
Min. application temperature	°C	up to -40	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	8	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	n.s.	
Surface resistance	Ω	> 10 ¹¹	DIN 53482

Table 01: Material properties

iglidur® M210 plain bearings provide the user with versatile all-round bearings, which have proven to have above average service life, primarily in pivoting applications at medium loads of up to 20MPa.

Moisture absorption

The humidity absorption of iglidur® M210 bearings amounts to about 0.3 % weight in standard climatic conditions. The saturation limit submerged in water is 0.5% weight. This low moisture absorption is well below the values of iglidur® G.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® M210 have limited use under radioactive radiation. They are resistant up to a radiation intensity of 3 - 10² Gy.

Resistance to weathering

iglidur® M210 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® M210 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® M210 as a function of radial pressure. At the recommended maximum surface pressure of 50MPa the deformation is less than 3% at room temperature.

Surface pressure, page 45



-40°C up to +100°C



50MPa



HB



RoHS



ISO 2795

Permissible surface speeds

Plain bearings made from iglidur® M210 are maintenance-free, they are developed for low to medium surface speeds. The maximum values given in table 03 can only be achieved at a very low surface pressure. The maximum speed given is the speed at which an increase up to the continuous use temperature occurs due to friction.

Surface speed, page 48

Temperature

Also thanks to its maximum long-term application temperature of +100°C, iglidur® M210 is suitable for a wide range of applications. If even higher temperatures are required, iglidur® G is also available with a max. long-term application temperature of +130°C. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. For temperatures over +50°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® M210. For rotational movements at radial loads below 1MPa, iglidur® M210 has generally very low wear. Wear is only significantly higher in combination with HR carbon steel shafts. Generally, rotational wear will be higher than for a pivoting application of equal load. This is only reversed at loads above 25MPa (diagram 07).

Shaft materials, page 56

Installation tolerances

iglidur® M210 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the D11 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	0
Diluted alkalines	-
Fuels	+
Greases, oils without additives	+
Hydrocarbons	-
Strong acids	-
Strong alkalines	-

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	1.5	0.7	8.0
Short-term m/s	2.0	1.4	4.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.08-0.20	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	D11 [mm]	H7 [mm]	D11 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.020	+0.080	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.030	+0.105	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.040	+0.130	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.050	+0.160	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.065	+0.195	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.080	+0.240	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.100	+0.290	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.120	+0.340	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.145	+0.395	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 2795 after press-fit

Technical data

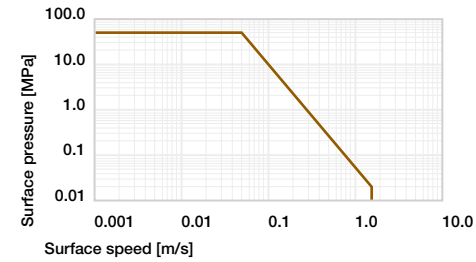


Diagram 01: Permissible pv values for iglidur® M210 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

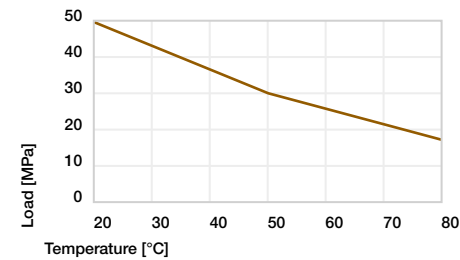


Diagram 02: Maximum recommended surface pressure as a function of temperature (50MPa at +20°C)

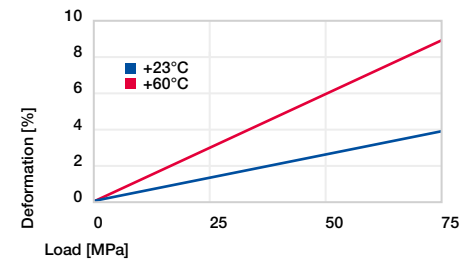


Diagram 03: Deformation under pressure and temperature

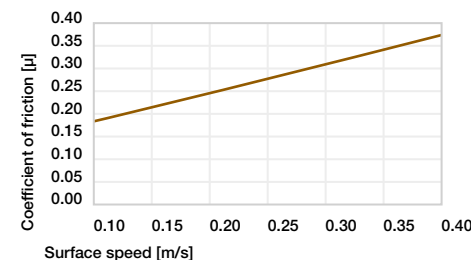


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1 MPa

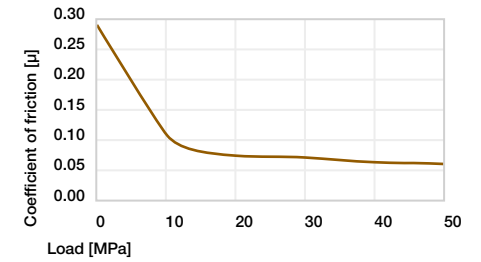


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

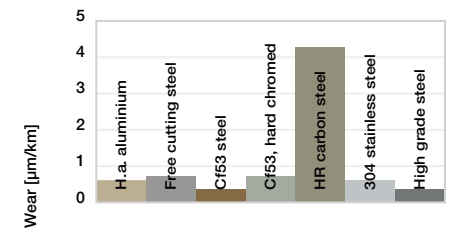


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

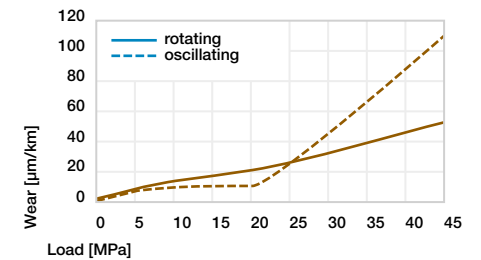
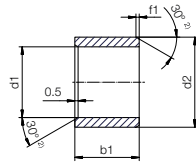


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® M210

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 2795 and special dimensions



Order example: **M210SM-2024-25** - no minimum order quantity.

M210 iglidur® material **S** Cylindrical **M** Metric **20** Inner Ø d1 **24** Outer Ø d2 **25** Total length b1

d1 [mm]	d1 Tolerance ³⁾	d2 [mm]	b1 h13 [mm]	Part No.
20.0	+0.040 +0.124	24.0	25.0	M210SM-2024-25
20.0	+0.040 +0.124	28.0	20.0	M210SM-2028-20
30.0	+0.040 +0.124	36.0	30.0	M210SM-3036-30
40.0	+0.050 +0.150	50.0	40.0	M210SM-4050-40
60.0	+0.060 +0.180	70.0	60.0	M210SM-6070-60

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/M210



Ordering note

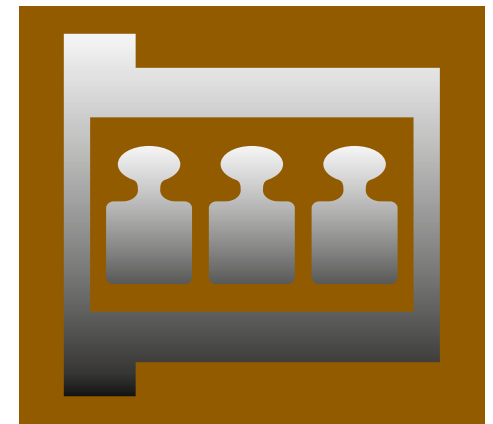
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.



For heavy duty Wear-resistant at medium temperatures and loads iglidur® M260



When to use it?

- When polymer shafts are used
- When the temperature rating of iglidur® J is not sufficient
- When a plain bearing with low coefficient of friction is required
- When high wear resistance is required at medium loads
- When good liquid media resistance is required



When not to use it?

- When high surface pressures occur
iglidur® Z
- When permanent temperatures exceed +120°C
iglidur® J350
- When universal wear resistance is required
iglidur® J

Bearing technology | Plain bearings | iglidur® M260



Ø
20.0-60.0mm



Also available as:



Bar stock, round bar
Page 743



Bar stock, plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

For heavy duty Wear-resistant at medium temperatures and loads

iglidur® M260 was specially developed for the application in harsh environments. Special attention was paid during development to ensure the material can be used for injection-moulded thick-walled bearings. Therefore iglidur® M260 is well-suited for applications in which thick-walled bearings are used or replaced, which are at the same robust.

- Excellent coefficient of friction
- Low moisture absorption

Typical application areas

- Automation
- Plant construction
- Test engineering and quality assurance
- Robotics industry
- Electronics industry

Descriptive technical specifications

Wear resistance at +23°C	-		+
Wear resistance at +90°C	-		+
Wear resistance at +150°C	-		+
Slide property	-		+
Wear resistance under water	-		+
Media resistance	-		+
Resistant to edge pressures	-		+
Resistant to shock and impact loads	-		+
Dirt resistance	-		+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert



EN 06/2023

Technical data

General properties		Testing method	
Density	g/cm ³	1.35	
Colour		black	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	0.4	
Coefficient of friction, dynamic, against steel	μ	0.08-0.16	
pv value, max. (dry)	MPa · m/s	0.35	
Mechanical properties			
Flexural modulus	MPa	2,200	DIN 53457
Flexural strength at +20°C	MPa	60	DIN 53452
Compressive strength	MPa	50	
Max. permissible surface pressure (+20°C)	MPa	40	
Shore D hardness		77	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+120	
Max. application temperature short-term	°C	+140	
Min. application temperature	°C	up to -100	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	13	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	n.s.	
Surface resistance	Ω	> 10 ¹⁰	DIN 53482

Table 01: Material properties

Similar to the classic, iglidur® J, iglidur® M260 is an endurance runner with outstanding wear behaviour, but provides increased reserves at its long-term application temperature of +120°C.

Moisture absorption

The moisture absorption of iglidur® M260 plain bearings in ambient conditions is approximately 0.2% weight. The saturation limit submerged in water is 0.4% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® M260 bearings.

Radiation resistance

They are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

iglidur® M260 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® M260 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® M260 as a function of radial pressure. At the recommended maximum surface pressure of 40MPa the deformation is less than 2.5% at room temperature. A possible deformation could be, among others, dependant on the duty cycle of the load.

Surface pressure, page 45



-100°C to
+120°C



40MPa



Permissible surface speeds

iglidur® M260 has been developed for low to medium surface speeds. The maximum values shown in table O3 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

The temperatures prevailing in the bearing system also have an influence on the wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +80°C. For temperatures over +80°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the load. The coefficient of friction decreases considerably with increasing loads, whereas a slight increase in surface speed causes an increase of the coefficient of friction (Diagram O4 and O5).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. For iglidur® M260 a ground surface with an average surface finish $R_a = 0.8\mu\text{m}$ is recommended. Diagram O6 shows a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® M260. It is important to notice that with increasing loads, the recommended hardness of the shaft increases. The "soft" shafts tend to wear more easily and thus increase the wear of the overall system, if the loads exceed 2MPa. The comparison of rotating and pivoting movements in diagram O7 makes it very clear that iglidur® M260 plain bearings are most suited for rotating operation.

Shaft materials, page 56

Installation tolerances

iglidur® M260 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the D11 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	-
Diluted alkalines	+ up to 0
Fuels	-
Greases, oils without additives	0 up to -
Hydrocarbons	+
Strong acids	-
Strong alkalines	+ up to 0

All data given at room temperature [+20°C]

Table O2: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	1.5	0.7	8.0
Short-term m/s	2.0	1.4	4.0

Table O3: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.08-0.16	0.09	0.04	0.04

Table O4: Coefficient of friction against steel ($R_a = 1\mu\text{m}$, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	D11 [mm]	D11 [mm]	h9 [mm]		
0-3	+0.000	+0.010	+0.020	+0.080	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.030	+0.105	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.040	+0.130	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.050	+0.160	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.065	+0.195	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.080	+0.240	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.100	+0.290	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.120	+0.340	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.145	+0.395	-0.100	+0.000

Table O5: Important tolerances for plain bearings according to ISO 2795 after press-fit

Technical data

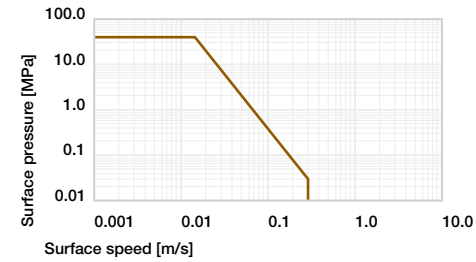


Diagram O1: Permissible pv values for iglidur® M260 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

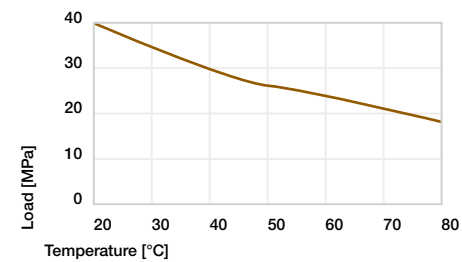


Diagram O2: Maximum recommended surface pressure as a function of temperature (40MPa at +20°C)

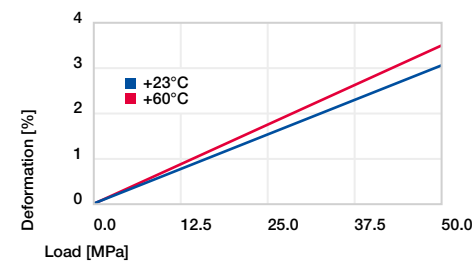


Diagram O3: Deformation under pressure and temperature

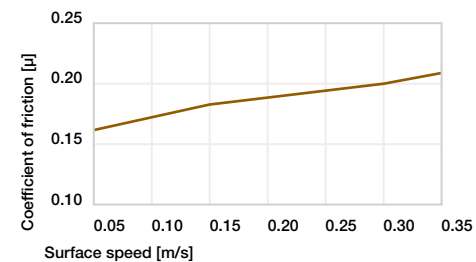


Diagram O4: Coefficient of friction as a function of the surface speed, $p = 0.75\text{MPa}$

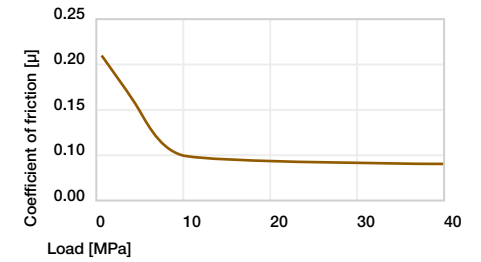


Diagram O5: Coefficient of friction as a function of the pressure, $v = 0.01\text{m/s}$

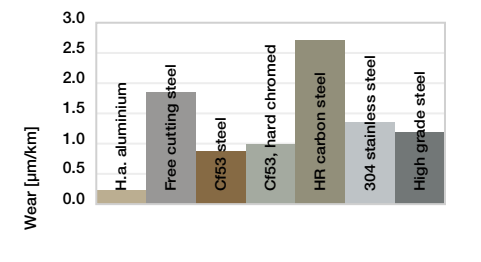


Diagram O6: Wear, rotating with different shaft materials, pressure, $p = 1\text{MPa}$, $v = 0.3\text{m/s}$

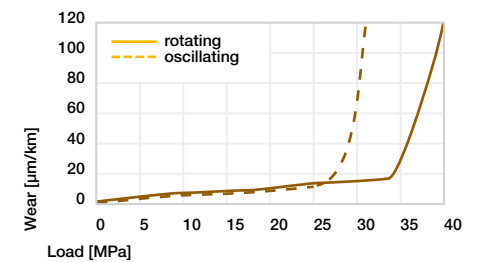
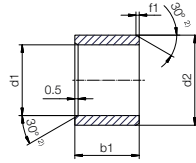


Diagram O7: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® M260

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8

i Dimensions according to ISO 2795 and special dimensions



Order example: M260SM-2024-25 - no minimum order quantity.

M260 iglidur® material **S** Cylindrical **M** Metric **20** Inner Ø d1 **24** Outer Ø d2 **25** Total length b1

d1 [mm]	d1 Tolerance ³⁾	d2 [mm]	b1 h13 [mm]	Part No.
20.0	+0.040 +0.124	24.0	25.0	M260SM-2024-25
20.0	+0.040 +0.124	28.0	20.0	M260SM-2028-20
30.0	+0.040 +0.124	36.0	30.0	M260SM-3036-30
40.0	+0.050 +0.150	50.0	40.0	M260SM-4050-40
60.0	+0.060 +0.180	70.0	60.0	M260SM-6070-60

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/M260



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.



Plain bearing materials for heavy-duty applications

Plain bearing materials for heavy-duty applications

The igutex® plain bearings for high load combine high wear resistance with the ability to withstand high (static) loads, shocks and edge loads.

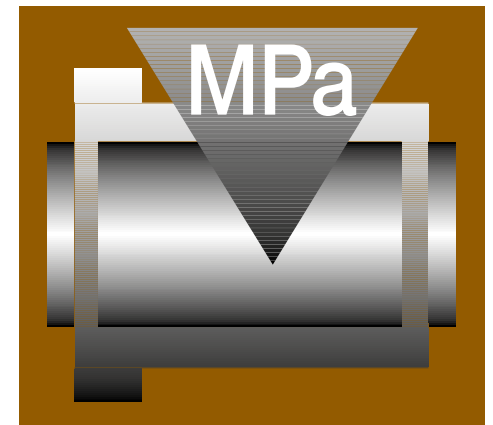
For special mechanical strength, igutex® bearings are woven from fibre composites enabling even higher strength than fibre-reinforced injection-moulded bearings made of thermoplastics.



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Online service life calculation
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igutex® TX1
The robust all-rounder

Temperature [°C] ¹²³⁾	+120	-	■	■	■	■	■	■	+
Surface pressure [MPa] ¹²⁴⁾	200	-	■	■	■	■	■	■	+
Coefficient of friction [μ] ¹²⁵⁾	0.37	-	■	■	■	■	■	■	+
Wear [μm/km] ¹²⁵⁾	7.10	-	■	■	■	■	■	■	+
Price index	-	-	■	■	■	■	■	■	+



igutex® TX2
The technical shafts specialist

Temperature [°C] ¹²³⁾	+130	-	■	■	■	■	■	■	+
Surface pressure [MPa] ¹²⁴⁾	180	-	■	■	■	■	■	■	+
Coefficient of friction [μ] ¹²⁵⁾	0.31	-	■	■	■	■	■	■	+
Wear [μm/km] ¹²⁵⁾	5.80	-	■	■	■	■	■	■	+
Price index	-	-	■	■	■	■	■	■	+



igutex® TX3
The endurance runner for the highest loads

Temperature [°C] ¹²³⁾	+130	-	■	■	■	■	■	■	+
Surface pressure [MPa] ¹²⁴⁾	180	-	■	■	■	■	■	■	+
Coefficient of friction [μ] ¹²⁵⁾	0.28	-	■	■	■	■	■	■	+
Wear [μm/km] ¹²⁵⁾	2.00	-	■	■	■	■	■	■	+
Price index	-	-	■	■	■	■	■	■	+

The robust all-rounder

For pivoting applications under extreme loads

igutex® TX1



When to use it?

- When very high permanent static loads occur
- For highly loaded pivoting movements
- When not only high loads but also high temperatures and media resistance are required



When not to use it?

- When loads of far less than 75MPa occur
iglidur® G, iglidur® Q2, iglidur® Q
- For rotational movements during continuous operation
iglidur® W300, iglidur® Z, iglidur® G
- For high-temperature applications with average load levels
iglidur® X, iglidur® J350, iglidur® H

¹²³⁾ Upper long-term application temperature ¹²⁴⁾ Max. recommended surface pressure at +20°C ¹²⁵⁾ Best pairing for p = 1 MPa, v = 0.3m/s, rotating

Bearing technology | Plain bearings | igutex® TX1



Ø 20.0-80.0mm



Also available as:



Bar stock, round bar
Page 743



Bar stock, plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

The robust all-rounder For pivoting applications under extreme loads

Outstanding rigidity and durability especially under high radial loads during pivoting operations characterise the plain bearings in the new igutex® TX1 series. Thanks to the closed-loop wound structure, excellent dimensional stability is achieved in cases of major forces and impacts.

- Suitable for static loads up to 200MPa
- Wear-resistant
- High media resistance
- Lubrication-free
- Suitable for dynamic loads up to 140MPa
- Maintenance-free
- High rigidity

Typical application areas

- Agricultural engineering
- Utility and construction vehicles
- Heavy equipments

Online product finder
www.igus.eu/iglidur-finder

Online service life calculation
www.igus.eu/iglidur-expert



EN 06/2023

Technical data

General properties		Testing method	
Density	g/cm³	2.10	
Colour		grey-green	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	0.5	
Mechanical properties			
Max. permissible surface pressure (+20°C)	MPa	200	
Shore D hardness		94	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+120	
Max. application temperature short-term	°C	+170	
Min. application temperature	°C	-60	
Electrical properties			
Specific transitional resistance	Ωcm	> 1 x 10 ¹¹	DIN IEC 93
Surface resistance	Ω	> 1 x 10 ¹³	DIN 53482

Table 01: Material properties

igutex® TX1 plain bearings represent very high load capacity with high radial loads and good abrasion resistance. The special design not only ensures excellent dimensional stability due to the long-fibre winding but also allows lubrication and maintenance-free operation thanks to solid lubricants. Dirt and media resistance round off the list of properties.

Permissible surface speeds

Typical applications for igutex® TX1 plain bearings are pivoting movements under high loads at comparatively low speeds.

Table 03

Temperature

igutex® TX1 is an extremely temperature-resistant material. The long-term upper temperature limit of +120°C permits the broad use in applications typical for the agricultural, utility vehicle or construction equipment sectors. The press-in and press-out forces of igutex® TX1 plain bearings are very high over the entire temperature range. As a result, additional axial securing is usually not necessary. Although these forces remain very high, a certain decrease can be observed at temperatures above +100°C and, in some cases axial securing is therefore recommended above this temperature.

Friction and wear

Please note that a sliding surface with a rough surface finish will increase the friction. Shafts that are too smooth also increase the coefficient of friction of the bearing. Surface finishes (Ra) of the shaft between 0.4-0.7µm are ideal. Furthermore, the coefficient of friction of igutex® TX1 plain bearings largely depends on the speed and load. As the surface speed increases, the coefficient of friction will quickly increase as well. With increasing load, the coefficient of friction however decreases continuously.

Shaft materials

In high load applications, we generally recommend the use of hardened shafts. This particularly applies when using igutex® TX1. However, acceptable wear rates are also achieved on soft shafts with heavy-duty pivoting of less than 100MPa.

Shaft materials, page 56

Installation tolerances

igutex® TX1 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance.



-60°C up to +120°C



200MPa



Chemicals	Resistance
Alcohols	0
Diluted acids	+
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	-

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

		Rotating	Oscillating
Long-term	m/s	0.4	0.2
Short-term	m/s	0.9	0.5

Table 03: Maximum surface speeds

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	H7 [mm]	[mm]	[mm]	h9 [mm]	h9 [mm]
20-40	+0.000	+0.021	+0.020	+0.150	-0.052	+0.000
> 40-70	+0.000	+0.025	+0.025	+0.175	-0.062	+0.000
> 70-80	+0.000	+0.030	+0.050	+0.200	-0.074	+0.000

Table 04: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Hardness*	Roughness
> 55hrc	Ra 0.2 - 1.4µ

* Lower hardness can reduce the service life

Table 05: Hardness and roughness

Technical data

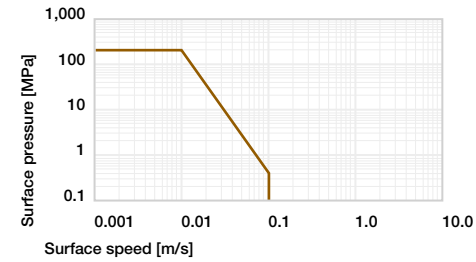


Diagram 01: Permissible pv values for igutex® TX1 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

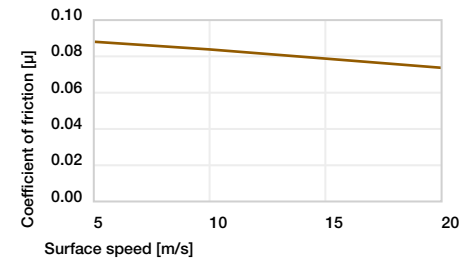


Diagram 02: Coefficient of friction as a function of the surface speed, p = 1MPa

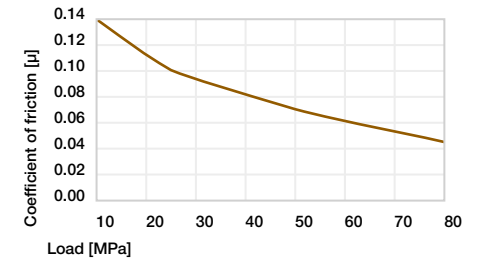


Diagram 03: Coefficient of friction as a function of the pressure, v = 0.01m/s

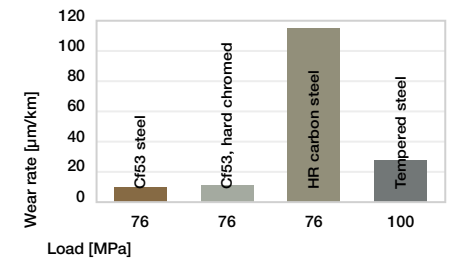


Diagram 04: Wear, rotating with different shaft materials, pressure, v = 0.01m/s

Bearing technology | Plain bearings | igutex® TX1

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 12 – 30	Ø >30
f1 [mm]	0.8	1.2

i Dimensions according to ISO 2795 and special dimensions



Order example: **TX1SM-2025-20** – no minimum order quantity.

TX1 igutex® material **S** Cylindrical **M** Metric **20** Inner Ø d1 **25** Outer Ø d2 **20** Total length b1

d1	d1 Tolerance ³⁸⁾	d2	b1 h13	Part No.
[mm]		[mm]	[mm]	
20.0		25.0	20.0	TX1SM-2025-20
20.0		25.0	30.0	TX1SM-2025-30
20.0		25.0	40.0	TX1SM-2025-40
20.0		30.0	30.0	TX1SM-2030-30
25.0		30.0	20.0	TX1SM-2530-20
25.0	+0.020 +0.150	30.0	30.0	TX1SM-2530-30
25.0		30.0	40.0	TX1SM-2530-40
30.0		35.0	30.0	TX1SM-3035-30
30.0		35.0	40.0	TX1SM-3035-40
30.0		40.0	40.0	TX1SM-3040-40
40.0		45.0	40.0	TX1SM-4045-40
40.0		50.0	50.0	TX1SM-4050-50
50.0		55.0	50.0	TX1SM-5055-50
50.0	+0.025 +0.175	60.0	60.0	TX1SM-5060-60
60.0		65.0	60.0	TX1SM-6065-60
60.0		70.0	80.0	TX1SM-6070-80
70.0		75.0	60.0	TX1SM-7075-60
70.0		80.0	100.0	TX1SM-7080-100
80.0	+0.050 +0.200	85.0	100.0	TX1SM-8085-100
80.0		90.0	100.0	TX1SM-8090-100

³⁸⁾ After press-fit of the bearing in a housing with nominal dimension



The technical shafts specialist Wear-resistant under extreme loads igutex® TX2



When to use it?

- When very high permanent static loads occur
- For highly loaded pivoting movements
- When not only high loads but also high temperatures and media resistance are required



When not to use it?

- When loads of far less than 75MPa occur
iglidur® G, iglidur® Q2, iglidur® Q
- For rotational movements during continuous operation
iglidur® W300, iglidur® Z, iglidur® G
- For high-temperature applications with average load levels
iglidur® X, iglidur® J350, iglidur® H

Bearing technology | Plain bearings | igutex® TX2



Ø 20.0-80.0mm



Also available as:



Bar stock, round bar
Page 743



Bar stock, plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

The technical shafts specialist Wear-resistant under extreme loads

The new igutex® TX2 bearings were developed for use in particularly heavily loaded applications. The high-strength, wound structure with integrated solid lubricants ensures low-friction and maintenance-free operation - without any external lubrication.

- Particularly low wear in heavy-duty areas
- Up to three and a half times the wear resistance of igutex® TX1
- Good coefficient of wear and therefore a long service life

Typical application areas

- Agricultural engineering
- Utility and construction vehicles
- Heavy equipments

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Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties			Testing method
Density	g/cm ³	1.77	
Colour sliding layer		black	
Colour supporting layer		reddish brown	
Max. moisture absorption at +23°C/50% r.h.	% weight	1.0	DIN 53495
Max. moisture absorption	% weight	1.3	
Mechanical properties			
Max. permissible surface pressure (+20°C)	MPa	180	
Shore D hardness		91	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+130	
Max. application temperature short-term	°C	+140	
Min. application temperature	°C	-60	
Electrical properties			
Specific transitional resistance	Ωcm	insulating	DIN IEC 93
Surface resistance	Ω	insulating	DIN 53482

Table 01: Material properties

igutex® TX2 plain bearings represent very high load capacity with high radial loads and good abrasion resistance. The special design not only ensures excellent dimensional stability due to the long-fibre winding but also allows lubrication and maintenance-free operation thanks to solid lubricants. Dirt and media resistance round off the list of properties.

Permissible surface speeds

Typical applications for igutex® TX2 plain bearings are pivoting movements under high loads at comparatively low speeds.

Table 03

Temperature

igutex® TX2 is an extremely temperature-resistant material. The long-term upper temperature limit of +130°C permits the broad use in applications typical for the agricultural, utility vehicle or construction equipment sectors. The press-in and press-out forces of igutex® TX2 plain bearings are very high over the entire temperature range. As a result, additional axial securing is usually not necessary. Although these forces remain very high, a certain decrease can be observed at temperatures above +100°C and, in some cases axial securing is therefore recommended above this temperature.

Friction and wear

Please note that a sliding surface with a rough surface finish will increase the friction. Shafts that are too smooth also increase the coefficient of friction of the bearing. Surface finishes (Ra) of the shaft between 0.4-0.7µm are ideal. Furthermore, the coefficient of friction of igutex® TX2 plain bearings largely depends on the speed and load. As the surface speed increases, the coefficient of friction will quickly increase as well. With increasing load, the coefficient of friction however decreases continuously.

Shaft materials

In high load applications, we generally recommend the use of hardened shafts. This particularly applies when using igutex® TX2. However, acceptable wear rates are also achieved on soft shafts with heavy-duty pivoting of less than 100MPa.

Shaft materials, page 56

Installation tolerances

igutex® TX2 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance.



-60°C up to +130°C



180MPa



Chemicals	Resistance
Alcohols	0
Diluted acids	+
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	-

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

		Rotating	Oscillating
Long-term	m/s	0.7	0.4
Short-term	m/s	1.0	0.7

Table 03: Maximum surface speeds

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	H7 [mm]	[mm]	[mm]	h9 [mm]	h9 [mm]
20-40	+0.000	+0.021	+0.020	+0.150	-0.052	+0.000
> 40-70	+0.000	+0.025	+0.025	+0.175	-0.062	+0.000
> 70-80	+0.000	+0.030	+0.050	+0.200	-0.074	+0.000

Table 04: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Hardness*	Roughness
> 55hrc	Ra 0.2 - 1.0µ

* Lower hardness can reduce the service life

Table 05: Hardness and roughness

Technical data

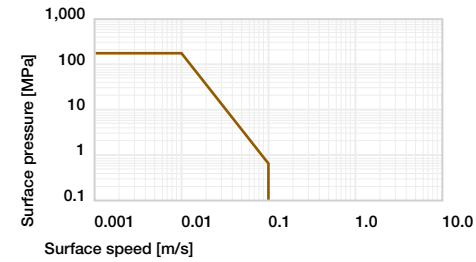


Diagram 01: Permissible pv values for igutex® TX2 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

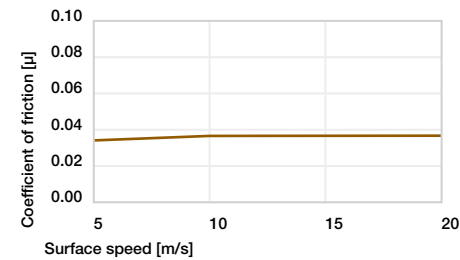


Diagram 02: Coefficient of friction as a function of the surface speed, p = 1MPa

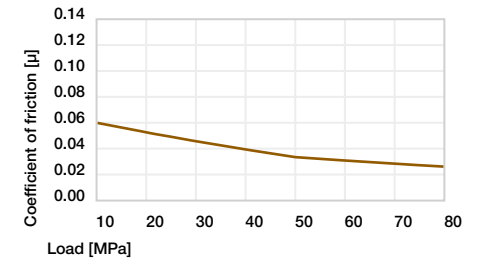


Diagram 03: Coefficient of friction as a function of the pressure, v = 0.01m/s

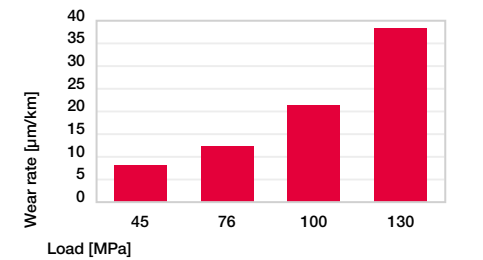
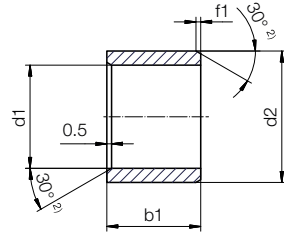


Diagram 04: Wear for oscillating applications with steel shaft material Cf53, hard-chromed, v = 0.01m/s

Bearing technology | Plain bearings | igutex® TX2

Sleeve bearings (form S)



^{a)} Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 2795 and special dimensions

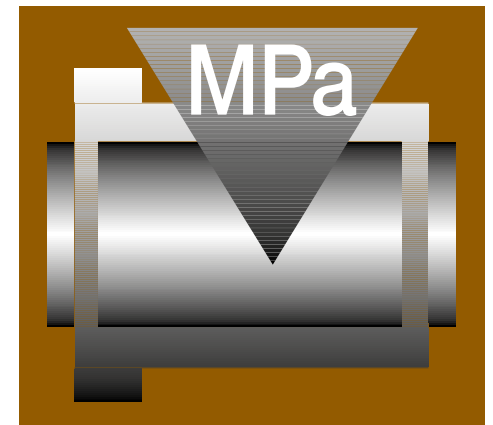
Chamfer in relation to d1

d1 [mm] Ø 12 – 30	Ø >30
f1 [mm] 0.8	1.2

i Order example: **TX2SM-2025-20** - no minimum order quantity.
TX2 igutex® material **S** Cylindrical **M** Metric **20** Inner Ø d1 **25** Outer Ø d2 **20** Total length b1

d1 [mm]	d1 Tolerance ³⁸⁾	d2 [mm]	b1 h13 [mm]	Part No.
20.0		25.0	20.0	TX2SM-2025-20
20.0		25.0	30.0	TX2SM-2025-30
20.0		25.0	40.0	TX2SM-2025-40
20.0		30.0	30.0	TX2SM-2030-30
25.0		30.0	20.0	TX2SM-2530-20
25.0	+0.020 +0.150	30.0	30.0	TX2SM-2530-30
25.0		30.0	40.0	TX2SM-2530-40
30.0		35.0	30.0	TX2SM-3035-30
30.0		35.0	40.0	TX2SM-3035-40
30.0		40.0	40.0	TX2SM-3040-40
40.0		45.0	40.0	TX2SM-4045-40
40.0		50.0	50.0	TX2SM-4050-50
50.0		55.0	50.0	TX2SM-5055-50
50.0	+0.025 +0.175	60.0	60.0	TX2SM-5060-60
60.0		65.0	60.0	TX2SM-6065-60
60.0		70.0	80.0	TX2SM-6070-80
70.0		75.0	60.0	TX2SM-7075-60
70.0		80.0	100.0	TX2SM-7080-100
80.0	+0.050 +0.200	85.0	100.0	TX2SM-8085-100
80.0		90.0	100.0	TX2SM-8090-100

³⁸⁾ After press-fit of the bearing in a housing with nominal dimension



The endurance runner for the highest loads

For pivoting applications under extreme loads

igutex® TX3



When to use it?

- When very high permanent static loads occur
- For highly loaded pivoting movements
- When not only high loads but also high temperatures and media resistance are required



When not to use it?

- When loads of far less than 100MPa occur
iglidur® G, iglidur® Q2, iglidur® Q
- For rotational movements during continuous operation
iglidur® W300, iglidur® Z, iglidur® G
- For high-temperature applications with average load levels
iglidur® X, iglidur® J350, iglidur® H

Bearing technology | Plain bearings | igutex® TX3



Ø 20.0-80.0mm



Also available as:



Bar stock, round bar
Page 743



Bar stock, plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

The endurance runner for the highest loads For pivoting applications under extreme loads

Outstanding rigidity and durability especially under high radial loads during pivoting operations characterise the plain bearings in the new igutex® TX3 series. Thanks to the closed-loop wound structure, excellent dimensional stability is achieved in cases of major forces and impacts.

- Low wear rates in dry operation under extreme conditions
- No lubrication and maintenance
- Tested in the igus® test laboratory at up to 100MPa and pivoting of 0.01m/s
- Long service life due to low wear; no additional lubrication required

Typical application areas

- Agricultural engineering
- Utility and construction vehicles
- Heavy equipments

Technical data

General properties			Testing method	
Density	g/cm³	1.9		
Colour		black		
Max. moisture absorption at +23°C/50% r.h.	% weight	0.1	DIN 53495	
Max. moisture absorption	% weight	0.1		
Mechanical properties				
Max. permissible surface pressure (+20°C)	MPa	180		
Shore D hardness		91	DIN 53505	
Physical and thermal properties				
Max. application temperature long-term	°C	+130		
Max. application temperature short-term	°C	+140		
Min. application temperature	°C	-60		
Electrical properties				
Specific transitional resistance	Ωcm	insulating	DIN IEC 93	
Surface resistance	Ω	insulating	DIN 53482	

Table 01: Material properties

igutex® TX3 plain bearings represent very high load capacity with high radial loads and good abrasion resistance. The special design not only ensures excellent dimensional stability due to the long-fibre winding but also allows lubrication and maintenance-free operation thanks to solid lubricants. Dirt and media resistance round off the list of properties.

Permissible surface speeds

Typical applications for igutex® TX3 plain bearings are pivoting movements under high loads at comparatively low speeds.

Table 03

Temperature

igutex® TX3 is an extremely temperature-resistant material. The long-term upper temperature limit of +130°C permits the broad use in applications typical for the agricultural, utility vehicle or construction equipment sectors. The press-in and press-out forces of igutex® TX3 plain bearings are very high over the entire temperature range. As a result, additional axial securing is usually not necessary. Although these forces remain very high, a certain decrease can be observed at temperatures above +100°C and, in some cases axial securing is therefore recommended above this temperature.

Friction and wear

Please note that a sliding surface with a rough surface finish will increase the friction. Shafts that are too smooth also increase the coefficient of friction of the bearing. Surface finishes (Ra) of the shaft between 0.4-0.7µm are ideal. Furthermore, the coefficient of friction of igutex® TX3 plain bearings largely depends on the speed and load. As the surface speed increases, the coefficient of friction will quickly increase as well. With increasing load, the coefficient of friction however decreases continuously.

Shaft materials

In high load applications, we generally recommend the use of hardened shafts. This particularly applies when using igutex® TX3. However, acceptable wear rates are also achieved on soft shafts with heavy-duty pivoting of less than 100MPa.

Shaft materials, page 56

Installation tolerances

igutex® TX3 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance.



-60°C up to +130°C



180MPa



Chemicals	Resistance
Alcohols	0
Diluted acids	+
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	-

All data given at room temperature [+20°C]

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Chemical table, page 1894

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> 40-70	+0.000	+0.025	+0.025	+0.175	-0.062	+0.000
> 70-80	+0.000	+0.030	+0.050	+0.200	-0.074	+0.000

Table 04: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Hardness*	Roughness
> 55hrc	Ra 0.2 - 1.4µ

* Lower hardness can reduce the service life

Table 05: Hardness and roughness

Technical data

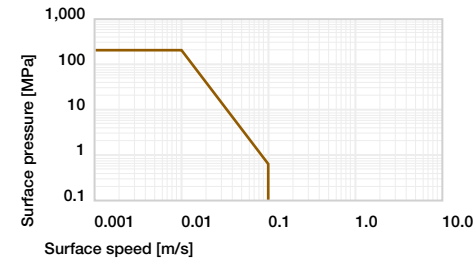


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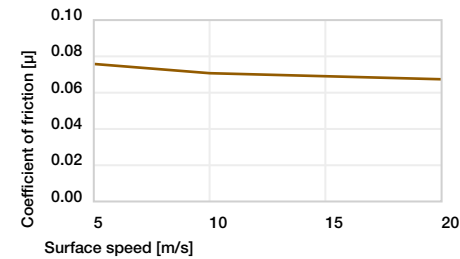


Diagram 02: Coefficient of friction as a function of the surface speed, p = 1MPa

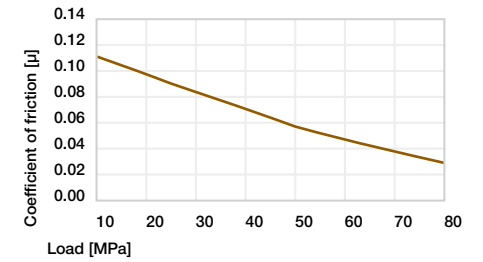


Diagram 03: Coefficient of friction as a function of the pressure, v = 0.01m/s

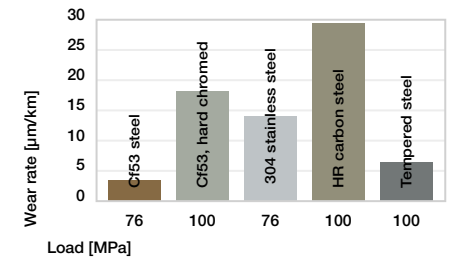
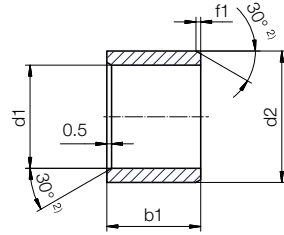


Diagram 04: Wear, rotating with different shaft materials, pressure, v = 0.01m/s

Bearing technology | Plain bearings | igutex® TX3

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 12 – 30	Ø >30
f1 [mm]	0.8	1.2

i Dimensions according to ISO 2795 and special dimensions

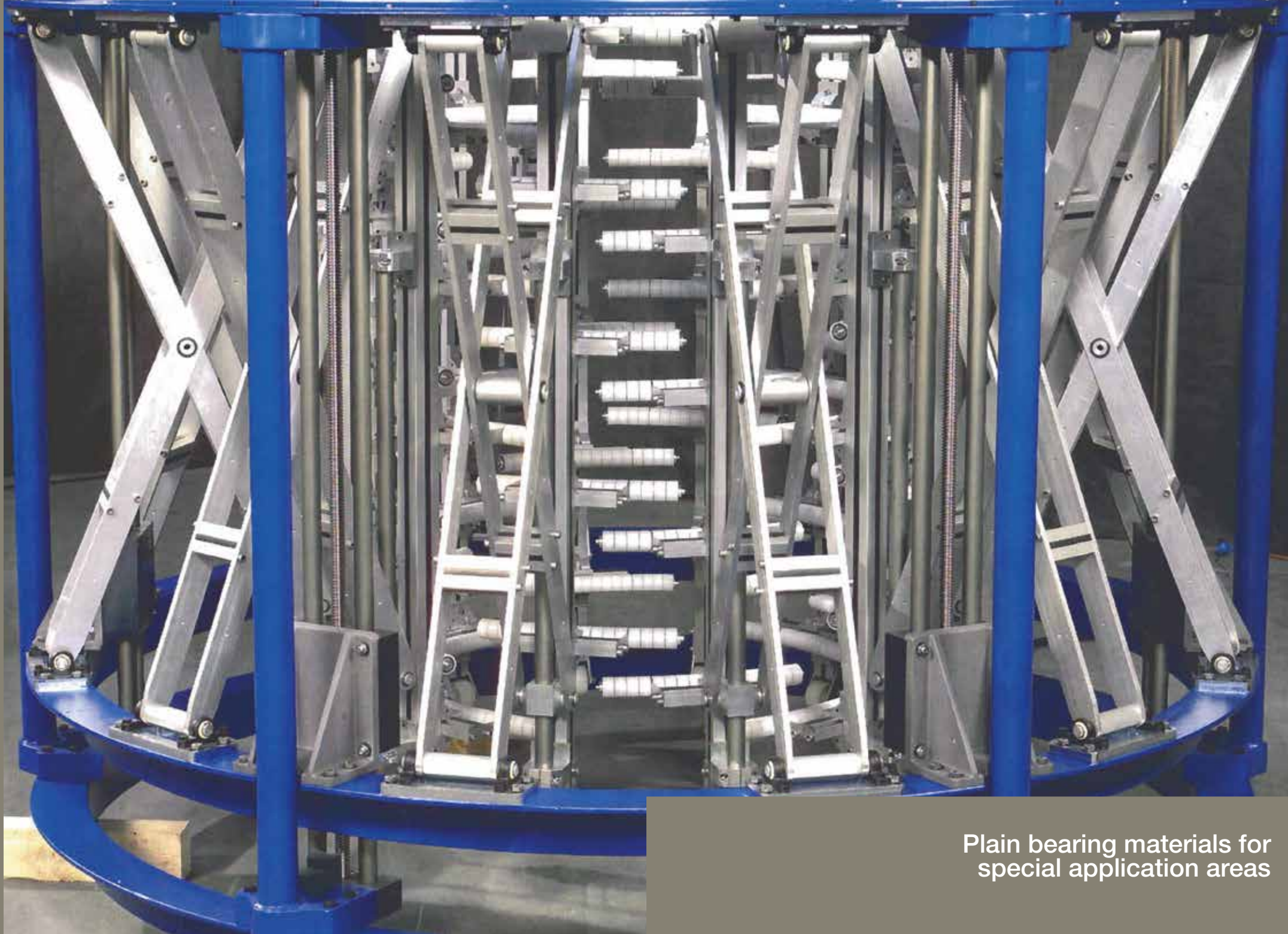


Order example: **TX3SM-2025-20** - no minimum order quantity.

TX3 igutex® material **S** Cylindrical **M** Metric **20** Inner Ø d1 **25** Outer Ø d2 **20** Total length b1

d1 [mm]	d1 Tolerance ³⁸⁾	d2 [mm]	b1 h13 [mm]	Part No.
20.0		25.0	20.0	TX3SM-2025-20
20.0		25.0	30.0	TX3SM-2025-30
20.0		25.0	40.0	TX3SM-2025-40
20.0		30.0	30.0	TX3SM-2030-30
25.0		30.0	20.0	TX3SM-2530-20
25.0	+0.020 +0.150	30.0	30.0	TX3SM-2530-30
25.0		30.0	40.0	TX3SM-2530-40
30.0		35.0	30.0	TX3SM-3035-30
30.0		35.0	40.0	TX3SM-3035-40
30.0		40.0	40.0	TX3SM-3040-40
40.0		45.0	40.0	TX3SM-4045-40
40.0		50.0	50.0	TX3SM-4050-50
50.0		55.0	50.0	TX3SM-5055-50
50.0	+0.025 +0.175	60.0	60.0	TX3SM-5060-60
60.0		65.0	60.0	TX3SM-6065-60
60.0		70.0	80.0	TX3SM-6070-80
70.0		75.0	60.0	TX3SM-7075-60
70.0		80.0	100.0	TX3SM-7080-100
80.0	+0.050 +0.200	85.0	100.0	TX3SM-8085-100
80.0		90.0	100.0	TX3SM-8090-100

³⁸⁾ After press-fit of the bearing in a housing with nominal dimension



Plain bearing materials for special application areas






Plain bearing materials for special application areas

This group brings together the iglidur® materials for very special cases. Those who have not yet found a suitable bearing, will find it here.








Electrical conductivity, free from PTFE and silicone or fast rotation under water: one iglidur® material for all requirements.

 **Online product finder**
www.igus.eu/iglidur-finder

 **Online service life calculation**
www.igus.eu/iglidur-expert

	iglidur® F Electrically conductive	Temperature [°C] ¹²³⁾	+140	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Surface pressure [MPa] ¹²⁴⁾	105	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Coefficient of friction [μ] ¹²⁵⁾	0.37	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Wear [μm/km] ¹²⁵⁾	1.00	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Price index	-	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
	iglidur® F2 ESD-compatible all-rounder	Temperature [°C] ¹²³⁾	+120	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Surface pressure [MPa] ¹²⁴⁾	47	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Coefficient of friction [μ] ¹²⁵⁾	0.16	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Wear [μm/km] ¹²⁵⁾	1.53	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Price index	-	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
	iglidur® H4 The automotive standard	Temperature [°C] ¹²³⁾	+200	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Surface pressure [MPa] ¹²⁴⁾	65	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Coefficient of friction [μ] ¹²⁵⁾	0.21	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Wear [μm/km] ¹²⁵⁾	2.10	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Price index	-	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
	iglidur® UW For fast rotation under water	Temperature [°C] ¹²³⁾	+90	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Surface pressure [MPa] ¹²⁴⁾	40	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Coefficient of friction [μ] ¹²⁵⁾	0.24	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Wear [μm/km] ¹²⁵⁾	1.80	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Price index	-	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
	iglidur® J UV For continuous direct sunlight	Temperature [°C] ¹²³⁾	+90	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Surface pressure [MPa] ¹²⁴⁾	34	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Coefficient of friction [μ] ¹²⁵⁾	0.19	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Wear [μm/km] ¹²⁵⁾	0.25	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Price index	-	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+

¹²³⁾ Upper long-term application temperature ¹²⁴⁾ Max. recommended surface pressure at +20°C ¹²⁵⁾ Best pairing for p = 1 MPa, v = 0.3m/s, rotating

	iglidur® N54 The biopolymer	Temperature [°C] ¹²³⁾	+80	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Surface pressure [MPa] ¹²⁴⁾	36	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Coefficient of friction [μ] ¹²⁵⁾	0.14	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Wear [μm/km] ¹²⁵⁾	0.20	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Price index	-	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
	iglidur® G V0 Low-cost all-rounder for fire protection	Temperature [°C] ¹²³⁾	+130	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Surface pressure [MPa] ¹²⁴⁾	75	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Coefficient of friction [μ] ¹²⁵⁾	0.20	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Wear [μm/km] ¹²⁵⁾	2.10	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Price index	-	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
	iglidur® J2 Versatile and cost-effective	Temperature [°C] ¹²³⁾	+90	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Surface pressure [MPa] ¹²⁴⁾	46	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Coefficient of friction [μ] ¹²⁵⁾	0.18	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Wear [μm/km] ¹²⁵⁾	5.00	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Price index	-	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
	iglidur® AB The first antibacterial iglidur® plain bearing	Temperature [°C] ¹²³⁾	+70	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Surface pressure [MPa] ¹²⁴⁾	25	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Coefficient of friction [μ] ¹²⁵⁾	0.18	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Wear [μm/km] ¹²⁵⁾	1.00	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Price index	-	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
	iglidur® RW370 For the rail industry, complies with DIN EN 45545 HL3, R22/R23	Temperature [°C] ¹²³⁾	+170	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Surface pressure [MPa] ¹²⁴⁾	75	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Coefficient of friction [μ] ¹²⁵⁾	0.13	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Wear [μm/km] ¹²⁵⁾	1.15	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Price index	-	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
	iglidur® B The variable one	Temperature [°C] ¹²³⁾	+100	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Surface pressure [MPa] ¹²⁴⁾	40	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Coefficient of friction [μ] ¹²⁵⁾	0.27	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Wear [μm/km] ¹²⁵⁾	1.72	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Price index	-	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
	iglidur® C Free from PTFE and silicone	Temperature [°C] ¹²³⁾	+90	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Surface pressure [MPa] ¹²⁴⁾	40	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Coefficient of friction [μ] ¹²⁵⁾	0.23	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Wear [μm/km] ¹²⁵⁾	1.73	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+
		Price index	-	-	<div style="width: 100%; height: 10px; background-color: #ccc;"></div>	+

EN 06/2023



Electrically conductive Pressure-resistant igidur® F



When to use it?

- When the bearing should be electrically conductive
- For high static loads



When not to use it?

- When mechanical reaming of the bore is necessary
igidur® M250
- When the highest wear resistance is required
igidur® W300
- When very low coefficient of friction in dry operation is required
igidur® J
- For underwater applications
igidur® H370
- When a universal plain bearing is required
igidur® G

Bearing technology | Plain bearings | iglidur® F



Ø
2.0-70.0mm



Also available
as:



Bar stock,
round bar
Page 743



Bar stock,
plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole
flange
bearings
Page 667



Moulded
special parts
Page 696



igubal®
spherical balls
Page 993

Electrically conductive Pressure-resistant

Outstanding rigidity and hardness as well as high conductivity: iglidur® F plain bearings can only be used in dry operations to a limited extent, but offer their fully mechanical benefits when lubricated with oil and grease.

- Electrically conductive
- High compressive strength
- High temperature resistance
- High pv values
- Chemical-resistant

Typical application areas

- Textile industry
- Automotive industry

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc;"><div style="width: 20%; background-color: #888;"></div></div>	+
Wear resistance at +90°C	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc;"><div style="width: 20%; background-color: #888;"></div></div>	+
Wear resistance at +150°C	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc;"><div style="width: 10%; background-color: #888;"></div></div>	+
Slide property	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc;"><div style="width: 20%; background-color: #888;"></div></div>	+
Wear resistance under water	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc;"><div style="width: 10%; background-color: #888;"></div></div>	+
Media resistance	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc;"><div style="width: 40%; background-color: #888;"></div></div>	+
Resistant to edge pressures	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc;"><div style="width: 80%; background-color: #888;"></div></div>	+
Resistant to shock and impact loads	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc;"><div style="width: 80%; background-color: #888;"></div></div>	+
Dirt resistance	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc;"><div style="width: 40%; background-color: #888;"></div></div>	+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.25	
Colour		black	
Max. moisture absorption at +23°C/50% r.h.	% weight	1.8	DIN 53495
Max. moisture absorption	% weight	8.4	
Coefficient of friction, dynamic, against steel	μ	0.10-0.39	
pv value, max. (dry)	MPa · m/s	0.34	
Mechanical properties			
Flexural modulus	MPa	11,600	DIN 53457
Flexural strength at +20°C	MPa	260	DIN 53452
Compressive strength	MPa	98	
Max. permissible surface pressure (+20°C)	MPa	105	
Shore D hardness		84	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+140	
Max. application temperature short-term	°C	+180	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.65	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	12	DIN 53752
Electrical properties ⁹⁾			
Specific transitional resistance	Ωcm	< 10 ³	DIN IEC 93
Surface resistance	Ω	< 10 ²	DIN 53482

⁹⁾ The good conductivity of this material can favour the generation of corrosion on the metallic contact components.

Table 01: Material properties

When plain bearings need to be electrically conductive, especially in applications that should keep out static, iglidur® F is the right choice. Moreover, the iglidur® F plain bearings are extremely pressure-resistant. At room temperature, they could be statically loaded up to 105MPa.

Moisture absorption

The moisture absorption of iglidur® F plain bearings in ambient conditions is approximately 1.8% weight. The saturation limit submerged in water is 8.4% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® F bearings.

Radiation resistance

Plain bearings made from iglidur® F are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

igidur® F plain bearings have limited resistance to weathering. The material properties are affected. Discolouration occurs. Practical tests under real application conditions are recommended.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® F plain bearings decreases. Diagram 02 shows this inverse relationship. With the long-term permitted application temperature of +140°C, the permitted surface pressure still amounts to 50MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® F at radial loads. At the recommended maximum surface pressure of 105MPa the deformation is less than 3% at room temperature. A plastic deformation can be negligible up to this value. However, it is also dependent on the service time.

Surface pressure, page 45



-40°C up to
+140°C



105MPa



Permissible surface speeds

The maximum permitted surface speeds are based on the operation period and the type of motion. A plain bearing is the most stressed in long-term rotating motions. Here, the maximum speed for iglidur® F plain bearings is 0.8 m/s. The speeds stated in table 03 are limit values for the lowest bearing loads. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

The ambient temperatures strongly influence the properties of plain bearings. With increasing temperatures, the compressive strength of iglidur® F plain bearings decreases. The wear also increases. For temperatures over +105°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

In dry operation, the coefficient of friction of iglidur® F plain bearings is not as favourable as those of many other iglidur® materials. However iglidur® plain bearings can be lubricated without any problems, and iglidur® F bearings attain excellent results among the lubricated iglidur® bearings.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® F. In the lowest load range, the hard-chromed shafts prove to be the most suitable shaft in rotating applications with iglidur® F bearings.

Shaft materials, page 56

Installation tolerances

iglidur® F plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). After being assembled into a nominal size housing, the inner diameter automatically adjusts to the D11 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	+ up to 0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 0.8	0.6	3.0
Short-term	m/s 1.5	1.1	6.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.10-0.39	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	D11 [mm]	D11 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.020	+0.080	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.030	+0.105	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.040	+0.130	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.050	+0.160	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.065	+0.195	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.080	+0.240	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.100	+0.290	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.120	+0.340	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.145	+0.395	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

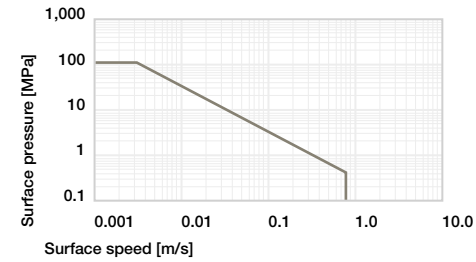


Diagram 01: Permissible pv values for iglidur® F plain bearing with a wall thickness of 1 mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

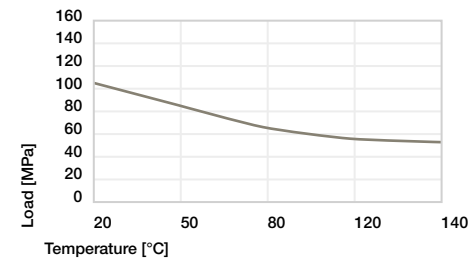


Diagram 02: Maximum recommended surface pressure as a function of temperature (150MPa at +20°C)

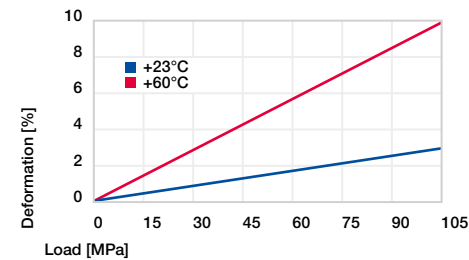


Diagram 03: Deformation under pressure and temperature

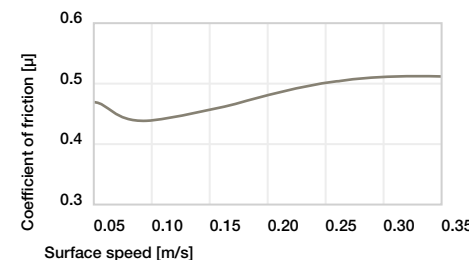


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

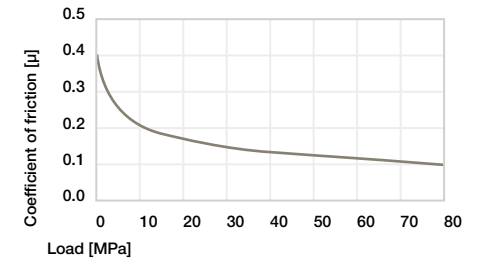


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

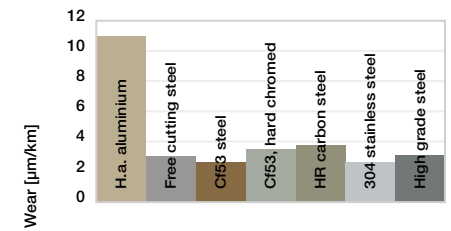


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

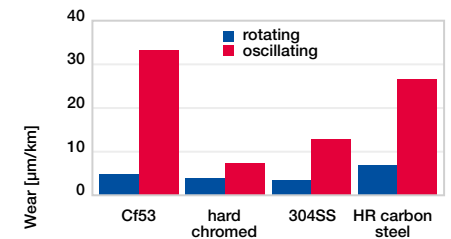
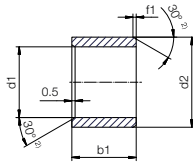


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

Bearing technology | Plain bearings | iglidur® F

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions



Order example: FSM-0203-03 – no minimum order quantity.

F iglidur® material S Cylindrical M Metric 02 Inner Ø d1 03 Outer Ø d2 03 Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13	
2.0	+0.020	3.5	3.0	FSM-0203-03
3.0	+0.080	4.5	3.0	FSM-0304-03
4.0		5.5	4.0	FSM-0405-04
5.0		7.0	5.0	FSM-0507-05
5.0	+0.030	7.0	8.0	FSM-0507-08
6.0	+0.105	8.0	6.0	FSM-0608-06
6.0		8.0	8.0	FSM-0608-08
6.0		8.0	10.0	FSM-0608-10
6.0		8.0	13.8	FSM-0608-13
7.0		9.0	10.0	FSM-0709-10
7.0		9.0	12.0	FSM-0709-12
8.0		10.0	8.0	FSM-0810-08
8.0	+0.040	10.0	10.0	FSM-0810-10
8.0	+0.130	10.0	15.0	FSM-0810-15
10.0		12.0	6.0	FSM-1012-06
10.0		12.0	9.0	FSM-1012-09
10.0		12.0	10.0	FSM-1012-10
12.0		14.0	10.0	FSM-1214-10
12.0		14.0	15.0	FSM-1214-15
13.0		15.0	20.0	FSM-1315-20
14.0	+0.050	16.0	15.0	FSM-1416-15
15.0	+0.160	17.0	15.0	FSM-1517-15
15.0		17.0	20.0	FSM-1517-20
16.0		18.0	15.0	FSM-1618-15

³⁾ After press-fit. Testing methods, page 61

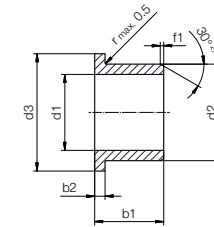
d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13	
18.0		20.0	12.0	FSM-1820-12
18.0	+0.050	20.0	15.0	FSM-1820-15
18.0	+0.160	20.0	20.0	FSM-1820-20
20.0		22.0	14.5	FSM-2022-14
20.0		22.0	20.0	FSM-2022-20
20.0		23.0	15.0	FSM-2023-15
20.0		23.0	20.0	FSM-2023-20
22.0		25.0	15.0	FSM-2225-15
25.0	+0.065	28.0	20.0	FSM-2528-20
28.0	+0.195	32.0	20.0	FSM-2832-20
28.0		32.0	30.0	FSM-2832-30
30.0		34.0	20.0	FSM-3034-20
30.0		34.0	30.0	FSM-3034-30
30.0		34.0	40.0	FSM-3034-40
32.0		36.0	30.0	FSM-3236-30
35.0		39.0	30.0	FSM-3539-30
35.0		39.0	40.0	FSM-3539-40
40.0	+0.080	44.0	30.0	FSM-4044-30
40.0	+0.240	44.0	50.0	FSM-4044-50
45.0		50.0	50.0	FSM-4550-50
50.0		55.0	40.0	FSM-5055-40
55.0	+0.100	60.0	50.0	FSM-5560-50
60.0	+0.290	65.0	60.0	FSM-6065-60

EN 06/2023



Bearing technology | Plain bearings | iglidur® F

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions



Order example: FFM-0405-04 – no minimum order quantity.

F iglidur® material F With flange M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
4.0		5.5	9.5	4.0	0.75	FFM-0405-04
4.0		5.5	9.5	6.0	0.75	FFM-0405-06
5.0	+0.030	7.0	11.0	5.0	1.00	FFM-0507-05
6.0	+0.105	8.0	12.0	6.0	1.00	FFM-0608-06
6.0		8.0	12.0	8.0	1.00	FFM-0608-08
8.0		10.0	15.0	6.0	1.00	FFM-0810-06
8.0		10.0	15.0	9.0	1.00	FFM-0810-09
10.0	+0.040	12.0	18.0	6.0	1.00	FFM-1012-06
10.0	+0.130	12.0	18.0	8.0	1.00	FFM-1012-08
10.0		12.0	18.0	9.0	1.00	FFM-1012-09
10.0		12.0	18.0	15.0	1.00	FFM-1012-15
10.0		12.0	18.0	18.0	1.00	FFM-1012-18
12.0		14.0	20.0	9.0	1.00	FFM-1214-09
12.0	+0.050	14.0	20.0	12.0	1.00	FFM-1214-12
14.0	+0.160	16.0	22.0	12.0	1.00	FFM-1416-12
14.0		16.0	22.0	17.0	1.00	FFM-1416-17
15.0		17.0	23.0	12.0	1.00	FFM-1517-12

³⁾ After press-fit. Testing methods, page 61

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
15.0		17.0	23.0	17.0	1.00	FFM-1517-17
16.0	+0.050	18.0	24.0	17.0	1.00	FFM-1618-17
18.0	+0.160	20.0	26.0	12.0	1.00	FFM-1820-12
18.0		20.0	26.0	17.0	1.00	FFM-1820-17
20.0		23.0	30.0	21.0	1.50	FFM-2023-21
25.0	+0.065	28.0	35.0	21.0	1.50	FFM-2528-21
30.0	+0.195	34.0	42.0	26.0	2.00	FFM-3034-26
32.0		36.0	45.0	26.0	2.00	FFM-3236-26
35.0		39.0	47.0	6.0	2.00	FFM-3539-06
35.0		39.0	47.0	16.0	2.00	FFM-3539-16
35.0		39.0	47.0	26.0	2.00	FFM-3539-26
40.0	+0.080	44.0	52.0	30.0	2.00	FFM-4044-30
40.0	+0.240	44.0	52.0	40.0	2.00	FFM-4044-40
45.0		50.0	58.0	50.0	2.00	FFM-4550-50
50.0		55.0	63.0	10.0	2.00	FFM-5055-10
50.0		55.0	63.0	40.0	2.00	FFM-5055-40
60.0	+0.100	65.0	73.0	40.0	2.00	FFM-6065-40
70.0	+0.290	75.0	83.0	40.0	2.00	FFM-7075-40

EN 06/2023





ESD-compatible all-rounder: Electrically conductive igidur® F2



When to use it?

- When the bearing should be electrically discharging
- When a universal plain bearing is required



When not to use it?

- When a universal plain bearing without electrostatic discharge capacity is required
igidur® G, iglidur® P
- For underwater use
igidur® H370
- When the highest wear resistance is required
igidur® J, iglidur® W300

Bearing technology | Plain bearings | iglidur® F2



Ø
5.0-20.0mm



Also available as:



Bar stock, round bar
Page 743



Bar stock, plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

ESD-compatible all-rounder: Electrically conductive

iglidur® F2 helps to prevent the build-up of electrostatic charges. Good resistance to media and temperature, suitable even in wet conditions due to low moisture absorption and good universal coefficient of wear pave the way for a wide range of applications.

- Used to prevent electro-static charges
- Suitable for wet environments
- Lubrication-free
- Maintenance-free

Typical application areas

- Mechanical engineering
- Jig construction
- Industrial handling

Descriptive technical specifications				
Wear resistance at +23°C	-	<div style="width: 40%; background-color: #808080;"></div>		+
Wear resistance at +90°C	-	<div style="width: 30%; background-color: #808080;"></div>		+
Wear resistance at +150°C	-	<div style="width: 20%; background-color: #808080;"></div>		+
Slide property	-	<div style="width: 40%; background-color: #808080;"></div>		+
Wear resistance under water	-	<div style="width: 20%; background-color: #808080;"></div>		+
Media resistance	-	<div style="width: 40%; background-color: #808080;"></div>		+
Resistant to edge pressures	-	<div style="width: 40%; background-color: #808080;"></div>		+
Resistant to shock and impact loads	-	<div style="width: 40%; background-color: #808080;"></div>		+
Dirt resistance	-	<div style="width: 40%; background-color: #808080;"></div>		+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.52	
Colour		black	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	0.4	
Coefficient of friction, dynamic, against steel	μ	0.16-0.22	
pv value, max. (dry)	MPa · m/s	0.31	
Mechanical properties			
Flexural modulus	MPa	7,418	DIN 53457
Flexural strength at +20°C	MPa	93	DIN 53452
Compressive strength	MPa	61	
Max. permissible surface pressure (+20°C)	MPa	47	
Shore D hardness		72	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+120	
Max. application temperature short-term	°C	+165	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.61	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	5	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	< 10 ⁹	DIN IEC 93
Surface resistance	Ω	< 10 ⁹	DIN 53482

Table 01: Material properties

The prevention of electrostatic charge is an important requirement in many application areas. At the same time other technical application parameters such as wear resistance, media and temperature resistance, suitability in a wet environment etc. cannot be neglected. iglidur® F2 with its wide range of properties constitutes another universal bearing for numerous "ESD-suitable" applications.

Moisture absorption

The moisture absorption of iglidur® F2 plain bearings in ambient conditions is approximately 0.2% weight. The saturation limit submerged in water is 0.4% weight.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® F2 bearings.

Radiation resistance

Plain bearings made from iglidur® F2 are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

iglidur® F2 plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® F2 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® F2 at radial loads. A plastic deformation can be negligible up to this value. However, it is also dependent on the service time.

Surface pressure, page 45



-40°C up to +120°C



47MPa



HB



ISO 35474

Permissible surface speeds

The maximum permitted surface speeds are based on the operation period and the type of motion. A plain bearing is the most stressed in long-term rotating motions. Here, the maximum speed for iglidur® F2 plain bearings is 0.8m/s. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

The ambient temperatures strongly influence the properties of plain bearings. With increasing temperatures, the compressive strength of iglidur® F2 plain bearings decreases. Diagram 02 shows this inverse relationship. For temperatures over +70°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Coefficient of friction and wear resistance are dependent on the application parameters (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 shows a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® F2. In the lower region of the load, free cutting steel and hard-anodised aluminium shafts, as well as HR carbon steel and hard-chromed steel shafts prove to be the most favourable in rotating applications with iglidur® F2 plain bearings with respect to wear. Diagram 07 shows significantly less wear in rotation compared to pivoting movements over the entire load range.

Shaft materials, page 56

Installation tolerances

iglidur® F2 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances.

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	0
Diluted alkalines	-
Fuels	+
Greases, oils without additives	+
Hydrocarbons	-
Strong acids	-
Strong alkalines	-

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 0.8	0.7	3.0
Short-term	m/s 1.4	1.1	5.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.16-0.22	0.01	0.05	0.03

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

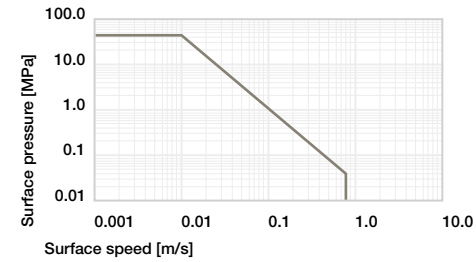


Diagram 01: Permissible pv values for iglidur® F2 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

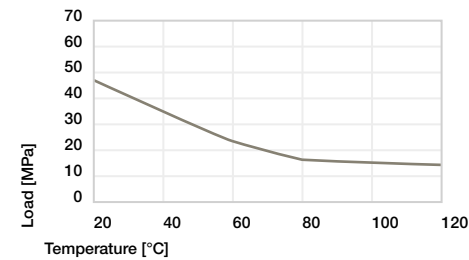


Diagram 02: Maximum recommended surface pressure as a function of temperature (47MPa at +20°C)

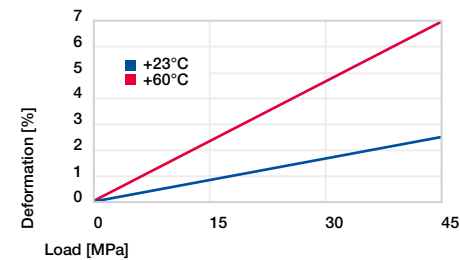


Diagram 03: Deformation under pressure and temperature

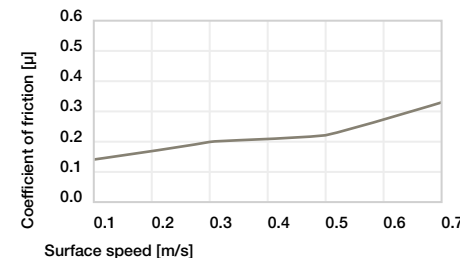


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

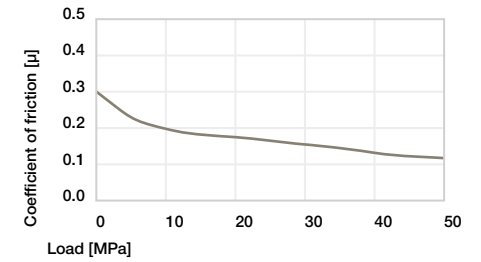


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

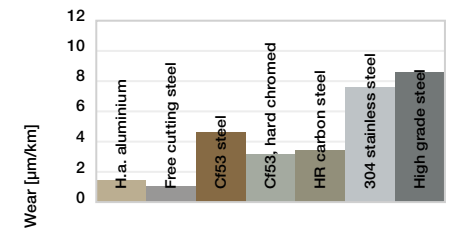


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

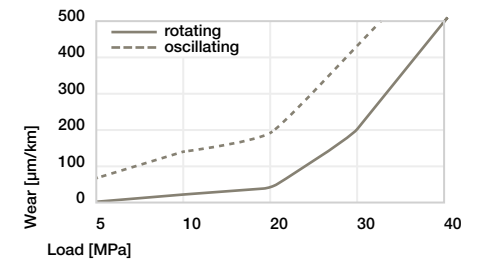
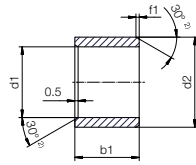


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® F2

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8



Order example: F2SM-0507-10 – no minimum order quantity.

F2 iglidur® material S Cylindrical M Metric 05 Inner Ø d1 07 Outer Ø d2 10 Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
5.0	+0.020 +0.068	7.0	10.0	F2SM-0507-10
6.0		8.0	6.0	F2SM-0608-06
7.0		9.0	10.0	F2SM-0709-10
8.0	+0.025 +0.083	10.0	10.0	F2SM-0810-10
10.0		12.0	10.0	F2SM-1012-10
10.0		12.0	15.0	F2SM-1012-15
12.0	+0.032 +0.102	14.0	12.0	F2SM-1214-12
16.0		18.0	15.0	F2SM-1618-15
20.0		23.0	20.0	F2SM-2023-20

³⁾ After press-fit. *Testing methods, page 61*



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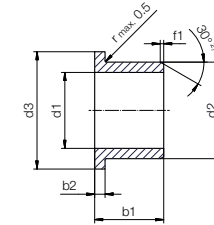
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Bearing technology | Plain bearings | iglidur® F2

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8



Order example: F2FM-0608-06 – no minimum order quantity.

F2 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾ [mm]	h13 [mm]	h13 [mm]	
6.0	+0.020 +0.068	8.0	12.0	6.0	1.00	F2FM-0608-06
8.0		10.0	15.0	10.0	1.00	F2FM-0810-10
10.0	+0.025 +0.083	12.0	18.0	10.0	1.00	F2FM-1012-10
12.0		14.0	20.0	12.0	1.00	F2FM-1214-12
16.0	+0.032 +0.102	18.0	24.0	17.0	1.00	F2FM-1618-17
20.0		23.0	30.0	21.5	1.50	F2FM-2023-21

³⁾ After press-fit. *Testing methods, page 61*



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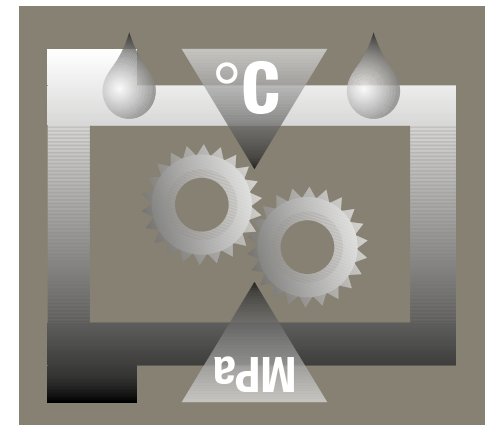
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The automotive standard

Up to +200°C, media-resistant
igidur® H4



When to use it?

- For application with fuels, oils, etc.
- When high wear resistance is required
- For low coefficient of friction
- For high temperature resistance from -40°C to +200°C
- For high chemical resistance



When not to use it?

- For underwater use
igidur® H370
- When a cost-effective universal plain bearing is required
igidur® G
- When a temperature and media-resistant plain bearing for static applications is required
igidur® H2

Bearing technology | Plain bearings | iglidur® H4



Ø
4.0-40.0mm



Also available as:



Bar stock, round bar
Page 743



Bar stock, plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

The automotive standard Up to +200°C, media-resistant

Cost-effective high-temperature material with good dry-operation properties and "engine compartment resistance".

- Low coefficient of friction
- High wear resistance
- Temperature-resistant from -40°C to +200°C
- Chemical-resistant
- Lubrication-free
- Maintenance-free

Typical application areas

- Automotive industry
- Automation
- Packaging

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 100%; height: 10px; background-color: #ccc; position: relative;"> <div style="width: 75%; height: 10px; background-color: #666;"></div> </div>	+
Wear resistance at +90°C	-	<div style="width: 100%; height: 10px; background-color: #ccc; position: relative;"> <div style="width: 75%; height: 10px; background-color: #666;"></div> </div>	+
Wear resistance at +150°C	-	<div style="width: 100%; height: 10px; background-color: #ccc; position: relative;"> <div style="width: 75%; height: 10px; background-color: #666;"></div> </div>	+
Slide property	-	<div style="width: 100%; height: 10px; background-color: #ccc; position: relative;"> <div style="width: 75%; height: 10px; background-color: #666;"></div> </div>	+
Wear resistance under water	-	<div style="width: 100%; height: 10px; background-color: #ccc; position: relative;"> <div style="width: 75%; height: 10px; background-color: #666;"></div> </div>	+
Media resistance	-	<div style="width: 100%; height: 10px; background-color: #ccc; position: relative;"> <div style="width: 75%; height: 10px; background-color: #666;"></div> </div>	+
Resistant to edge pressures	-	<div style="width: 100%; height: 10px; background-color: #ccc; position: relative;"> <div style="width: 75%; height: 10px; background-color: #666;"></div> </div>	+
Resistant to shock and impact loads	-	<div style="width: 100%; height: 10px; background-color: #ccc; position: relative;"> <div style="width: 75%; height: 10px; background-color: #666;"></div> </div>	+
Dirt resistance	-	<div style="width: 100%; height: 10px; background-color: #ccc; position: relative;"> <div style="width: 75%; height: 10px; background-color: #666;"></div> </div>	+

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EN 06/2023

Technical data

General properties		Testing method	
Density	g/cm ³	1.79	
Colour		brown	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.2	
Coefficient of friction, dynamic, against steel	μ	0.08-0.25	
pv value, max. (dry)	MPa · m/s	0.70	
Mechanical properties			
Flexural modulus	MPa	7,500	DIN 53457
Flexural strength at +20°C	MPa	120	DIN 53452
Compressive strength	MPa	50	
Max. permissible surface pressure (+20°C)	MPa	65	
Shore D hardness		80	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+200	
Max. application temperature short-term	°C	+240	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	5	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹³	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

Table 01: Material properties

iglidur® H4 plain bearings stand for high carrying capacity, good abrasion resistance and good temperature resistance, besides the obvious economic factors. Temperatures up to +200°C, permitted surface pressure up to 65MPa, and excellent chemical resistance are only some of the essential attributes. Solid lubricants reduce the coefficient of friction and support the wear resistance, which has been significantly improved compared to the iglidur® H2 plain bearings, which are also very cost-effective. iglidur® H4 plain bearings are suitable for all sliding surfaces.

Moisture absorption

The moisture absorption of iglidur® H4 plain bearings is below 0.1% weight in ambient conditions. The saturation limit submerged in water is 0.2% weight. iglidur® H4 is therefore an ideal material for wet environments.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance

Plain bearings made from iglidur® H4 are resistant up to a radiation intensity of 2 · 10² Gy.

Resistance to weathering

iglidur® H4 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® H4 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® H4 at radial loads.

Surface pressure, page 45



-40°C up to +200°C



65MPa



V-0



Permissible surface speeds

In contrast to the similarly cost-effective iglidur® H2 plain bearings, iglidur® H4 has a favourable coefficient of friction. This accounts for the higher permitted surface speeds that can be attained with these bearings. The speeds stated in table 03 are limit values for the lowest bearing loads. With higher loads, the permitted speed drops with the extent of the load due to the limitations by the pv value.

Surface speed, page 48

Temperature

iglidur® H4 is an extremely temperature-resistant material. With increasing temperatures, the compressive strength of iglidur® H4 plain bearings decreases. When considering temperatures, the additional frictional heat in the bearing system must be taken into account. For temperatures over +110°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The coefficient of friction of the iglidur® H4 plain bearings is very low (diagrams 04 and 05). Please note that a sliding surface with a rough surface finish will increase the friction.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

With many of the suitable shaft materials, iglidur® H4 is the economical alternative to many other high-temperature bearings. The important thing is however the selection of the suitable shaft material. It cannot be generally stated that iglidur® H4 is suitable for use with hard or soft shafts. Tests have however shown that pivoting applications yield better wear data. In rotating applications, the wear increases markedly from 10MPa.

Shaft materials, page 56

Installation tolerances

iglidur® H4 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	+ up to 0
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	0 up to -
Strong alkalines	+

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 1.0	0.7	1.0
Short-term	m/s 1.5	1.1	2.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.08-0.25	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	F10 [mm]	F10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.006	+0.046	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.010	+0.058	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.013	+0.071	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.016	+0.086	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.020	+0.104	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.025	+0.125	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.030	+0.150	-0.074	+0.000
> 80-120	+0.000	+0.035	-0.036	+0.176	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

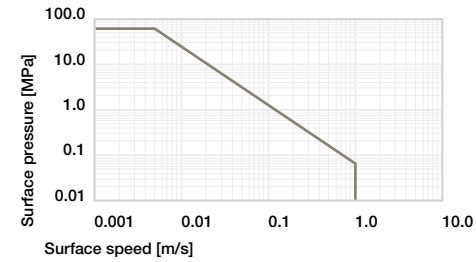


Diagram 01: Permissible pv values for iglidur® H4 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

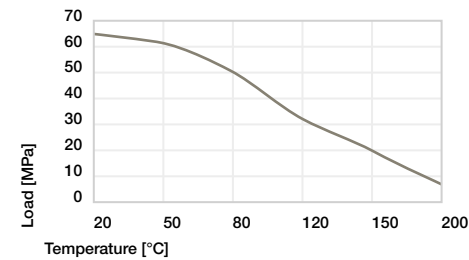


Diagram 02: Maximum recommended surface pressure as a function of temperature (65MPa at +20°C)

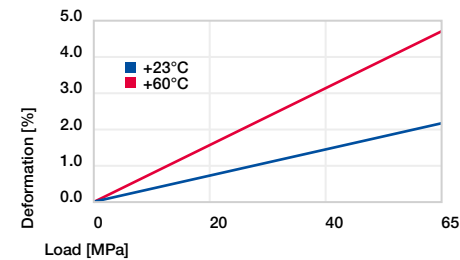


Diagram 03: Deformation under pressure and temperature

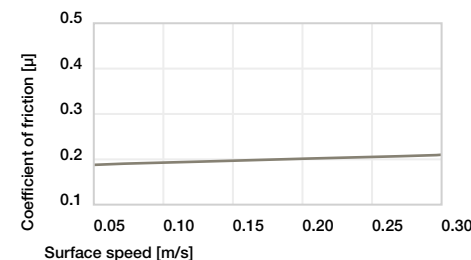


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

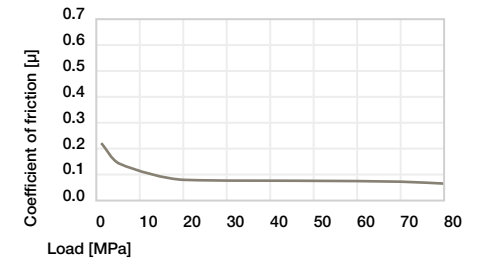


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

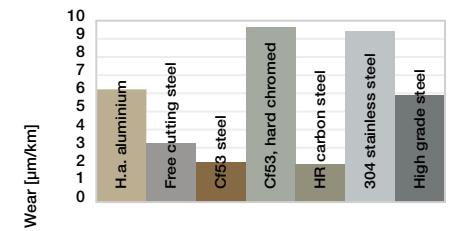


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

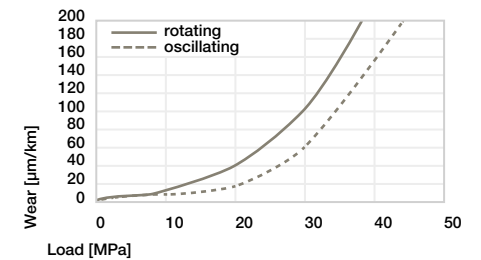
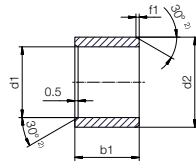


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® H4

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions



Order example: H4SM-0405-04 – no minimum order quantity.

H4 iglidur® material S Cylindrical M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

d1 [mm]	d1 Tolerance ³⁾	d2 [mm]	b1 h13 [mm]	Part No.
4.0		5.5	4.0	H4SM-0405-04
6.0	+0.010 +0.058	8.0	8.0	H4SM-0608-08
8.0		10.0	10.0	H4SM-0810-10
8.0	+0.013 +0.071	10.0	20.0	H4SM-0810-20
16.0		18.0	20.0	H4SM-1618-20
18.0	+0.016 +0.086	20.0	15.0	H4SM-1820-15
20.0	+0.020 +0.104	22.0	15.0	H4SM-2022-15
39.0	+0.025 +0.125	43.0	40.0	H4SM-3943-40

³⁾ After press-fit. *Testing methods, page 61*



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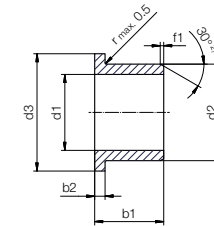
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Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2

i Dimensions according to ISO 3547-1 and special dimensions



Order example: H4FM-0405-04 – no minimum order quantity.

H4 iglidur® material F With flange M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

d1 [mm]	d1 Tolerance ³⁾	d2 [mm]	d3 d13 ³⁾ [mm]	b1 h13 [mm]	b2 h13 [mm]	Part No.
4.0		5.5	9.5	4.0	0.75	H4FM-0405-04
6.0	+0.010 +0.058	8.0	12.0	8.0	1.00	H4FM-0608-08
6.0		10.0	12.0	20.0	1.00	H4FM-060810-20
8.0		10.0	15.0	10.0	1.00	H4FM-0810-10
10.0	+0.013 +0.071	12.0	18.0	5.0	1.00	H4FM-1012-05
10.0		12.0	18.0	12.0	1.00	H4FM-1012-12
10.0		12.0	18.0	25.0	1.00	H4FM-101218-25
12.0		14.0	20.0	12.0	1.00	H4FM-1214-12
15.0	+0.016 +0.086	17.0	23.0	12.0	1.00	H4FM-1517-12
16.0		18.0	24.0	17.0	1.00	H4FM-1618-17
18.0		20.0	26.0	17.0	1.00	H4FM-1820-17
20.0		23.0	30.0	21.5	1.50	H4FM-2023-21
25.0	+0.020 +0.104	28.0	35.0	21.5	1.50	H4FM-2528-21
30.0		34.0	40.0	30.0	2.00	H4FM-3034-30
40.0	+0.030 +0.150	44.0	52.0	40.0	2.00	H4FM-4044-40

³⁾ After press-fit. *Testing methods, page 61*



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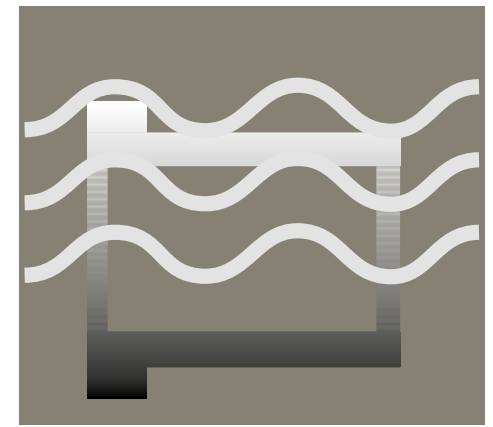
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10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.



For fast rotation under water

Extreme wear resistance in liquid under continuous operation

iglidur® UW



When to use it?

- For underwater applications and in liquid media
- For low loads
- For high rotational speeds
- For extreme wear resistance in media-lubricated continuous operation



When not to use it?

- When continuous operating temperatures are higher than +90°C
iglidur® UW500
- When high loads occur
iglidur® H370, iglidur® UW500, iglidur® X
- When only dry operation is feasible
iglidur® J

Bearing technology | Plain bearings | iglidur® UW



Ø
3.0-20.0mm



Also available as:



Bar stock, round bar
Page 743

For fast rotation under water Extreme wear resistance in liquid under continuous operation

The best iglidur® plain bearing for underwater applications. The first choice for pumping applications.

- Suitable for underwater applications
- For fast and constant rotation
- Long service life
- Lubrication-free
- Maintenance-free



Bar stock, plate
Page 773

Typical application areas

- Fluid technology
- Pumps



tribo-tape liner
Page 781



Guide rings
Page 641

Descriptive technical specifications

Wear resistance at +23°C	-		+
Wear resistance at +90°C	-		+
Wear resistance at +150°C	-		+
Slide property	-		+
Wear resistance under water	-		+
Media resistance	-		+
Resistant to edge pressures	-		+
Resistant to shock and impact loads	-		+
Dirt resistance	-		+



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.52	
Colour		black	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption ⁹⁾	% weight	0.8	
Coefficient of friction, dynamic, against steel	μ	0.15-0.35	
pv value, max. (dry)	MPa · m/s	0.11	
Mechanical properties			
Flexural modulus	MPa	9,600	DIN 53457
Flexural strength at +20°C	MPa	90	DIN 53452
Compressive strength	MPa	70	
Max. permissible surface pressure (+20°C)	MPa	40	
Shore D hardness		78	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+110	
Min. application temperature	°C	-50	
Thermal conductivity	W/m · K	0.60	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	6	DIN 53752
Electrical properties ⁹⁾			
Specific transitional resistance	Ωcm	< 10 ⁵	DIN IEC 93
Surface resistance	Ω	< 10 ⁵	DIN 53482

⁹⁾ The good conductivity of this material can favour the generation of corrosion on the metallic contact components.

⁹⁾ All results were obtained under laboratory conditions with demineralised water. For application with direct water contact, we recommend tests under real application conditions.

Table 01: Material properties

iglidur® UW was developed for underwater applications in which the maximum temperatures are lower than +100°C. For application temperatures above this limit, the plain bearings made from iglidur® UW500 are available. Though iglidur® UW was developed for application in liquids, it is also suitable for dry operation. This one is particularly important in applications that call for both dry and wet operations. These applications can be seen often in practice. The features of the bearings made from iglidur® UW described in this section apply to the dry operation. Unless it is expressly mentioned otherwise.

Moisture absorption

The moisture absorption of iglidur® UW plain bearings in ambient conditions is approximately 0.2% weight. The saturation limit submerged in water is 0.8% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® UW are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

iglidur® UW plain bearings have limited resistance to weathering. The material properties are affected. Discolouration occurs. Practical tests under real application conditions are recommended.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® UW plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® UW under different loads. At the maximum recommended surface pressure of 40MPa, the deformation is less than 1%.

Surface pressure, page 45



-50°C up to +90°C



40MPa



Permissible surface speeds

iglidur® UW is very good in both wet and dry operation. Due to hydrodynamic lubrication at high speeds, surface speeds far above 2m/s can be achieved. The iglidur® UW plain bearings can be used in dry operation at speeds of up to 1.5m/s for short periods.

Surface speed, page 48

Temperature

As stated earlier, iglidur® UW plain bearings are required for use in the low temperature range. As the liquid usually dissipates heat in underwater applications the temperature of the liquid is very important. For temperatures over +80°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The surface finish of the shafts should not be extremely smooth in order to prevent a high adhesion effect and the related increase of the coefficient of friction. Please contact us for the specifications of shaft surface finishes in underwater applications.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® UW. For low loads with rotation, the combinations achieve the best coefficient of wear with high grade steel and 304 stainless steel. The conditions shift with increasing loads. It is also important to note that the wear rate increases significantly from loads > 5MPa.

Shaft materials, page 56

Installation tolerances

iglidur® UW plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	+ up to 0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	0.5	0.4	2.0
Short-term m/s	1.5	1.1	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.15-0.35	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

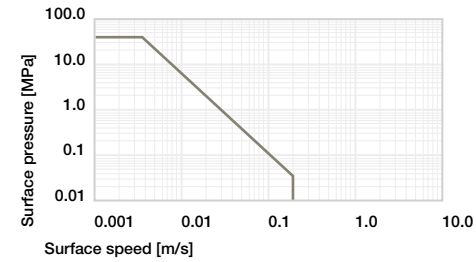


Diagram 01: Permissible pv values for iglidur® UW plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

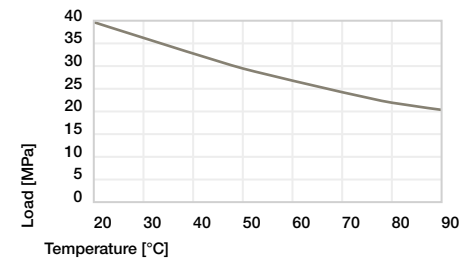


Diagram 02: Maximum recommended surface pressure as a function of temperature (40MPa at +20°C)

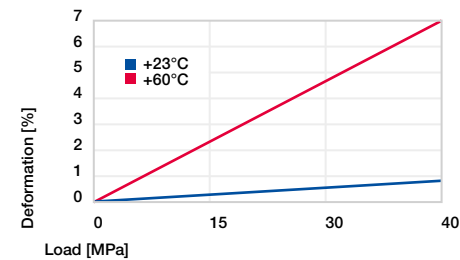


Diagram 03: Deformation under pressure and temperature

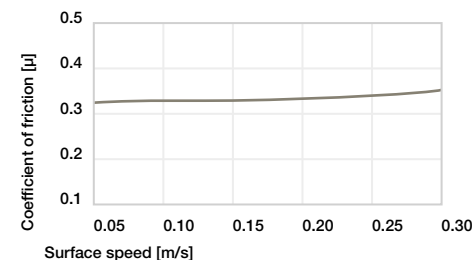


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

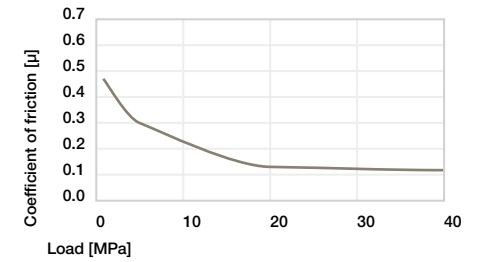


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

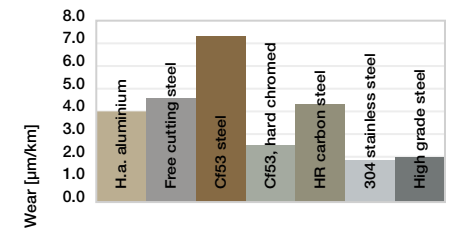


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

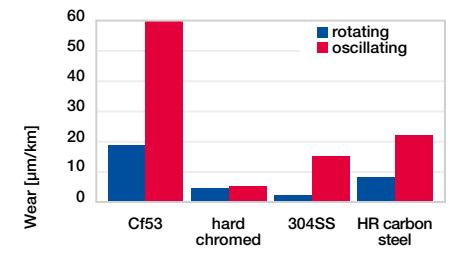
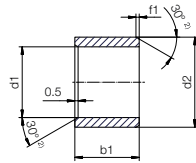


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

Bearing technology | Plain bearings | iglidur® UW

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8



Order example: UWSM-0304-05 – no minimum order quantity.

UW iglidur® material S Cylindrical M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
3.0	+0.014 +0.054	4.5	5.0	UWSM-0304-05
4.0		5.5	6.0	UWSM-0405-06
5.0	+0.020 +0.068	7.0	8.0	UWSM-0507-08
6.0		8.0	8.0	UWSM-0608-08
8.0	+0.025 +0.083	10.0	10.0	UWSM-0810-10
10.0		12.0	10.0	UWSM-1012-10
12.0		14.0	12.0	UWSM-1214-12
16.0	+0.032 +0.102	18.0	12.0	UWSM-1618-12
18.0		20.0	15.0	UWSM-1820-15

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/UW



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

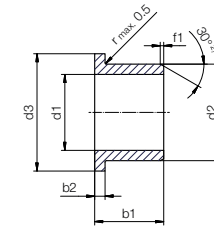
No low-quantity surcharges.

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EN 06/2023

Bearing technology | Plain bearings | iglidur® UW

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8



Order example: UWFM-0304-05 – no minimum order quantity.

UW iglidur® material F With flange M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾ [mm]	h13 [mm]	h13 [mm]	
3.0	+0.014 +0.054	4.5	7.5	5.0	0.75	UWFM-0304-05
4.0		5.5	9.5	6.0	0.75	UWFM-0405-06
5.0	+0.020 +0.068	7.0	11.0	5.0	1.00	UWFM-0507-05
6.0		8.0	12.0	6.0	1.00	UWFM-0608-06
8.0	+0.025 +0.083	10.0	15.0	10.0	1.00	UWFM-0810-10
10.0		12.0	18.0	10.0	1.00	UWFM-1012-10
12.0		14.0	20.0	12.0	1.00	UWFM-1214-12
16.0	+0.032 +0.102	18.0	24.0	17.0	1.00	UWFM-1618-17
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	UWFM-2023-21

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/UW



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

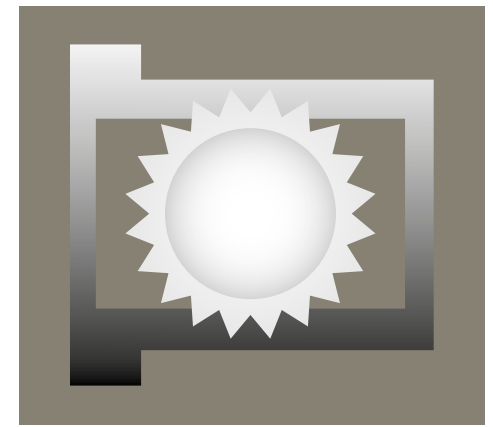
Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

EN 06/2023



For continuous direct sunlight

Permanently UV-resistant with properties comparable to iglidur® J

iglidur® J UV



When to use it?

- When high UV resistance is required
- When a wear-resistant material is required
- When an optimisation of the long-term mechanical properties is required



When not to use it?

- When high pressures occur
iglidur® G
- When temperatures higher than +120 °C occur
iglidur® G, iglidur® X
- When a cost-effective plain bearing for occasional movements is necessary
iglidur® G

Bearing technology | Plain bearings | iglidur® J UV



Ø
6.0-20.0mm



Also available as:



Bar stock, round bar
Page 743

For continuous direct sunlight
Permanently UV-resistant with properties comparable to iglidur® J



Bar stock, plate
Page 773

Today, plain bearings appear as special shapes for special uses, in some instances of which they are exposed to UV radiation for long periods of time. igus® has therefore developed a new material: iglidur® J UV.

- UV-stabilised
- Long-term mechanical properties improved
- High wear resistance



tribo-tape liner
Page 781

Typical application areas

- Solar technology
- Outdoor applications



Guide rings
Page 641

Descriptive technical specifications

Wear resistance at +23°C	-	██████████	+
Wear resistance at +90°C	-	██████████	+
Wear resistance at +150°C	-	██████	+
Slide property	-	██████████	+
Wear resistance under water	-	██████	+
Media resistance	-	██████████	+
Resistant to edge pressures	-	██████████	+
Resistant to shock and impact loads	-	██████████	+
Dirt resistance	-	██████████	+



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.49	
Colour		black	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.3	
Max. moisture absorption	% weight	1.3	
Coefficient of friction, dynamic, against steel	μ	0.08-0.19	
pv value, max. (dry)	MPa · m/s	0.30	
Mechanical properties			
Flexural modulus	MPa	2,400	
Flexural strength at +20°C	MPa	72	
Compressive strength	MPa	n.s.	
Max. permissible surface pressure (+20°C)	MPa	34	
Shore D hardness		74	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+120	
Min. application temperature	°C	-50	
Thermal conductivity	W/m · K	0.30	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	10	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹³	DIN IEC 93
Surface resistance	Ω	> 10 ¹³	DIN 53482

Table 01: Material properties

One main advantage of iglidur® J UV plain bearings is the low coefficient of friction in dry operation. The material is resistant to UV radiation and retains its sliding properties.

Moisture absorption

The moisture absorption of iglidur® J UV plain bearings in ambient conditions is approximately 0.3% weight. The saturation limit submerged in water is 1.3% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® J UV bearings.

Radiation resistance

Plain bearings made from iglidur® J UV are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

iglidur® J UV plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® J UV plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

With a maximum recommended surface pressure of 35MPa, iglidur® J UV plain bearings are not suitable for extreme loads. Diagram 03 shows the elastic deformation of iglidur® J UV at radial loads.

Surface pressure, page 45



-50°C up to +90°C



35MPa



HB



Permissible surface speeds

The low coefficient of friction and no stick-slip tendency of iglidur® J UV plain bearings are particularly important at very low speeds. However, iglidur® J UV can also be used for high speeds of over 1m/s. In both cases the static friction is very low and stick slip does not occur. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

In the case of a permissible long-term application temperature of +90°C, iglidur® J UV will even withstand +120°C for short periods. The wear rises with increasing temperatures. For temperatures over +60°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. With increasing shaft surface finish, the coefficient of friction also increases. For iglidur® J UV a ground surface with an average surface finish $R_a = 0.8\mu\text{m}$ is recommended. Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® J UV. When compared to most other iglidur® materials, iglidur® J UV plain bearings have very low wear results at low loads compared with all shaft materials tested. Also, for increasing loads up to 5 MPa, the wear resistance of iglidur® J UV plain bearings is excellent. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 56

Installation tolerances

iglidur® J UV plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	+ up to 0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	1.5	1.1	8.0
Short-term m/s	2.2	1.7	12.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.08-0.19	0.09	0.04	0.04

Table 04: Coefficient of friction against steel ($R_a = 1\mu\text{m}$, 50HRC)

	Housing	Plain bearings	Shaft			
$\varnothing d1$ [mm]	H7 [mm]	E10 [mm]	h9 [mm]			
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

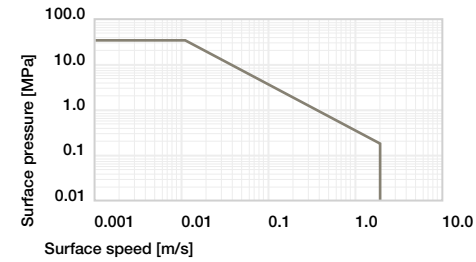


Diagram 01: Permissible pv values for iglidur® J UV plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

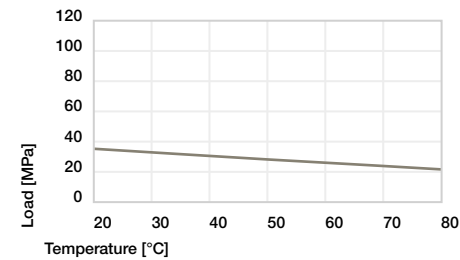


Diagram 02: Maximum recommended surface pressure as a function of temperature (35MPa at +20°C)

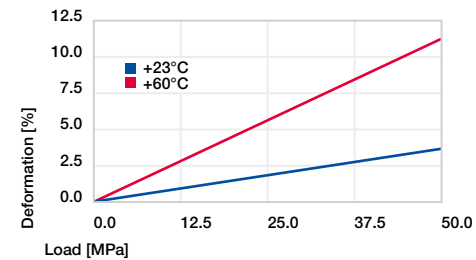


Diagram 03: Deformation under pressure and temperature

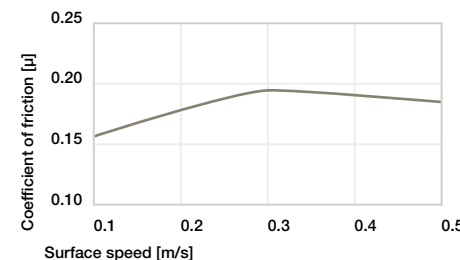


Diagram 04: Coefficient of friction as a function of the surface speed, $p = 0.75\text{MPa}$

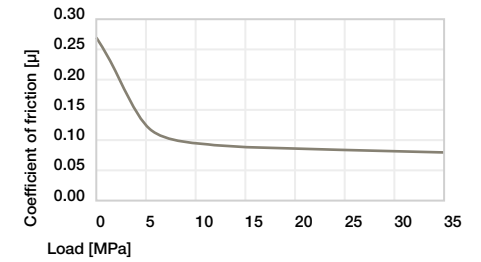


Diagram 05: Coefficient of friction as a function of the pressure, $v = 0.01\text{m/s}$

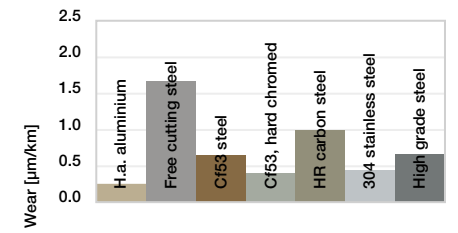


Diagram 06: Wear, rotating with different shaft materials, pressure, $p = 1\text{MPa}$, $v = 0.3\text{m/s}$

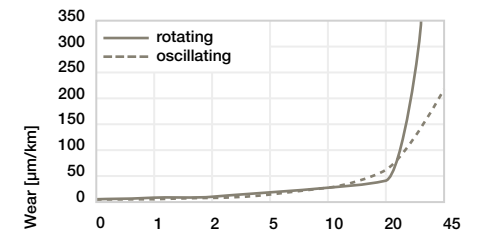
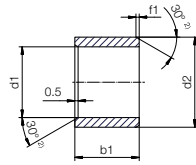


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, $p = 2\text{MPa}$

Bearing technology | Plain bearings | iglidur® J UV

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8



Order example: JUVSM-0608-08 – no minimum order quantity.

J UV iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 08 Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
6.0		8.0	8.0	JUVSM-0608-08
8.0	+0.020 +0.068	10.0	12.0	JUVSM-0810-12
10.0	+0.025 +0.083	12.0	12.0	JUVSM-1012-12
12.0	+0.030 +0.102	14.0	12.0	JUVSM-1214-12
16.0	+0.030 +0.102	18.0	15.0	JUVSM-1618-15
20.0	+0.040 +0.124	23.0	20.0	JUVSM-2023-20

³⁾ After press-fit. *Testing methods, page 61*



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including delivery times, prices, online tools

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Ordering note

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Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

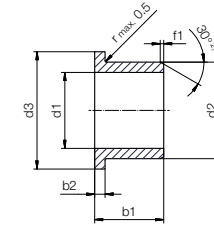
No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Bearing technology | Plain bearings | iglidur® J UV

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8



Order example: JUVFM-0608-08 – no minimum order quantity.

J UV iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 08 Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾ [mm]	h13 [mm]	h13 [mm]	
6.0		8.0	12.0	8.0	1.00	JUVFM-0608-08
8.0	+0.020 +0.068	10.0	15.0	9.5	1.00	JUVFM-0810-09
10.0	+0.025 +0.083	12.0	18.0	12.0	1.00	JUVFM-1012-12
12.0	+0.030 +0.102	14.0	20.0	12.0	1.00	JUVFM-1214-12
16.0	+0.030 +0.102	18.0	24.0	17.0	1.00	JUVFM-1618-17
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	JUVFM-2023-21

³⁾ After press-fit. *Testing methods, page 61*



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Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.



The biopolymer

Based on renewable resources

iglidur® N54



When to use it?

- For applications with infrequent movement at low to medium loads
- At static loads
- When the environmental impact of a product needs to be optimised



When not to use it?

- When a universal standard plain bearing is required
iglidur® G
- When dealing with high motion frequencies and continuous operation
iglidur® J
- When dealing with high temperatures
iglidur® J350

Bearing technology | Plain bearings | iglidur® N54



Ø
6.0-20.0mm



Also available
as:



Bar stock,
round bar
Page 743



Bar stock,
plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole
flange
bearings
Page 667



Moulded
special parts
Page 696



igubal®
spherical balls
Page 993

The biopolymer Based on renewable resources

Based on 54 % renewable resources, this material also meets high technical requirements.

- Based on renewable resources
- Universal installation
- Lubrication-free
- Maintenance-free

Typical application areas

- Consumer products
- General mechanical engineering
- Furniture industry
- Industrial design

Descriptive technical specifications

Wear resistance at +23°C	-	<div style="width: 25%; background-color: #808080;"></div>	+
Wear resistance at +90°C	-	<div style="width: 15%; background-color: #808080;"></div>	+
Wear resistance at +150°C	-	<div style="width: 10%; background-color: #808080;"></div>	+
Slide property	-	<div style="width: 40%; background-color: #808080;"></div>	+
Wear resistance under water	-	<div style="width: 15%; background-color: #808080;"></div>	+
Media resistance	-	<div style="width: 25%; background-color: #808080;"></div>	+
Resistant to edge pressures	-	<div style="width: 25%; background-color: #808080;"></div>	+
Resistant to shock and impact loads	-	<div style="width: 25%; background-color: #808080;"></div>	+
Dirt resistance	-	<div style="width: 25%; background-color: #808080;"></div>	+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.13	
Colour		green	
Max. moisture absorption at +23°C/50% r.h.	% weight	1.6	DIN 53495
Max. moisture absorption	% weight	3.6	
Coefficient of friction, dynamic, against steel	μ	0.15-0.23	
pv value, max. (dry)	MPa · m/s	0.50	
Mechanical properties			
Flexural modulus	MPa	1,800	DIN 53457
Flexural strength at +20°C	MPa	70	DIN 53452
Compressive strength	MPa	30	
Max. permissible surface pressure (+20°C)	MPa	36	
Shore D hardness		74	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+80	
Max. application temperature short-term	°C	+120	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	9	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹³	DIN IEC 93
Surface resistance	Ω	> 10 ¹¹	DIN 53482

Table 01: Material properties

iglidur® N54 is the first iglidur® material based largely on biopolymers. In addition to the proven lubrication-free properties of all iglidur® materials, this is one further contribution to positive environmental stewardship. The low coefficient of friction in conjunction with long service life ensure that this material has a permanent place in the iglidur® product range.

Moisture absorption

The moisture absorption of JUVFM-0608-08 plain bearings is below 1.6% weight in ambient conditions. The saturation limit submerged in water is 3.6% weight.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® N54 have limited use under radioactive radiation. They are resistant up to a radiation intensity of 1 · 10⁴ Gy.

Resistance to weathering

iglidur® N54 plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® N54 plain bearings decreases. Diagram 02 shows this inverse relationship. With the long-term permitted application temperature of +80°C, the permitted surface pressure still amounts to 10MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this. Diagram 03 shows the elastic deformation of iglidur® N54 at radial loads.

Surface pressure, page 45



-40 °C up to
+80 °C



36MPa



HB



RoHS



ISO
35474

Permissible surface speeds

Although the typical applications of iglidur® N54 plain bearings are generally in the area of intermittent operation, the maximum attainable speeds can be quite high, depending on the type of motion. The speeds stated in table 03 are limit values for the lowest bearing loads. With higher loads, the permitted speed drops with the extent of the load due to the limitations by the pv value.

Surface speed, page 48

Temperature

The short-term permissible temperature limit is +120°C, which allows the use of iglidur® N54 plain bearings in all applications involving elevated ambient temperatures. With increasing temperatures, the compressive strength of iglidur® N54 plain bearings decreases. When considering temperatures, the additional frictional heat in the bearing system must be taken into account. For temperatures over +60°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The coefficient of friction of iglidur® N54 is low. Please note that a sliding surface with a rough surface finish will increase the friction. Surface finishes (Ra) of the shaft between 0.1-0.4µm are ideal. The coefficient of friction of iglidur® N54 plain bearings is only marginally dependent on the surface speed. The influence of the load is greater; an increase in load lowers the coefficient of friction to as low as 0.8.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

It is important to select a suitable shaft material. As a rule, iglidur® N54 is suitable for use with hard or soft shafts, but "hard" shaft surfaces tend to give better service life. Starting at loads of 1MPa, wear increases measurably and continuously. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 56

Installation tolerances

iglidur® N54 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to +
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	0.8	0.6	1.0
Short-term m/s	1.5	1.1	2.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction µ	0.15-0.23	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]		
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

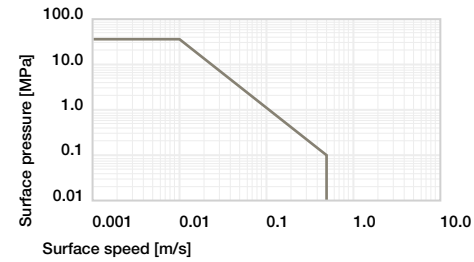


Diagram 01: Permissible pv values for iglidur® N54 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

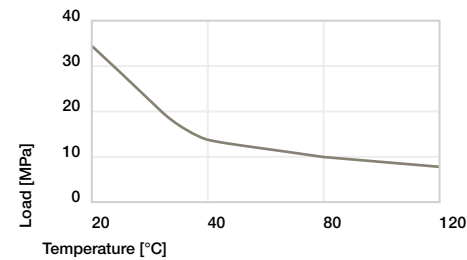


Diagram 02: Maximum recommended surface pressure as a function of temperature (36MPa at +20°C)

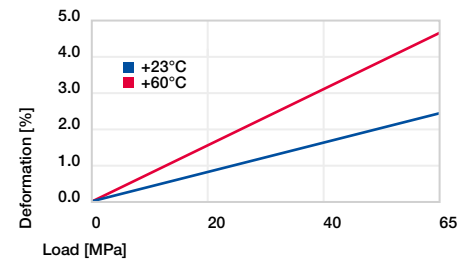


Diagram 03: Deformation under pressure and temperature

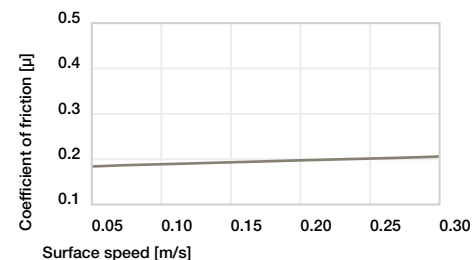


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

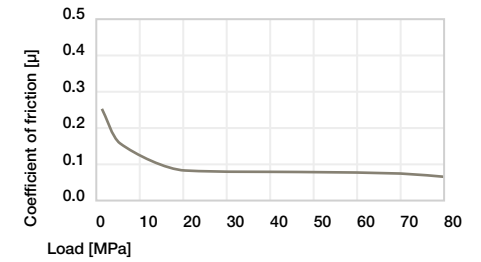


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

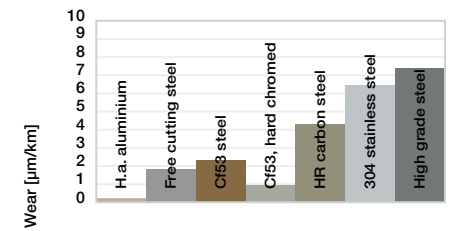


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

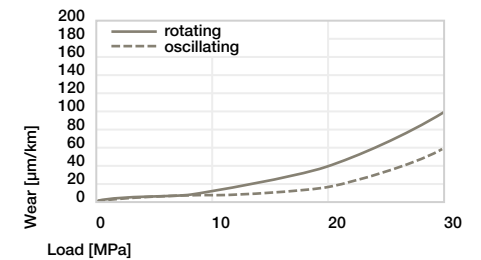
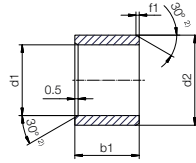


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® N54

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 6-12	Ø 12-30
f1 [mm]	0.5	0.8



Order example: N54SM-0608-06 – no minimum order quantity.

N54 iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
6.0	+0.020 +0.068	8.0	6.0	N54SM-0608-06
8.0	+0.025 +0.083	10.0	10.0	N54SM-0810-10
10.0		12.0	10.0	N54SM-1012-10
12.0	+0.032 +0.102	14.0	12.0	N54SM-1214-12
16.0		18.0	15.0	N54SM-1618-15
20.0	+0.040 +0.124	23.0	20.0	N54SM-2023-20

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

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Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

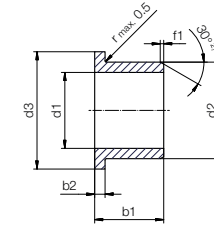
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EN 06/2023



Bearing technology | Plain bearings | iglidur® N54

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 6-12	Ø 12-30
f1 [mm]	0.5	0.8



Order example: N54FM-0608-06 – no minimum order quantity.

N54 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾ [mm]	h13 [mm]	h13 [mm]	
6.0	+0.020 +0.068	8.0	12.0	6.0	1.00	N54FM-0608-06
8.0	+0.025 +0.083	10.0	15.0	10.0	1.00	N54FM-0810-10
10.0		12.0	18.0	10.0	1.00	N54FM-1012-10
12.0	+0.032 +0.102	14.0	20.0	12.0	1.00	N54FM-1214-12
16.0		18.0	24.0	17.0	1.00	N54FM-1618-17
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	N54FM-2023-21

³⁾ After press-fit. *Testing methods, page 61*



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Ordering note

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Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

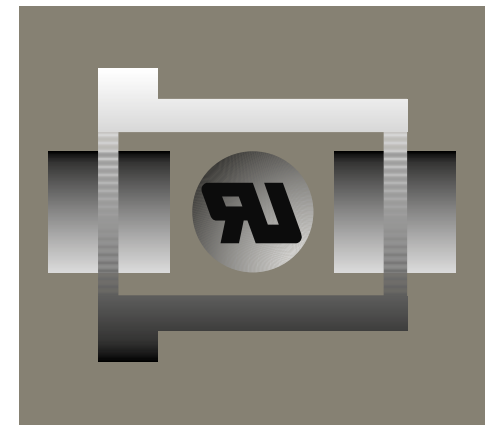
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EN 06/2023





Low-cost all-rounder for fire protection

UL94 V0 rating

iglidur® G V0



When to use it?

- When a UL94 V0 classified plain bearing for normal environmental conditions is required
- When an economic UL94 V0 classified plain bearing is required



When not to use it?

- When a UL94 V0 classified plain bearing for high-temperature applications is required
iglidur® X
- When a standard plain bearing without having to meet special fire codes is required
iglidur® G

Bearing technology | Plain bearings | iglidur® G V0



Ø
6.0-40.0mm



Also available as:



Bar stock, round bar
Page 743



Bar stock, plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

Low-cost all-rounder for fire protection UL94 V0 rating

The material achieves the UL94 V0 rating and is therefore perfectly suited for applications with stringent fire protection regulations (vehicle and aircraft interiors, building interior systems, etc.). Other properties are similar to the all-rounder material iglidur® G.

- UL94 V0-compliant
- High wear resistance
- Universal installation
- Lubrication-free
- Maintenance-free

Typical application areas

- Passenger seats
- Elevators
- Escalators
- Control cabinets
- Hinges

Descriptive technical specifications				
Wear resistance at +23°C	-	<div style="width: 100%; height: 10px; background-color: #ccc; position: relative;"> <div style="width: 100%; height: 100%; background-color: #888;"></div> </div>		+
Wear resistance at +90°C	-	<div style="width: 100%; height: 10px; background-color: #ccc; position: relative;"> <div style="width: 100%; height: 100%; background-color: #888;"></div> </div>		+
Wear resistance at +150°C	-	<div style="width: 100%; height: 10px; background-color: #ccc; position: relative;"> <div style="width: 100%; height: 100%; background-color: #888;"></div> </div>		+
Slide property	-	<div style="width: 100%; height: 10px; background-color: #ccc; position: relative;"> <div style="width: 100%; height: 100%; background-color: #888;"></div> </div>		+
Wear resistance under water	-	<div style="width: 100%; height: 10px; background-color: #ccc; position: relative;"> <div style="width: 100%; height: 100%; background-color: #888;"></div> </div>		+
Media resistance	-	<div style="width: 100%; height: 10px; background-color: #ccc; position: relative;"> <div style="width: 100%; height: 100%; background-color: #888;"></div> </div>		+
Resistant to edge pressures	-	<div style="width: 100%; height: 10px; background-color: #ccc; position: relative;"> <div style="width: 100%; height: 100%; background-color: #888;"></div> </div>		+
Resistant to shock and impact loads	-	<div style="width: 100%; height: 10px; background-color: #ccc; position: relative;"> <div style="width: 100%; height: 100%; background-color: #888;"></div> </div>		+
Dirt resistance	-	<div style="width: 100%; height: 10px; background-color: #ccc; position: relative;"> <div style="width: 100%; height: 100%; background-color: #888;"></div> </div>		+

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert



EN 06/2023

Technical data

General properties		Testing method	
Density	g/cm ³	1.53	
Colour		black	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.7	DIN 53495
Max. moisture absorption	% weight	4.0	
Coefficient of friction, dynamic, against steel	μ	0.07-0.20	
pv value, max. (dry)	MPa · m/s	0.50	
Mechanical properties			
Flexural modulus	MPa	7,900	DIN 53457
Flexural strength at +20°C	MPa	140	DIN 53452
Compressive strength	MPa	100	
Max. permissible surface pressure (+20°C)	MPa	75	
Shore D hardness		80	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+130	
Max. application temperature short-term	°C	+210	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	9	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹¹	DIN 53482

Table 01: Material properties

iglidur® G V0 is the first iglidur® material with a UL94 V0 rating for universal use in the normal temperature range. All other iglidur® materials with V0 rating are part of the high-temperature segment. The general mechanical and thermal properties are largely comparable to the all-rounder, iglidur® G.

Moisture absorption

The moisture absorption of iglidur® G V0 plain bearings in ambient conditions is approximately 0.7% weight. The saturation limit submerged in water is 4.0% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® G V0 bearings.

Radiation resistance

Plain bearings made from iglidur® G V0 are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

iglidur® G V0 plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

Mechanical properties

When temperatures increase, the compressive strength of iglidur® G V0 plain bearings decreases. Diagram 02 shows this inverse relationship. With the long-term permitted application temperature of +130°C, the permitted surface pressure still amounts to 35MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® G V0 under different loads. The plastic deformation is minimal up to a pressure of approximately 100MPa. However, it is also dependent on the service time.

Surface pressure, page 45

Permissible surface speeds

iglidur® G V0 has been developed for low to medium surface speeds. The maximum values shown in table 03 can only be achieved at low pressures. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48



-40°C up to +130°C



75MPa



V-0



RoHS



ISO 35474

Temperature

The ambient temperatures strongly influence the properties of plain bearings. The short-term maximum temperature permitted is +210°C and allows the use of iglidur® G V0 plain bearings in applications where the bearings are not subjected to any additional load such as a paint drying process. The temperatures prevailing in the bearing system also have an influence on the wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +120°C. For temperatures over +100°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the load. The coefficient of friction decreases considerably with increasing loads, whereas a slight increase in surface speed causes an increase of the coefficient of friction. This relationship explains the excellent results of iglidur® G V0 plain bearings for high loads and low speeds (diagrams 04 and 05).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. For iglidur® G V0 a ground surface with an average surface finish $R_a = 0.6-0.8\mu\text{m}$ is recommended. Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® G V0. It is important to notice that with increasing loads, the recommended hardness of the shaft increases. The "soft" shafts tend to wear themselves and thus increase the wear of the overall system. If the loads exceed 2MPa it is important to recognise that the wear rate (the gradient of the curves) clearly decreases with the hard shaft materials. The comparison of rotation and pivoting shows that iglidur® G V0 provides advantages in pivoting movements (diagram 07). If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 56

Installation tolerances

iglidur® G V0 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances.

Testing methods, page 61

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 1.0	0.7	4.0
Short-term	m/s 2.0	1.4	5.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.07-0.20	0.09	0.04	0.04

Table 04: Coefficient of friction against steel ($R_a = 1\mu\text{m}$, 50HRC)

$\varnothing d1$ [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	H7 [mm]	E10 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

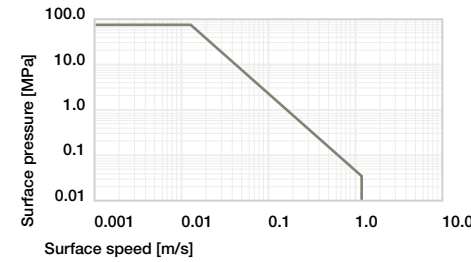


Diagram 01: Permissible pv values for iglidur® G V0 plain bearing with a wall thickness of 1 mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

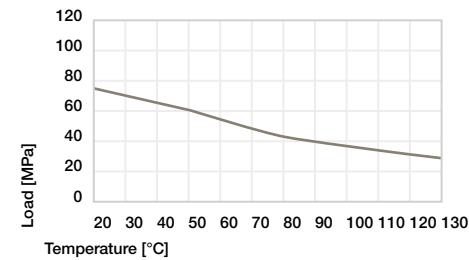


Diagram 02: Maximum recommended surface pressure as a function of temperature (75MPa at +20°C)

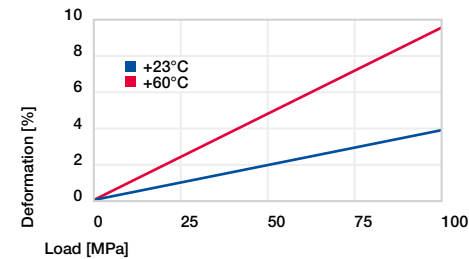


Diagram 03: Deformation under pressure and temperature

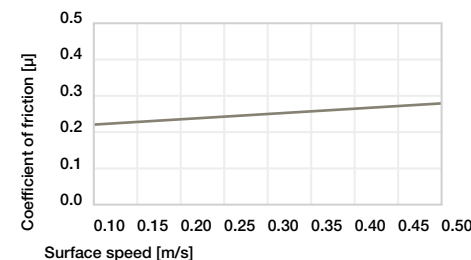


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1 MPa

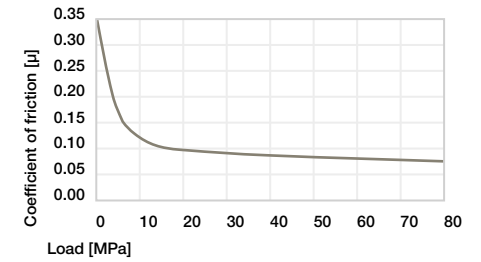


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

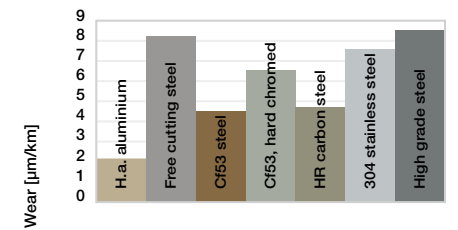


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1 MPa, v = 0.3 m/s

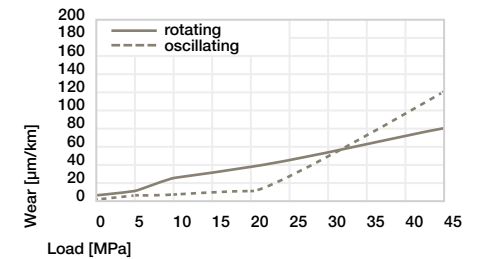
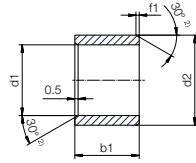


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® G V0

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2



Dimensions according to ISO 3547-1 and special dimensions



Order example: GV0SM-0608-06 – no minimum order quantity.

G V0 iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
6.0	+0.020 +0.068	8.0	6.0	GV0SM-0608-06
8.0		10.0	10.0	GV0SM-0810-10
10.0		12.0	8.0	GV0SM-1012-08
10.0	+0.025 +0.083	12.0	9.0	GV0SM-1012-09
10.0		12.0	10.0	GV0SM-1012-10
10.0		12.0	15.0	GV0SM-1012-15
10.0		12.0	17.0	GV0SM-1012-17
12.0	+0.032 +0.102	14.0	12.0	GV0SM-1214-12
16.0		18.0	15.0	GV0SM-1618-15
20.0		23.0	20.0	GV0SM-2023-20
25.0	+0.040 +0.124	28.0	20.0	GV0SM-2528-20
30.0		34.0	30.0	GV0SM-3034-30
35.0		39.0	40.0	GV0SM-3539-40
40.0	+0.050 +0.150	44.0	40.0	GV0SM-4044-40

³⁾ After press-fit. *Testing methods, page 61*



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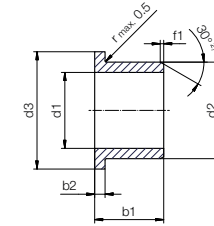
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Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30	Ø > 30
f1 [mm]	0.3	0.5	0.8	1.2



Dimensions according to ISO 3547-1 and special dimensions



Order example: GV0FM-0608-06 – no minimum order quantity.

G V0 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾ [mm]	h13 [mm]	h13 [mm]	
6.0	+0.020 +0.068	8.0	12.0	6.0	1.00	GV0FM-0608-06
8.0		10.0	15.0	10.0	1.00	GV0FM-0810-10
10.0	+0.025 +0.083	12.0	18.0	10.0	1.00	GV0FM-1012-10
12.0		14.0	20.0	12.0	1.00	GV0FM-1214-12
16.0	+0.032 +0.102	18.0	24.0	17.0	1.00	GV0FM-1618-17
20.0		23.0	30.0	21.5	1.50	GV0FM-2023-21
25.0	+0.040 +0.124	28.0	35.0	21.0	1.50	GV0FM-2528-21
30.0		34.0	42.0	37.0	2.00	GV0FM-3034-37
35.0		39.0	47.0	36.0	2.00	GV0FM-3539-36
40.0	+0.050 +0.150	44.0	52.0	40.0	2.00	GV0FM-4044-40

³⁾ After press-fit. *Testing methods, page 61*



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Discount scaling		
1-9	50-99	500-999
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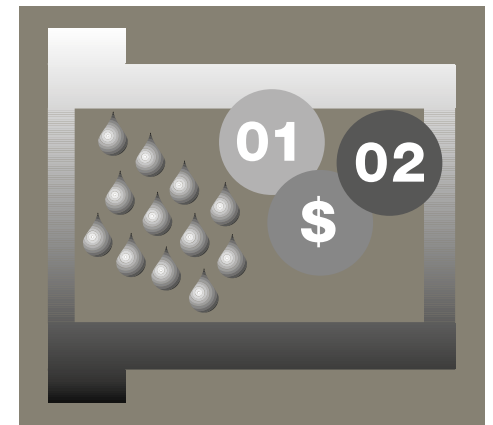
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Versatile and cost-effective

For applications with infrequent movement or continuous lubrication

iglidur® J2



When to use it?

- When low moisture absorption and good media resistance is required for static load
- When a cost-effective plain bearing is required for use in a wet environment with low pv values
- When there is basic lubrication of the plain bearing



When not to use it?

- When a wear-resistant plain bearing is required for continuous dry operation
iglidur® J3
- When low moisture absorption and media resistance play a minor role
iglidur® M250
- When a resistance to high temperatures and chemicals is required
iglidur® X

Bearing technology | Plain bearings | iglidur® J2



Ø
6.0-25.0mm



Also available
as:



Bar stock,
round bar
Page 743

Versatile and cost-effective For applications with infrequent movement or continuous lubrication

iglidur® J2 has good universal media resistance, comparable to that of iglidur® J and similar materials. The mechanical specifications in sporadically moving applications are better, but in comparison there are significant reductions in friction and wear. Like all iglidur® materials, iglidur® J2 is PFOA-free.

- Robust
- Cost-effective
- High media resistance
- Lubrication-free
- Maintenance-free

Typical application areas

- Jig construction
- Industrial handling



Bar stock,
plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole
flange
bearings
Page 667



Moulded
special parts
Page 696



igubal®
spherical balls
Page 993

Descriptive technical specifications				
Wear resistance at +23°C	-	<div style="width: 25%; background-color: #808080;"></div>		+
Wear resistance at +90°C	-	<div style="width: 15%; background-color: #808080;"></div>		+
Wear resistance at +150°C	-	<div style="width: 10%; background-color: #808080;"></div>		+
Slide property	-	<div style="width: 75%; background-color: #808080;"></div>		+
Wear resistance under water	-	<div style="width: 25%; background-color: #808080;"></div>		+
Media resistance	-	<div style="width: 80%; background-color: #808080;"></div>		+
Resistant to edge pressures	-	<div style="width: 70%; background-color: #808080;"></div>		+
Resistant to shock and impact loads	-	<div style="width: 70%; background-color: #808080;"></div>		+
Dirt resistance	-	<div style="width: 25%; background-color: #808080;"></div>		+

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www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.44	
Colour		light yellow	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	1.3	
Coefficient of friction, dynamic, against steel	μ	0.11-0.27	
pv value, max. (dry)	MPa · m/s	0.23	
Mechanical properties			
Flexural modulus	MPa	3,605	DIN 53457
Flexural strength at +20°C	MPa	101	DIN 53452
Compressive strength	MPa	77	
Max. permissible surface pressure (+20°C)	MPa	46	
Shore D hardness		74	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+110	
Min. application temperature	°C	-50	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	7	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹³	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

Table 01: Material properties

With respect to its general mechanical and thermal specifications, iglidur® J2 is directly comparable to our classic, iglidur® J. Therefore the iglidur® J2 is superior to iglidur® J with respect to the mechanical properties, such as maximum recommended surface pressure. However, wear resistance is reduced in dry operation.

Moisture absorption

The moisture absorption of iglidur® J2 plain bearings in ambient conditions is approximately 0.2% weight. The saturation limit submerged in water is 1.3% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® J2 bearings.

Radiation resistance

Plain bearings made from iglidur® J2 are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

iglidur® J2 plain bearings have limited resistance to weathering. The material properties are affected. Discolouration occurs. Practical tests under real application conditions are recommended.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® J2 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® J2 at radial loads. A possible deformation could be, among others, dependant on the duty cycle of the load.

Surface pressure, page 45



-50°C up to
+90°C



46MPa



Permissible surface speeds

iglidur® J2 is mainly suitable for low surface speeds in dry operation, but the specified values shown in table O3 can only be achieved at very low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

The temperatures prevailing in the bearing system also have an influence on the wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +90°C. For temperatures over +60°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Coefficient of friction and wear resistance are dependent on the application parameters (diagrams O4 and O5).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. Diagram O6 shows results of testing different shafts. Diagram O7 shows that iglidur® J2 delivers good coefficient of wear especially with free cutting steel in rotation at 1MPa. In dry operation, the coefficient of wear is sometimes significantly higher on other shafts. Unlike many other iglidur® materials, the wear rate in pivoting is slightly higher compared to the rate in rotation with otherwise identical parameters (diagram O7).

Shaft materials, page 56

Installation tolerances

iglidur® J2 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. In relation to the installation tolerance, the inner diameter changes with the absorption of humidity.

Testing methods, page 61

Chemicals	Resistance
Alcohols	+
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	+ up to 0

All data given at room temperature [+20°C]

Table O2: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	0.8	0.7	3.0
Short-term m/s	1.9	1.1	5.0

Table O3: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.11-0.27	0.08	0.07	0.04

Table O4: Coefficient of friction against steel (Ra = 1µm, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table O5: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

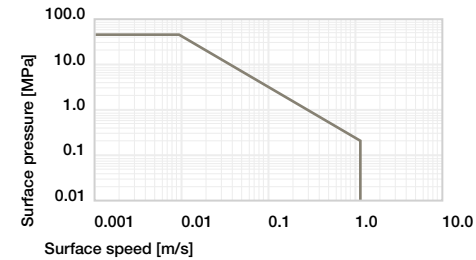


Diagram O1: Permissible pv values for iglidur® J2 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

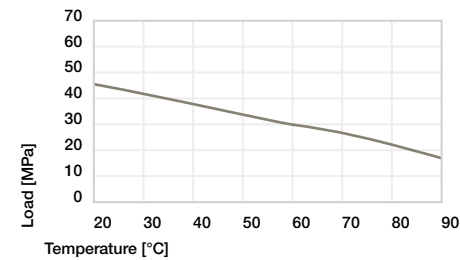


Diagram O2: Maximum recommended surface pressure as a function of temperature (46MPa at +20°C)

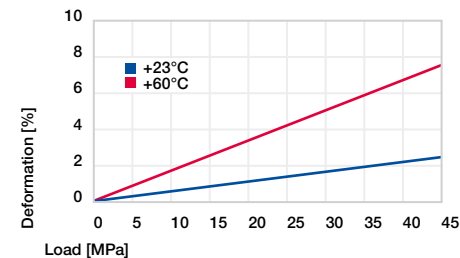


Diagram O3: Deformation under pressure and temperature

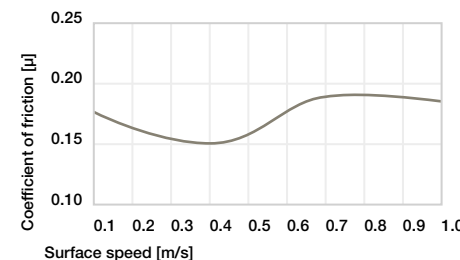


Diagram O4: Coefficient of friction as a function of the surface speed, p = 1MPa

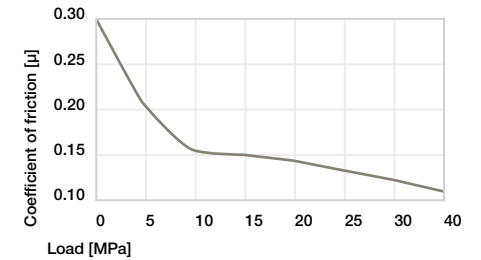


Diagram O5: Coefficient of friction as a function of the pressure, v = 0.01m/s

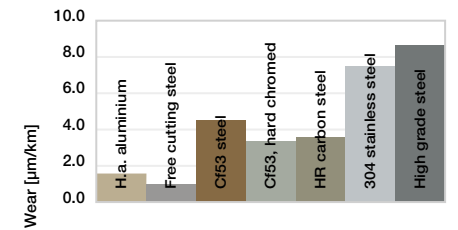


Diagram O6: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

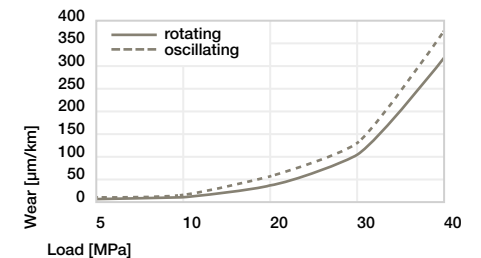
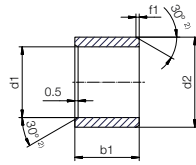


Diagram O7: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® J2

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 6-12	Ø 12-30
f1 [mm]	0.5	0.8



Order example: J2SM-0608-06 – no minimum order quantity.

J2 iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
6.0	+0.020 +0.068	8.0	6.0	J2SM-0608-06
8.0	+0.025 +0.083	10.0	10.0	J2SM-0810-10
10.0		12.0	10.0	J2SM-1012-10
12.0	+0.032 +0.102	14.0	12.0	J2SM-1214-12
16.0		18.0	15.0	J2SM-1618-15
20.0	+0.040 +0.124	23.0	20.0	J2SM-2023-20
25.0		28.0	20.0	J2SM-2528-20

³⁾ After press-fit. *Testing methods, page 61*



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1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

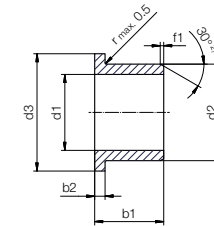
No minimum order value.

No low-quantity surcharges.

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Bearing technology | Plain bearings | iglidur® J2

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 6-12	Ø 12-30
f1 [mm]	0.5	0.8



Order example: J2FM-0608-06 – no minimum order quantity.

J2 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾ [mm]	h13 [mm]	h13 [mm]	
6.0	+0.020 +0.068	8.0	12.0	6.0	1.00	J2FM-0608-06
8.0	+0.025 +0.083	10.0	15.0	10.0	1.00	J2FM-0810-10
10.0		12.0	18.0	10.0	1.00	J2FM-1012-10
12.0	+0.032 +0.102	14.0	20.0	12.0	1.00	J2FM-1214-12
16.0		18.0	24.0	17.0	1.00	J2FM-1618-17
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	J2FM-2023-21

³⁾ After press-fit. *Testing methods, page 61*



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Ordering note

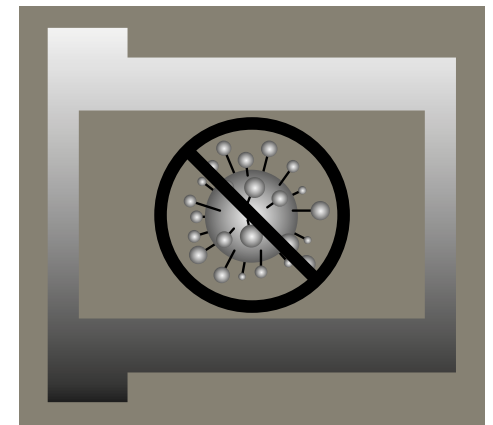
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.



The first antibacterial iglidur® plain bearing

According to ISO 22 196:2011

iglidur® AB



When to use it?

- When bearing points must meet high hygienic standards
- When a universal plain bearing for manual applications is required
- When a plain bearing for low to medium loads is required



When not to use it?

- When a wear-resistant plain bearing is required for continuous dry operation
iglidur® J3
- When a plain bearing that conforms with Regulation (EU) No. 10/2011 and/or the FDA requirements for repeated contact with food is required
iglidur® A181, iglidur® A350
- When a plain bearing with the highest possible media resistance is required
iglidur® X

Bearing technology | Plain bearings | iglidur® AB



Ø
6.0-20.0mm



Also available
as:



Bar stock,
round bar
Page 743



Bar stock,
plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole
flange
bearings
Page 667



Moulded
special parts
Page 696



igubal®
spherical balls
Page 993

The first antibacterial iglidur® plain bearing According to ISO 22 196:2011

Plain bearings made from iglidur® AB help to reduce the bacteria in bearing points that are difficult to access.

- Antibacterial
- Universal installation
- High media resistance
- Lubrication-free
- Maintenance-free

Typical application areas

- Medical technology
- Laboratory technology
- Ventilation systems
- Sanitary furniture and equipment
- Bearings of patient and care furniture

Descriptive technical specifications

Wear resistance at +23°C	-		+
Wear resistance at +90°C	-		+
Wear resistance at +150°C	-		+
Slide property	-		+
Wear resistance under water	-		+
Media resistance	-		+
Resistant to edge pressures	-		+
Resistant to shock and impact loads	-		+
Dirt resistance	-		+

Technical data

General properties		Testing method	
Density	g/cm ³	1.11	
Colour		yellow	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.8	ISO 175
Max. moisture absorption	% weight	1.6	ISO 62
Coefficient of friction, dynamic, against steel	μ	0.18-0.31	
pv value, max. (dry)	MPa · m/s	0.25	
Mechanical properties			
Flexural modulus	MPa	1,850	DIN EN ISO 178
Flexural strength at +20°C	MPa	50	DIN EN ISO 178
Compressive strength	MPa	40	
Max. permissible surface pressure (+20°C)	MPa	25	
Shore D hardness		70	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+70	
Max. application temperature short-term	°C	+140	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	10	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	>10 ¹²	DIN IEC 93
Surface resistance	Ω	>10 ¹²	DIN 53482

Table 01: Material properties

iglidur® AB was specifically developed for applications in areas with high hygiene requirements. Often such applications are manually operated pivots (doors, medical furniture, etc.). The material reduces the level of bacterial contamination but - like all "anti-bacterial" materials - is not a substitute for adequate hygienic measures.

Moisture absorption

The moisture absorption of iglidur® AB plain bearings in ambient conditions is approximately 0.8% weight. The saturation limit submerged in water is 1.6% weight.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® AB bearings.

Radiation resistance

Plain bearings made from iglidur® AB are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

Resistance to weathering

iglidur® AB plain bearings have limited resistance to weathering. The material properties are affected. Discolouration occurs. Practical tests under real application conditions are recommended.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® AB plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® AB at radial loads. A possible deformation could be, among others, dependant on the duty cycle of the load.

Surface pressure, page 45



-40°C up to
+70°C



25MPa



HB



Permissible surface speeds

iglidur® AB is mainly suitable for low surface speeds in dry operation, but the specified values shown in table O3 can only be achieved at very low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

The temperatures prevailing in the bearing system also have an influence on the wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +60°C. For temperatures over +50°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

Coefficient of friction and wear resistance are dependent on the application parameters (diagrams O4 and O5).

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. Diagram O6 shows results of testing different shafts. When rotating at a load of 1MPa, the wear on all tested shafts is very similar. Only the hard-anodised aluminium shafts cause a noticeable increase in the wear. As illustrated in diagram O7, the wear rate from pivoting and rotational movements at loads in increasing levels is also quite similar if the remaining parameters are identical.

Shaft materials, page 56

Installation tolerances

iglidur® AB plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. In relation to the installation tolerance, the inner diameter changes with the absorption of humidity. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	0

All data given at room temperature [+20°C]

Table O2: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	0.7	0.5	1.0
Short-term m/s	1.0	0.7	1.8

Table O3: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.18-0.31	0.09	0.04	0.04

Table O4: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	E10 [mm]	E10 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.014	+0.054	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.020	+0.068	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.025	+0.083	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.032	+0.102	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.040	+0.124	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.050	+0.150	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.060	+0.180	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.072	+0.212	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.085	+0.245	-0.100	+0.000

Table O5: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

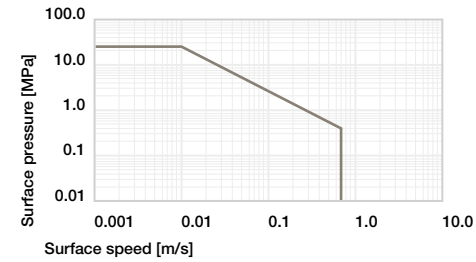


Diagram O1: Permissible pv values for iglidur® AB plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

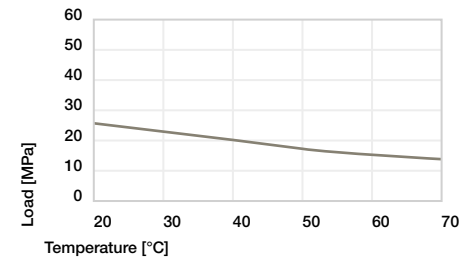


Diagram O2: Maximum recommended surface pressure as a function of temperature (25MPa at +20°C)

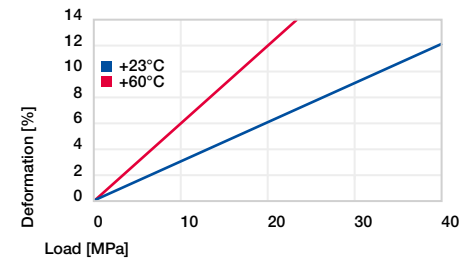


Diagram O3: Deformation under pressure and temperature

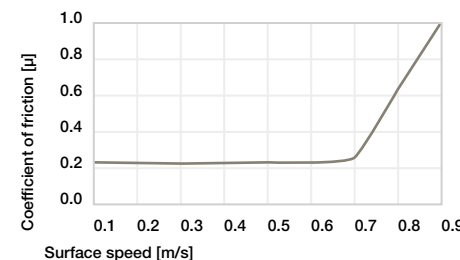


Diagram O4: Coefficient of friction as a function of the surface speed, p = 1MPa

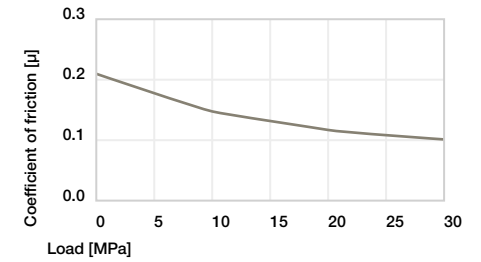


Diagram O5: Coefficient of friction as a function of the pressure, v = 0.01m/s

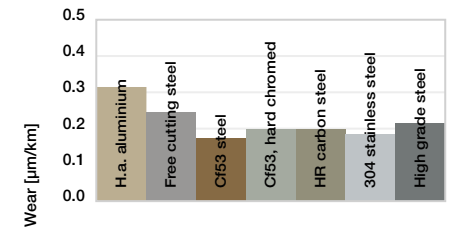


Diagram O6: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

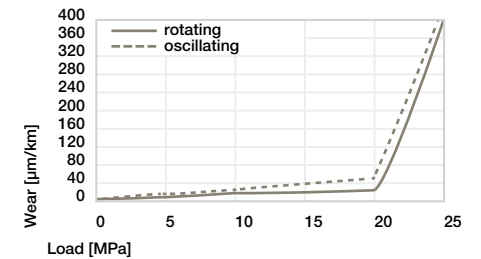
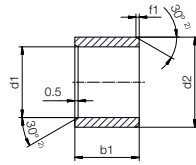


Diagram O7: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® AB

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8



Order example: ABSM-0608-06 – no minimum order quantity.

AB iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13 [mm]	
6.0	+0.020 +0.068	8.0	6.0	ABSM-0608-06
8.0	+0.025 +0.083	10.0	10.0	ABSM-0810-10
10.0		12.0	10.0	ABSM-1012-10
12.0	+0.032 +0.102	14.0	15.0	ABSM-1214-15
15.0		17.0	15.0	ABSM-1517-15
20.0	+0.040 +0.124	23.0	20.0	ABSM-2023-20

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

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Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

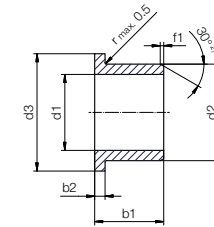
No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

Bearing technology | Plain bearings | iglidur® AB

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 1-6	Ø 6-12	Ø 12-30
f1 [mm]	0.3	0.5	0.8



Order example: ABFM-0608-08 – no minimum order quantity.

AB iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 08 Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾ [mm]	h13 [mm]	h13 [mm]	
6.0	+0.020 +0.068	8.0	12.0	8.0	1.00	ABFM-0608-08
8.0	+0.025 +0.083	10.0	15.0	9.5	1.00	ABFM-0810-09
10.0		12.0	18.0	12.0	1.00	ABFM-1012-12
12.0	+0.032 +0.102	14.0	20.0	12.0	1.00	ABFM-1214-12
15.0		17.0	23.0	12.0	1.00	ABFM-1517-12
20.0	+0.040 +0.124	23.0	30.0	21.5	1.50	ABFM-2023-21

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/AB



Ordering note

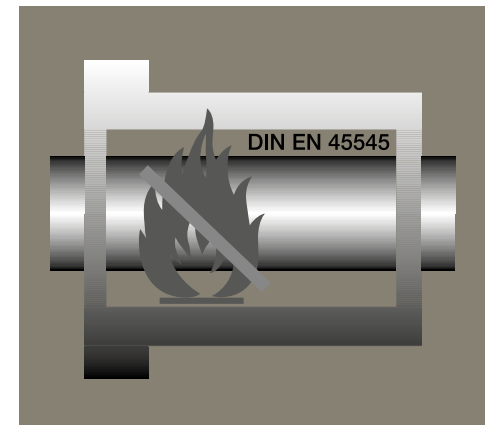
Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.



For the rail industry, complies with DIN EN 45545 HL3, R22/R23

Wear-resistant for rail technology
iglidur® RW370



When to use it?

- For applications in rail technology where suitability according to DIN EN 45545 is required
- For high wear resistance at low to medium pressures
- When a low coefficient of friction in dry operation is requested
- Low moisture absorption



When not to use it?

- When high pressure loads occur and suitability according to DIN EN 45545 is not required
iglidur® G, iglidur® W300
- When temperatures higher than +190°C occur
iglidur® G, iglidur® Z
- When a cost-effective plain bearing for occasional movements is necessary
iglidur® G

Bearing technology | Plain bearings | iglidur® RW370



Ø
6.0-20.0mm



Also available
as:



Bar stock,
round bar
Page 743

For the rail industry, complies with DIN EN 45545 HL3, R22/R23 Wear-resistant for rail technology

The first iglidur® material that fulfills the European fire safety standard for rail vehicles is suitable for many wear-stressed applications in railway technology due to its very complete property profile.

- Complies with the European fire protection standard DIN EN 45545 HL3 requirement set R22/R23
- Flame-retardant
- High wear resistance
- Low coefficient of friction
- Lubrication and maintenance-free



Bar stock,
plate
Page 773



tribo-tape liner
Page 781

Typical application areas

- Door guides and hinges
- Rotating joint
- Entrance staircases
- Seat table mechanisms



Guide rings
Page 641



Two hole
flange
bearings
Page 667



Moulded
special parts
Page 696



igubal®
spherical balls
Page 993

Descriptive technical specifications				
Wear resistance at +23°C	-	<div style="width: 75%; background-color: #ccc;"></div>		+
Wear resistance at +90°C	-	<div style="width: 75%; background-color: #ccc;"></div>		+
Wear resistance at +150°C	-	<div style="width: 75%; background-color: #ccc;"></div>		+
Slide property	-	<div style="width: 75%; background-color: #ccc;"></div>		+
Wear resistance under water	-	<div style="width: 75%; background-color: #ccc;"></div>		+
Media resistance	-	<div style="width: 75%; background-color: #ccc;"></div>		+
Resistant to edge pressures	-	<div style="width: 75%; background-color: #ccc;"></div>		+
Resistant to shock and impact loads	-	<div style="width: 75%; background-color: #ccc;"></div>		+
Dirt resistance	-	<div style="width: 75%; background-color: #ccc;"></div>		+

Technical data

General properties		Testing method	
Density	g/cm³	1.34	
Colour		beige	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.25	ISO 175
Max. moisture absorption	% weight	1.2	ISO 62
Coefficient of friction, dynamic, against steel	μ	0.13-0.17	
pv value, max. (dry)	MPa · m/s	1.20	
Mechanical properties			
Flexural modulus	MPa	2,997	DIN EN ISO 178
Flexural strength at +20°C	MPa	100	DIN EN ISO 178
Compressive strength	MPa	129	
Max. permissible surface pressure (+20°C)	MPa	75	
Shore D hardness		80	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+170	
Max. application temperature short-term	°C	+190	
Min. application temperature	°C	-50	
Thermal conductivity	W/m · K	0.22	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	5	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	>10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

Table 01: Material properties

iglidur® RW370 was specially developed for the fire protection requirements in railway technology. It fulfils the specification of DIN EN 45545. Plain bearings made of iglidur® RW370 are used primarily in door systems, seat adjustments and joints, as well as hinges.

Moisture absorption

The moisture absorption of iglidur® RW370 plain bearings is below 0.25% weight in ambient conditions. The saturation limit submerged in water is 1.2% weight.

Vacuum

In vacuum, the moisture content is released as vapour. Due to its low moisture absorption, use in a vacuum is possible.

Radiation resistance

Plain bearings made from iglidur® RW370 are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

iglidur® RW370 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® RW370 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® RW370 under different loads. A possible deformation could be, among others, dependant on the duty cycle of the load.

Surface pressure, page 45



-50°C up to
+170°C



75MPa



V-0



Permissible surface speeds

Although the typical applications of iglidur® RW370 plain bearings are generally in the area of intermittent operation, the maximum attainable speeds can be quite high, depending on the type of motion. The speeds stated in table 03 are limit values for the lowest bearing loads. With higher loads, the permitted speed drops with the extent of the load due to the limitations by the pv value.

Surface speed, page 48

Temperature

The short-term permissible temperature limit is +190°C, which allows the use of iglidur® RW370 plain bearings in all applications involving elevated ambient temperatures. With increasing temperatures, the compressive strength of iglidur® RW370 plain bearings decreases. When considering temperatures, the additional frictional heat in the bearing system must be taken into account. For temperatures over +120°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The excellent coefficient of friction level of iglidur® RW370 in dry operation decreases with speed, to a value of 1.1m/s. Diagram 04 shows this with respect to a steel shaft. Above a speed of 1.25 m/s the coefficient of friction increases significantly as the load limit of the material is reached.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 and 07 display a summary of the test results with different shaft materials conducted with plain bearings made from iglidur® RW370. At a surface pressure of 0.3m/s and 1MPa, shafts made of hard-anodised aluminium and hard-chromed Cf53 are the most suitable glide surfaces. Shafts made from 304 stainless steel or high grade steel also show good results. If the shaft material you plan on using is not shown in these test results, please contact us.

Shaft materials, page 56

Installation tolerances

iglidur® RW370 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	+
Diluted alkalines	+
Fuels	+ up to 0
Greases, oils without additives	+
Hydrocarbons	-
Strong acids	-
Strong alkalines	-

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term m/s	0.9	0.6	2.5
Short-term m/s	1.0	0.8	2.6

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.13-0.17	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	F10 [mm]	F10 [mm]	h9 [mm]		
0-3	+0.000	+0.010	+0.006	+0.046	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.010	+0.058	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.013	+0.071	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.016	+0.086	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.020	+0.104	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.025	+0.125	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.030	+0.150	-0.074	+0.000
> 80-120	+0.000	+0.035	-0.036	+0.176	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.043	+0.203	+0.000	+0.100

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

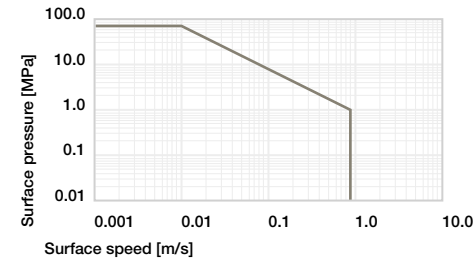


Diagram 01: Permissible pv values for iglidur® RW370 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

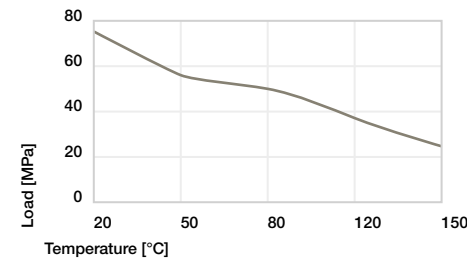


Diagram 02: Maximum recommended surface pressure as a function of temperature (75MPa at +20°C)

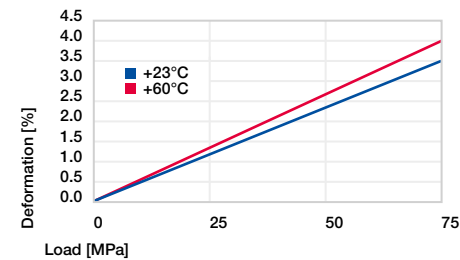


Diagram 03: Deformation under pressure and temperature

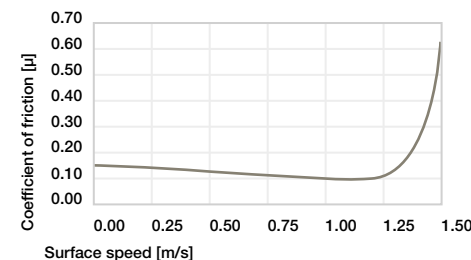


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

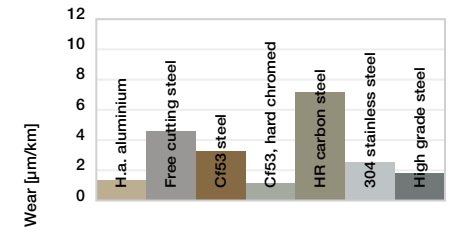


Diagram 05: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

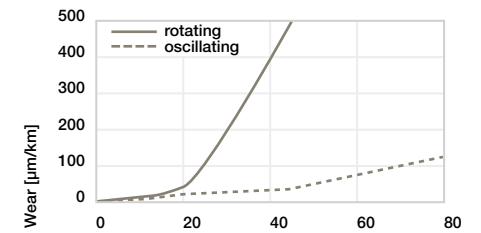
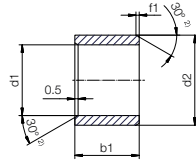


Diagram 06: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

Bearing technology | Plain bearings | iglidur® RW370

Sleeve bearings (form S)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 6-12	Ø 12-30
f1 [mm]	0.5	0.8



Order example: RW370SM-0608-06 – no minimum order quantity.

RW370 iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1	d1	d2	b1	Part No.
[mm]	Tolerance ³⁾	[mm]	h13	
6.0	+0.010 +0.058	8.0	6.0	RW370SM-0608-06
8.0	+0.013 +0.071	10.0	10.0	RW370SM-0810-10
10.0		12.0	10.0	RW370SM-1012-10
12.0		14.0	12.0	RW370SM-1214-12
16.0	+0.016 +0.086	18.0	15.0	RW370SM-1618-15
20.0	+0.020 +0.104	23.0	20.0	RW370SM-2023-20

³⁾ After press-fit. *Testing methods, page 61*



Available from stock

Detailed information about delivery time online.

www.igus.eu/24



Order online

including delivery times, prices, online tools

www.igus.eu/RW370



Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

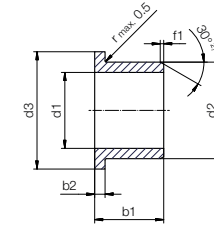
No low-quantity surcharges.

Free shipping within Germany for orders above €150.

EN 06/2023

Bearing technology | Plain bearings | iglidur® RW370

Flange bearings (form F)



²⁾ Thickness < 0.6mm: chamfer = 20°

i Dimensions according to ISO 3547-1 and special dimensions

Chamfer in relation to d1

d1 [mm]	Ø 6-12	Ø 12-30
f1 [mm]	0.5	0.8



Order example: RW370FM-0608-06 – no minimum order quantity.

RW370 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

d1	d1	d2	d3	b1	b2	Part No.
[mm]	Tolerance ³⁾	[mm]	d13 ³⁾	h13	h13	
6.0	+0.010 +0.058	8.0	12.0	6.0	1.00	RW370FM-0608-06
8.0	+0.013 +0.071	10.0	15.0	9.5	1.00	RW370FM-0810-09
10.0		12.0	18.0	9.0	1.00	RW370FM-1012-09
12.0		14.0	20.0	12.0	1.00	RW370FM-1214-12
16.0	+0.016 +0.086	18.0	24.0	12.0	1.00	RW370FM-1517-12
20.0	+0.020 +0.104	23.0	30.0	21.5	1.50	RW370FM-2023-20

³⁾ After press-fit. *Testing methods, page 61*



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Detailed information about delivery time online.

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Ordering note

Our prices are scaled according to order quantities, current prices can be found online.

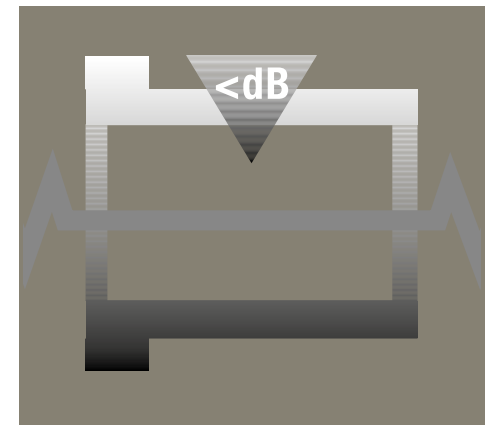
Discount scaling		
1-9	50-99	500-999
10-24	100-199	1,000-2,499
25-49	200-499	2,500-4,999

No minimum order value.

No low-quantity surcharges.

Free shipping within Germany for orders above €150.

EN 06/2023



The variable one

For simple bearing applications

iglidur® B



When to use it?

- When maximum vibration dampening is required
- When sealing function has to be integrated
- When high edge loads occur



When not to use it?

- In applications with high atmospheric humidity
iglidur® J
- When a cost-effective universal plain bearing is required
iglidur® R
- When the highest wear resistance is required
iglidur® J

Bearing technology | Plain bearings | iglidur® B



Ø
-



Also available as:



Bar stock, round bar
Page 743



Bar stock, plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

The variable one For simple bearing applications

Vibration dampening is the predominant feature of the iglidur® B material, which are also well-suited for edge loads at low pressure.

- Elimination of noise
- High flexibility
- Sealing function possible
- Lubrication-free
- Maintenance-free

Descriptive technical specifications				
Wear resistance at +23°C	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc; border: 1px solid #ccc;"> <div style="width: 20%; background-color: #666;"></div> </div>	+	
Wear resistance at +90°C	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc; border: 1px solid #ccc;"> <div style="width: 10%; background-color: #666;"></div> </div>	+	
Wear resistance at +150°C	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc; border: 1px solid #ccc;"> <div style="width: 10%; background-color: #666;"></div> </div>	+	
Slide property	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc; border: 1px solid #ccc;"> <div style="width: 20%; background-color: #666;"></div> </div>	+	
Wear resistance under water	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc; border: 1px solid #ccc;"> <div style="width: 10%; background-color: #666;"></div> </div>	+	
Media resistance	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc; border: 1px solid #ccc;"> <div style="width: 20%; background-color: #666;"></div> </div>	+	
Resistant to edge pressures	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc; border: 1px solid #ccc;"> <div style="width: 80%; background-color: #666;"></div> </div>	+	
Resistant to shock and impact loads	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc; border: 1px solid #ccc;"> <div style="width: 80%; background-color: #666;"></div> </div>	+	
Dirt resistance	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc; border: 1px solid #ccc;"> <div style="width: 50%; background-color: #666;"></div> </div>	+	

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.15	
Colour		grey	
Max. moisture absorption at +23°C/50% r.h.	% weight	1	DIN 53495
Max. moisture absorption	% weight	6.3	
Coefficient of friction, dynamic, against steel	μ	0.18-0.28	
pv value, max. (dry)	MPa · m/s	0.15	
Mechanical properties			
Flexural modulus	MPa	1,800	DIN 53457
Flexural strength at +20°C	MPa	55	DIN 53452
Compressive strength	MPa	20	
Max. permissible surface pressure (+20°C)	MPa	40	
Shore D hardness		69	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+100	
Max. application temperature short-term	°C	+130	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	12	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹⁰	DIN IEC 93
Surface resistance	Ω	> 10 ⁹	DIN 53482

Table 01: Material properties

The compressive strength of the iglidur® B plain bearings is on the one hand low, but on the other, is an important property of the bearing. They are mainly used where vibration dampening and acoustic separation are required.

Moisture absorption

The moisture absorption of iglidur® B plain bearings in ambient conditions is approximately 1% weight. The saturation limit submerged in water is 6.3% weight. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® B bearings.

Radiation resistance

Plain bearings made from iglidur® B are resistant up to a radiation intensity of 3 · 10² Gy.

Resistance to weathering

igidur® B plain bearings have limited resistance to weathering. The material properties are affected. Discolouration occurs. Practical tests under real application conditions are recommended.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® B plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this. Diagram 03 shows the elastic deformation of iglidur® B at radial loads. At the maximum recommended surface pressure of 40MPa the deformation is about 5.3%.

Surface pressure, page 45



-40°C up to +100°C



40MPa



HB



RoHS



ISO 35474

Permissible surface speeds

iglidur® B plain bearings can be continuously used up to 0.7m/s in rotating applications. The frictional heat provides the speed limits. In practice, though, this level is rarely reached due to varying application conditions.

Surface speed, page 48

Temperature

The maximum long-term application temperature is +100°C. For temperatures over +50°C an additional securing is required. The wear resistance also decreases exponentially from +70°C upwards.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The coefficient of friction increases slightly with the speed and decreases with the load. Surface finishes (Ra) of the shaft between 0.4-0.6µm are ideal. As far as the bearing load is not too high, the attained coefficient of wear is pretty good. An increase in load results in a disproportionate increase in abrasion.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

The influence of the shaft is not very large on the wear resistance. Diagram 06 and 07 clarify that very similar wear data are attained with different shaft materials.

Shaft materials, page 56

Installation tolerances

iglidur® B plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the D11 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Product range

iglidur® B plain bearings are manufactured to special order.

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to -
Diluted alkalines	-
Fuels	-
Greases, oils without additives	-
Hydrocarbons	-
Strong acids	-
Strong alkalines	-

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 0.7	0.5	2.0
Short-term	m/s 1.0	0.7	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.18-0.28	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

Ø d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	D11 [mm]	D11 [mm]	h9 [mm]		
0-3	+0.000	+0.010	+0.020	+0.080	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.030	+0.105	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.040	+0.130	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.050	+0.160	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.065	+0.195	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.080	+0.240	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.100	+0.290	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.120	+0.340	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.145	+0.395	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

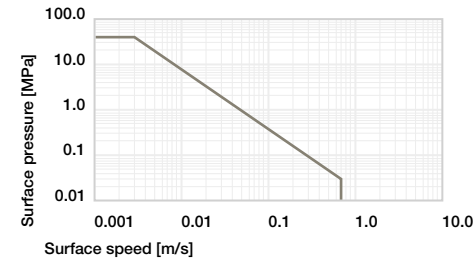


Diagram 01: Permissible pv values for iglidur® B plain bearing with a wall thickness of 1 mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

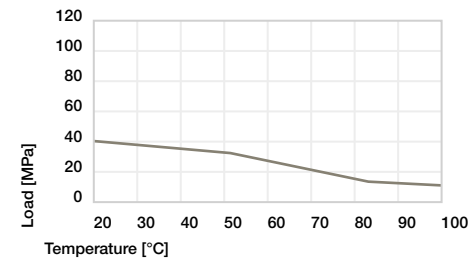


Diagram 02: Maximum recommended surface pressure as a function of temperature (40MPa at +20°C)

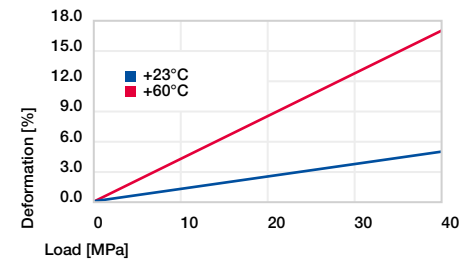


Diagram 03: Deformation under pressure and temperature

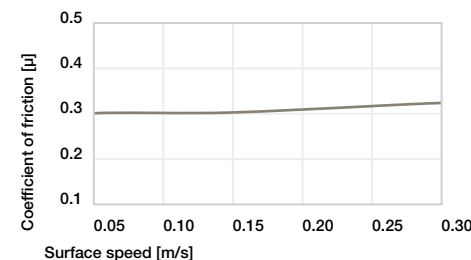


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

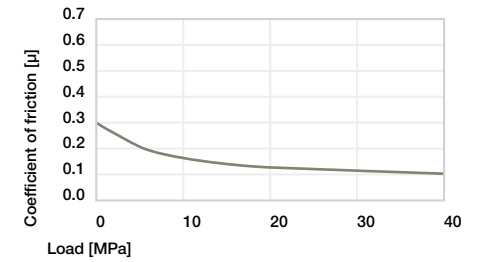


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

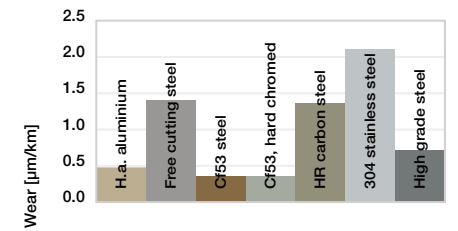


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

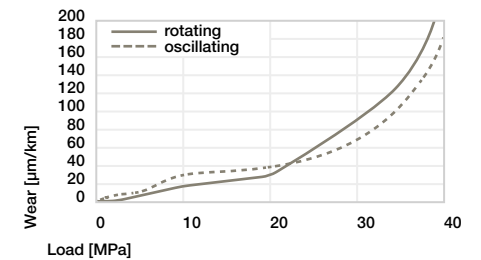
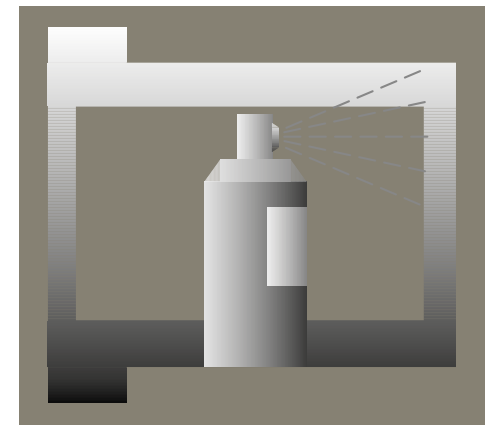


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load



Free from PTFE and silicone

For simple applications

igidur® C



When to use it?

- When PTFE and silicone are not allowed in your application
- For applications with low speed
- When dirt-resistant bearings is required
- When maintenance-free, self-lubricating bearings is required



When not to use it?

- When the highest wear resistance is required
igidur® W300
- When lowest coefficient of friction is required
igidur® J, iglidur® L250
- When a cost-effective option is requested
igidur® M250
- When low moisture absorption is required
igidur® R

Bearing technology | Plain bearings | iglidur® C



∅
-



Also available as:



Bar stock, round bar
Page 743

Free from PTFE and silicone For simple applications

Although iglidur® C dispenses with the use of PTFE and silicone as lubricants, the bearings still have excellent wear resistance under low loads.

- Maintenance-free dry operation
- High wear resistance
- Lubrication-free
- Maintenance-free



Bar stock, plate
Page 773



tribo-tape liner
Page 781



Guide rings
Page 641



Two hole flange bearings
Page 667



Moulded special parts
Page 696



igubal® spherical balls
Page 993

Descriptive technical specifications				
Wear resistance at +23°C	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc; border: 1px solid #ccc;"> <div style="width: 20%; background-color: #666;"></div> </div>	+	
Wear resistance at +90°C	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc; border: 1px solid #ccc;"> <div style="width: 10%; background-color: #666;"></div> </div>	+	
Wear resistance at +150°C	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc; border: 1px solid #ccc;"> <div style="width: 10%; background-color: #666;"></div> </div>	+	
Slide property	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc; border: 1px solid #ccc;"> <div style="width: 20%; background-color: #666;"></div> </div>	+	
Wear resistance under water	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc; border: 1px solid #ccc;"> <div style="width: 10%; background-color: #666;"></div> </div>	+	
Media resistance	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc; border: 1px solid #ccc;"> <div style="width: 20%; background-color: #666;"></div> </div>	+	
Resistant to edge pressures	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc; border: 1px solid #ccc;"> <div style="width: 30%; background-color: #666;"></div> </div>	+	
Resistant to shock and impact loads	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc; border: 1px solid #ccc;"> <div style="width: 30%; background-color: #666;"></div> </div>	+	
Dirt resistance	-	<div style="display: flex; width: 100px; height: 10px; background-color: #ccc; border: 1px solid #ccc;"> <div style="width: 30%; background-color: #666;"></div> </div>	+	

Online product finder
www.igus.eu/igidur-finder

Online service life calculation
www.igus.eu/igidur-expert

Technical data

General properties		Testing method	
Density	g/cm ³	1.10	
Colour		off white	
Max. moisture absorption at +23°C/50% r.h.	% weight	1	DIN 53495
Max. moisture absorption	% weight	6.9	
Coefficient of friction, dynamic, against steel	μ	0.17-0.25	
pv value, max. (dry)	MPa · m/s	0.10	
Mechanical properties			
Flexural modulus	MPa	1,900	DIN 53457
Flexural strength at +20°C	MPa	60	DIN 53452
Compressive strength	MPa	30	
Max. permissible surface pressure (+20°C)	MPa	40	
Shore D hardness		72	DIN 53505
Physical and thermal properties			
Max. application temperature long-term	°C	+90	
Max. application temperature short-term	°C	+130	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	15	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹⁰	DIN IEC 93
Surface resistance	Ω	> 10 ⁹	DIN 53482

Table 01: Material properties

Plain bearings made from iglidur® C were developed especially for applications where the use of PTFE and silicon is not possible. Such applications can be found in electronics, tobacco and beverages industry and in many painting processes. Keywords like paint compatibility and silicon-free make the further employment of this material reasonable.

Moisture absorption

The moisture absorption of iglidur® C plain bearings is only 6.9% weight after saturation in water. This must be taken into account for these types of applications.

Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® C are resistant up to a radiation intensity of 2 · 10⁴ Gy.

Resistance to weathering

igidur® C plain bearings have limited resistance to weathering. The material properties are affected. Discolouration occurs. Practical tests under real application conditions are recommended.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® C plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® C at radial loads. The high flexibility makes the bearing suitable for vibrations and edge loads.

Surface pressure, page 45



-40°C up to +90°C



40MPa



Permissible surface speeds

Although important solid lubricants were intentionally not used in the development of iglidur® C, the plain bearings are very wear-resistant and are therefore also suitable for continuous movements at medium surface speeds. Despite it being possible to temporarily attain rotational speeds of up to 1.5m/s, the main applications should nevertheless involve speeds of less than 0.5m/s.

Surface speed, page 48

Temperature

The iglidur® C plain bearings can be used at temperatures up to +130°C for short periods. However no real loads are possible at this temperature. It therefore makes sense to limit the temperature to around +80°C to +90°C. For temperatures over +40°C an additional securing is required.

Application temperatures, page 53

Additional securing, page 53

Friction and wear

The coefficient of friction of the iglidur® C plain bearing is dependent to a large degree on the surface finish of the shaft. The wear of the bearing is very good in applications with rotating or pivoting movements with low loads.

Coefficient of friction and surfaces, page 51

Wear resistance, page 54

Shaft materials

Diagram 06 clearly shows how important the most "suitable" shaft can be. Although all shown results of these rotation experiments can be understood as very good, the difference is sometimes significant. This difference increases still further with increasing loads.

Shaft materials, page 56

Installation tolerances

iglidur® C plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the D11 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

Testing methods, page 61

Product range

iglidur® C plain bearings are manufactured to special order.

Chemicals	Resistance
Alcohols	+ up to 0
Diluted acids	0 up to -
Diluted alkalines	+
Fuels	+
Greases, oils without additives	+
Hydrocarbons	+
Strong acids	-
Strong alkalines	0

All data given at room temperature [+20°C]

Table 02: Chemical resistance

Chemical table, page 1894

	Rotating	Oscillating	linear
Long-term	m/s 1.0	0.7	2.0
Short-term	m/s 1.5	1.1	3.0

Table 03: Maximum surface speeds

	Dry	Greases	Oil	Water
Coefficient of friction μ	0.17-0.25	0.09	0.04	0.04

Table 04: Coefficient of friction against steel (Ra = 1 μ m, 50HRC)

\varnothing d1 [mm]	Housing		Plain bearings		Shaft	
	H7 [mm]	D11 [mm]	D11 [mm]	h9 [mm]	h9 [mm]	h9 [mm]
0-3	+0.000	+0.010	+0.020	+0.080	-0.025	+0.000
> 3-6	+0.000	+0.012	+0.030	+0.105	-0.030	+0.000
> 6-10	+0.000	+0.015	+0.040	+0.130	-0.036	+0.000
> 10-18	+0.000	+0.018	+0.050	+0.160	-0.043	+0.000
> 18-30	+0.000	+0.021	+0.065	+0.195	-0.052	+0.000
> 30-50	+0.000	+0.025	+0.080	+0.240	-0.062	+0.000
> 50-80	+0.000	+0.030	+0.100	+0.290	-0.074	+0.000
> 80-120	+0.000	+0.035	+0.120	+0.340	-0.087	+0.000
> 120-180	+0.000	+0.040	+0.145	+0.395	-0.100	+0.000

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

Technical data

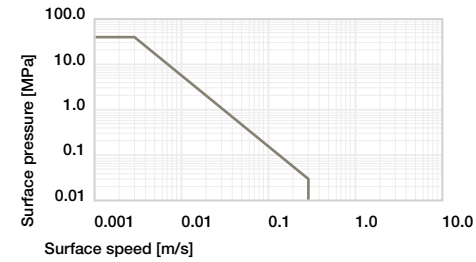


Diagram 01: Permissible pv values for iglidur® C plain bearing with a wall thickness of 1 mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

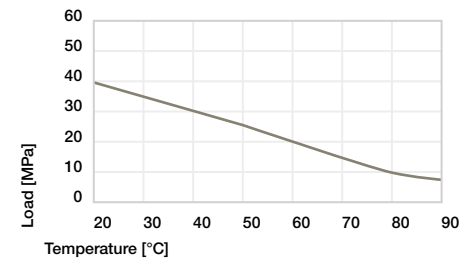


Diagram 02: Maximum recommended surface pressure as a function of temperature (40MPa at +20°C)

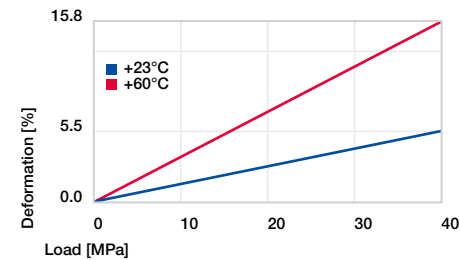


Diagram 03: Deformation under pressure and temperature

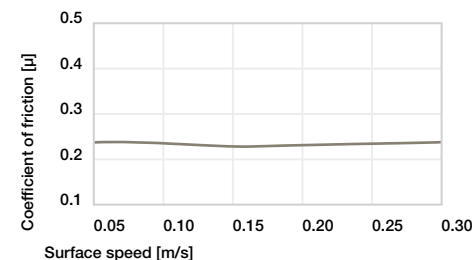


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

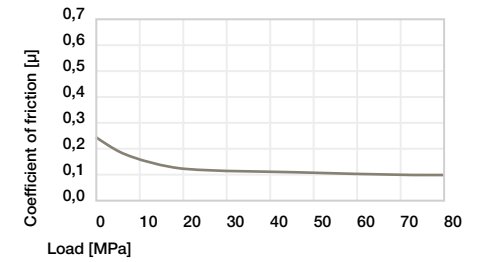


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

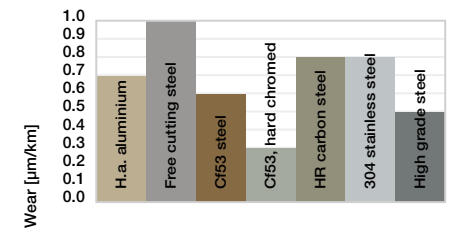


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

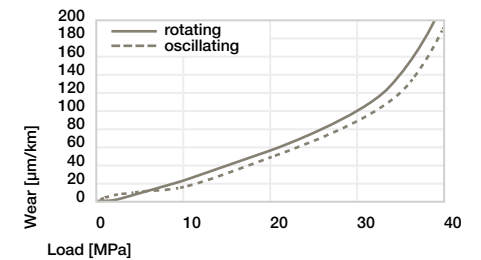


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

iglidur®

Other products



...plastics

iglidur® guide rings and clip bearings



An alternative to PTFE tape:
Guide rings
► Page 641



Easy to install, security with the double flange design:
Clip bearings
► Page 645



Easy to install due to split design:
Split bearings
► Page 656



With anti-rotation feature:
Split bearings
► Page 657



iglidur® guide rings and clip bearings



Press in and fold down:
Flanged bearings
► Page 658

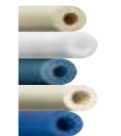


Press and plug:
Double flange bearings
► Page 659



Join and snap into place:
Special solution
Clip On
► Page 660

iglidur® solutions for special applications



For precise conveying:
Knife edge rollers
► Page 661



Secured by screws:
Two hole flange bearings
► Page 667



With pre-load:
Two hole flange bearings
► Page 670



Zero clearance and rattle-free: Pre-loaded plain bearings
► Page 671



iglidur® solutions for special applications



Cushion and dampen:
Disc springs polysorb
► Page 675



For all shaft surfaces and materials:
iglidur® PEP
► Page 679



Position and seal:
Lip seal bearings
► Page 683



Plain bearings with felt seal
► Page 687

New



igus® Service



iglidur® coatings:
High-performance polymers for coating
► Page 691

New



Quick and individual:
Customised special parts – print2mold®, FastLine
► Page 695



iglidur[®] guide rings

Easy installation

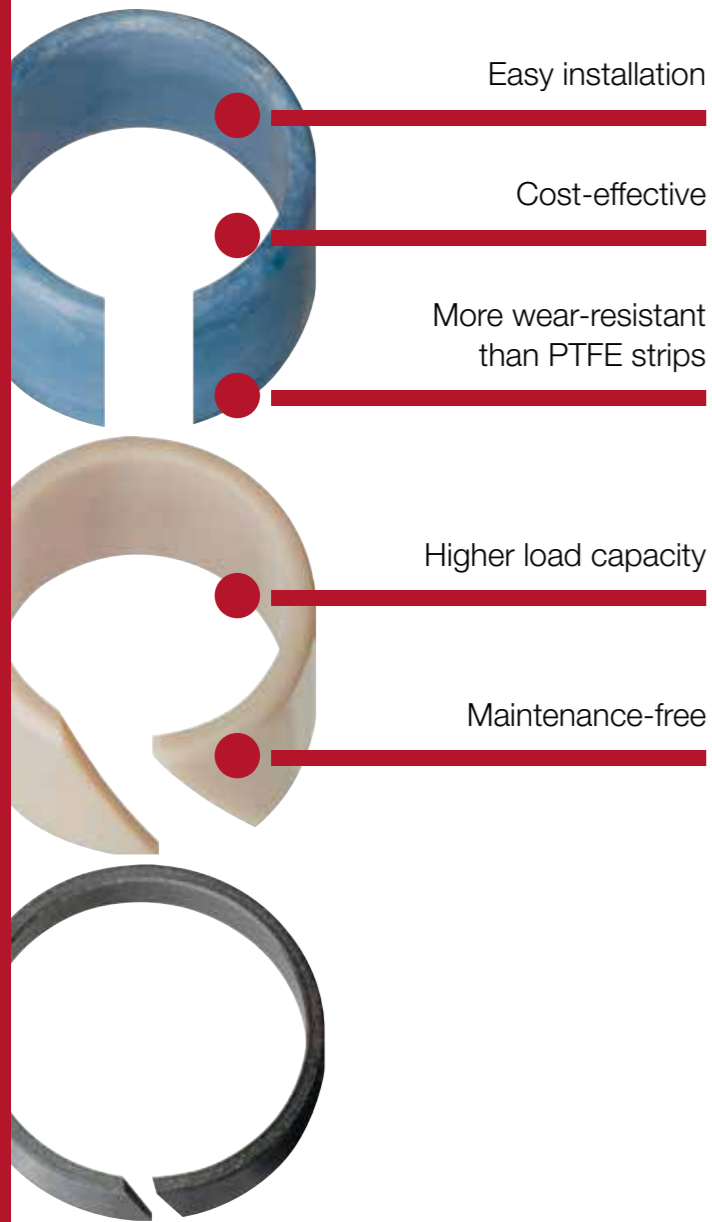
Cost-effective

More wear-resistant than PTFE strips

Higher load capacity

Standard range from stock





Easy installation

Cost-effective

More wear-resistant than PTFE strips

Higher load capacity

Maintenance-free

iglidur® guide rings

Some things can actually be very easy: replace complex stamped PTFE strips with a single clip-on ring, for example in cylinders, control valves and fittings. In addition to the standard iglidur® J range, it is also possible to configure your required guide ring from the entire iglidur® bearing range.



When to use it?

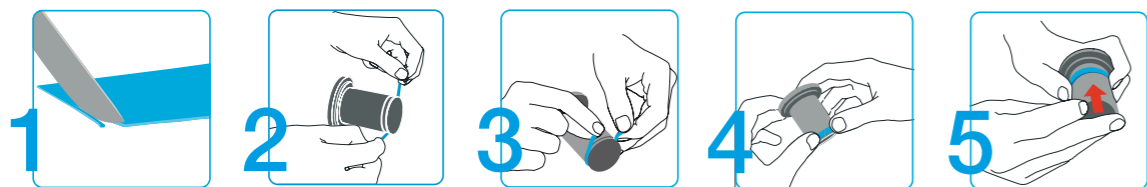
- When guide rings with excellent wear properties are required
- When simple assembly is of great importance
- When high edge loads occur
- When tailor-made solutions based on iglidur® materials are required



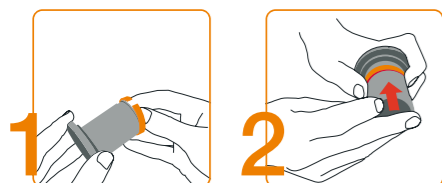
When not to use it?

- When the guide rings should also act as a seal
- When different diameters should be covered by one part

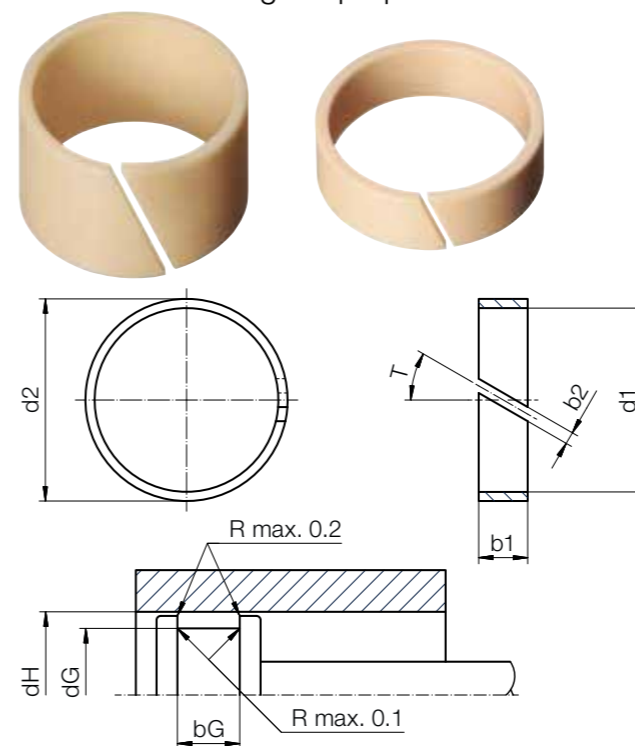
Alternative solutions:



With iglidur®:



iglidur® J is our all-round material when it comes to an outstanding running performance and low coefficient of friction on the broadest range of shafts. The flexibility of iglidur® J enables the typical assembly expected with guide rings using the push over/clip on method. Good media resistance rounds off the range of properties.



Installation recommendation for piston

Dimensions [mm]	dG (h tolerance)	dH (H tolerance)	bG
Nominal size	dG = d1	dH = d2	bG = b1 + 0.2

Dimensions [mm]

d1	d2	b1	b2	T	Part No.
		h13	±0.5	[°]	
6	8	6	1.0	0	JPRM-0608-00-010-060 ¹⁶⁷⁾
8	10	10	1.0	0	JPRM-0810-00-010-100 ¹⁶⁷⁾
10	12	5.4	2.5	20	JPRM-1012-20-025-054
12	14	5.4	2.5	20	JPRM-1214-20-025-054
13	15	5.4	2.5	20	JPRM-1315-20-025-054
14	16	5.4	2.5	20	JPRM-1416-20-025-054
14	16	10	1.0	20	JPRM-1416-20-010-100
16	18	5.4	2.5	20	JPRM-1618-20-025-054
17	22	5.4	2.5	25	JPRM-1722-25-025-054
20	23	5.4	2.5	20	JPRM-2023-20-025-054
25	28	5.4	2.5	20	JPRM-2528-20-025-054
28	32	10	1.0	20	JPRM-2832-20-010-100
28	32	20	1.0	20	JPRM-2832-20-010-200
28	33	5.4	2.5	25	JPRM-2833-25-025-054
30	34	5.4	2.5	20	JPRM-3034-20-025-054
35	39	5.4	2.5	20	JPRM-3539-20-025-054
35	40	5.4	2.5	25	JPRM-3540-25-025-054

¹⁶⁷⁾ Straight slot

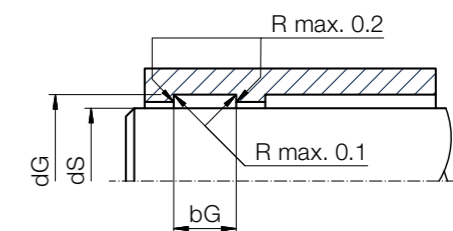


Order key

Type	Dimensions [mm]
------	-----------------

JPRM-0608-00-010-060

iglidur® material	Guide ring	Metric	Inner Ø	Outer Ø	Slot angle	Slot width	Length
-------------------	------------	--------	---------	---------	------------	------------	--------



Installation recommendation for housing

Dimensions [mm]	dS (h tolerance)	dG (H tolerance)	bG
Nominal size	dS = d1	dG = d2	bG = b1 + 0.2

d1	d2	b1	b2	T	Part No.
		h13	±0.5	[°]	
40	44	5.4	2.5	20	JPRM-4044-20-025-054
45	50	5.4	2.5	20	JPRM-4550-20-025-054
45	50	10	2.0	0	JPRM-4550-00-020-100 ¹⁶⁷⁾
50	55	5.4	2.5	20	JPRM-5055-20-025-054
50	55	10	2.0	0	JPRM-5055-00-020-100 ¹⁶⁷⁾
58	63	9.5 (-0.22)	2.5	25	JPRM-5863-25-025-095
60	65	5.4	2.5	20	JPRM-6065-20-025-054
70	75	5.4	2.5	20	JPRM-7075-20-025-054



More Information about iglidur® material and technical data
iglidur® J ► Page 163



Max. +90°C
min. -50°C



Ø 6 - 70mm
More dimensions upon request

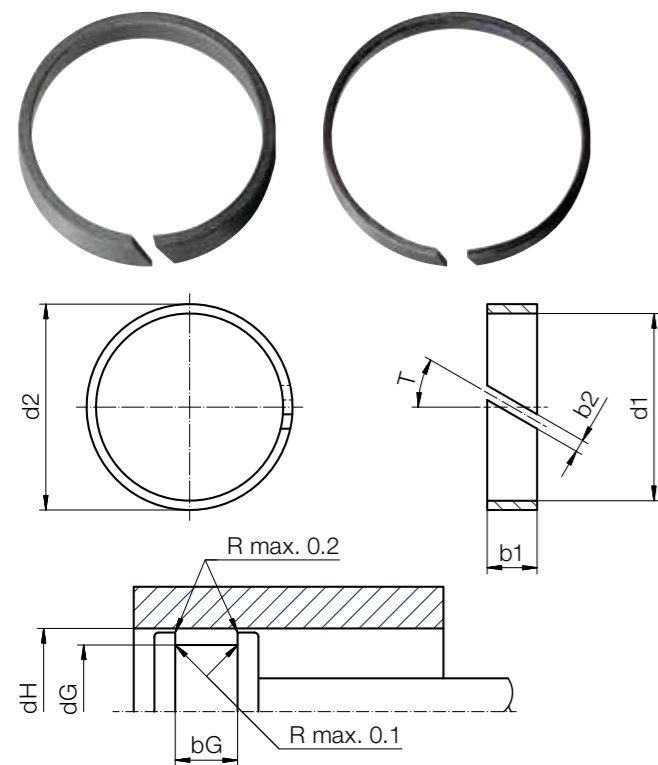


Available from stock
Detailed information about delivery time online.

Guide rings as desired

In addition to the stock range of iglidur® J guide rings, you can also select your required guide ring on the basis of the entire iglidur® bearing range.

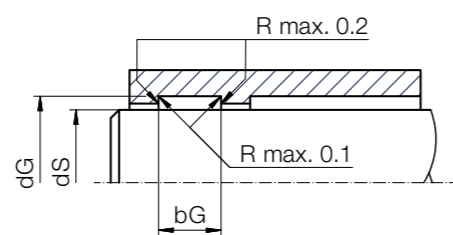
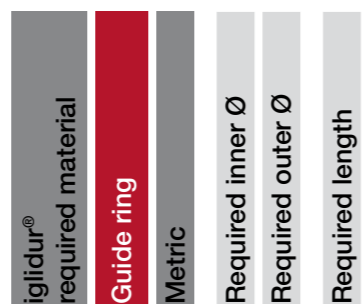
Use the entire iglidur® plain bearing range and choose the material best suited to your application. Your guide ring will be delivered within 10 days - to your requirements.



Order key

Type Dimensions [mm]

PRM-



Installation recommendation for piston

Dimensions [mm]	dG (h tolerance)	dH (H tolerance)	bG
Nominal size	dG = d1	dH = d2	bG = b1 + 0.2

Installation recommendation for housing

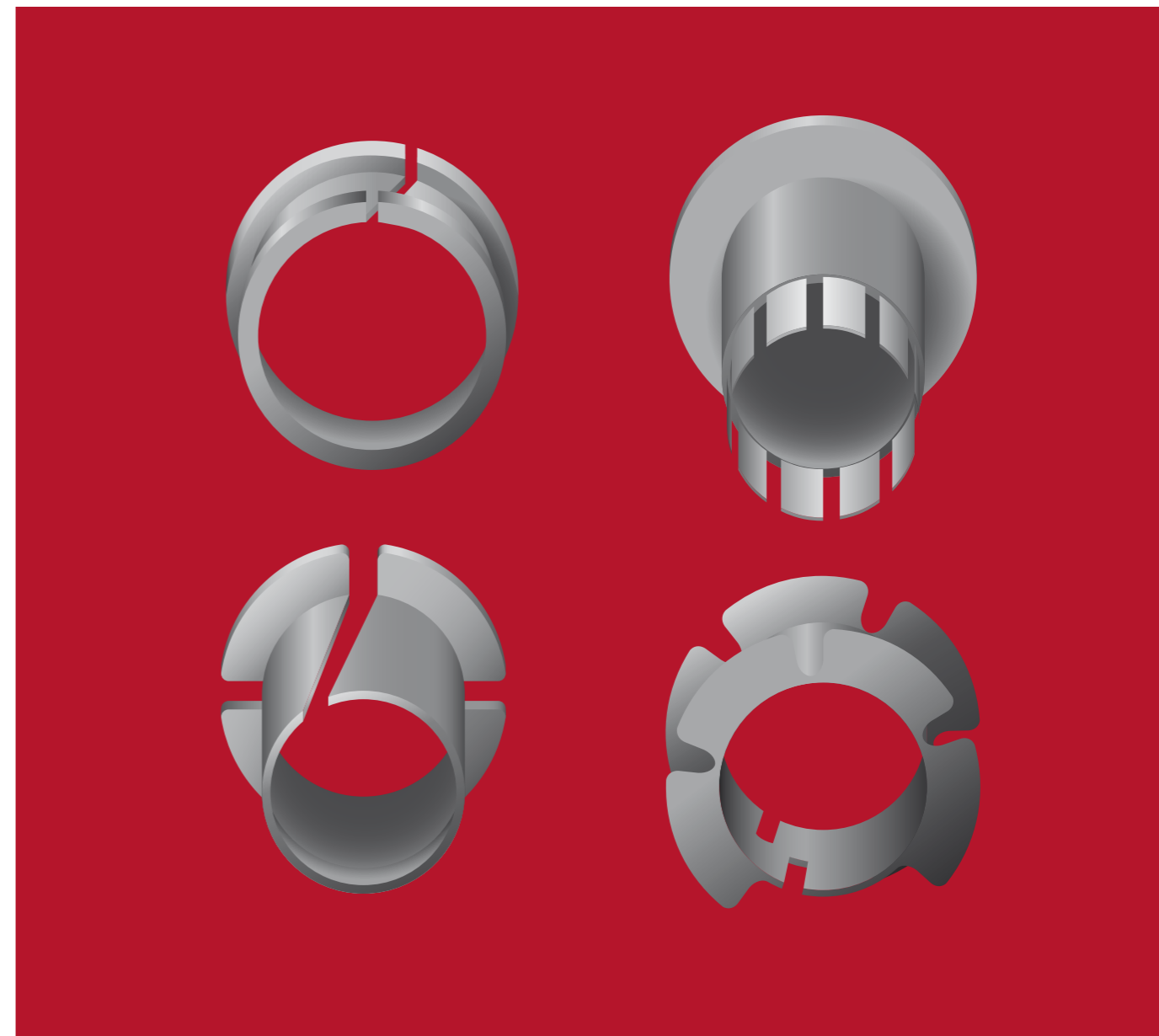
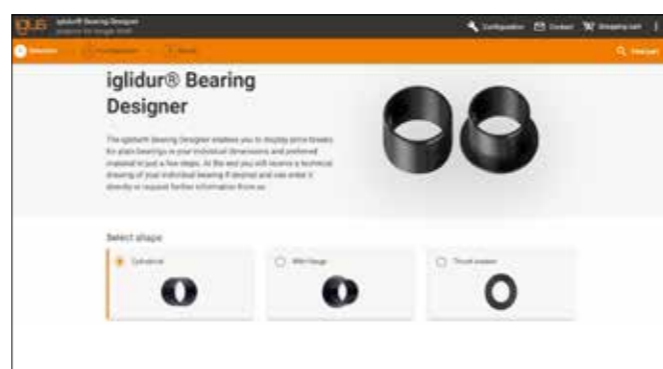
Dimensions [mm]	dS (h tolerance)	dG (H tolerance)	bG
Nominal size	dS = d1	dG = d2	bG = b1 + 0.2

! Our material recommendations for special requirements:

- iglidur® A181: FDA-compliant ▶ Page 401
- iglidur® J350: > +90°C ▶ Page 203
- iglidur® H1: Temperatures up to +200°C ▶ Page 345

i In addition to mechanical processing of existing iglidur® plain bearings to guide rings, we also develop custom-made guide ring solutions for your volume requirements. Please contact us, we will support you with your design and create an appropriate proposal.

Q iglidur® guide rings product finder
Material selection and individual dimensions made easy. With just a few clicks, the guide ring finder can find the optimum iglidur® material and select the appropriate dimensions from the standard catalogue range in order to define a guide ring in a customised width.
▶ www.igus.eu/IBD



iglidur® - clip bearings

Easy installation

Abrasion-resistant

Predictable service life

Custom versions possible

Lubrication and maintenance-free

Standard range from stock





iglidur® clip bearings:
Captive with double flange
► From page 652



iglidur® split bearings:
Easy assembly due to lateral slot,
also with anti-rotation feature
► From page 656



iglidur® flanged bearings:
Press in and fold down
► From page 658



iglidur® double flange bearings:
Press and plug
► From page 659



Special solution
iglidur® Clip On:
Join and snap into place
► From page 660

iglidur® clip bearings for fitting shafts

iglidur® clip bearings are designed specifically for fitting shafts through sheet metal. For this reason, the bearings have flanges located on both ends. The plain bearings are secured in the sheet metal plate on both sides after fitting.

The clip bearings have an angled slot which allows them to be fitted from one side. After fitting, the bearing expands and forms a lining for the hole in the metal plate. The shaft prevents the clip bearing from falling out the housing. Even during linear movement, the plain bearing cannot slide out.

- Lateral slot for easy installation
- Lubrication and maintenance-free
- Good adaptability to punched holes
- Abrasion-resistant
- Smooth operation
- For rotating and linear movements

Typical application areas

- Automotive industry
- Mechanical engineering
- Jig construction

Material: iglidur® M250
6 types
Ø 3 - 25mm

More dimensions upon request

Imperial dimensions available
► From page 1870

Material properties

General properties	Unit	iglidur® M250	iglidur® K230	iglidur® K250	iglidur® A230	Testing method
Density	g/cm³	1.14	1.36	1.19	1.20	
Colour		dark grey	dark grey	black	blue	
Max. moisture absorption at +23°C and 50% r.h.	% weight	1.4	0.8	0.3	0.3	DIN 53495
Max. moisture absorption	% weight	7.6	2.9	3.6	2.5	
Coefficient of sliding friction, dynamic against steel	μ	0.18-0.40	-	-	-	
pv value, max. (dry)	MPa · m/s	0.12	-	-	-	

Mechanical properties

Flexural modulus	MPa	2,700	1,600	2,975	1,530	DIN 53457
Flexural strength at +20°C	MPa	112	40	79	53	DIN 53452
Compressive strength	MPa	52	40	-	-	
Max. recommended surface pressure (+20°C)	MPa	20	38	35	18	
Shore D hardness		79	68	70	73	DIN 53505

Physical and thermal properties

Max. continuous application temperature	°C	+80	+110	+90	+110	
Max. short-term application temperature	°C	+170	+130	+110	+130	
Min. application temperature	°C	-40	-30	-50	-30	
Thermal conductivity	W/m · K	0.24	0.25	0.25	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	10	11	-	13	DIN 53752

Electrical properties

Specific volume resistance	Ωcm	> 10 ¹³	> 10 ¹²	> 10 ¹²	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹¹	> 10 ¹²	> 10 ¹²	> 10 ¹²	DIN 53482

Table 01: Material properties table

Available from stock
Detailed information about delivery time online.

Max. +80°C
min. -40°C



iglidur® clip bearings

- Easy to fit due to clip-on feature
 - Increased security with the double flange design
 - Abrasion-resistant
- From page 652



iglidur® split bearings (clips2)

- Easy to fit
 - Tolerance compensation with angled slot
 - Low bearing clearance, high precision
- From page 656



iglidur® flanged bearings

- Easy installation
 - Press-fit
 - Axial load on both sides
 - Compensation of tolerances of the sheet metal
- From page 658



iglidur® double flange bearings

- Easy to fit due to clip-on feature
 - Large flange surfaces
 - Two identical large flange surfaces
- From page 659



Special solution iglidur® Clip On

- The disc is snapped onto the flanged bearing with undercuts
 - Compensation of axial clearance
 - Pre-assembly possible
 - Combination of conductive and non-conductive materials
- From page 660

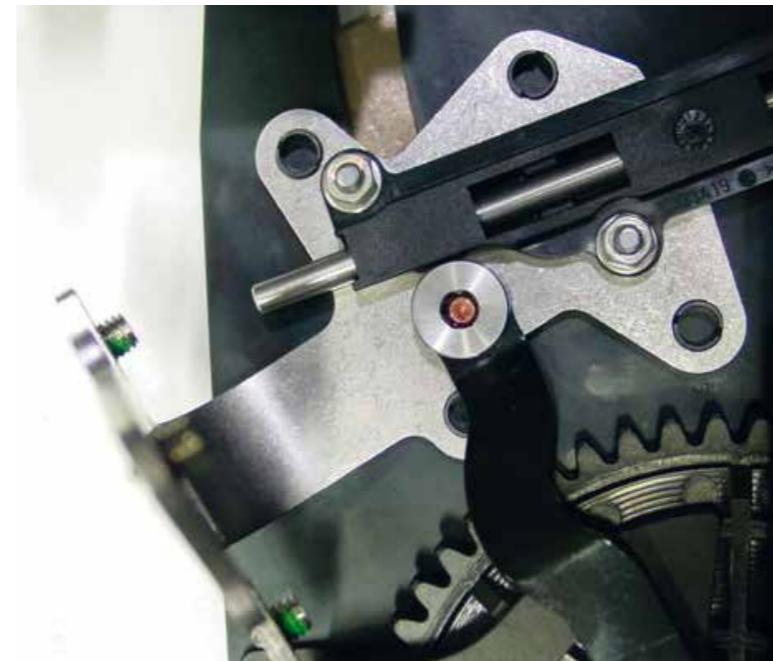


Prescription printer: precise and effective

This prescription printer for pharmacies fits into the limited space in a cash register. Absolute accuracy is required for a precise typeface. The ink cartridge holder slides on the metal guide rod, using two iglidur® J plain bearings, and two additional guides on the sheet metal edge help keep the application parallel. The guide rod was mounted with igus® MCM clip bearings.

Sweet nectar with clip bearings

The honeycombs are pierced with needles so that the honey can flow out of them when they are spun around. To ensure that the needles hit all the combs, the frame must shift a few millimetres linearly. Easy-to-clean, cost-effective iglidur® clip bearings and iglidur® fixed flange bearings are used for this.



Weatherproof plain bearings for radiator mascot

By using wear-resistant iglidur® clip bearings, the lowering mechanism for radiator mascots on luxury cars could be improved. Their advantages are the consistent flange thickness and the high wear resistance in various environmental conditions such as cold, heat or fine sand.

General properties

The clip bearings have an angled slot which allows the bearings to be fitted from one side. After fitting, the bearing expands and forms a lining for the hole in the metal plate. The shaft prevents the clip bearing from falling out the housing. Even during linear movement, the bearing cannot slide out. iglidur® clip bearings are made from wear-resistant material iglidur® M250.

iglidur® M250 is a plain bearing material with strong wear resistance at average loads. The plain bearings are self-lubricating and can be used dry. If required the plain bearings can also be lubricated. The material iglidur® M250 is resistant to all common lubricants.

Mechanical properties

The permissible static surface pressure of iglidur® M250 at room temperature is 20MPa. Due to the possibility of high tolerances in the housing hole, the clip bearing has a high compressive strength even for punched holes.

For bearing surfaces that are very small, the vibration dampening properties and the resistance to edge pressure are especially important.

► iglidur® M250, Page 111

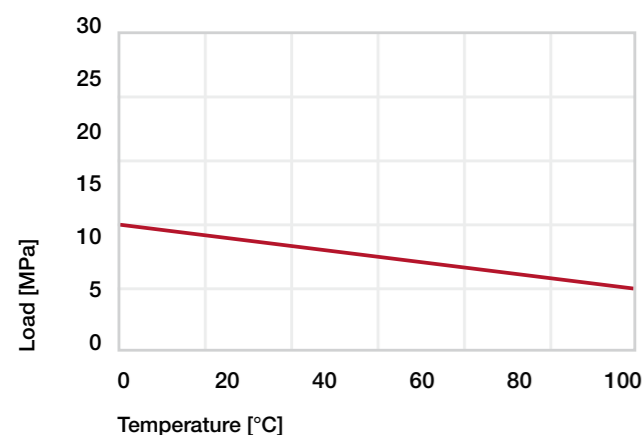


Diagram 01: Maximum recommended surface pressure as a function of temperature (20MPa at +20°C)

Permissible surface speeds

Clip bearings are extremely wear-resistant in slow rotating, oscillating, and linear movements. The maximum surface speeds for the different movements are the same as for the material iglidur® M250 (table 01).

With lubrication the permissible surface speeds can be increased.

► Surface speed, page 48

m/s	Rotating	Oscillating	linear
Long-term	0.8	0.6	2.5
Short-term	2	1.4	5

Table 01: Maximum surface speeds

Temperatures

For operating temperatures up to +80°C iglidur® clip bearings display high wear resistance. Even in the cold, the plain bearings remain elastic and abrasion-resistant.

► Application temperatures, page 53

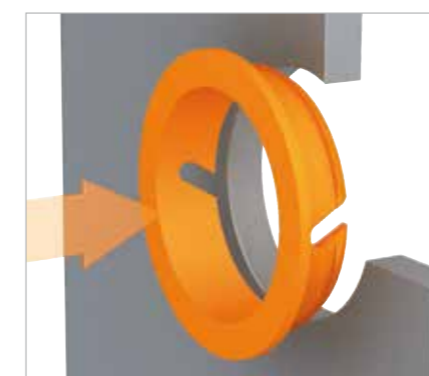
iglidur® M250	Application temperature
Minimum	-40°C
Max. long-term	+80°C
Maximum, short-term	+170°C

Table 02: temperature limits

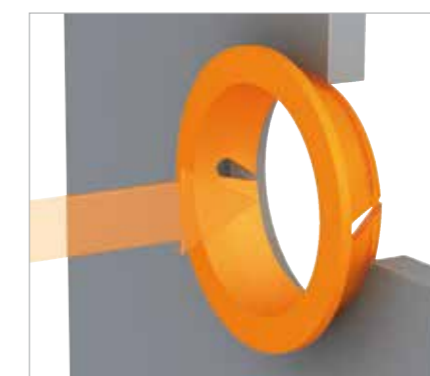
Assembly

For installation, the plain bearings are pressed together on the side with the large flange. The angled slot makes the bearing spiral shaped so that it can be placed easily into the metal plate. The slot also compensates for expansions of the circumference. In this way, a tight clearance is possible with the clip bearings. The bearing clearance is dimensioned in such a way that in a housing hole with a nominal diameter, a shaft made with the same nominal diameter turns easily. The clip bearings should be fitted into a housing with a "H" class tolerance, up to H13. The clip bearing can also rotate within the housing hole.

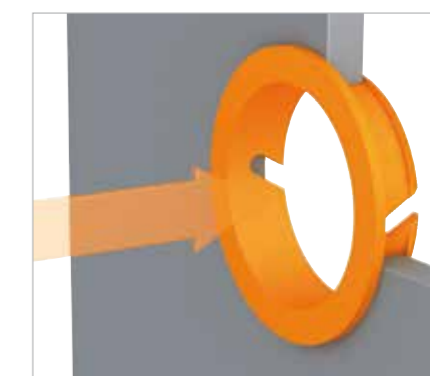
Fitting:



Simple axial press in



Axial safety through the second flange

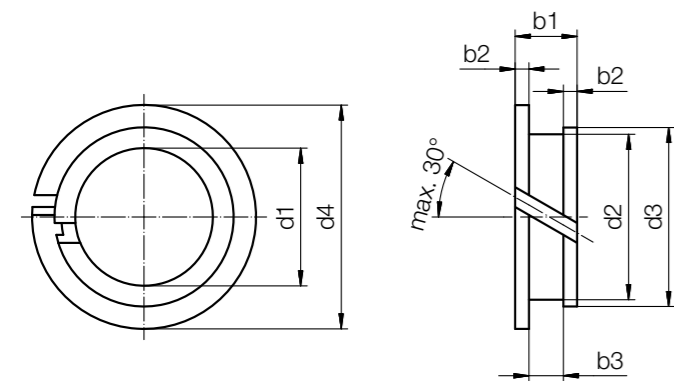


Easy installation via clip on mechanism

i Please contact us if you need this special solution for your application. We will help you with your design, drawing on the experience that we have with a large number of custom bearing solutions.



Image exemplary



Order key

Type	Dimensions [mm]
------	-----------------

M C M-03-02

iglidur® material	Form	Metric	Inner Ø	Metal sheet thickness
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Material:
iglidur® M250 ▶ Page 111

Imperial dimensions available
▶ From page 1869

Dimensions [mm]

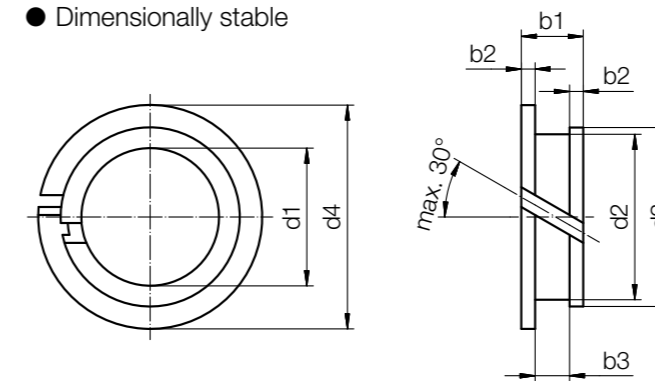
d1	d2	d3	d4	b1	b2	b3	Part No.
D11 ⁷⁾				+0.20	-0.10		
3	4.2	4.8	6.0	3.2	0.6	2.0	MCM-03-02
3	4.2	4.8	6.0	4.2	0.6	3.0	MCM-03-03
4	5.2	5.9	7.0	3.2	0.6	2.0	MCM-04-02
4	5.2	5.9	7.0	4.2	0.6	3.0	MCM-04-03
5	6.2	6.8	8.0	3.2	0.6	2.0	MCM-05-02
5	6.2	6.8	8.0	4.2	0.6	3.0	MCM-05-03
6	7.2	7.8	11.0	2.7	0.6	1.5	MCM-06-015
6	7.2	7.8	11.0	3.2	0.6	2.0	MCM-06-02
6	7.2	7.8	11.0	4.2	0.6	3.0	MCM-06-03
6	7.2	7.8	11.0	5.2	0.6	4.0	MCM-06-04
7	9.0	9.8	13.0	4.6	0.8	3.0	MCM-07-03
8	9.6	10.4	13.0	3.6	0.8	2.0	MCM-08-02
8	9.6	10.4	13.0	4.6	0.8	3.0	MCM-08-03
8	9.6	13.0	10.4	5.6	0.8	4.0	MCM-08-04
9	10.6	11.4	14.0	3.6	0.8	2.0	MCM-09-02
10	11.6	12.4	15.0	3.6	0.8	2.0	MCM-10-02
10	11.6	12.4	15.0	4.1	0.8	2.5	MCM-10-025

⁷⁾ d1 value is measured with a plug gauge after fitting into a reference housing d2 (+0.005). Please see D11 tolerances table ▶ Page 62

d1	d2	d3	d4	b1	b2	b3	Part No.
D11 ⁷⁾				+0.20	-0.10		
10	11.6	12.4	15.0	4.6	0.8	3.0	MCM-10-03
10	11.6	12.4	15	5.6	0.8	4.0	MCM-10-04
10	11.6	12.4	15	9.6	0.8	8.0	MCM-10-08
12	13.6	14.4	17	3.6	0.8	2.0	MCM-12-02
12	13.6	14.4	17	4.35	0.8	2.75	MCM-12-025
12	13.6	14.4	17	4.6	0.8	3.0	MCM-12-03
12	13.6	14.4	17	5.1	0.8	3.5	MCM-12-035
12	13.6	14.4	17	5.6	0.8	4.0	MCM-12-04
12	13.6	14.4	17	6.4	0.8	4.8	MCM-12-045
14	15.6	16.4	19	4.6	0.8	3.0	MCM-14-03
16	17.6	18.4	21	3.6	0.8	2.0	MCM-16-02
16	17.6	18.4	21	4.6	0.8	3.0	MCM-16-03
18	20.0	21.0	23	4.0	1.0	2.4	MCM-18-02
18	20.0	21.0	23	5.0	1.0	3.0	MCM-18-03
20	22.0	23.0	25	5.0	1.0	3.0	MCM-20-03
25	27.0	28.0	30	5.0	1.0	3.0	MCM-25-03
25	27.0	28.0	30	8.0	1.0	6.0	MCM-25-06



- High temperature resistance
- e-coating
- Dimensionally stable



Order key

Type	Dimensions [mm]
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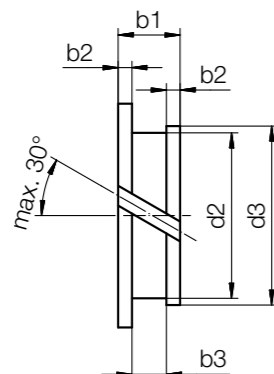
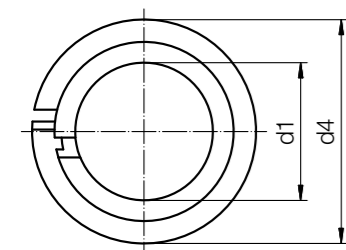
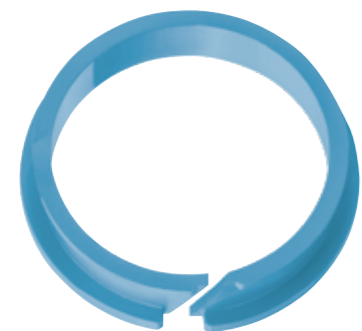
K250 C M-05-02

iglidur® material	Form	Metric	Inner Ø	Metal sheet thickness
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Material:
iglidur® K250 ▶ Page 1912

Dimensions [mm]

d1	d2	d3	d4	b2	b1	Part No.
	D11					
5	6.2	6.8	8.0	0.6	3.2	K250CM-05-02 New
6	7.2	7.8	11.0	0.6	4.2	K250CM-06-03 New
8	9.6	10.4	13.0	0.8	4.6	K250CM-08-03 New
10	11.6	12.4	15.0	0.8	4.6	K250CM-10-03 New
12	13.6	14.4	17.0	0.8	4.6	K250CM-12-03 New



Order key

Type Dimensions [mm]

A230 C M-05-02

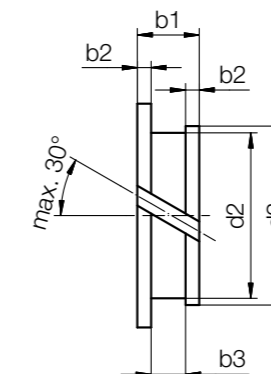
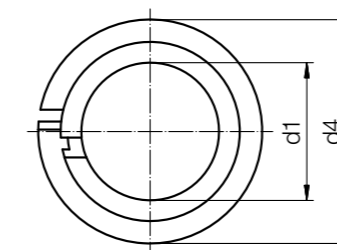
iglidur® material	Form	Metric	Inner Ø	Metal sheet thickness
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Material:
iglidur® A230 ▶ Page 1912

- FDA and EU10/2011 compliant
- Visually detectable
- Low moisture absorption
- Suitable for use in the food industry and medical technology

Dimensions [mm]

d1	d2 D11	d3	d4	b2	b1	Part No.
5	6.2	6.8	8.0	0.6	3.2	A230CM-05-02 New
6	7.2	7.8	11.0	0.6	4.2	A230CM-06-03 New
8	9.6	10.4	13.0	0.8	4.6	A230CM-08-03 New
10	11.6	12.4	15.0	0.8	4.6	A230CM-10-03 New
12	13.6	14.4	17.0	0.8	4.6	A230CM-12-03 New



Order key

Type Dimensions [mm]

K230 C M-05-02

iglidur® material	Form	Metric	Inner Ø	Metal sheet thickness
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Material:
iglidur® K230 ▶ Page 1911

These clip bearings are made of wear-resistant iglidur® high-performance polymers and are designed specifically for fitting shafts through sheet metal. With this specific clip bearing design, a locating spigot is utilised to enable fitting into less precise holes and housings. The new iglidur® K230 material offers a lower moisture absorption and even more flexibility compared to the iglidur® M250 clip bearings.

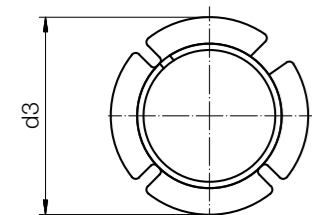
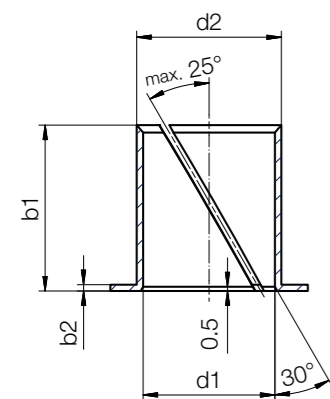
- Lubrication and maintenance-free
- Low moisture absorption
- Temperature resistance
- Chemical resistance
- Corrosion-resistant

Dimensions [mm]

d1	d2 D11	d3	d4	b2	b1	Part No.
5	6.2	6.8	8.0	0.6	3.2	K230CM-05-02 New
6	7.2	7.8	11.0	0.6	4.2	K230CM-06-03 New
8	9.6	10.4	13.0	0.8	4.6	K230CM-08-03 New
10	11.6	12.4	15.0	0.8	4.6	K230CM-10-03 New
12	13.6	14.4	17.0	0.8	4.6	K230CM-12-03 New



Image exemplary



r = max. 0.5mm

Dimensions [mm]

d1	d1 tolerance ⁷⁾	d2 ⁹⁾	d3 ±0.40	b1 -0.40	b2 -0.13	Part No.
4	+0.025 +0.075	5.2	7.0	4.0	0.6	MYM-04-04
5	+0.025 +0.075	6.2	8.0	5.0	0.6	MYM-05-05
6	+0.025 +0.075	7.2	9.5	6.0	0.6	MYM-06-06
8	+0.025 +0.075	9.6	12.0	8.0	0.8	MYM-08-08
10	+0.025 +0.075	11.6	15.0	10.0	0.8	MYM-10-10
12	+0.025 +0.075	13.6	18.0	12.0	0.8	MYM-12-12
14	+0.025 +0.075	15.6	21.0	14.0	0.8	MYM-14-14
16	+0.025 +0.075	17.6	24.0	16.0	0.8	MYM-16-16
20	+0.025 +0.075	21.6	30.0	16.0	0.8	MYM-20-16
20	+0.025 +0.075	21.6	30.0	20.0	0.8	MYM-20-20
25	+0.025 +0.075	27.4	37.5	25.0	1.2	MYM-25-25

⁷⁾ d1 value is measured with a plug gauge after fitting into a reference housing d2 (+0.005)

⁹⁾ Recommended housing hole tolerance: H9

Order key

Type	Dimensions [mm]
------	-----------------

M Y M-04-04

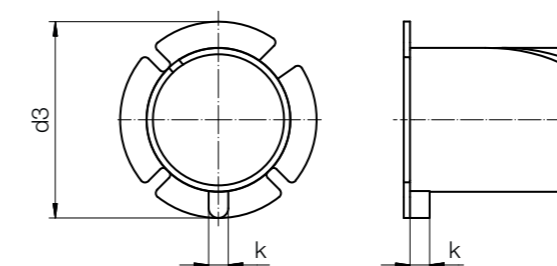
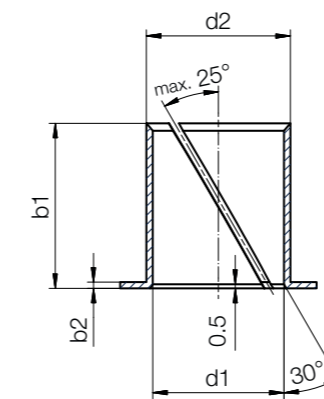
iglidur® material
Form
Metric
Inner Ø
Total length

i Material:
iglidur® M250 ▶ Page 111
With anti-rotation feature ▶ Page 657

inch Imperial dimensions available
▶ From page 1870



Image exemplary



Dimensions [mm]

d1	d1 tolerance ⁸⁾	d2 ⁹⁾	d3 ±0.40	b1 -0.40	b2 -0.13	k	Part No.
4	+0.025 +0.075	5.20	7.00	4.00	0.60	1.0	MYM-04-04-K
5	+0.025 +0.075	6.20	8.00	5.00	0.60	1.0	MYM-05-05-K
6	+0.025 +0.075	7.20	9.50	6.00	0.60	1.5	MYM-06-06-K
10	+0.025 +0.075	11.60	15.00	10.00	0.80	2.0	MYM-10-10-K
14	+0.025 +0.075	15.60	21.00	14.00	0.80	3.0	MYM-14-14-K

⁸⁾ d1 value is measured with a plug gauge after fitting into a reference housing d2 (+0.005)

⁹⁾ Recommended housing hole tolerance: H9

Order key

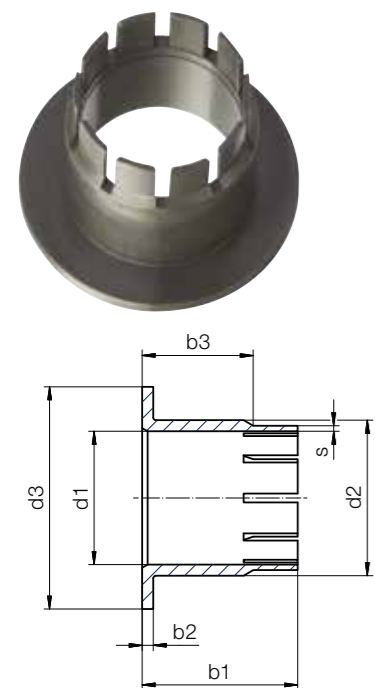
Type	Dimensions [mm]	Option
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M Y M- 04 - 04 - K

iglidur® material
Form
Metric
Inner Ø
Total length
Anti-rotation feature

i Material:
iglidur® M250 ▶ Page 111

inch Imperial dimensions available
▶ From page 1870



Order key

Type Dimensions [mm]

M K M-1012-10

iglidur® material	Form	Metric	Inner Ø	Outer Ø	Metal sheet thickness
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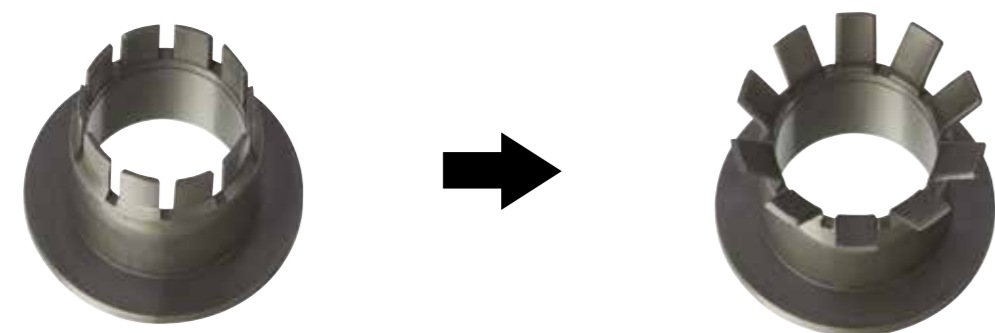
Material:
iglidur® M250 ▶ Page 111

Sample dimension [mm]

d1	d1 tolerance ³⁾ E10	d2	d3 d13	b1 h13	b2 h13	b3 +0.1/+0.7	Øs ±0.1	Part No.
10	+0.025 +0.083	12	18	14	1	10	0.4	MKM-1012-10

³⁾ After press-fit; testing methods ▶ Page 61

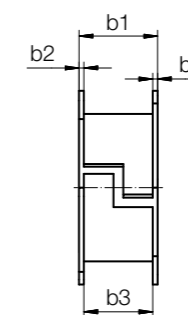
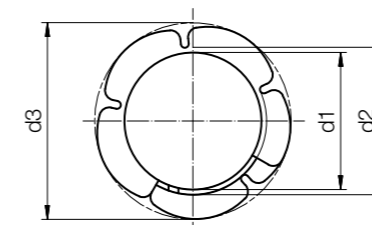
Fitting:



Press-fit, fold down, ready: axial load on both sides



Please contact us if you need a custom-made double flange bearing for your application. We will help you with your design, drawing on the experience that we have with a large number of custom bearing solutions.



Order key

Type Dimensions [mm]

M D M-1213-06

iglidur® material	Form	Metric	Inner Ø	Outer Ø	Metal sheet thickness
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Material:
iglidur® M250 ▶ Page 111

Sample dimension [mm]

d1	d1 tolerance ⁸⁾	d2	d3	b1	b2	b3	Part No.
12	+0.050 +0.160	13	16.5	7	0.5	6.0	MDM-1213-06

⁸⁾ d1 value is measured with a plug gauge after fitting into a reference housing d2 (+0.005)

Fitting:



Please contact us if you need a custom-made double flange bearing for your application. We will help you with your design, drawing on the experience that we have with a large number of custom bearing solutions.



The solution for all applications in stamped sheet metal retainers

iglidur® Clip On are frequently used in seat and convertible top systems and multi-joint hinges. iglidur® Clip On bearings facilitate captive assembly even in punched sheet metal/steering arms with limited fine blanking content.

- Compensation of axial clearance
- Pre-assembly possible
- Electrically conductive materials are available
- Pressure-resistant materials up to 80MPa

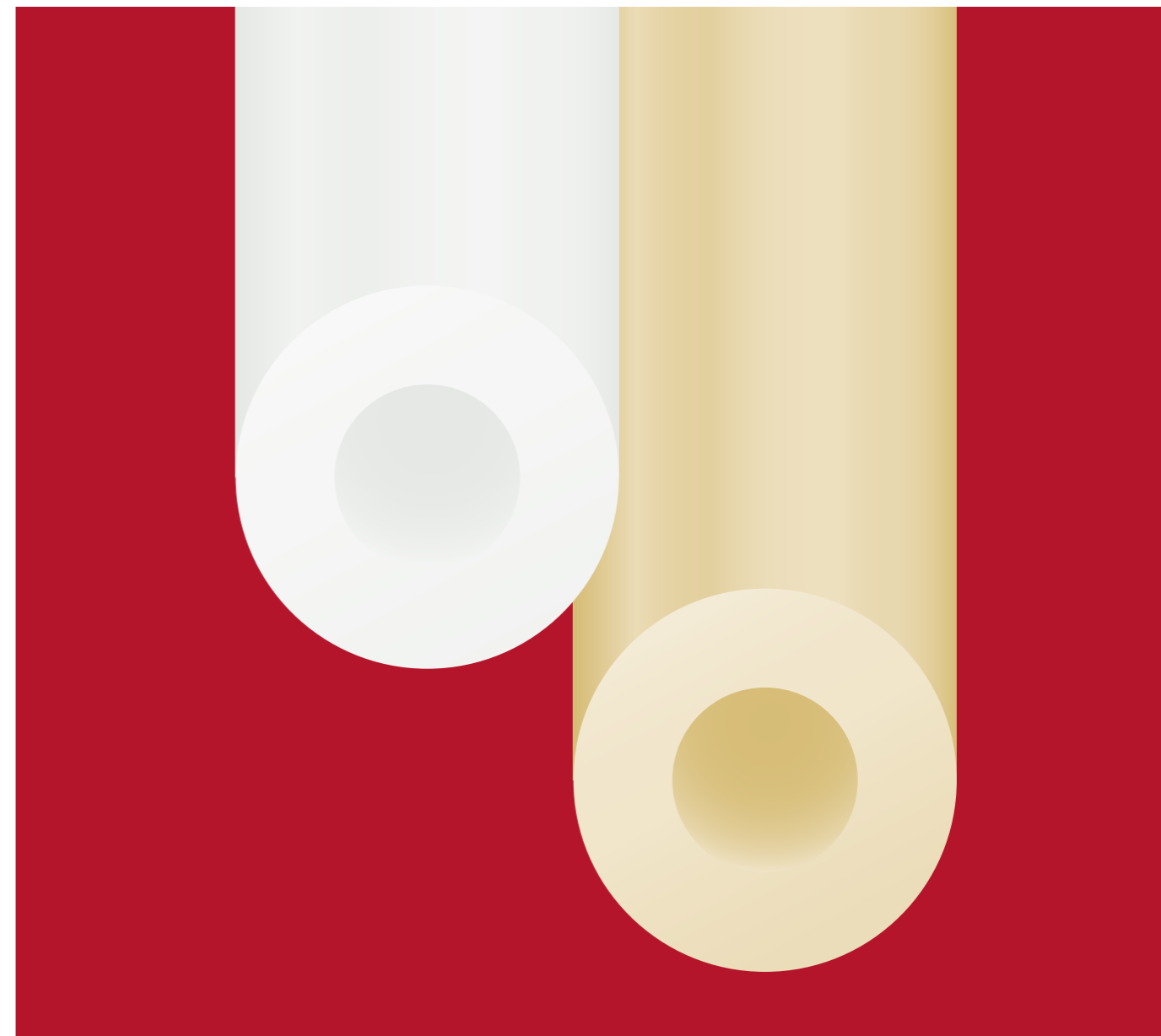
The Clip On bearings can also be produced from electrically conductive iglidur® RN89, thus permitting e-coating.

i Material:
iglidur® M250 ▶ Page 111
iglidur® RN89 ▶ Page 1916

Fitting:
The disc is clipped onto the flange bushing with undercuts.



i Please contact us if you need this special solution for your application. We will help you with your design, drawing on the experience that we have with a large number of custom bearing solutions.



iglidur® knife edge rollers

- 100% lubrication-free
- Low drive power
- Tight belt deflection
- Long service life of the belt
- Cost-effective
- Long service life
- Standard range from stock



iglidur® P210: Universal

Tight belt deflection

iglidur® A180:
FDA-compliant up to +90°C

Long service life

iglidur® A350:
FDA-compliant up to +180°C

Low drive power

iglidur® H1:
For higher
transport speeds

iglidur® A250:
FDA-compliant

iglidur® knife edge rollers

igus® has developed its own knife-edge rollers to deflect conveyor belts in materials handling applications. The iglidur® solution is characterised by tight belt deflection and a low level of required drive power.



When to use it?

- When a lubrication-free deflection of conveyor belt is required
- When a precise guiding is required
- When a cost-effective and lightweight solution is required



When not to use it?

- In constant high speed belt
- When high forces are applied on the belts
- When a static knife edge is required



Available from stock

Detailed information about delivery time online.



Depending on material:

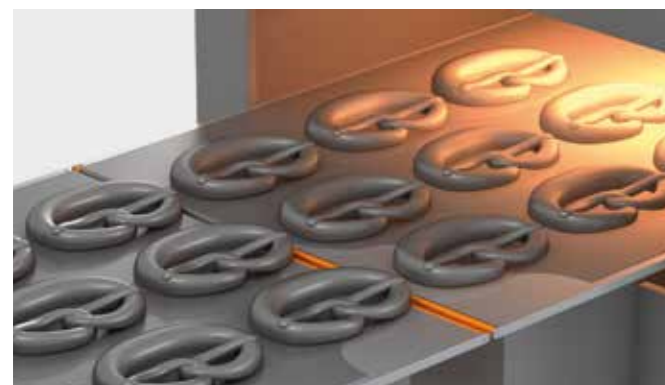
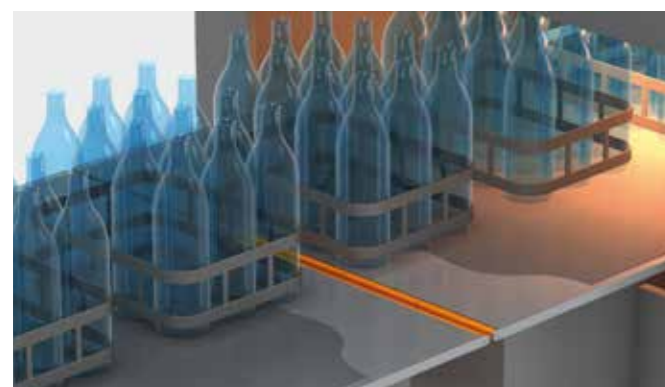
- iglidur® P210: -40°C up to +100°C
- iglidur® A180: -50°C up to +90°C
- iglidur® A350: -100°C up to +180°C
- iglidur® H1: -40°C up to +200°C



4 materials

Ø 9 - 20mm

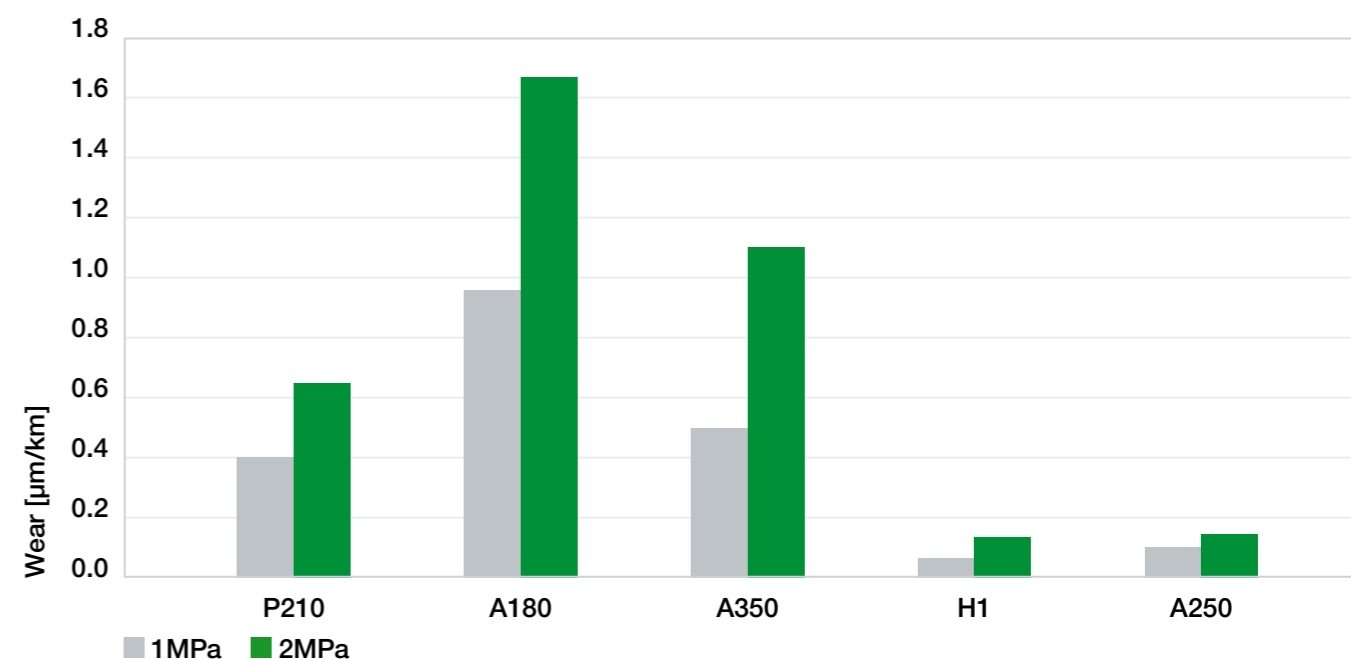
More dimensions upon request



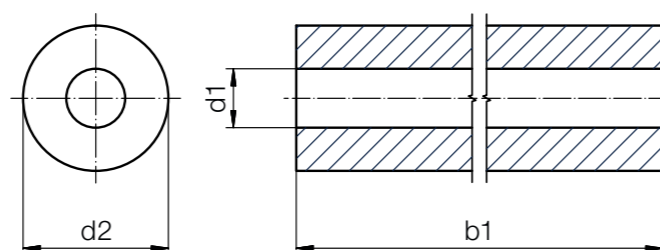
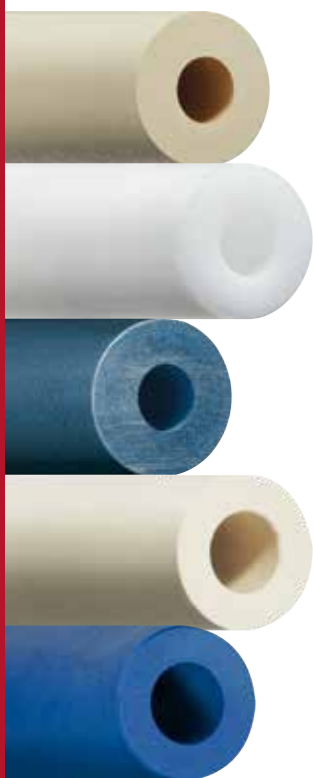
Material properties

General properties	Unit	iglidur® P210	iglidur® A180	iglidur® A350	iglidur® H1	iglidur® A250	Testing method
Density	g/cm³	1.40	1.46	1.42	1.53	1.34	
Colour		yellow	white	blue	cream	blue	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.3	0.2	0.6	0.1	0.3	DIN 53495
Max. moisture absorption	% weight	0.5	1.3	1.9	0.3	4.2	
Coefficient of sliding friction, dynamic against steel	μ	0.07 - 0.19	0.05 - 0.23	0.1 - 0.2	0.06 - 0.20	n.s.	
pv value, max. (dry)	MPa · m/s	0.4	0.31	0.4	0.8	n.s.	
Mechanical properties							
Flexural modulus	MPa	2,500	2,300	2,000	2,800	2,540	DIN 53457
Flexural strength at +20°C	MPa	70	88	110	55	84	DIN 53452
Compressive strength	MPa	50	78	78	78	n.s.	
Max. recommended surface pressure (+20°C)	MPa	50	28	60	80	34	
Shore D hardness		75	76	76	77	74	DIN 53505
Physical and thermal properties							
Max. long-term application temperature	°C	+100	+90	+180	+200	+90	
Max. short-term application temperature	°C	+160	+110	+210	+240	+180	
Min. application temperature	°C	-40	-50	-100	-40	-40	
Thermal conductivity	W/m · K	0.25	0.25	0.24	0.24	n.s.	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	8	11	8	6	n.s.	DIN 53752
Electrical properties							
Specific transitional resistance	Ωcm	> 10 ¹²	> 10 ¹²	> 10 ¹¹	> 10 ¹²	> 10 ¹¹	DIN IEC 93
Surface resistance	Ω	> 10 ¹¹	> 10 ¹¹	> 10 ¹¹	> 10 ¹¹	> 10 ¹¹	DIN 53482

Table 01: Material properties table



Wear comparison; 0.3m/s; 304 SS shaft; 1MPa and 2MPa



- For particularly tight belt deflection
- No production contamination caused by lubricants
- Hygienic design without ball or needle rollers
- Easy to clean
- Suitable for direct contact with food
- Resistant to temperature and chemicals

Order key

Type	Dimensions [mm]				
P210 RLM-0309-50					
iglidur® material	Roller	Metric	Inner Ø	Outer Ø	Total length
Options:					
iglidur® material					
P210: iglidur® P210					
A180: iglidur® A180					
A350: iglidur® A350					
H1: iglidur® H1					

Knife edge rollers made from iglidur® P210 - universal, up to +100°C

d1 +0.1 [mm]	d2 ¹⁴⁷⁾ ±0.1 [mm]	b1 -0.3 [mm]	Part No.
3.1	9.0	50.0	P210RLM-0309-50
4.1	9.0	50.0	P210RLM-0409-50
5.1	11.0	70.0	P210RLM-0511-70
5.1	14.0	70.0	P210RLM-0514-70
6.1	12.0	70.0	P210RLM-0612-70
6.1	14.0	70.0	P210RLM-0614-70
8.1	12.0	70.0	P210RLM-0812-70
8.1	14.0	70.0	P210RLM-0814-70
8.1	16.0	77.0	P210RLM-0816-77
8.1	18.0	70.0	P210RLM-0818-70
10.1	20.0	70.0	P210RLM-1020-70

Knife edge rollers made from iglidur® A180 - FDA-compliant, up to +90°C

d1 +0.1 [mm]	d2 ¹⁴⁷⁾ ±0.1 [mm]	b1 -0.3 [mm]	Part No.
3.1	9.0	50.0	A180RLM-0309-50
4.1	9.0	50.0	A180RLM-0409-50
5.1	11.0	70.0	A180RLM-0511-70
5.1	14.0	70.0	A180RLM-0514-70
6.1	12.0	70.0	A180RLM-0612-70
6.1	14.0	70.0	A180RLM-0614-70
8.1	12.0	70.0	A180RLM-0812-70
8.1	14.0	70.0	A180RLM-0814-70
8.1	18.0	70.0	A180RLM-0818-70
10.1	20.0	70.0	A180RLM-1020-70

¹⁴⁷⁾ Measured with gauge

Knife edge rollers made from iglidur® A250 - wear-resistant conveyor belt support, up to +90°C

d1 +0.1 [mm]	d2 ¹⁴⁷⁾ ±0.1 [mm]	b1 -0.3 [mm]	Part No.
4.1	9.0	50.0	A250RLM-0409-50 New
6.1	12.0	70.0	A250RLM-0612-70 New
8.1	12.0	70.0	A250RLM-0812-70 New
8.1	14.0	70.0	A250RLM-0814-70 New
8.1	16.0	70.0	A250RLM-0816-70 New

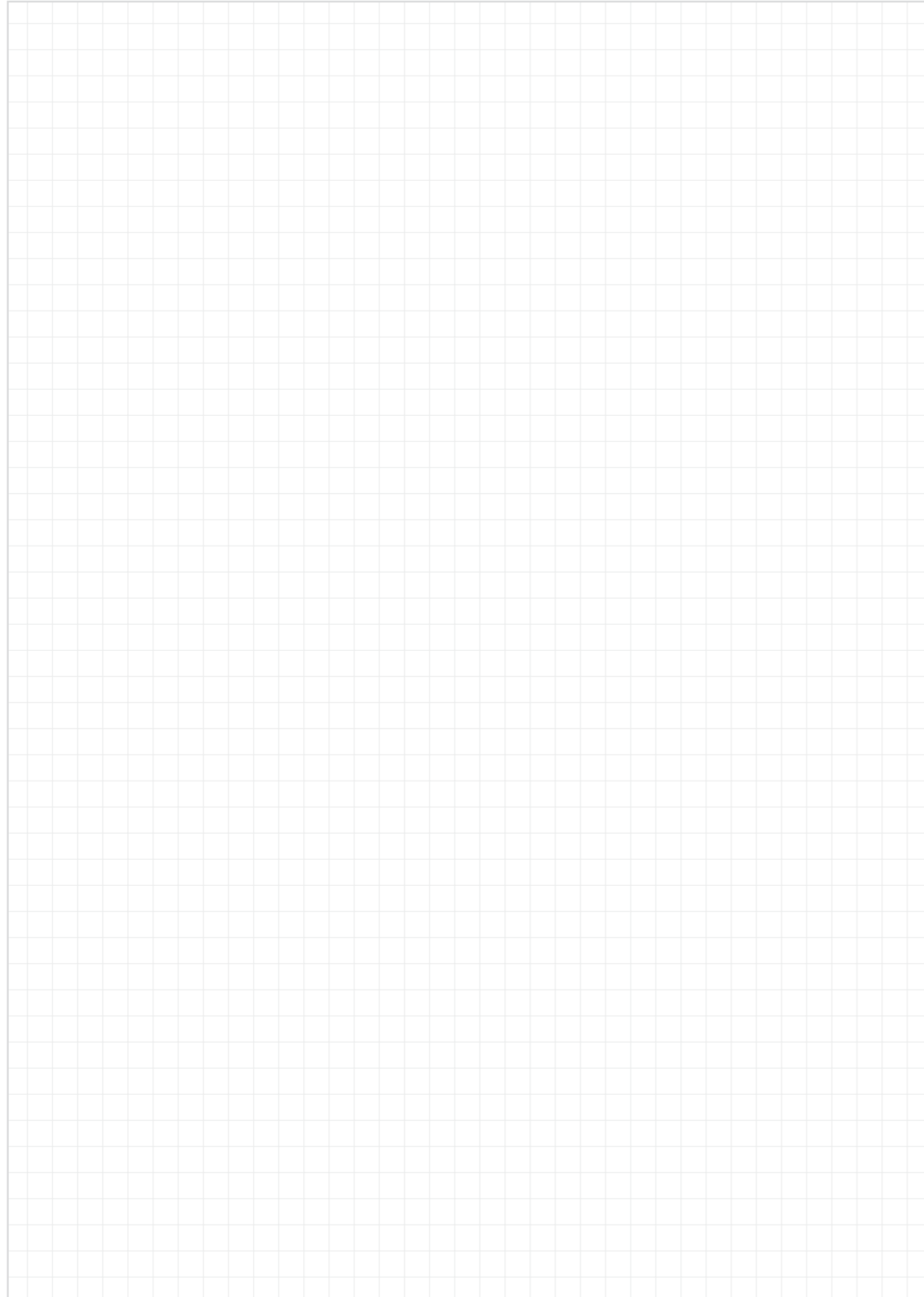
Knife edge rollers made from iglidur® A350 - FDA-compliant, up to +180°C

d1 +0.1 [mm]	d2 ¹⁴⁷⁾ ±0.1 [mm]	b1 -0.3 [mm]	Part No.
3.1	9.0	50.0	A350RLM-0309-50
6.1	12.0	70.0	A350RLM-0612-70
6.1	14.0	70.0	A350RLM-0614-70
8.1	18.0	70.0	A350RLM-0818-70

Knife edge rollers made from iglidur® H1 for higher transport speeds, up to +200°C

d1 +0.1 [mm]	d2 ¹⁴⁷⁾ ±0.1 [mm]	b1 -0.3 [mm]	Part No.
3.1	9.0	50.0	H1RLM-0309-50
4.1	9.0	50.0	H1RLM-0409-50
5.1	11.0	70.0	H1RLM-0511-70
6.1	12.0	70.0	H1RLM-0612-70
6.1	14.0	70.0	H1RLM-0614-70
8.1	12.0	70.0	H1RLM-0812-70
8.1	14.0	70.0	H1RLM-0814-70

¹⁴⁷⁾ Measured with gauge



iglidur[®] two hole flange bearing

Very good wear resistance

Maintenance-free dry operation

Lightweight

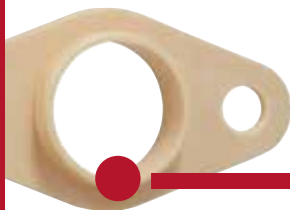
Standard range from stock



Maintenance-free dry operation



iglidur® G:
Standard material for all-round applications



iglidur® J:
Material for low wear



iglidur® X:
Material for high temperature applications



iglidur® A180
Material for use in the food sector



iglidur® J:
Two hole flanged bearing with preload

iglidur® - maintenance-free two hole flange bearings

With this design it is possible to use iglidur® high performance plain bearings in locations where recommended housing hole tolerances are not possible. Due to the design of the bearing, high loads are possible although there is a minimal precision requirement of the housing.

- Very good wear resistance
- Lightweight
- Lubrication-free

Assembly

For low radial loads, it is sufficient to mount iglidur® two hole flange bearings on one surface simply with two bolts. For higher radial loads, it is advisable to support the iglidur® two hole flange bearing in a housing or boss. For this hole, large tolerances are permitted, since it serves only as additional support for the iglidur® two hole flange bearing. In order to achieve higher radial loads in the bearings, the iglidur® two hole flange bearing can be press-fit into a recommended housing hole with H7 tolerances. The additional bolts ensure the fit of the bearing in the housing.



Material properties:

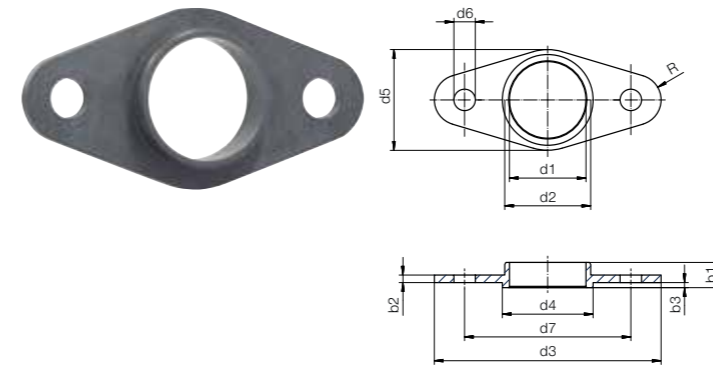
- iglidur® G** ▶ Page 85
- iglidur® J** ▶ Page 163
- iglidur® X** ▶ Page 291
- iglidur® A180** ▶ Page 425



Ø 10 - 35mm

More dimensions upon request

Two hole flange bearings



Order key

Type Dimensions [mm]

GFL-10

iglidur® material
Two hole flange bearings

Inner Ø

Options:

iglidur® material

G: iglidur® G

J: iglidur® J

X: iglidur® X

A180: iglidur® A180

Dimensions [mm]

d1	d1 tolerance ³⁾	d2 ¹³⁾	d3	d4	d5	d6	d7	b1	b2	b3	R	Part No.
											(±0.2)	
10	+0.025 +0.083	12	30	14	15	4.5	22	6	2	1	4	GFL-10
12	+0.032 +0.102	14	36	16	18	4.5	26	6	2	1	4.5	GFL-12
14	+0.032 +0.102	16	42	18	21	5.5	30	6	2	1	5	GFL-14
16	+0.032 +0.102	18	48	20	24	5.5	34	6	2	1	5.5	GFL-16
18	+0.032 +0.102	20	54	22	27	6.5	39	6	2	1	7	GFL-18
20	+0.040 +0.124	23	60	26	30	6.5	44	10	3	2	7	GFL-20
25	+0.040 +0.124	28	75	30	35	6.5	55	10	3	2	8.5	GFL-25
30	+0.040 +0.124	34	90	36	40	8.5	66	10	3	2	10	GFL-30
35	+0.050 +0.150	39	95	41	55	8.5	77	10	3	2	12	GFL-35
10	+0.025 +0.083	12	30	14	15	4.5	22	6	2	1	4	JFL-10
12	+0.032 +0.102	14	36	16	18	4.5	26	6	2	1	4.5	JFL-12
14	+0.032 +0.102	16	42	18	21	5.5	30	6	2	1	5	JFL-14
16	+0.032 +0.102	18	48	20	24	5.5	34	6	2	1	5.5	JFL-16
20	+0.040 +0.124	23	60	26	30	6.5	44	10	3	2	7	JFL-20
25	+0.040 +0.124	28	75	30	35	6.5	55	10	3	2	8.5	JFL-25
30	+0.040 +0.124	34	90	36	40	8.5	66	10	3	2	10	JFL-30
35	+0.050 +0.150	39	95	41	55	8.5	77	10	3	2	12	JFL-35
10	+0.013 +0.071	12	30	14	15	4.5	22	6	2	1	4	XFL-10
12	+0.016 +0.086	14	36	16	18	4.5	26	6	2	1	4.5	XFL-12
14	+0.016 +0.086	16	42	18	21	5.5	30	6	2	1	5	XFL-14
16	+0.016 +0.086	18	48	20	24	5.5	34	6	2	1	5.5	XFL-16
20	+0.020 +0.104	23	60	26	30	6.5	44	10	3	2	7	XFL-20
25	+0.020 +0.104	28	75	30	35	6.5	55	10	3	2	8.5	XFL-25
30	+0.020 +0.104	34	90	36	40	8.5	66	10	3	2	10	XFL-30
35	+0.025 +0.125	39	95	41	55	8.5	77	10	3	2	12	XFL-35
10	+0.025 +0.083	12	30	14	15	4.5	22	6	2	1	4	A180FL-10
12	+0.032 +0.102	14	36	16	18	4.5	26	6	2	1	4.5	A180FL-12
16	+0.032 +0.102	18	48	20	24	5.5	34	6	2	1	5.5	A180FL-16
20	+0.040 +0.124	23	60	26	30	6.5	44	10	3	2	7	A180FL-20
25	+0.040 +0.124	28	75	30	35	6.5	55	10	3	2	8.5	A180FL-25
30	+0.040 +0.124	34	90	36	40	8.5	66	10	3	2	10	A180FL-30
35	+0.050 +0.150	39	95	41	55	8.5	77	10	3	2	12	A180FL-35

³⁾ After press-fit. Testing methods ▶ Page 57 ¹³⁾ Press-fit in H7 tolerance housing hole



Available from stock

Detailed information about delivery time online.



Depending on material:

iglidur® G: -40°C up to +130°C

iglidur® J: -50°C up to +90°C

iglidur® X: -100°C up to +250°C

iglidur® A180: -50°C up to +90°C

iglidur® two hole flange bearings | Advantages

Two hole flanged bearing with preload



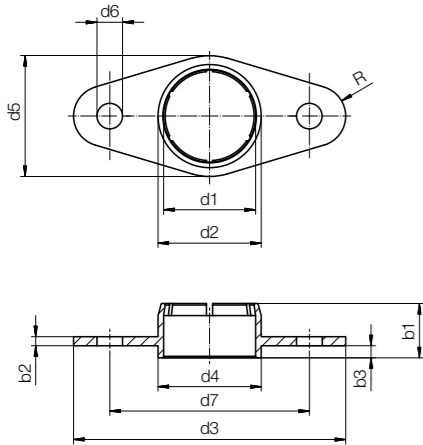
Order key

Type Dimensions [mm]

J V FL-10

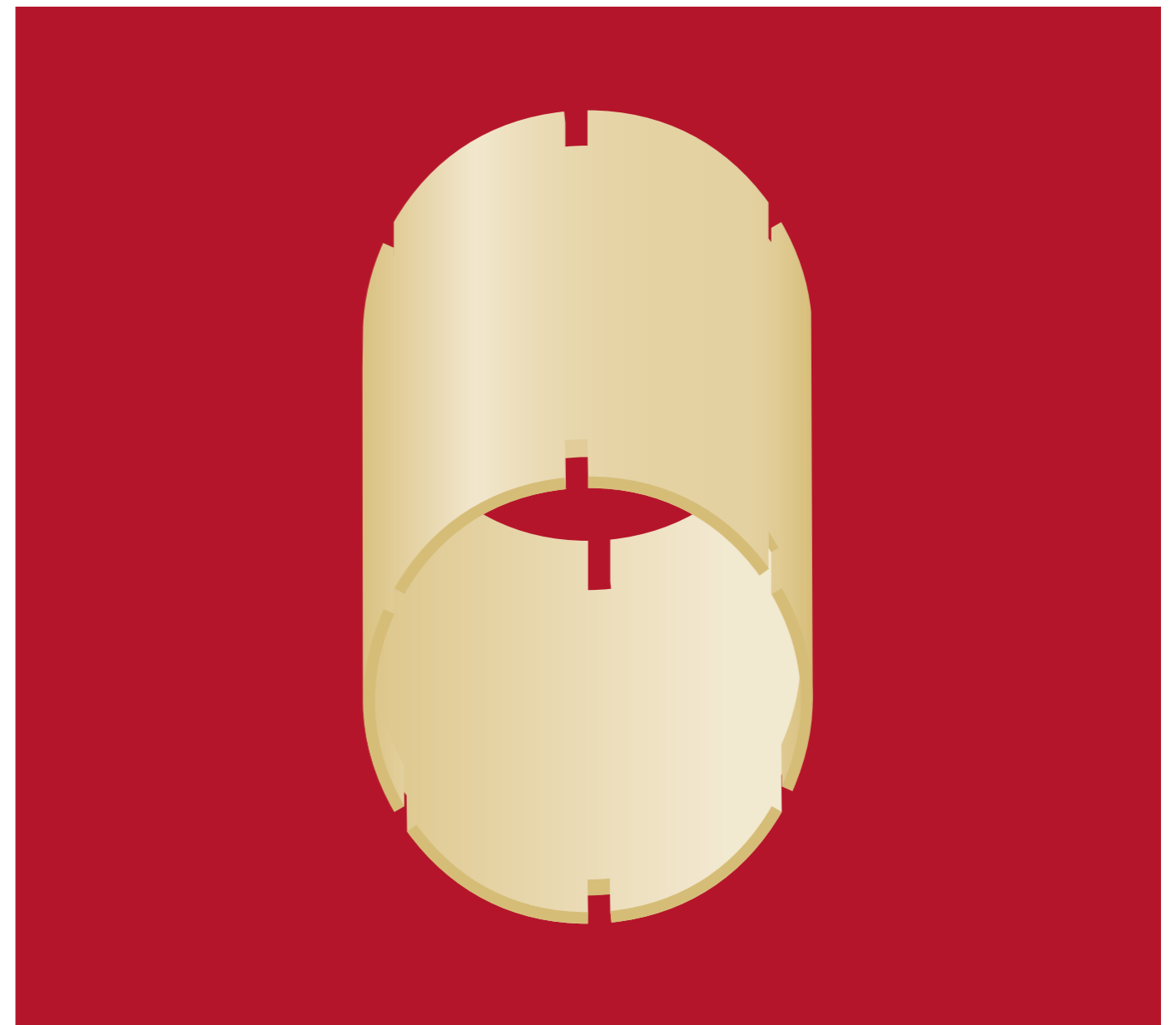
iglidur® material	iglidur® material
Pre-loaded	iglidur® J
Two hole flange bearings	
Inner Ø	

- Corrosion-resistant
- Self-lubricating due to incorporated solid lubricants
- Long service life thanks to high-performance polymers



Dimensions [mm]

d1	d1 tolerance	d2	d3	d4	d5	d6	d7	b1	b2	b3	R (±0.2)	Part No.
10	+0.025 +0.083	12	30	12	15	4.5	22	9	2.0	3	4.0	JVFL-10
12	+0.032 +0.102	14	36	14	18	4.5	26	10	2.0	4	4.5	JVFL-12
16	+0.032 +0.102	18	48	18	24	5.5	34	11	2.5	4	5.5	JVFL-16
20	+0.040 +0.124	23	60	23	30	6.5	44	13	3.0	5	7.0	JVFL-20



iglidur® clearance-free pre-loaded plain bearings

Radial and axial pre-load

Zero clearance in unloaded condition

Material: iglidur® J

Maintenance-free and predictable service life



Clearance-free and pre-loaded bearings

Zero clearance in unloaded condition

Maintenance-free and predictable service life

iglidur® clearance-free pre-loaded plain bearings

iglidur® JVSM and JVFM plain bearings are clearance-free in unloaded condition due to the axial and/or radial pre-load. The iglidur® J material possesses extremely low coefficient of friction in dry operation and a very low stick-slip effect. Ideal for "antivibration mounting" of pedal box bearings, etc.



When to use it?

- When a radial and/or axial pre-load of plain bearings is required
- When a rattle-free bearing in the unloaded state is required
- When you need a clearance-free feel



When not to use it?

- When a plain bearing solution with reduced clearance is needed ► Please contact us
- When the pre-load has to withstand high radial forces
- When total zero clearance feature is required at high loads



2 types
Ø 6 - 20mm

More dimensions upon request



Imperial dimensions available
► From page 1871



Available from stock

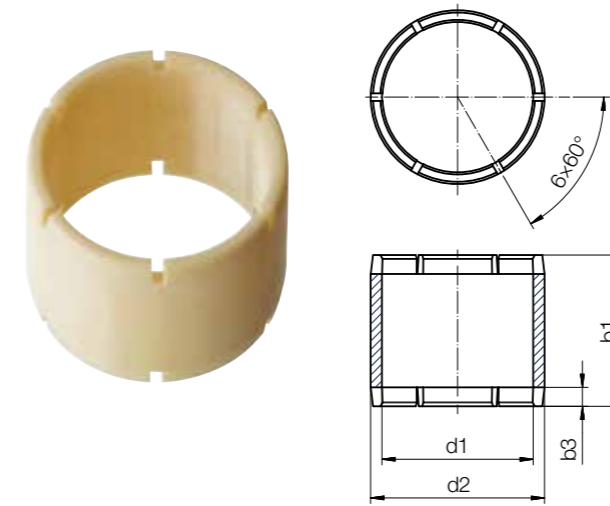
Detailed information about delivery time online.



Material:
iglidur® J ► Page 163



Max. +90°C
min. -50°C



Order key

Type	Dimensions [mm]
J V S M-0608-06	
iglidur® material	
pre-tensioned	
Form	
Metric	
Inner Ø	
Outer Ø	
Total length	

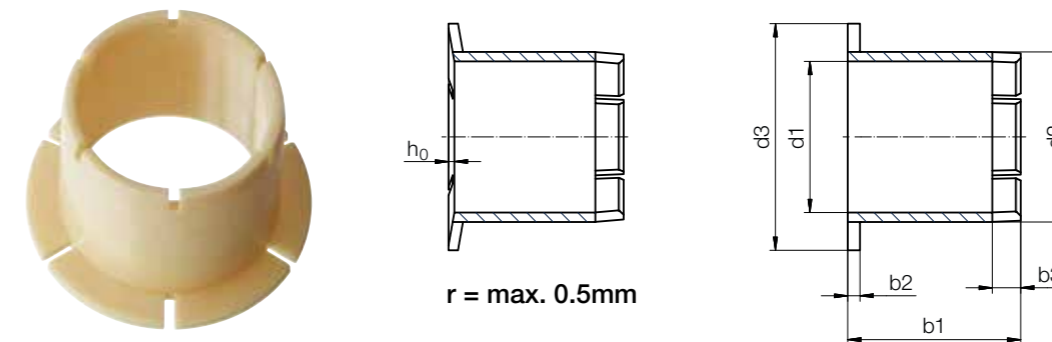
Options:
Form:
S: sleeve
F: with flange

Dimensions [mm]

d1	d1 tolerance ¹⁴⁾ E10	d2	b1 h13	b3	Part No.
6.0	+0.020 +0.068	8.0	6.0	2.0	JVSM-0608-06
8.0	+0.025 +0.083	10.0	8.0	2.0	JVSM-0810-08
10.0	+0.025 +0.083	12.0	10.0	2.0	JVSM-1012-10
12.0	+0.032 +0.102	14.0	12.0	2.0	JVSM-1214-12
14.0	+0.032 +0.102	16.0	14.0	2.0	JVSM-1416-14
15.0	+0.032 +0.102	17.0	15.0	2.5	JVSM-1517-15
18.0	+0.032 +0.102	20.0	18.0	2.5	JVSM-1820-18
20.0	+0.040 +0.124	23.0	20.0	2.5	JVSM-2023-20

¹⁴⁾ d1 measured after press-fit in housing hole. d2 H7 within the measurement plane

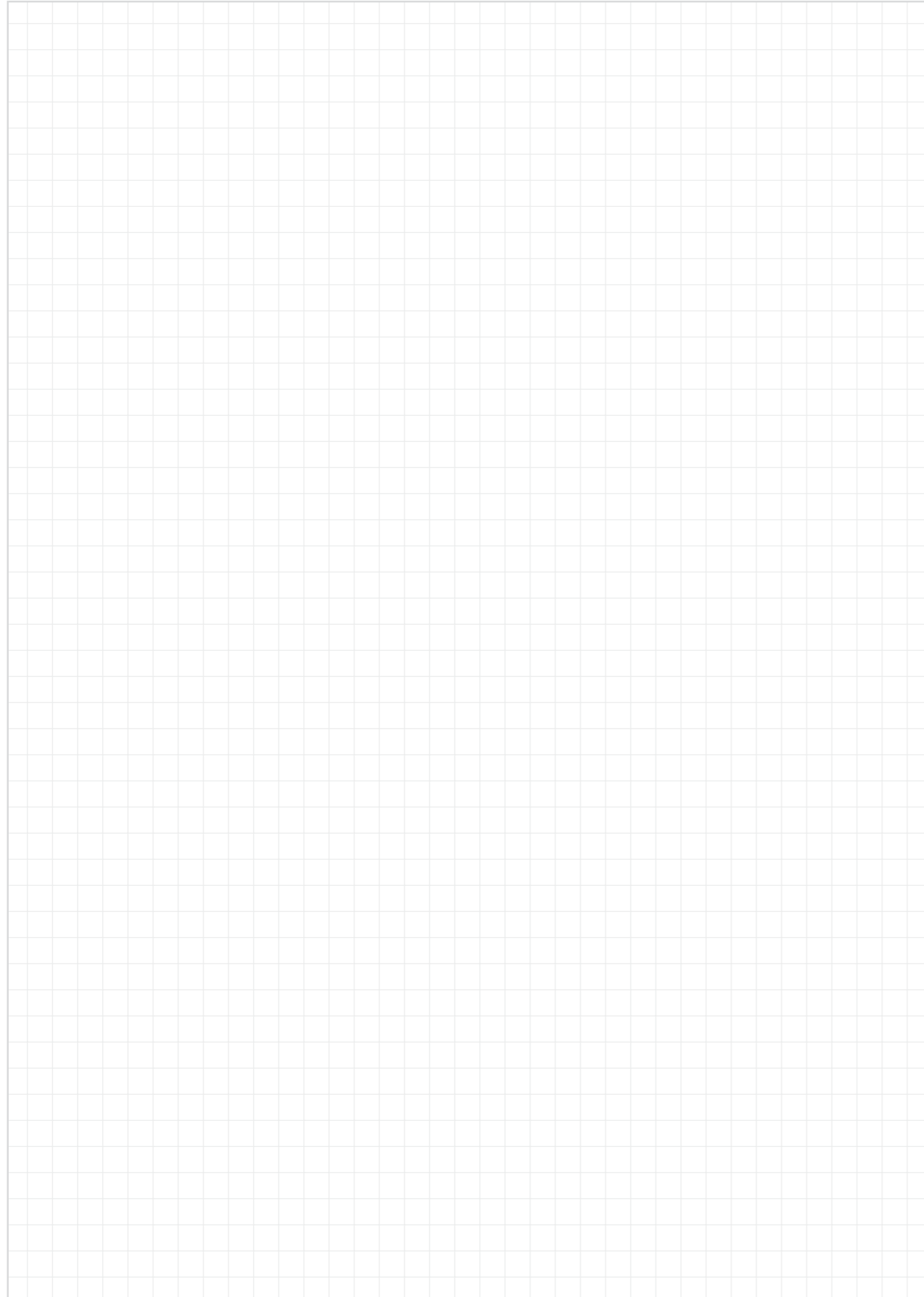
Pre-loaded sleeve plain bearings with flange



Dimensions [mm]

d1	d1 tolerance ¹⁴⁾ E10	d2	d3	b1 h13	b2	b3	h ₀ ±0.1	Part No.
8	+0.025 +0.083	10	15	10	1.0	2.0	0.44	JVFM-0810-10
10	+0.025 +0.083	12	18	10	1.0	2.0	0.53	JVFM-1012-10
12	+0.032 +0.102	14	20	12	1.0	2.0	0.53	JVFM-1214-12
14	+0.032 +0.102	16	22	12	1.0	2.0	0.53	JVFM-1416-12
15	+0.032 +0.102	17	23	15	1.0	2.5	0.53	JVFM-1517-15
18	+0.032 +0.102	20	26	11	1.0	2.5	0.53	JVFM-1820-11
18	+0.032 +0.102	20	26	18	1.0	2.5	0.53	JVFM-1820-18
20	+0.040 +0.124	23	30	20	1.5	2.5	0.62	JVFM-2023-20

¹⁴⁾ d1 measured after press-fit in housing hole. d2 H7 within the measurement plane



polysorb disc springs

Compensation for axial clearances and manufacturing tolerances

Vibration dampening

Noise dampening

Corrosion-free

Lightweight

Electrical and thermal insulation

Standard range from stock



polysorb disc springs

Disc springs are discs that can be axially loaded, which are concave in the axial direction. Disc springs require less space than other spring types and are especially suitable for designs that do not require a high spring length.



When to use it?

- When an application requires disc spring characteristics which are only possible in metal at a considerable expense (slot design)
- For compensation of axial clearances and manufacturing tolerances
- For vibration dampening
- For noise reduction
- When a non-magnetic material is required
- For electrical and thermal insulation



When not to use it?

- When constant spring forces are necessary over a wide temperature range
- When high spring forces are required



Depending on material:

iglidur® J: -50°C up to +90°C
iglidur® A500: -100°C up to +250°C



1 type, 2 materials
 Ø 5 - 20mm

More dimensions upon request

iglidur® J: standard material for many applications

Compensation of axial clearance and manufacturing tolerances

Vibration dampening

iglidur® A500: High temperature material

Lightweight



Available upon request

Detailed information about delivery time online.



Material properties:

iglidur® J ▶ Page 163
iglidur® A500 ▶ Page 417

General properties

The spring deflection of the disc spring is relatively small. Therefore a number of disc springs are combined in practice. Disc springs that are alternately stacked increase the spring length proportionally to the amount of springs. In order to increase the force, the disc springs can be parallel stacked to form a spring unit.

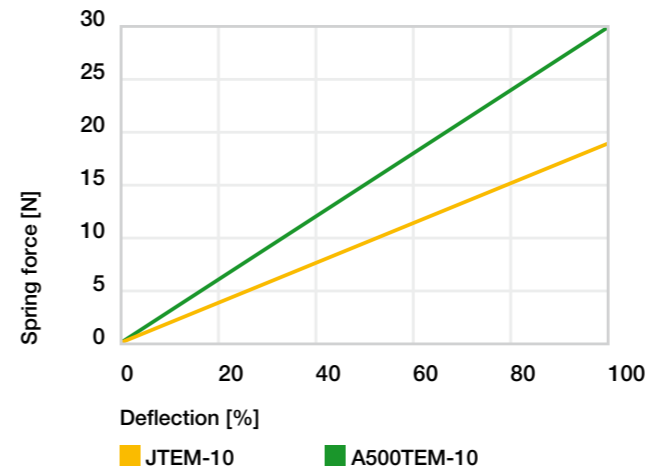


Diagram 01: Spring force [N] as a function of percental deflection measured with size 10

The force-deformation curves of polysorb disc springs are approximately linear.

Chemical resistance

polysorb disc springs are resistant to a variety of chemicals. iglidur® A500 has a higher resistance than iglidur® J.

Chemicals	Resistance	
	iglidur® J	iglidur® A500
Alcohols	+	+
Hydrocarbons	+	+
Greases, oils without additives	+	+
Fuels	+	+
Diluted acids	0 to -	+
Strong acids	-	+
Diluted alkalines	+	+
Strong alkalines	+ to 0	+

+ resistant 0 conditionally resistant - not resistant

All data given at room temperature [+20°C]

Table 01: Chemical resistance

Moisture absorption

Low humidity absorption means that they can be used in wet or humid environments. polysorb disc springs absorb moisture and in the process the mechanical properties change. However, in the worst application case – a long-term use in water – polysorb disc springs still have a high spring force.

iglidur®	Standard environment	Saturated in water
	20°C/50% r.h.	
J	18	15
A500	24	23

Table 02: Spring force [N] as a function of the absorbed moisture

Temperatures

Increased temperatures reduce the rigidity of polymers. polysorb disc springs made from iglidur® J (JTEM-10) still have a maximum spring force of 8N at the maximum permissible temperature of +90°C. The spring force against ambient temperature is shown in diagram 02.

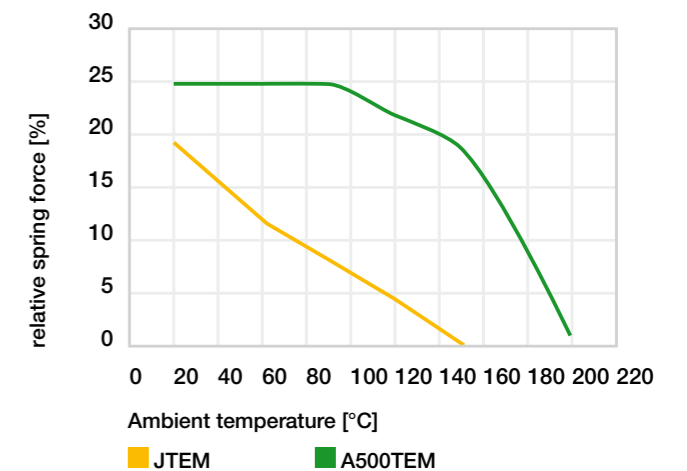


Diagram 02: Effect of ambient temperature on the spring force



iglidur® J



iglidur® A500



Order key

Type TEM-05 Dimensions [mm]

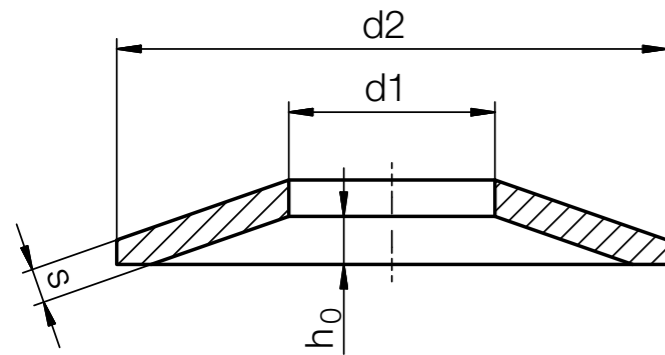
TEM-05

iglidur® material
Thrust washer style
"Elastic spring"
Metric
Inner Ø

Options:
iglidur® material
iglidur® J
for low wear
iglidur® A500
for high temperature applications
requiring FDA-compliance



Material:
iglidur® J ▶ Page 163
iglidur® A500 ▶ Page 417



Dimensions based on DIN 2093

Dimensions [mm]

d1	d2	Øs	h ₀	Standard values: Spring lengths and forces		Weight [g]	Part No. ¹⁵⁾
				F _{1,0} iglidur® J [N]	F _{1,0} iglidur® A500 [N]		
5.2	10.0	0.5	0.25	5	8	0.04	<input type="checkbox"/> TEM-05
6.2	12.5	0.7	0.30	10	15	0.11	<input type="checkbox"/> TEM-06
8.2	16.0	0.9	0.35	16	24	0.20	<input type="checkbox"/> TEM-08
10.2	20.0	1.1	0.45	24	35	0.33	<input type="checkbox"/> TEM-10
12.2	25.0	1.5	0.55	45	70	0.85	<input type="checkbox"/> TEM-12
16.3	31.5	1.75	0.70	65	85	1.44	<input type="checkbox"/> TEM-16
20.4	40.0	2.25	0.90	130	150	3.10	<input type="checkbox"/> TEM-20

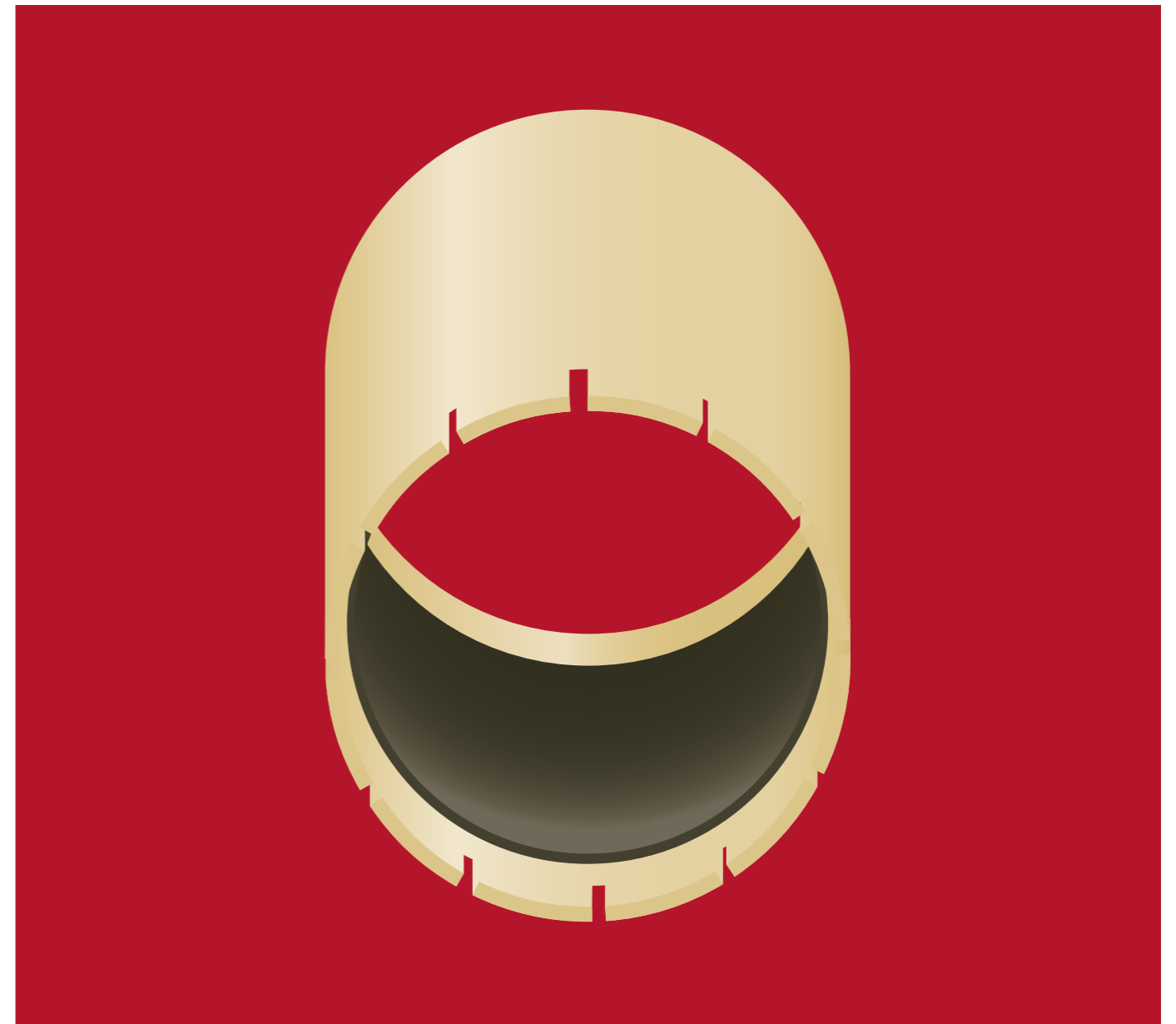
The standard values for the spring lengths and forces are rounded mean values.

¹⁵⁾ Material: iglidur® J: JTEM, standard

iglidur® A500: A500TEM, high temperature and chemical resistance

Symbols and units:

- F = Force [N]
- h₀ = Maximum spring displacement [mm]
- F_{1,0} = Spring force 100% displacement [N]



iglidur® PEP multi-component bearings

Can be used with any shaft material

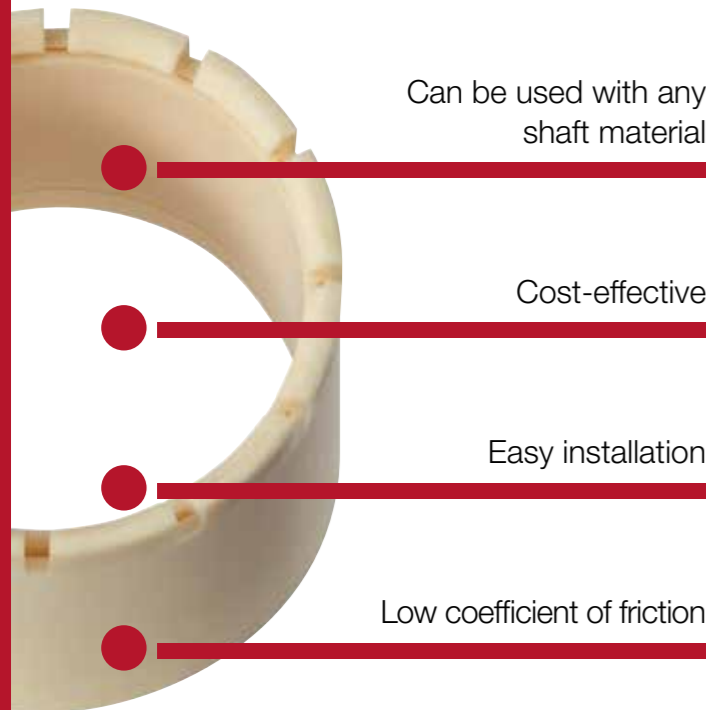
Cost-effective

Easy installation

Low coefficient of friction

Standard range from stock





iglidur® PEP multi-component bearings

In standard plain bearing solutions, the shaft has a critical part to play, as important as the bearing itself. With the iglidur® PEP bearings, igus® is forging new trail with this enclosed and maintenance-free plain bearing design.



When to use it?

- When a cost-effective plastic plain bearing system is required
- When independence from the shaft material and shaft surface is required
- For the protection of expensive and sensitive shafts



When not to use it?

- For high surface speeds
 - ▶ iglidur® J, page 163
- At high loads
 - ▶ iglidur® G, page 85
 - ▶ iglidur® Q, page 491
- At high temperatures
 - ▶ iglidur® V400, page 319
 - ▶ iglidur® X, page 291
 - ▶ iglidur® Z, page 301
- When low clearance bearings are required
 - ▶ iglidur® P, page 135
 - ▶ iglidur® X, page 291



1 type

Ø 6 - 20mm

More dimensions upon request



Imperial dimensions available

▶ From page 1871



Available from stock

Detailed information about delivery time online.



Material:

iglidur® J ▶ Page 163



Max. +90°C

min. -50°C

General properties

Maintenance-free plain bearings are generally described as being able to slide on the shaft without any additional coating and/or lubrication. It is evident that shaft materials are as important as the plain bearing itself. igus® is forging a new path with a plain bearing that is self-contained and maintenance-free.

iglidur® PEP is an innovative design for lubrication-free plastic plain bearing systems with an inner and outer ring. The special feature; the sliding surface is the inner ring, and for the first, time shaft materials and shaft surfaces are not a concern. Even threads, rust and scratches do not affect the performance or reliability. With the control over the sliding surface and through considerable testing, the long-term behaviour of the bearing system can be predicted precisely. Similar to ball bearings, the inner ring turns with the shaft in the plastic PEP plain bearing. Relative movements of the shaft with respect to the bearing are eliminated. This protects the shaft surface from wear and saves costs. An additional benefit; even the most sensitive or unusual materials can be used as the rotating shaft with this polymer plain bearing. Due to the bearing materials used, the PEP plastic bearing is totally corrosion-free.

Wear resistance

For loads up to 5N/mm² the wear test results are compelling. Here PEP plastic bearings obtain values that are comparable to most wear-resistant metal-backed bearing systems. This is a very positive result, when you consider the reduced costs compared with the required shaft surface finish which is demanded by traditional bearings. The consistently low coefficient of friction is also an advantage to the user. Since the running surfaces are fixed, the tribological data can be calculated. The coefficient of friction of the lubrication-free PEP bearings is no longer based on the shaft materials or surface properties. If necessary, the coefficient of friction can be reduced further with a small amount of lubricant.

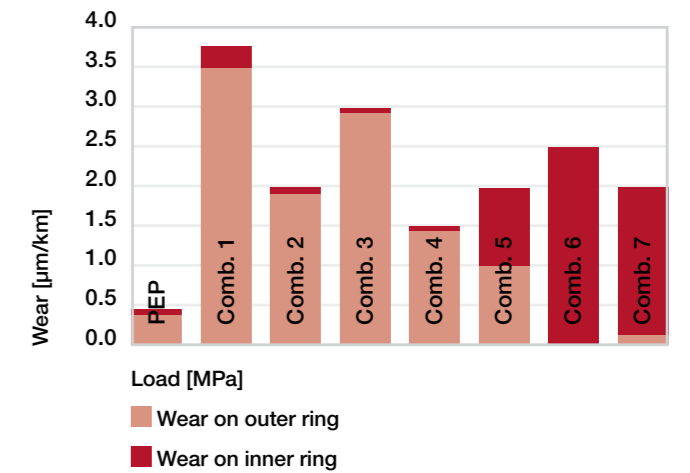


Diagram 01: Wear experiments of different material combinations, p = 0.75MPa, v = 0.3m/s

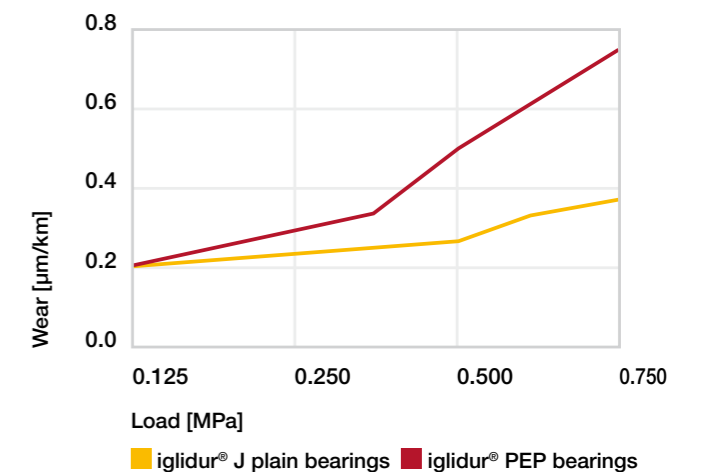
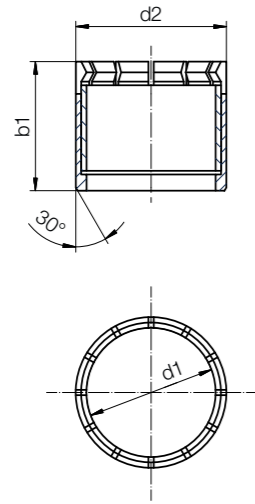


Diagram 02: Wear of iglidur® PEP bearings as a function of the load, v = 0.3m/s

Assembly

The installation of the PEP plain bearing could not be easier or faster. The bearings are manufactured to be press-fitted into a recommended housing hole of H7 tolerance. Then, the shaft is inserted and fits tightly onto the inner ring. The inner bearing is clipped into the outer ring. This design makes it possible to pull the shaft out without removing the inner ring.



Order key

Type Dimensions [mm]

PEP S M-0610-10

iglidur® material	Form	Metric	Inner Ø	Outer Ø	Total length
-------------------	------	--------	---------	---------	--------------

Material:
iglidur® J ▶ Page 163

Imperial dimensions available
▶ From page 1871

Dimensions [mm]

d1	d2	b1	Part No.
6	10	10	PEPSM-0610-10
8	12	12	PEPSM-0812-12
10	14	12	PEPSM-1014-12
12	16	15	PEPSM-1216-15
16	20	20	PEPSM-1620-20
20	23	20	PEPSM-2023-20



iglidur® lip seal bearings

Polymer bearing with integrated radial shaft seal

Seals against the rotating shaft

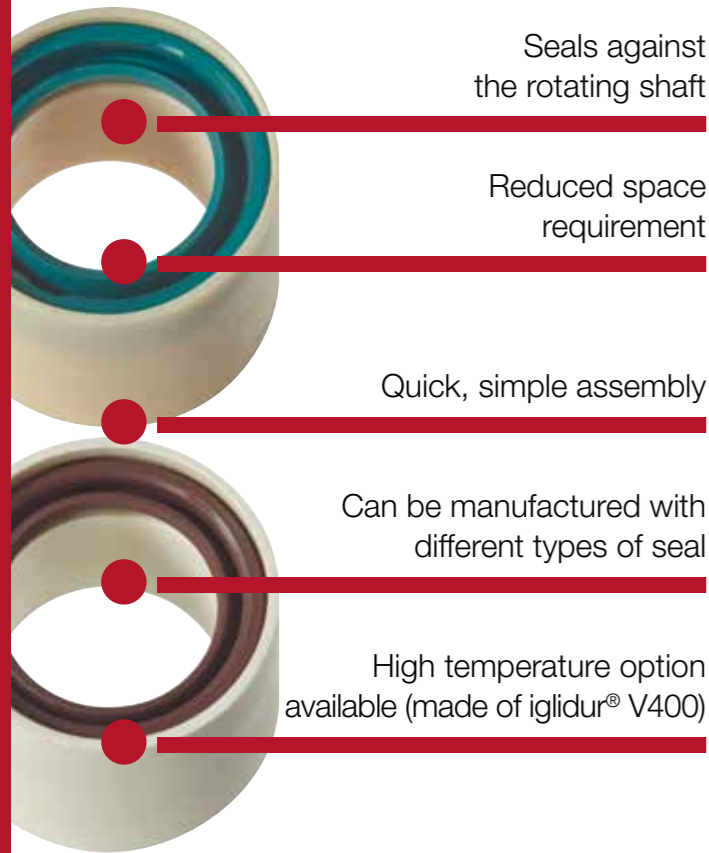
Reduced space requirement and easy, fast installation

Can be manufactured with different types of seal

High temperature option available (VDSM)



Position and seal: plastic bearing with clip-on shaft seal



Seals against the rotating shaft

Reduced space requirement

Quick, simple assembly

Can be manufactured with different types of seal

High temperature option available (made of iglidur® V400)

iglidur® lip seal bearings

Easy and quick to fit polymer plain bearing made of iglidur® J (JDSM) or iglidur® V400 (VDSM) with an integrated rotary lip seal, which protects against dust, dirt, and all depressurised liquids.



When to use it?

- When the ingress of dirt and water spray should be prevented
- When only a small installation space is available in the axial direction
- When an existing seal should be integrated in a plain bearing



When not to use it?

- When pressurised media should be sealed
- When a permanent tensioned seal is required



Available upon request

Detailed information about delivery time online.



Material properties:

iglidur® J ▶ Page 163
iglidur® V400 ▶ Page 319



Depending on material:

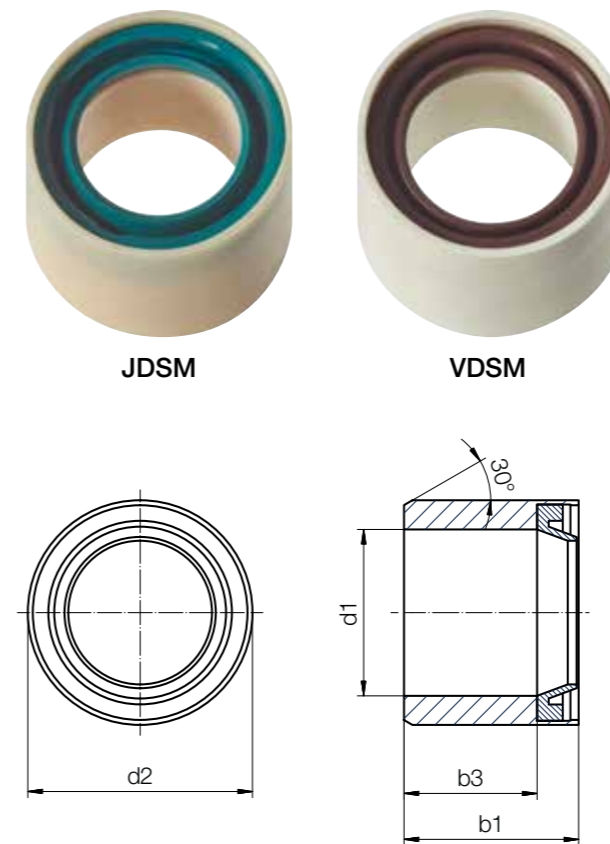
iglidur® J: -50°C up to +90°C
iglidur® V400: -50°C up to +200°C



1 type, 2 materials
Ø 10mm

More dimensions upon request

Lip seal sleeve bearings (form S)



JDSM

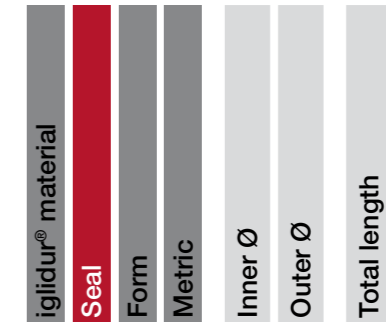
VDSM



Order key

Type Dimensions [mm]

□ D S M-1015-14



Material:

iglidur® J ▶ Page 163
iglidur® V400 ▶ Page 319

Dimensions [mm]

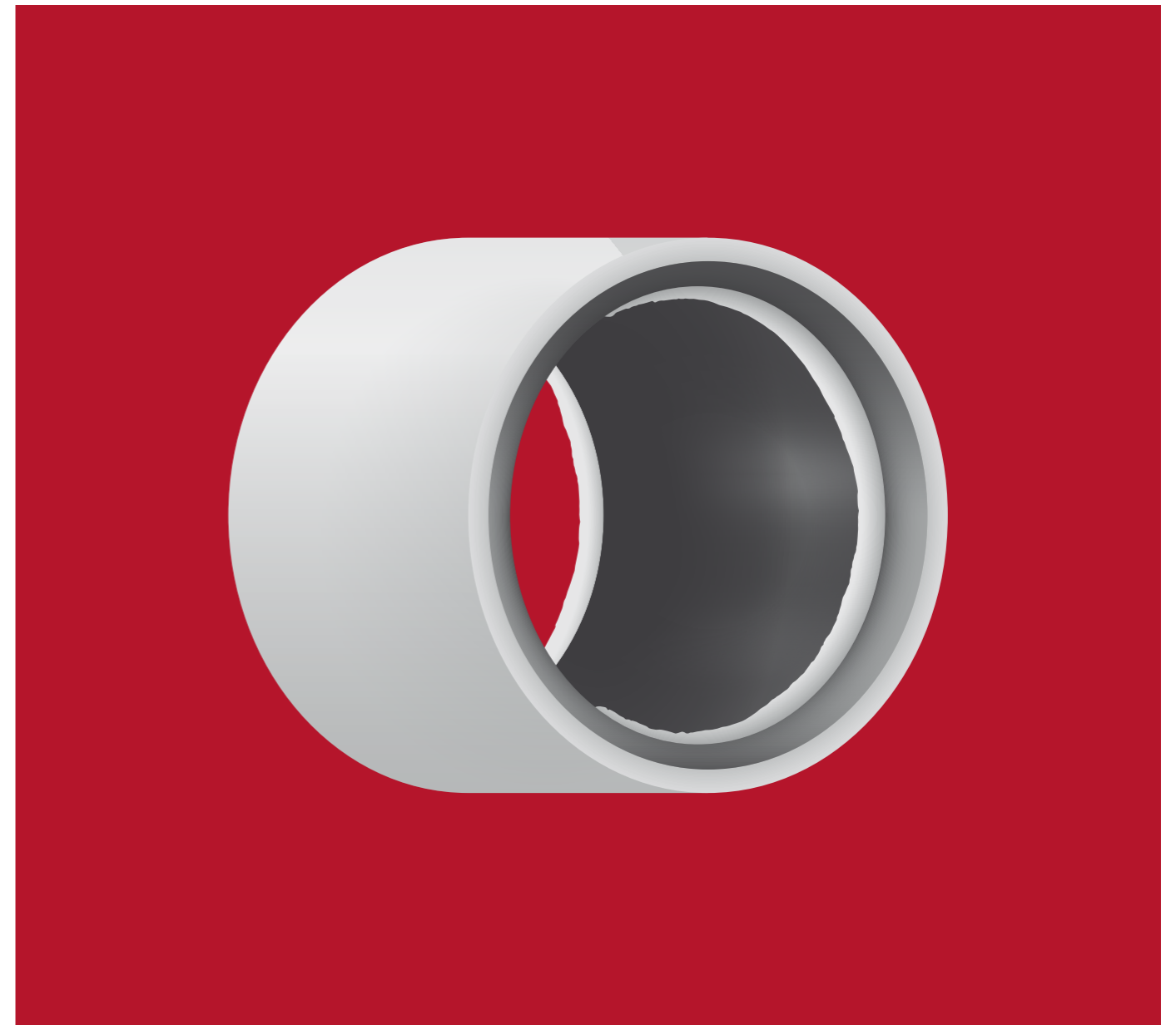
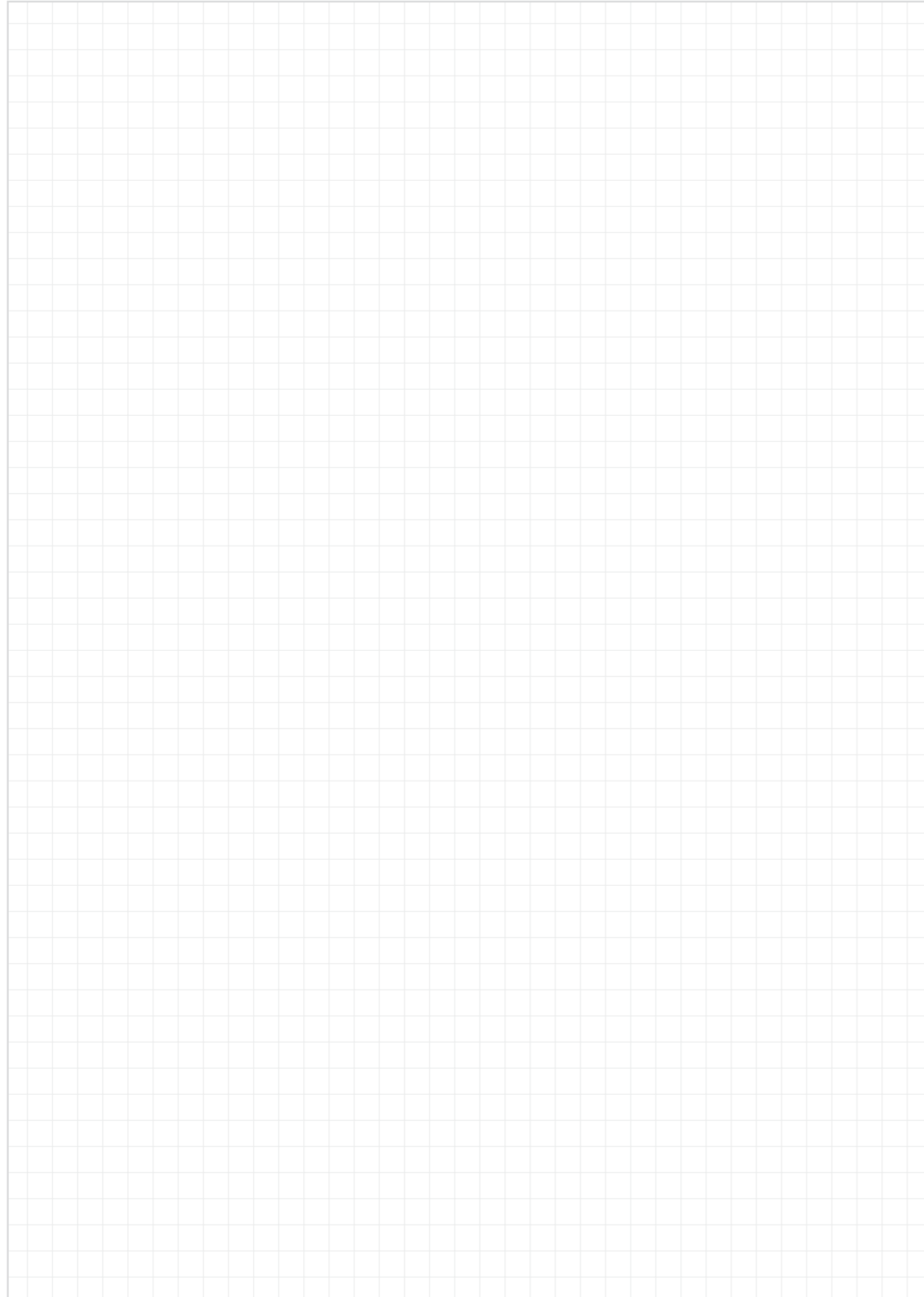
d1	d1 tolerance ³⁾	d2	b1	b3	f	Part No.
E11		Ø	h13			
10	+0.025 +0.135	15	14	10	1	JDSM-1015-14
10	+0.025 +0.135	15	14	10	1	VDSM-1015-14

³⁾ After press-fit. Testing methods ▶ Page 61



Please contact us if you want to combine your seal with an iglidur® plain bearing.

We will support you with the design, will check the integration and create an appropriate proposal.



Plain bearings with felt seal

Maintenance-free

High running performance

Shafts are protected against wear even more effectively as dirt cannot ingress the bearing point



Clean bearings even in applications with dirt and dust

Maintenance-free

High running performance

The shaft is protected against wear even more effectively as dirt cannot ingress the bearing point

Sleeve heavy-duty plain bearing iglidur® TX2

Plain bearings with felt seal

The felt seal for SG03 plain bearing prevents the ingress of dirt and dust into the bearing point and thus protects the bearing itself and the shaft against wear and premature failure.



When to use it?

- When the ingress of dirt should be prevented
- When a 2 in 1 solution (bearing and seal) is required



When not to use it?

- When liquid seal is required
- When high axial forces act on the flange



Material properties:

- iglidur® G ▶ Page 85
- iglidur® P210 ▶ Page 121
- iglidur® Q2 ▶ Page 477



Available from stock

Detailed information about delivery time online.
Sleeve bearing upon request

For flanged bearings and thrust washers



Order key

Type Dimensions [mm]

F M-20 26-20-SG03-050

iglidur® material	Form	Metric	Inner Ø	Outer Ø	Total length	Felt seal	Cap
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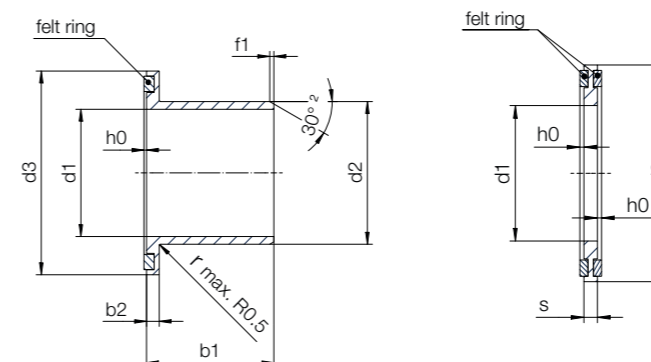
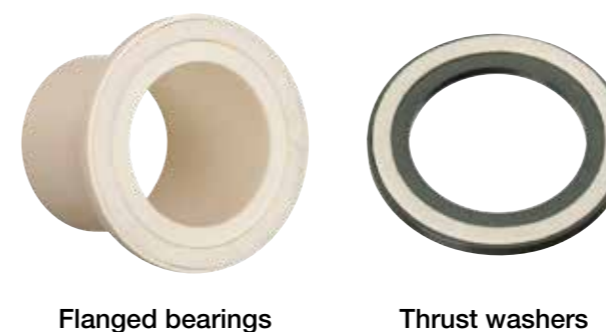
Options:

= iglidur® material

iglidur® G - the classic all-rounder

iglidur® P210 - specialist for pivoting etc.

iglidur® Q2 - the durable heavy-duty bearing

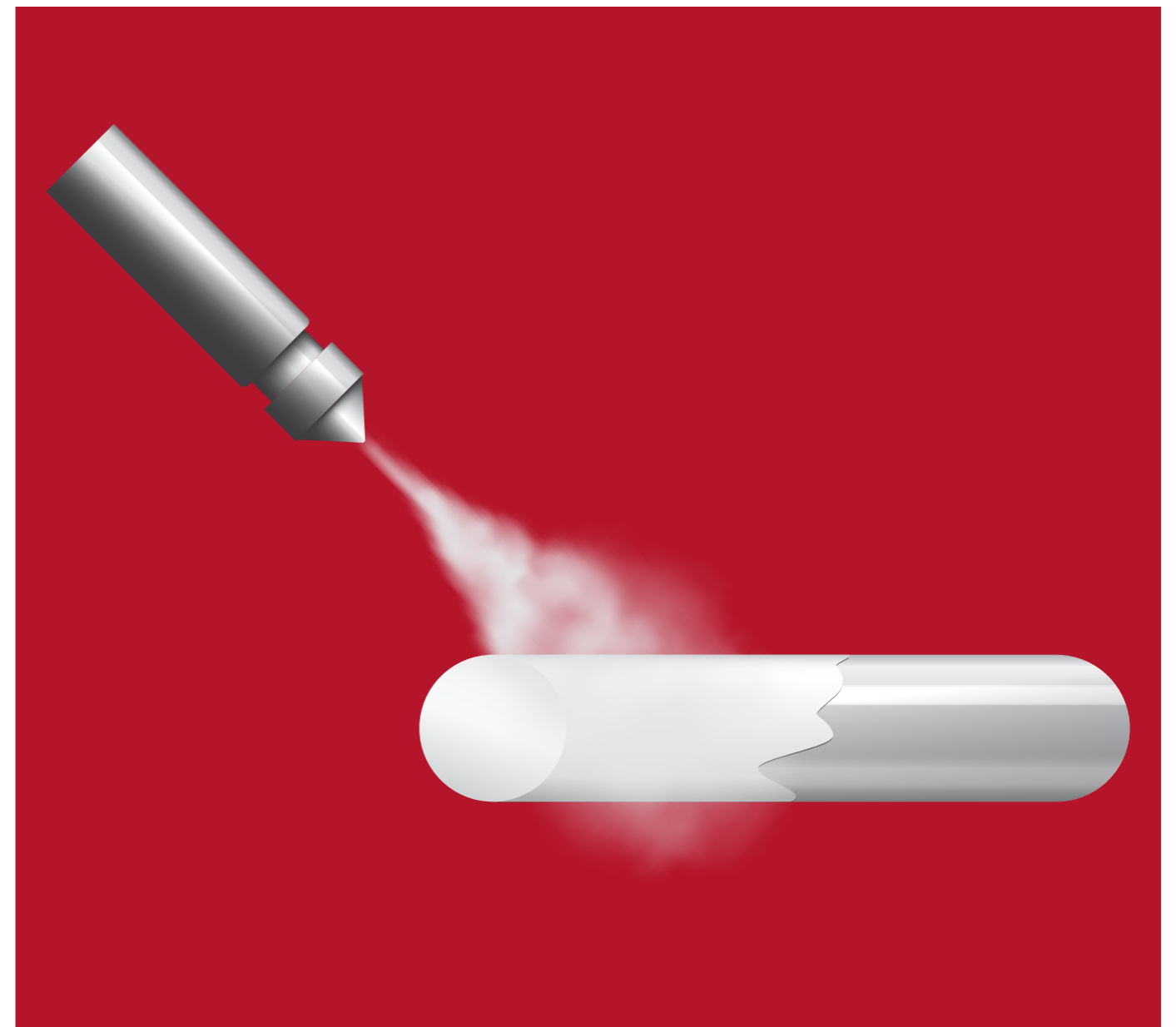
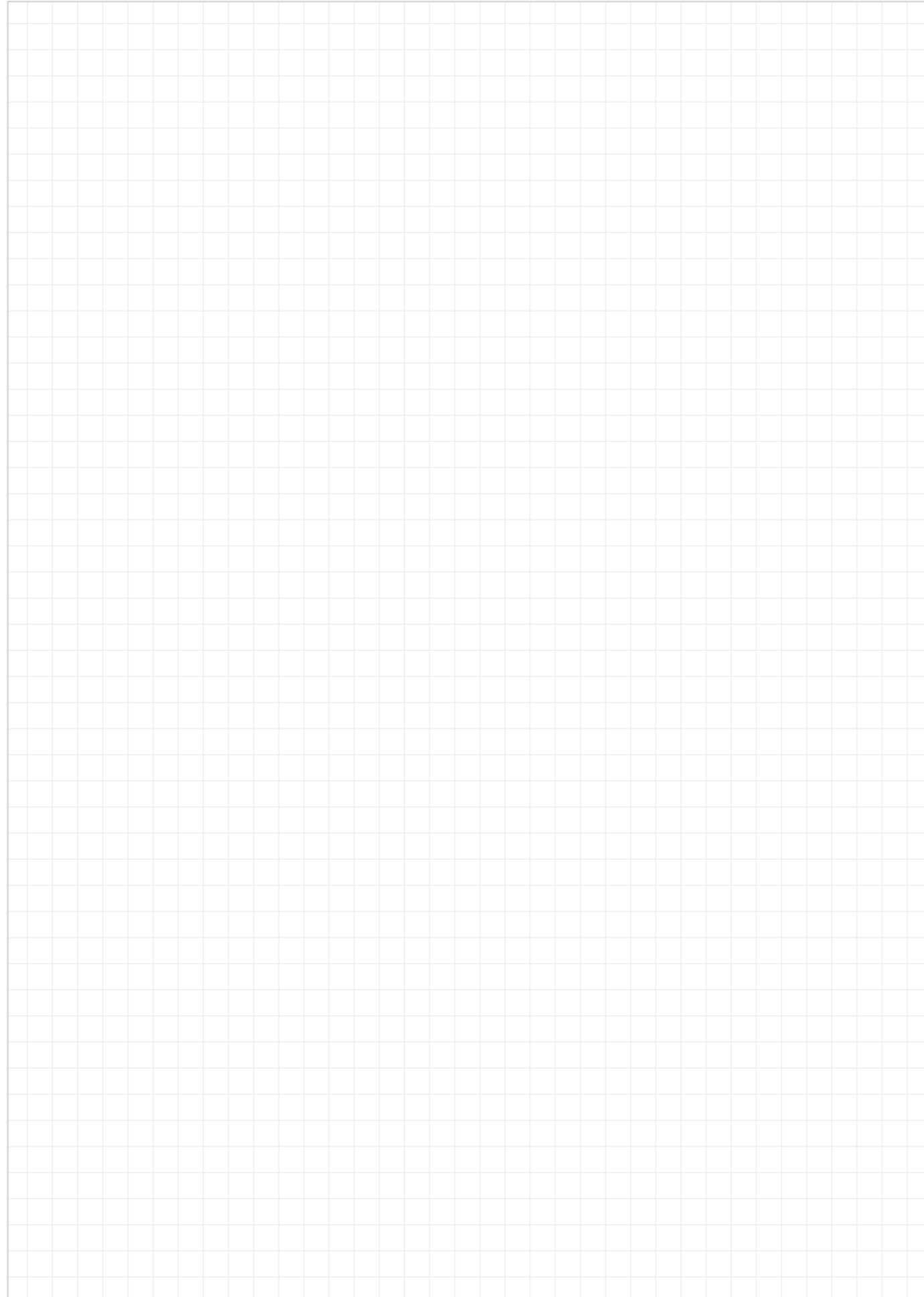


Flanged bearings dimensions [mm]

d1	d2	d3	b2	b1	Part No.
20	26	34	1.5	20	<input type="checkbox"/> FM-2026-20-SG03-050 New
25	28	40	2.5	25	<input type="checkbox"/> FM-2528-25-SG03-050 New
30	34	45	2.5	30	<input type="checkbox"/> FM-3034-30-SG03-050 New
35	39	50	2.5	35	<input type="checkbox"/> FM-3539-35-SG03-050 New
40	44	55	2.5	40	<input type="checkbox"/> FM-4044-40-SG03-050 New

Thrust washers dimensions [mm]

d1	d2	b1	Part No.
20	26	20	<input type="checkbox"/> TM-2036-025-SG03-050 New
25	28	25	<input type="checkbox"/> TM-2540-025-SG03-050 New
30	34	30	<input type="checkbox"/> TM-3045-025-SG03-050 New
35	39	35	<input type="checkbox"/> TM-3550-025-SG03-050 New
40	44	40	<input type="checkbox"/> TM-4055-025-SG03-050 New



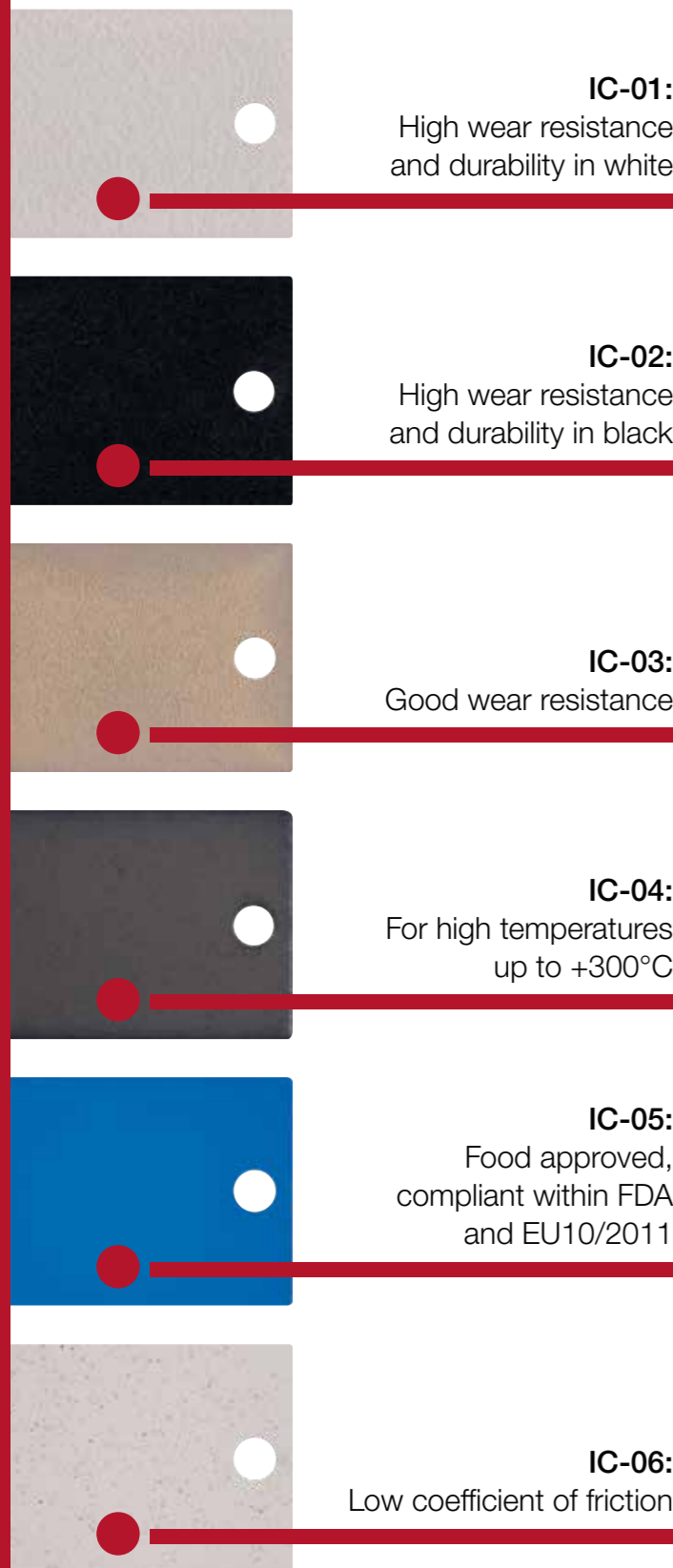
iglidur® coatings

Easy coating of metallic components

Good coefficient of wear and therefore a long service life

The perfect coating for your application





IC-01:

High wear resistance and durability in white

IC-02:

High wear resistance and durability in black

IC-03:

Good wear resistance

IC-04:

For high temperatures up to +300°C

IC-05:

Food approved, compliant within FDA and EU10/2011

IC-06:

Low coefficient of friction

iglidur® coatings

iglidur® coating is a tribologically optimised polymer in powder form that can be applied to electrically conductive components by means of powder coating. Like all iglidur® materials, iglidur® coating powders are tribologically optimised and offer excellent coefficient of friction and wear. With this method, you also protect heavily stressed surfaces from wear – without any additional components.

- Reduced friction coefficients
- Abrasion-resistant surface
- Self-lubricating due to incorporated solid lubricants



When to use it?

- For a simple and flexible way to reduce friction
- To protect the surface
- To avoid additional lubrication



When not to use it?

- In unprotected outdoor application
- In an underwater application
- For a thick wear layer



Available from stock

Detailed information about delivery time online.



Available as powder from stock



Coated with iglidur® IC-05
Image exemplary



Order key

Type

IC-01-□

iglidur® coating

Material

Package size

Options:

□ = Available packaging sizes, 1kg, 2kg, 10kg

Technical data

iglidur®	Colour	Max. application temperature [°C]	Part No.
IC-01	white	+90	IC-01-□ New
IC-02	black	+90	IC-02-□ New
IC-03	yellow	+140	IC-03-□ New
IC-04	grey	+300	IC-04-□ New
IC-05	blue	+80	IC-05-□ New
IC-06	cream	+140	IC-06-□ New

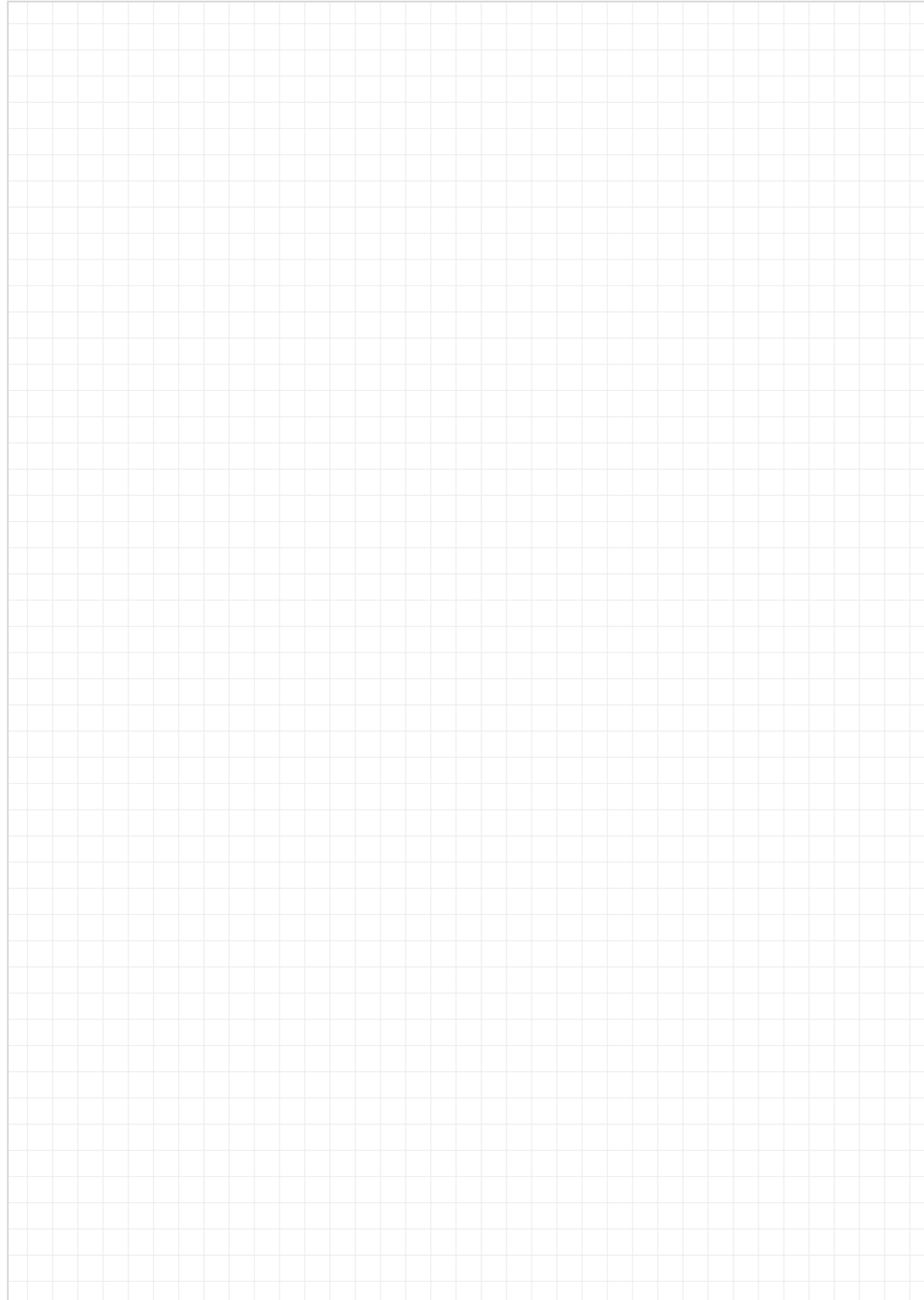
Order example: IC-01-10KG - high-performance polymer iglidur® IC-01 in a 10kg bag



We will coat your component for you

Send us your metallic component. We will coat it for you with our iglidur® high-performance polymers and send it back to you.

► www.igus.eu/coating-tool



print2mold® - custom-made parts manufactured by injection moulding

Cost-effective prototypes and series production

Original iglidur® tribo materials

Tailored to your application

Delivery time from 3 days

For quantities ranging from a few hundred to
several million



Customised & cost-effective:
Your plastic plain bearing in the required design, material and quantity



"Show me the plastic part that gives you a problem. I'll provide you with a solution!"

With this idea, Günter Blase founded igus® over 50 years ago, and it still holds true today: hence, customer-specific series solutions are part of our daily work just like catalogue parts.

Your igus® plastic plain bearings:

- Customised parts from 3 days delivery time
- Service life predicted in advance
- From 1 piece to several million pieces: Always the appropriate manufacturing process
- ▶ www.igus.eu/special-design
- All iglidur® materials possible
- New development of specific materials possible
- Joint dimensioning and design coordination

Custom manufactured

With this service, there are two different methods: first, custom-made plastic parts can be produced with 3D-printed injection moulds and second, with the aid of machined aluminium tools.

In the 3D printing process, users can choose their custom-made part from over 50 different iglidur® tribological materials optimised for friction and wear. The material of the 3D-printed mould is tailored to withstand the high temperatures and pressure prevailing in injection moulding. You can produce from just one piece up to 500 parts,

prototypes or small batches from a 3D-printed injection mould.

For batches between 200 and 2,000 pieces, the injection moulded part can also be produced with an aluminium tool. This lean manufacturing method also saves the user time and money here: aluminium tools are also lower cost and faster to produce than steel moulds, as no lengthy hardening is required.

In 3 steps to your individual plain bearing

1. Submit an enquiry

Fill in the form with some basic information: quantity and requirement, such as food contact, dirt resistance, low wear etc. and upload the CAD files, for example. After one of our specialists has contacted you for a consultation, you will receive a quotation.

2. We produce your required component

Upon order, igus® starts the production process.

3. You receive your product

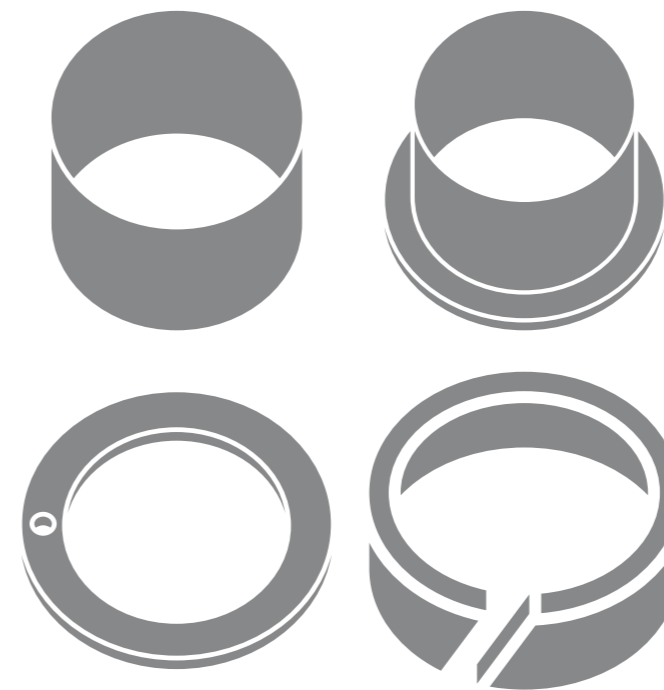
Your required component is ready to ship and delivered quickly.

Send a request: ▶ www.igus.eu/specialbearings-enquiry

Configured in seconds, injection-moulded within seven days

With the igus® FastLine service, you receive customised injection-moulded plain bearings and thrust washers in a maximum of seven days. Apart from the immediate price indication, the iglidur® plain bearing designer shows you the manufacturing costs of our other production methods. Should your desired plain bearings already be available in our standard product range, they will be included in the price comparison as well. That way, you can always keep an eye on the best price.

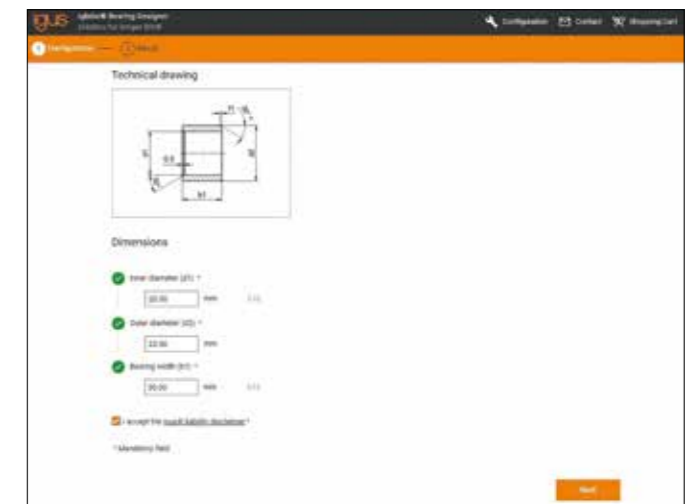
- Receive injection-moulded plain bearings with special dimensions in a maximum of 7 days
- Everything from one source: from the injection mould to the completed plain bearing



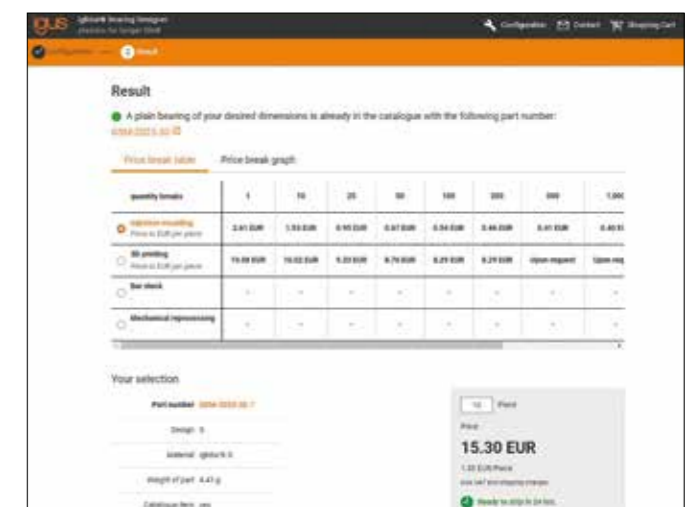
Immediately available: sleeve bearings, flanged bearings, thrust washers, guide rings, clip bearings and knife edge rollers



Select the design



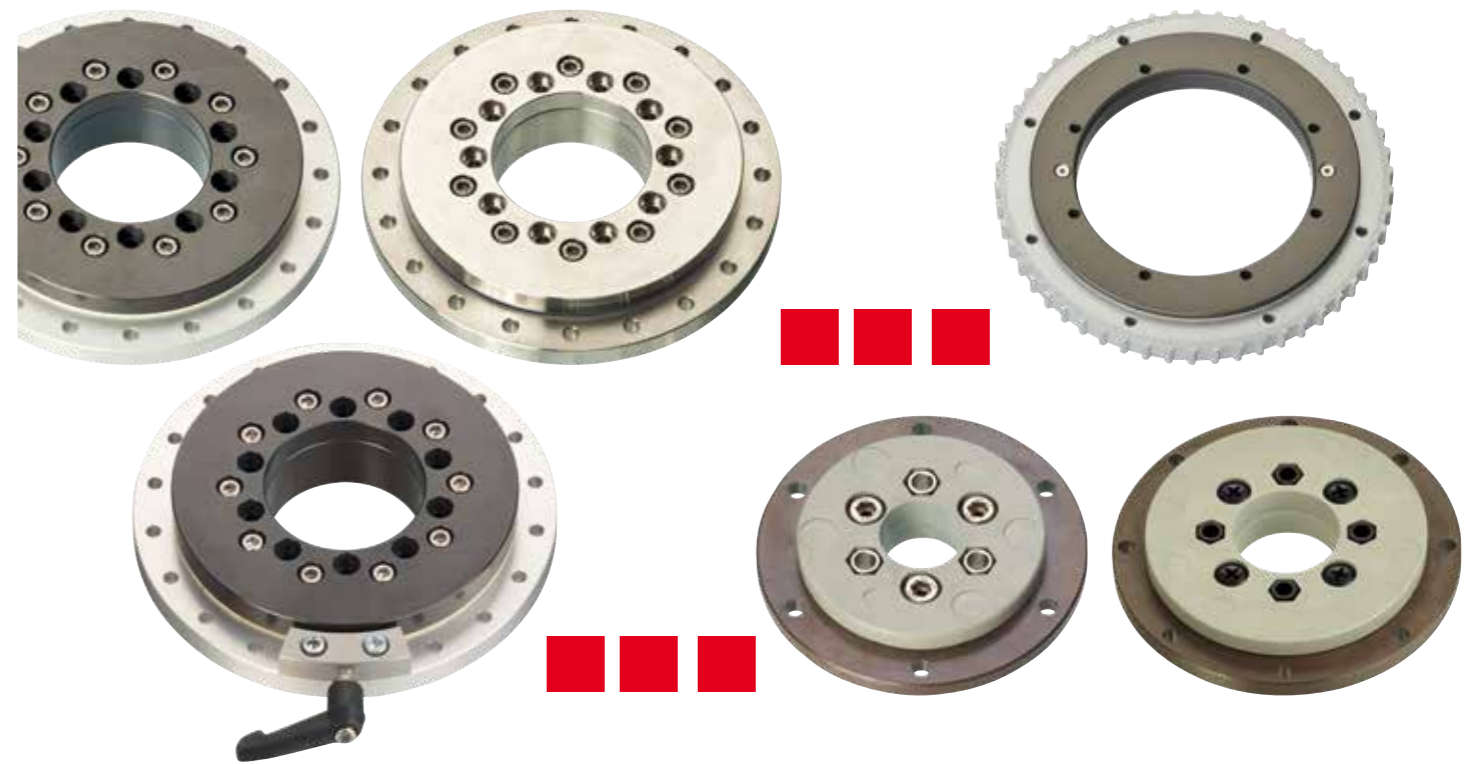
Enter the dimensions



Order

iglidur®

Slewing rings



...plastics

iglidur® PRT - polymer slewing rings, standard



High torsional rigidity:

Type 01

► Page 710

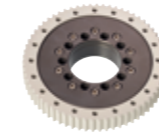


Compact, lightweight and cost-effective:

Type 04

► Page 711

iglidur® PRT - polymer slewing rings, tooth profile



With outer drive ring:

Type 01

► Page 712



With tooth profile:

Type 04

► Page 713



With inner drive ring:

Type 04

► Page 714

New

iglidur® PRT - polymer slewing rings



With angle stop:

Type 01

► Page 716



With angle stop:

Type 04

► Page 717

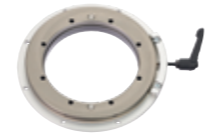
New



Manual clamp:

Type 01

► Page 718



Manual clamp:

Type 04

► Page 719

New

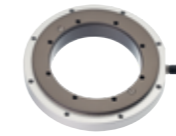


With snap mechanism:

Type 04

► Page 720

New



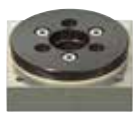
With locking device:

Type 04

► Page 721

New

iglidur® PRT - polymer slewing rings, modular system



Special geometries and accessories

► Page 722



With assembled drive pin:

Type 04

► Page 724



With switching sensor:

Type 01 i.Sense

► Page 725

New



Spacer rings:

Type 01

► Page 726



Spacer rings:

Type 04

► Page 727

New



Black Edition:

Type 04

► Page 728

New



Slot nut profile:

Type 04

► Page 729

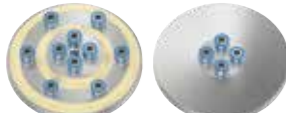


Installation solutions:

Type 04

► Page 730

iglidur® PRT - polymer slewing rings, modular system



Hygienic design:

Type 04

► Page 731



Felt cover:

Type 04

► Page 732

New



Position indicator:

Type 04

► Page 733

New



For the smallest applications:

Type 04

► Page 734

New



Lightweight:

Type 02

► Page 735



Low-cost:

Type 03

► Page 736

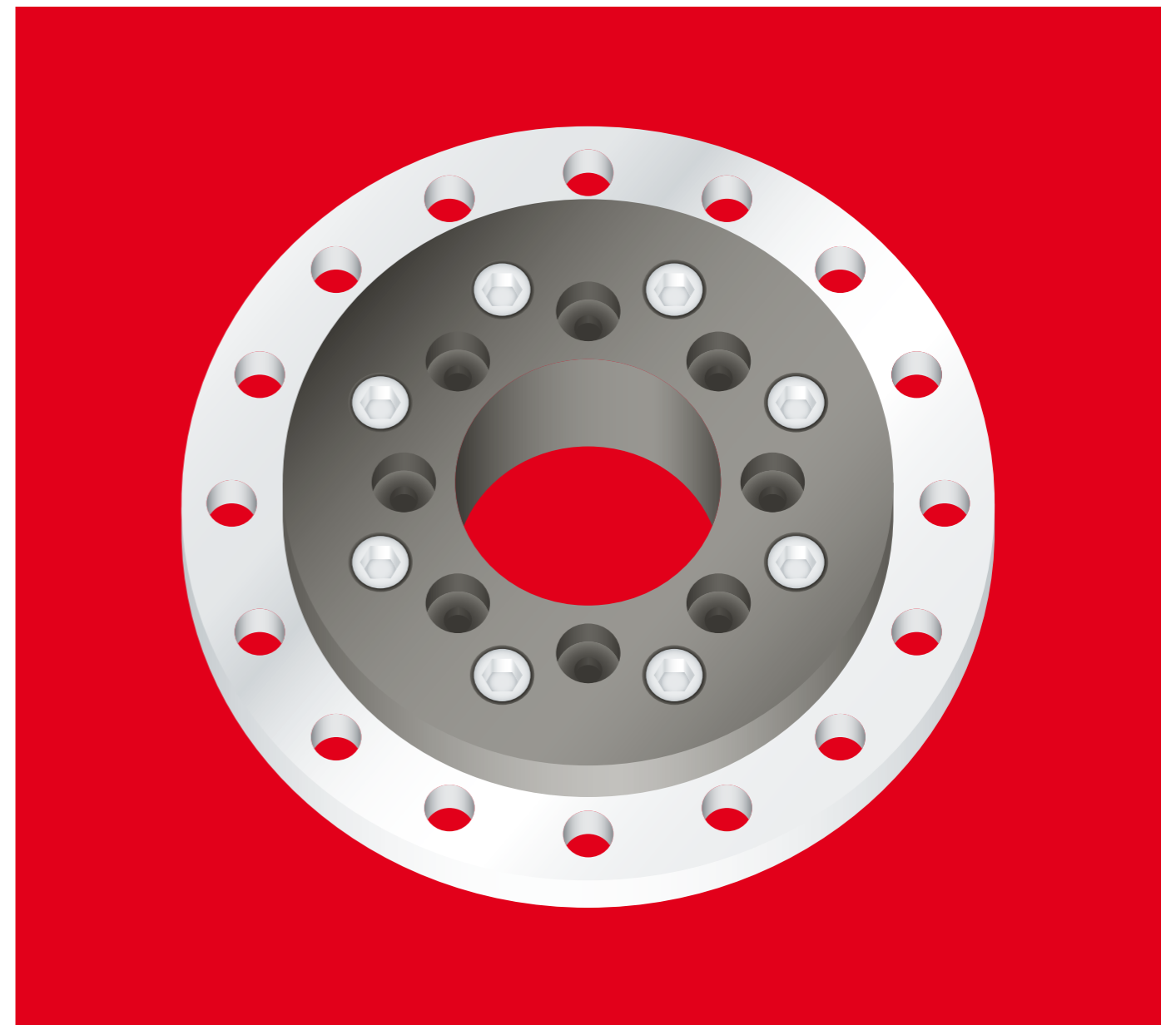


Sliding element replacement kits:

Type 01 and 04

► Page 737

New



iglidur® PRT - polymer slewing rings

Completely maintenance-free

Easy to install replaceable sliding pads

High wear resistance

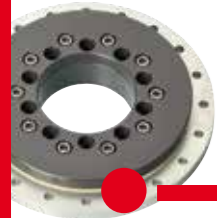
For high loads and high stiffness

Stainless steel versions available

Extensive accessories

Standard range from stock





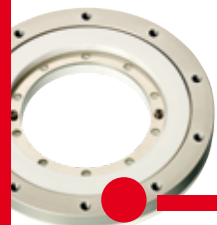
Type 01:
High torsional rigidity



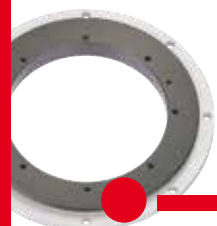
Type 01 with gear teeth:
With outer drive ring



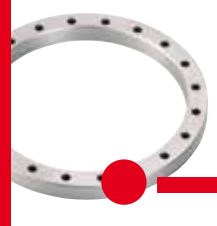
Type 02:
Lightweight



Type 03:
Cost-effective



Type 04:
Compact, lightweight
and cost-effective



Extensive accessories:
Special geometries and
accessories



Universal sliding elements:
Customise your own
slewing ring systems

Polymer slewing ring bearings


iglidur® PRT slewing rings are ready-to-install rotary joints for lubrication-free dry operation. The design is not based on metallic rollers or balls, but on maintenance-free sliding elements made of the proven tribologically optimised iglidur® materials in combination with rings made of lightweight anodised aluminium or stainless steel. These iglidur® materials are universally applicable. They can be used in applications with high temperatures, moisture or chemical contact, for example.


- Completely maintenance-free
- Easy to install replaceable sliding pads
- High wear resistance
- For high loads and high stiffness
- Stainless steel versions available
- Extensive accessories


Typical application areas


- Conveyors and automation
- Stage and lighting technology
- Assembly stations

 **Available from stock**
Stainless steel version upon request
Detailed information about delivery time online.

 **Price breaks online**
No minimum order value. No minimum order quantity

 **Max. +180°C**
min. -50°C

 **4 types**
Ø 20 - 300mm

 **Service life calculation**
► www.igus.eu/prt-expert

Design slewing ring

- Type 01 and 04:** Hard anodised aluminium, or 316 stainless steel
- Type 01 and 04:** iglidur® J or H1
- Type 01, 02 and 04:** Anodised aluminium or 316 stainless steel



Rotating digital flip chart

The compact design of the PRT-02-30 makes it the ideal solution for the rotating digital flip chart. Thanks to ready-to-install delivery and easy assembly. In addition, due to the plastic sliding elements made of iglidur® material, maintenance work is no longer necessary after installation.

Personal robot

The PRT slewing ring bearing makes the robot's rear axis lubrication-free and maintenance-free. In addition, the service life of the PRT for use in robots was calculated in advance and far exceeds the design requirements.



Assembly table with slewing ring bearing

The PRT-01-30-TO-AT10 has proven to be the optimum solution due to its ready-to-install delivery with the AT10 belt profile. Precise and automatic rotation of the assembly table is made possible. Due to the plastic sliding elements made of iglidur® material, no maintenance work is required after installation.

Slewing ring general properties

Type 01

Properties	Unit	-20	-30	-50	-60	-100	-150	-200	-300
Weight	[kg]	0.2	0.4	1.0	1.1	1.3	2.2	3.2	7.6
Axial load, static	[N]	15,000	27,000	40,000	50,000	55,000	80,000	100,000	150,000
Axial load, dynamic	[N]	4,000	7,000	10,000	15,000	16,000	25,000	30,000	90,000
Radial load, static	[N]	2,300	5,000	8,000	10,000	16,000	25,000	35,000	45,000
Radial load, dynamic	[N]	600	1,500	2,500	3,000	5,000	8,000	10,000	27,000
Rotating speed, dry operation	[1/min]	300	250	200	200	150	100	80	50
Max. permissible tilting moment	[Nm]	100	200	600	800	1,500	2,000	3,800	5,000

Type 02

Properties	Unit	-20-AL	-20-ES	-20-LC	-20-P	-30-AL	-30-ES	-30-LC	-30-P
Weight	[g]	105	202	87	72	200	363	167	145
Axial load, static	[N]	13,000	13,000	13,000	13,000	25,000	25,000	25,000	25,000
Axial load, dynamic	[N]	4,000	4,000	4,000	4,000	7,000	7,000	7,000	7,000
Radial load, static	[N]	2,000	2,000	2,000	2,000	2,500	2,500	2,500	2,500
Radial load, dynamic	[N]	500	500	500	500	700	700	700	700
Rotating speed, dry operation	[1/min]	250	250	250	250	200	200	180	180
Max. permissible tilting moment	[Nm]	60	60	40	40	100	100	50	50

Properties	Unit	-50-AL	-50-ES	-50-LC	-50-P	-60-AL	-60-ES
Weight	[g]	440	747	380	338	700	1,322
Axial load, static	[N]	35,000	35,000	35,000	35,000	45,000	45,000
Axial load, dynamic	[N]	9,000	9,000	9,000	9,000	12,000	12,000
Radial load, static	[N]	5,000	5,000	5,000	5,000	10,000	10,000
Radial load, dynamic	[N]	1,200	1,200	1,200	1,200	2,800	2,800
Rotating speed, dry operation	[1/min]	120	120	120	120	120	120
Max. permissible tilting moment	[Nm]	120	120	100	100	200	200

Type 03

Properties	Unit	-80
Weight	[kg]	0.47
Axial load, static (compressive force direction)	[N]	45,000
Axial load, static (tensile force direction) ¹⁵⁴⁾	[N]	5,000
Axial load, dynamic (compressive force direction)	[N]	12,000
Axial load, dynamic (tensile force direction) ¹⁵⁴⁾	[N]	1,200
Radial load, static	[N]	4,000
Radial load, dynamic	[N]	1,000
Rotating speed, dry operation	[1/min]	120
Max. permissible tilting moment ¹⁵⁴⁾	[Nm]	120

Axial clearance 0.7mm, radial clearance 0.9mm

¹⁵⁴⁾ Only when the PRT is fitted onto a flat, stable surface

Type 04

Properties	Unit	-20	-30	-50	-60	-100	-150	-200	-300
Weight	[g]	n.s.	n.s.	225	250	370	530	680	990
Axial load, static	[N]	5,000	8,000	12,000	14,000	20,000	27,000	35,000	48,000
Axial load, dynamic	[N]	1,500	2,000	3,000	4,000	5,000	7,500	9,000	12,000
Radial load, static	[N]	1,000	1,500	2,500	3,000	5,500	6,500	8,000	10,000
Radial load, dynamic	[N]	300	400	750	900	1,500	1,900	2,500	3,500
Rotating speed, dry operation	[1/min]	300	250	200	190	135	100	80	50
Max. permissible tilting moment	[Nm]	30	60	200	250	450	650	875	1,200

Assembly data type 01 - 04

	Unit	Surface in the bolting area
Flatness	[mm]	0.05
Hardness	HBW ¹⁸⁵⁾	Min. 50

¹⁸⁵⁾ Valid at max. load

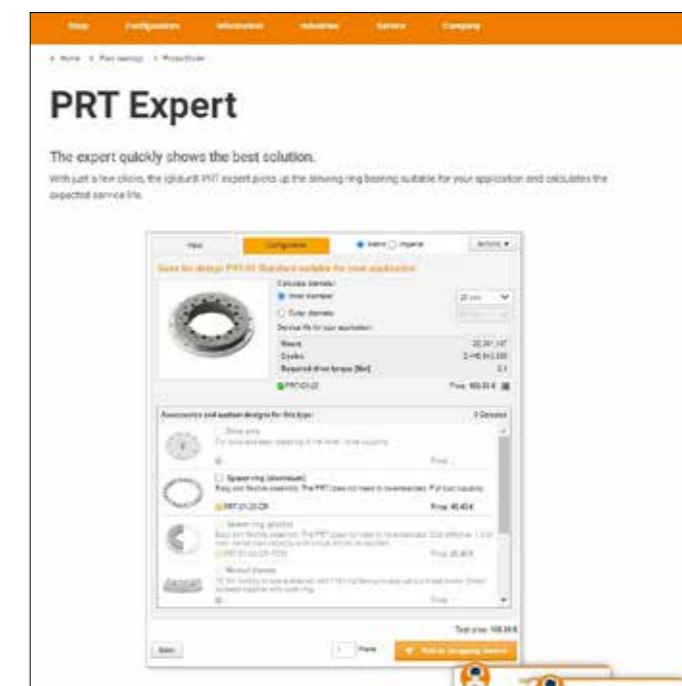
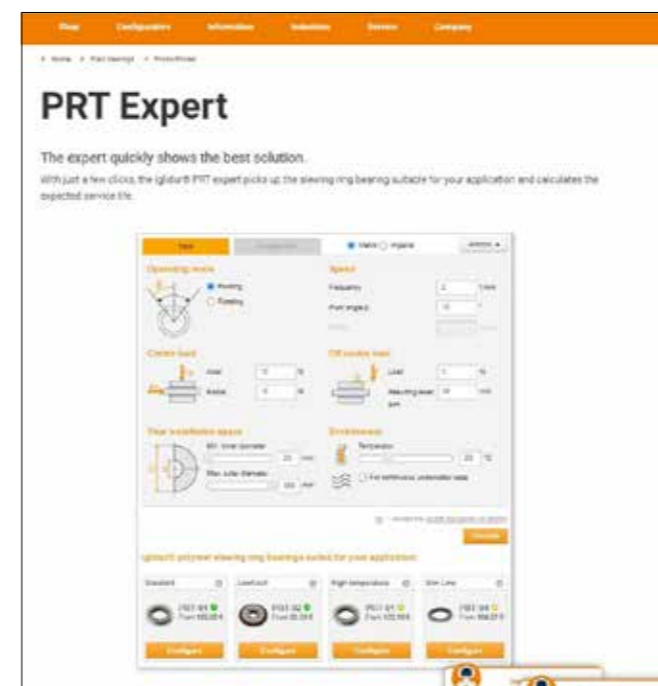


Configurator for slewing rings

The most common criteria for selecting an iglidur® PRT slewing ring bearing are firstly the loads and torques to be supported and secondly the installation space available and the minimum central implementation distance required.

The suitable sizes and types are selected on the basis of this data and the speed and their service life is calculated.

► www.igus.eu/prt-expert



Type 01

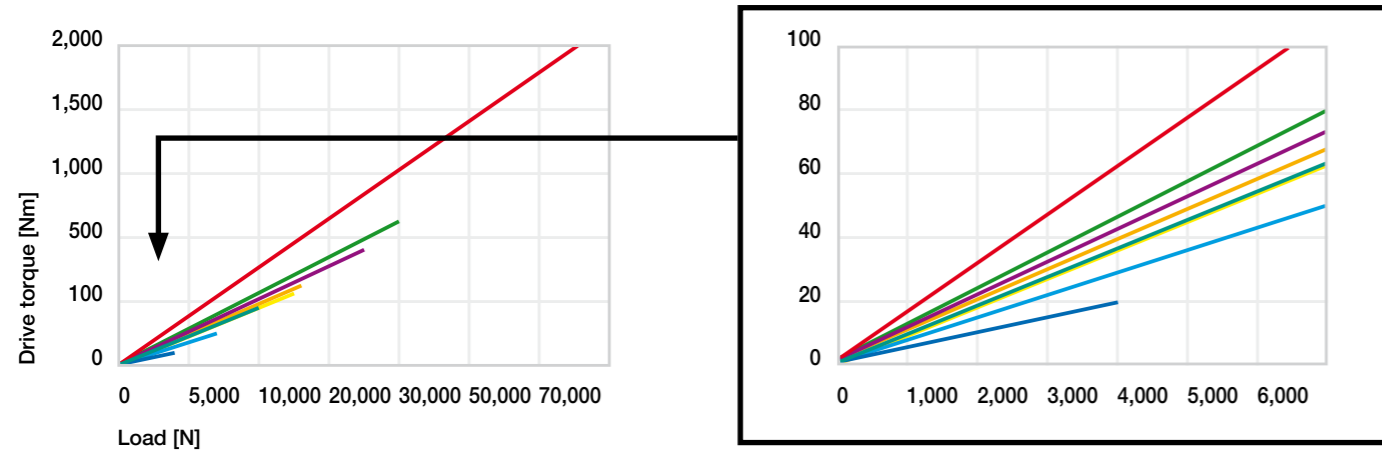


Diagram 01: Required drive torque versus applied load

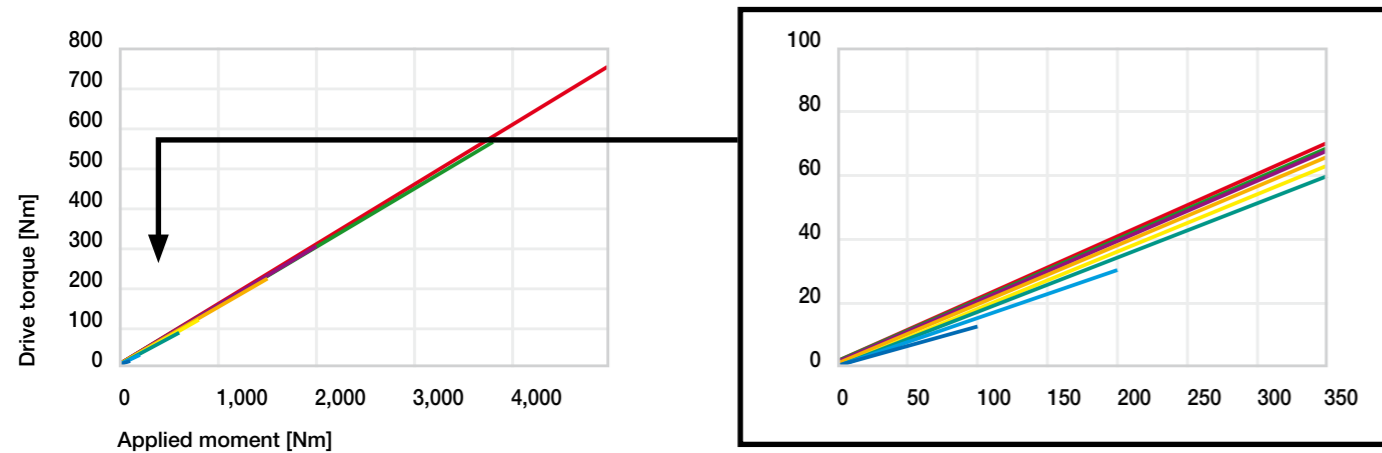


Diagram 02: Required drive torque versus applied moment

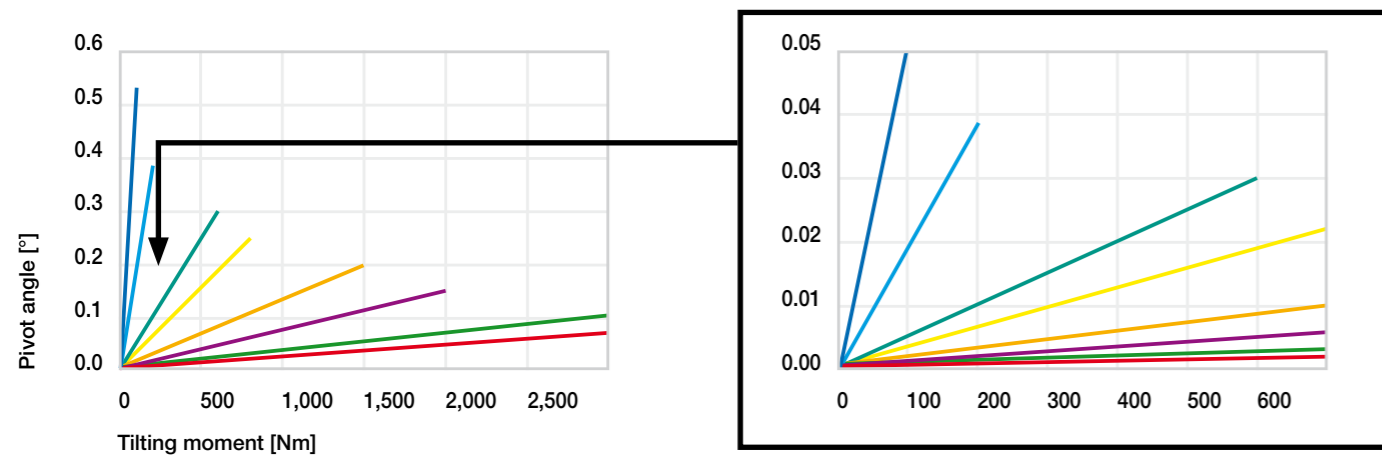


Diagram 03: Deflection versus applied tilting moment

— PRT-01-20 — PRT-01-30 — PRT-01-50 — PRT-01-60
 — PRT-01-100 — PRT-01-150 — PRT-01-200 — PRT-01-300

i All load values assume the PRT is assembled with cap head screws (strength class 8.8) on the outside pitch circle diameter of the collar clamp. For the assembly (using strength class 8.8 screws) of the PRT, the screws have to be inserted to a minimum thread depth of 2xd in every hole location in the outer ring. All data can be used for both lateral and horizontal assembly (including overhead installation).

Type 04

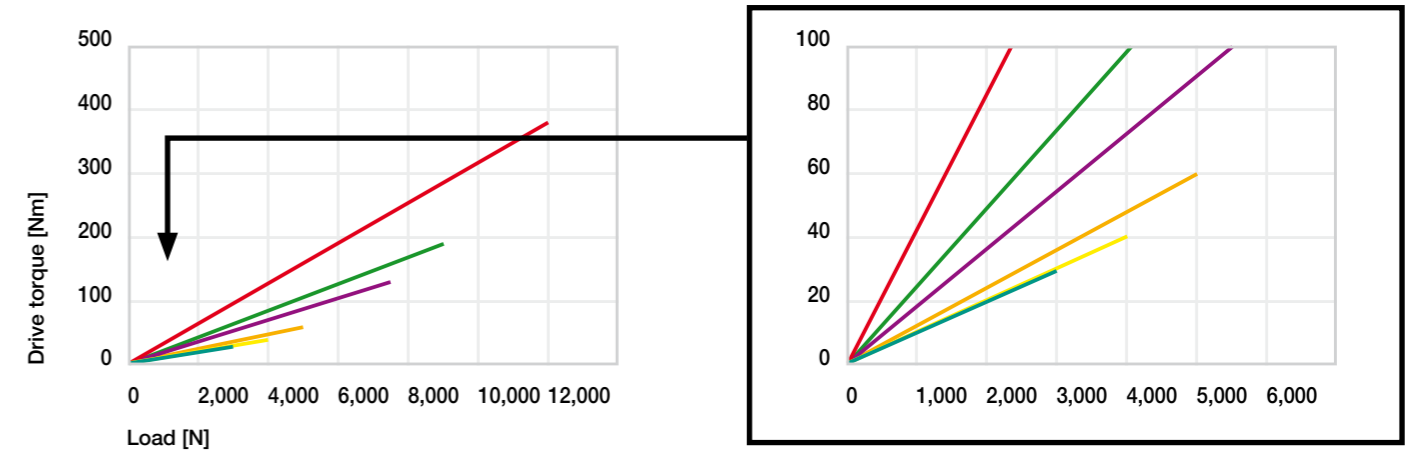


Diagram 01: Required drive torque versus applied load

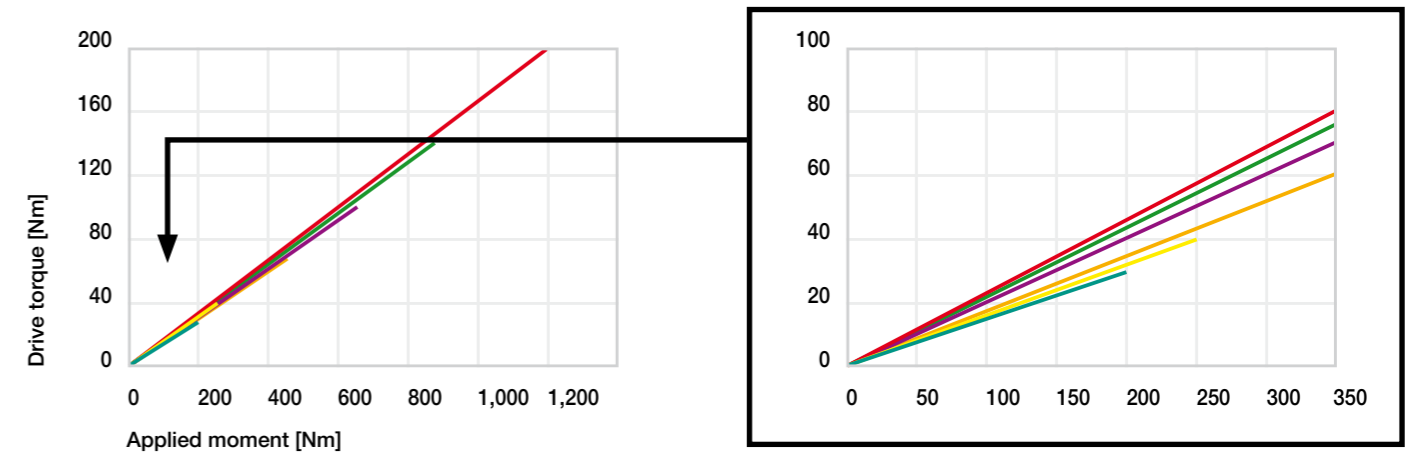


Diagram 02: Required drive torque versus applied moment

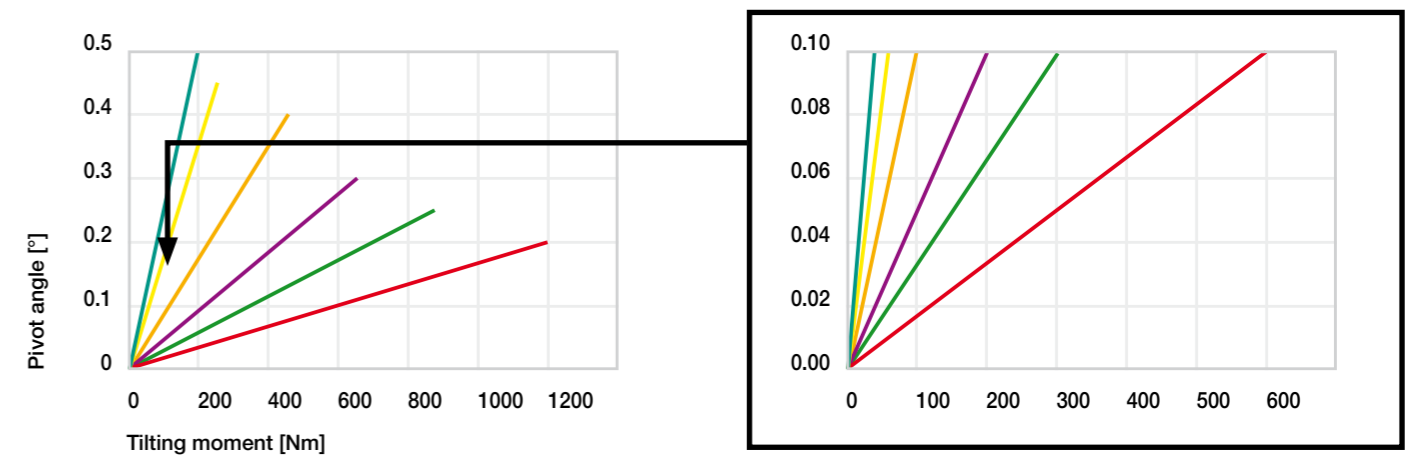
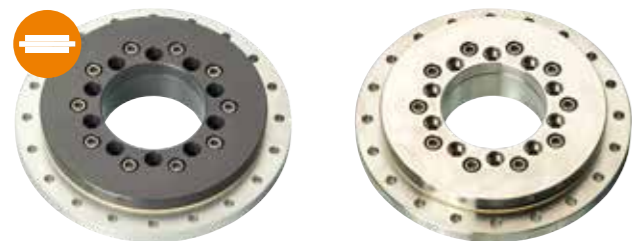


Diagram 03: Deflection versus applied tilting moment

— PRT-04-50 — PRT-04-60 — PRT-04-100
 — PRT-04-150 — PRT-04-200 — PRT-04-300



Standard

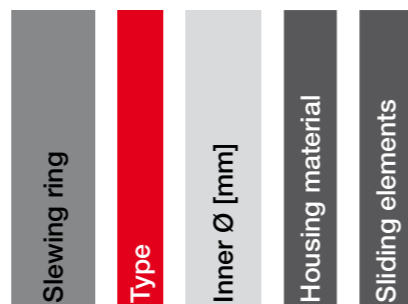
Stainless steel version

- Aluminium or stainless steel body (upon request)
- Replaceable maintenance-free sliding elements made of iglidur® J (Standard) ▶ **Page 163**, iglidur® H1 (for temperatures up to +180°C) ▶ **Page 345**, iglidur® F2 (ESD-compliant) ▶ **Page 553** or iglidur® A180 (FDA-compliant) ▶ **Page 425**

Order key

Type Size Options

PRT-01- 30 -ES-H1



Options:

Housing material

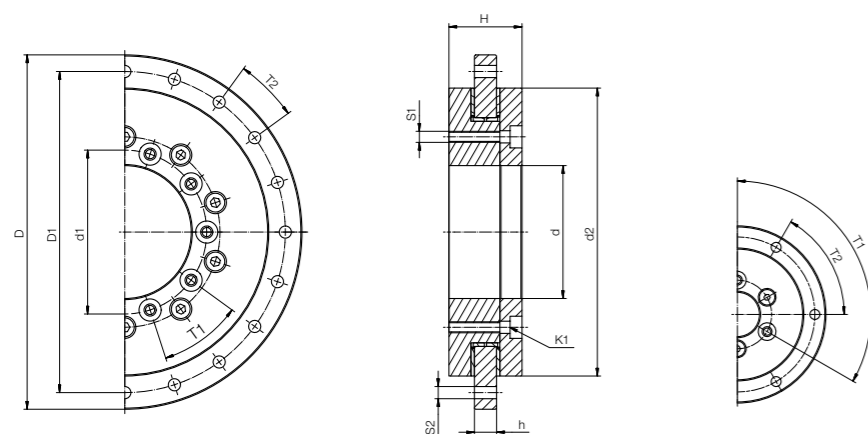
Blank: Aluminium
ES: 316 stainless steel

Sliding elements

Blank: iglidur® J
H1: iglidur® H1, high temperature
F2: iglidur® F2, ESD-compliant (only in conjunction with stainless steel)
A180: iglidur® A180, FDA-compliant

Accessories

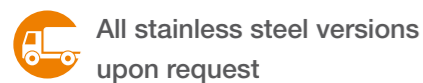
▶ From page 718



Dimensions [mm]

D ¹⁰⁾	D1	d1	d	d2	H	h	T1	T2	S1	S2	K1 for screw		R1	R2	B	Part No.
80	70	31	20	60	24	8	6 x 60°	6 x 60°	M4	4.5	DIN 7984 M4		30	20	3.5	PRT-01-20-□
100	91	42.5	30	82	29	10	8 x 45°	8 x 45°	M4	4.5	DIN 7984 M4		41	29	4.5	PRT-01-30-□
150	135	65	50	120	33	10	8 x 45°	16 x 22,5°	M6	6.6	ISO 4762 M6		60	46.5	4.5	PRT-01-50-□
160	145	74	60	130	33	10	10 x 36°	20 x 18°	M5	5.5	ISO 4762 M5		65	51.5	4.5	PRT-01-60-□
185	170	112	100	160	34	12	12 x 30°	16 x 22,5°	M5	5.5	ISO 4762 M5		80	69	5.5	PRT-01-100-□
250	235	165	150	220	35	12	12 x 30°	16 x 22,5°	M5	5.5	ISO 4762 M5		110	96.5	5.5	PRT-01-150-□
300	285	215	200	274	38	15	12 x 30°	16 x 22,5°	M6	6.6	ISO 4762 M6		137	124	7.0	PRT-01-200-□
450	430	320	300	410	42	15	12 x 30°	16 x 22,5°	M8	9.0	DIN 7984 M8		205	186.6	7.0	PRT-01-300-□

¹⁰⁾ Tolerance according to DIN ISO 2768 mK



Standard

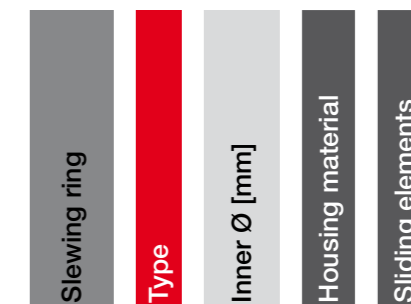
Stainless steel version

- Available with diameters from 20mm to 300mm
- 60% lighter and 50% more compact compared to PRT-01
- 20% more cost-effective compared to PRT-01
- Wear-resistant, lubrication-free and maintenance-free iglidur® sliding elements

Order key

Type Size Options

PRT-04- 50 -ES-H1



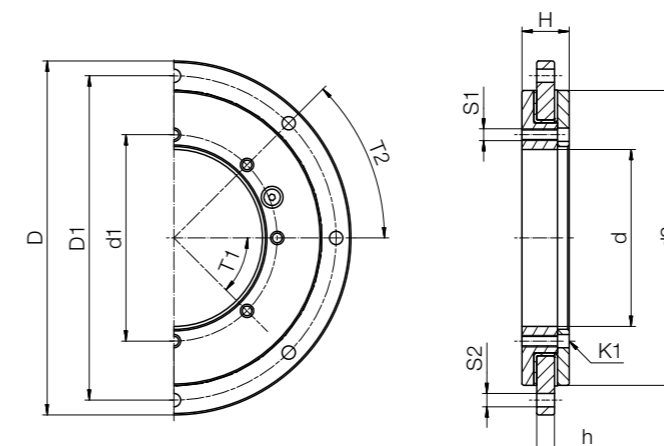
Options:

Housing material

Blank: Aluminium
ES: 316 stainless steel

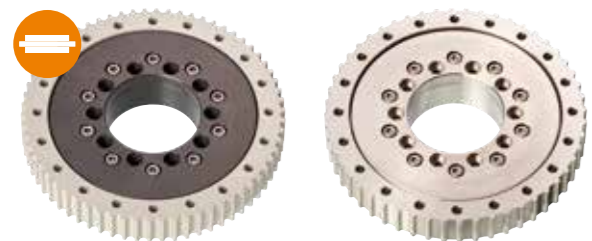
Sliding elements

Blank: iglidur® J
H1: iglidur® H1, high temperature
F2: iglidur® F2, ESD-compliant (only in conjunction with stainless steel)
A180: iglidur® A180, FDA-compliant



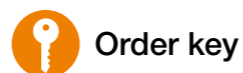
Dimensions [mm]

D	D1	d1	d	d2	H	h	T1	T2	S1	S2	K1 for screw		Part No.
80	70	30	20	60	16	6	8 x 45°	8 x 45°	M4	Ø 4.5	Ø 4.5		PRT-04-20-□ New
90	80	40	30	70	16	6	8 x 45°	8 x 45°	M4	Ø 4.5	Ø 4.5		PRT-04-30-□ New
110	100	60	50	90	16	6	8 x 45°	8 x 45°	M4	Ø 4.5	Ø 4.5		PRT-04-50-□
120	110	70	60	100	16	6	8 x 45°	8 x 45°	M4	Ø 4.5	Ø 4.5		PRT-04-60-□
160	150	110	100	140	16	6	8 x 45°	8 x 45°	M4	Ø 4.5	Ø 4.5		PRT-04-100-□
210	200	160	150	190	16	6	16 x 22.5°	16 x 22.5°	M4	Ø 4.5	Ø 4.5		PRT-04-150-□
260	250	210	200	240	16	6	16 x 22.5°	16 x 22.5°	M4	Ø 4.5	Ø 4.5		PRT-04-200-□
360	350	310	300	340	16	6	16 x 22.5°	16 x 22.5°	M4	Ø 4.5	Ø 4.5		PRT-04-300-□



Standard Stainless steel version

- 4 standards for outer rings are available
 - A classic spur gearing according to DIN3967
 - Commercially available belt profiles: T10, AT10, HTD8M
- The inner ring is fixed and the outer ring is driven
- The specially widened outer ring supports product transport
- Outer ring available in stainless steel as an option (suffix "-ES")

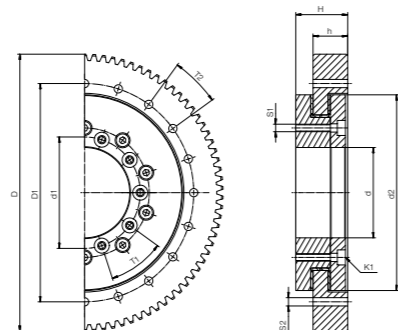


Order key

Type	Size	Options
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PRT-01- 30 -TO-...-ES

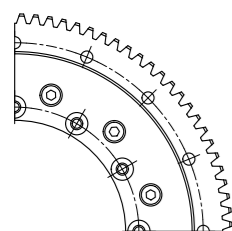
Slewing ring	Type	Inner Ø [mm]	Outer drive ring	Tooth profile type	Stainless steel version
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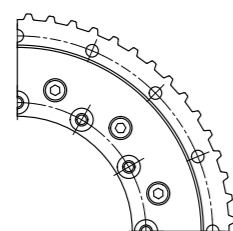
Dimensions [mm]

D1	d1	d	d2	h	T1	T2	S1	S2	K1	R1	R2	B	H	Part No.
for screw														
70	31.0	20	60	18	6x60°	6x60°	M4	4.5	DIN 7984	M4	30	20.0	3.5 (26.0)	PRT-01-20-TO-...
91	42.5	30	82	21	8x45°	8x45°	M4	4.5	DIN 7984	M4	41	29.0	4.5 (30.5)	PRT-01-30-TO-...
135	65.0	50	120	10	8x45°	16x22.5°	M6	6.6	ISO 4762	M6	60	46.5	4.5 (33.0)	PRT-01-50-TO-...
145	74.0	60	130	23	10x36°	20x18°	M5	5.5	ISO 4762	M5	65	51.5	4.5 (34.5)	PRT-01-60-TO-...
170	112.0	100	160	25	12x30°	16x22.5°	M5	5.5	ISO 4762	M5	80	69.0	5.5 (36.0)	PRT-01-100-TO-...
235	165.0	150	220	25	12x30°	16x22.5°	M5	5.5	ISO 4762	M5	110	96.5	5.5 (36.5)	PRT-01-150-TO-...
285	215.0	200	274	30	12x30°	16x22.5°	M6	7.0	ISO 4762	M6	137	124.0	7.0 (41.5)	PRT-01-200-TO-...
430	320.0	300	410	30	12x30°	16x22.5°	M8	9.0	DIN 7984	M8	205	186.5	8.5 (43.5)	PRT-01-300-TO-...

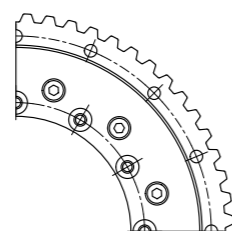
Spur gearing ST



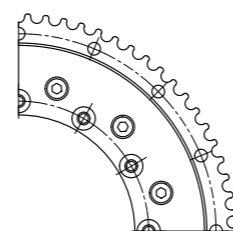
Toothed belt profile AT10



Toothed belt profile T10



Toothed belt profile HTD5M (-20)/HTD8M



D	m	z	Part No.
	Module	Number of teeth	add-on
(88)	-	42	...-ST
(112)	2	54	...-ST
(160)	2	78	...-ST
(184)	2	90	...-ST
(196)	2	96	...-ST
(256)	2	126	...-ST
(308)	2	152	...-ST
(462)	3	152	...-ST

D	z	Part No.
	Number of teeth	add-on
(87.25)	28	...-AT10
(106.4)	34	...-AT10
(157.3)	50	...-AT10
(163.8)	52	...-AT10
(189.2)	60	...-AT10
(252.9)	80	...-AT10
(303.9)	96	...-AT10
(456.7)	144	...-AT10

D	z	Part No.
	Number of teeth	add-on
(87.25)	28	...-T10
(106.4)	34	...-T10
(157.3)	50	...-T10
(163.8)	52	...-T10
(189.2)	60	...-T10
(252.9)	80	...-T10
(303.9)	96	...-T10
(456.7)	144	...-T10

D	z	Part No.
	Number of teeth	add-on
(81.25)	52	...-HTD5M
(110.7)	44	...-HTD8M
(161.6)	64	...-HTD8M
(166.7)	66	...-HTD8M
(187.1)	74	...-HTD8M
(253.3)	100	...-HTD8M
(304.3)	120	...-HTD8M
(457.1)	180	...-HTD8M

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AT10 T10



HTD5M ST

- Easy replacement and extension: modular construction kit design
- Driving the easy way with gear profiles
- Adjustable with manual clamps

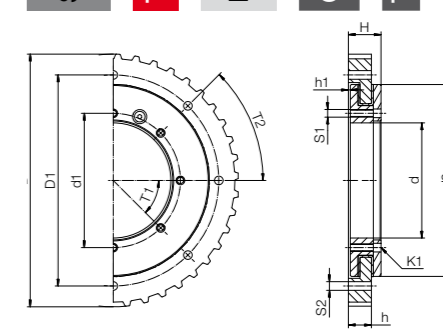


Order key

Type	Size	Options
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PRT-04- 50 -TO-...

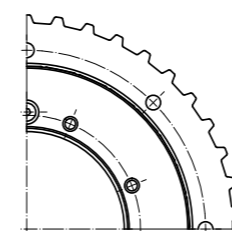
Slewing ring	Type	Inner Ø [mm]	Outer drive ring	Tooth profile type
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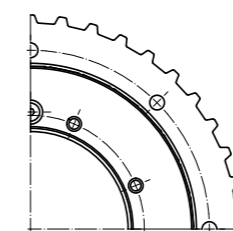
Dimensions [mm]

D1	d1	d	d2	H	h1	h	T1	T2	S1	S2	K1	Part No.
for screw												
With gear profile												
100	60	50	90	17	1	12	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	PRT-04-50-TO-...
110	70	60	100	17	1	12	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	PRT-04-60-TO-...
150	110	100	140	17	1	12	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	PRT-04-100-TO-...
200	160	150	190	17	1	12	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	PRT-04-150-TO-...
250	210	200	240	17	1	12	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	PRT-04-200-TO-...
350	310	300	340	17	1	12	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	PRT-04-300-TO-...

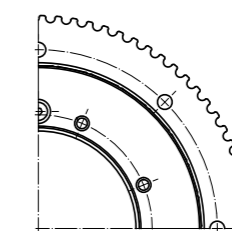
Toothed belt profile AT10



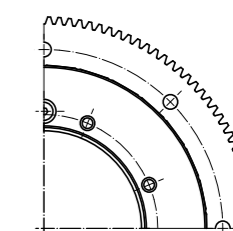
Toothed belt profile T10



Toothed belt profile HTD5M



Spur gearing ST



D	z	Part No.
	Number of teeth	add-on
118.9	38	...-AT10
131.7	42	...-AT10
169.9	54	...-AT10
220.8	70	...-AT10
271.7	86	...-AT10
370.4	117	...-AT10

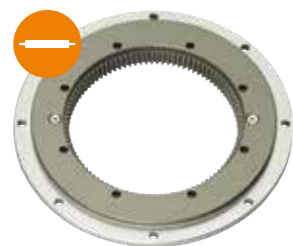
D	z	Part No.
	Number of teeth	add-on
118.9	38	...-T10
131.7	42	...-T10
169.9	54	...-T10
220.8	70	...-T10
271.7	86	...-T10
370.4	117	...-T10

D	z	Part No.
	Number of teeth	add-on
120	38	...-HTD5M
131	42	...-HTD5M
170.9	54	...-HTD5M
221.8	70	...-HTD5M
271.2	86	...-HTD5M
371.4	117	...-HTD5M

D	z	Module	Part No.
	Number of teeth		add-on
120	118	1	...-ST
130	128	1	...-ST
170	168	1	...-ST
220	218	1	...-ST
270	268	1	...-ST
370	368	1	...-ST

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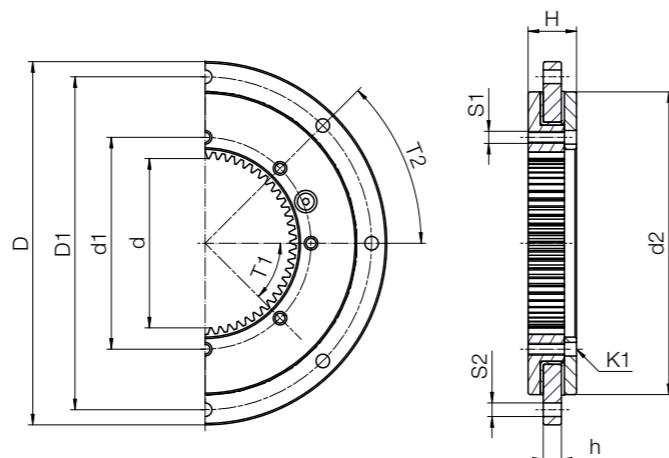
TI-ST

Order key

Type	Size	Options
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PRT-04- 50 - TI -ST

Slewing ring	Type	Inner Ø [mm]	Inner gear teeth	Tooth profile type
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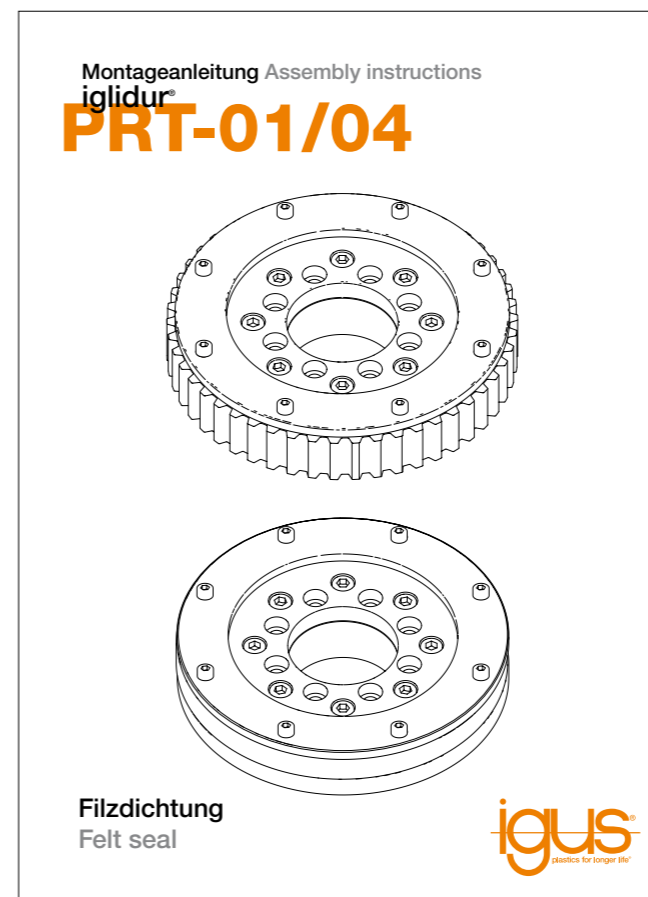


- Easy replacement and extension: modular construction kit design
- Inner drive teeth

Dimensions [mm]

D	D1	d1	d	d2	H	h	z	Part No.
110	100	60	46	90	16	6	48	PRT-04-50-TI-ST New
120	110	70	56	100	16	6	58	PRT-04-60-TI-ST New
160	150	110	96	140	16	6	98	PRT-04-100-TI-ST New
210	200	160	146	190	16	6	148	PRT-04-150-TI-ST New
260	250	210	196	240	16	6	198	PRT-04-200-TI-ST New
360	350	310	296	340	16	6	298	PRT-04-300-TI-ST New

T1	T2	S1	S2	K1 for screw	Module	Part No.
8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	1	PRT-04-50-TI-ST New
8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	1	PRT-04-60-TI-ST New
8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	1	PRT-04-100-TI-ST New
16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	1	PRT-04-150-TI-ST New
16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	1	PRT-04-200-TI-ST New
16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	1	PRT-04-300-TI-ST New



The felt cover was developed for applications in particularly harsh environments where heavy loads, dirt and dust occur. The felt cover extends the PRT slewing ring service life.

PRT felt seal ► **Page 732**

Assembly instructions available in the download area ► www.igus.eu/prt-assembly



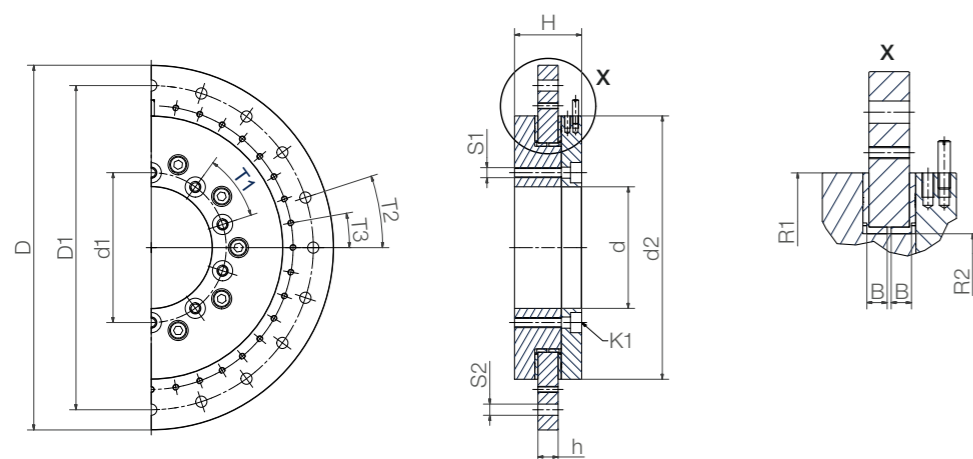
Order key

Type Size Options

PRT-01- 20 -AA

Slewing ring	Type	Inner Ø [mm]	Angle stop
--------------	------	--------------	------------

- Quick adjustment of the stop
- Load ratings identical to standard type 01



Dimensions [mm]

D ¹⁰⁾	D1	d1	d	d2	H	h	T1	T2	S1	S2	K1	R1	R2	B	Part No.	
				±0.2												
											for screw					
80	70	31.0	20	60	24	8	6 x 60°	6 x 60°	M4	4.5	DIN 7984	M4	30	20	3.5	PRT-01-20-AA
100	91	42.5	30	82	29	10	8 x 45°	8 x 45°	M4	4.5	DIN 7984	M4	41	29	4.5	PRT-01-30-AA
150	135	65.0	50	120	33	10	8 x 45°	16 x 22,5°	M6	6.6	ISO 4762	M6	60	46.5	4.5	PRT-01-50-AA
160	145	74.0	60	130	33	10	10 x 36°	20 x 18°	M5	5.5	ISO 4762	M5	65	51.5	4.5	PRT-01-60-AA
185	170	112.0	100	160	34	12	12 x 30°	16 x 22,5°	M5	5.5	ISO 4762	M5	80	69	5.5	PRT-01-100-AA
250	235	165.0	150	220	35	12	12 x 30°	16 x 22,5°	M5	5.5	ISO 4762	M5	110	96.5	5.5	PRT-01-150-AA
300	285	215.0	200	274	38	15	12 x 30°	16 x 22,5°	M6	6.6	ISO 4762	M6	137	124	7.0	PRT-01-200-AA
450	430	320.0	300	410	42	15	12 x 30°	16 x 22,5°	M8	9.0	DIN 7984	M8	205	186.6	7.0	PRT-01-300-AA

¹⁰⁾ Tolerance according to DIN ISO 2768 mK



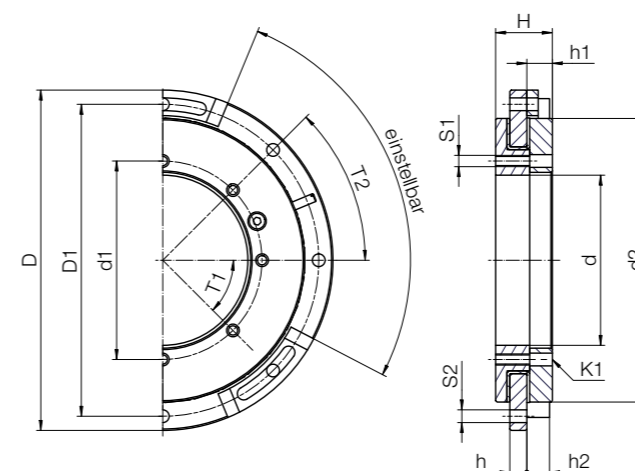
Order key

Type Size Options

PRT-04- 50 -TS

Slewing ring	Type	Inner Ø [mm]	Angle stop
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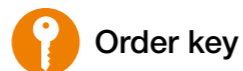
- Already successfully in use for years with PRT-01
- Compact design means 60% less weight compared to the PRT-01 series



Dimensions [mm]

D	D1	d1	d	d2	H	h	h1	h2	Part No.
110	100	60	50	90	20	6	9	8	PRT-04-50-TS New
120	110	70	60	100	20	6	9	8	PRT-04-60-TS New
160	150	110	100	140	20	6	9	8	PRT-04-100-TS New
210	200	160	150	190	20	6	9	8	PRT-04-150-TS New
260	250	210	200	240	20	6	9	8	PRT-04-200-TS New
360	350	310	300	340	20	6	9	8	PRT-04-300-TS New

T1	T2	S1	S2	K1	Part No.
					for screw
8 x 45°	8 x 45°	M4	Ø 4.5	Ø 4.5	PRT-04-50-TS New
8 x 45°	8 x 45°	M4	Ø 4.5	Ø 4.5	PRT-04-60-TS New
8 x 45°	8 x 45°	M4	Ø 4.5	Ø 4.5	PRT-04-100-TS New
16 x 22.5°	16 x 22.5°	M4	Ø 4.5	Ø 4.5	PRT-04-150-TS New
16 x 22.5°	16 x 22.5°	M4	Ø 4.5	Ø 4.5	PRT-04-200-TS New
16 x 22.5°	16 x 22.5°	M4	Ø 4.5	Ø 4.5	PRT-04-300-TS New



Order key

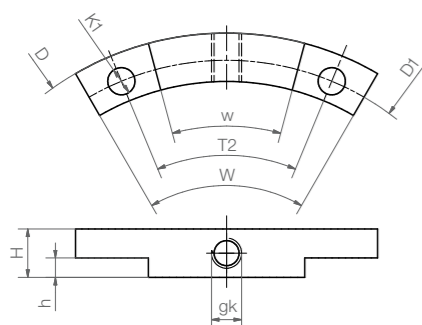
Type Size

PRT-HK-30-K

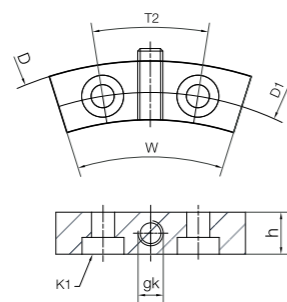
Stewing ring	Manual clamp	Inner Ø [mm]	Manual clamp
--------------	--------------	--------------	--------------

Options:
Blank: Threaded pin
K: Manual clamp

- With 1Nm screw torque, a holding torque up to 10Nm is possible
- Easy to screw onto outer ring



PRT-HK-20/30



PRT-HK-50/60/100/150/200/300



PRT-HK-60



PRT-HK-60-K

PRT with fitted manual clamp

Dimensions [mm]

D	D1	T2	K1 for screw	H	h	gk	W	Part No.
80	70	60.0°	Ø 4.5	7	3.2	M5	90°	PRT-HK-20
100	91	45.0°	Ø 4.5	8	3.2	M5	60°	PRT-HK-30
150	135	22.5°	Ø 11.0	-	10	M6	40°	PRT-HK-50
160	145	18.0°	Ø 10.0	-	10	M6	35°	PRT-HK-60
205	185	22.5°	Ø 10.0	-	10	M6	40°	PRT-HK-100 ¹²⁾
210	200	22.5°	Ø 10.0	-	10	M6	35°	PRT-HK-150
320	300	22.5°	Ø 11.0	-	10	M6	40°	PRT-HK-200 ¹²⁾
360	350	22.5°	Ø 15.0	-	12	M6	30°	PRT-HK-300

¹²⁾ To be connected only with enlarged outer ring



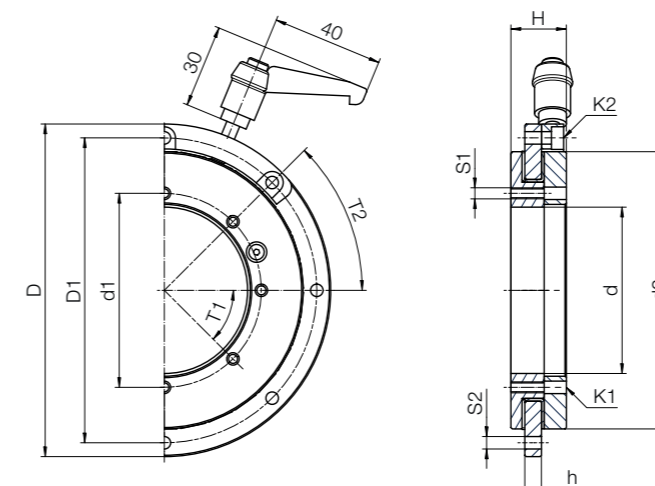
Order key

Type Size Options

PRT-04-20-HK

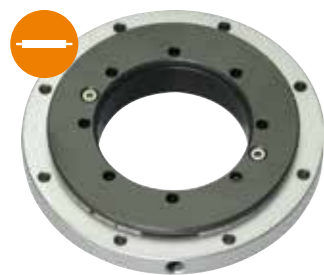
Stewing ring	Type	Inner Ø [mm]	Manual clamp
--------------	------	--------------	--------------

- Securing against unintentional adjustment
- Easy to fit
- Part of the extensive PRT modular system
- With 1Nm screw torque, a holding torque up to 10Nm is possible



Dimensions [mm]

D	D1	d	d1	d2	H	h	T1	T2	S1	S2 H13	K1 H13	Part No.
80	70	20	30	60	20	6	8 x 45°	8 x 45°	M4	4.5	4.5	PRT-04-20-HK New
90	80	30	40	70	20	6	8 x 45°	8 x 45°	M4	4.5	4.5	PRT-04-30-HK New
110	100	50	60	90	20	6	8 x 45°	8 x 45°	M4	4.5	4.5	PRT-04-50-HK New
120	110	60	70	100	20	6	8 x 45°	8 x 45°	M4	4.5	4.5	PRT-04-60-HK New
160	150	100	110	140	20	6	8 x 45°	8 x 45°	M4	4.5	4.5	PRT-04-100-HK New
210	200	150	160	190	20	6	16 x 22,5°	16 x 22,5°	M4	4.5	4.5	PRT-04-150-HK New
260	250	200	210	240	20	6	16 x 22,5°	16 x 22,5°	M4	4.5	4.5	PRT-04-200-HK New
360	350	300	310	340	20	6	16 x 22,5°	16 x 22,5°	M4	4.5	4.5	PRT-04-300-HK New



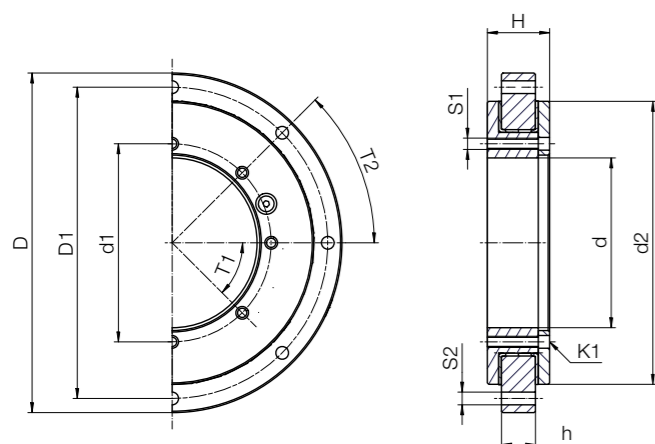
Order key

Type	Size	Options
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PRT-04- 50 - R

Slewing ring	Type	Inner Ø [mm]	Locking mechanism
--------------	------	--------------	-------------------

- Repeatably defined location points
- Can also be ideally combined with the optional T-slot plate for your assembly table, for example
- Slewing ring with defined latching points; can be released with a force of 30N (+-2N)
- Standard versions have locking points every 90°
- Locking points can be individually defined



Dimensions [mm]

D	D1	d1	d	d2	H	h	T1	T2	S1	S2	K1	Part No.	
				-0.1/-0.5								for screw	
80	70	30	20	60	22	12	8 × 45°	8 × 45°	M4	Ø 4.5	M4	PRT-04-20-R	New
90	80	40	30	70	22	12	8 × 45°	8 × 45°	M4	Ø 4.5	M4	PRT-04-30-R	New
110	100	60	50	90	22	12	8 × 45°	8 × 45°	M4	Ø 4.5	M4	PRT-04-50-R	New
120	110	70	60	100	22	12	8 × 45°	8 × 45°	M4	Ø 4.5	M4	PRT-04-60-R	New
160	150	110	100	140	22	12	8 × 45°	8 × 45°	M4	Ø 4.5	M4	PRT-04-100-R	New
210	200	160	150	190	22	12	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	M4	PRT-04-150-R	New
260	250	210	200	240	22	12	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	M4	PRT-04-200-R	New
360	350	310	300	340	22	12	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	M4	PRT-04-300-R	New



PRT-04_xx_ART



PRT-04_xx_ART-PD



PRT-04_xx_ART-U



PRT-04_xx_ART-RC

Order key

Type	Size	Options
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PRT-04- 50 - ART - □

Slewing ring	Type	Inner Ø [mm]	Locking device	Design
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Options:

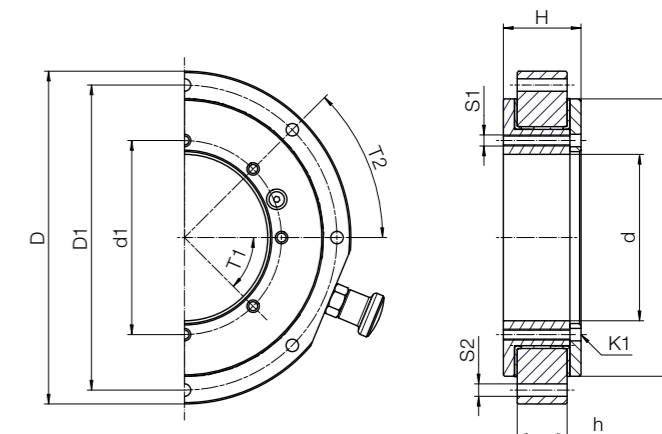
□ = Suffix

PD: With locking mechanism and position monitoring

U: With locking mechanism and universal adapter

RC: With locking mechanism and remote trigger

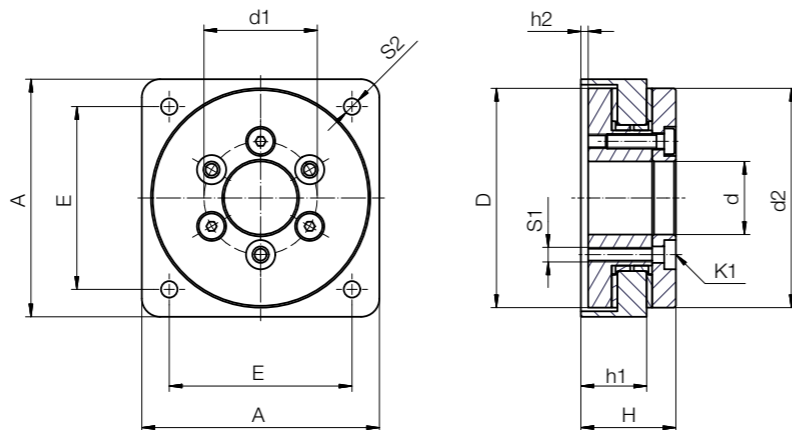
- Easy and quick release by hand or remote trigger
- Available with electronic closing control mechanism or with universal adapter for custom solutions



Dimensions [mm]

D1	D1	d	d1	Ø d2	H	h	T1	T2	S1	S2	K1	Part No.	
									H13	H13			
80	70	20	30	60	28	6	8 × 45°	8 × 45°	M4	Ø 4.5	4.5	PRT-04-20-ART-□	New
90	80	30	40	70	28	6	8 × 45°	8 × 45°	M4	Ø 4.5	4.5	PRT-04-30-ART-□	New
110	100	50	60	90	28	6	8 × 45°	8 × 45°	M4	Ø 4.5	4.5	PRT-04-50-ART-□	New
120	110	60	70	100	28	6	8 × 45°	8 × 45°	M4	Ø 4.5	4.5	PRT-04-60-ART-□	New
160	150	100	110	140	28	6	8 × 45°	8 × 45°	M4	Ø 4.5	4.5	PRT-04-100-ART-□	New
210	200	150	160	190	28	6	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	4.5	PRT-04-150-ART-□	New
260	250	200	210	240	16	6	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	4.5	PRT-04-200-ART-□	New
360	350	300	310	340	16	6	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	4.5	PRT-04-300-ART-□	New

Slewing rings with square flange for direct mounting on flat surfaces

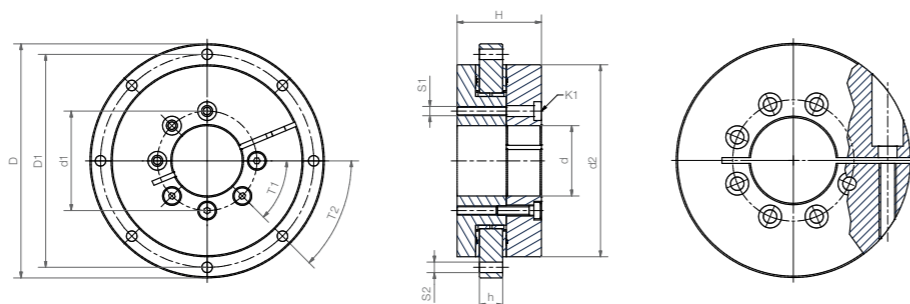


- No through-hole necessary
- No separate spacer ring
- Fix with only 4 screws

Dimensions [mm]

d	d1	d2	D	A	E	H	h1	h2	T1	S1	S2	K1	Part No.
												for screw	
20	31.0	60	62	65	50	26.0	18	2.0	6 x 60°	M4	4.5	DIN 7984 M4	PRT-01-20-SQ
30	42.5	82	84	85	65	30.5	21	1.5	8 x 45°	M4	4.5	DIN 7984 M4	PRT-01-30-SQ
50	65.0	120	122	125	100	34.5	23	1.5	8 x 45°	M6	6.6	ISO 4762 M6	PRT-01-50-SQ

Slewing rings with collar clamp



Slewing ring with PRT-01-30-C collar clamp

Collar clamp for PRT-01-30-C

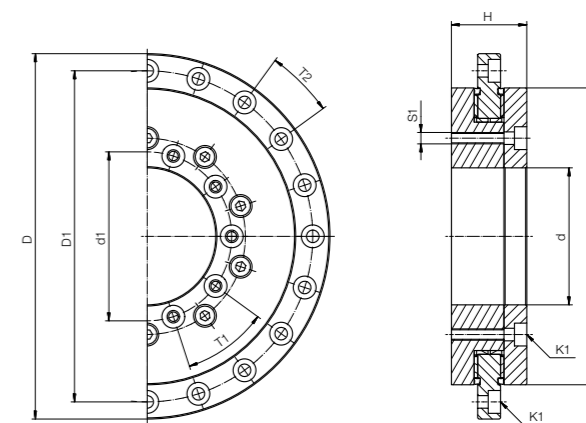
Slewing ring PRT-01-30 with collar clamp for 30h7 tolerance shafts.

- For simple handling designs
- Quick and easy assembly
- Max. tightening torque: 5Nm

Dimensions [mm]

D	D1	d1	d	d2	H	h	T1	T2	S1	S2	K1	Part No.
												for screw
80	70	31	20	60	32.5	8	4 x 60°	6 x 60°	M4	4.5	DIN 7984 M4	PRT-01-20-C
100	91	42.5	30	82	36.0	10	6 x 45°	8 x 45°	M4	4.5	DIN 7984 M4	PRT-01-30-C

Slewing rings with seal (-D: one-sided, -DD: both-sided)



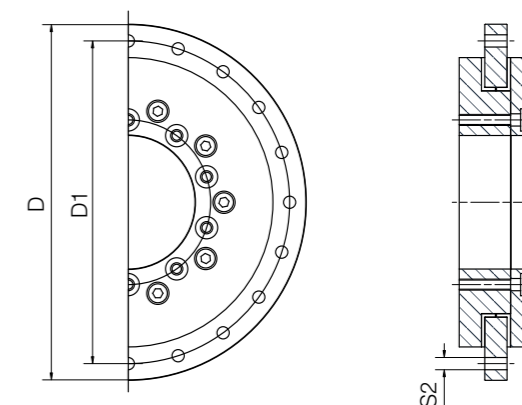
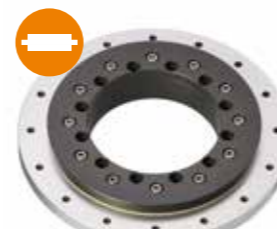
- For use in extremely dirty environments
- High wear resistance
- For high loads and high stiffness

Dimensions [mm]

D ¹⁰⁾	D1	d1	d	d2	H	h	T1	T2	S1	S2	K1	R1	R2	B	Part No.
												for screw			
160	145	74	60	130	33	10	10 x 36°	20 x 18°	M5	5.5	ISO 4762 M5	65	51.5	4.5	PRT-01-60-D/DD
185	170	112	100	160	34	12	12 x 30°	16 x 22,5°	M5	5.5	ISO 4762 M5	80	69	5.5	PRT-01-100-D/DD

¹⁰⁾ Tolerance according to DIN ISO 2768 mK

Slewing rings with enlarged outer ring

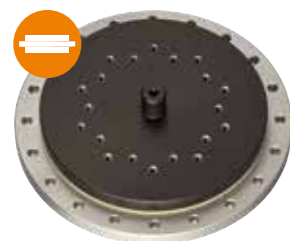


- Easy to install replaceable sliding pads
- High wear resistance
- For high loads and high stiffness

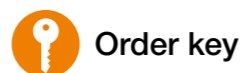
Dimensions [mm] - other dimensions similar to standard type PRT-01 ▶ Page 710

D	D1	S2	Part No. ¹¹⁾
205	185	5.5	PRT-01-100-M-ARG
205	185	M6	PRT-01-100-M-ARGG
205	185	5.5	PRT-01-100-M-ARGS
320	300	7.0	PRT-01-200-M-ARG
320	300	M8	PRT-01-200-M-ARGG
320	300	7.0	PRT-01-200-M-ARGS

¹¹⁾ Ending: -G standard hole, -GG threaded hole or -GS counterbore



- Easy to install and replaceable sliding elements
- High wear resistance
- For high loads and high stiffness
- Housing made of aluminium

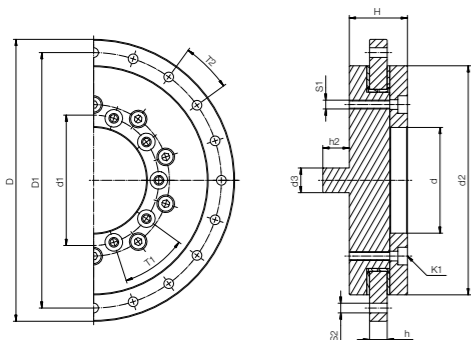


Order key

Type	Size	Options
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PRT-01- 60 - DP

Slewing ring	Type	Inner Ø [mm]	Drive pin
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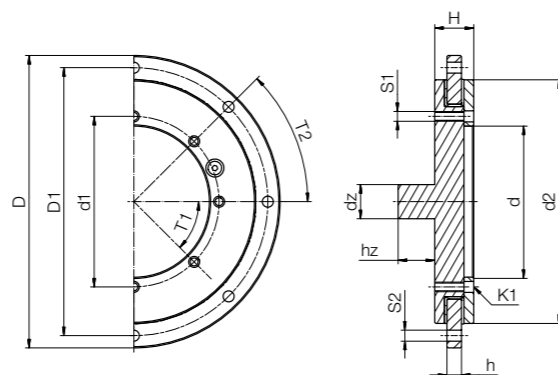
Dimensions [mm]

D	D1	d1	d	d2	d2-	H	h	T1	T2	S1	S2	K1	R1	R2	B	h2	Part No.
Tolerance																	
160	145	74	60	130	±0.2	33	10	10 x 36°	20 x 18°	M5	5.5	M5	65	51.5	4.5	15	PRT-01-60-DP

PRT with assembled drive pin - type 04



- Easy replacement and extension: modular construction kit design
- Driving the easy way with drive pin for couplings
- Adjustable with manual clamps



Dimensions [mm]

D	D1	d1	d	d2	dz	hz	H	h	T1	T2	S1	S2	K1	Part No.
for screw														
With DrivePin														
80	70	30	22	60	14 h6	15	16	6	8 x 45°	8 x 45°	M4	Ø 4.5	Ø 4.5	PRT-04-20-DP New
90	80	40	32	70	14 h6	15	16	6	8 x 45°	8 x 45°	M4	Ø 4.5	Ø 4.5	PRT-04-30-DP New
110	100	60	52	90	14 h6	15	16	6	8 x 45°	8 x 45°	M4	Ø 4.5	Ø 4.5	PRT-04-50-DP
120	110	70	62	100	14 h6	15	16	6	8 x 45°	8 x 45°	M4	Ø 4.5	Ø 4.5	PRT-04-60-DP
160	150	110	102	140	14 h6	15	16	6	8 x 45°	8 x 45°	M4	Ø 4.5	Ø 4.5	PRT-04-100-DP
210	200	160	152	190	14 h6	15	16	6	16 x 22.5°	16 x 22.5°	M4	Ø 4.5	Ø 4.5	PRT-04-150-DP
260	250	210	202	240	14 h6	15	16	6	16 x 22.5°	16 x 22.5°	M4	Ø 4.5	Ø 4.5	PRT-04-200-DP
360	350	310	302	340	14 h6	15	16	6	16 x 22.5°	16 x 22.5°	M4	Ø 4.5	Ø 4.5	PRT-04-300-DP



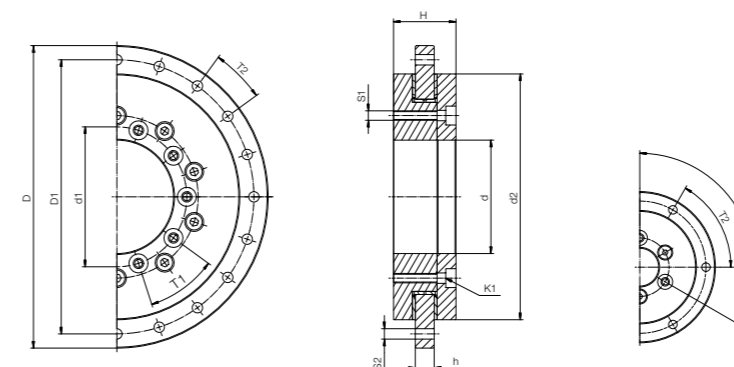
Order key

Type	Size	Options
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PRT-01- 30 - PR.W - DS

Slewing ring	Type	Inner Ø [mm]	Wear monitoring
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- No unplanned machine downtime
- Early information about bearing wear prevents the assembly from damage



Dimensions [mm]

D ¹⁰⁾	D1	d1	d	d2	H	h	T1	T2	Part No.	
				±0.2						
80	70	31	20	60	24	8	3 x 120°	6 x 60°	PRT-01-20-PR.W-DS New	
100	91	42.5	30	82	29	10	4 x 90°	8 x 45°	PRT-01-30-PR.W-DS New	
150	135	65	50	120	33	10	8 x 45°	16 x 22,5°	PRT-01-50-PR.W-DS New	
160	145	74	60	130	33	10	10 x 36°	20 x 18°	PRT-01-60-PR.W-DS New	
185	170	112	100	160	34	12	12 x 30°	16 x 22,5°	PRT-01-100-PR.W-DS New	
250	235	165	150	220	35	12	12 x 30°	16 x 22,5°	PRT-01-150-PR.W-DS New	
300	285	215	200	274	38	15	12 x 30°	16 x 22,5°	PRT-01-200-PR.W-DS New	
450	430	320	300	410	42	15	12 x 30°	16 x 22,5°	PRT-01-300-PR.W-DS New	

S1	S2	K1	R1	R2	B	Part No.
for screw						
M4	4.5	DIN 7984 M4	30	20.0	3.5	PRT-01-20-PR.W-DS New
M4	4.5	DIN 7984 M4	41	29.0	4.5	PRT-01-30-PR.W-DS New
M6	6.6	ISO 4762 M6	60	46.5	4.5	PRT-01-50-PR.W-DS New
M5	5.5	ISO 4762 M5	65	51.5	4.5	PRT-01-60-PR.W-DS New
M5	5.5	ISO 4762 M5	80	69.0	5.5	PRT-01-100-PR.W-DS New
M5	5.5	ISO 4762 M5	110	96.5	5.5	PRT-01-150-PR.W-DS New
M6	6.6	ISO 4762 M6	137	124.0	7.0	PRT-01-200-PR.W-DS New
M8	9.0	DIN 7984 M8	205	186.6	7.0	PRT-01-300-PR.W-DS New

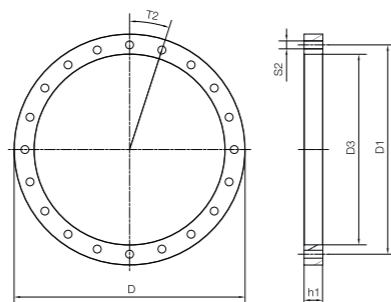
¹⁰⁾ Tolerance according to DIN ISO 2768 mK



Aluminium



Plastic (POM)



PRT with mounted
spacer ring

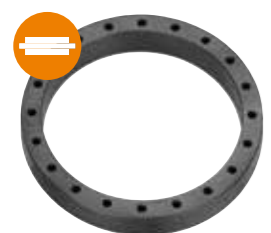
- Easy installation
- Can be combined with all sizes

Dimensions [mm]

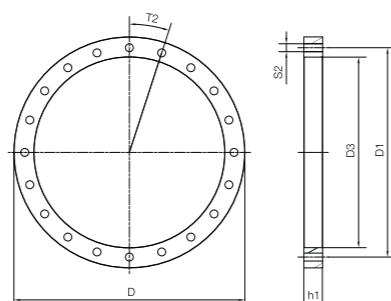
D	D1	T2	S2	D3	h1	Part No. ³⁹⁾
80	70	6 x 60°	4.5	62	10	PRT-01-20-DR
100	91	8 x 45°	4.5	84	11	PRT-01-30-DR
150	135	16 x 22,5°	6.6	122	13	PRT-01-50-DR
160	145	20 x 18°	5.5	132	13	PRT-01-60-DR
185	170	16 x 22,5°	5.5	162	13	PRT-01-100-DR
250	235	16 x 22,5°	5.5	222	13	PRT-01-150-DR
300	285	16 x 22,5°	7.0	276	13	PRT-01-200-DR
450	430	16 x 22,5°	9.0	412	15	PRT-01-300-DR

³⁹⁾ Please add suffix "-POM" for plastic version (not available for sizes 150 and 300)

Spacer ring for heavy duty applications - type 01



- Steel version to avoid distortion during installation
- iglidur® PRT modular system: can be combined with all sizes
- Corrosion-resistant

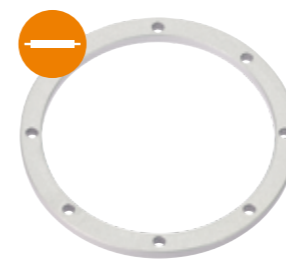


PRT with mounted
HD spacer ring

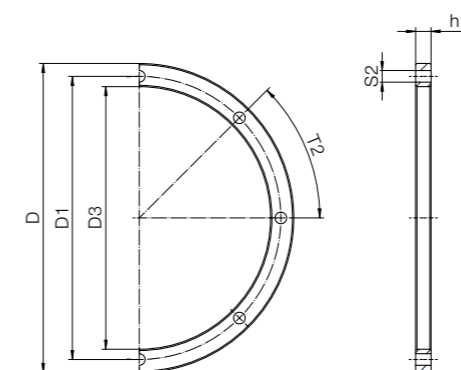
Dimensions [mm]

D	D1	T2	S2	D3 ±0.2	h1	Part No.
80	70	6 x 60°	4.5	62	20	PRT-01-20-DR-HD
100	91	8 x 45°	4.5	84	22	PRT-01-30-DR-HD
150	135	16 x 22,5°	6.6	122	26	PRT-01-50-DR-HD
160	145	20 x 18°	5.5	132	26	PRT-01-60-DR-HD
185	170	16 x 22,5°	5.5	162	26	PRT-01-100-DR-HD
250	235	16 x 22,5°	5.5	222	26	PRT-01-150-DR-HD
300	285	16 x 22,5°	7.0	276	26	PRT-01-200-DR-HD
450	430	16 x 22,5°	9.0	412	30	PRT-01-300-DR-HD

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- Allows easy installation of slewing ring bearings on surfaces
- Part of the extensive modular system



Dimensions [mm]

D	D1	T2	S2	D3	h1	Part No.
80	70	8 x 45°	4.5	62	6	PRT-04-20-DR New
90	80	8 x 45°	4.5	72	6	PRT-04-30-DR New
110	100	8 x 45°	4.5	92	6	PRT-04-50-DR New
120	110	8 x 45°	4.5	102	6	PRT-04-60-DR New
160	150	8 x 45°	4.5	142	6	PRT-04-100-DR New
210	200	16 x 22,5°	4.5	192	6	PRT-04-150-DR New
260	250	16 x 22,5°	4.5	242	6	PRT-04-200-DR New
360	350	16 x 22,5°	4.5	342	6	PRT-04-300-DR New

EN 06/2023



Order key

Type	Size	Options
PRT-04-	20	-DR
Slewing ring	Type	Inner Ø [mm]
Spacer ring		



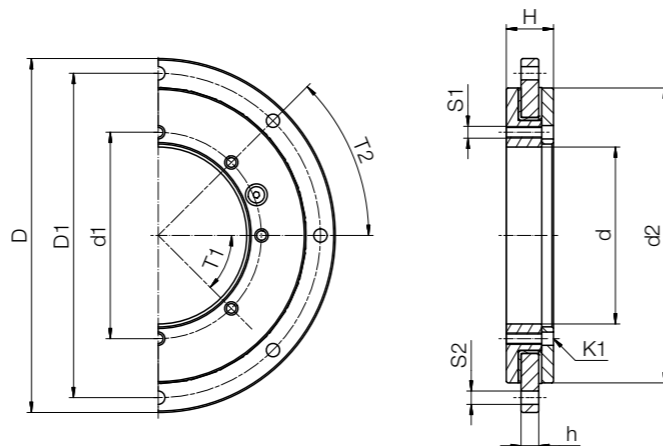
Order key

Type	Size	Options
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PRT-04- 50 -BE

Slewing ring	Type	Inner Ø [mm]	Black Edition
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- Available with diameters from 20mm to 300mm
- 60% lighter and 50% more compact compared to PRT-01
- 20% more cost-effective compared to PRT-01
- Wear-resistant, lubrication-free and maintenance-free iglidur® sliding elements
- Black anodised coating anti-reflect. Black Edition for visible parts



Dimensions [mm]

D	D1	d1	d	d2	H	h	T1	T2	S1	S2	K1	Part No.
												for screw
80	70	30	20	60	16	6	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	PRT-04-20-BE New
90	80	40	30	70	16	6	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	PRT-04-30-BE New
110	100	60	50	90	16	6	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	PRT-04-50-BE
120	110	70	60	100	16	6	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	PRT-04-60-BE
160	150	110	100	140	16	6	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	PRT-04-100-BE
210	200	160	150	190	16	6	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	PRT-04-150-BE
260	250	210	200	240	16	6	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	PRT-04-200-BE
360	350	310	300	340	16	6	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	PRT-04-300-BE



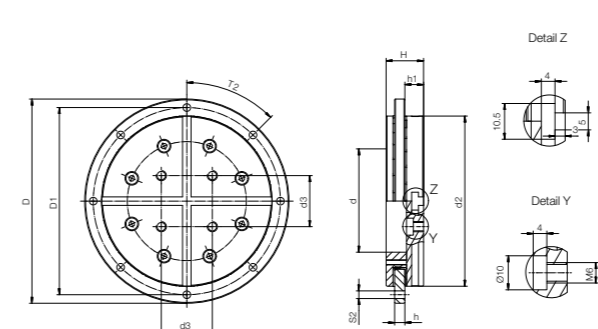
Order key

Type	Size	Options
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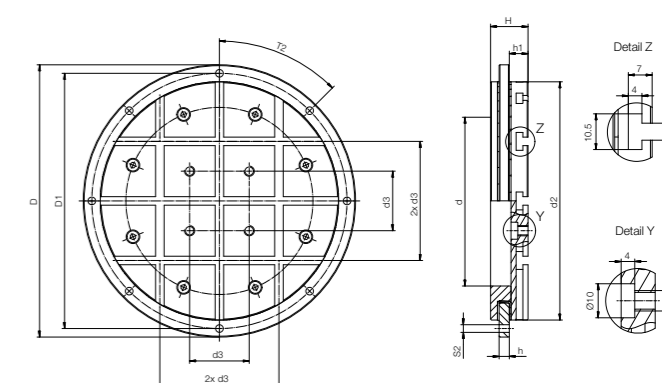
PRT-04- 50 - T

Slewing ring	Type	Inner Ø [mm]	Slot nuts
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- Fast assembly
- Easy positioning with no additional holes



Slot nut profile up to size 60



Slot nut profile from size 100

Dimensions [mm]

D	D1	d1	d	d2	H	h	h1	T2	S2	Part No.
80	70	30	20	60	22	6	11	8 × 45°	Ø 4.5	PRT-04-20-T New
90	80	40	30	70	22	6	11	8 × 45°	Ø 4.5	PRT-04-30-T New
110	100	60	50	90	22	6	11	8 × 45°	Ø 4.5	PRT-04-50-T
120	110	70	60	100	22	6	11	8 × 45°	Ø 4.5	PRT-04-60-T
160	150	110	100	140	22	6	11	8 × 45°	Ø 4.5	PRT-04-100-T
210	200	160	150	190	22	6	11	16 × 22.5°	Ø 4.5	PRT-04-150-T
260	250	210	200	240	22	6	11	16 × 22.5°	Ø 4.5	PRT-04-200-T
360	350	310	300	340	22	6	11	16 × 22.5°	Ø 4.5	PRT-04-300-T



With outer spacer ring

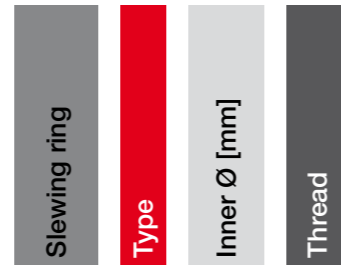
With large outer support ring



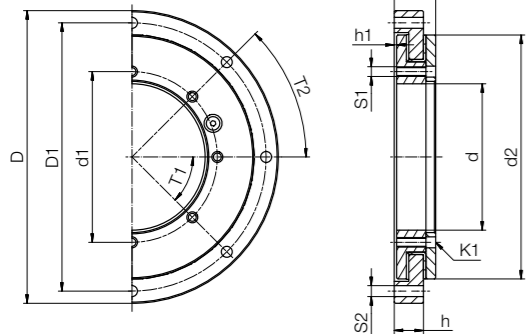
Order key

Type Size Options

PRT-04- 50 -M4

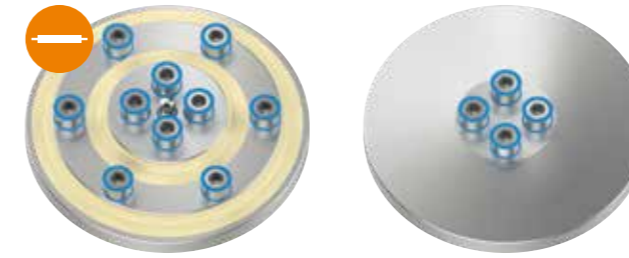


- Maintenance-free and wear-resistant
- Easy installation
- Replaceable sliding elements



Dimensions [mm]

D	D1	d1	d	d2	H	h1	h	T1	T2	S1	S2	K1 for screw	Part No.	
With M4 thread in outer ring														
80	70	30	20	60	16	-	6	8 × 45°	8 × 45°	M4	M4	Ø 4.5	PRT-04-20-M4	New
90	80	40	30	70	16	-	6	8 × 45°	8 × 45°	M4	M4	Ø 4.5	PRT-04-30-M4	New
110	100	60	50	90	16	-	6	8 × 45°	8 × 45°	M4	M4	Ø 4.5	PRT-04-50-M4	
120	110	70	60	100	16	-	6	8 × 45°	8 × 45°	M4	M4	Ø 4.5	PRT-04-60-M4	
160	150	110	100	140	16	-	6	8 × 45°	8 × 45°	M4	M4	Ø 4.5	PRT-04-100-M4	
210	200	160	150	190	16	-	6	16 × 22.5°	16 × 22.5°	M4	M4	Ø 4.5	PRT-04-150-M4	
260	250	210	200	240	16	-	6	16 × 22.5°	16 × 22.5°	M4	M4	Ø 4.5	PRT-04-200-M4	
360	350	310	300	340	16	-	6	16 × 22.5°	16 × 22.5°	M4	M4	Ø 4.5	PRT-04-300-M4	
With enlarged outer ring														
80	70	30	20	60	16	-	6	8 × 45°	6 × 60°	M4	Ø 4.5	Ø 4.5	PRT-04-20-G	New
100	91	40	30	70	16	-	6	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	PRT-04-30-G	New
150	135	60	50	90	16	-	6	8 × 45°	16 × 22.5°	M4	Ø 6.6	Ø 4.5	PRT-04-50-G	
160	145	70	60	100	16	-	6	8 × 45°	20 × 18°	M4	Ø 5.5	Ø 4.5	PRT-04-60-G	
185	170	110	100	140	16	-	6	8 × 45°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	PRT-04-100-G	
250	235	160	150	190	16	-	6	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	PRT-04-150-G	
300	285	210	200	240	16	-	6	16 × 22.5°	16 × 22.5°	M4	Ø 5.5	Ø 4.5	PRT-04-200-G	
450	430	310	300	340	16	-	6	16 × 22.5°	16 × 22.5°	M4	Ø 9.0	Ø 4.5	PRT-04-300-G	
With outer spacer ring														
80	70	30	20	60	17	1	12	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	PRT-04-20-DRI	New
90	80	40	30	70	17	1	12	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	PRT-04-30-DRI	New
110	100	60	50	90	17	1	12	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	PRT-04-50-DRI	
120	110	70	60	100	17	1	12	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	PRT-04-60-DRI	
160	150	110	100	140	17	1	12	8 × 45°	8 × 45°	M4	Ø 4.5	Ø 4.5	PRT-04-100-DRI	
210	200	160	150	190	17	1	12	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	PRT-04-150-DRI	
260	250	210	200	240	17	1	12	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	PRT-04-200-DRI	
360	350	310	300	340	17	1	12	16 × 22.5°	16 × 22.5°	M4	Ø 4.5	Ø 4.5	PRT-04-300-DRI	



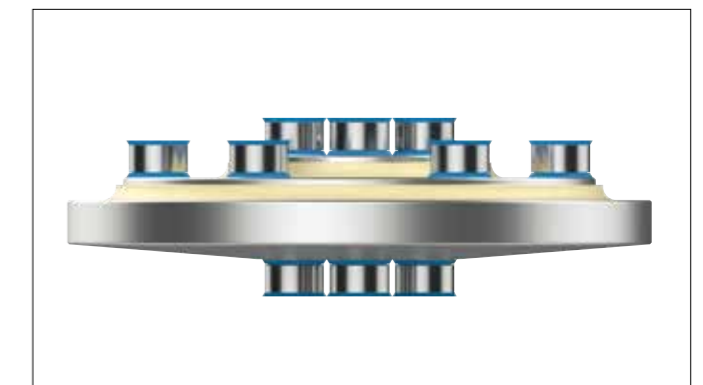
- Easy to clean according to hygienic design guidelines
- With certified hygienic design screws
- Low dead space design, even on the seals
- FDA-compliant seals

The slewing rings with hygienic design are used in special machine construction and designed to your requirements. Contact us!

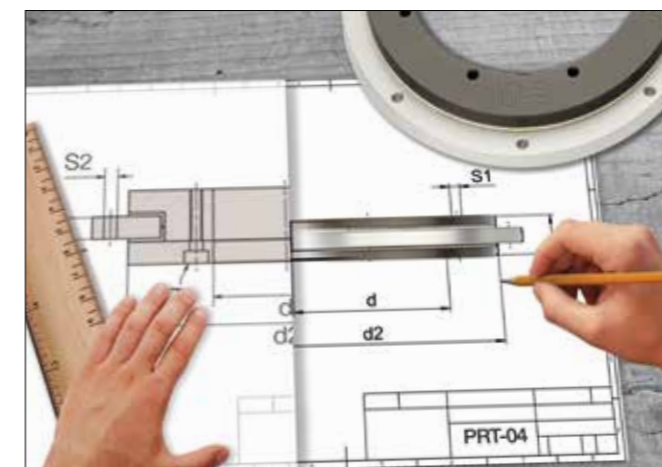
► www.igus.eu/prt-enquiry



Easy to clean: PRT hygienic design for the beverage industry

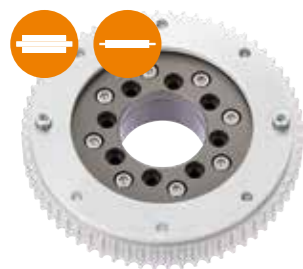


PRT made of stainless steel with hygienic design seals



If you cannot find the right product in our constantly growing range, simply contact us. We would be happy to help you designing your slewing ring bearing.

By entering a few parameters regarding installation space, load, speed and environment, we configure the right bearing for your application.



Order key

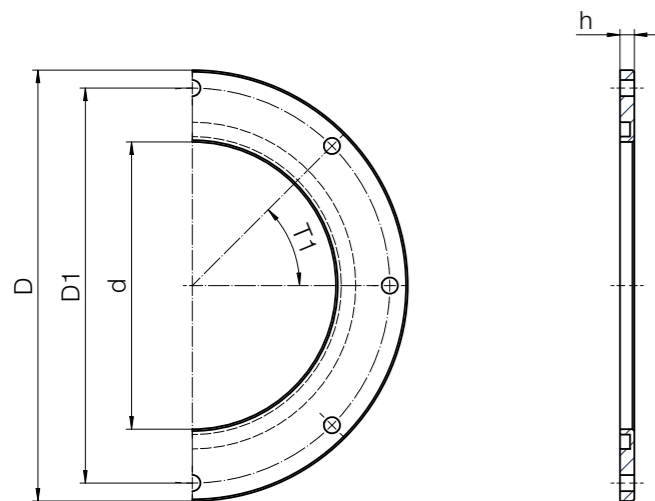
Type Size Options

PRT-□- 20 -SG

Slewing ring	Type	Inner Ø [mm]	Felt seal
--------------	------	--------------	-----------

Options:
01: Type 01
04: Type 04

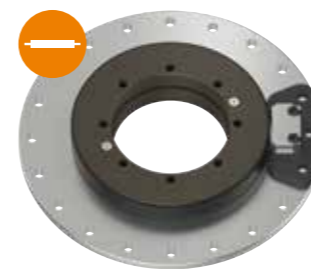
- Prevents dirt from reaching the sliding elements
- For all 01 and 04 series sizes
- Part of the extensive PRT modular system
- No additional lubricants necessary
- For all PRT series



Dimensions [mm]

D	D1	d	h	T1	Part No.
80	70	20	4	8 x 45°	PRT-□-20-SG New
90	80	30	4	8 x 45°	PRT-□-30-SG New
110	100	50	4	8 x 45°	PRT-□-50-SG New
120	110	60	4	8 x 45°	PRT-□-60-SG New
160	150	100	4	8 x 45°	PRT-□-100-SG New
210	200	150	4	16 x 22,5°	PRT-□-150-SG New
260	250	200	4	16 x 22,5°	PRT-□-200-SG New
360	350	300	4	16 x 22,5°	PRT-□-300-SG New

Assembly instructions available in the download area ► www.igus.eu/prt-assembly



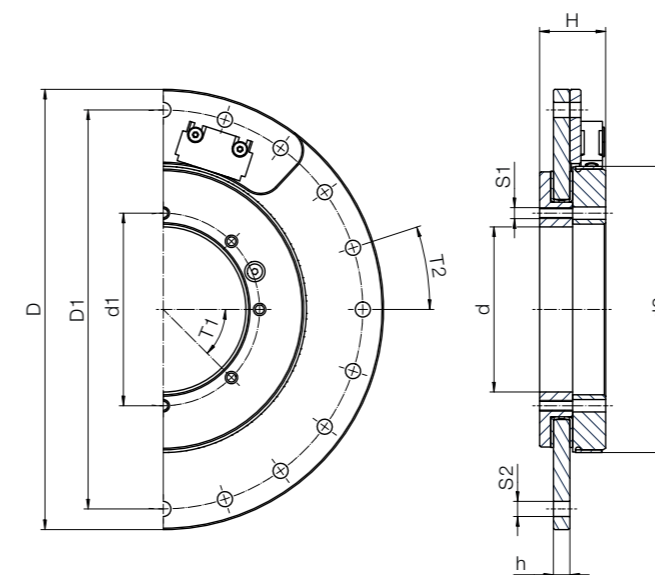
Order key

Type Size Options

PRT-04- 60 -AM

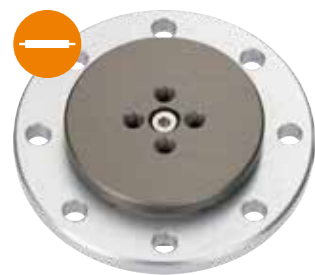
Slewing ring	Type	Inner Ø [mm]	Position indicator
--------------	------	--------------	--------------------

- Exact detection of the rotation angle
- Part of the extensive PRT modular system



Dimensions [mm]

D	D1	d	d1	d2	H	h	T1	T2	S1	S2	K1	Weight [g]	Part No.
150	135	70	70	104	24	6	8 x 45°	8 x 45°	M4	H13	H13	4.5	PRT-04-60-AM New



- Tight tolerances
- Suitable for smallest installation space
- Robust and lightweight

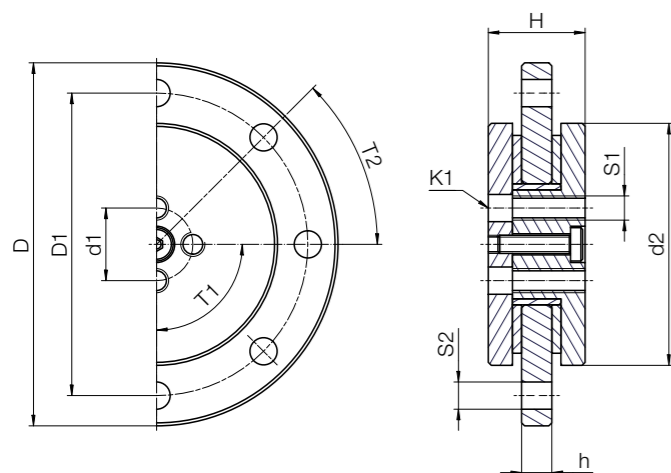
Order key

Type Size Options

PRT-04- 00 -PL

Slewing ring | **Type** | Inner Ø [mm] | Preload

Option:
PL:
Pre-load version

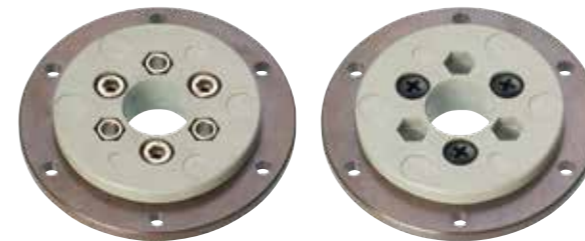


Dimensions [mm]

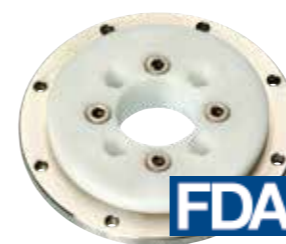
D	D1	d1	Ø d2	H	h	T1	T2	S1	S2	K1	Part No.
60	50	12	40	16	5	90°	8 x 45°	M4	4.5	4.5	PRT-04-00-PL New



Standard Stainless steel version



Low-cost version Solid plastic design



FDA-compliant

- Slewing rings with extremely light weight
- Outer ring made from anodised aluminium, 316 stainless steel (upon request) or iguton G
- Collar clamps made from iglidur® J4 or FDA-compliant iglidur® A180
- 30% lighter than standard -AL type

Order key

Type Size Options

PRT-02- 20 -AL -A180

Slewing ring | **Type** | Inner Ø [mm] | Housing material | Collar clamps

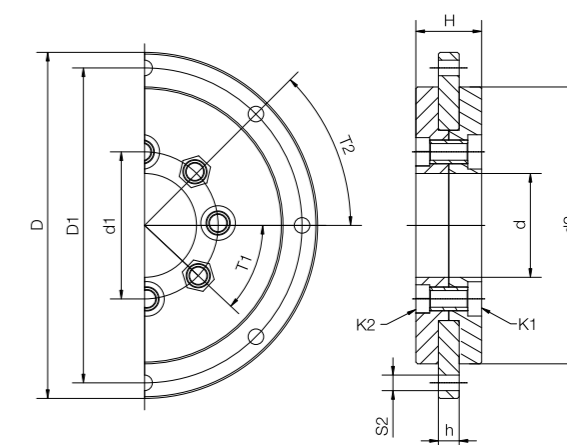
Options:

Housing material

- AL: Aluminium
- ES: 316 stainless steel
- LC: Low-cost
- P: Solid plastic

Collar clamps

- Blank: iglidur® J4
- A180: iglidur® A180, FDA-compliant



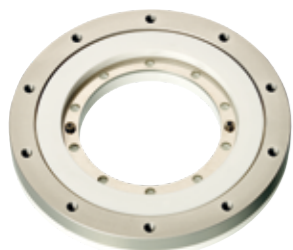
Dimensions [mm]

D ¹⁰⁾	D1	d1	d	d2	H	h	T1	T2	S2	K1 for screw	K2 for screw nut	Part No.
80	70	31	20	60	16	5	6 x 60°	6 x 60°	4.5	DIN 6912 M5	ISO 4035 M5	PRT-02-20- <input type="text"/>
100	91	42.5	30	80	19	6	8 x 45°	8 x 45°	4.5	DIN 7984 M5	ISO 4035 M5	PRT-02-30- <input type="text"/>
150	135	65	50	120	20	6	16 x 22,5°	8 x 45°	6.6	Through hole 6.5 mm		PRT-02-50- <input type="text"/>
160	145	86.0	60	130	30	10	12 x 30°	20 x 18°	5.5	Counterbore Ø16 and 6.5 deep		PRT-02-60- <input type="text"/> ¹¹⁶⁾

¹⁰⁾ Tolerance according to DIN ISO 2768 mK

¹¹⁶⁾ Only available with body made from aluminium and stainless steel

Please add suffix "-A180" for FDA-compliant version



iglidur® PRT slewing rings in a low-cost design. Through consistent downsizing, an additional design has been created that relies even more on plastic.

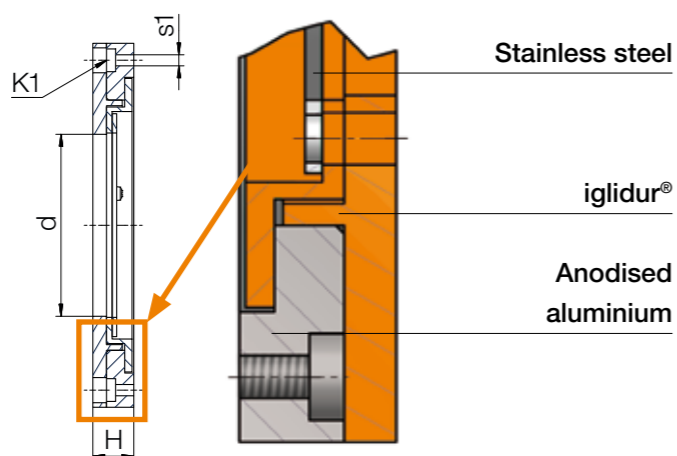
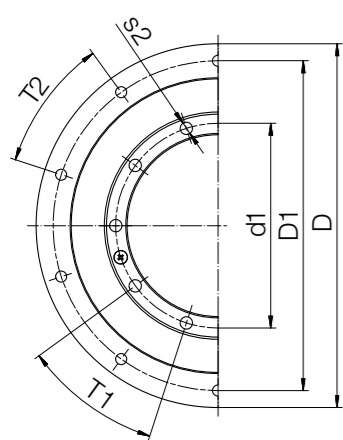
- Maintenance-free and lubrication-free
- Cost-effective and lightweight
- Reduced space requirement
- Ready-to-fit
- For temperatures from 0 to +60°C

Order key

Type Size

PRT-03-80

Slewing ring	Type	Inner Ø [mm]



Dimensions [mm]

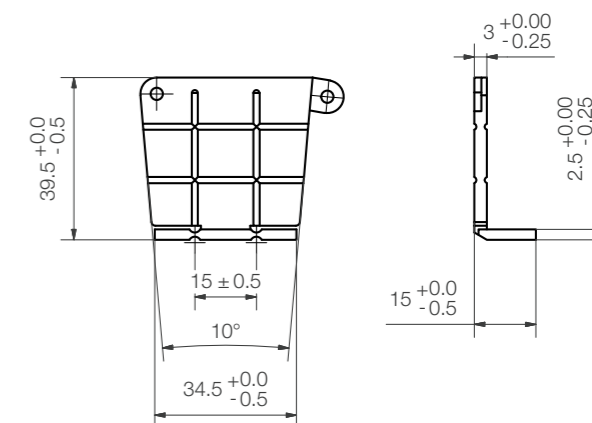
D	D1	d1	d	H	T1	T2	s1	s2	K1	Part No.
160	145	90	80	18	10 x 36°	10 x 36°	M6	5.5	DIN 7984 M5 for screw	PRT-03-80

Customise your own slewing ring systems

Using the versatile iglidur® PRT universal sliding elements, large slewing ring systems can be tailored to the type 01.

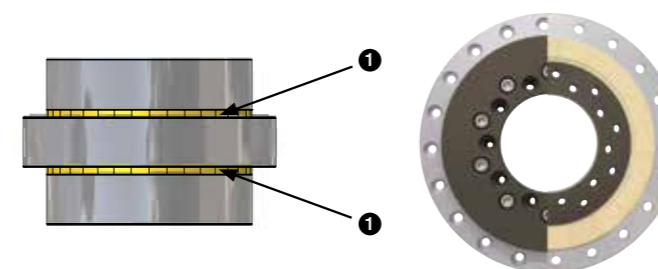


- Made from the proven iglidur® J ▶ **Page 163**
- Slewing ring bearings possible from 0.5 up to 5 metres
- Robust and resistant to dirt
- Corrosion-free and resistant to liquids



Part No.
JRS-500S/45S

Basic structure of type 01:



① Sliding elements made from iglidur® J

Replacement kit for type 01 and 04

Wear-resistant parts easily replaceable

The PRT sliding element replacement kit for the PRT-01 and PRT-04 series allows you to replace worn sliding elements with new ones. They extend the service life of your PRT slewing ring bearings and protect the environment. Assembly instructions available in the download area ▶ www.igus.eu/prt-assembly



Order example:

PRT-01-20-KIT-J: Replacement kit for PRT slewing rings, type 01, inner diameter 20mm, sliding elements material iglidur® J



iglidur® A180

- Complies with Food and Drug Administration (FDA) regulations for contact with food



iglidur® F2

- ESD-compliant
- Electrically conductive



iglidur® H1

- Resistance to chemicals and high temperatures
- Well suited to pivoting movements

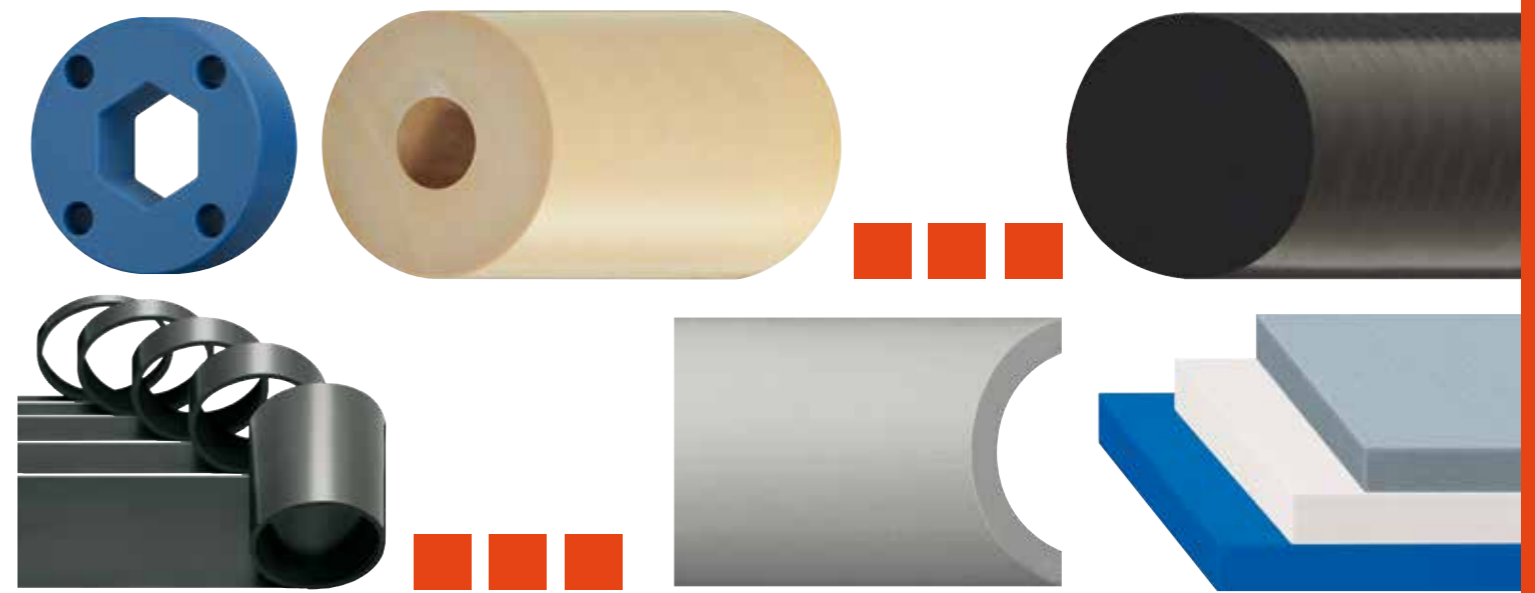


iglidur® J

- Low coefficient of friction during dry operation
- Low moisture absorption
- Low particle emission

iglidur®

Plastic rod, CNC service,
profiles and liners



...plastics

iglidur® round bars - all-rounder



iglidur® M250:
Excellent vibration
dampening
▶ Page 754



iglidur® P210: Good
coefficient of friction and
wear: on almost every shaft
▶ Page 754

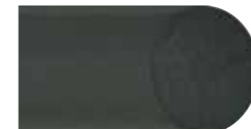


iglidur® J4:
Cost-effective and wear-
resistant
▶ Page 755



iglidur® RN289: Impact-
resistant, media-resistant
and good for edge loads
▶ Page 755

New



iglidur® B160:
Low coefficient of friction
▶ Page 756

New

Endurance runner



iglidur® J:
The versatile endurance
runner
▶ Page 756



iglidur® W300:
The classic endurance
runner up to 30MPa
▶ Page 757



iglidur® J3:
Specialist for pivoting and
pulsating loads
▶ Page 757

Endurance runner



iglidur® J350: Endurance
runner with high dimensional
stability at high temperature
▶ Page 758



iglidur® J260:
Ideal for plastic shafts
▶ Page 758



iglidur® R:
Low-cost material
▶ Page 759



iglidur® J200:
Specially for aluminium
shafts
▶ Page 759



iglidur® E7:
Ideal for pivoting
movement
▶ Page 760



iglidur® JB:
Extremely wear-resistant
in black
▶ Page 760



iglidur® RN44:
Cost-effective and
wear-resistant
▶ Page 761

New



iglidur® X:
The chemical and
temperature specialist
▶ Page 761

High temperatures

High temperatures



iglidur® HSD350:
All-rounder for steam
sterilisation
▶ Page 762



iglidur® H1:
Endurance runner with
high media resistance
▶ Page 762



iglidur® H3: Tough,
wear-resistant, durable
▶ Page 763



iglidur® C500:
For extreme
ambient conditions
▶ Page 763

Contact with food



iglidur® A181: The all-
rounder for food, FDA and
EU 10/2011-compliant
▶ Page 764



iglidur® A350: The FDA-
compliant endurance
runner at high temperatures
▶ Page 764



iglidur® A500:
The media and temperature
specialist in the food sector
▶ Page 765



iglidur® A180:
The all-rounder for food
▶ Page 765

Contact with food



iglidur® A160: "Food"
material with high media
resistance up to +90°C
▶ Page 766



New

iglidur® A250:
Wear-resistant for the food
industry
▶ Page 766



New

iglidur® AC500:
For high temperatures
up to +250°C
▶ Page 767



iglidur® UW160:
For contact with drinking
water
▶ Page 767

Special application areas



iglidur® T220:
For the tobacco industry
▶ Page 768



iglidur® J2:
Versatile and cost-effective
▶ Page 768



iglidur® RW370: For the rail industry,
flame-retardant, complies with
DIN EN 45545 HL3, R22/R23
▶ Page 769



iglidur® J:
The versatile endurance
runner
▶ Page 770

iglidur® hollow bars

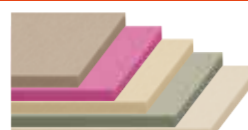
iglidur® sheets, plates, plate strips



iglidur® sheets
in thicknesses of 2-6mm
▶ Page 772



iglidur® plates
in thicknesses of 10-40mm
▶ Page 774



iglidur® plate strips with a
fixed width of 160mm
▶ Page 776

Special parts & profiles



Special parts & profiles:
Online services
▶ Page 779

iglidur® tribo-tape



Material iglidur® A160:
FDA-compliant
▶ Page 786



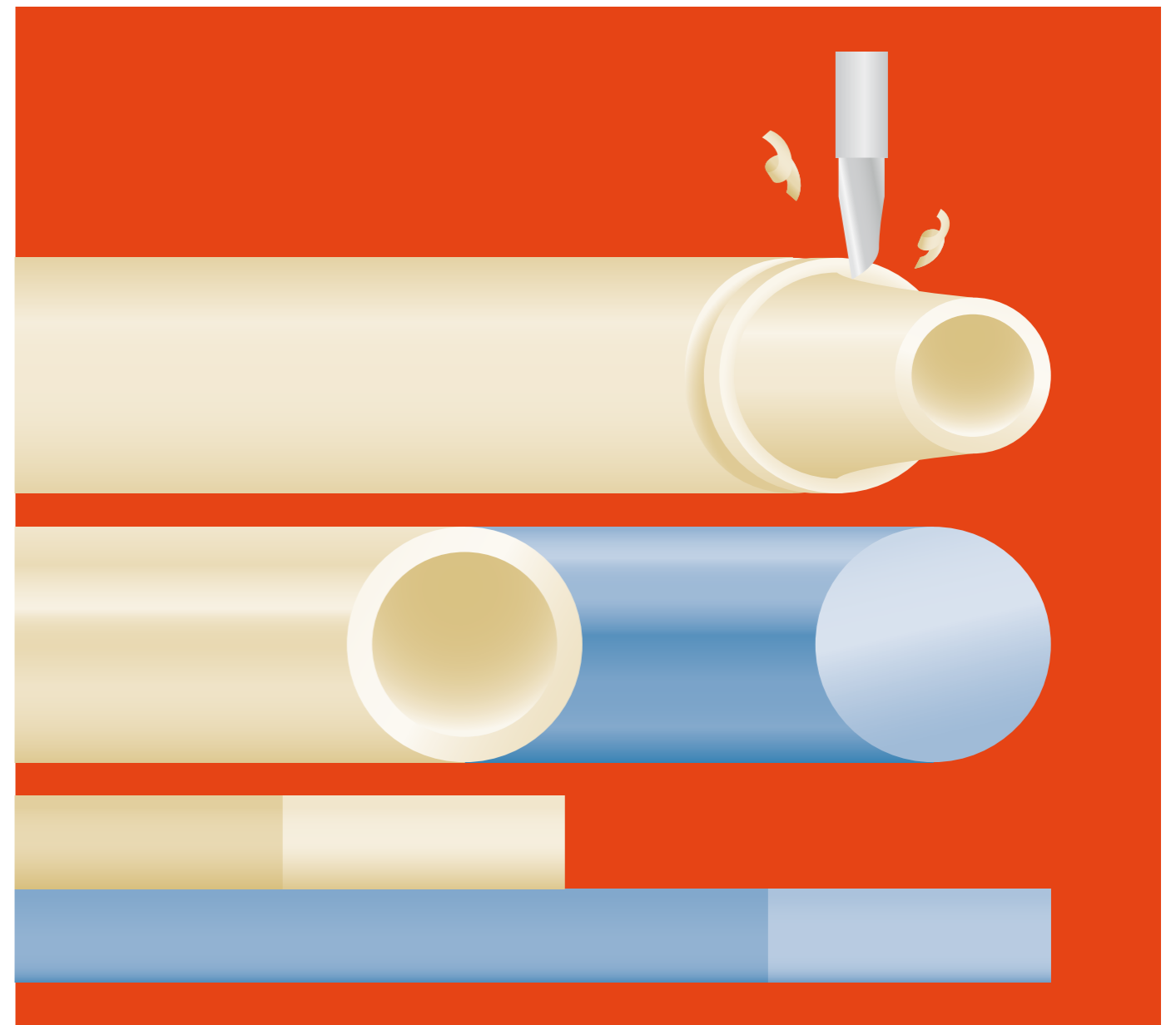
Material iglidur® B160:
For use in visible areas
▶ Page 787



Material iglidur® W160:
Lubrication-free tribo-tape
in white - hardly any wear
▶ Page 788



Material iglidur® V400:
Extremely high wear
resistance
▶ Page 789



iglidur[®] bar stock

Round bars, hollow bars, plates and sheets

Standard range from stock

Cut to required size

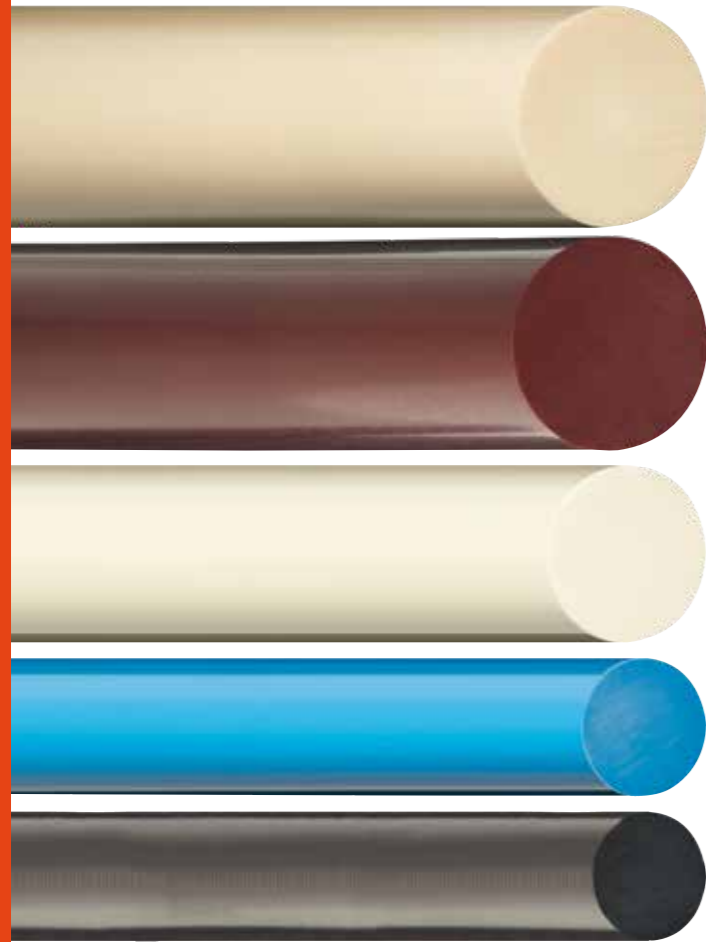
CNC components with no minimum order quantity

Maintenance-free and predictable

Profiles to your specifications



Large selection for all applications




Bar made of technical plastics


All iglidur® materials have been specially developed for dynamic applications. They are self-lubricating and characterised by a low coefficient of friction. Due to its properties, every material becomes a specialist for a specific application. For example, there is suitable iglidur® bar material for almost every application from high-temperature to seawater, from food to automotive.


The selection of available bar is as diverse as the selection of materials. A wide range of plates, round and hollow bars in various dimensions is available from stock. You can either machine our bar yourself or you can use our CNC service and we will produce high-precision CNC components for you according to your specifications. Use our express service and your components will be ready to ship within three days.


Another service is the extrusion of customer-specific profiles from a wide variety of iglidur® high-performance polymers. Talk to us, and we would be happy to advise you on your project.


- Wide range of tribologically optimised plastic bar stock
- Bar stock from stock or customer-specific CNC components in 3 to 5 days
- Easy to machine - ask for our machining tips
- Lubrication and maintenance-free
- Service life can now also be calculated for machined plain bearings
- No minimum order value
- No minimum order quantity

 **Available from stock**
Detailed information about delivery time online. Further materials and dimensions upon request.

 **Operation temperatures:**
-50°C up to +90°C (standard iglidur® J)
-100°C up to +250°C (depending on material)

 igus® is constantly expanding its range of available materials and dimensions. The current range can be found here:
▶ www.igus.eu/barstock

 Online CNC service for individual turned and machined parts:
▶ www.igus.eu/cnc-service

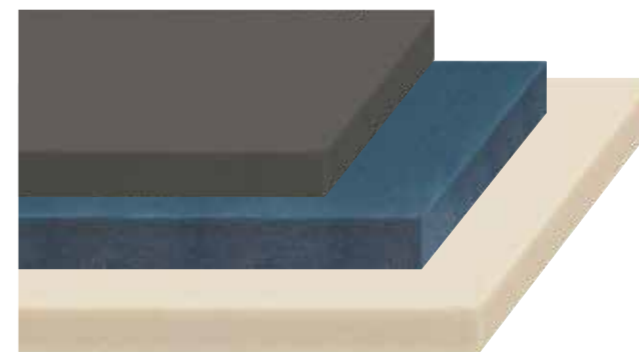
 **Service life calculation**
▶ www.igus.eu/barstock-expert

Round bars and plates for free design



iglidur® round bars

- Currently 28 iglidur® materials to choose from
 - Outer diameter 10-100mm
 - Excellent wear rates and coefficient of friction
- ▶ From page 754



iglidur® plates

- Versatile application options
 - Plate thickness 2-40mm
- ▶ From page 776



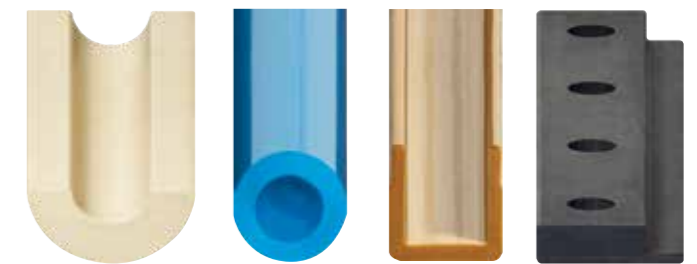
Online CNC service

- Improved calculation, ease of use and new features
 - Multi-part upload, graduated pricing, feasibility analysis and a much simplified order processing
- ▶ From page 779



iglidur® hollow bars

- Large outer diameters 110-150mm
 - Low wear against different shaft materials
- ▶ From page 770



iglidur® profiles

- Wear-resistant industrial profiles according to customer specifications
- ▶ From page 780

iglidur®	M250	P210	J4	RN289	B160	J	W300
Descriptive technical specifications							
Wear resistance at +23°C							
Wear resistance at +90°C							
Wear resistance at +150°C							
Slide property							
Wear resistance under water							
Media resistance							
Resistant to edge pressures							
Resistant to shock and impact loads							
Dirt resistance							
Price index ¹⁴¹⁾							
For high loads (>60MPa)							
Electrically conductive							
Approvals and standards							
FDA-compliant							
EU 10/2011-compliant							
Fire class in accordance with UL-94	V-2	HB	F	HB	HB	HB	HB
Mould test DIN EN ISO 846							
Fogging DIN 75201-B	●						
Availabilities / variants							
Bar stock, round material	●	●	●	●	●	●	●
Bar stock, hollow bars						●	
Bar stock, sheet						●	
Bar stock, plate				●	●	●	
Bar stock, plate strips			●			●	●

¹⁴¹⁾ Price index Low price category Medium price category Highest price category







J3	J350	J260	R	J200	E7	JB	RN44	X	HSD350
	●							●	
								●	
Approvals and standards									
FDA-compliant									
EU 10/2011-compliant									
Fire class in accordance with UL-94	HB	V-0	V-2	HB	HB	HB	HB	HB	V-0
Mould test DIN EN ISO 846		●							●
Fogging DIN 75201-B									
Availabilities / variants									
Bar stock, round material	●	●	●	●	●	●	●	●	●
Bar stock, hollow bars									
Bar stock, sheet									
Bar stock, plate						●	●		
Bar stock, plate strips		●				●		●	












iglidur®	H1	H3	C500	A181	A350	A500
Descriptive technical specifications						
Wear resistance at +23°C						
Wear resistance at +90°C						
Wear resistance at +150°C						
Slide property						
Wear resistance under water						
Media resistance						
Resistant to edge pressures						
Resistant to shock and impact loads						
Dirt resistance						
Price index ¹⁴¹⁾						
For high loads (>60MPa)	●	●	●		●	●
Electrically conductive						
Approvals and standards						
FDA-compliant				●	●	●
EU 10/2011-compliant				●	●	●
Fire class in accordance with UL-94	V-0	V-0	V-0	HB	V-0	V-1
Mould test DIN EN ISO 846	●	●				
Fogging DIN 75201-B						
Availabilities / variants						
Bar stock, round material	●	●	●	●	●	●
Bar stock, hollow bars						
Bar stock, sheet						
Bar stock, plate					●	
Bar stock, plate strips			●		●	●

¹⁴¹⁾ Price index Low price category Medium price category Highest price category






A180	A160	A250	AC500	AD500	UW160	T220	J2	RW370
			●	●				●
●	●	●		●		●		
●	●	●		●				
HB	HB	V-2	V-0	V-1	HB	HB	HB	V-0
		●						
●	●	●	●	●	●	●	●	●
●	●							
			●	●				●

iglidur® bar stock | Material properties

iglidur®	Unit	M250	P210	J4	RN289	B160	J
General properties							
Density	[g/cm³]	1.14	1.40	1.48	1.24	1.00	1.49
Colour							
Max. moisture absorption at +23 °C/50% r.h.	[% weight]	1.4	0.3	0.3	0.8	0.1	0.3
Max. moisture absorption	[% weight]	7.6	0.5	1.3	2.9	0.1	1.3
Coefficient of sliding friction, dynamic against steel	[μ]	0.18-0.40	0.07-0.19	0.06-0.20	0.45-0.57	0.13-0.20	0.06-0.18
pv value, max. (dry)	[MPa·m/s]	0.12	0.4	0.30	–	0.25	0.34
Mechanical properties							
Flexural modulus	[MPa]	2,700	2,500	2,350	1,600	852	2,400
Flexural strength at +20°C	[MPa]	112	70	70	60	14	73
Compressive strength	[MPa]	52	50	55	–	37	60
Max. permissible surface pressure at +20°C	[MPa]	20	50	35	26	11	35
Shore D hardness		79	75	74	74	59	74
Physical and thermal properties							
Max. continuous operating temperature	[°C]	+80	+100	+90	+110	+90	+90
Max. short-term operating temperature	[°C]	+170	+160	+120	+130	+100	+120
Min. continuous operating temperature	[°C]	-40	-40	-50	-30	-50	-50
Thermal conductivity	[W/m·K]	0.24	0.25	0.25	–	0.32	0.25
Coefficient of thermal expansion at +23°C	[K ⁻¹ ·10 ⁻⁵]	10	8	10	9.7	11	10
Electrical properties							
Specific contact resistance	[Ωcm]	> 10 ¹³	> 10 ¹²	> 10 ¹³	> 10 ¹²	> 10 ¹²	> 10 ¹³
Surface resistance	[Ω]	> 10 ¹¹	> 10 ¹¹	> 10 ¹³	> 10 ¹²	> 10 ¹²	> 10 ¹²
Page		754	754	755	755	756	756











W300	J3	J350	J260	R	J200	E7	JB	RN44	X	HSD350
1.24	1.42	1.44	1.35	1.39	1.72	1.05	1.49	1.42	1.44	1.39
										
1.3	0.3	0.3	0.2	0.2	0.2	0.1	0.3	0.4	0.1	0.6
6.5	1.3	1.6	0.4	1.1	0.7	0.1	1.3	1.2	0.5	1.2
0.08-0.23	0.06-0.20	0.10-0.20	0.06-0.20	0.09-0.25	0.11-0.17	0.08-0.17	0.06-0.18	0.31-0.36	0.09-0.27	0.07-0.23
0.23	0.5	0.45	0.35	0.27	0.3	0.22	0.34	0.27	1.32	0.3
3,500	2,700	2,000	2,200	1,950	2,800	1,477	2,400	2,000	8,100	2,150
125	70	55	60	70	58	22	73	75	170	67
61	60	60	50	68	43	18	60	–	100	44
60	45	60	40	23	23	18	35	25	150	30
77	73	80	77	77	70	61	74	78	85	77
+90	+90	+180	+120	+90	+90	+70	+90	+90	+250	+180
+180	+120	+220	+140	+110	+120	+90	+120	+110	+315	+210
-40	-50	-100	-100	-50	-50	-50	-50	-50	-100	-40
0.24	0.25	0.24	0.24	0.25	0.24	0.24	0.25	–	0.60	0.24
9	13	7	13	11	8	25	10	16	5	7
> 10 ¹³	> 10 ¹²	> 10 ¹³	> 10 ¹²	> 10 ¹²	> 10 ⁸	> 10 ⁹	> 10 ¹³	> 10 ¹²	< 10 ⁵	> 10 ¹³
> 10 ¹²	> 10 ¹²	> 10 ¹⁰	> 10 ¹⁰	> 10 ¹²	> 10 ⁸	> 10 ⁹	> 10 ¹²	> 10 ¹²	< 10 ³	> 10 ¹⁴
757	757	758	758	759	759	760	760	761	761	762

iglidur® bar stock | Material properties

iglidur®	Unit	H1	H3	C500	A181	A350
General properties						
Density	[g/cm³]	1.53	1.41	1.37	1.38	1.42
Colour						
Max. moisture absorption at +23 °C/50% r.h.	[% weight]	0.1	0.2	0.3	0.2	0.6
Max. moisture absorption	[% weight]	0.3	0.5	0.5	1.3	1.9
Coefficient of sliding friction, dynamic against steel	[μ]	0.06-0.20	0.16-0.19	0.07-0.19	0.10-0.21	0.10-0.20
pv value, max. (dry)	[MPa·m/s]	0.80	0.70	0.70	0.31	0.40
Mechanical properties						
Flexural modulus	[MPa]	2,800	2,760	3,300	1,913	2,000
Flexural strength at +20°C	[MPa]	55	68	100	48	110
Compressive strength	[MPa]	78	n.s.	110	60	78
Max. permissible surface pressure at +20°C	[MPa]	80	40	80	31	60
Shore D hardness		77	75	80	76	76
Physical and thermal properties						
Max. continuous operating temperature	[°C]	+200	+200	+250	+90	+180
Max. short-term operating temperature	[°C]	+240	+240	+300	+110	+210
Min. continuous operating temperature	[°C]	-40	-40	-100	-50	-100
Thermal conductivity	[W/m·K]	0.24	n.s.	0.24	0.25	0.24
Coefficient of thermal expansion at +23°C	[K ⁻¹ ·10 ⁻⁵]	6	5	9	11	8
Electrical properties						
Specific contact resistance	[Ωcm]	> 10 ¹²	> 10 ¹²	> 10 ¹⁴	> 10 ¹²	> 10 ¹¹
Surface resistance	[Ω]	> 10 ¹¹	> 10 ¹²	> 10 ¹³	> 10 ¹²	> 10 ¹¹
Page		762	763	763	764	764

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A500	A180	A160	A250	AC500	AD500	UW160	T220	J2	RW370
1.28	1.46	1.00	1.34	1.38	1.31	1.04	1.28	1.44	1.34
									
0.3	0.2	0.1	0.7	0.1	0.3	0.1	0.3	0.2	0.25
0.5	1.3	0.1	4.2	0.4	0.5	0.1	0.5	1.3	1.2
0.26-0.41	0.05-0.23	0.09-0.19	0.16-0.21	0.19-0.22	0.36-0.43	0.17-0.31	0.20-0.32	0.11-0.27	0.13-0.17
0.28	0.31	0.25	0.30	0.70	0.50	0.22	0.28	0.23	1.2
3,600	2,300	1,151	2,540	2,776	3,700	1,349	1,800	3,605	2,997
140	88	19	84	127	139	22	65	101	100
118	78	37	n.s.	n.s.	110	32	55	77	129
120	28	15	34	45	72	15	40	46	75
83	76	60	74	85	81	60	76	n.s.	80
+250	+90	+90	+90	+250	+250	+90	+100	+90	+170
+300	+110	+100	+180	+300	+300	+100	+160	+110	+190
-100	-50	-50	-40	-100	-100	-50	-40	-50	-50
0.24	0.25	0.30	0.24	0.24	0.24	0.50	0.24	0.25	0.22
9	11	11	10	9	9	18	11	7	5
> 10 ¹⁴	> 10 ¹²	> 10 ¹²	> 10 ¹¹	> 10 ¹²	> 10 ¹²	> 10 ¹²	> 10 ¹⁰	> 10 ¹³	> 10 ¹²
> 10 ¹³	> 10 ¹¹	> 10 ¹²	> 10 ¹¹	> 10 ¹²	> 10 ¹²	> 10 ¹²	> 10 ¹⁰	> 10 ¹²	> 10 ¹²
765	765	766	766	767	776	767	768	768	769

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Excellent vibration dampening - iglidur® M250



Order key for round bars

Type	Dimensions [mm]
SF R M250-30 00-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.
Bar stock	Round bar
iglidur® material	Outer Ø
	Inner Ø
	Length

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRM250-1000-□
15	100-1,000	SFRM250-1500-□
20	100-1,000	SFRM250-2000-□
25	100-1,000	SFRM250-2500-□
30	100-1,000	SFRM250-3000-□
35	100-1,000	SFRM250-3500-□
40	100-1,000	SFRM250-4000-□
45	100-1,000	SFRM250-4500-□

Ø	Lengths	Part No.
50	100-1,000	SFRM250-5000-□
55	100-1,000	SFRM250-5500-□
60	100-1,000	SFRM250-6000-□
65	100-1,000	SFRM250-6500-□
70	100-1,000	SFRM250-7000-□
80	100-1,000	SFRM250-8000-□
90	100-1,000	SFRM250-9000-□
100	100-1,000	SFRM250-10000-□

Good coefficient of friction and wear on almost every shaft - iglidur® P210



Order key for round bars

Type	Dimensions [mm]
SF R P210-30 00-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.
Bar stock	Round bar
iglidur® material	Outer Ø
	Inner Ø
	Length

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRP210-1000-□
15	100-1,000	SFRP210-1500-□
20	100-1,000	SFRP210-2000-□
25	100-1,000	SFRP210-2500-□
30	100-1,000	SFRP210-3000-□
35	100-1,000	SFRP210-3500-□
40	100-1,000	SFRP210-4000-□
45	100-1,000	SFRP210-4500-□

Ø	Lengths	Part No.
50	100-1,000	SFRP210-5000-□
55	100-1,000	SFRP210-5500-□
60	100-1,000	SFRP210-6000-□
65	100-1,000	SFRP210-6500-□
70	100-1,000	SFRP210-7000-□
80	100-1,000	SFRP210-8000-□
90	100-1,000	SFRP210-9000-□
100	100-1,000	SFRP210-10000-□

Available from stock
Upon request/check availability

Cost-effective and wear-resistant - iglidur® J4



Order key for round bars

Type	Dimensions [mm]
SF R J4-30 00-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.
Bar stock	Round bar
iglidur® material	Outer Ø
	Inner Ø
	Length

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRJ4-1000-□
15	100-1,000	SFRJ4-1500-□
20	100-1,000	SFRJ4-2000-□
25	100-1,000	SFRJ4-2500-□
30	100-1,000	SFRJ4-3000-□
35	100-1,000	SFRJ4-3500-□
40	100-1,000	SFRJ4-4000-□
45	100-1,000	SFRJ4-4500-□

Ø	Lengths	Part No.
50	100-1,000	SFRJ4-5000-□
55	100-1,000	SFRJ4-5500-□
60	100-1,000	SFRJ4-6000-□
65	100-1,000	SFRJ4-6500-□
70	100-1,000	SFRJ4-7000-□
80	100-1,000	SFRJ4-8000-□
90	100-1,000	SFRJ4-9000-□
100	100-1,000	SFRJ4-10000-□

Impact-resistant and media-resistant - iglidur® RN289 **New**



Order key for round bars

Type	Dimensions [mm]
SF R RN289-30 00-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.
Bar stock	Round bar
iglidur® material	Outer Ø
	Inner Ø
	Length

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRJ-1000-□
15	100-1,000	SFRJ-1500-□
20	100-1,000	SFRJ-2000-□
25	100-1,000	SFRJ-2500-□
30	100-1,000	SFRJ-3000-□
35	100-1,000	SFRJ-3500-□
40	100-1,000	SFRJ-4000-□
45	100-1,000	SFRJ-4500-□

Ø	Lengths	Part No.
50	100-1,000	SFRJ-5000-□
55	100-1,000	SFRJ-5500-□
60	100-1,000	SFRJ-6000-□
65	100-1,000	SFRJ-6500-□
70	100-1,000	SFRJ-7000-□
80	100-1,000	SFRJ-8000-□
90	100-1,000	SFRJ-9000-□
100	100-1,000	SFRJ-10000-□

igus® constantly expands its range of available materials and dimensions. Please contact us in case the required diameter is not available.

Excellent vibration dampening - iglidur® B160



Order key for round bars

Type	Dimensions [mm]
SF R B160 -30 00-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

Bar stock

Round bar

iglidur® material

Outer Ø

Inner Ø

Length

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRM250-1000-□
15	100-1,000	SFRB160-1500-□
20	100-1,000	SFRB160-2000-□
25	100-1,000	SFRB160-2500-□
30	100-1,000	SFRB160-3000-□
35	100-1,000	SFRB160-3500-□
40	100-1,000	SFRB160-4000-□
45	100-1,000	SFRB160-4500-□

Ø	Lengths	Part No.
50	100-1,000	SFRB160-5000-□
55	100-1,000	SFRB160-5500-□
60	100-1,000	SFRB160-6000-□
65	100-1,000	SFRB160-6500-□
70	100-1,000	SFRB160-7000-□
80	100-1,000	SFRB160-8000-□
90	100-1,000	SFRB160-9000-□
100	100-1,000	SFRB160-10000-□

The versatile endurance runner - iglidur® J



Order key for round bars

Type	Dimensions [mm]
SF R J -30 00-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

Bar stock

Round bar

iglidur® material

Outer Ø

Inner Ø

Length

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRJ-1000-□
15	100-1,000	SFRJ-1500-□
20	100-1,000	SFRJ-2000-□
25	100-1,000	SFRJ-2500-□
30	100-1,000	SFRJ-3000-□
35	100-1,000	SFRJ-3500-□
40	100-1,000	SFRJ-4000-□
45	100-1,000	SFRJ-4500-□

Ø	Lengths	Part No.
50	100-1,000	SFRJ-5000-□
55	100-1,000	SFRJ-5500-□
60	100-1,000	SFRJ-6000-□
65	100-1,000	SFRJ-6500-□
70	100-1,000	SFRJ-7000-□
80	100-1,000	SFRJ-8000-□
90	100-1,000	SFRJ-9000-□
100	100-1,000	SFRJ-10000-□

Available from stock
Upon request/check availability

The classic endurance runner up to 30MPa - iglidur® W300



Order key for round bars

Type	Dimensions [mm]
SF R W-30 00-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

Bar stock

Round bar

iglidur® material

Outer Ø

Inner Ø

Length

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRW-1000-□
15	100-1,000	SFRW-1500-□
20	100-1,000	SFRW-2000-□
25	100-1,000	SFRW-2500-□
30	100-1,000	SFRW-3000-□
35	100-1,000	SFRW-3500-□
40	100-1,000	SFRW-4000-□
45	100-1,000	SFRW-4500-□

Ø	Lengths	Part No.
50	100-1,000	SFRW-5000-□
55	100-1,000	SFRW-5500-□
60	100-1,000	SFRW-6000-□
65	100-1,000	SFRW-6500-□
70	100-1,000	SFRW-7000-□
80	100-1,000	SFRW-8000-□
90	100-1,000	SFRW-9000-□
100	100-1,000	SFRW-10000-□

Specialist for pivoting and pulsating loads - iglidur® J3



Order key for round bars

Type	Dimensions [mm]
SF R J3 -30 00-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

Bar stock

Round bar

iglidur® material

Outer Ø

Inner Ø

Length

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRJ3-1000-□
15	100-1,000	SFRJ3-1500-□
20	100-1,000	SFRJ3-2000-□
25	100-1,000	SFRJ3-2500-□
30	100-1,000	SFRJ3-3000-□
35	100-1,000	SFRJ3-3500-□
40	100-1,000	SFRJ3-4000-□
45	100-1,000	SFRJ3-4500-□

Ø	Lengths	Part No.
50	100-1,000	SFRJ3-5000-□
55	100-1,000	SFRJ3-5500-□
60	100-1,000	SFRJ3-6000-□
65	100-1,000	SFRJ3-6500-□
70	100-1,000	SFRJ3-7000-□
80	100-1,000	SFRJ3-8000-□
90	100-1,000	SFRJ3-9000-□
100	100-1,000	SFRJ3-10000-□

igus® constantly expands its range of available materials and dimensions. Please contact us in case the required diameter is not available.

iglidur® round bars | Product range

Endurance runner with high dimensional stability at high temperature - iglidur® J350



Order key for round bars

Type	Dimensions [mm]
SF R J350-30 00-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRJ350-1000-□
15	100-1,000	SFRJ350-1500-□
20	100-1,000	SFRJ350-2000-□
25	100-1,000	SFRJ350-2500-□
30	100-1,000	SFRJ350-3000-□
35	100-1,000	SFRJ350-3500-□
40	100-1,000	SFRJ350-4000-□
45	100-1,000	SFRJ350-4500-□

Ø	Lengths	Part No.
50	100-1,000	SFRJ350-5000-□
55	100-1,000	SFRJ350-5500-□
60	100-1,000	SFRJ350-6000-□
65	100-1,000	SFRJ350-6500-□
70	100-1,000	SFRJ350-7000-□
80	100-1,000	SFRJ350-8000-□
90	100-1,000	SFRJ350-9000-□
100	100-1,000	SFRJ350-10000-□

Ideal for plastic shafts - iglidur® J260



Order key for round bars

Type	Dimensions [mm]
SF R J260-30 00-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRJ260-1000-□
15	100-1,000	SFRJ260-1500-□
20	100-1,000	SFRJ260-2000-□
25	100-1,000	SFRJ260-2500-□
30	100-1,000	SFRJ260-3000-□
35	100-1,000	SFRJ260-3500-□
40	100-1,000	SFRJ260-4000-□
45	100-1,000	SFRJ260-4500-□

Ø	Lengths	Part No.
50	100-1,000	SFRJ260-5000-□
55	100-1,000	SFRJ260-5500-□
60	100-1,000	SFRJ260-6000-□
65	100-1,000	SFRJ260-6500-□
70	100-1,000	SFRJ260-7000-□
80	100-1,000	SFRJ260-8000-□
90	100-1,000	SFRJ260-9000-□
100	100-1,000	SFRJ260-10000-□

Available from stock
Upon request/check availability

iglidur® round bars | Product range

Low-cost - iglidur® R



Order key for round bars

Type	Dimensions [mm]
SF R R-30 00-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRR-1000-□
15	100-1,000	SFRR-1500-□
20	100-1,000	SFRR-2000-□
25	100-1,000	SFRR-2500-□
30	100-1,000	SFRR-3000-□
35	100-1,000	SFRR-3500-□
40	100-1,000	SFRR-4000-□
45	100-1,000	SFRR-4500-□

Ø	Lengths	Part No.
50	100-1,000	SFRR-5000-□
55	100-1,000	SFRR-5500-□
60	100-1,000	SFRR-6000-□
65	100-1,000	SFRR-6500-□
70	100-1,000	SFRR-7000-□
80	100-1,000	SFRR-8000-□
90	100-1,000	SFRR-9000-□
100	100-1,000	SFRR-10000-□

Specially for aluminium shafts - iglidur® J200



Order key for round bars

Type	Dimensions [mm]
SF R J200-30 00-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

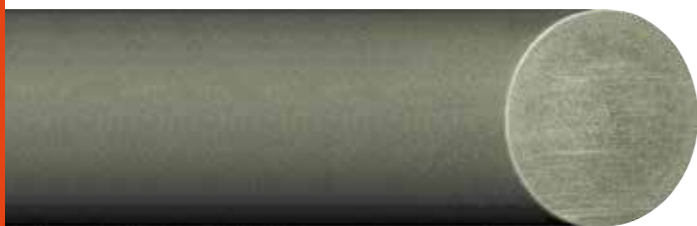
Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRJ200-1000-□
15	100-1,000	SFRJ200-1500-□
20	100-1,000	SFRJ200-2000-□
25	100-1,000	SFRJ200-2500-□
30	100-1,000	SFRJ200-3000-□
35	100-1,000	SFRJ200-3500-□
40	100-1,000	SFRJ200-4000-□
45	100-1,000	SFRJ200-4500-□

Ø	Lengths	Part No.
50	100-1,000	SFRJ200-5000-□
55	100-1,000	SFRJ200-5500-□
60	100-1,000	SFRJ200-6000-□
65	100-1,000	SFRJ200-6500-□
70	100-1,000	SFRJ200-7000-□
80	100-1,000	SFRJ200-8000-□
90	100-1,000	SFRJ200-9000-□
100	100-1,000	SFRJ200-10000-□

igus® constantly expands its range of available materials and dimensions. Please contact us in case the required diameter is not available.

Ideal for pivoting movement - iglidur® E7



Order key for round bars

Type	Dimensions [mm]
SF R E7-30 00-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRE7-1000-□
15	100-1,000	SFRE7-1500-□
20	100-1,000	SFRE7-2000-□
25	100-1,000	SFRE7-2500-□
30	100-1,000	SFRE7-3000-□
35	100-1,000	SFRE7-3500-□
40	100-1,000	SFRE7-4000-□
45	100-1,000	SFRE7-4500-□

Ø	Lengths	Part No.
50	100-1,000	SFRE7-5000-□
55	100-1,000	SFRE7-5500-□
60	100-1,000	SFRE7-6000-□
65	100-1,000	SFRE7-6500-□
70	100-1,000	SFRE7-7000-□
80	100-1,000	SFRE7-8000-□
90	100-1,000	SFRE7-9000-□
100	100-1,000	SFRE7-10000-□

Extremely wear-resistant in black - iglidur® JB



Order key for round bars

Type	Dimensions [mm]
SF R JB-30 00-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRJB-1000-□
15	100-1,000	SFRJB-1500-□
20	100-1,000	SFRJB-2000-□
25	100-1,000	SFRJB-2500-□
30	100-1,000	SFRJB-3000-□
35	100-1,000	SFRJB-3500-□
40	100-1,000	SFRJB-4000-□
45	100-1,000	SFRJB-4500-□

Ø	Lengths	Part No.
50	100-1,000	SFRJB-5000-□
55	100-1,000	SFRJB-5500-□
60	100-1,000	SFRJB-6000-□
65	100-1,000	SFRJB-6500-□
70	100-1,000	SFRJB-7000-□
80	100-1,000	SFRJB-8000-□
90	100-1,000	SFRJB-9000-□
100	100-1,000	SFRJB-10000-□

Available from stock
Upon request/check availability

Cost-effective and wear-resistant - iglidur® RN44 **New**



Order key for round bars

Type	Dimensions [mm]
SF R RN44-30 00-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRRN44-1000-□
15	100-1,000	SFRRN44-1500-□
20	100-1,000	SFRRN44-2000-□
25	100-1,000	SFRRN44-2500-□
30	100-1,000	SFRRN44-3000-□
35	100-1,000	SFRRN44-3500-□
40	100-1,000	SFRRN44-4000-□
45	100-1,000	SFRRN44-4500-□

Ø	Lengths	Part No.
50	100-1,000	SFRRN44-5000-□
55	100-1,000	SFRRN44-5500-□
60	100-1,000	SFRRN44-6000-□
65	100-1,000	SFRRN44-6500-□
70	100-1,000	SFRRN44-7000-□
85	100-1,000	SFRRN44-8500-□
90	100-1,000	SFRRN44-9000-□
100	100-1,000	SFRRN44-10000-□

The chemical and temperature specialist - iglidur® X



Order key for round bars

Type	Dimensions [mm]
SF R X-30 00-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRX-1000-□
15	100-1,000	SFRX-1500-□
20	100-1,000	SFRX-2000-□
25	100-1,000	SFRX-2500-□
30	100-1,000	SFRX-3000-□
35	100-1,000	SFRX-3500-□
40	100-1,000	SFRX-4000-□
45	100-1,000	SFRX-4500-□

Ø	Lengths	Part No.
50	100-1,000	SFRX-5000-□
55	100-1,000	SFRX-5500-□
60	100-1,000	SFRX-6000-□
65	100-1,000	SFRX-6500-□
70	100-1,000	SFRX-7000-□
80	100-1,000	SFRX-8000-□
90	100-1,000	SFRX-9000-□
100	100-1,000	SFRX-10000-□

igus® constantly expands its range of available materials and dimensions. Please contact us in case the required diameter is not available.

iglidur® round bars | Product range

All-rounder for steam sterilisation - iglidur® HSD350



Order key for round bars

Type	Dimensions [mm]
SF R HSD350-30 00-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

Bar stock

Round bar

iglidur® material

Outer Ø

Inner Ø

Length

Dimensions [mm]

Ø	Lengths	Part No.
10	100 - 1,000	SFRHSD350-1000-□
15	100 - 1,000	SFRHSD350-1500-□
20	100 - 1,000	SFRHSD350-2000-□
25	100 - 1,000	SFRHSD350-2500-□
30	100 - 1,000	SFRHSD350-3000-□
35	100 - 1,000	SFRHSD350-3500-□
40	100 - 1,000	SFRHSD350-4000-□
45	100 - 1,000	SFRHSD350-4500-□

Ø	Lengths	Part No.
50	100 - 1,000	SFRHSD350-5000-□
55	100 - 1,000	SFRHSD350-5500-□
60	100 - 1,000	SFRHSD350-6000-□
65	100 - 1,000	SFRHSD350-6500-□
70	100 - 1,000	SFRHSD350-7000-□
80	100 - 1,000	SFRHSD350-8000-□
90	100 - 1,000	SFRHSD350-9000-□
100	100 - 1,000	SFRHSD350-10000-□

Endurance runner with high media resistance - iglidur® H1



Order key for round bars

Type	Dimensions [mm]
SF R H1-30 00-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

Bar stock

Round bar

iglidur® material

Outer Ø

Inner Ø

Length

Dimensions [mm]

Ø	Lengths	Part No.
10	100 - 1,000	SFRH1-1000-□
15	100 - 1,000	SFRH1-1500-□
20	100 - 1,000	SFRH1-2000-□
25	100 - 1,000	SFRH1-2500-□
30	100 - 1,000	SFRH1-3000-□
35	100 - 1,000	SFRH1-3500-□
40	100 - 1,000	SFRH1-4000-□
45	100 - 1,000	SFRH1-4500-□

Ø	Lengths	Part No.
50	100 - 1,000	SFRH1-5000-□
55	100 - 1,000	SFRH1-5500-□
60	100 - 1,000	SFRH1-6000-□
65	100 - 1,000	SFRH1-6500-□
70	100 - 1,000	SFRH1-7000-□
80	100 - 1,000	SFRH1-8000-□
90	100 - 1,000	SFRH1-9000-□
100	100 - 1,000	SFRH1-10000-□

Available from stock
Upon request/check availability

iglidur® round bars | Product range

Tough, wear-resistant, durable - iglidur® H3 New



Order key for round bars

Type	Dimensions [mm]
SF R H3-30 00-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

Bar stock

Round bar

iglidur® material

Outer Ø

Inner Ø

Length

Dimensions [mm]

Ø	Lengths	Part No.
10	100 - 1,000	SFRH3-1000-□
15	100 - 1,000	SFRH3-1500-□
20	100 - 1,000	SFRH3-2000-□
25	100 - 1,000	SFRH3-2500-□
30	100 - 1,000	SFRH3-3000-□
35	100 - 1,000	SFRH3-3500-□
40	100 - 1,000	SFRH3-4000-□
45	100 - 1,000	SFRH3-4500-□

Ø	Lengths	Part No.
50	100 - 1,000	SFRH3-5000-□
55	100 - 1,000	SFRH3-5500-□
60	100 - 1,000	SFRH3-6000-□
65	100 - 1,000	SFRH3-6500-□
70	100 - 1,000	SFRH3-7000-□
80	100 - 1,000	SFRH3-8000-□
90	100 - 1,000	SFRH3-9000-□
100	100 - 1,000	SFRH3-10000-□

For extreme environmental conditions - iglidur® C500



Order key for round bars

Type	Dimensions [mm]
SF R C500-30 00-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

Bar stock

Round bar

iglidur® material

Outer Ø

Inner Ø

Length

Dimensions [mm]

Ø	Lengths	Part No.
10	100 - 1,000	SFRC500-1000-□
15	100 - 1,000	SFRC500-1500-□
20	100 - 1,000	SFRC500-2000-□
25	100 - 1,000	SFRC500-2500-□
30	100 - 1,000	SFRC500-3000-□
35	100 - 1,000	SFRC500-3500-□
40	100 - 1,000	SFRC500-4000-□
45	100 - 1,000	SFRC500-4500-□

Ø	Lengths	Part No.
50	100 - 1,000	SFRC500-5000-□
55	100 - 1,000	SFRC500-5500-□
60	100 - 1,000	SFRC500-6000-□
65	100 - 1,000	SFRC500-6500-□
70	100 - 1,000	SFRC500-7000-□
80	100 - 1,000	SFRC500-8000-□
90	100 - 1,000	SFRC500-9000-□
100	100 - 1,000	SFRC500-10000-□

igus® constantly expands its range of available materials and dimensions. Please contact us in case the required diameter is not available.

The all-rounder for food, FDA and EU 10/2011-compliant - iglidur® A181



Order key for round bars

Type	Dimensions [mm]
SF R A181-3000-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.
Bar stock	Round bar
iglidur® material	Outer Ø
	Inner Ø
	Length

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRA181-1000-□
15	100-1,000	SFRA181-1500-□
20	100-1,000	SFRA181-2000-□
25	100-1,000	SFRA181-2500-□
30	100-1,000	SFRA181-3000-□
35	100-1,000	SFRA181-3500-□
40	100-1,000	SFRA181-4000-□
45	100-1,000	SFRA181-4500-□

Ø	Lengths	Part No.
50	100-1,000	SFRA181-5000-□
55	100-1,000	SFRA181-5500-□
60	100-1,000	SFRA181-6000-□
65	100-1,000	SFRA181-6500-□
70	100-1,000	SFRA181-7000-□
80	100-1,000	SFRA181-8000-□
90	100-1,000	SFRA181-9000-□
100	100-1,000	SFRA181-10000-□

The FDA-compliant endurance runner at higher temperatures - iglidur® A350



Order key for round bars

Type	Dimensions [mm]
SF R A350-3000-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.
Bar stock	Round bar
iglidur® material	Outer Ø
	Inner Ø
	Length

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRA350-1000-□
15	100-1,000	SFRA350-1500-□
20	100-1,000	SFRA350-2000-□
25	100-1,000	SFRA350-2500-□
30	100-1,000	SFRA350-3000-□
35	100-1,000	SFRA350-3500-□
40	100-1,000	SFRA350-4000-□
45	100-1,000	SFRA350-4500-□

Ø	Lengths	Part No.
50	100-1,000	SFRA350-5000-□
55	100-1,000	SFRA350-5500-□
60	100-1,000	SFRA350-6000-□
65	100-1,000	SFRA350-6500-□
70	100-1,000	SFRA350-7000-□
80	100-1,000	SFRA350-8000-□
90	100-1,000	SFRA350-9000-□
100	100-1,000	SFRA350-10000-□

Available from stock
Upon request/check availability

The media and temperature specialist in the food sector - iglidur® A500



Order key for round bars

Type	Dimensions [mm]
SF R A500-3000-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.
Bar stock	Round bar
iglidur® material	Outer Ø
	Inner Ø
	Length

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRA500-1000-□
15	100-1,000	SFRA500-1500-□
20	100-1,000	SFRA500-2000-□
25	100-1,000	SFRA500-2500-□
30	100-1,000	SFRA500-3000-□
35	100-1,000	SFRA500-3500-□
40	100-1,000	SFRA500-4000-□
45	100-1,000	SFRA500-4500-□

Ø	Lengths	Part No.
50	100-1,000	SFRA500-5000-□
55	100-1,000	SFRA500-5500-□
60	100-1,000	SFRA500-6000-□
65	100-1,000	SFRA500-6500-□
70	100-1,000	SFRA500-7000-□
80	100-1,000	SFRA500-8000-□
90	100-1,000	SFRA500-9000-□
100	100-1,000	SFRA500-10000-□

The all-rounder for food - iglidur® A180



Order key for round bars

Type	Dimensions [mm]
SF R A180-3000-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.
Bar stock	Round bar
iglidur® material	Outer Ø
	Inner Ø
	Length

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRA180-1000-□
15	100-1,000	SFRA180-1500-□
20	100-1,000	SFRA180-2000-□
25	100-1,000	SFRA180-2500-□
30	100-1,000	SFRA180-3000-□
35	100-1,000	SFRA180-3500-□
40	100-1,000	SFRA180-4000-□
45	100-1,000	SFRA180-4500-□

Ø	Lengths	Part No.
50	100-1,000	SFRA180-5000-□
55	100-1,000	SFRA180-5500-□
60	100-1,000	SFRA180-6000-□
65	100-1,000	SFRA180-6500-□
70	100-1,000	SFRA180-7000-□
80	100-1,000	SFRA180-8000-□
90	100-1,000	SFRA180-9000-□
100	100-1,000	SFRA180-10000-□

igus® constantly expands its range of available materials and dimensions. Please contact us in case the required diameter is not available.

iglidur® round bars | Product range

"Food" material with high media resistance up to +90°C - iglidur® A160



Order key for round bars

Type	Dimensions [mm]
SF R A160-30 00-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRA160-1000-□
15	100-1,000	SFRA160-1500-□
20	100-1,000	SFRA160-2000-□
25	100-1,000	SFRA160-2500-□
30	100-1,000	SFRA160-3000-□
35	100-1,000	SFRA160-3500-□
40	100-1,000	SFRA160-4000-□
45	100-1,000	SFRA160-4500-□

Ø	Lengths	Part No.
50	100-1,000	SFRA160-5000-□
55	100-1,000	SFRA160-5500-□
60	100-1,000	SFRA160-6000-□
65	100-1,000	SFRA160-6500-□
70	100-1,000	SFRA160-7000-□
80	100-1,000	SFRA160-8000-□
90	100-1,000	SFRA160-9000-□
100	100-1,000	SFRA160-10000-□

Wear-resistant in the food industry - iglidur® A250 **New**



Order key for round bars

Type	Dimensions [mm]
SF R A250-30 00-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRA250-1000-□
15	100-1,000	SFRA250-1500-□
20	100-1,000	SFRA250-2000-□
25	100-1,000	SFRA250-2500-□
30	100-1,000	SFRA250-3000-□
35	100-1,000	SFRA250-3500-□
40	100-1,000	SFRA250-4000-□
45	100-1,000	SFRA250-4500-□

Ø	Lengths	Part No.
50	100-1,000	SFRA250-5000-□
55	100-1,000	SFRA250-5500-□
60	100-1,000	SFRA250-6000-□
65	100-1,000	SFRA250-6500-□
70	100-1,000	SFRA250-7000-□
80	100-1,000	SFRA250-8000-□
90	100-1,000	SFRA250-9000-□
100	100-1,000	SFRA250-10000-□

Available from stock
Upon request/check availability

iglidur® round bars | Product range

For high temperatures up to +250°C - iglidur® AC500 **New**



Order key for round bars

Type	Dimensions [mm]
SF R AC500-30 00-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRAC500-1000-□
15	100-1,000	SFRAC500-1500-□
20	100-1,000	SFRAC500-2000-□
25	100-1,000	SFRAC500-2500-□
30	100-1,000	SFRAC500-3000-□
35	100-1,000	SFRAC500-3500-□
40	100-1,000	SFRAC500-4000-□
45	100-1,000	SFRAC500-4500-□

Ø	Lengths	Part No.
50	100-1,000	SFRAC500-5000-□
55	100-1,000	SFRAC500-5500-□
60	100-1,000	SFRAC500-6000-□
65	100-1,000	SFRAC500-6500-□
70	100-1,000	SFRAC500-7000-□
80	100-1,000	SFRAC500-8000-□
90	100-1,000	SFRAC500-9000-□
100	100-1,000	SFRAC500-10000-□

For contact with drinking water - iglidur® UW160



Order key for round bars

Type	Dimensions [mm]
SF R UW160-30 00-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRUW160-1000-□
15	100-1,000	SFRUW160-1500-□
20	100-1,000	SFRUW160-2000-□
25	100-1,000	SFRUW160-2500-□
30	100-1,000	SFRUW160-3000-□
35	100-1,000	SFRUW160-3500-□
40	100-1,000	SFRUW160-4000-□
45	100-1,000	SFRUW160-4500-□

Ø	Lengths	Part No.
50	100-1,000	SFRUW160-5000-□
55	100-1,000	SFRUW160-5500-□
60	100-1,000	SFRUW160-6000-□
65	100-1,000	SFRUW160-6500-□
70	100-1,000	SFRUW160-7000-□
80	100-1,000	SFRUW160-8000-□
90	100-1,000	SFRUW160-9000-□
100	100-1,000	SFRUW160-10000-□

igus® constantly expands its range of available materials and dimensions. Please contact us in case the required diameter is not available.

iglidur® round bars | Product range

For the tobacco industry - iglidur® T220



Order key for round bars

Type	Dimensions [mm]
SF R T220-3000-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRT220-1000-□
15	100-1,000	SFRT220-1500-□
20	100-1,000	SFRT220-2000-□
25	100-1,000	SFRT220-2500-□
30	100-1,000	SFRT220-3000-□
35	100-1,000	SFRT220-3500-□
40	100-1,000	SFRT220-4000-□
45	100-1,000	SFRT220-4500-□

Versatile and cost-effective - iglidur® J2



Order key for round bars

Type	Dimensions [mm]
SF R J2-3000-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRJ2-1000-□
15	100-1,000	SFRJ2-1500-□
20	100-1,000	SFRJ2-2000-□
25	100-1,000	SFRJ2-2500-□
30	100-1,000	SFRJ2-3000-□
35	100-1,000	SFRJ2-3500-□
40	100-1,000	SFRJ2-4000-□
45	100-1,000	SFRJ2-4500-□

Available from stock
Upon request/check availability

iglidur® round bars | Product range

For the rail industry, flame-retardant, complies with DIN EN 45545 HL3, R22/R23 - iglidur® RW370



Order key for round bars

Type	Dimensions [mm]
SF R RW370-3000-□	In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Ø	Lengths	Part No.
10	100-1,000	SFRRW370-1000-□
15	100-1,000	SFRRW370-1500-□
20	100-1,000	SFRRW370-2000-□
25	100-1,000	SFRRW370-2500-□
30	100-1,000	SFRRW370-3000-□
35	100-1,000	SFRRW370-3500-□
40	100-1,000	SFRRW370-4000-□
45	100-1,000	SFRRW370-4500-□

Ø	Lengths	Part No.
50	100-1,000	SFRRW370-5000-□
55	100-1,000	SFRRW370-5500-□
60	100-1,000	SFRRW370-6000-□
65	100-1,000	SFRRW370-6500-□
70	100-1,000	SFRRW370-7000-□
80	100-1,000	SFRRW370-8000-□
90	100-1,000	SFRRW370-9000-□
100	100-1,000	SFRRW370-10000-□

igus® constantly expands its range of available materials and dimensions. Please contact us in case the required diameter is not available.



 Order key hollow bars

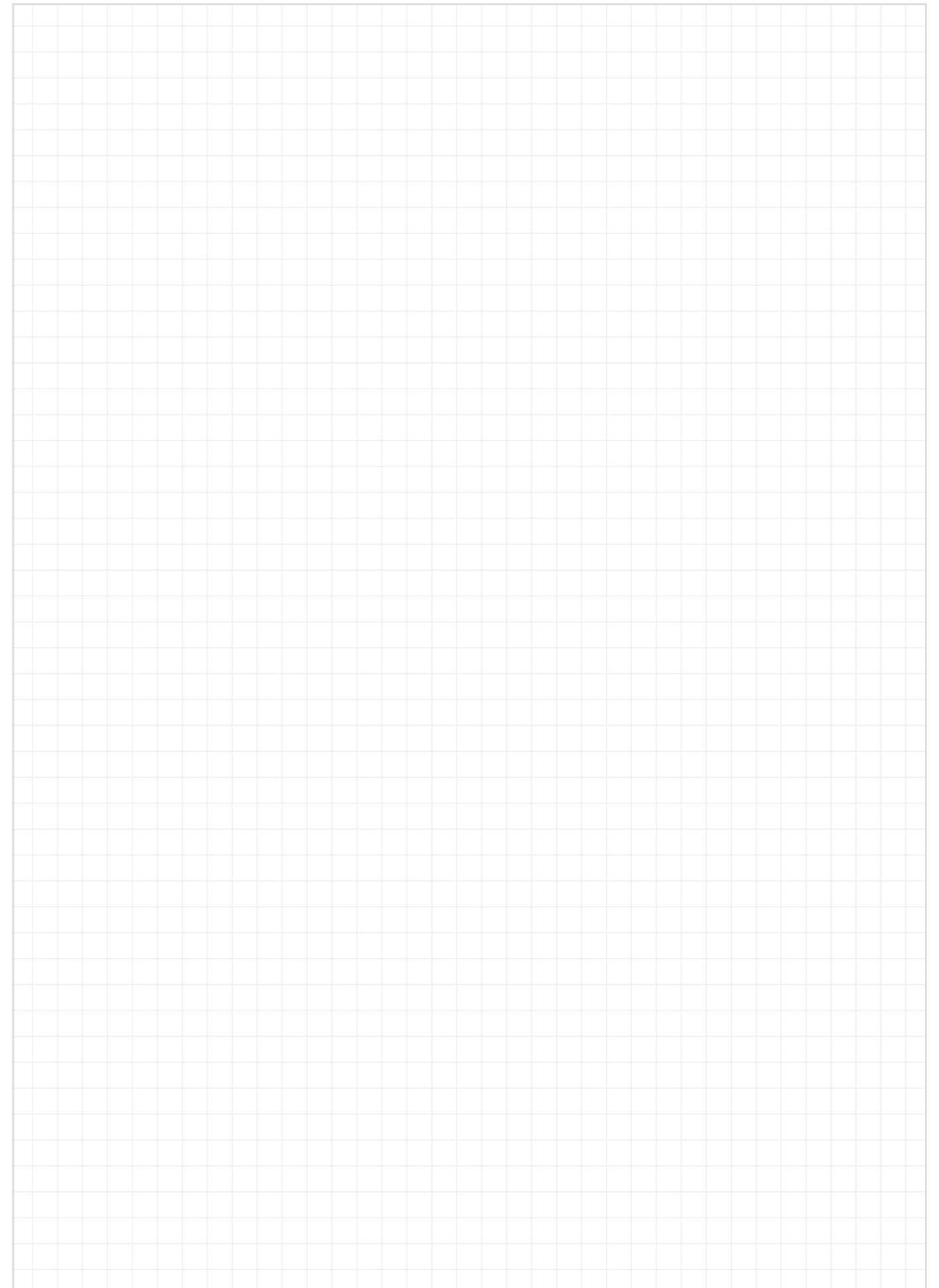
Type	Dimensions [mm]
SFTJ-11070-□	
Bar stock	Outer Ø
Hollow bar	Inner Ø
iglidur® material	Length

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

Inner Ø	Inner diameter tolerance	Outer Ø	Outer diameter tolerance	Length	Part No.
70	-2.0 / -6.5	110	+1.5 / +4.5	100 - 1,000	SFTJ-11070-□
70	-2.0 / -6.5	125	+1.5 / +4.5	100 - 1,000	SFTJ-12570-□
100	-2.0 / -6.5	150	+1.5 / +4.5	100 - 1,000	SFTJ-150100-□

Notes



The versatile endurance runner - iglidur® J

Plastic sheets (thickness: 2 to 6mm) and plates (thickness: 10 to 40mm) made from iglidur® can be supplied as blanks or finished parts and are offered in up to seven standard sizes.

Order key

Type Dimensions [mm]

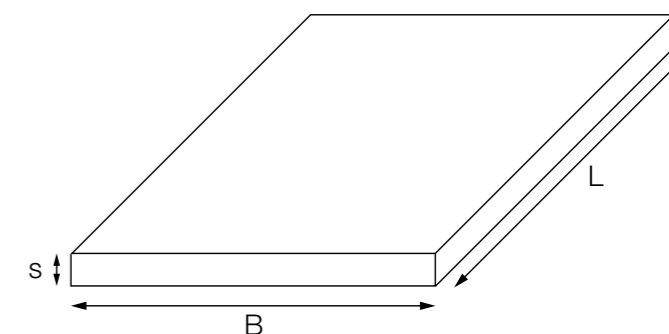
SF P J - □ - 500 - 240



Dimensions (L x W)	Material thickness s	Part No.
500x240	02 / 03 / 04 / 05 / 06	SFPJ-□-500-240
500x500	02 / 03 / 04 / 05 / 06	SFPJ-□-500-500
1,000x500	02 / 03 / 04 / 05 / 06	SFPJ-□-1000-500
1,000x1,000	02 / 03 / 04 / 05 / 06	SFPJ-□-1000-1000

Tolerances	
Material thickness	Tolerance
02	+0.050 +0.150
03	+0.200 +0.200
04	+0.200 +0.200
05	+0.250 +0.250
06	+0.250 +0.250

The versatile endurance runner - iglidur® J



Dimensions (L x W)	Material thickness s	Part No.
500x300	10 / 15 / 20 / 25 / 30 / 40	SFPJ-□-500-300
500x610	10 / 15 / 20 / 25 / 30 / 40	SFPJ-□-500-610
1,000x610	10 / 15 / 20 / 25 / 30 / 40	SFPJ-□-1000-610

Tolerances	
Material thickness	Tolerance
10	+0.200 +1.100
15	+0.300 +1.500
20	+0.300 +1.500
25	+0.300 +1.500
30	+0.500 +2.500
40	+0.500 +2.500

Extremely wear-resistant in black - iglidur® JB



Dimensions (L x W)	Material thickness s	Part No.
500x300	10 / 25	SFPJB-□-500-300
500x610	10 / 25	SFPJB-□-500-610
1,000x610	10 / 25	SFPJB-□-1000-610

Tolerances	
Material thickness	Tolerance
10	+0.200 +1.100
25	+0.300 +1.500

The FDA-compliant endurance runner at higher temperatures - iglidur® A350



Order key

Type Dimensions [mm]

SF P A350-□-500-300



Dimensions (L x W)	Material thickness s	Part No.
500x300	15 / 20 / 25 / 30	SFPA350-□-500-300
500x610	15 / 20 / 25 / 30	SFPA350-□-500-610
1,000x610	15 / 20 / 25 / 30	SFPA350-□-1000-610

Tolerances	
Material thickness	Tolerance
15	+0.300 +1.500
20	+0.300 +1.500
25	+0.300 +1.500
30	+0.500 +2.500

FDA and EU 10/2011-compliant - iglidur® A160



Dimensions (L x W)	Material thickness s	Part No.
500x300	10 / 20	SFPA160-□-500-300
500x610	10 / 20	SFPA160-□-500-610
1,000x610	10 / 20	SFPA160-□-1000-610

Tolerances	
Material thickness	Tolerance
10	+0.200 +1.100
20	+0.300 +1.500

FDA-compliant - iglidur® A180



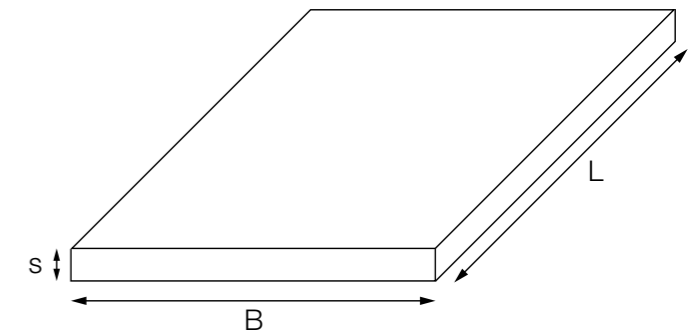
Dimensions (L x W)	Material thickness s	Part No.
500x300	10 / 20	SFPA180-□-500-300
500x610	10 / 20	SFPA180-□-500-610
1,000x610	10 / 20	SFPA180-□-1000-610

Tolerances	
Material thickness	Tolerance
10	+0.200 +1.100
20	+0.300 +1.500

EN 06/2023



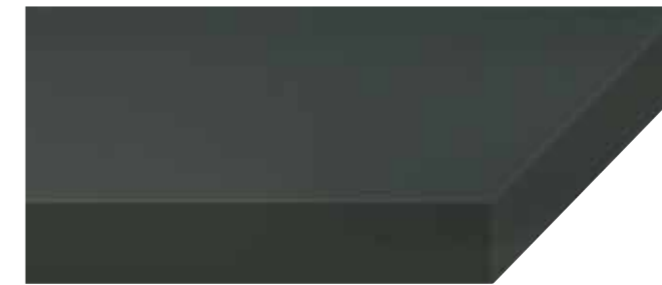
Impact-resistant, strong and media-resistant - RN326



Dimensions (L x W)	Material thickness s	Part No.
500x300	15	SFPRN326-□-500-300
500x610	15	SFPRN326-□-500-610
1,000x610	15	SFPRN326-□-1000-610

Tolerances	
Material thickness	Tolerance
15	+0.300 +1.500

With a low coefficient of friction - iglidur® B160 **New**



Dimensions (L x W)	Material thickness s	Part No.
500x300	40	SFPB160-□-500-300
500x610	40	SFPB160-□-500-610
1,000x610	40	SFPB160-□-1000-610

Tolerances	
Material thickness	Tolerance
40	+0.500 +2.500

Cost-effective and wear-resistant - iglidur® RN44 **New**



Dimensions (L x W)	Material thickness s	Part No.
1,000x610	45	SFPRN44-□-1000-610

Tolerances	
Material thickness	Tolerance
45	+0.500 +2.500

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Solve wear problems quickly with iglidur® plate strips

Order key for plate strips



Type	Dimensions [mm]
SF P	□-15-160-□
Bar stock	iglidur® material
Plate	Material thickness
	Width
	Length

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

Dimensions [mm]

iglidur® material	Material thickness	Material thickness	Width	Part No.
	Øs	Tolerance		
A500	15	+0.300 +1.500	160	SFPA500-15-160-□
A500	30	+0.500 +2.500	160	SFPA500-30-160-□
A500	50	+0.500 +2.500	160	SFPA500-50-160-□
AD500	06	+0.200 +0.700	160	SFPAD500-06-160-□ New
AD500	10	+0.200 +1.100	160	SFPAD500-10-160-□ New
C500	15	+0.300 +1.500	160	SFPC500-15-160-□
E7	30	+0.500 +2.500	160	SFPE7-30-160-□
HSD350	50	+0.500 +2.500	160	SFPHSD350-50-160-□
J350	15	+0.300 +1.500	160	SFPJ350-15-160-□
J4	15	+0.300 +1.500	160	SFPJ4-15-160-□
J4	30	+0.500 +2.500	160	SFPJ4-30-160-□
J4	50	+0.500 +2.500	160	SFPJ4-50-160-□
RW370	15	+0.300 +1.500	160	SFPRW370-15-160-□
W300	15	+0.300 +1.500	160	SFPW-15-160-□
X	15	+0.300 +1.500	160	SFPX-15-160-□

i iglus® constantly expands its range of available materials and dimensions. Please contact us in case the required diameter is not available.

Processing information for iglidur® bar stock

General information for achieving good results when processing iglidur® bar stock:

- Use tools made from high-speed steels (HSS) and hard metal (HM)
- Always ensure the tools are extremely sharp and in perfect condition
- In view of the far greater thermal expansion compared to metals and the dimensional

changes caused by absorbed water, larger production tolerances are required for plastics than for metal parts

- To reduce any retrospective warping as a result of machining stresses, if large material volumes are to be machined, interim tempering should be used before the refined finishing stage

	Sawing	Turning	Milling	Drilling
Tool made of	HM with alternate teeth or trapezoidal flat teeth	HSS	HSS	HSS
Clearance angle	5-30°	2-10°	2-30°	3-16°
Rake angle	0-15°	0-8°	0-15°	5-30°
Tooth pitch	2-14 mm	-	-	-
Setting angle	-	45-60°	-	-
Tip angle	-	-	-	90-130°
Cutting speed	max. 300 m/min.	100-500m/min.	80-500m/min.	20-200m/min.
Feed rate	-	0.05-0.5mm/rpm	0.02-0.3mm/rpm	

Table: General processing information

Machining guidelines

	Unit	iglidur® material							
		A160, B160, W160, E7, RN326, RN289	J, J2, J4, JB, A180, A181, J200, R, RN44	J260	W300 M250 A250	P210 T220	A350 J350	H1 H3	X A500 C500 AC500 AD500
Turning									
Clearance angle	[°]	6-10	6-8	5-10	6-10	5-10	6	6	6
Rake angle	[°]	0-5	0-5	6-8	0-5	0-5	0	0-5	0-5
Setting angle	[°]	45-60	45-60	45-60	45-60	45-60	45-60	45-60	45-60
Cutting speed	[m/min]	250-500	300-600	300	250-500	300-400	350-400	250-500	250-500
Feed rate	[mm/rpm]	0.1-0.5	0.1-0.4	0.1-0.5	0.1-0.5	0.2-0.4	0.1-0.3	0.1-0.5	0.1-0.5
Milling									
Number of teeth		Z1-Z2	Z1-Z2	Z1-Z2	Z1-Z2	Z1-Z2	Z1-Z2	Z1-Z2	Z1-Z2
Cutting speed	[m/min]	250-500	300	300	250-500	300	250-500	250-500	250-500
Feed rate	[mm/rpm]	0.1-0.45	0.15-0.5	0.15-0.4	0.1-0.45	0.15-0.5	0.1-0.45	0.1-0.45	0.1-0.45
Drilling									
Number of teeth		Z2	Z2	Z2	Z2	Z2	Z2	Z2	Z2
Angle of twist	[°]	25	25	25	25	25	25	25	25
Acute angle	[°]	90	90	90	90	90	90	90	90
Cutting speed	[m/min]	50-150	50-150	50-100	50-150	50-100	20-80	50-200	50-200
Feed rate	[mm/rpm]	0.1-0.3	0.1-0.3	0.2-0.3	0.1-0.3	0.2-0.3	0.1-0.3	0.1-0.3	0.1-0.3

Processing information for iglidur® bar stock

igus® subjects its bar stock to a material-specific tempering process so that they remain dimensionally stable during and after machining. All bar stock from 25mm thickness are tempered, regardless of the respective iglidur® material. For materials that are suitable for use at high temperatures such as iglidur® X, C500 or A500, all bar stock are basically tempered.

What is tempering and how does it work?

During tempering, a material is subjected to a heat treatment for a prolonged period, during which the melting temperature is not exceeded. The selected temperature and the duration of the treatment vary depending on the material, material thickness and shape. It is crucial that the material is completely heated up and cooled slowly and evenly to room temperature after the holding time of the temperature. Tempering is particularly effective only with a slow cooling.

Tempering specifications for iglidur® materials

	iglidur® material					
	E7, RN326, A160, B160, RN289	J, J2, J3, J4, J200, JB, A180, A181, B180, RN44	J260	W300, M250, P210, T220, A250	A350, J350, H1, H3	X A500 C500 AC500 AD500
Heat up	+80°C	+120°C	1 hour per cm diameter to			
			+130°C	+180°C	+200°C	+220°C
Maximum temperature/ holding time	+80°C	+120°C	1 hour per cm diameter at			
			+130°C	+180°C	+200°C	+220°C
Cooling down	Cool down to maximum +20°C per hour until room temperature					

CNC online service and tolerance check

Clear user interface and new features

Improved calculation, ease of use and new features. Multi-part upload, graduated pricing, feasibility analysis and a much simplified order processing.

Express options:

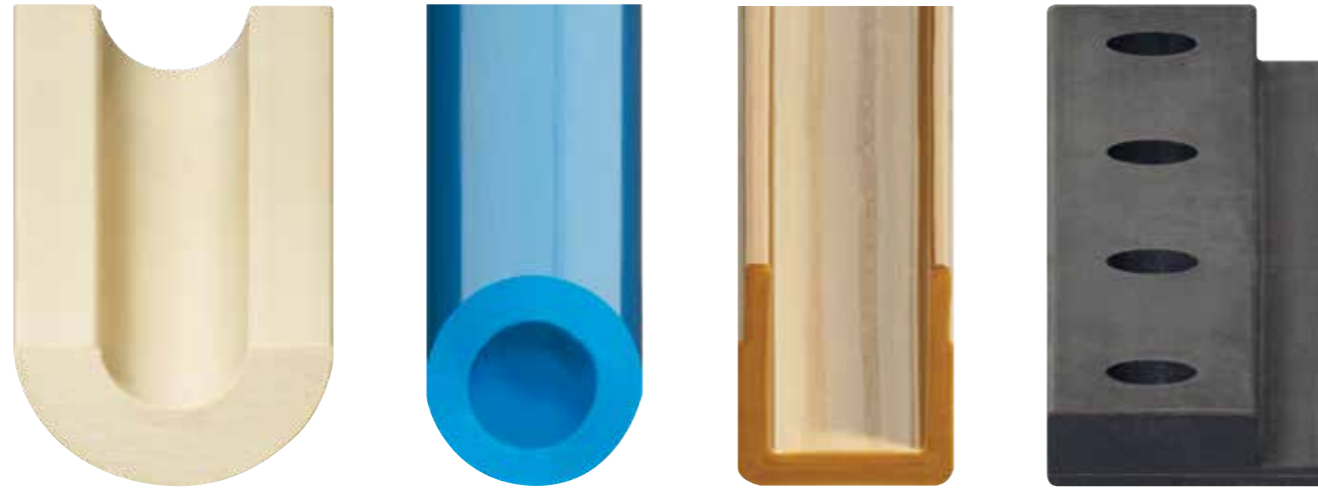
- CNC online service: up to ten machined parts ready to ship in three days
- IBD iglidur® bearing designer: up to 500 bearings, thrust washers or knife edge rollers ready to ship in five days



For general design tips and guidance on our manufacturing processes, please refer to the Design Guide.

► www.igus.eu/cnc-design-guide

Wear-resistant industrial profiles



With igus® you have the option of having industrial profiles manufactured according to individual specifications. Various profile geometries can be implemented according to your specifications and requirements. Choose from a variety of our wear-resistant iglidur® materials.

Due to its properties, every material becomes suitable for a specific application. For example, there is suitable bar stock for almost every application from high-temperature to seawater, from food to automotive. All iglidur® materials have been specially developed for dynamic applications, and have low coefficient of friction and wear.

Simply request your individual profile from us now. We would be happy to advise you on your project.

► www.igus.eu/profile-enquiry



iglidur® tribo-tape liners

Choice of 4 materials

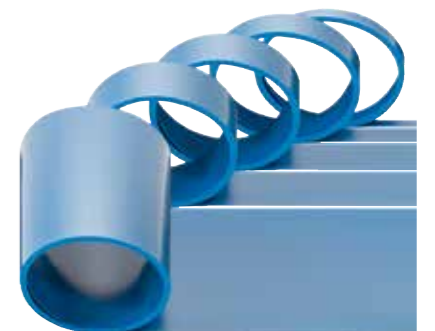
Wear-resistant

With and without adhesive back

Standard widths from stock

Special widths to your specifications

Special cuts according to drawings





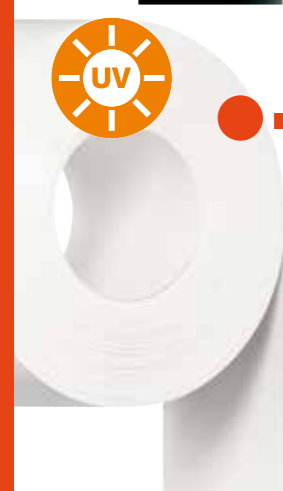
Material: iglidur® A160

- Low coefficient of friction
- Wear resistance: ++
- Up to +90°C
- ▶ **Page 786**



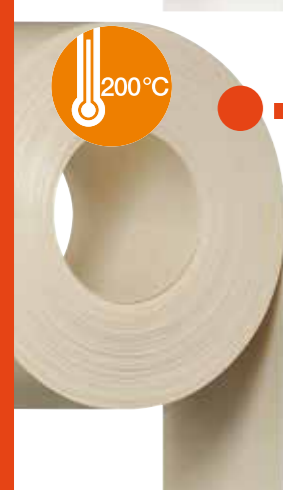
Material: iglidur® B160

- For use in visible areas
- Wear resistance: ++++
- Up to +90°C
- ▶ **Page 787**



Material: iglidur® W160

- White and UV-stabilised
- Wear resistance: +++
- Up to +90°C
- ▶ **Page 788**



Material: iglidur® V400

- High media resistance
- Wear resistance: +++++
- Up to +200°C (with adhesive back, see product page)
- ▶ **Page 789**

Easy-to-fit protection for all surfaces: iglidur® tribo-tape

igus® tribo-tape is designed for lining areas of wear and where frequent maintenance is required, an example is for machine beds etc. At just 0.5mm thick (0.71mm including the adhesive back), the space requirement is extremely low. The ease of use (the tape can simply be cut using scissors) and optional self-adhesive back open up almost endless possibilities for the product's use.

- Lubrication and maintenance-free
- Easy to cut
- For compact areas
- With or without self-adhesive back
- Standard widths from stock
- Individual required widths in continuous range from 10-500mm

Available from stock
Detailed information about delivery time online.

Operation temperatures:
iglidur® A160: -50°C up to +90°C
iglidur® B160: -50°C up to +90°C
iglidur® W160: -50°C up to +90°C
iglidur® V400: -50°C up to +200°C
 Differing temperatures with adhesive back (see product page)

Product film
▶ www.igus.eu/tape-film

Cutting service
Whether as a specially tailored by-the-metre product or freely designed pre-cut parts: We produce your required product in required width from our iglidur® tribo-tape. Please contact us.
▶ www.igus.eu/tape-cut-to-size

Material properties

General properties	Unit	iglidur® A160	iglidur® B160	iglidur® W160	iglidur® V400	Testing method
Density	g/cm³	1.00	1.00	0.95	1.51	
Colour		blue	black	white	cream-white	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.1	0.1	0.1	0.1	DIN 53495
Max. moisture absorption	% weight	0.1	0.1	0.1	0.2	
Coefficient of sliding friction, dynamic against steel	μ	0.09-0.19	0.13-0.20	0.12-0.20	0.15-0.20	
Mechanical properties						
Flexural modulus	MPa	1,151	852	799	4,500	DIN 53457
Flexural strength at +20°C	MPa	19	14	14	95	DIN 53452
Shore D hardness		60	59	58	74	DIN 53505
Physical and thermal properties						
Max. long-term application temperature	°C	+90	+90	+90	+200	
Max. short-term application temperature	°C	+100	+100	+100	+240	
Min. application temperature	°C	-50	-50	-50	-50	
Thermal conductivity	W/m · K	0.30	0.32	0.30	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	11	11	11	3	DIN 53752
Electrical properties						
Specific transitional resistance	Ωcm	> 10 ¹²	> 10 ¹²	> 10 ¹²	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	> 10 ¹²	> 10 ¹²	> 10 ¹²	DIN 53482

Table: Material properties table

Chemical resistance (at +20°C)

Chemical resistance	iglidur® A160	iglidur® B160	iglidur® W160	iglidur® V400
Alcohols	+	+	+	+
Hydrocarbons	+	+	+	+
Greases, oils without additives	+	+	+	+
Fuels	+ to 0	+ to 0	+ to 0	+
Diluted acids	+	+	+	+
Strong acids	+	+	+	+
Diluted alkalines	+	+	+	+
Strong alkalines	+	+	+	-
Radiation Resistance [Gy] up to	1 · 10 ⁵	1 · 10 ⁵	1 · 10 ⁵	2 · 10 ⁴

+ resistant 0 conditionally resistant - not resistant

All data given at room temperature [+20°C]

Unknown factors, temperatures, wet weather and many other ambient conditions impair the adhesion. It is therefore essential that the use of iglidur® tribo-tape be tested under realistic conditions. We are happy to provide you with samples for tests. All recommendations, as well as suggestions regarding use that are made, are based on experience gained in practice and tests where the basic conditions cannot be applied to other conditions of use. They are therefore not binding and do not release the buyer from the obligation to carry out his/her own tests. We always recommend application-specific tests under real conditions of use.

iglidur®	A160	B160	W160	V400
Descriptive technical specifications				
Wear resistance at +23°C				
Wear resistance at +90°C				
Wear resistance at +150°C				
Slide property				
Wear resistance under water				
Media resistance				
Resistant to edge pressures				
Resistant to shock and impact loads				
Dirt resistance				
Price index ¹⁴¹⁾				
For high loads (>60MPa)				
Electrically conductive				
Approvals and standards				
FDA-compliant	●			
EU 10/2011-compliant	●			
Fire class in accordance with UL-94	HB	HB	HB	V-0
Mould test DIN EN ISO 846				
Fogging DIN 75201-B				
Availabilities / variants				
Bar stock, round material	●			
Bar stock, hollow bars				
Bar stock, sheet				
Bar stock, plate	●			
Bar stock, plate strips				
Machined made from bar stocks	●			

¹⁴¹⁾ Price index Low price category Medium price category Highest price category

iglidur®	Unit	A160	B160	W160	V400
General properties					
Density	[g/cm ³]	1.00	1.00	0.95	1.51
Colour					
Max. moisture absorption at +23 °C/50% r.h.	[% weight]	0.1	0.1	0.1	0.1
Max. moisture absorption	[% weight]	0.1	0.1	0.1	0.2
Coefficient of sliding friction, dynamic against steel	[μ]	0.09-0.19	0.13-0.20	0.12-0.20	0.15-0.20
Mechanical properties					
Flexural modulus	[MPa]	1,151	852	799	4,500
Flexural strength at +20°C	[MPa]	19	14	14	95
Compressive strength	[MPa]	37	37	37	47
Max. permissible surface pressure at +20°C	[MPa]	15	11	11	45
Shore D hardness		60	59	58	74
Physical and thermal properties					
Max. continuous operating temperature	[°C]	+90	+90	+90	+200
Max. short-term operating temperature	[°C]	+100	+100	+100	+240
Min. continuous operating temperature	[°C]	-50	-50	-50	-50
Thermal conductivity	[W/m · K]	0.30	0.32	0.30	0.24
Coefficient of thermal expansion at +23°C	[K ⁻¹ · 10 ⁻⁵]	11	11	11	3
Electrical properties					
Specific contact resistance	[Ωcm]	> 10 ¹²	> 10 ¹²	> 10 ¹²	> 10 ¹²
Surface resistance	[Ω]	> 10 ¹²	> 10 ¹²	> 10 ¹²	> 10 ¹²
Page		786	787	788	789



Order key

Type	Dimensions [mm]	Options
A160 - T - 005 - 0020 - G		
iglidur® material	Tape	Thickness
		Width
		Adhesive back

G = Optional self-adhesive back

i tribo-tape from iglidur® A160 with adhesive back
Temperature -40°C up to +90°C

The low-cost iglidur® A160 tribo-tape has high wear resistance compared to similar, thin plastic products.

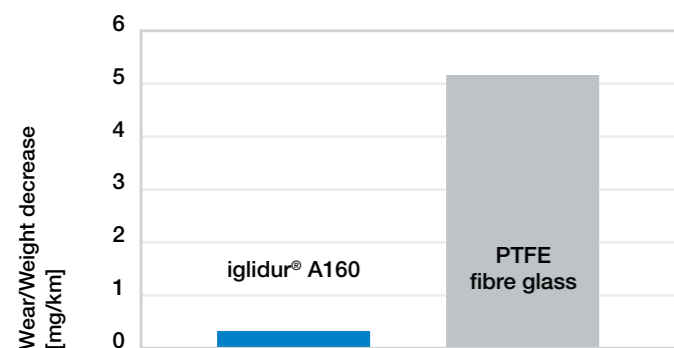
Dimensions [mm]

Material thickness without adhesive back	Material thickness with adhesive back	Width ±1.0	Part No. without adhesive back	Part No. with adhesive back
±0.1	±0.121			
0.5	0.71	20	A160-T-005-0020	A160-T-005-0020-G
0.5	0.71	50	A160-T-005-0050	A160-T-005-0050-G
0.5	0.71	100	A160-T-005-0100	A160-T-005-0100-G
0.5	0.71	500	A160-T-005-0500	A160-T-005-0500-G
1.0	1.21	500	A160-T-010-0500	A160-T-010-0500-G

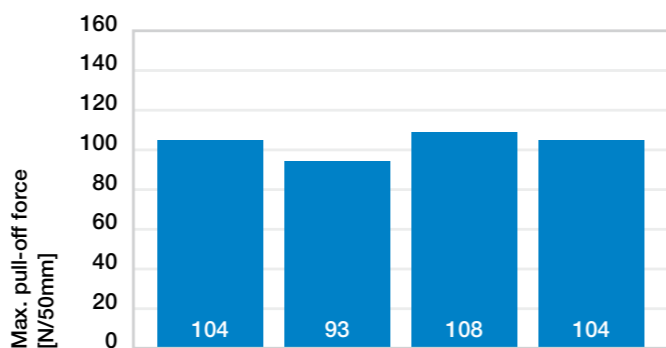
Cuts from standard widths are manufactured with excess dimensions.

i Individual widths upon request
Continuously from 10-500mm

✂ Cutting service
Design tribo-tape flexibly
► www.igus.eu/tape-cut-to-size



Linear wear against stainless steel pin (AISI 303)
F = 10N, v = 9,600mm/min



180° pull-off test after various exposure conditions



This material complies with EU directive 10/2011 and also with FDA (Food and Drug Administration) specifications for repeated contact with food.



long life

Order key

Type	Dimensions [mm]	Options
B160 - T - 005 - 0020 - G		
iglidur® material	Tape	Thickness
		Width
		Adhesive back

G = Optional self-adhesive back

i tribo-tape from iglidur® B160 with adhesive back
Temperature -40°C up to +90°C

Especially where the iglidur® tribo-tape is a visible part, the new black option now offers even more creative freedom. In addition the wear resistance has been improved once again compared to iglidur® A160.

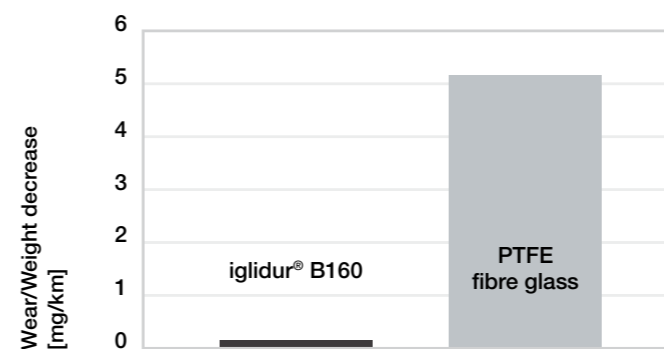
Dimensions [mm]

Material thickness without adhesive back	Material thickness with adhesive back	Width ±1.0	Part No. without adhesive back	Part No. with adhesive back
±0.1	±0.121			
0.5	0.71	20	B160-T-005-0020	B160-T-005-0020-G
0.5	0.71	50	B160-T-005-0050	B160-T-005-0050-G
0.5	0.71	100	B160-T-005-0100	B160-T-005-0100-G
0.5	0.71	500	B160-T-005-0500	B160-T-005-0500-G
1.0	1.21	500	B160-T-010-0500	B160-T-010-0500-G

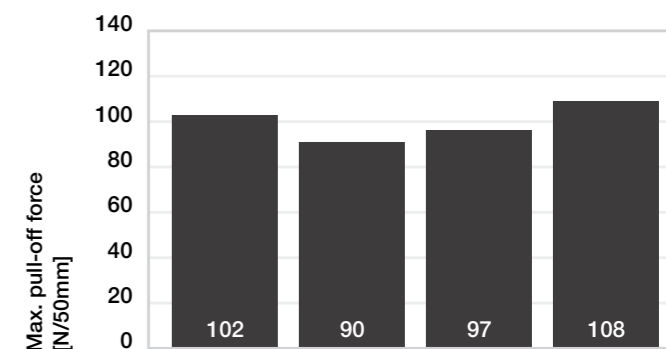
Cuts from standard widths are manufactured with excess dimensions.

i Individual widths upon request
Continuously from 10-500mm

✂ Cutting service
Design tribo-tape flexibly
► www.igus.eu/tape-cut-to-size



Linear wear against stainless steel pin (AISI 303)
F = 10N, v = 9,600mm/min



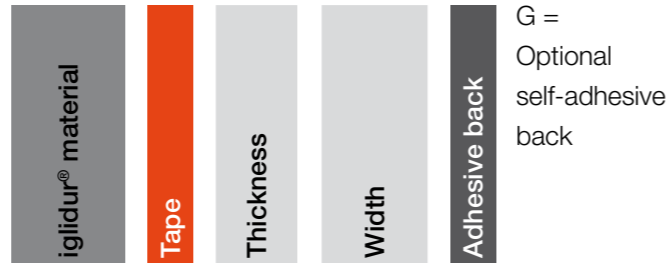
180° pull-off test after various exposure conditions



Order key

Type	Dimensions [mm]	Options
------	-----------------	---------

W160 - T - 005 - 0020 - G



With its white colour and UV-stabilised additives, iglidur® W160 tribo-tape offers even more design freedom.¹⁴⁸⁾



tribo-tape from iglidur® W160 with adhesive back
Temperature -40°C up to +90°C

Dimensions [mm]

Material thickness without adhesive back	Material thickness with adhesive back	Width ±1.0	Part No. without adhesive back	Part No. with adhesive back
±0.1	±0.121			
0.5	0.71	20	W160-T-005-0020	W160-T-005-0020-G
0.5	0.71	50	W160-T-005-0050	W160-T-005-0050-G
0.5	0.71	100	W160-T-005-0100	W160-T-005-0100-G
0.5	0.71	500	W160-T-005-0500	W160-T-005-0500-G
1.0	1.21	500	W160-T-010-0500	W160-T-010-0500-G

Cuts from standard widths are manufactured with excess dimensions.



Individual widths upon request

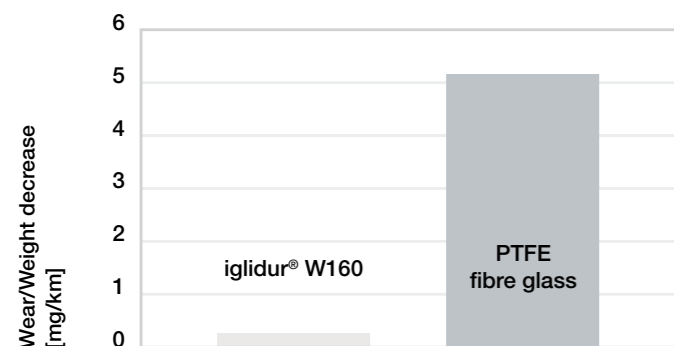
Continuously from 10-500mm



Cutting service

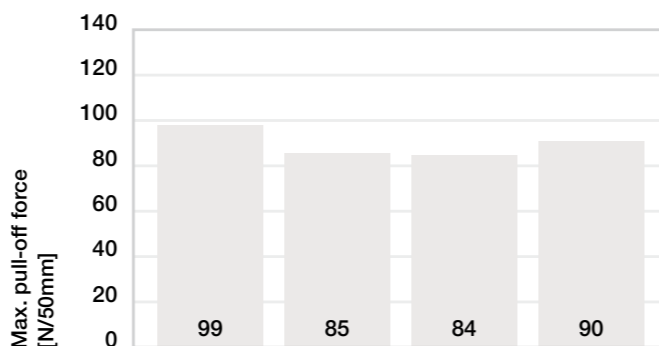
Design tribo-tape flexibly

► www.igus.eu/tape-cut-to-size



Linear wear against stainless steel pin (1.4305)

F = 10N, v = 9600mm/min



180° pull-off test after various exposure conditions

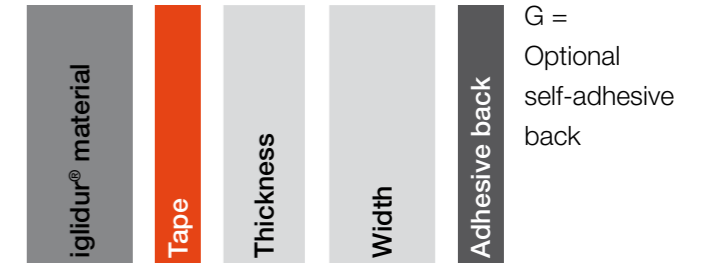
EN 06/2023



Order key

Type	Dimensions [mm]	Options
------	-----------------	---------

V400 - T - 005 - 0120 - G



iglidur® V400 tribo-tape is not only extremely wear-resistant but also extremely media and temperature-resistant. In fact, it has been proven in tests to be up to 10 times more wear-resistant than special products for machine beds.



tribo-tape from iglidur® V400 with adhesive back
Temperature -40°C up to +160°C

Dimensions [mm]

Material thickness without adhesive back	Material thickness with adhesive back	Width ±1.0	Part No. without adhesive back	Part No. with adhesive back
±0.1	±0.121			
0.5	0.71	120	V400-T-005-0120	V400-T-005-0120-G

Cuts from standard widths are manufactured with excess dimensions.



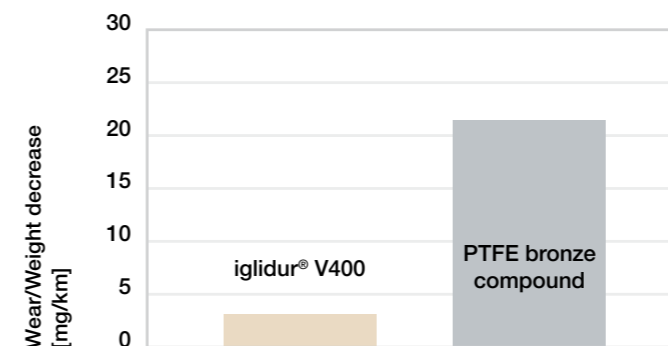
Individual widths upon request



Cutting service

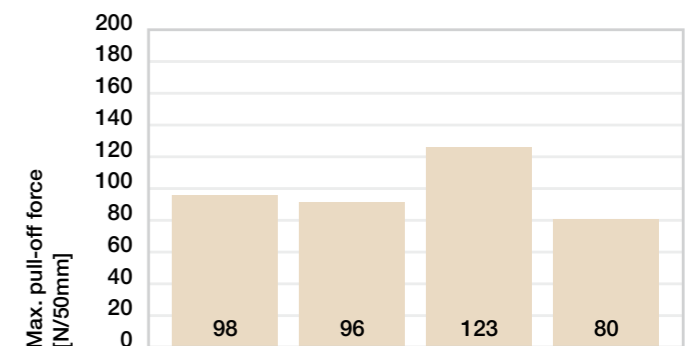
Design tribo-tape flexibly

► www.igus.eu/tape-cut-to-size



Linear wear against stainless steel pin (AISI 303)

F = 35N, v = 0.5m/min



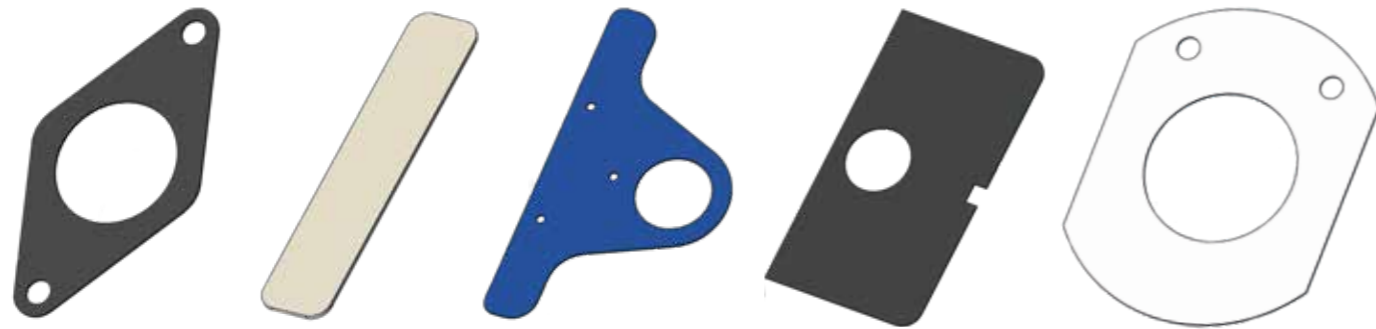
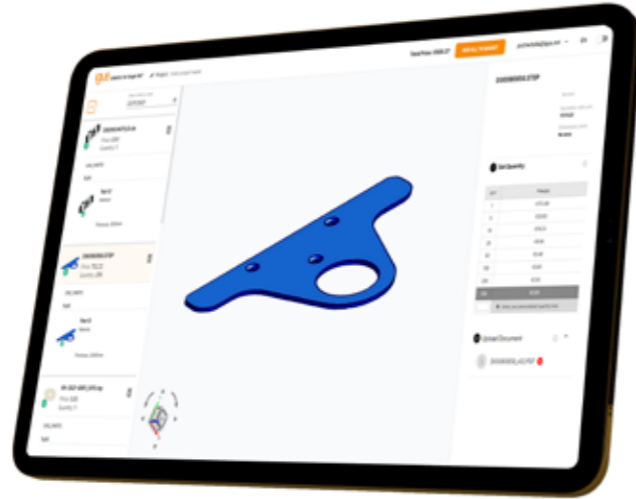
180° pull-off test after various exposure conditions

EN 06/2023



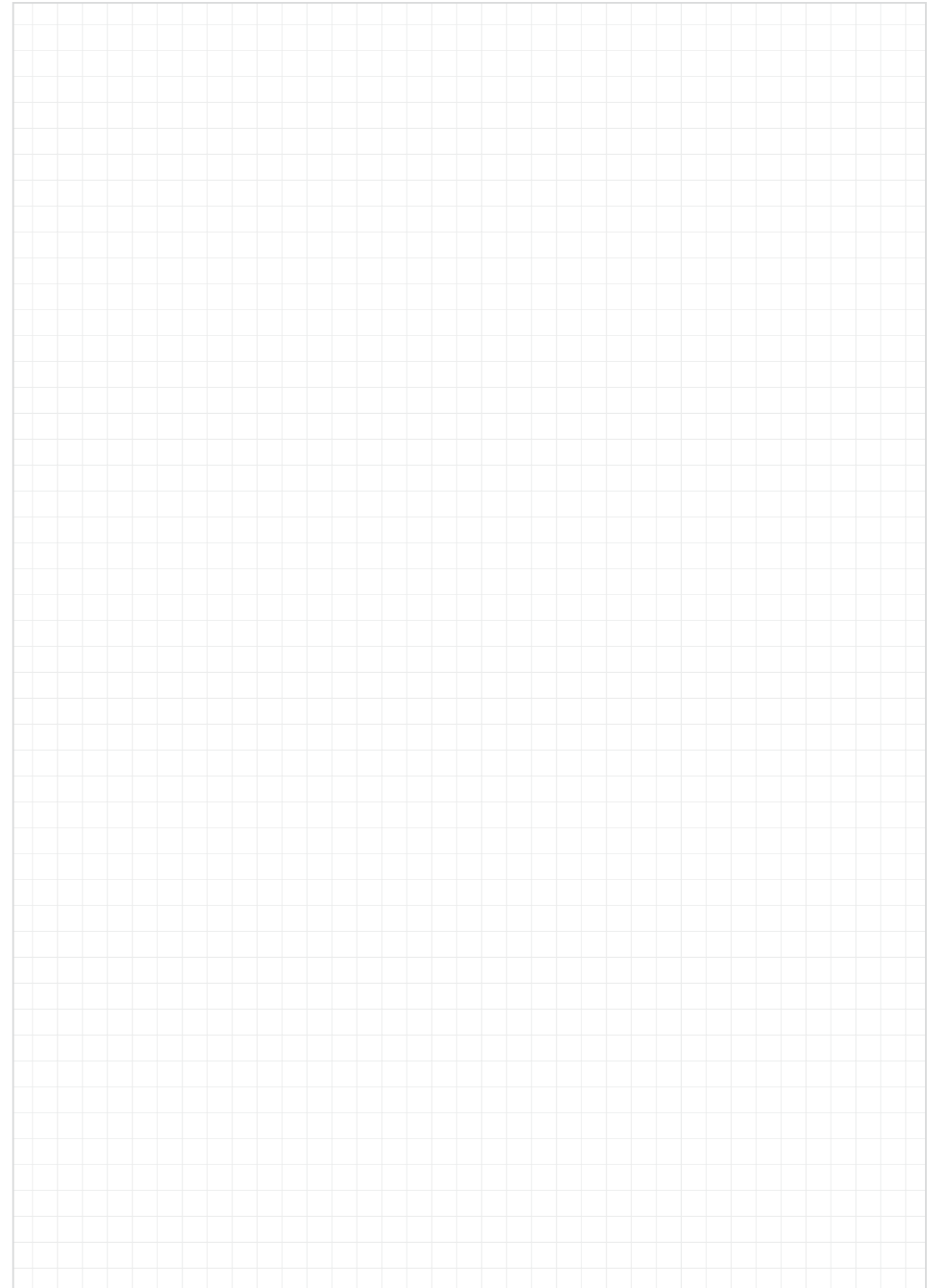
Calculate tribo-tape special parts online

Calculate plotted tribo-tape custom parts quickly and easily with our new online pricing tool.

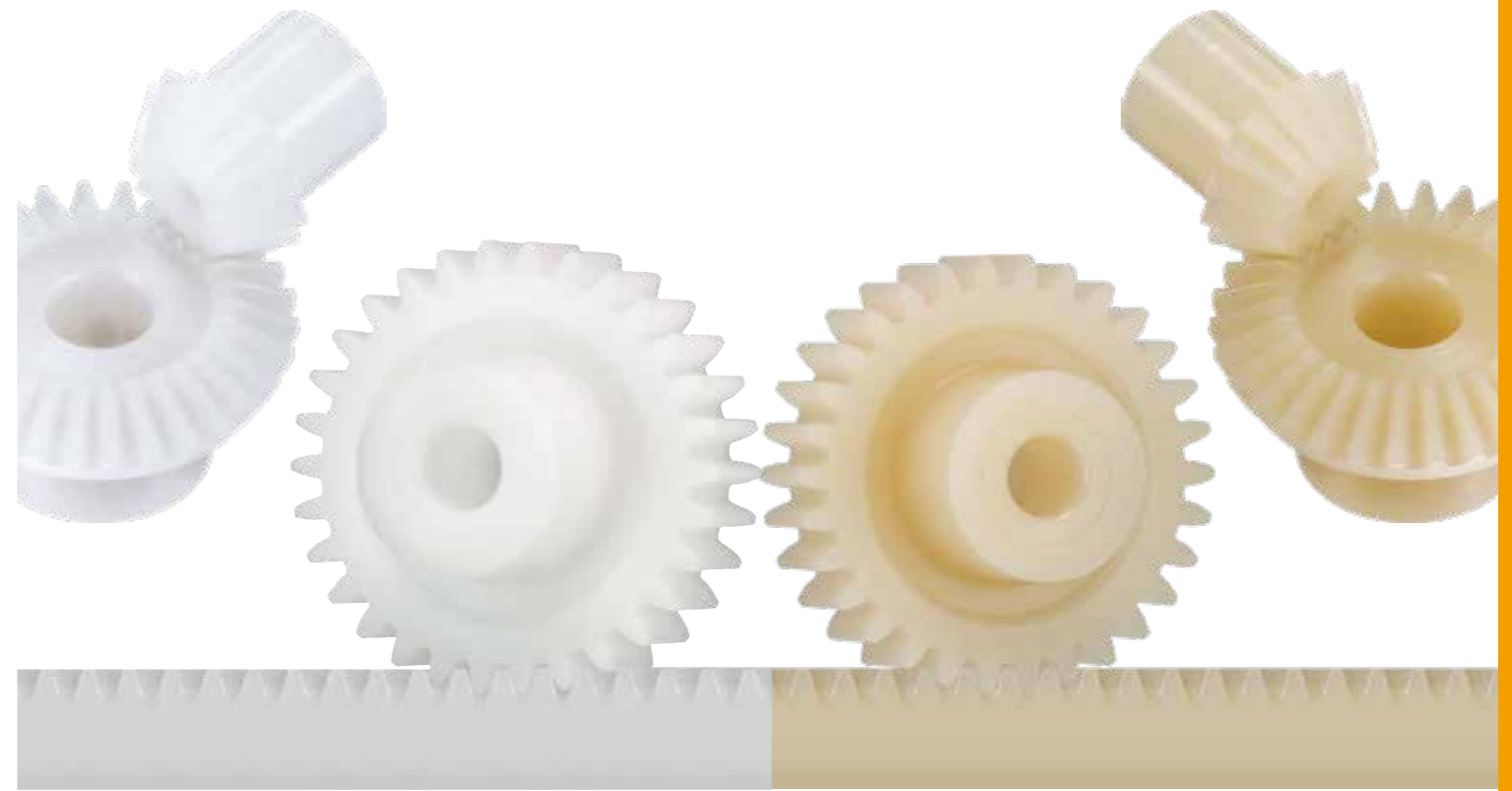


i Blanks in desired geometry
▶ www.igus.eu/tribo-tape-tool

Notes



iglidur[®]
Gears



...plastics

Lubrication-free iglidur® gears

The gears made of the tribologically optimised iglidur® high-performance polymers prove that a significantly longer service life is possible over gears made of commercially available plastics. By precisely adding reinforcing materials and solid lubricants, you can completely dispense with additional lubricants.

- Maintenance-free dry operation
- Quiet
- Corrosion-free
- Resistant to dirt

Typical application areas

- Rail industry
- Automotive industry
- Medical technology
- Food/beverage industry
- Vending machinery
- Packaging industry



Available from stock

Detailed information about delivery time online.



Price breaks online

No minimum order value. No minimum order quantity



Max. +250°C
min. -100°C



Service life calculation

► www.igus.eu/gear-expert



Post processing possible

Tolerances for plastic gears

The hole diameters d1 for cylindrical gears made of plastic are machined with reamers. It should be noted that due to the behaviour of the material, as well as temperature influences, the holes of the gears may change by 0.02-0.04. The tolerance for the bore diameter d1 is given as H10.

Gears
8 different modules
12-150 teeth
► **From page 800**

Racks
8 different modules
250mm
► **From page 816**

Gear wheels
6 transmission ratios
7 different modules
► **From page 818**

Angular gearbox
Module 1
5 transmission ratios
► **From page 820**



iguform S270 gears

- Low coefficient of friction
- Low moisture absorption
- Quiet

► **From page 800**



igutek P360 gears

- Increased wear resistance
- Good tribological specifications
- Tough

● Resistant to shock loads

► **From page 800**



iguform S270 gear racks

- Low coefficient of friction
- Low moisture absorption
- Quiet

► **From page 816**



igutek P360 gear racks

- Increased wear resistance
- Good tribological specifications
- Tough

● Resistant to shock loads

► **From page 816**



iguform S270 and igutek P360 bevel gears

- iguform S270 convinces with a low coefficient of friction and low moisture absorption.
- igutek P360 offers increased wear resistance, good tribological properties and high toughness.

► **From page 818**



iguform S270 and igutek P360 bevel gear angle gearboxes

- iguform S270 convinces with a low coefficient of friction and low moisture absorption.
- igutek P360 offers increased wear resistance, good tribological properties and high toughness.

► **From page 820**

From a single part to high-volume production of up to several millions

The expert at higher temperatures with chemical resistance



Max. +250°C
min. -100°C



Lubrication-free

iglidur® A500

- The endurance runner at higher temperatures in the food sector
- Compliant with EU Regulation 10/2011 EC
- FDA-compliant
- Temperature-resistant from -100°C to +250°C

The endurance runner with ESD conformity



Max. +140°C
min. -40°C



Lubrication-free

iglidur® F

- Electrically conductive
- High compressive strength
- Good temperature resistance
- Available in 3 hub designs

The all-rounder with FDA conformity



Max. +80°C
min. -40°C



Lubrication-free

xirodur® B180

- Low coefficient of friction
- Wear-resistant material for continuous operation
- Vibration-dampening
- Available in 3 hub designs

The cost-effective standard with low moisture absorption



Max. +90°C
min. -40°C



Lubrication-free

iguform S270

- Low coefficient of friction
- Low moisture absorption
- Quiet

The robust all-rounder with high toughness



Max. +110°C
min. -30°C



Lubrication-free

igutek P360

- Increased wear resistance
- Good tribological specifications
- Tough
- Resistant to shock loads

Technical data

		iguform S270	igutek P360	iglidur® A500	iglidur® F	xirodur® B180
General properties						
Density	[g/cm³]	1.41	1.24	1.28	1.25	1.41
Colour		white	light beige	brown	black	white
Max. moisture absorption at +23°C and 50% relative humidity	[% weight]	0.20	0.50	0.30	1.80	0.2
Max. waterabsorption	[% weight]	0.65	2.10	0.50	8.40	0.7
Mechanical properties						
Flexural modulus	[MPa]	2,400	1,300	3,600	11,600	2,500
Flexural strength	[MPa]	65	50	140	260	68
Shore D hardness		–	–	83	84	77
Physical and thermal properties						
Max. continuous operating temperature	[°C]	+90	+110	+250	+140	+80
Max. short-term operating temperature	[°C]	+100	+130	+300	+180	+110
Min. continuous operating temperature	[°C]	-40	-30	-100	-40	-40
Electrical properties						
Specific contact resistance	[Ωcm]	> 10 ¹²	> 10 ¹³	> 10 ¹⁴	> 10 ³	> 10 ¹⁴
Surface resistance	[Ω]	> 10 ¹⁴	> 10 ¹³	> 10 ¹³	> 10 ²	> 10 ¹⁴
FDA-compliant		Possible upon request	–	●	–	●

Other materials and desired dimensions upon request

Chemicals	Resistance				
	iguform S270	igutek P360	iglidur® A500	iglidur® F	xirodur® B180
Alcohols	+	+	+	+ up to 0	+
Diluted acids	0 up to –	+	+	0 up to –	0 up to –
Diluted alkalines	+	+	+	+	+
Fuels	+	+	+	+	+
Greases, oils without additives	+	+	+	+	+
Strong acids	–	–	+	–	–
Strong alkalines	+ up to 0	+ up to 0	+	+ up to 0	+ up to 0

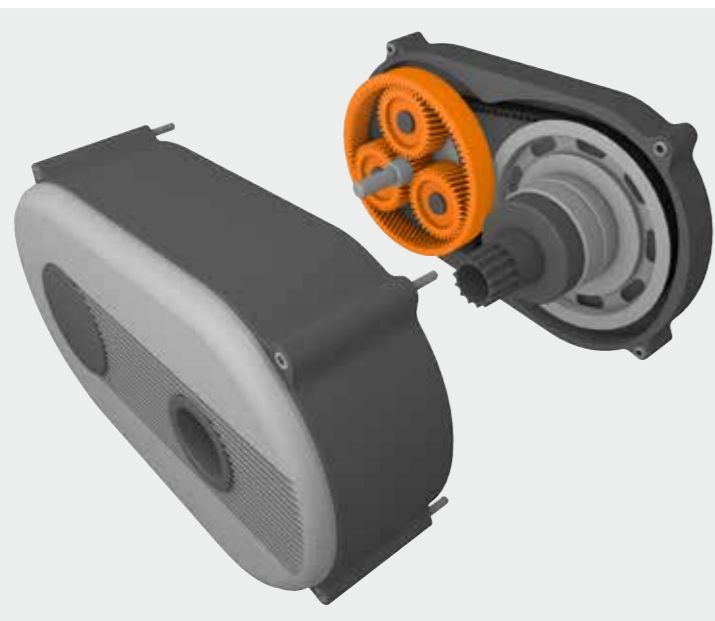
+ resistant 0 conditionally resistant – unstable All data at room temperature [+20°C]

Further information on chemicals can be found in the shop ► www.igus.eu/gear-shop

Gears in actuators

The application areas are diverse, actuators can be found in all areas of the vehicle. Through the innovative formulations of the iglidur® high-performance plastics, we achieve smoother operation, lower torque and thus lower power consumption in the drive unit with improved material properties.

The aim is to eliminate the greases used in the assembly process. This is to prevent failures due to missing or incorrectly dosed grease. The manufacturing process of an actuator is simplified and less expensive.



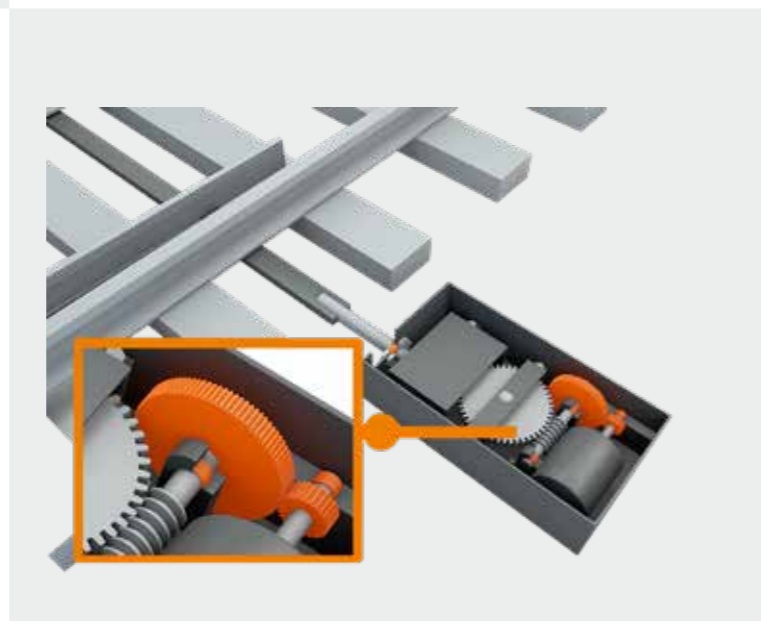
Gears in planetary systems

The requirements for eBikes are high, especially the planetary gear located in the drive unit which must transmit high torque. For example, with cargo bikes this load is particularly high.

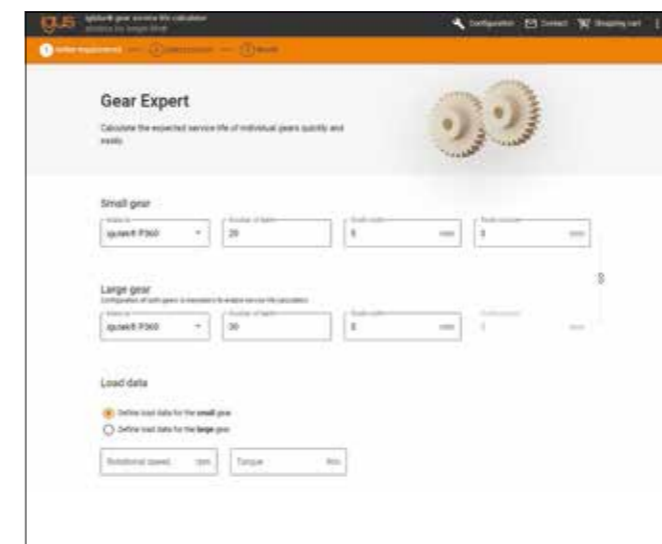
The gears used here made of the iglidur® high-performance plastics convince with a long service life. Depending on the requirement, it is our goal to find the suitable material for the required parameters together with our customers. Other aspects such as noise emissions to be avoided also play an important role for us.

Gears in a railway switch

The metal gears used in railway switches require the use of external lubricants. As a result, regular maintenance has to be carried out, costing both time and money. There is a risk that inadequate lubrication can lead to failures. With the help of 3D-printed gears made of iglidur® i3, the downtime is reduced, as they have very good emergency operation properties and can be used without external lubricants. Another advantage is that the iglidur® gears are corrosion-resistant.



iglidur® gear expert





Gear service life calculator

Enter the application parameters of your gear and calculate the expected service life with just a few clicks.

 www.igus.eu/gear-expert

Gear/rack configurator

Gear configurator online for single and double gears from 8 teeth. No CAD software or knowledge required.

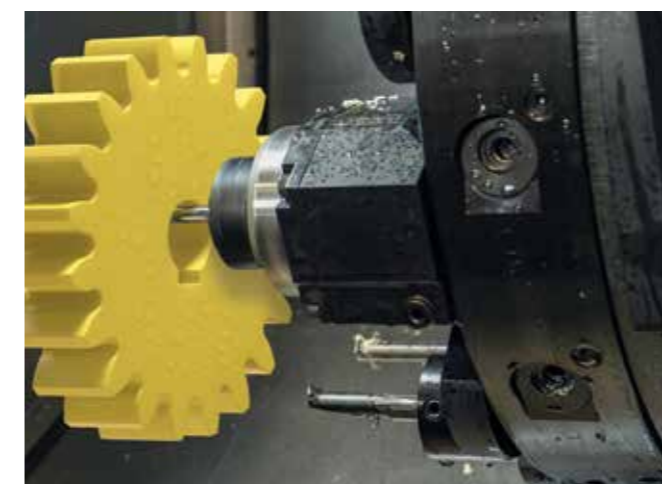
 www.igus.eu/gear-configurator
 www.igus.eu/gear-rack



Special parts

Do you need gears with special geometries? We will be happy to work with you to find the right manufacturing process and the right material for your project. From a single part to high-volume production of up to several millions.

 www.igus.eu/gear-special-parts



Post-processing

Our standard gears can be individually adapted to your requirements, e.g.:

- Hole diameter
- Hub design (key, D-Cut, etc.)
- Cross holes, grooves
- Thread
- ...

www.igus.eu/gears



iguform S270



igutek P360

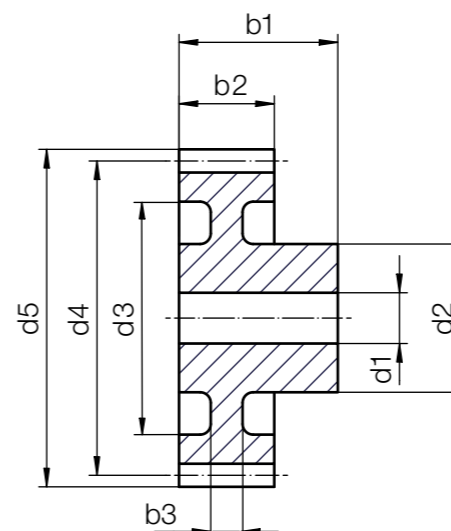
- Low coefficient of friction
- Low moisture absorption
- Quiet

- Increased wear resistance
- Good tribological specifications
- Tough
- Resistant to shock loads

Technical data

Module	Number of teeth	Helix angle [°]	Hub design
0.5	12	0	Round
0.5	13	0	Round
0.5	14	0	Round
0.5	15	0	Round
0.5	16	0	Round
0.5	17	0	Round
0.5	18	0	Round
0.5	19	0	Round
0.5	20	0	Round
0.5	21	0	Round
0.5	22	0	Round
0.5	23	0	Round
0.5	24	0	Round
0.5	25	0	Round
0.5	26	0	Round
0.5	27	0	Round
0.5	28	0	Round
0.5	30	0	Round
0.5	32	0	Round
0.5	35	0	Round
0.5	36	0	Round
0.5	38	0	Round
0.5	40	0	Round
0.5	42	0	Round

iguform S270 and igutek P360 are available in over 300 variants and customisable according to your requirements



Order key

Part number

G M-ST-050-012-00-020-R

Material	Gear	Metric	Spur gear	Module	Number of teeth	Helix angle	Hole diameter	Hub design round
	S270							
	P360							

S270 Low coefficient of friction
P360 Good tribological specifications

Dimensions [mm]

d1 H10	d5	b2	d4	b1	d2	b3	d3	Part No.
2	7.0	3	6.0	7	4.0	3.0	-	G M-ST-050-012-00-020-R
2	7.5	3	6.5	7	4.0	3.0	-	G M-ST-050-013-00-020-R
2	8.0	3	7.0	7	5.0	3.0	-	G M-ST-050-014-00-020-R
3	8.5	3	7.5	10	6.0	3.0	-	G M-ST-050-015-00-030-R
3	9.0	3	8.0	10	6.0	3.0	-	G M-ST-050-016-00-030-R
3	9.5	3	8.5	10	6.0	3.0	-	G M-ST-050-017-00-030-R
4	10.0	3	9.0	10	7.8	3.0	-	G M-ST-050-018-00-040-R
4	10.5	3	9.5	10	7.8	3.0	-	G M-ST-050-019-00-040-R
4	11.0	3	10.0	10	7.9	3.0	-	G M-ST-050-020-00-040-R
4	11.5	3	10.5	10	8.0	3.0	-	G M-ST-050-021-00-040-R
4	12.0	3	11.0	10	10.0	3.0	-	G M-ST-050-022-00-040-R
4	12.5	3	11.5	10	9.9	3.0	-	G M-ST-050-023-00-040-R
4	13.0	3	12.0	10	9.9	3.0	-	G M-ST-050-024-00-040-R
4	13.5	3	12.5	10	9.9	3.0	-	G M-ST-050-025-00-040-R
4	14.0	3	13.0	10	9.9	3.0	-	G M-ST-050-026-00-040-R
4	14.5	3	13.5	10	9.9	3.0	-	G M-ST-050-027-00-040-R
4	15.0	3	14.0	10	10.0	3.0	-	G M-ST-050-028-00-040-R
4	16.0	3	15.0	10	11.9	3.0	-	G M-ST-050-030-00-040-R
4	17.0	3	16.0	10	12.0	3.0	-	G M-ST-050-032-00-040-R
4	18.5	3	17.5	10	12.0	3.0	-	G M-ST-050-035-00-040-R
4	19.0	3	18.0	10	11.9	3.0	-	G M-ST-050-036-00-040-R
4	20.0	3	19.0	10	12.0	3.0	-	G M-ST-050-038-00-040-R
4	21.0	3	20.0	10	12.0	2.0	14.8	G M-ST-050-040-00-040-R
4	22.0	3	21.0	10	12.15	2.0	17.0	G M-ST-050-042-00-040-R



Order example:

S270GM-ST-050-012-00-020-R: material iguform S270, G gear, M metric, -ST spur gear, -050 module 0.5, -012 number of teeth 12, -00 helix angle 0°, -020 hole diameter Ø2mm, -R hub design round

Technical data

Module	Number of teeth	Helix angle [°]	Hub design
0.5	45	0	Round
0.5	48	0	Round
0.5	50	0	Round
0.5	52	0	Round
0.5	54	0	Round
0.5	55	0	Round
0.5	56	0	Round
0.5	60	0	Round
0.5	64	0	Round
0.5	65	0	Round
0.5	70	0	Round
0.5	72	0	Round
0.5	75	0	Round
0.5	80	0	Round
0.5	90	0	Round
0.5	96	0	Round
0.5	100	0	Round
0.5	120	0	Round
0.7	12	0	Round
0.7	13	0	Round
0.7	14	0	Round
0.7	15	0	Round
0.7	16	0	Round
0.7	17	0	Round
0.7	18	0	Round
0.7	19	0	Round
0.7	20	0	Round
0.7	21	0	Round
0.7	22	0	Round
0.7	23	0	Round
0.7	24	0	Round
0.7	25	0	Round
0.7	26	0	Round
0.7	27	0	Round
0.7	28	0	Round
0.7	30	0	Round
0.7	32	0	Round
0.7	35	0	Round
0.7	36	0	Round
0.7	38	0	Round
0.7	40	0	Round
0.7	42	0	Round
0.7	45	0	Round
0.7	48	0	Round

Dimensions [mm]

d1 H10	d5	b2	d4	b1	d2	b3	d3	Part No.
4	23.5	3	22.5	10	12.15	2.0	18.0	GM-ST-050-045-00-040-R
6	25.0	3	24.0	10	15.0	2.0	19.0	GM-ST-050-048-00-060-R
6	26.0	3	25.0	10	15.0	2.0	20.0	GM-ST-050-050-00-060-R
6	27.0	3	26.0	10	15.0	2.0	21.0	GM-ST-050-052-00-060-R
6	28.0	3	27.0	10	15.0	2.0	21.0	GM-ST-050-054-00-060-R
6	28.5	3	27.5	10	15.0	2.0	23.0	GM-ST-050-055-00-060-R
6	29.0	3	28.0	10	15.0	2.0	23.0	GM-ST-050-056-00-060-R
6	31.0	3	30.0	10	15.0	2.0	23.0	GM-ST-050-060-00-060-R
6	33.0	3	32.0	10	15.0	2.0	23.0	GM-ST-050-064-00-060-R
6	33.5	3	32.5	10	15.0	2.0	23.0	GM-ST-050-065-00-060-R
6	36.0	3	35.0	10	15.0	2.0	29.0	GM-ST-050-070-00-060-R
6	37.0	3	36.0	10	15.0	2.0	30.0	GM-ST-050-072-00-060-R
6	38.5	3	37.5	10	15.0	2.0	33.0	GM-ST-050-075-00-060-R
6	41.0	3	40.0	10	15.0	2.0	33.0	GM-ST-050-080-00-060-R
6	46.0	3	45.0	10	15.0	2.0	39.0	GM-ST-050-090-00-060-R
6	49.0	3	48.0	10	15.0	2.0	42.0	GM-ST-050-096-00-060-R
6	51.0	3	50.0	10	15.0	2.0	44.0	GM-ST-050-100-00-060-R
6	61.0	3	60.0	10	15.0	2.0	54.0	GM-ST-050-120-00-060-R
3	9.8	6	8.4	15	6.0	6.0	-	GM-ST-070-012-00-030-R
3	10.5	6	9.1	15	6.0	6.0	-	GM-ST-070-013-00-030-R
3	11.2	6	9.8	15	6.0	6.0	-	GM-ST-070-014-00-030-R
3	11.9	6	10.5	15	6.0	6.0	-	GM-ST-070-015-00-030-R
4	12.6	6	11.2	15	9.0	6.0	-	GM-ST-070-016-00-040-R
4	13.3	6	11.9	15	9.0	6.0	-	GM-ST-070-017-00-040-R
4	14.0	6	12.6	15	9.0	6.0	-	GM-ST-070-018-00-040-R
4	14.7	6	13.3	15	9.0	6.0	-	GM-ST-070-019-00-040-R
4	15.4	6	14.0	15	9.0	6.0	-	GM-ST-070-020-00-040-R
4	16.1	6	14.7	15	9.0	6.0	-	GM-ST-070-021-00-040-R
4	16.8	6	15.4	15	9.0	6.0	-	GM-ST-070-022-00-040-R
4	17.5	6	16.1	15	9.0	6.0	-	GM-ST-070-023-00-040-R
4	18.2	6	16.8	15	9.0	3.0	13.0	GM-ST-070-024-00-040-R
6	18.9	6	17.5	15	9.0	3.0	13.0	GM-ST-070-025-00-060-R
6	19.6	6	18.2	15	9.0	3.0	13.0	GM-ST-070-026-00-060-R
6	20.3	6	18.9	15	9.0	3.0	13.0	GM-ST-070-027-00-060-R
6	21.0	6	19.6	15	9.0	3.0	13.0	GM-ST-070-028-00-060-R
6	22.4	6	21.0	15	12.0	3.0	16.0	GM-ST-070-030-00-060-R
6	23.8	6	22.4	15	12.0	3.0	16.0	GM-ST-070-032-00-060-R
6	25.9	6	24.5	15	15.0	3.0	18.5	GM-ST-070-035-00-060-R
6	26.6	6	25.2	15	15.0	3.0	18.5	GM-ST-070-036-00-060-R
6	28.0	6	26.6	15	15.0	3.0	21.0	GM-ST-070-038-00-060-R
6	29.4	6	28.0	15	15.0	3.0	21.0	GM-ST-070-040-00-060-R
6	30.8	6	29.4	15	18.0	2.0	24.0	GM-ST-070-042-00-060-R
6	32.9	6	31.5	15	18.0	2.0	24.0	GM-ST-070-045-00-060-R
8	35.0	6	33.6	15	18.0	2.0	24.0	GM-ST-070-048-00-080-R

iguform S270 and igutek P360 are available in over 300 variants and customisable according to your requirements

Dimension description see page 801

Technical data

Module	Number of teeth	Helix angle [°]	Hub design
0.7	50	0	Round
0.7	52	0	Round
0.7	54	0	Round
0.7	55	0	Round
0.7	56	0	Round
0.7	60	0	Round
0.7	64	0	Round
0.7	65	0	Round
0.7	70	0	Round
0.7	72	0	Round
0.7	75	0	Round
0.7	80	0	Round
0.7	90	0	Round
0.7	96	0	Round
0.7	100	0	Round
0.7	120	0	Round
1.0	12	0	Round
1.0	13	0	Round
1.0	14	0	Round
1.0	15	0	Round
1.0	16	0	Round
1.0	17	0	Round
1.0	18	0	Round
1.0	19	0	Round
1.0	20	0	Round
1.0	21	0	Round
1.0	22	0	Round
1.0	23	0	Round
1.0	24	0	Round
1.0	25	0	Round
1.0	26	0	Round
1.0	27	0	Round
1.0	28	0	Round
1.0	30	0	Round
1.0	32	0	Round
1.0	35	0	Round
1.0	36	0	Round
1.0	38	0	Round
1.0	40	0	Round
1.0	42	0	Round
1.0	45	0	Round
1.0	48	0	Round
1.0	50	0	Round
1.0	52	0	Round

Dimensions [mm]

d1 H10	d5	b2	d4	b1	d2	b3	d3	Part No.
8	36.4	6	35.0	15	18.0	2.0	27.5	GM-ST-070-050-00-080-R
8	37.8	6	36.4	15	18.0	2.0	27.5	GM-ST-070-052-00-080-R
8	39.2	6	37.8	15	18.0	2.0	27.5	GM-ST-070-054-00-080-R
8	39.9	6	38.5	15	18.0	2.0	30.0	GM-ST-070-055-00-080-R
8	40.6	6	39.2	15	18.0	2.0	30.0	GM-ST-070-056-00-080-R
8	43.4	6	42.0	15	18.0	2.0	30.0	GM-ST-070-060-00-080-R
8	46.2	6	44.8	15	18.0	2.0	37.0	GM-ST-070-064-00-080-R
8	46.9	6	45.5	15	18.0	2.0	37.0	GM-ST-070-065-00-080-R
8	50.4	6	49.0	15	18.0	2.0	37.0	GM-ST-070-070-00-080-R
8	51.8	6	50.4	15	18.0	2.0	37.0	GM-ST-070-072-00-080-R
10	53.9	6	52.5	15	18.0	2.0	37.0	GM-ST-070-075-00-100-R
10	57.4	6	56.0	15	21.0	2.0	46.5	GM-ST-070-080-00-100-R
10	64.4	6	63.0	15	21.0	2.0	57.0	GM-ST-070-090-00-100-R
10	68.6	6	67.2	15	21.0	2.0	57.0	GM-ST-070-096-00-100-R
10	71.4	6	70.0	15	21.0	2.0	57.0	GM-ST-070-100-00-100-R
10	85.4	6	84.0	15	21.0	2.0	77.0	GM-ST-070-120-00-100-R
4	14.0	9	12.0	17	9.0	9.0	-	GM-ST-100-012-00-040-R
4	15.0	9	13.0	17	9.0	9.0	-	GM-ST-100-013-00-040-R
4	16.0	9	14.0	17	9.0	9.0	-	GM-ST-100-014-00-040-R
4	17.0	9	15.0	17	9.0	9.0	-	GM-ST-100-015-00-040-R
4	18.0	9	16.0	17	9.0	9.0	-	GM-ST-100-016-00-040-R
4	19.0	9	17.0	17	9.0	6.0	12.0	GM-ST-100-017-00-040-R
4	20.0	9	18.0	17	9.0	6.0	13.0	GM-ST-100-018-00-040-R
4	21.0	9	19.0	17	9.0	6.0	13.0	GM-ST-100-019-00-040-R
4	22.0	9	20.0	17	9.0	6.0	13.0	GM-ST-100-020-00-040-R
5	23.0	9	21.0	17	12.0	6.0	16.0	GM-ST-100-021-00-050-R
5	24.0	9	22.0	17	12.0	6.0	16.0	GM-ST-100-022-00-050-R
5	25.0	9	23.0	17	12.0	6.0	16.0	GM-ST-100-023-00-050-R
6	26.0	9	24.0	18	15.0	6.0	18.5	GM-ST-100-024-00-060-R
6	27.0	9	25.0	18	15.0	6.0	18.5	GM-ST-100-025-00-060-R
6	28.0	9	26.0	18	15.0	6.0	18.5	GM-ST-100-026-00-060-R
6	29.0	9	27.0	18	15.0	6.0	18.5	GM-ST-100-027-00-060-R
6	30.0	9	28.0	18	15.0	6.0	21.0	GM-ST-100-028-00-060-R
6	32.0	9	30.0	18	15.0	6.0	21.0	GM-ST-100-030-00-060-R
6	34.0	9	32.0	18	18.0	4.6	23.5	GM-ST-100-032-00-060-R
8	37.0	9	35.0	18	18.0	4.6	23.5	GM-ST-100-035-00-080-R
8	38.0	9	36.0	18	18.0	4.6	27.0	GM-ST-100-036-00-080-R
8	40.0	9	38.0	18	18.0	4.6	27.0	GM-ST-100-038-00-080-R
8	42.0	9	40.0	18	18.0	4.6	27.0	GM-ST-100-040-00-080-R
8	44.0	9	42.0	18	18.0	4.6	27.0	GM-ST-100-042-00-080-R
8	47.0	9	45.0	18	18.0	4.6	36.5	GM-ST-100-045-00-080-R
8	50.0	9	48.0	18	18.0	4.6	36.5	GM-ST-100-048-00-080-R
8	52.0	9	50.0	18	18.0	4.6	36.5	GM-ST-100-050-00-080-R
8	54.0	9	52.0	18	21.0	4.6	46.0	GM-ST-100-052-00-080-R

iguform S270 and igutek P360 are available in over 300 variants and customisable according to your requirements

Dimension description see page 801

Technical data

Module	Number of teeth	Helix angle [°]	Hub design
1.0	54	0	Round
1.0	55	0	Round
1.0	56	0	Round
1.0	58	0	Round
1.0	60	0	Round
1.0	64	0	Round
1.0	65	0	Round
1.0	70	0	Round
1.0	72	0	Round
1.0	75	0	Round
1.0	80	0	Round
1.0	85	0	Round
1.0	90	0	Round
1.0	100	0	Round
1.0	110	0	Round
1.0	120	0	Round
1.0	130	0	Round
1.0	140	0	Round
1.25	12	0	Round
1.25	13	0	Round
1.25	14	0	Round
1.25	15	0	Round
1.25	16	0	Round
1.25	17	0	Round
1.25	18	0	Round
1.25	19	0	Round
1.25	20	0	Round
1.25	21	0	Round
1.25	22	0	Round
1.25	23	0	Round
1.25	24	0	Round
1.25	25	0	Round
1.25	26	0	Round
1.25	27	0	Round
1.25	28	0	Round
1.25	30	0	Round
1.25	32	0	Round
1.25	35	0	Round
1.25	36	0	Round
1.25	38	0	Round
1.25	40	0	Round
1.25	42	0	Round
1.25	45	0	Round
1.25	48	0	Round

Dimensions [mm]

d1 H10	d5	b2	d4	b1	d2	b3	d3	Part No.
8	56.0	9	54.0	18	21.0	4.6	46.0	GM-ST-100-054-00-080-R
8	57.0	9	55.0	18	21.0	4.6	46.0	GM-ST-100-055-00-080-R
8	58.0	9	56.0	18	21.0	4.6	46.0	GM-ST-100-056-00-080-R
8	60.0	9	58.0	18	21.0	4.6	46.0	GM-ST-100-058-00-080-R
8	62.0	9	60.0	18	21.0	4.6	46.0	GM-ST-100-060-00-080-R
10	66.0	9	64.0	18	21.0	4.6	56.5	GM-ST-100-064-00-100-R
10	67.0	9	65.0	18	21.0	4.6	56.5	GM-ST-100-065-00-100-R
10	72.0	9	70.0	18	21.0	4.6	56.5	GM-ST-100-070-00-100-R
10	74.0	9	72.0	18	21.0	4.6	66.0	GM-ST-100-072-00-100-R
10	77.0	9	75.0	18	21.0	4.6	66.0	GM-ST-100-075-00-100-R
10	82.0	9	80.0	18	21.0	4.6	66.0	GM-ST-100-080-00-100-R
10	87.0	9	85.0	18	21.0	4.6	66.0	GM-ST-100-085-00-100-R
10	92.0	9	90.0	18	21.0	4.6	76.0	GM-ST-100-090-00-100-R
12	102.0	9	100.0	18	24.0	4.6	86.0	GM-ST-100-100-00-120-R
12	112.0	9	110.0	18	24.0	4.6	96.0	GM-ST-100-110-00-120-R
12	122.0	9	120.0	18	24.0	4.6	105.5	GM-ST-100-120-00-120-R
12	132.0	9	130.0	18	24.0	4.6	115.0	GM-ST-100-130-00-120-R
12	142.0	9	140.0	18	24.0	4.6	125.0	GM-ST-100-140-00-120-R
5	17.5	10	15.0	19	9.0	10.0	-	GM-ST-125-012-00-050-R
5	18.75	10	16.25	19	9.0	10.0	-	GM-ST-125-013-00-050-R
5	20.0	10	17.5	19	9.0	10.0	-	GM-ST-125-014-00-050-R
5	21.25	10	18.75	19	9.0	7.0	13.0	GM-ST-125-015-00-050-R
5	22.5	10	20.0	19	9.0	7.0	13.0	GM-ST-125-016-00-050-R
5	23.75	10	21.25	19	9.0	7.0	13.0	GM-ST-125-017-00-050-R
5	25.0	10	22.5	19	12.0	7.0	16.0	GM-ST-125-018-00-050-R
5	26.25	10	23.75	19	12.0	7.0	16.0	GM-ST-125-019-00-050-R
5	27.5	10	25.0	19	12.0	7.0	16.0	GM-ST-125-020-00-050-R
6	28.75	10	26.25	19	15.0	7.0	18.5	GM-ST-125-021-00-060-R
6	30.0	10	27.5	19	15.0	7.0	18.5	GM-ST-125-022-00-060-R
6	31.25	10	28.75	19	15.0	7.0	18.5	GM-ST-125-023-00-060-R
6	32.5	10	30.0	19	15.0	7.0	21.0	GM-ST-125-024-00-060-R
6	33.75	10	31.25	19	15.0	7.0	21.0	GM-ST-125-025-00-060-R
6	35.0	10	32.5	19	18.0	5.5	23.5	GM-ST-125-026-00-060-R
6	36.25	10	33.75	19	18.0	5.5	23.5	GM-ST-125-027-00-060-R
8	37.5	10	35.0	19	18.0	5.5	23.5	GM-ST-125-028-00-080-R
8	40.0	10	37.5	19	18.0	5.5	27.0	GM-ST-125-030-00-080-R
8	42.5	10	40.0	19	18.0	5.5	27.0	GM-ST-125-032-00-080-R
8	46.25	10	43.75	19	18.0	5.5	27.0	GM-ST-125-035-00-080-R
8	47.5	10	45.0	19	18.0	5.5	36.0	GM-ST-125-036-00-080-R
8	50.0	10	47.5	19	18.0	5.5	36.0	GM-ST-125-038-00-080-R
8	52.5	10	50.0	19	18.0	5.5	36.0	GM-ST-125-040-00-080-R
8	55.0	10	52.5	19	18.0	5.5	36.0	GM-ST-125-042-00-080-R
8	58.75	10	56.25	19	21.0	5.5	46.0	GM-ST-125-045-00-080-R
8	62.5	10	60.0	19	21.0	5.5	46.0	GM-ST-125-048-00-080-R

iguform S270 and igutek P360 are available in over 300 variants and customisable according to your requirements

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Dimension description see page 801

Technical data

Module	Number of teeth	Helix angle [°]	Hub design
1.25	50	0	Round
1.25	52	0	Round
1.25	54	0	Round
1.25	55	0	Round
1.25	56	0	Round
1.25	60	0	Round
1.25	64	0	Round
1.25	65	0	Round
1.25	70	0	Round
1.25	72	0	Round
1.25	75	0	Round
1.25	80	0	Round
1.25	90	0	Round
1.25	100	0	Round
1.25	110	0	Round
1.5	12	0	Round
1.5	13	0	Round
1.5	14	0	Round
1.5	15	0	Round
1.5	16	0	Round
1.5	17	0	Round
1.5	18	0	Round
1.5	19	0	Round
1.5	20	0	Round
1.5	21	0	Round
1.5	22	0	Round
1.5	23	0	Round
1.5	24	0	Round
1.5	25	0	Round
1.5	26	0	Round
1.5	27	0	Round
1.5	28	0	Round
1.5	30	0	Round
1.5	32	0	Round
1.5	35	0	Round
1.5	36	0	Round
1.5	38	0	Round
1.5	40	0	Round
1.5	42	0	Round
1.5	43	0	Round
1.5	45	0	Round
1.5	48	0	Round
1.5	50	0	Round
1.5	52	0	Round

Dimensions [mm]

d1 H10	d5	b2	d4	b1	d2	b3	d3	Part No.
8	65.0	10	62.5	19	21.0	5.5	46.0	GM-ST-125-050-00-080-R
10	67.5	10	65.0	19	21.0	5.5	56.0	GM-ST-125-052-00-100-R
10	70.0	10	67.5	19	21.0	5.5	56.0	GM-ST-125-054-00-100-R
10	71.25	10	68.75	19	21.0	5.5	56.0	GM-ST-125-055-00-100-R
10	72.5	10	70.0	19	21.0	5.5	56.0	GM-ST-125-056-00-100-R
10	77.5	10	75.0	19	21.0	5.5	66.0	GM-ST-125-060-00-100-R
10	82.5	10	80.0	19	21.0	5.5	66.0	GM-ST-125-064-00-100-R
10	83.75	10	81.25	19	21.0	5.5	66.0	GM-ST-125-065-00-100-R
10	90.0	10	87.5	19	21.0	5.5	76.0	GM-ST-125-070-00-100-R
12	92.5	10	90.0	19	21.0	5.5	76.0	GM-ST-125-072-00-120-R
10	96.25	10	93.75	19	21.0	5.5	76.0	GM-ST-125-075-00-100-R
12	102.5	10	100.0	19	24.0	5.5	86.0	GM-ST-125-080-00-120-R
12	115.0	10	112.5	19	24.0	5.5	95.0	GM-ST-125-090-00-120-R
12	127.5	10	125.0	19	24.0	5.5	105.5	GM-ST-125-100-00-120-R
12	140.0	10	137.5	19	24.0	5.5	115.0	GM-ST-125-110-00-120-R
6	21.0	12	18.0	23	14.0	12.0	-	GM-ST-150-012-00-060-R
6	22.5	12	19.5	23	14.0	12.0	-	GM-ST-150-013-00-060-R
6	24.0	12	21.0	23	14.0	10.5	13.0	GM-ST-150-014-00-060-R
6	25.5	12	22.5	23	14.0	10.5	16.0	GM-ST-150-015-00-060-R
6	27.0	12	24.0	23	14.0	10.5	16.0	GM-ST-150-016-00-060-R
6	28.5	12	25.5	23	14.0	10.5	16.0	GM-ST-150-017-00-060-R
8	30.0	12	27.0	23	17.0	10.5	18.5	GM-ST-150-018-00-080-R
8	31.5	12	28.5	23	17.0	10.5	18.5	GM-ST-150-019-00-080-R
8	33.0	12	30.0	23	17.0	9.0	22.5	GM-ST-150-020-00-080-R
8	34.5	12	31.5	23	17.0	5.0	22.5	GM-ST-150-021-00-080-R
8	36.0	12	33.0	23	17.0	5.0	22.5	GM-ST-150-022-00-080-R
8	37.5	12	34.5	23	17.0	5.0	22.5	GM-ST-150-023-00-080-R
8	39.0	12	36.0	23	19.0	5.0	26.5	GM-ST-150-024-00-080-R
8	40.5	12	37.5	23	19.0	5.0	26.5	GM-ST-150-022-00-080-R
8	42.0	12	39.0	23	19.0	5.0	26.5	GM-ST-150-022-00-080-R
8	43.5	12	40.5	23	19.0	5.0	25.5	GM-ST-150-027-00-080-R
8	45.0	12	42.0	23	19.0	5.0	25.5	GM-ST-150-028-00-080-R
10	48.0	12	45.0	23	24.0	5.0	33.5	GM-ST-150-030-00-100-R
10	51.0	12	48.0	23	24.0	5.0	33.5	GM-ST-150-032-00-100-R
10	55.5	12	52.5	23	24.0	5.0	41.5	GM-ST-150-035-00-100-R
10	57.0	12	54.0	23	24.0	5.0	41.5	GM-ST-150-036-00-100-R
10	60.0	12	57.0	23	24.0	5.0	41.5	GM-ST-150-038-00-100-R
10	63.0	12	60.0	23	24.0	5.0	48.5	GM-ST-150-040-00-100-R
10	66.0	12	63.0	23	24.0	5.0	48.5	GM-ST-150-042-00-100-R
10	67.5	12	64.5	23	24.0	5.0	48.5	GM-ST-150-043-00-100-R
10	70.5	12	67.5	23	24.0	5.0	48.5	GM-ST-150-045-00-100-R
10	75.0	12	72.0	23	24.0	5.0	48.5	GM-ST-150-048-00-100-R
12	78.0	12	75.0	23	27.0	5.0	63.0	GM-ST-150-050-00-120-R
12	81.0	12	78.0	23	27.0	5.0	63.0	GM-ST-150-052-00-120-R

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Dimension description see page 801

Technical data

Module	Number of teeth	Helix angle [°]	Hub design
1.5	54	0	Round
1.5	55	0	Round
1.5	60	0	Round
1.5	70	0	Round
1.5	80	0	Round
1.5	90	0	Round
1.5	100	0	Round
1.5	110	0	Round
1.5	120	0	Round
1.5	130	0	Round
1.5	140	0	Round
1.5	150	0	Round
2.0	12	0	Round
2.0	13	0	Round
2.0	14	0	Round
2.0	15	0	Round
2.0	16	0	Round
2.0	17	0	Round
2.0	18	0	Round
2.0	19	0	Round
2.0	20	0	Round
2.0	21	0	Round
2.0	22	0	Round
2.0	23	0	Round
2.0	24	0	Round
2.0	25	0	Round
2.0	26	0	Round
2.0	27	0	Round
2.0	28	0	Round
2.0	30	0	Round
2.0	32	0	Round
2.0	35	0	Round
2.0	36	0	Round
2.0	38	0	Round
2.0	40	0	Round
2.0	42	0	Round
2.0	45	0	Round
2.0	48	0	Round
2.0	50	0	Round
2.0	55	0	Round
2.0	60	0	Round
2.0	70	0	Round
2.0	75	0	Round
2.0	80	0	Round

Dimensions [mm]

d1 H10	d5	b2	d4	b1	d2	b3	d3	Part No.
12	84.0	12	81.0	23	27.0	5.0	63.0	GM-ST-150-054-00-120-R
12	85.5	12	82.5	23	27.0	5.0	63.0	GM-ST-150-055-00-120-R
12	93.0	12	90.0	23	27.0	5.0	63.0	GM-ST-150-060-00-120-R
14	108.0	12	105.0	23	30.0	5.0	88.0	GM-ST-150-070-00-140-R
14	123.0	12	120.0	23	30.0	5.0	104.0	GM-ST-150-080-00-140-R
14	138.0	12	135.0	23	30.0	5.0	116.0	GM-ST-150-090-00-140-R
20	153.0	19	150.0	34	40.0	8.0	133.0	GM-ST-150-100-00-200-R
20	168.0	19	165.0	34	40.0	8.0	148.0	GM-ST-150-110-00-200-R
20	183.0	19	180.0	34	40.0	8.0	163.0	GM-ST-150-120-00-200-R
20	198.0	19	195.0	34	40.0	8.0	178.0	GM-ST-150-130-00-200-R
20	213.0	19	210.0	34	40.0	8.0	193.0	GM-ST-150-140-00-200-R
20	228.0	19	225.0	34	40.0	8.0	208.0	GM-ST-150-150-00-200-R
8	28.0	15	24.0	27	18.5	13.5	16.0	GM-ST-200-012-00-080-R
8	30.0	15	26.0	27	18.5	13.5	18.5	GM-ST-200-013-00-080-R
8	32.0	15	28.0	27	18.5	13.5	18.5	GM-ST-200-014-00-080-R
8	34.0	15	30.0	27	18.5	12.0	22.0	GM-ST-200-015-00-080-R
8	36.0	15	32.0	27	17.5	6.0	22.0	GM-ST-200-016-00-080-R
8	38.0	15	34.0	27	17.5	6.0	24.0	GM-ST-200-017-00-080-R
8	40.0	15	36.0	27	17.5	6.0	25.0	GM-ST-200-018-00-080-R
8	42.0	15	38.0	27	17.5	6.0	27.0	GM-ST-200-019-00-080-R
10	44.0	15	40.0	27	20.0	6.0	28.0	GM-ST-200-020-00-100-R
10	46.0	15	42.0	27	20.0	6.0	28.0	GM-ST-200-021-00-100-R
10	48.0	15	44.0	27	20.0	6.0	28.0	GM-ST-200-022-00-100-R
10	50.0	15	46.0	27	24.0	6.0	35.0	GM-ST-200-023-00-100-R
10	52.0	15	48.0	27	24.0	6.0	35.0	GM-ST-200-024-00-100-R
10	54.0	15	50.0	27	24.0	6.0	35.0	GM-ST-200-025-00-100-R
10	56.0	15	52.0	27	24.0	6.0	38.5	GM-ST-200-026-00-100-R
10	58.0	15	54.0	27	24.0	6.0	38.5	GM-ST-200-027-00-100-R
10	60.0	15	56.0	27	24.0	6.0	38.5	GM-ST-200-028-00-100-R
10	64.0	15	60.0	27	24.0	6.0	43.5	GM-ST-200-030-00-100-R
10	68.0	15	64.0	27	26.0	6.0	44.0	GM-ST-200-032-00-100-R
12	74.0	15	70.0	27	26.0	6.0	54.0	GM-ST-200-035-00-120-R
12	76.0	15	72.0	27	26.0	6.0	54.0	GM-ST-200-036-00-120-R
12	80.0	15	76.0	27	26.0	6.0	61.5	GM-ST-200-038-00-120-R
12	84.0	15	80.0	27	26.0	6.0	61.5	GM-ST-200-040-00-120-R
12	88.0	15	84.0	27	26.0	6.0	61.5	GM-ST-200-042-00-120-R
14	94.0	15	90.0	27	30.0	6.0	68.0	GM-ST-200-045-00-140-R
14	100.0	15	96.0	27	30.0	6.0	74.0	GM-ST-200-048-00-140-R
14	104.0	15	100.0	27	30.0	6.0	78.0	GM-ST-200-050-00-140-R
14	114.0	15	110.0	27	30.0	6.0	87.5	GM-ST-200-055-00-140-R
14	124.0	15	120.0	27	30.0	6.0	97.5	GM-ST-200-060-00-140-R
14	144.0	15	140.0	27	30.0	6.0	117.0	GM-ST-200-070-00-140-R
20	154.0	19	150.0	34	40.0	8.0	133.0	GM-ST-200-075-00-200-R
20	164.0	19	160.0	34	40.0	8.0	133.0	GM-ST-200-080-00-200-R

iguform S270 and igutek P360 are available in over 300 variants and customisable according to your requirements

Dimension description see page 801

Technical data

Module	Number of teeth	Helix angle [°]	Hub design
2.0	85	0	Round
2.0	90	0	Round
2.0	95	0	Round
2.0	100	0	Round
2.0	110	0	Round
2.5	10	0	Round
2.5	12	0	Round
2.5	13	0	Round
2.5	14	0	Round
2.5	15	0	Round
2.5	16	0	Round
2.5	17	0	Round
2.5	18	0	Round
2.5	19	0	Round
2.5	20	0	Round
2.5	21	0	Round
2.5	22	0	Round
2.5	23	0	Round
2.5	24	0	Round
2.5	25	0	Round
2.5	26	0	Round
2.5	27	0	Round
2.5	28	0	Round
2.5	30	0	Round
2.5	32	0	Round
2.5	35	0	Round
2.5	36	0	Round
2.5	38	0	Round
2.5	40	0	Round
2.5	42	0	Round
2.5	45	0	Round
2.5	48	0	Round
2.5	50	0	Round
2.5	55	0	Round
2.5	60	0	Round
2.5	65	0	Round
2.5	70	0	Round
2.5	75	0	Round
2.5	80	0	Round
2.5	85	0	Round
2.5	90	0	Round
2.5	95	0	Round
3.0	12	0	Round
3.0	13	0	Round

Dimensions [mm]

d1 H10	d5	b2	d4	b1	d2	b3	d3	Part No.
20	174.0	19	170.0	34	40.0	8.0	148.0	GM-ST-200-085-00-200-R
20	184.0	19	180.0	34	40.0	8.0	163.0	GM-ST-200-090-00-200-R
20	194.0	19	190.0	34	40.0	8.0	163.0	GM-ST-200-095-00-200-R
20	204.0	19	200.0	34	40.0	8.0	178.0	GM-ST-200-100-00-200-R
20	224.0	19	220.0	34	40.0	8.0	193.0	GM-ST-200-110-00-200-R
10	30.0	17	25.0	30	20.0	-	-	GM-ST-250-010-00-100-R
10	35.0	17	30.0	30	20.0	-	-	GM-ST-250-012-00-100-R
10	37.5	17	32.5	30	20.0	-	-	GM-ST-250-013-00-100-R
10	40.0	17	35.0	30	20.0	-	-	GM-ST-250-014-00-100-R
10	42.5	17	37.5	30	20.0	7.0	27.0	GM-ST-250-015-00-100-R
10	45.0	17	40.0	30	20.0	7.0	27.0	GM-ST-250-016-00-100-R
10	47.5	17	42.5	30	20.0	7.0	27.0	GM-ST-250-017-00-100-R
10	50.0	17	45.0	30	20.0	7.0	34.0	GM-ST-250-018-00-100-R
10	52.5	17	47.5	30	20.0	7.0	34.0	GM-ST-250-019-00-100-R
10	55.0	17	50.0	30	20.0	7.0	34.0	GM-ST-250-020-00-100-R
12	57.5	17	52.5	30	24.0	7.0	41.0	GM-ST-250-021-00-120-R
12	60.0	17	55.0	30	24.0	7.0	41.0	GM-ST-250-022-00-120-R
12	62.5	17	57.5	30	24.0	7.0	41.0	GM-ST-250-023-00-120-R
12	65.0	17	60.0	30	24.0	7.0	49.0	GM-ST-250-024-00-120-R
12	67.5	17	62.5	30	24.0	7.0	49.0	GM-ST-250-025-00-120-R
12	70.0	17	65.0	30	24.0	7.0	49.0	GM-ST-250-026-00-120-R
12	72.5	17	67.5	30	24.0	7.0	56.0	GM-ST-250-027-00-120-R
12	75.0	17	70.0	30	24.0	7.0	56.0	GM-ST-250-028-00-120-R
12	80.0	17	75.0	30	24.0	7.0	56.0	GM-ST-250-030-00-120-R
14	85.0	17	80.0	30	30.0	7.0	68.0	GM-ST-250-032-00-140-R
14	92.5	17	87.5	30	30.0	7.0	68.0	GM-ST-250-035-00-140-R
14	95.0	17	90.0	30	30.0	7.0	72.0	GM-ST-250-036-00-140-R
14	100.0	17	95.0	30	30.0	7.0	72.0	GM-ST-250-038-00-140-R
14	105.0	17	100.0	30	30.0	7.0	84.0	GM-ST-250-040-00-140-R
16	110.0	17	105.0	30	30.0	7.0	84.0	GM-ST-250-042-00-160-R
16	117.5	17	112.5	30	30.0	7.0	84.0	GM-ST-250-045-00-160-R
16	125.0	17	120.0	30	30.0	7.0	100.0	GM-ST-250-048-00-160-R
16	130.0	17	125.0	30	30.0	7.0	100.0	GM-ST-250-050-00-160-R
20	142.5	17	137.5	30	30.0	7.0	100.0	GM-ST-250-055-00-200-R
20	155.0	19	150.0	34	40.0	8.0	133.0	GM-ST-250-060-00-200-R
20	167.5	19	162.5	34	40.0	8.0	133.0	GM-ST-250-065-00-200-R
20	180.0	19	175.0	34	40.0	8.0	148.0	GM-ST-250-070-00-200-R
20	192.5	19	187.5	34	40.0	8.0	163.0	GM-ST-250-075-00-200-R
20	205.0	19	200.0	34	40.0	8.0	178.0	GM-ST-250-080-00-200-R
20	217.5	19	212.5	34	40.0	8.0	178.0	GM-ST-250-085-00-200-R
20	230.0	19	225.0	34	40.0	8.0	193.0	GM-ST-250-090-00-200-R
20	242.5	19	237.5	34	40.0	8.0	208.0	GM-ST-250-095-00-200-R
12	42.0	19	36.0	34	24.0	19.0	-	GM-ST-300-012-00-120-R
12	45.0	19	39.0	34	24.0	19.0	-	GM-ST-300-013-00-120-R

iguform S270 and igutek P360 are available in over 300 variants and customisable according to your requirements

Dimension description see page 801

Technical data

Module	Number of teeth	Helix angle [°]	Hub design
3.0	14	0	Round
3.0	15	0	Round
3.0	16	0	Round
3.0	17	0	Round
3.0	18	0	Round
3.0	19	0	Round
3.0	20	0	Round
3.0	21	0	Round
3.0	22	0	Round
3.0	23	0	Round
3.0	24	0	Round
3.0	25	0	Round
3.0	26	0	Round
3.0	27	0	Round
3.0	28	0	Round
3.0	30	0	Round
3.0	32	0	Round
3.0	33	0	Round
3.0	34	0	Round
3.0	35	0	Round
3.0	38	0	Round
3.0	40	0	Round
3.0	45	0	Round
3.0	48	0	Round
3.0	50	0	Round
3.0	55	0	Round
3.0	60	0	Round
3.0	65	0	Round
3.0	70	0	Round
3.0	75	0	Round

iguform S270 and igutek P360 are available in over 300 variants and customisable according to your requirements

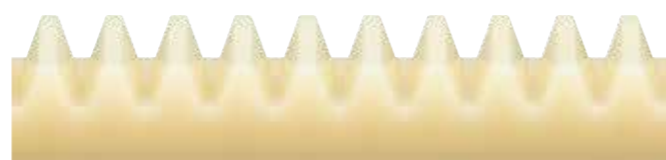
Dimensions [mm]

d1 H10	d5	b2	d4	b1	d2	b3	d3	Part No.
12	48.0	19	42.0	34	24.0	19.0	-	GM-ST-300-014-00-120-R
12	51.0	19	45.0	34	24.0	8.0	30.5	GM-ST-300-015-00-120-R
12	54.0	19	48.0	34	24.0	8.0	30.5	GM-ST-300-016-00-120-R
12	57.0	19	51.0	34	24.0	8.0	30.5	GM-ST-300-017-00-120-R
12	60.0	19	54.0	34	24.0	8.0	38.0	GM-ST-300-018-00-120-R
12	63.0	19	57.0	34	24.0	8.0	38.0	GM-ST-300-019-00-120-R
12	66.0	19	60.0	34	24.0	8.0	38.0	GM-ST-300-020-00-120-R
12	69.0	19	63.0	34	24.0	8.0	45.0	GM-ST-300-021-00-120-R
12	72.0	19	66.0	34	24.0	8.0	45.0	GM-ST-300-022-00-120-R
12	75.0	19	69.0	34	24.0	8.0	52.0	GM-ST-300-023-00-120-R
12	78.0	19	72.0	34	24.0	8.0	52.0	GM-ST-300-024-00-120-R
14	81.0	19	75.0	34	28.0	8.0	58.0	GM-ST-300-025-00-140-R
14	84.0	19	78.0	34	28.0	8.0	58.0	GM-ST-300-026-00-140-R
14	87.0	19	81.0	34	28.0	8.0	58.0	GM-ST-300-027-00-140-R
14	90.0	19	84.0	34	28.0	8.0	65.0	GM-ST-300-028-00-140-R
14	96.0	19	90.0	34	28.0	8.0	68.0	GM-ST-300-030-00-140-R
16	102.0	19	96.0	34	32.0	8.0	69.0	GM-ST-300-032-00-160-R
16	105.0	19	99.0	34	32.0	8.0	69.0	GM-ST-300-033-00-160-R
16	108.0	19	102.0	34	32.0	8.0	78.0	GM-ST-300-034-00-160-R
16	111.0	19	105.0	34	32.0	8.0	78.0	GM-ST-300-035-00-160-R
16	120.0	19	114.0	34	32.0	8.0	87.0	GM-ST-300-038-00-160-R
16	126.0	19	120.0	34	32.0	8.0	93.0	GM-ST-300-040-00-160-R
16	141.0	19	135.0	34	32.0	8.0	108.0	GM-ST-300-045-00-160-R
16	150.0	19	144.0	34	32.0	8.0	123.0	GM-ST-300-048-00-160-R
20	156.0	19	150.0	34	40.0	8.0	133.0	GM-ST-300-050-00-200-R
20	171.0	19	165.0	34	40.0	8.0	148.0	GM-ST-300-055-00-200-R
20	186.0	19	180.0	34	40.0	8.0	163.0	GM-ST-300-060-00-200-R
20	201.0	19	195.0	34	40.0	8.0	178.0	GM-ST-300-065-00-200-R
20	216.0	19	210.0	34	40.0	8.0	193.0	GM-ST-300-070-00-200-R
20	231.0	19	225.0	34	40.0	8.0	208.0	GM-ST-300-075-00-200-R

Dimension description see page 801



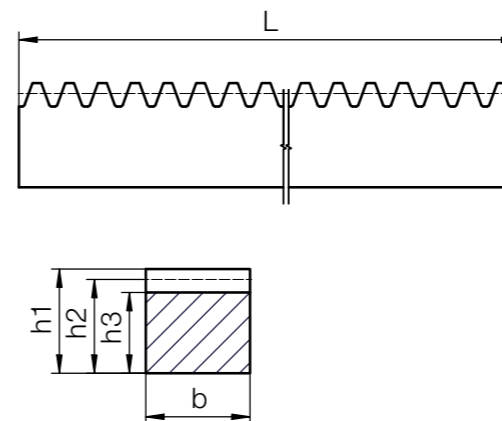
iguform S270



igutek P360

- Low coefficient of friction
- Low moisture absorption
- Quiet

- Increased wear resistance
- Good tribological specifications
- Tough
- Resistant to shock loads



Order key

Part number Dimensions [mm]

G M-GR-050-00-250-040-045

Material	Gear	
	Metric	
	Rack	
	Module	
	Helix angle	
	Length	
	Width	
	Height	

- S270** Low coefficient of friction
- P360** Good tribological specifications

Technical data and dimensions [mm]

Module	Helix angle [°]	h1	h2
0.5	0	4.5	4.0
0.5	0	6.0	5.5
0.7	0	6.7	6.0
1.0	0	9.0	8.0
1.25	0	11.0	9.75
1.5	0	12.0	10.5
2.0	0	11.0	9.0
2.5	0	13.0	10.5
3.0	0	15.0	12.0

h3	b	L	Part No.
3.4	4.0	250	<input type="checkbox"/> GM-GR-050-00-250-040-045
4.9	4.0	250	<input type="checkbox"/> GM-GR-050-00-250-040-060
5.1	6.0	250	<input type="checkbox"/> GM-GR-070-00-250-060-067
6.8	9.0	250	<input type="checkbox"/> GM-GR-100-00-250-090-090
8.3	10.0	250	<input type="checkbox"/> GM-GR-125-00-250-100-110
8.75	12.0	250	<input type="checkbox"/> GM-GR-150-00-250-120-120
6.6	15.4	250	<input type="checkbox"/> GM-GR-200-00-250-154-110
7.7	17.0	250	<input type="checkbox"/> GM-GR-250-00-250-170-130
8.5	19.4	250	<input type="checkbox"/> GM-GR-300-00-250-194-150

The actual length depends on the module and is a multiple of the pitch. The racks start and end with a full tooth and can therefore be paired for the desired length.

The exact length can be found in the CAD data. These are freely available for download at ► www.igus-cad.com.



Order example:

S270GM-GR-125-00-250-100-110: material iguform S270, G gear, M metric, -GR gear rack, -125 module 1.25, -00 helix angle 0°, -250 length 250mm, -100 width 10.0mm, -110 height 11.0mm

Transmission ratio 1:1



iguform S270

igutek P360

iguform S270 convinces with a low coefficient of friction and low moisture absorption. igutek P360 offers increased wear resistance, good tribological properties and high toughness.

- 6 transmission ratios
- 7 different modules
- Transmission ratios 1:1 to 1:5 available

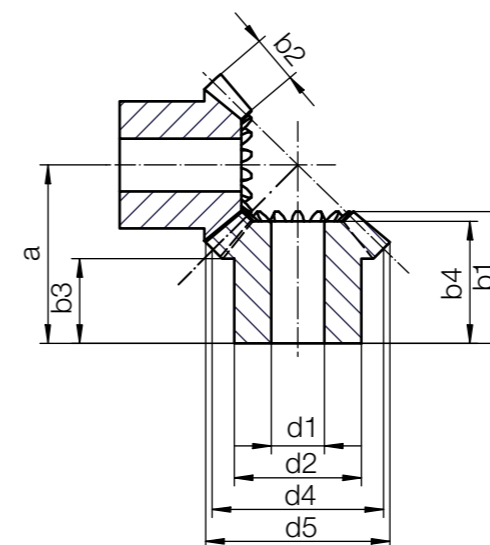
Transmission ratio 1:2



iguform S270

igutek P360

i Please note: the bevel gears are sold individually. In order to achieve the desired transmission ratio, two bevel gears must be ordered. The gears need to have the same transmission ratio and the same module to be compatible.



Order key

Part number	Dimensions [mm]
G M-BG-050-016-00-030-R-10	
Material	
Gear	
Metric	
Bevel gear	
Module	
Number of teeth	
Helix angle	
Hole diameter	
Hub design round	
Transmission ratio	
S270	Low coefficient of friction
P360	Good tribological specifications

Technical data and dimensions [mm]

Module	Number of teeth	b2	d1	d4	d5	d2	b1	b4	b3	a	Part No.
Transmission ratio 1:1											
0.5	16	2.0	3	8.0	8.7	7.0	8.1	8.1	6.0	10.5	G M-BG-050-016-00-030-R-10
1.0	16	4.7	5	16.0	17.6	12.0	13.6	13.6	8.0	18.4	G M-BG-100-016-00-050-R-10
1.0	30	7.0	6	30.0	31.0	15.0	15.4	13.3	7.6	25.1	G M-BG-100-030-00-060-R-10
1.5	16	7.0	8	24.0	26.4	18.5	18.4	16.2	10.0	25.8	G M-BG-150-016-00-080-R-10
2.0	16	10.0	10	32.0	34.9	21.9	21.2	18.3	9.7	30.4	G M-BG-200-016-00-100-R-10
2.5	16	12.3	12	40.0	43.5	25.2	25.5	22.9	11.5	37.0	G M-BG-250-016-00-120-R-10
3.0	16	13.8	14	48.0	52.3	28.8	29.2	25.7	13.2	43.0	G M-BG-300-016-00-140-R-10
3.5	16	15.8	18	56.0	61.4	33.3	33.1	28.0	14.6	49.5	G M-BG-350-016-00-180-R-10
Transmission ratio 1:1.5											
1.5	16	8.0	8	24.0	26.0	20.0	18.8	17.8	10.8	30.0	G M-BG-150-016-00-080-R-15
1.5	24	8.0	10	36.0	37.0	24.0	19.5	18.0	11.3	26.6	G M-BG-150-024-00-100-R-15
Transmission ratio 1:2											
1.0	15	6.4	5	15.0	16.6	12.2	17.1	17.1	10.5	26.3	G M-BG-100-015-00-050-R-20
1.5	15	10.5	8	22.5	25.0	17.0	22.8	22.8	11.7	35.8	G M-BG-150-015-00-080-R-20
2.0	15	14.5	10	30.0	33.3	22.6	27.0	26.0	12.0	44.0	G M-BG-200-015-00-100-R-20
2.5	15	17.1	12	37.5	42.0	26.5	31.1	29.5	12.7	53.3	G M-BG-250-015-00-120-R-20
3.0	15	20.2	14	45.0	50.0	31.2	36.4	34.8	15.3	63.3	G M-BG-300-015-00-140-R-20
1.0	30	6.9	8	30.0	31.0	18.0	16.0	14.7	9.0	20.8	G M-BG-100-030-00-080-R-20
1.5	30	10.7	10	45.0	46.3	23.4	19.6	17.5	9.6	25.9	G M-BG-150-030-00-100-R-20
2.0	30	14.2	12	60.0	62.0	30.2	24.5	22.4	12.0	32.9	G M-BG-200-030-00-120-R-20

Module	Number of teeth	b2	d1	d4	d5	d2	b1	b4	b3	a	Part No.
2.5	30	17.4	16	75.0	77.2	35.8	29.6	27.6	15.2	40.8	G M-BG-250-030-00-160-R-20
3.0	30	20.3	18	90.0	92.5	45.0	37.5	33.8	19.0	49.9	G M-BG-300-030-00-180-R-20
Transmission ratio 1:3											
1.0	15	9.0	5	15.0	16.4	12.3	20.5	-	11.4	34.5	G M-BG-100-015-00-050-R-30
1.5	15	14.0	8	22.5	25.1	17.2	26.6	-	12.3	47.3	G M-BG-150-015-00-080-R-30
2.0	10	12.2	6	20.0	23.6	15.5	25.0	-	12.0	43.3	G M-BG-200-010-00-060-R-30
2.5	10	15.2	8	25.0	29.6	18.8	28.7	-	13.0	52.4	G M-BG-250-010-00-080-R-30
1.0	45	8.8	10	45.0	45.7	23.4	17.9	16.2	9.6	22.4	G M-BG-100-045-00-100-R-30
1.5	45	14.0	12	67.5	68.5	30.4	23.2	21.4	11.8	29.7	G M-BG-150-045-00-120-R-30
2.0	30	12.5	12	60.0	61.7	30.3	22.5	19.8	11.8	28.0	G M-BG-200-030-00-120-R-30
2.5	30	15.7	18	75.0	77.2	36.0	29.0	25.0	15.9	35.8	G M-BG-250-030-00-180-R-30
Transmission ratio 1:4											
1.0	10	8.0	4	10.0	12.0	7.9	17.7	-	9.6	30.2	G M-BG-100-010-00-040-R-40
1.5	10	12.2	5	15.0	18.0	11.3	23.2	-	11.0	41.5	G M-BG-150-010-00-050-R-40
2.0	10	16.0	6	20.0	23.7	14.0	28.7	-	12.8	53.5	G M-BG-200-010-00-060-R-40
1.0	40	8.4	10	40.0	41.0	23.4	16.9	15.5	10.8	20.2	G M-BG-100-040-00-100-R-40
1.5	40	12.3	12	60.0	60.7	30.4	21.0	19.0	12.8	25.2	G M-BG-150-040-00-120-R-40
2.0	40	16.2	18	80.0	81.2	36.1	27.0	24.4	17.0	32.5	G M-BG-200-040-00-180-R-40
Transmission ratio 1:5											
1.0	12	9.9	4	12.0	13.7	9.5	20.2	-	10.1	40.6	G M-BG-100-012-00-040-R-50
1.0	60	9.5	10	60.0	60.3	20.5	17.4	15.3	11.2	21.2	G M-BG-100-060-00-100-R-50

Order example:
S270GM-BG-100-016-00-050-R-10: material iguform S270, G gear metrical, BG bevel gear, -100 module, -016 number of teeth 16, -00 helix angle 0°, -050 hole diameter 5mm, -R hole diameter round, -10 transmission ratio 1:1

iglidur® angular gearboxes | Product range

iguform S270 and igutek P360 angular gearboxes with bevel gears

Transmission ratio 1:1

Transmission ratio 1:5



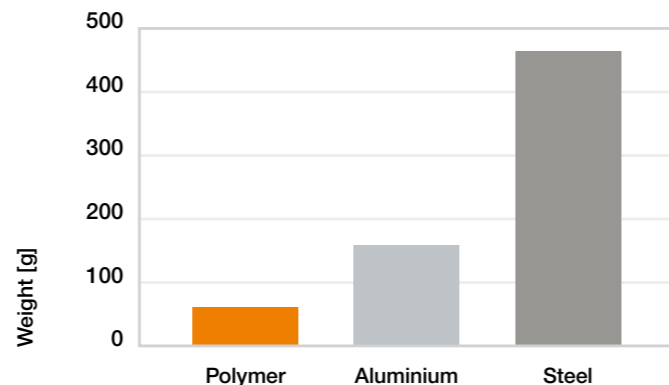
iguform S270

igutek P360

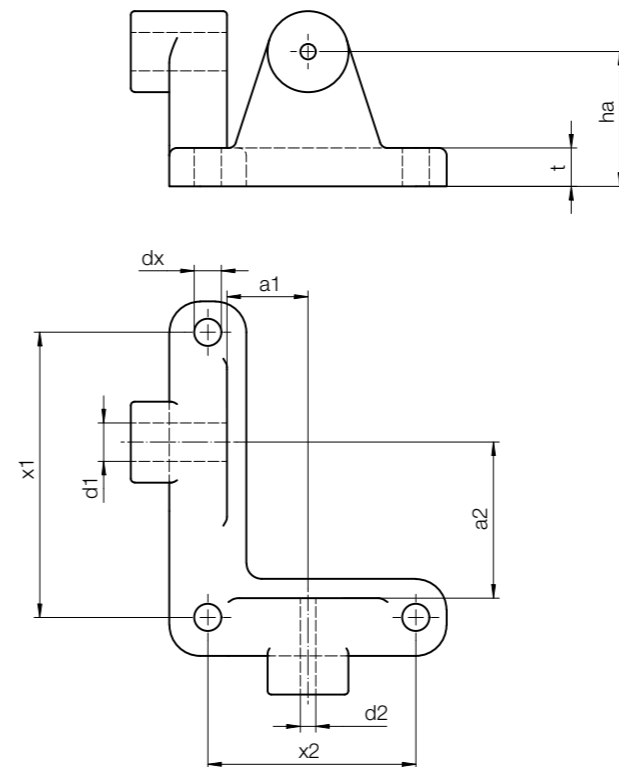
iguform S270

igutek P360

- Module 1
- 5 transmission ratios
- Transmission ratios 1:1 to 1:5 available
- The bevel gears are pinned and interchangeable
- When mounting the shafts in the housing, no external lubricants are required



Weight savings of up to a factor of 7 with housings made of plastic compared to steel and aluminium



Order key

Part number: **G M-AG-100-016-016-10-SL-BK** Dimensions [mm]

Material	Gear	Metric	Angular gearbox	Module	Number of teeth 1	Number of teeth 2	Transmission ratio	Shaft material	Colour: black
S270									Low coefficient of friction
P360									Good tribological specifications

Housing material:

Laser sintering material

Colour: black

Shaft material:

SL: corrosion-free steel

Technical data and dimensions [mm]

Module	a1	a2	d1	d2	dx	x1	x2	ha	L
1.0	18.4	18.4	5	5	5	34	34	15	47
1.0	20.9	26.4	8	5	5	54	44	20	68
1.0	22.7	34.3	10	5	7	64	54	25	82
1.0	20.1	30.1	10	4	7	64	54	25	82
1.0	21.0	40.5	10	4	7	74	54	35	92

B	t	Transmission ratio	Number of teeth of bevel gears		Part No.
			Number of teeth 1	Number of teeth 2	
47	6	1:1	16	16	GM-AG-100-016-016-10-SL-BK
58	8	1:2	15	30	GM-AG-100-015-030-20-SL-BK
72	10	1:3	15	45	GM-AG-100-015-045-30-SL-BK
72	10	1:4	10	40	GM-AG-100-010-040-40-SL-BK
72	10	1:5	12	60	GM-AG-100-012-060-50-SL-BK

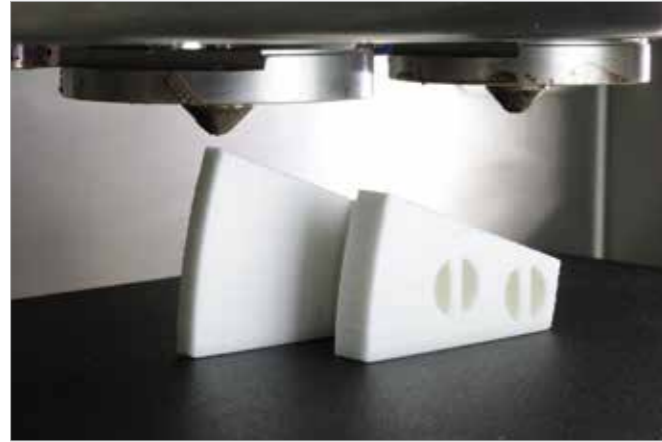


Order example:

S270GM-AG-100-016-016-10-SL-BK: material iguform S270, G gear, M metrical, -AG angular gearbox, -100 module 1, -016 number of teeth bevel gear 1, -016 number of teeth bevel gear 2, -10 transmission ratio 1:1, -SL steel shaft, -BK laser sintering material black



...plastics

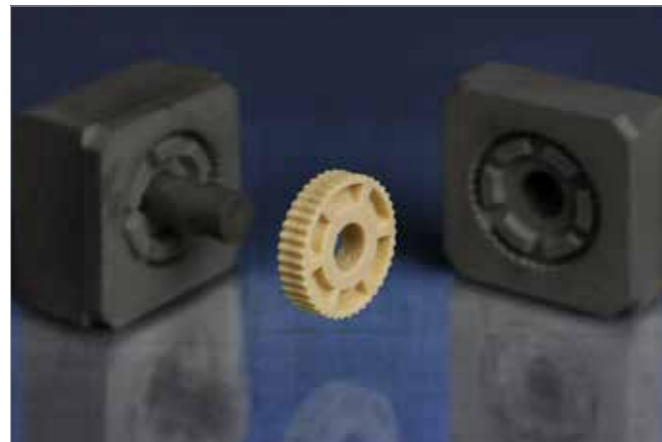


3D printing/SLS/DLP

For prototypes or small quantities made from tribofilaments® with resin or the laser sintering method

Wear-resistant materials for 3D printing, Digital Light Processing (DLP) and the laser sintering method - print parts yourself or have igus® print them for you.

- Up to 50-times more abrasion-resistant than normal 3D printing materials
- Various iglidur® materials available for FDM/FFF (filament), SLS (powder) and DLP (resin)
- No tool costs, cost-effective, no minimum order quantity



Printed tools

For small quantities made from iglidur® granules 3D printed mould tools to produce wear-resistant injection-moulded parts made in all available iglidur® materials.

- Customised parts delivered from 2 weeks
- Up to 80% more cost-effective than conventional injection mould tools
- For prototypes and small volumes
- Check price and manufacturability online
▶ www.igus.eu/idd


Lubrication-free printing


Abrasion and wear-resistant tribo-plastics for additive manufacturing via selective laser sintering (SLS), with filament (FDM/FFF) or resin (DLP) allow you to use the printed component or to test the function of the part reliably and completely from the prototype or production batch onward.

- Abrasion-resistant
- Lubrication and maintenance-free
- No tooling costs
- Design freedom
- 3D printing of parts on site
- Can be processed by commercially available 3D printers
- Predictable service life
- 3D printing service in 1 to 3 days


Typical application areas


- Special wear-resistant parts
- Jig construction
- Single pieces and small volumes

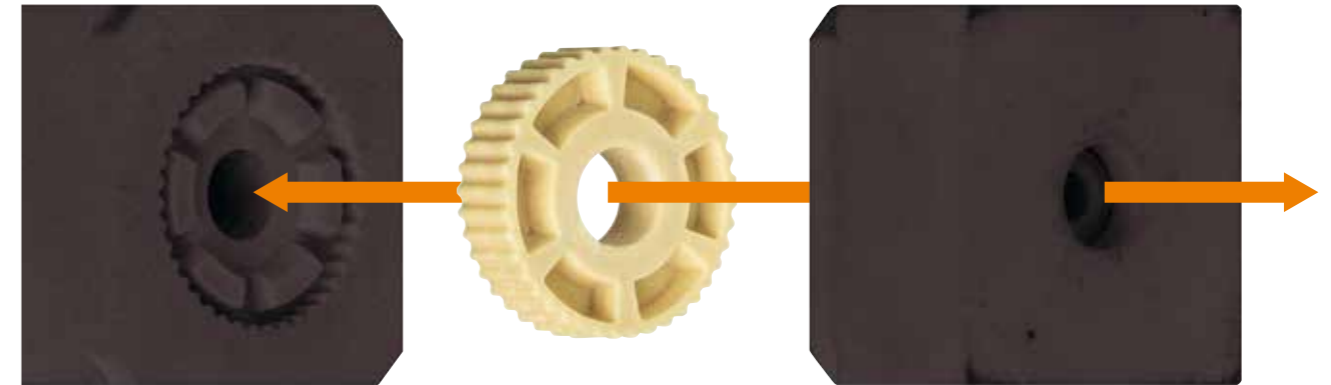
 **Available from stock**
Detailed information about delivery time online.

 **More information about 3D printing**
▶ www.igus.eu/3d

 **Get 3D printing prices and calculate the service life online**
▶ www.igus.eu/idd

 **Calculate service life for 3D printed gears online**
▶ www.igus.eu/gear-expert

 **Create a 3D model of the gear, roller, and much more within one minute**
▶ www.igus.eu/cad-configurators



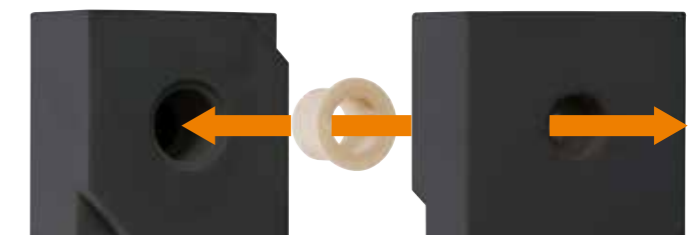
Injection moulding with 3D printed tools

Due to 3D printing, igus® is able to make customised injection moulds in a short time with up to 80% lower costs. Maintenance-free plastic plain bearings in the required shape can be made quickly and, above all, cost-effectively from all iglidur® materials.


- High variety of materials: all iglidur® plain bearing materials can be requested as samples
- Cost-efficient and delivered quickly
- No minimum order quantity
- For simple geometries
- For large quantities and recurring projects, metal 3D-printed moulds can also be provided.
- Prices online ▶ www.igus.eu/idd

The manufacture of maintenance-free plastic components from 3D printed injection moulds is worthwhile compared to direct 3D printing of the iglidur® materials especially if:

- Special material characteristics are needed, such as conductivity, high temperature, underwater use, KTW compliance
- Small volumes in the same iglidur® material are to be sampled as is a later high volume from a classic injection moulding tool



 **Delivery time**
from 2 weeks

 **Information**
▶ www.igus.eu/print2mold

 **Prices**
▶ www.igus.eu/idd

Wear-resistant parts from the 3D printing service: online and extremely fast

Printed parts extremely wear-resistant- as prototype or in small series. Simply upload your required part, determine the price and order online (or ask for a quotation). Thanks to the iglidur® 3D printing service, from now on 2 quick and easy steps will complete your customised component made of lubrication-free and abrasion-resistant iglidur® plastics. The service life of the 3D printed components is comparable to igus® injection moulded parts. In the online 3D printing calculation, you can not only receive 3D printing, but also analyse feasibility and prices of injection-moulded parts made with 3D-printed moulds (print2mold).

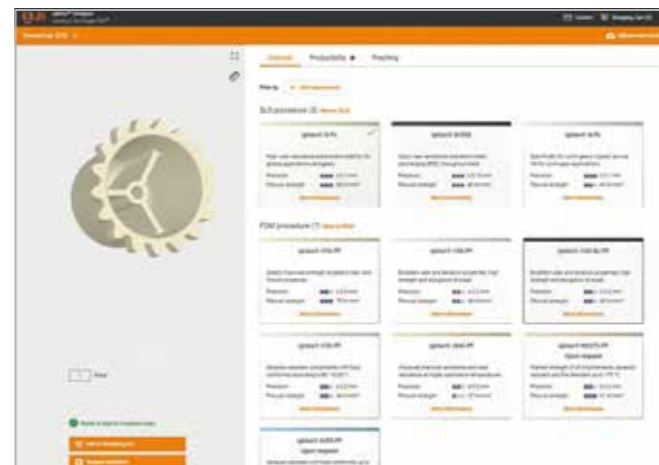
- 1 Go to www.igus.eu/idd and upload the 3D model in the STEP format. The manufacturability (wall thickness and component size) is analysed automatically
 - 2 Select material and quantity and order the component or ask for a quotation.
- **Your individual wear-resistant part will be shipped in 72 hours**

 **Delivery time**
72hrs

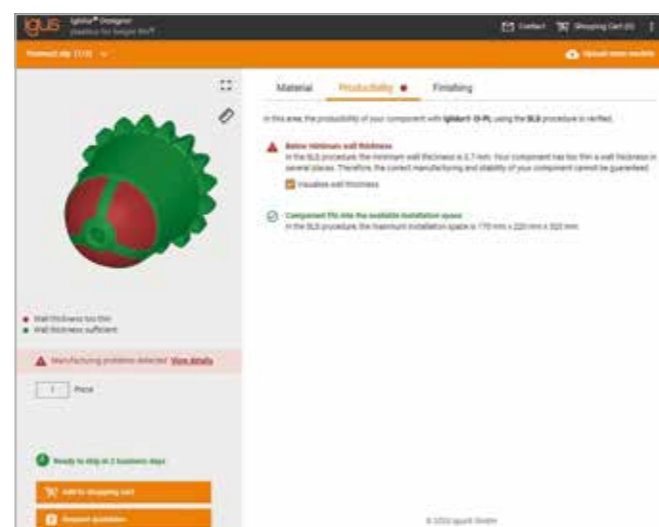
New: Calculate the service life of sliding surfaces

With the new service life calculator, you can determine the service life of individual components. Simply click on sliding surface and enter the parameters.

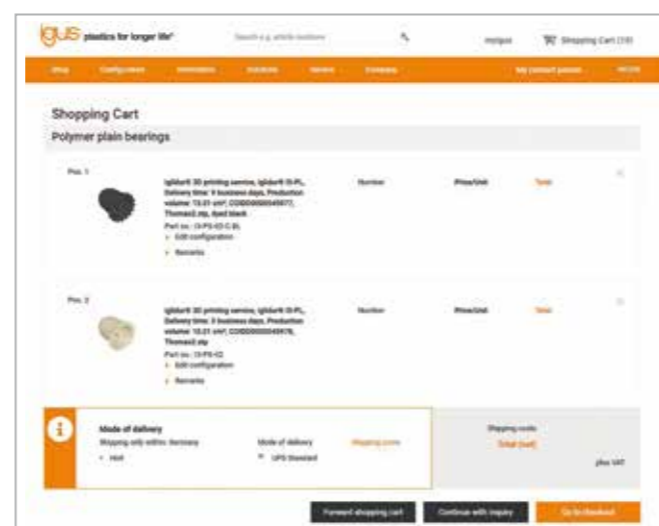
 **Try it out now:**
► www.igus.eu/idd



Material selection



Wall thickness analyses



Shopping cart

SLS can also be used to make wear-resistant parts

The 3D printing service is also available with all of our SLS powders. Laser sintering (SLS) is used to make parts of these materials. With this method even more plain bearing applications are therefore possible with 3D-printed parts, strength and precision are considerably greater and the price per component is lower.

Additional laser sintering services

In the 3D printing service, more services for laser sintering materials can now be selected and their prices easily defined.

- Black colouring for visible parts
- Polish surfaces using vibratory finishing or chemical polishing

New: Multi-material print (FDM/FFF)

Workpieces with up to four components made from proven tribofilaments® and other plastics.

One possible combination would be intelligent bearings for predictive maintenance: with a fibre-reinforced housing, tribofilament® and integrated conductor tracks to warn of bearing wear.



New: Digital Light Processing (DLP)

In the DLP 3D printing service, igus® processes its own iglidur® i3000 resin in the classic DLP process with a high resolution that allows precision components to be manufactured. In addition, the UV wavelength of 385nm can reduce excessive curing and ensure a more precise shape.

Dimensional stability and size of installation space

The precision of the printed parts in the case of the iglidur® tribofilaments® is $\pm 0.2\text{mm}$ (up to an edge length of 50mm, above this $\pm 0.4\%$). In the case of parts made using the laser sintering process the precision is $\pm 0.1\text{mm}$ (up to an edge length of 50mm, above this $\pm 0.2\%$).

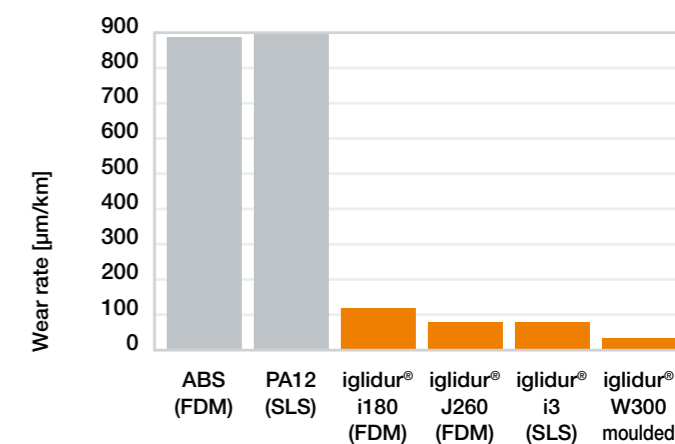
The space used for processing the iglidur® tribofilaments® measures 135x145x200mm. In the case of laser sintering the space used measures 170x220x300mm. The following applies to both processes: larger parts may have to be made of several pieces.

Large-format 3D printing

Up to 3 metres-large components made of iglidur® i150 and iglidur® i151 in a 3D printing process. The space of the large-format printer measures 1,000x500x500mm. Larger parts may have to be made of several pieces

In order to ensure that the 3D-printed components function correctly, the following should be included in the 3D model:

- The 3D model should be at the centre of tolerance; e.g. for a tolerance of 16mm to 0.2mm, the 3D model should correspond to 15.9mm to
- In the case of clearance fits, a play of approx. 0.1mm should be planned
- Minimum wall thickness: SLS 0.7mm, FDM/FFF 1mm



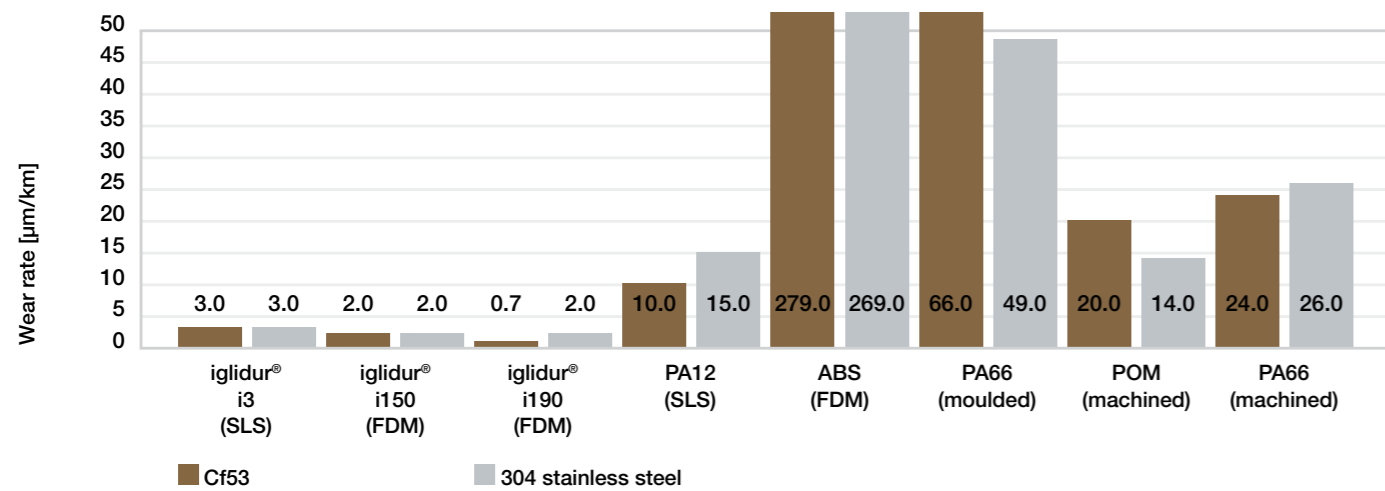
Wear, rotating $p = 20\text{MPa}$; $v = 0.01\text{m/s}$, 304 stainless steel

iglidur® tribo 3D printing | Tested

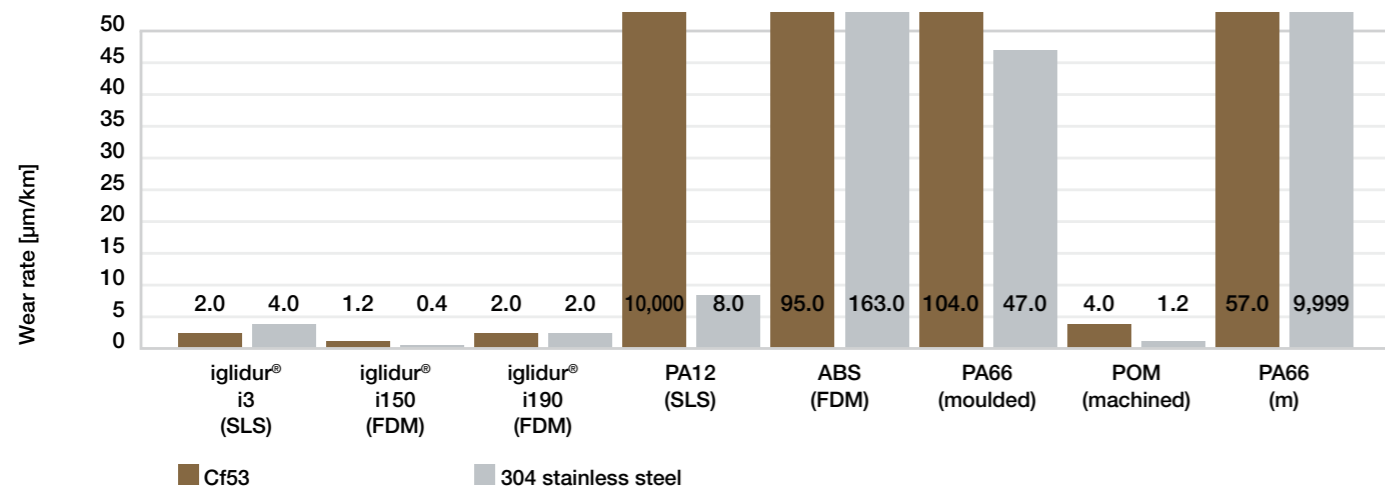
Printed as good as injection-moulded

iglidur® 3D printing materials impress in testing with injection-moulded quality

The igus® test series prove that 3D-printed bearings made from iglidur® tribo materials are just as wear-resistant as injection-moulded and machined parts. The tests have also shown that iglidur® 3D printing filaments, 3D printing resins and SLS materials have significantly lower coefficient of friction and up to 50 times higher abrasion resistance than conventional 3D printing materials. This makes igus® 3D printing materials the only ones that are convincing even in moving applications. You can directly install printed parts such as plain bearings, drive nuts or worm gears and use them as wear-resistant parts - from the prototype phase to series production.



Wear, 60° pivoting, p = 2MPa; v = 0.01m/s

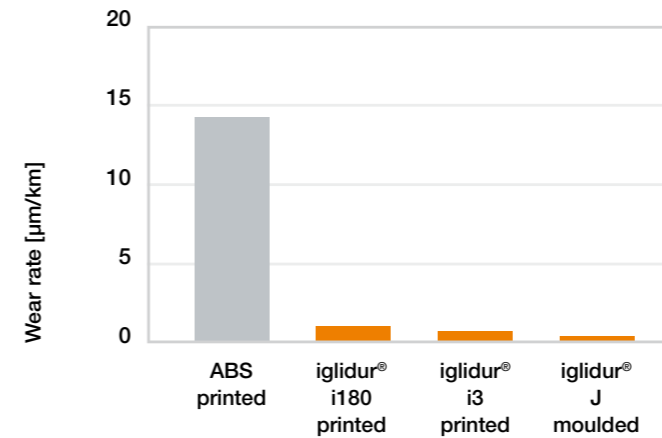


Wear, linear p = 1MPa; v = 0.01m/s

iglidur® tribofilament® | Test results

Wear-resistant parts made of iglidur® tribofilament® with the 3D printing method or parts made of iglidur® i3 with the SLS method are much more wear-resistant than standard 3D printing materials.

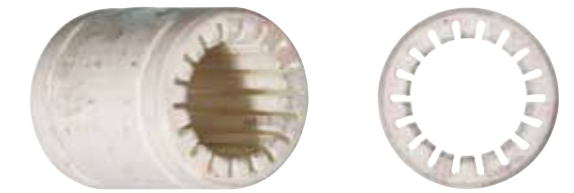
The following tests also show "printed as good as injection-moulded": the 3D-printed iglidur® plain bearings are comparable to conventionally made plain bearings with respect to wear resistance.



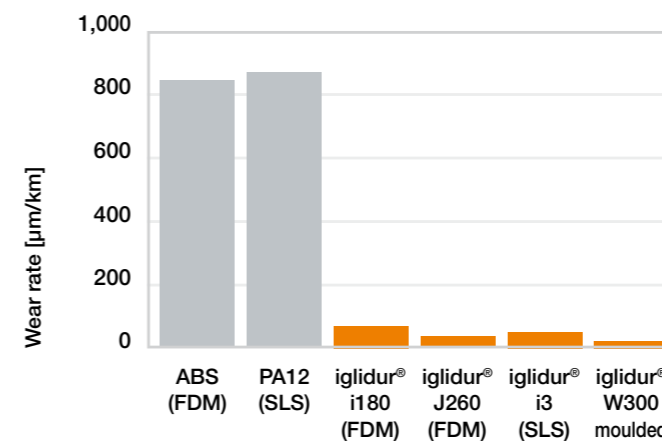
Linear wear: p = 0.11MPa; v = 0.34m/s; l = 370mm



ABS printed



iglidur® i180 printed



Wear, rotating p = 20MPa; v = 0.01m/s, 304 stainless steel



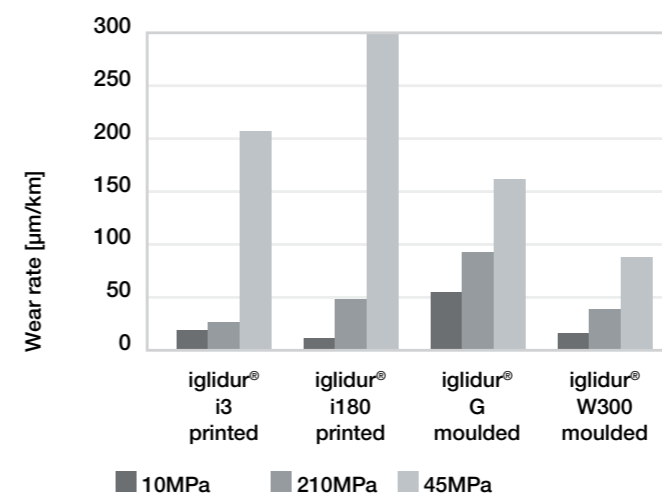
ABS

PA12



iglidur® i3

iglidur® i180



Wear, pivoting shaft: 304 stainless steel, v = 0.01m/s; B = 60°



iglidur® i3

iglidur® i180



iglidur® G

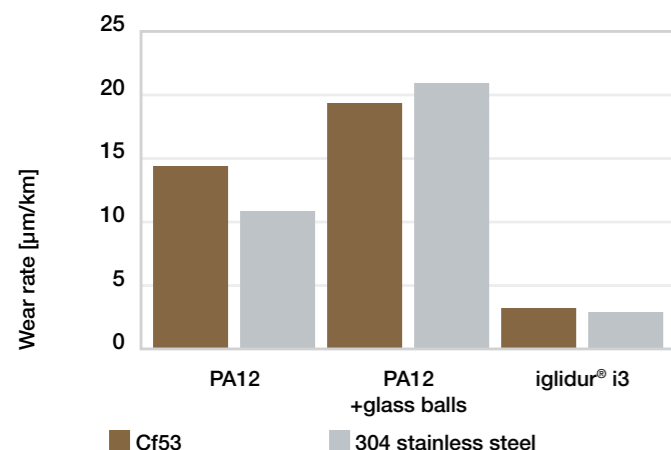
iglidur® W300



At least 3 times more wear-resistant: iglidur® i3 for 3D printing via SLS

The material iglidur® i3, which was specially developed for laser sintering, showed a 3 to 30 times better abrasion resistance than conventional materials in the igus® test lab. This further increases design freedom of sliding components prone to wear. iglidur® i3 is also suitable for regular gears such as spur gears, bevel gears, and planetary gears.

- Lubrication and maintenance-free
- Wear-resistant
- Good mechanical properties
- Accurate surface details
- Can be processed using the standard parameter set
- Refresh rate: 75%
- Automotive-compliant according to FMV SS 302
- Most-popular igus® 3D-printing material (more than 100,000 parts per year)
- 3D printing service ► www.igus.eu/idd
- Gear service life calculation ► www.igus.eu/gear-expert



Wear, rotating p = 1MPa; v = 0.3m/s

Delivery time
72hrs

Material properties

General properties	Unit	iglidur® i3	Testing method
Density	g/cm³	1.05	
Colour		yellow	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.8	DIN 53495
Max. moisture absorption	% weight	1.9	
Mechanical properties			
Flexural modulus	MPa	1,400	DIN 53457
Flexural strength at +20°C	MPa	68/61 ¹³⁰⁾	DIN 53452
Shore D hardness		70	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+80	
Max. short-term application temperature	°C	+140	
Min. application temperature	°C	-40	
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹¹	DIN 53482

¹³⁰⁾ Printed flat/upright

► Chemical table, page 1894

Part No. raw material (10kg)
I3-PL-10000

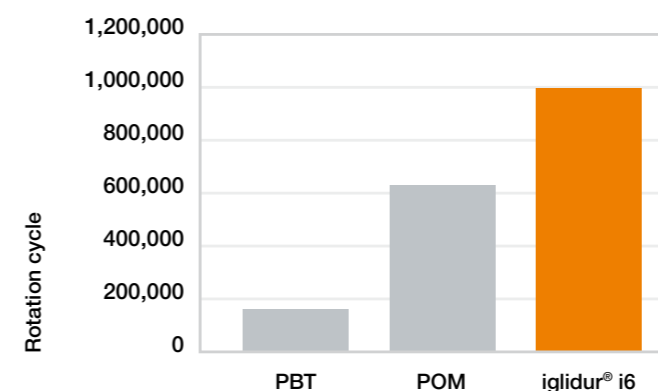
Part No. component
I3-PS-02



Durable worm wheels made of iglidur® i6 via laser sintering

The material iglidur® i6 was specifically developed for laser sintering and is especially suited for worm wheels. The tests in the igus® test laboratory showed a longer service life than conventional machined POM worm wheels. This greatly increases the flexibility in the design of gears, since no tools are necessary due to the laser sintering process and gears can be produced efficiently without minimum order quantity.

- **New:** Compliant with Regulation (EU) No. 10/2011 and FDA guidelines
- Excellent abrasion resistance
- Extremely long operating times
- Lubrication and maintenance-free
- Cost-effective, no minimum order quantity
- No tooling costs
- Accurate surface details
- 3D printing service ► www.igus.eu/idd
- Also suitable for medium-sized series, e.g. 5,000 pieces ► www.igus.eu/gears



Service life test worm wheel. 12rpm; 4.9Nm

Delivery time
72hrs

Material properties

General properties	Unit	iglidur® i6	Testing method
Density	g/cm³	1.06	
Colour		white	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.8	DIN 53495
Max. moisture absorption	% weight	1.9	
Mechanical properties			
Flexural modulus	MPa	1,100	DIN 53457
Flexural strength at +20°C	MPa	49/38 ¹³⁰⁾	DIN 53452
Shore D hardness		67	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+80	
Max. short-term application temperature	°C	+140	
Min. application temperature	°C	-40	
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹¹	DIN 53482

¹³⁰⁾ Printed flat/upright

► Chemical table, page 1894

Part No. raw material (10kg)
I6-PL-10000

Part No. component
I6-PS-02



Food safe and in blue

The laser sintering material iglidur® i6-BLUE complies with the food-specific regulations of the FDA and of EU 10/2011 and can therefore be used in numerous applications in the food and beverage industry.

- Easy to detect due to its blue colour
- Abrasion-resistant: at least 9x more abrasion-resistant than PA12 (SLS) in rotation test
- Longer service life in worm gear test than if machined with POM
 - ▶ www.igus.eu/gear
- Can be processed on regular laser sintering systems
- Available with the 3D printing service from 7 days
 - ▶ www.igus.eu/3d-printing-request

Delivery time
7 business days

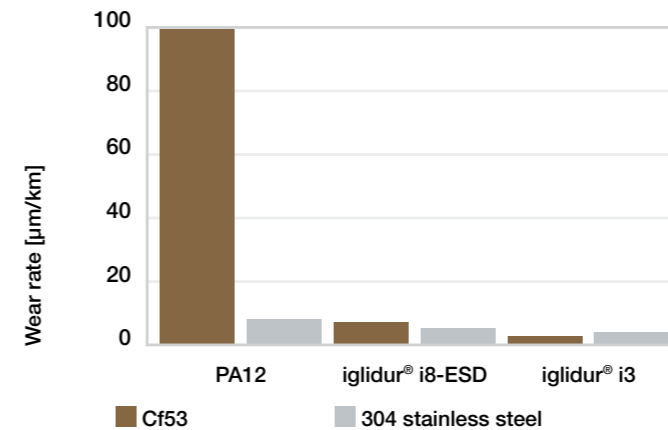
Material properties

General properties	Unit	iglidur® i6-BLUE	Testing method
Density	g/cm³	1.06	
Colour		light blue	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.8	DIN 53495
Max. moisture absorption	% weight	1.9	
Mechanical properties			
Flexural modulus	MPa	1,100	DIN 53457
Flexural strength at +20°C	MPa	49/38 ¹³⁰⁾	DIN 53452
Shore D hardness		67	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+80	
Max. short-term application temperature	°C	+140	
Min. application temperature	°C	-40	
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹¹	DIN 53482

¹³⁰⁾ Printed flat/upright
▶ Chemical table, page 1894

Part No. raw material (10kg)
I6-BLUE-PL-10000

Part No. component
I6-BLUE-PS-02



Wear, linear p = 1MPa; v = 0.01m/s

Delivery time
4 business days

Material properties

General properties	Unit	iglidur® i8-ESD	Testing method
Density	g/cm³	1.03	
Colour		black	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.8	DIN 53495
Max. moisture absorption	% weight	1.9	
Mechanical properties			
Flexural modulus	MPa	2,200	DIN 53457
Flexural strength at +20°C	MPa	63/42 ¹³⁰⁾	DIN 53452
Shore D hardness		72	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+80	
Max. short-term application temperature	°C	+140	
Min. application temperature	°C	-40	
Electrical properties			
Specific transitional resistance	Ωcm	2.8 x 10 ⁷	DIN IEC 93
Surface resistance	Ω	3.6 x 10 ⁷	DIN 53482

¹³⁰⁾ Printed flat/upright
▶ Chemical table, page 1894

Part No. raw material (10kg)
I8-ESD-PL-10000

Part No. raw material (1kg)
I8-ESD-PL-1000

Part No. component
I8-ESD-PS-02



Chemical-resistant and food-compatible special parts printed via SLS

The laser sintering material iglidur® i10 is ideal for applications in the food and electroplating industries because of its chemical resistance.

- Chemical-resistant
 - Food-compatible
 - Lubrication and maintenance-free
 - Tough
 - Available with the 3D printing service from 7 days
- www.igus.eu/idd

Delivery time
7 business days

Material properties

General properties ¹⁷⁸⁾	Unit	iglidur® i10	Testing method
Density	g/cm ³	0.85	
Colour		off white	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.2	
Mechanical properties ¹⁷⁸⁾			
Flexural modulus	MPa	800/750 ¹³⁰⁾	DIN 53457
Flexural strength at +20°C	MPa	20 ¹³⁰⁾	DIN 53452
Shore D hardness		66	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+60 ^{176), 177)}	
Max. short-term application temperature	°C	+80 ^{176), 177)}	
Min. application temperature	°C	0	
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹¹	DIN 53482

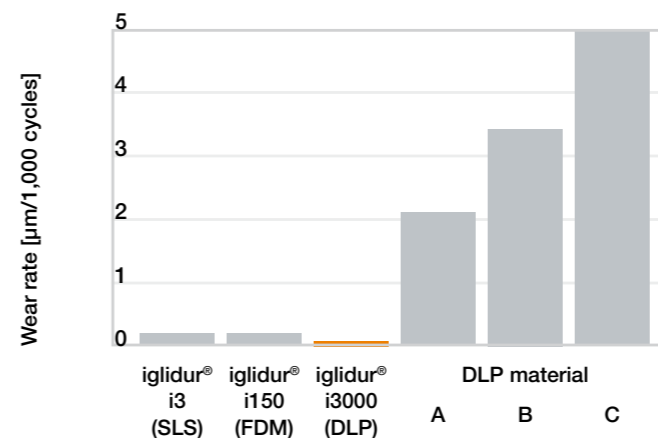
¹³⁰⁾ Printed flat/upright; ¹⁷⁶⁾ Relaxation not excluded; ¹⁷⁷⁾ Without additional load; no sliding movement;

¹⁷⁸⁾ Depending on the printing parameters and building direction

► Chemical table, page 1894

Part No. raw material (10kg)
I10-PL-10000

Part No. component
I10-PS-02



Wear in µm/1,000 cycles $p = 0.42N/mm^2$;
 $v = 0.32m/s$

Material properties

General properties	Unit	iglidur® i3000
Density	g/cm ³	1.3
Colour		grey
Max. moisture absorption at +23°C and 50% r.h.	% weight	1.8
Max. moisture absorption	% weight	3.2
Mechanical properties		
Flexural modulus	MPa	2,610
Flexural strength at +20°C	MPa	90
Shore D hardness		78
Physical and thermal properties		
Max. long-term application temperature	°C	+80
Max. short-term application temperature	°C	+100
Min. application temperature	°C	-20
Electrical properties		
Specific transitional resistance	Ωcm	> 10 ¹²
Surface resistance	Ω	> 10 ¹¹

¹³⁰⁾ Printed flat/upright



For parts with the finest details

First 3D printing resin for wear-resistant parts and gears

The DLP 3D printing resin iglidur® i3000 is suitable for DLP and LCD printers and was specifically developed for printing gears and wear-resistant parts. With a service life of at least 30 to 60 times longer than conventional 3D printing resins, iglidur® i3000 is suitable for all types of applications. The high resolution of up to 35µm enables the print of very delicate components with the finest details. The mechanical properties are largely isotropic due to the photopolymerisation process. Start of the beta test phase: please contact igus® if you would like to test individual wear-resistant parts made from iglidur® i3000.

- Self-lubricating and low maintenance
 - Fine details, 35µm and 43µm resolution
 - Inner channels possible
 - Fine tooth module of 0.2 possible
 - Available with the 3D printing service from 5 days
- igus.eu/3d-printing-request

Processing instructions:


Since skin contact with the liquid resin must be avoided, personal protective equipment is absolutely necessary during processing.

Part No. raw material (1kg)
I3000-PR-1000

Part No. component
I3000-PS-06

3D printing with tribofilament®

50 times more abrasion-resistant than standard materials for maximum service life
Wear-resistant parts made of igus® tribofilaments® are up to 50 times more wear-resistant than standard materials for 3D printing and therefore achieve a long service life. Due to their tribological properties, they are ideal for 3D printing spare wear-resistant parts for e.g. plain bearings, drive nuts, gears and other wear-resistant parts. The igus® tribofilaments® can be processed on 3D printers that are based on the fused-deposition-modelling method (FDM/FFF) and that allow the nozzle temperature to be set as required.

 Find and order the appropriate tribofilament® online
▶ www.igus.eu/tribofilament



Recommended iglidur® tribofilament® according to application temperature and printers

Ambient temperature of application	All printer types (also open installation space)	Closed installation space	Heatable installation space approx. +100°C	Heatable installation space approx. +160°C
-30°C to +65°C	iglidur® i150 iglidur® i151 igumid® P150 ¹⁸³⁾	iglidur® i150 iglidur® i151 igumid® P150 ^{184), 183)}		
-40°C to +80°C	iglidur® i190 ¹⁸³⁾	iglidur® i190 ¹⁸³⁾		
-30°C to +100°C	igumid® P190 ¹⁸³⁾	iglidur® i180 iglidur® i180-BL igumid® P190 ¹⁸³⁾	iglidur® i180 ¹⁸⁴⁾ iglidur® i180-BL ¹⁸⁴⁾	iglidur® J260
-100°C to +120°C			iglidur® J260	iglidur® J260
-50°C to +170°C				iglidur® RW370
-100°C to +180°C				iglidur® A350

¹⁸³⁾ This 3D printer is only needed for larger parts (> 100mm), the previous printer is suitable for smaller parts

¹⁸⁴⁾ The material is abrasive, therefore a wear-resistant nozzle and drive wheel is required



Material: iglidur® i150

Wear-resistant parts printed the easy way

- High abrasion resistance at low speeds
 - Good mechanical properties
 - Easiest to process tribofilament® (also without heated print bed)
 - Food-compatible according to EU10/2011 regulation
 - Nozzle temperature: +240°C up to +250°C
- ▶ Page 838



New Material: igumid® P150

Rigid and tough

- The first igus® tribofilament® specially developed for multi-material 3D printing together with iglidur® i150
 - Extremely robust and rigid with fibre reinforcement
- ▶ Page 844



New Material: iglidur® i190

Strong and abrasion-resistant

- Flexural strength 80MPa, the best iglidur® tribofilament® for regular 3D printers
 - Excellent service life - 50 times higher abrasion resistance than ABS
- ▶ Page 842



Material: iglidur® J260

Extremely long service life and excellent coefficient of friction

- Outstanding abrasion resistance of tribofilaments®
 - Application temperature from -100°C to +120°C
 - High-quality processing
 - Nozzle temperature: +260°C up to +270°C
- ▶ Page 840



Material: iglidur® A350

For the food industry

- Compliant with Regulation (EU) No. 10/2011 and FDA guidelines
- Application temperature from -100°C to +180°C



New Material: iglidur® i151

For contact with food

- Compliant with Regulation (EU) No. 10/2011 and FDA guidelines
 - Easy to detect due to its blue colour
- ▶ Page 845



Material: iglidur® i180

Best combination of ability to be processed and service life

- Excellent abrasion resistance
 - Good mechanical properties
 - Nozzle temperature: +250°C up to +260°C
 - Also in black (iglidur® i180-BL)
- ▶ Page 839



New Material: igumid® P190

Rigid and tough

- Specially developed for multi-material 3D printing together with iglidur® i190
 - Extremely robust and rigid with carbon fibre reinforcement
- ▶ Page 843



Material: iglidur® RW370

Ideal for rail technology

- Flame-retardant and high strength
 - Application temperature from -50°C to +170°C
 - High temperature printer necessary
 - Nozzle temperature: +350°C up to +360°C
- ▶ Page 846





iglidur® i150



Order key

tribofilament®	Diameter	Weight
I150-PF-	0175	-0750
iglidur® material	tribofilament®	Ø [mm · 100]
		Spool weight [g]

iglidur® i150 - makes printing even easier

- High abrasion resistance at low speeds
- Good mechanical properties
- The tribofilament® that is easiest to process
- Compliant with food requirements according to (EU) No 10/2011
- Recommended printing surface: igus® adhesive film or glue-stick on glass
- Also to be processed without a heated print bed (prerequisite: igus® adhesive film ► Page 848)

Dimensions [mm]

Filament diameter	Outer Ø spool	Inner Ø spool	Spool width	Weight [g]	Part No.
1.75	200	52	55	750	I150-PF-0175-0750
1.75	335	51	220	8,000	I150-PF-0175-8000 New
3.00	200	52	55	750	I150-PF-0300-0750
3.00	335	51	220	8,000	I150-PF-0300-8000 New

Material properties

General properties	Unit	iglidur® i150	iglidur® i180	iglidur® i180-BL
Density	g/cm³	1.30	1.21	1.21
Colour		white	white	black
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.3	0.3	0.3
Max. moisture absorption	% weight	0.7	0.9	0.9
Mechanical properties				
Flexural modulus	MPa	1,700	1,700	1,700
Flexural strength at +20°C	MPa	54/37 ¹³⁰⁾	46/33 ¹³⁰⁾	46/33 ¹³⁰⁾
Shore D hardness		62	66	66
Physical and thermal properties				
Max. long-term application temperature	°C	+65	+80	+80
Max. short-term application temperature	°C	+75	+90	+90
Min. application temperature	°C	-30	-40	-40
Electrical properties				
Specific transitional resistance	Ωcm	> 10 ¹³	> 10 ¹²	> 10 ¹²
Surface resistance	Ω	> 10 ¹²	> 10 ¹¹	> 10 ¹¹

¹³⁰⁾ Printed flat/upright



iglidur® i180



iglidur® i180-BL

Order key

tribofilament®	Diameter	Weight
I180-PF-	0175	-0250
iglidur® material	tribofilament®	Ø [mm · 100]
		Spool weight [g]

iglidur® i180 - flexible

- High degree of abrasion resistance, even in the case of dynamic applications
- Good mechanical properties
- Max. application temperature: +80°C
- Recommended printing surface: igus® adhesive film ► Page 848

iglidur® i180-BL - for visible parts

- In black for visible parts
- Same mechanical and tribological properties as iglidur® i180 in white

Dimensions [mm]

Filament diameter	Outer Ø spool	Inner Ø spool	Spool width	Weight [g]	Part No.
1.75	200	52	55	250	I180-PF-0175-0250
1.75	200	52	67	750	I180-PF-0175-0750
3.00	200	52	55	250	I180-PF-0300-0250
3.00	200	52	67	750	I180-PF-0300-0750
1.75	200	52	55	250	I180-BL-PF-0175-0250
1.75	200	52	67	750	I180-BL-PF-0175-0750
3.00	200	52	55	250	I180-BL-PF-0300-0250
3.00	200	52	67	750	I180-BL-PF-0300-0750

Processing and accessories
► Page 848

Part No. Adhesive film for the print bed
PF-01-0203-0203 (203 x 203mm)
PF-01-0254-0228 (254 x 228mm)

Complete processing instructions online (in the download area of the respective material)
► www.igus.eu/tribofilament



iglidur® J260



Order key

tribofilament®	Diameter	Weight
J260-PF- 0175 -0250		
iglidur® material	tribofilament®	Ø [mm · 100]
		Spool weight [g]

iglidur® J260 - long service life

- Outstanding abrasion resistance of tribofilaments®
- Application temperature from -100°C to +120°C
- For experts: high-quality processing
- Recommended printing surface:
igus® adhesive film ► **Page 848**

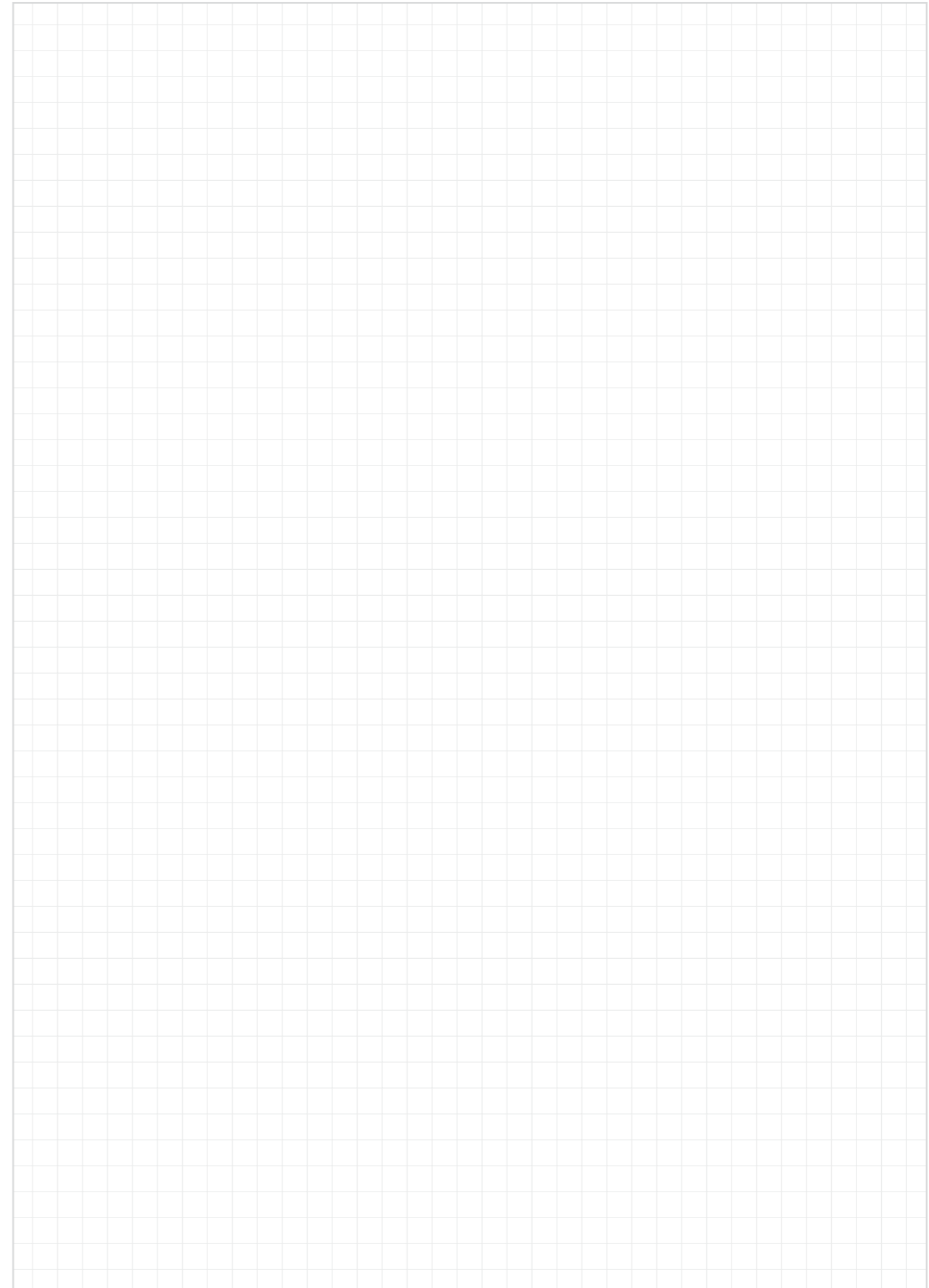
Dimensions [mm]

Filament diameter	Outer Ø spool	Inner Ø spool	Spool width	Weight [g]	Part No.
1.75	200	52	55	250	J260-PF-0175-0250
1.75	200	52	67	750	J260-PF-0175-0750
3.00	200	52	55	250	J260-PF-0300-0250
3.00	200	52	67	750	J260-PF-0300-0750

Material properties

General properties	Unit	iglidur® J260
Density	g/cm³	1.35
Colour		yellow
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.2
Max. moisture absorption	% weight	0.4
Mechanical properties		
Flexural modulus	MPa	1,000
Flexural strength at +20°C	MPa	41/13 ¹³⁰⁾
Shore D hardness		66
Physical and thermal properties		
Max. long-term application temperature	°C	+120
Max. short-term application temperature	°C	+140
Min. application temperature	°C	-100
Electrical properties		
Specific transitional resistance	Ωcm	> 10 ¹²
Surface resistance	Ω	> 10 ¹⁰

¹³⁰⁾ Printed flat/upright





iglidur® i190



Order key

tribofilament®	Diameter	Weight
I190-PF-	0175	-0750
iglidur® material	tribofilament®	Ø [mm · 100]
		Spool weight [g]

iglidur® i190 - strong and abrasion-resistant

- Flexural strength 80MPa, the best iglidur® tribofilament® for regular 3D printers
- Excellent service life - 50 times higher abrasion resistance than ABS
- Can be processed by commercially available 3D printers
- Max. application temperature: +90°C
- igus® bonding agent for tribofilament® or glue stick in glass ► **Page 848**

Dimensions [mm]

Filament diameter	Outer Ø spool	Inner Ø spool	Spool width	Weight [g]	Part No.
1.75	200	52	55	750	I190-PF-0175-0750 New
3.00	200	52	55	750	I190-PF-0300-0750 New

Material properties

General properties	Unit	iglidur® i190	igumid® P190
Density	g/cm³	1.30	1.25
Colour		beige	black
Max. moisture absorption at +23°C and 50% r.h.	% weight	1.4	1.4
Max. moisture absorption	% weight	6.0	3.7
Mechanical properties			
Flexural modulus	MPa	2,400	6.34/11.55/2.86GPa ¹³⁰⁾
Flexural strength at +20°C	MPa	75 ¹³⁰⁾	163/237/70 ¹⁸⁹⁾
Shore D hardness		71	83
Physical and thermal properties			
Max. long-term application temperature	°C	+90	+120
Max. short-term application temperature	°C	+120	+140
Min. application temperature	°C	-40	-40
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	> 10 ¹⁰
Surface resistance	Ω	> 10 ¹¹	> 10 ¹⁰

¹³⁰⁾ Printed flat/upright

¹⁸⁹⁾ Printed flat, printing lines aligned 45°/-45°; printing lines aligned according to optimum strength/printed upright



igumid® P190



Order key

tribofilament®	Diameter	Weight
P190-PF-	0175	-0750
iglidur® material	tribofilament®	Ø [mm · 100]
		Spool weight [g]

igumid® P190 - rigid and tough

- Specially developed for multi-material 3D printing together with iglidur® i190
- Extremely robust and rigid with carbon fibre reinforcement
- Suitable for structural components and multi-material components
- igus® bonding agent for tribofilament® or glue stick in glass ► **Page 848**

Dimensions [mm]

Filament diameter	Outer Ø spool	Inner Ø spool	Spool width	Weight [g]	Part No.
1.75	200	52	55	750	P190-PF-0175-0750 New
3.00	300	52	100	750	P190-PF-0300-0750 New

Processing and accessories
► **Page 848**

Part No. Bonding agent for tribofilaments®
PF-ADHESIVE-01

Complete processing instructions online (in the download area of the respective material)
► www.igus.eu/tribofilament



igumid® P150



Order key

tribofilament®	Diameter	Weight
P150-PF-	0175	-0750
iglidur® material	tribofilament®	Ø [mm · 100]
		Spool weight [g]

igumid® P150 - rigid and tough

- igumid® P150 is the first igus® tribofilament® specially developed for multi-material 3D printing together with iglidur® i150
- igumid® P150: robust and rigid with fibre reinforcement

- Also suitable for structural components: flexural strength 95MPa, flexural modulus 5GPa (optimised filling direction)
- igus® bonding agent for tribofilament® or glue stick in glass ► **Page 848**

Dimensions [mm]

Filament diameter	Outer Ø spool	Inner Ø spool	Spool width	Weight [g]	Part No.
1.75	200	52	55	750	P150-PF-0175-0750 New
3.00	200	52	55	750	P150-PF-0300-0750 New

Material properties

General properties	Unit	igumid® P150	iglidur® i151
Density	g/cm³	1.40	1.42
Colour		black	light blue
Max. moisture absorption at +23°C and 50% r.h.	% weight	n.s.	n.s.
Max. moisture absorption	% weight	0.3	n.s.
Mechanical properties			
Flexural modulus	MPa	4,700	1,400
Flexural strength at +20°C	MPa	87 ¹³⁰⁾	43 ¹³⁰⁾
Shore D hardness		n.s.	69
Physical and thermal properties			
Max. long-term application temperature	°C	+100	+65
Max. short-term application temperature	°C	+125	+75
Min. application temperature	°C	-30	-30
Electrical properties			
Specific transitional resistance	Ωcm	n.s.	n.s.
Surface resistance	Ω	n.s.	n.s.

¹³⁰⁾ Printed flat/upright



iglidur® i151



Order key

tribofilament®	Diameter	Weight
I151-PF-	0175	-0750
iglidur® material	tribofilament®	Ø [mm · 100]
		Spool weight [g]

iglidur® i151 - for contact with food

- Compliant with Regulation (EU) No. 10/2011 and FDA guidelines
- Easy to detect due to its blue colour
- Can be processed easily on any commercially available 3D printers

- Long service life - up to 50x more abrasion-resistant than ABS, PETG and PLA in 3D printing
- igus® bonding agent for tribofilament® or glue stick in glass ► **Page 848**

Dimensions [mm]

Filament diameter	Outer Ø spool	Inner Ø spool	Spool width	Weight [g]	Part No.
1.75	200	52	55	750	I151-PF-0175-0750 New
3.00	200	52	55	750	I151-PF-0300-0750 New

Processing and accessories
► **Page 848**

Part No. Bonding agent for tribofilaments®
PF-ADHESIVE-01

Complete processing instructions online (in the download area of the respective material)
► www.igus.eu/tribofilament



iglidur® RW370



Order key

tribofilament®	Diameter	Weight
RW370-PF-	0175	-0750
iglidur® material	tribofilament®	Ø [mm · 100]
		Spool weight [g]

iglidur® RW370 - ideal for the rail industry

- Flame-retardant according to UL94-V0 and DIN EN 45545
- 91MPa flexural strength
- High wear resistance
- Can be processed with high-temperature 3D printer
- Max. application temperature: +170°C
- Available for 3D printing (Ø 1.75mm), as bar stock and as injection-moulding material
- Lubrication and maintenance-free
- Recommended printing surface: PET film

Dimensions [mm]

Filament diameter	Outer Ø spool	Inner Ø spool	Spool width	Weight [g]	Part No.
1.75	200	52	55	750	RW370-PF-0175-0750

Material properties

General properties	Unit	iglidur® RW370	iglidur® A350
Density	g/cm³	1.34	1.42
Colour		beige	blue
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.25	0.6
Max. moisture absorption	% weight	1.2	1.9
Mechanical properties			
Flexural modulus	MPa	2,100	1,250/1,390 ¹³⁰⁾
Flexural strength at +20°C	MPa	91/30 ¹³⁰⁾	50/46 ¹³⁰⁾
Shore D hardness		80	76
Physical and thermal properties			
Max. long-term application temperature	°C	+170	+180
Max. short-term application temperature	°C	+190	+210
Min. application temperature	°C	-50	-100
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	> 10 ¹¹
Surface resistance	Ω	> 10 ¹²	> 10 ¹⁰

¹³⁰⁾ Printed flat/upright



iglidur® A350



Order key

tribofilament®	Diameter	Weight
A350-PF-	0175	-0750
iglidur® material	tribofilament®	Ø [mm · 100]
		Spool weight [g]

iglidur® A350 - for the food industry

- Compliant with Regulation (EU) No. 10/2011 and FDA guidelines
- Available as 3D print filament, bar stock and for injection moulding
- In industry-standard blue
- Max. application temperature: +180°C
- Complies with the fire prevention requirements of the Federal Aviation Administration of the USA (FAA) for aircraft interiors
- Suitable for autoclave
- Recommended bonding surface: PET film

Dimensions [mm]

Filament diameter	Outer Ø spool	Inner Ø spool	Spool width	Weight [g]	Part No.
1.75	200	52	55	750	A350-PF-0175-0750

Processing and accessories
▶ Page 848

Complete processing instructions online (in the download area of the respective material)
▶ www.igus.eu/tribofilament


Processing instructions

iglidur® tribofilaments® can be processed on any 3D printer that is equipped with a heated print bed on which temperatures are adjustable. The igus® adhesive film allows a good adhesion between the iglidur® tribofilament® and the print bed.

- Good ventilation should be provided during processing
- When heated above +300°C, hazardous fumes are produced
- For iglidur® A350 and iglidur® RW370, a high-temperature printer is necessary

 **Example: Part No. tribofilaments®**
I150-PF-0175-0750


for 750g spool with a diameter of 1.75mm made of the iglidur® material i150

 **Complete processing instructions online (in the download area of the respective material)**
▶ www.igus.eu/tribofilament

New: igus® bonding agent for tribofilament®

The igus® bonding agent for iglidur® tribofilaments® ensures reliable adhesion of the component to the print bed but also easy removal after printing. The bonding agent (powered by Magigoo) was developed as a simple solution specifically for iglidur® tribofilaments® to improve the adhesion of these filaments to various printing plates. It is easy to apply and can be removed at any time with warm water without leaving any residue.

- Ideal for tribofilaments® iglidur® i150, iglidur® i180 and iglidur® i180-BL
- Good adhesion of the parts on the print bed
- Easy detachment


 **Part No. Bonding agent for tribofilaments®**
PF-ADHESIVE-01

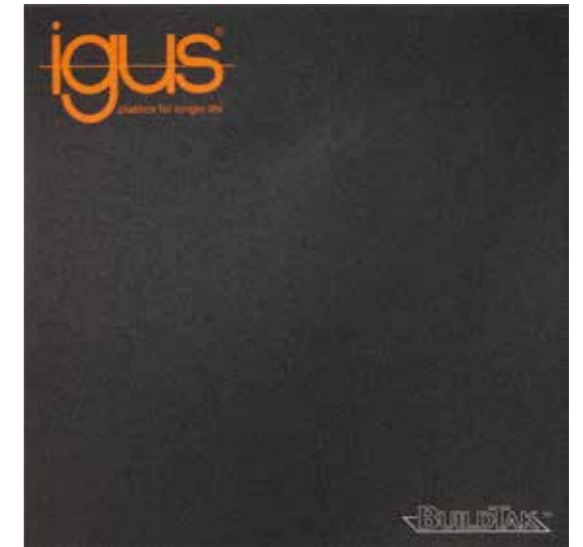


igus® print bed film for your print bed

Thanks to the film available from igus® for the print bed, there is very good adhesion between the iglidur® tribofilament® and the print bed.

- Useable up to approximately 20 times
- "Set" the degree of adhesion by means of print bed temperature
- 3D printer without heating bed? The combination of iglidur® I150 with this print bed film also makes it possible to make wear-resistant parts oneself with such 3D printers

 **Part No. Adhesive film for the print bed**
PF-01-0203-0203 (203 x 203mm)
PF-01-0254-0228 (254 x 228mm)




Spool

iglidur® tribofilaments® weighing up to 750g are wound onto a spool. Larger dimensions are available upon request.

Filament thickness

The iglidur® tribofilaments® are available with 1.75mm and 3mm thickness. The 3mm filaments can be used without problems in 3D printers that need a 2.85mm filament.

 **Test kits**
for 25g of filament, loose with 1.75mm diameter made of the iglidur® material i150



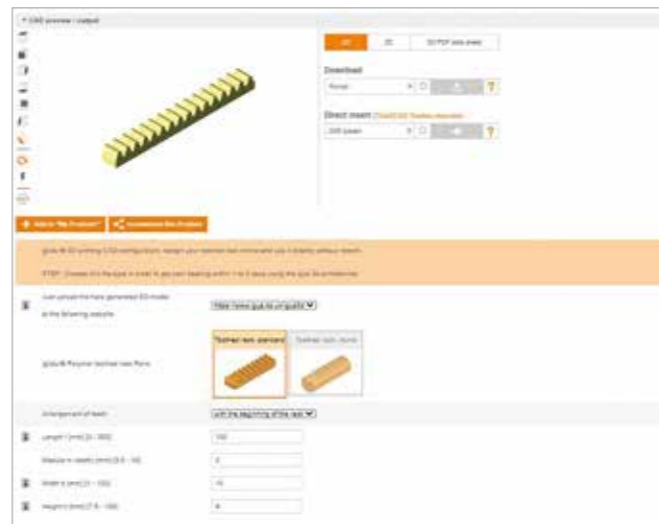
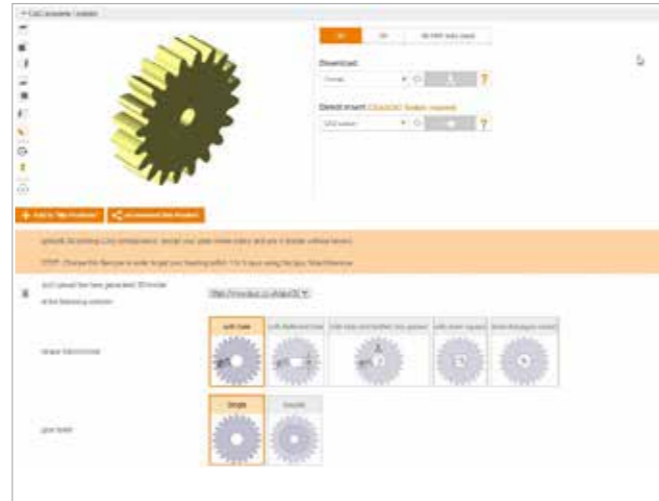
iglidur® tribo 3D printing | Gear configurator

Wear-resistant gears in 60 seconds using the new igus® gear configurator

Configure individual gears and racks in 60 seconds, shipped within 3 days

In order to facilitate the work of designers, igus® has now developed a simple and practical tool with the gear configurator. This allows each customer to configure their own component even in special dimensions. In a few steps, the user only needs to enter the specifications of the required gear; such as the tooth module, number of teeth, width and inner diameter or select the suitable rack profile. This automatically displays a 3D model that can be exported as a STEP file. By uploading the file in the igus® 3D printing service, www.igus.eu/3d-print-service the configured gear made from the new laser sintering material iglidur® i3 for gears can be ordered immediately. With one click, the user can order their own wear-resistant gear with no minimum order quantity or request a quotation. Within 3 days the custom-made gear is ready for shipment. iglidur® i3 is well suited for straight and helical spur gears, racks and bevel gears.

Gear service life calculator
► www.igus.eu/gear-expert



iglidur® i6 for worm gears: double the service life

In the test, iglidur® i6 showed itself to be considerably better than machined worm wheels. Worm wheels made of POM had total wear after 621,000 cycles, whereas worm wheels made of iglidur® i6 continued to be functional after more than 1 million cycles.

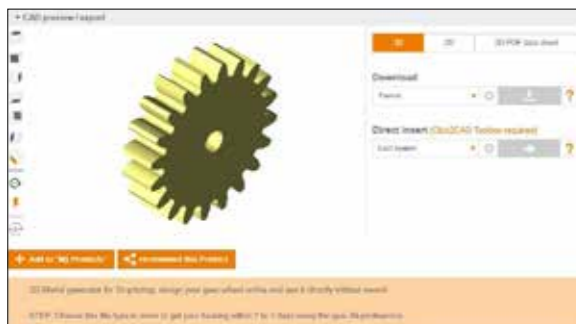
Delivery time
24-72hrs

Online CAD configurator for gears
► www.igus.eu/gear-configurator



Material	Service Life	Wear Status
POM	321,000 cycles	High wear
POM	621,000 cycles	Failed
iglidur® i6	1 million cycles	Low wear

Online CAD configurator for plain bearings
► www.igus.eu/3d-model

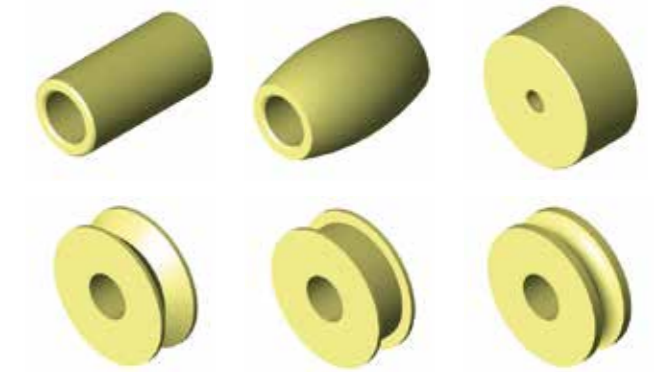
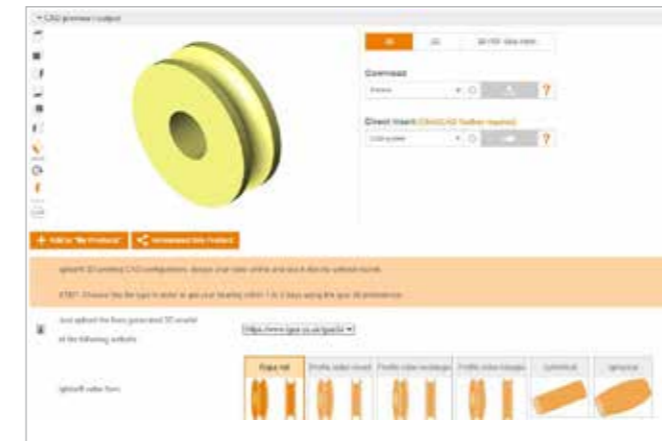


iglidur® tribo 3D printing | Configurators

Individual rollers, lead screw nuts, sliding plates and toothed belts

Configure rollers in the desired shape online, delivered in only 24hrs

Create and download your individual 3D model with the roller configurator. Then order it from the 3D printing service (shipped in one to three days). Rollers with different shapes are possible with any dimensions between 1 and 170mm. The rollers can be used immediately without any further machining.

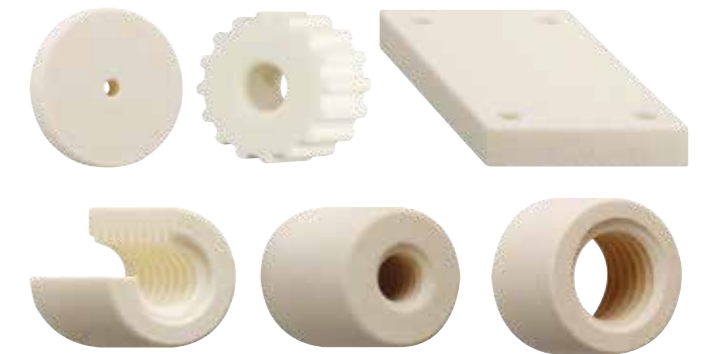


Delivery time
24-72hrs

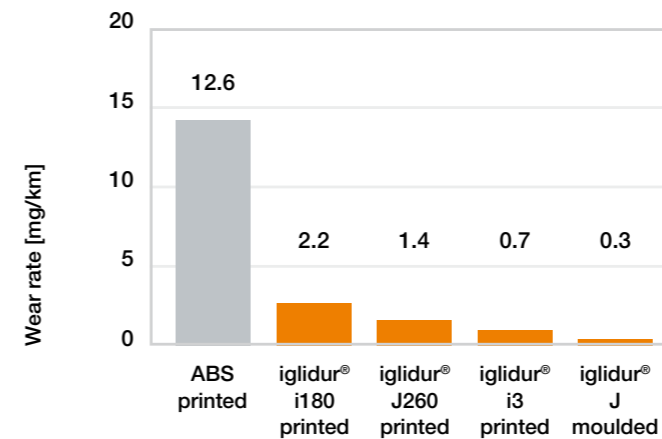
Configure rollers
► www.igus.eu/roller-configurator

Configure custom lead screw nuts, plain bearings, sliding plates and toothed belts in 60 seconds and they will be ready for shipment within 3 days

In addition to individually configurable sliding plates and plain bearings, lead screw nuts with trapezoidal threads can be manufactured from a 3D model. Eliminating costly, time-consuming design and rework. Lead screw nuts, plain bearing and sliding plates are manufactured via laser sintering.



Lead screw nut wear test



F = 129N; l = 370mm; n = 290rpm



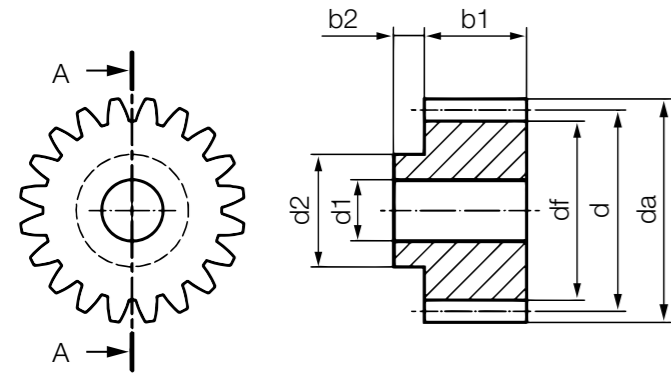
Delivery time
24-72hrs

The configurators
► www.igus.eu/cad-configurators

Configure gear with and without keyway



Image exemplary



Configuration key

Part type	Options
OC-GEAR-01-1.00-18-10.0-6.1-20.0-8.0	
Configurator	Gear type
	Tooth module
	Number of teeth
	Width b1
	Inner diameter d1
	Diameter outlet b2
	Width outlet b2

Configuration limits:

Gear type 01: gear with hole, keyway optional
 Tooth module: 0.50 to 10.0mm
 Number of teeth: 17 to 100
 Width: 1.0 to 200mm

Dimensions [mm] - example gear configuration with and without keyway

Part No.	Configuration number	Tooth module	Number of teeth	Width b1	Inner Ø d1	Keyway Ø b2	Width outlet b2
I3-PS-02	OC-GEAR-01-1.00-□-10-6-15	1.00	17-100	10	6	15	8
I3-PS-02	OC-GEAR-01-1.50-□-10-10-25	1.50	17-100	10	10	25	10
I3-PS-02	OC-GEAR-01-2.00-□-12-10	2.00	17-100	12	10	-	-
I3-PS-02	OC-GEAR-01-2.50-□-14-12	2.50	17-100	14	12	-	-



Many other gear types, including double gears, can be configured online: download the STEP model and determine the price online ► www.igus.eu/gear-configurator

Delivery time
72hrs

852 Try it out now ► www.igus.eu/cad-configurators



EN 06/2023

Configure flat and round racks



Image exemplary



Configuration key rack, flat

Part type	Options
OC-GEAR-RACK-01-1.00-10.0-4.5-60.0- S	
Configurator	Rack type
	Tooth module
	Width b
	Height h
	Length l
	Arrangement

Configuration limits:

Rack type 01: flat rack
 Tooth module: 0.50 to 10.0mm
 Width: 1.0 to 100mm
 Height: up to 100mm
 Length: 3 to 300mm¹⁷³⁾
 Arrangement S: Symmetrical end separation

Configuration key rack, round

Part type	Options
OC-GEAR-RACK-02-1.00-10.0-60.0- S	
Configurator	Rack type
	Tooth module
	Diameter d
	Length l
	Arrangement

Configuration limits:

Rack type 02: round rack
 Tooth module: 0.50 to 10.0mm
 Diameters: 3.0mm up to 100mm
 Length: 3 to 300mm¹⁷³⁾
 Arrangement S: Symmetrical end separation

Dimensions [mm] - example configuration of rack (flat)

Part No.	Configuration number	Tooth module	Width b	Height h	Length l	Arrangement
I3-PS-02	OC-GEAR-RACK-01-1.00-10.0-10.0-□-S	1.00	10.0	10.0	3-300	S
I3-PS-02	OC-GEAR-RACK-01-1.50-15.0-15.0-□-S	1.50	15.0	15.0	3-300	S
I3-PS-02	OC-GEAR-RACK-01-2.00-20.0-20.0-□-S	2.00	20.0	20.0	3-300	S
I3-PS-02	OC-GEAR-RACK-01-2.50-20.0-20.0-□-S	2.50	20.0	20.0	3-300	S

¹⁷³⁾ Also has multiple parts

Configure an individual rack, download the STEP model, and determine the price online ► www.igus.eu/rack-configurator

Delivery time
72hrs

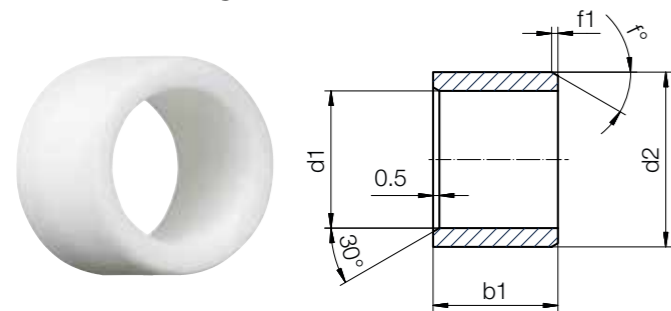


EN 06/2023

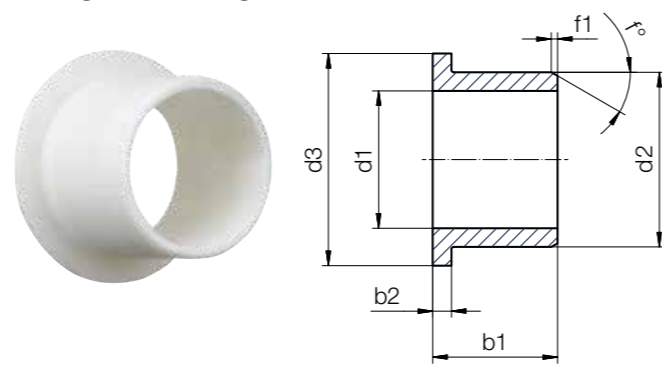
Prices and delivery time online ► www.igus.eu/idd 853

Configure plain bearings with and without flange

Sleeve bearing



Flanged bearings



Configuration key Sleeve bearing

Part type	Options
-----------	---------

OC-BRG-S-10.0-12.0-10.0

Configurator	Plain bearing type	Inner Ø d1	Outer Ø d2	Length b1
--------------	--------------------	------------	------------	-----------

Configuration limits:

Plain bearing type S: sleeve bearing
 Inner diameter: up to 195mm
 Outer diameter: up to 200mm
 Bearing length: up to 300mm

Configuration key Flanged bearings

Part type	Options
-----------	---------

OC-BRG-F-10.0-12.0-10.0-16.0-1.0

Configurator	Plain bearing type	Inner Ø d1	Outer Ø d2	Length b1	Flange Ø d3	Flange thickness b2
--------------	--------------------	------------	------------	-----------	-------------	---------------------

Configuration limits:

Plain bearing type F: flanged bearing
 Inner diameter: up to 195mm
 Outer diameter: up to 200mm
 Bearing length: up to 300mm
 Flange diameter: up to 200mm
 Flange thickness: up to 20mm

Dimensions [mm] - example plain bearing configuration with and without flange

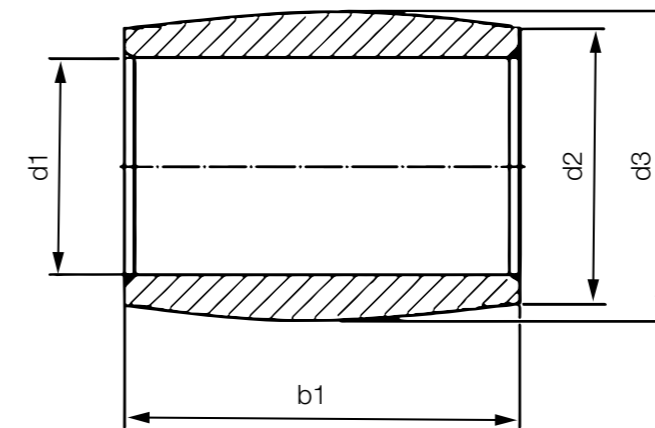
Part No.	Configuration number	Inner Ø d1	Outer Ø d2	Total length b1	Flange Ø d3	Flange thickness b2
I3-PS-02	OC-BRG-S-50.0-60.0-30.0	50.0	60.0	30.0	-	-
I3-PS-02	OC-BRG-S-18.0-20.0-16.0	18.0	20.0	16.0	-	-
I3-PS-02	OC-BRG-F-18.0-22.0-18.0-30.0-1.0	18.0	22.0	18.0	30.0	1.0
I3-PS-02	OC-BRG-F-50.0-60.0-31.0-66.0-1.0	50.0	60.0	31.0	66.0	1.0



Configure an individual plain bearing, download the STEP model, and determine the price online, including special shapes with slot ► www.igus.eu/3d-model

Delivery time
72hrs

Configure convex rollers



Configuration key

Part type	Options
-----------	---------

OC-ROLLER-02-10.0-15.0-30.0-20.0

Configurator	Roller type	Inner Ø d1	Outer Ø d2	Spherical outer Ø d3	Roller length b1
--------------	-------------	------------	------------	----------------------	------------------

Configuration limits:

Roller type 02: convex roller
 Inner diameter: 1 up to 190mm
 Outer diameter: up to 195mm
 Roller length: up to 300mm

Dimensions [mm] - example configuration of convex rollers

Part No.	Configuration number	Inner Ø d1	Outer Ø d2	Spherical Outer Ø d3	Max. Roller length b1
I3-PS-02	OC-ROLLER-02-4.0-8.0-8.2-□	4.0	8.0	8.2	300
I3-PS-02	OC-ROLLER-02-10.0-15.0-20-□	10.0	15.0	20	300
I3-PS-02	OC-ROLLER-02-10.0-50.0-55.0-□	10.0	50.0	55.0	300
I3-PS-02	OC-ROLLER-02-14.0-60.0-61.0-□	14.0	60.0	61.0	300
I3-PS-02	OC-ROLLER-02-20.0-100.0-120.0-□	20.0	100.0	120.0	300



Many other roller types can be configured online: download the STEP model and determine the price online ► www.igus.eu/roller-configurator

Delivery time
72hrs



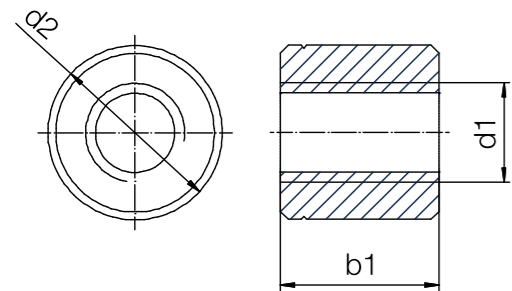
Image exemplary

Configuration key

Part type	Options
OC-NUT-S-18.0-12.0-TR10X2-R	
Configurator	Lead screw nut type
	Outer Ø d2
	Width b1
	Thread
	Thread direction

Configuration limits:

Lead screw nut type S: cylindrical
 Outer diameter: up to 150mm
 Width: 3 to 200mm
 Thread: 32 types to select from
 Thread direction: R = Right hand
 L = Left



Dimensions [mm] - example configuration of cylindrical lead screw nut

Part No.	Configuration number	Outer Ø d2	Width b1	Thread	Thread direction	
					Right	left
I3-PS-02	OC-NUT-S-15.0-□-TR8X1.5-R	15.0	3-200	TR8X1.5	●	-
I3-PS-02	OC-NUT-S-16.0-□-TR10X2-L	16.0	3-200	TR10X2	-	●
I3-PS-02	OC-NUT-S-18.0-□-TR11X5-R	18.0	3-200	TR11X5	●	-
I3-PS-02	OC-NUT-S-22.0-□-TR16X2-R	22.0	3-200	TR16X2	●	-
I3-PS-02	OC-NUT-S-26.0-□-TR20X2-L	26.0	3-200	TR20X2	-	●
I3-PS-02	OC-NUT-S-50,0-□-TR30X3-R	50.0	3-200	TR30X3	●	-



Configure individual trapezoidal lead screw nuts, download the STEP model and determine the price online ► www.igus.eu/lead-screw-nut-configurator

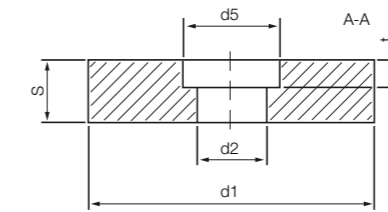
Delivery time
72hrs

856 Try it out now ► www.igus.eu/cad-configurators

Round sliding element with central hole



Image exemplary



Configuration key
Round sliding element with central hole

Part type	Options
OC-SLIDER-01-6.4-30.0-10.0-13.0-5.0	
Configurator	Glider type
	Inner Ø d1
	Outer Ø d2
	Thickness s
	Flat sink d5
	Flat sink depth t

Configuration limits:

Glider Type 01: round with central hole
 Inner diameter: up to 195mm
 Outer diameter: up to 200mm
 Height 2: up to 100mm
 Flat sink: optional

Dimensions [mm] - example plain bearing configuration with and without flange

Part No.	Configuration number	Width	Length	Pitch	Height	Bore	Flat sink	Flat sink
		b1	l1	l2	Øs	d3	d5	depth t
I3-PS-02	OC-SLIDER-04-20.0-40.0-20.0-10.0-6.4-13.0-5.0	20.0	40.0	20.0	10.0	6.4	13.0	5.0
I3-PS-02	OC-SLIDER-04-30.0-60.0-40.0-8.0-4.3-9.0-4.4	30.0	60.0	40.0	8.0	4.3	9.0	4.4
I3-PS-02	OC-SLIDER-04-50.0-100.0-60.0-11.0-8.2	50.0	100.0	60.0	11.0	8.2	-	-

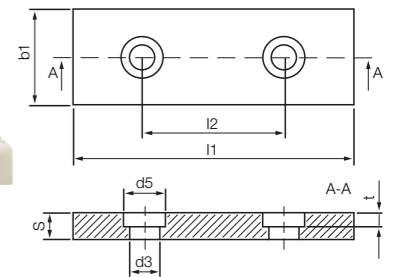
Many other glider types can be configured online: download the STEP model and determine the price online ► www.igus.eu/glider-configurator

Delivery time
72hrs

Rectangular sliding element with 2 holes



Image exemplary



Configuration key
Rectangular sliding element with 2 holes

Part type	Options
OC-SLIDER-04-20.0-40.0-20.0-10.0-6.4-13.0-5.0	
Configurator	Glider type
	Width b1
	Length l1
	Pitch l2
	Thickness s
	Hole d3
	Flat sink d5
	Flat sink depth t

Configuration limits:

Glider Type 04: Rectangle with two holes
 Width: 10 to 200mm
 Length: 10 to 200mm
 Flat sink: optional
 Glider type:
 01: Round with central hole
 02: Round with 4 holes
 03: Round with 5 holes
 04: Rectangle with 2 holes
 05: Rectangle with 4 holes

Prices and delivery time online ► www.igus.eu/idd 857

igubal[®]

Polymer spherical bearings



...plastics

Tech up ... Cost down

For years the igus® motto has been "plastics for longer life®". By this we mean the production of innovative plastic products which reduce maintenance work, achieve technical improvements, at the same time as reducing costs and increasing service life, everything delivered immediately from stock. Our references from the practice show the proven employment from igubal® spherical bearings in a wide variety of applications.

Robotics chassis

To research technologies such as machine learning, engineer Josh Bowen has developed a robotics chassis. It drives autonomously over harsh, dirty terrain. One challenge was the robot axes, which must adjust independently of one another to the terrain height. For this, Bowen uses igubal® ball and socket joints. They ensure reliable, smooth operation - even in dusty or damp environments.

► www.igus.eu/igubal-applications



Race car with igubal® rod end bearings

University students on the Arrabona Racing Team, based in Hungary, are building a race car that is to be especially reliable and lightweight.

► www.igus.eu/manus-2021-racecar



igubal® pillow block bearings in a catamaran

Recreative Electric Vehicles, a shipyard in southern France, is building an electric catamaran that is 80% recyclable.

► www.igus.eu/manus-2021-catamaran

Sun protection

Arcora, a French company, is developing a system for moving sun protection fins on facades.

► www.igus.eu/manus-2021-bronze



Inspection trolley for seedlings

Students at France's Institut catholique d'arts et métiers have developed an automated solution for manufacturers of agricultural machinery.

► www.igus.eu/manus-2021-seedling

igubal® rod end bearings with female thread



Selectable spherical ball material:
KCRM/KCLM
▶ Page 878




Integrated lock nut for easy assembly:
KBRM-CL/KBLM-CL
▶ Page 880



Classic design:
KBRM/KBLM
▶ Page 882



Space-saving, selectable spherical ball material:
EBRM/EBLM 
▶ Page 888




For temperatures up to +200°C:
EBRM-HT/EBLM-HT
▶ Page 892



Suitable for food contact:
EBRM-FC/KCRM-FC
▶ Page 894



Metallic housing with maintenance-free inner ring:
KCRM-S/KCLM-S 
▶ Page 896

igubal® rod end bearings with male thread



For higher loads:
KARM-CL/KALM-CL
▶ Page 884



Classic design:
KARM/KALM 
▶ Page 886




Space-saving, selectable spherical ball material:
EARM/EALM
▶ Page 890



For temperatures up to +200°C:
EARM-HT/EALM-HT
▶ Page 893



Metallic housing with maintenance-free inner ring:
KARM-S/KALM-S 
▶ Page 897

igubal® angled and in-line ball and socket joints



Angled ball and socket joints:
WGRM/WGLM
▶ Page 898



Angled ball and socket joints, low-cost:
WGRM-LC/WGLM-LC
▶ Page 899



Easy assembly and disassembly:
WGRM-DE/WGLM-DE
▶ Page 900




In-line ball and socket joint:
AGRM/AGLM
▶ Page 901



In-line ball and socket joints, low-cost:
AGRM-LC/AGLM-LC
▶ Page 902

igubal® clevis joint combinations



Clevis joints with clevis pin and circlip:
GERMK/GELMK 
▶ Page 912



Clevis joints with spring-loaded fixing clip:
GERMF/GELMF
▶ Page 913

igubal® clevis joints combinations and single components



Clevis joint combination:
GERMKE/GELMKE
▶ Page 914



Clevis joints with spring-loaded fixing clip:
GERMFE/GELMFE
▶ Page 915



Clevis joint, high rigidity:
GERM/GELM 
▶ Page 908



Spring-loaded fixing clip:
GEFM
▶ Page 916



Clevis pin and circlips:
GBM/GSR
▶ Page 917




Clevis joints with spring-loaded fixing pin, detectable, FDA and EU10/2011-compliant:
GERMF-FC
▶ Page 918



Clip-on version:
KSTM-CL
▶ Page 928



Compensation of misalignment errors:
KSTM 
▶ Page 928

igubal® pillow block bearings for high radial loads



Easy to disassemble, split housing and ball:
KSTM-GT
▶ Page 930



Easy installation:
ESTM
▶ Page 931



For quick assembly and low total moisture absorption:
ESTM-GT-GT
▶ Page 932



Split housings with parallel hole:
ESTM-GT
▶ Page 933



Extremely light, compact design:
ESTM-SL
▶ Page 934




Space-saving:
PA-KS-JEM-SP 
▶ Page 935



Split pillow block bearings for square profiles:
ESQM
▶ Page 936



Pillow block bearings for contact with food:
ESTM-FC 
▶ Page 937

... for high radial loads



New

Pillow block bearings with polymer housing:
P-KS-JEM-SP
▶ Page 938



New

Pillow block bearings with cast iron housing:
P-JEM-SP
▶ Page 939



Pillow block bearings with cost-effective metallic housing:
PP-JEM-SP
▶ Page 940

igubal® pillow block bearings - low-cost design

igubal® fixed flange bearings for supporting the centre or ends of shafts



Easy installation:
EFOM
▶ Page 946



For high radial loads:
EFSM
▶ Page 948



Universal and quick assembly, female thread:
GFSM-IG
▶ Page 950



Universal and quick assembly, female thread:
GFSM-AG
▶ Page 951

igubal® fixed flange bearings for supporting the centre or ends of shafts



High static load, split housing:
KFSM-GT
▶ Page 952



For temperatures up to +200°C:
EFSM-HT
▶ Page 953



For temperatures up to +200°C:
EFOM-HT
▶ Page 954



Suitable for food contact:
EFOM-FC
▶ Page 955



New

With polymer housing:
FL-KS-JEM-SP
▶ Page 956



New

With polymer housing:
F-KS-JEM-SP
▶ Page 957



New

Compact fixed flange bearing: FL208-30-KS
F208-30-KS
▶ Page 958



New

With cast iron housing:
FL-JEM-SP
▶ Page 960

igubal® spherical bearings



New

With cast iron housing:
F-JEM-SP
▶ Page 961



With cost-effective metallic housing:
PFL-JEM-SP
▶ Page 962



Standard, easy to fit:
KGLM
▶ Page 970



Easy to fit, cost-effective:
KGLM-LC
▶ Page 968



For extremely narrow installation space:
KGLM-SL
▶ Page 969



Cost-effective, selectable spherical ball material:
EGLM-LC
▶ Page 971



Space-saving:
EGLM
▶ Page 972



New

FC spherical bearings:
EGLM-FC
▶ Page 973

igubal® clip bearings



Simply snap into sheet metal:
ECLM
▶ Page 974



For high axial and radial loads:
ECLM-HD
▶ Page 975



For tolerance compensation, selectable spherical ball material: EGFM-T
▶ Page 976



Clip into sheet metal, can be assembled on both sides:
ZCLM
▶ Page 977

igubal® double joints and coupling joints



Robust plastic:
EGZM
▶ Page 978



Selectable materials, individual dimensions:
KDGM
▶ Page 980



Selectable materials, individual dimensions:
WDGM
▶ Page 982



Removable, selectable materials:
WDGM-DE
▶ Page 984



New

Variable coupling joint for dirty environments:
WDGM-FX
▶ Page 985



Crimped coupling joints with clevis joints:
GDGM-V
▶ Page 986



New

Crimped threaded inserts:
TDGM
▶ Page 987



Resistant to edge loads:
SAM
▶ Page 992

igubal® spherical balls - different material options



Standard, low coefficient of friction:
WKM/WEM
▶ Page 997



Cost-effective, good wear resistance:
RKM/REM
▶ page 998



For temperatures up to +250°C:
XKM/XEM
▶ page 999



Low moisture absorption:
JKM/JEM
▶ page 1000



Low moisture absorption:
JKM
▶ Page 1001



Low moisture absorption:
JKM-GT
▶ Page 1002



Low moisture absorption, split design:
JEM-GT
▶ Page 1002



Cost-effective and low total moisture absorption:
J4KM/J4EM
▶ Page 1003

igubal® spherical balls - different material options



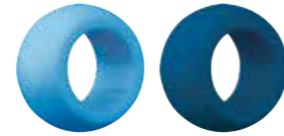
Stainless steel spherical ball:
EK
▶ Page 1004



For underwater applications:
UWEM
▶ page 1005



Clearance-free, pre-loaded:
J4VEM
▶ page 1006



For the food industry:
A181/FC180
▶ page 1007



Spherical insert bearings for metallic bearing housings:
JEM/A180EM/A350EM/J3EM
▶ Page 1009



Cost-effective alternative to machined options:
JEM-SP/J4EM-SP/A350EM-SP/J3EM-SP
▶ Page 1010



igubal® accessories



Fixing collar, galvanised steel:
SRM-ES
▶ Page 1012



Fixing collar, polymer:
SRM-KS
▶ Page 1012



Ball stud, Female thread:
GZRM-IG
▶ Page 1013



Ball stud, Male thread:
GZRM-AG
▶ Page 1014



Adapter screws with circlip:
PKRM/PKLM
▶ Page 1015



End caps for fixed flange bearings with spherical insert bearings:
EC-208/EC-208-CLEAR
▶ Page 1016

Self-aligning maintenance-free spherical bearings made from high-performance polymers

igubal® is a system of self-aligning bearing elements completely made from plastic. igubal® puts a complete system of self-aligning bearings - rod end bearings, clevis joints, fixed flange bearings, spherical bearings and pillow block bearings - at the developer's fingertips.

Self-aligning bearings are easy to fit, adapt to all angular deviations and replace special housings in many cases.

With igubal®, the user can take advantage of all the benefits of high performance polymers. They can be used in dry operation and have excellent vibration dampening properties. They are resistant to dirt, can operate in liquids and even in chemicals and are completely resistant to corrosion.

The weight of the igubal® parts is approximately 80% lighter than comparable steel parts. Additional savings are cost-savings at the time of purchasing and during operation. igubal® bearings are also extremely cost-effective due to the elimination of maintenance and installation costs.

The installation space can also be reduced due to their small dimensions. igubal® self-aligning spherical bearings are made from a polymer housing for high strengths and a spherical ball made from maintenance-free self-lubricating high-performance polymers allowing low wear and long service life.

The benefits of igubal®

- Especially cost-effective
- Maintenance-free
- Lubrication-free
- Insensitive to dust and dirt
- Corrosion-free
- Can be used in liquid media
- Vibration-dampening
- Spherical ball set in housings with very low clearance
- No ingress of dirt
- Lightweight
- Temperature resistance up to +200°C, depending on the material



Picture 01: igus® test lab: More than 13,000 tribological tests (friction and wear) each year in 300 test rigs in the industry's largest laboratory (3,800m²). View inside igubal® test rigs.

igubal® spherical balls

In standard spherical bearings, the spherical ball is made of iglidur® W300 material, which is known for its low coefficient of friction in dry operation and extremely low tendency to stick-slip. This is especially important for low loads and very slow movements.

► More information about iglidur® W300, **page 175**

Taking advantage of its long experience in polymers and based on several tests, igus® decided in the last years to respond more precisely to the different applications and customer requests by developing spherical balls in other materials.

Further to the standard material iglidur® W300, spherical balls are now available in nine other materials presenting particular advantages:

- iglidur® X for high temperatures
- iglidur® J for low moisture absorption
- iglidur® J4 for low moisture absorption at lower costs
- iglidur® R as a low-cost alternative
- iglidur® UW for underwater applications
- iglidur® J4V as pre-loaded spherical ball
- iglidur® FC180, the detectable material
- iglidur® A350 for food applications
- iglidur® A181 for food applications

► Spherical balls, **page 993**

Do not hesitate to ask for technical support concerning the choice of the material.

igubal® housing

There are different housing materials available, each of them offering particular properties:

- Standard housings made from igumid® G, an extremely shock-resistant, long-fibre reinforced polymer. Temperatures from -30°C to +80°C
- High temperature housings are made from iguton G. This material has a high chemical resistance and is suitable for temperatures from -40°C to +200°C.
- Detectable housings made from RN246 material. Temperatures from -30°C to +80°C
- Housings made from igumid® FC material suitable for food contact. This material is FDA and EU10/2011-compliant and suitable for temperatures from -30°C to +100°C
- Zinc die-casting and stainless steel for metallic rod ends. Temperatures from -30°C to +80°C
- Painted cast iron and galvanised steel for pillow block bearing and fixed flange bearings. Temperatures from -30°C to +80°C

► Material properties, **page 1914**

Application areas

igubal® bearing elements can be used without problems even in harsh environments. In moist or wet environments, the bearings are corrosion-free, and resistant to weak acids and alkalis. The operating temperatures range from -30°C to +200°C. The insensitivity to dirt should also be emphasised, because even under extreme soiling, the plain bearings of the igubal® bearing elements do not require a seal. This is true for fine dust as well as coarse dirt.

Detectable

Made from the special materials iglidur® FC180 for the spherical ball and igumid® FC for the housing, the parts of metal detectable igubal® polymer bearings can be verified as foreign particles with all common parameters used in the metal detection technology and thus ensure safe food.

► Material properties, **page 1910**

Loads

The load capacity of the maintenance-free igubal® bearing element parts is very high at normal ambient temperatures. igubal® bearings absorb high forces and weigh only one fifth of traditional, metal bearing housings. The excellent dampening properties are based on the fact that the polymer material of the two part bearing can absorb vibrations differently than steel.

However, plastic specific properties, such as dependence on temperature and behaviour under long-term stress, must be taken into consideration when using igubal® bearings. The load capacity of the rod end should therefore be checked in a practical test, particularly if it will be used under continuous high loads and at elevated temperatures.

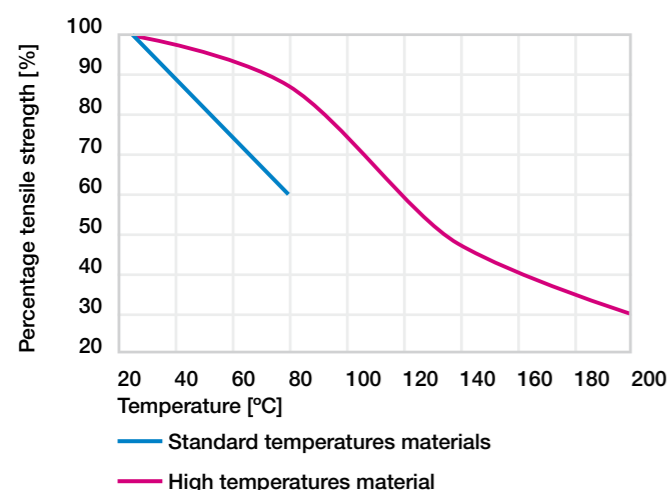


Diagram 01: Trends indicate the effect of temperature on the max. tensile strength of igubal® rod end bearings.

Coefficient of sliding friction and speed

One important advantage of igubal® spherical bearings is that rapid, shaft rotation takes place directly within the spherical portion, made of iglidur® W300. The advantage therefore lies in the plastic vs. steel relationship. Polymer produces lower friction and permits high speeds, even in dry operation. Taking the radial loads into account, maximum surface speeds up to 0.5m/s rotating can be attained. By contrast, rotations of the shaft are supported directly in the inner diameter of the spherical portion. The maintenance-free igubal® bearing elements also permit linear movements of the shaft.

Application temperatures

igubal® standard bearing elements can be used in temperatures from -30°C to +80°C. The high temperatures versions can be used at continuous temperatures up to +200°C. Diagram 01 trends indicate the effect of temperature on the maximum tensile strength of igubal® rod end bearings.

igubal®	Application temperature		
	Standard	HT version	FC version
Minimum	-30°C	-40°C	-30°C
Max. long-term	+80°C	+200°C	+90°C
Maximum, short-term	+120°C	+240°C	+110°C

Table 01: Temperature limits of igubal® bearing elements

Thread type	Pitch [mm]
M2	0.40
M3	0.50
M4	0.70
M5	0.80
M6	1.00
M8	1.25
M10	1.50
M10 F	1.25
M12	1.75
M12 F	1.25
M14	2.00
M16	2.00
M16 F	1.50
M18	1.50
M20	1.50
M20 M20	2.50
M22	1.50
M24	2.00
M27	2.00
M30	2.00

Table 02: Thread pitches of igubal® rod ends and clevis joints

Chemical resistance of igubal® bearing elements

The spherical balls made from iglidur® W300 and the housing made from igumid® G are resistant to weak alkalis, weak acids and fuels, as well as all types of lubricants. The HT versions can be used for applications with a higher chemical demand. The moisture absorption of igubal® spherical bearings is about 1.3% by weight in normal climate. The saturation limit submerged in water is 6.5%. This must be taken into evaluation for applications. If a lower moisture absorption is essential, a look on to the different materials is helpful.

► Chemical table, page 1894

Medium	Resistance	
	Standard	HT version
Alcohols	+ to 0	+
Hydrocarbons	+	+
Greases, oils without additives	+	+
Fuels	+	+
Diluted acids	0 to -	+ to 0
Strong acids	-	+ to -
Diluted alkalines	+	+
Strong alkalines	0	+

Table 03: Chemical resistance of igubal® bearing elements

+ resistant 0 conditionally resistant - not resistant
All data given at room temperature [+20°C]

Radiation resistance

Self-aligning igubal® bearings are resistant to radiation up to an intensity of 3 · 10²Gy.

UV resistance

The corrosion resistance of igubal® bearings gives them special value for outside applications. igubal® bearings are permanently resistant to UV radiation. A small change in colour (dark colouration) of the spherical ball due to UV radiation does not affect the mechanical, electrical or thermal properties.

Tolerances

igubal® bearing elements can be used with different tolerances according to each application. They are designed with a large bearing clearance in the standard product range, which enables a secure operation even under high peripheral speeds. The inner ring inner diameter has a tolerance of E10. The shaft tolerance should be manufactured between h6 and h9. The tolerances are provided in the table below. Please contact us in case you require lower or other bearing tolerances.

Nominal size [mm]	Tolerance	
	Plug gauge falls	Plug gauge sticks
to 3	x.01	x.05
> 3 to 6	x.02	x.07
> 6 to 10	x.02	x.08
> 10 to 18	x.03	x.10
> 18 to 30	x.04	x.12
> 30 to 50	x.05	x.15

Table 04: Tolerances of inner diameter (spherical balls)

Check the inner diameter



Inadequate test equipment; plug gauge too short Wrong test equipment; caliper



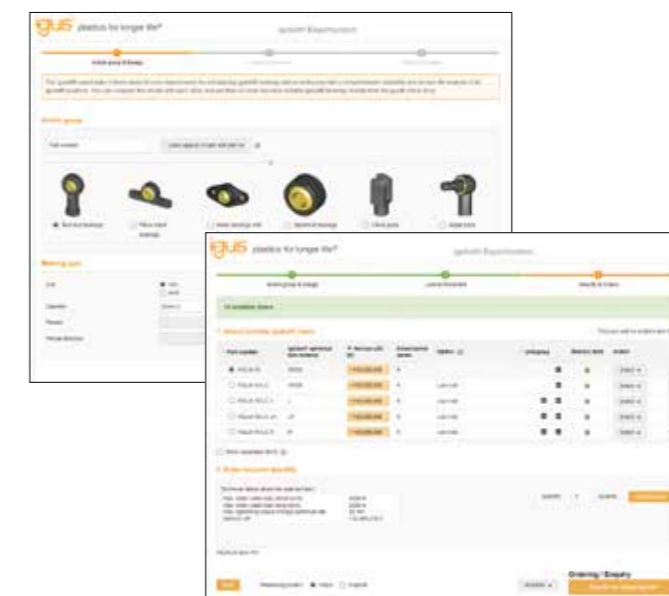
Tolerance test with plug gauge

Service life calculation

The igubal® expert allows to check the suitability of igubal® bearings for every application. You can choose from different igubal® bearings and specific load (radial, axial or static, cyclic and dynamic).

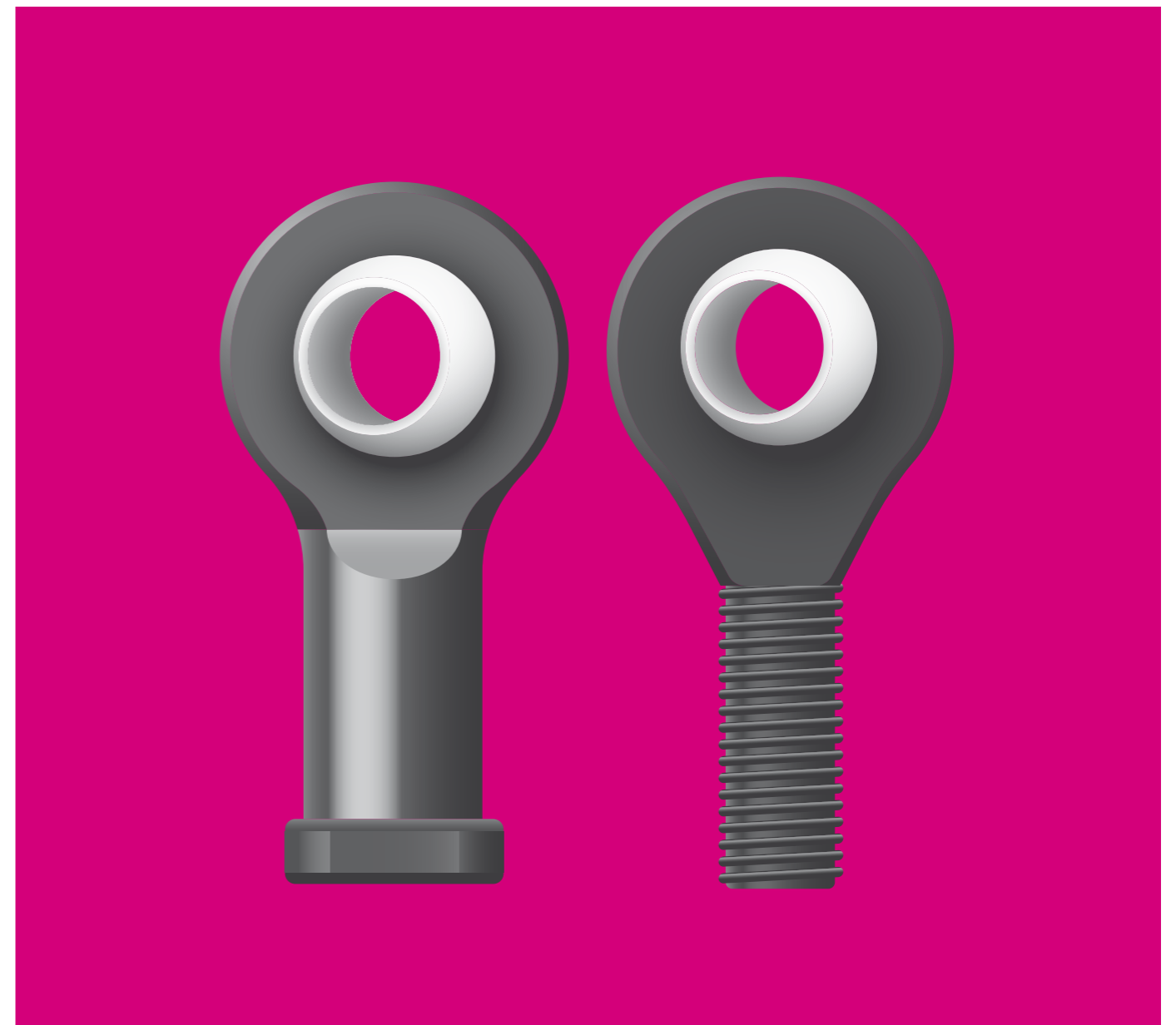
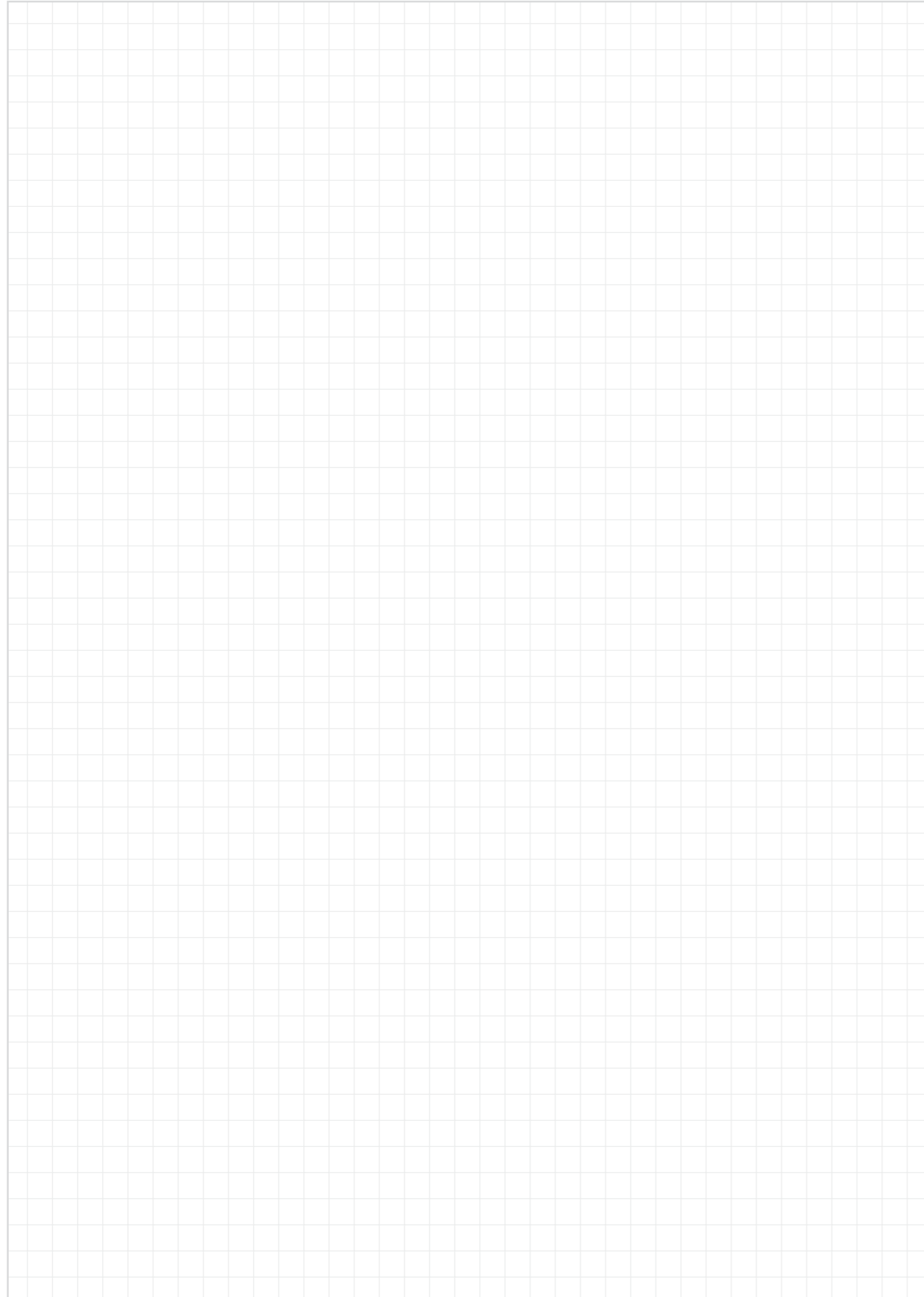
The expert system will calculate from these input data:

- The bearing wear
- The theoretical service life



igubal® expert system
www.igus.eu/igubal-expert

igubal® product finder
► www.igus.eu/igubal-finder



igubal[®] rod ends

Maintenance-free dry operation

High rigidity

Durable

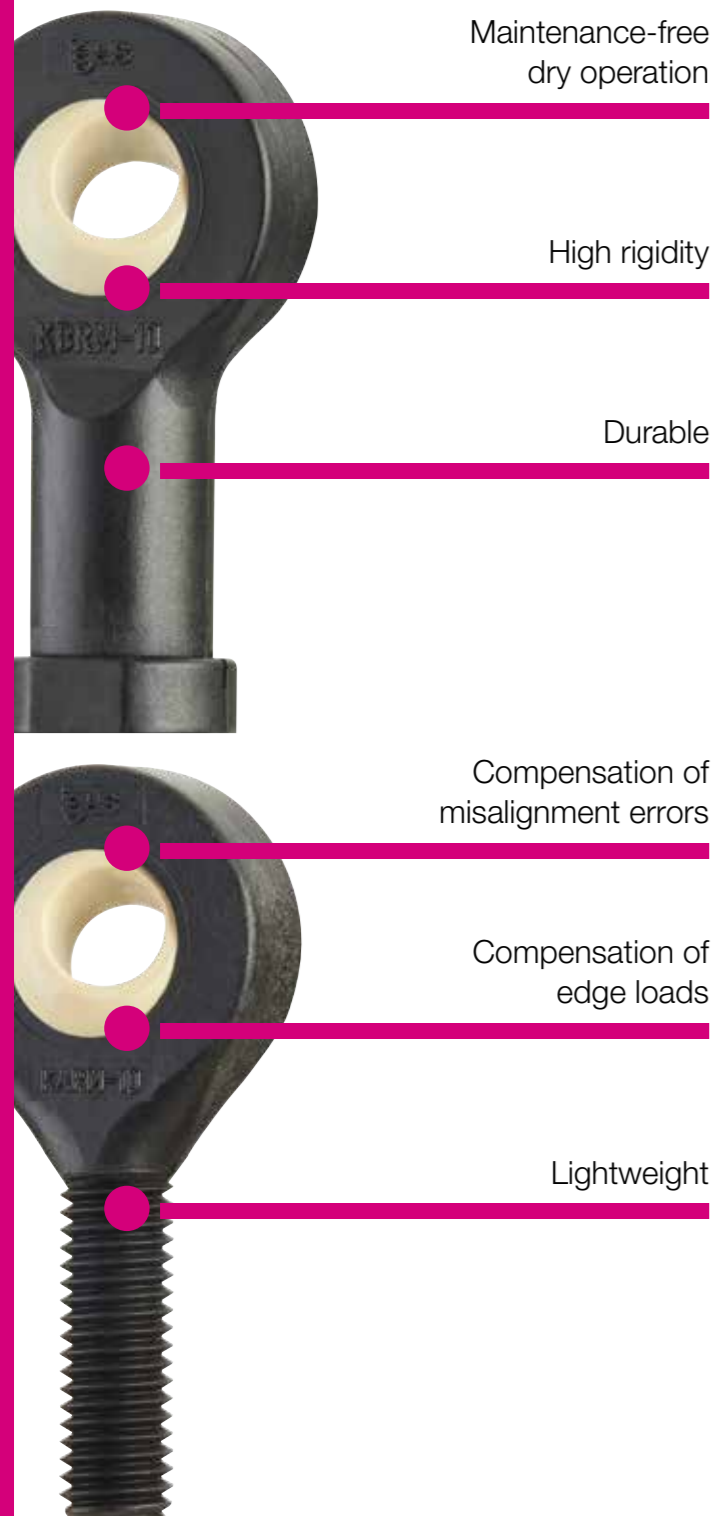
Compensation of misalignment

Compensation of edge loads

Lightweight



igubal® rod ends can also be used in rough environments. They are corrosion-resistant in humid environments and resistant to weak acids and media. Depending on the version (HT) the operation temperature is from -40°C to +200°C. Rod ends are also resistant to dirt and dust, they are also available as detectable version.



When do I take them?

- If you want to save weight
- For rotating, oscillating and linear movements
- If high-frequency oscillations/vibrations occur
- If silent operation is required
- If you need an electrically insulating part
- If corrosion resistance is required
- In combination with pneumatic cylinders and gas struts
- When chemical resistance is required
- If high rigidity is required
- If they should be detectable



When do I not take them?

- When temperatures are higher than +80°C
 - ▶ HT version, page 892-893
- If rotation speeds of more than 0.5 m/s are to be achieved
- When really high tensile and axial forces occur
- When applications must be implemented with hydraulic cylinders
- If diameters above 30 mm are required



Max. +200 °C
min. -40 °C

(depending on material: standard from -30°C to +80°C; HT from -40°C to +200°C)



18 types
Ø 2 - 30mm



Imperial dimensions available
▶ From page 1872



Online product finder
▶ www.igus.eu/igubal-finder



Available from stock
Detailed information about delivery time online.



Price breaks online
No minimum order value. No minimum order quantity



Exoskeleton

The Jožef Stefan Institute in Slovenia is building an exoskeleton to physically assist warehouse workers with lifting. It must be lightweight to be successful. That is why the engineers are using lightweight, maintenance-free igubal® polymer plain bearings to connect the exoskeleton frame and iglidur® tribo-tape for several sliding surfaces.



Ornithopter

The ornithopter from the company citrusträume in Groß-Gerau has two flapping wings with the wingspan of an eagle (190cm), which generate the forward and upward thrust. To keep its weight as minimal as possible, the engineers rely on igubal® polymer rod end bearings (KBRM-03-MH) in the joints of the wings.



Mini car

IBR, a Brazilian company, is developing a petrol-driven mini car boasting 6.5 horsepower which will excite the kids. Because it is a recreational vehicle for children, all components must be as durable and low-maintenance as possible. That is why the design engineers are using iglidur® W300 rod ends (KBRM-12) in the steering rods, igubal® pillow block bearings (ESTM-08) in the front suspension and igubal® fixed flange bearings (EFOM-15) in the steering column.

Benefits

- Maintenance-free dry operation
- High rigidity
- Very high durability under alternating loads
- Compensation of misalignment errors
- Compensation of edge loads
- Resistant to dirt, dust and lint
- Resistant to corrosion and chemicals
- Vibration-dampening
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional K and E series, according to standard DIN ISO 12240
- Available with stainless steel sleeve for higher tightening torque

Product range

igubal® rod ends are available in the dimensional K and E series for shaft diameters of 2 to 30mm according to standard DIN ISO 12240

- Form A - with male thread and
- Form B - with female thread

Stainless steel sleeve

The dimensional K and partially E series are available in imperial dimensions, as well as a special version containing a stainless steel sleeve in the spherical ball. This allows a significantly higher tightening torque than for the standard polymer race. Please contact us if you need other dimensions.

Loads

igubal® rod ends handle high loads at ambient temperatures, have excellent dampening properties and weigh only a fifth of traditional metallic bearing housings. In applications with high continuous loads and high temperatures, the load capacity of igubal® rod ends should be tested in an experiment that simulates the application.

► www.igus.eu/igubal-finder

Coefficient of sliding friction and speed

Shaft rotation takes place directly within the spherical ball made of iglidur® W300. The advantage therefore lies in the plastic vs. steel relationship. Polymer produces lower friction and permits high speeds, even in dry operation. Taking the radial loads into account, maximum surface speeds up to 0.5m/s rotating can be attained.

The maintenance-free igubal® rod end bearings permit linear and oscillating movements of the shaft.

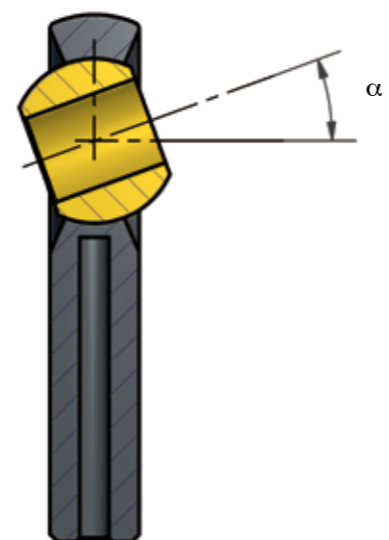
Temperatures

The igubal® rod ends can be used in temperatures from -30°C up to +80°C. The igubal® rod ends made from HT material are suitable for temperatures up to +200°C (E series, female and male threads).

Tolerances

igubal® rod ends can be used with different tolerances according to each application. They are designed with a large bearing clearance in the standard product range, which enables a secure operation even under high peripheral speeds. The hole of the spherical ball is produced to a standard tolerance range E10. The shaft tolerance should be manufactured between h6 and h9. All values and tolerances according to ISO 2768-m. Please contact us in case you require lower or other bearing tolerances.






pivot angle



igubal® rod end bearings with female thread

				
Selectable spherical ball material	Easy assembly	Classic design	Space-saving	For temperatures up to +200°C
K series ► Page 878	K series ► Page 880	K series ► From page 882	E series ► Page 888	E series ► Page 892
	 New	 New		
Suitable for food contact	Suitable for food contact	Metallic housing		
E series ► Page 894	K series ► Page 894	K series ► Page 896		



igubal® rod end bearings with male thread

				 New
For higher loads	Classic design	Space-saving	For temperatures up to +200°C	Metallic housing
K series ► Page 884	K series ► From page 886	E series ► From page 890	E series ► Page 893	K series ► From page 897

igubal® angled and in-line ball and socket joints

		
Angled ball and socket joints	Angled ball and socket joints, low-cost	Easy assembly and disassembly
► Page 898	► Page 899	► Page 900

igubal® angled and in-line ball and socket joints

	
In-line ball and socket joint	In-line ball and socket joints, low-cost
► Page 901	► Page 902

igubal® accessories for rod ends

	
Clevis joints with clevis pin and circlip	Clevis joints with spring-loaded fixing clip
E series ► Page 912	E series ► Page 913

Rod ends with female thread: KCRM and KCLM



- Successor model of KBRM
- New design resists dirt
- Spherical ball is clipped in
- Choice of iglidur® spherical ball materials
- Compensation of misalignment errors
- Lightweight
- Absolute corrosion resistance
- Available with stainless steel sleeve for higher tightening torque
- Dimensional series K following DIN ISO 12240
- Adapter screw with circlip available
- ▶ Accessories, **page 1015**

Online service life calculation
▶ www.igus.eu/igubal-expert

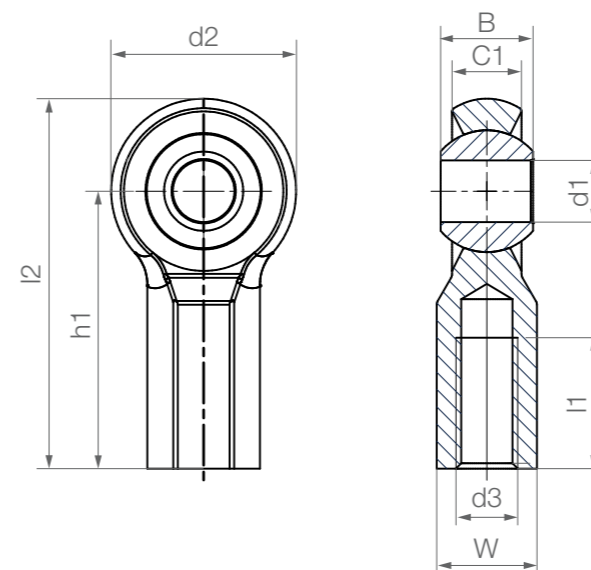
Technical data

Part No.	Max. static tensile strain		Max. static axial force		Min. thread depth	Max. tightening torque	Max. tightening torque through ball		Weight		
	Short-term	Long-term	Short-term	Long-term			Thread	Female thread		without stainless steel sleeve	with stainless steel sleeve
										[Nm]	[Nm]
KC□M-05	1,200	600	180	90	7	1.00	5	12	4.0		
KC□M-06	1,400	700	300	150	8	0.75	10	15	4.2		
KC□M-08	2,100	1,050	500	250	11	2.00	12	40	7.6		
KC□M-10	3,100	1,550	800	400	13	3.00	20	50	12.8		
KC□M-10-F	3,100	1,550	800	400	13	3.00	20	50	12.8		
KC□M-12	3,560	1,780	750	375	15	15.0	30	70	19.0		
KC□M-12-F	3,560	1,780	750	375	15	15.0	30	70	19.0		
KC□M-16	3,800	1,900	800	400	19	15.0	40	110	34.0		
KC□M-16-F	3,800	1,900	800	400	19	15.0	40	110	34.0		
KC□M-20	4,550	2,275	400	200	22	20.0	55	200	55.0		
KC□M-20-M20	4,550	2,275	400	200	22	20.0	55	200	55.0		

Alternative spherical ball materials ▶ Page 993



Rod ends with female thread: KCRM and KCLM



Order key

Type	Size	Options
------	------	---------

K C □ M- 06 - MH



- Options:
- Thread
 - L : Left-hand thread
 - R : Right-hand thread
 - Add-on:
 - MH : With stainless steel sleeve
 - Spherical ball material
 - Blank : iglidur® W300
 - R : iglidur® R
 - J : iglidur® J
 - J4 : iglidur® J4
 - EK : Stainless steel (AISI 303)

i Material:
Housing: igumid® G ▶ Page 1914
Spherical ball: iglidur® W300 ▶ Page 175

Dimensions [mm]

Part No.	d1 E10	d2	d3	W	B		C1	h1	I1	I2	Max. pivot angle
					without stainless steel sleeve	with stainless steel sleeve +0.2					
KC□M-05	5	18	M5	SW9	8	8.2	6.0	27	12.0	36	43°
KC□M-06	6	20	M6	SW10	9	9.2	7.0	30	13.5	40	40°
KC□M-08	8	24	M8	SW13	12	12.2	9.0	36	17.0	48	35°
KC□M-10	10	30	M10	SW15	14	14.2	10.5	43	22.0	58	35°
KC□M-10-F	10	30	M10 x 1.25	SW15	14	14.2	10.5	43	22.0	58	35°
KC□M-12	12	34	M12	SW17	16	16.2	12.0	50	25.0	67	35°
KC□M-12-F	12	34	M12 x 1.25	SW17	16	16.2	12.0	50	25.0	67	35°
KC□M-16	16	42	M16	SW20	21	21.2	15.0	64	30.0	85	35°
KC□M-16-F	16	42	M16 x 1.5	SW20	21	21.2	15.0	64	30.0	85	35°
KC□M-20	20	50	M20 x 1.5	SW24	25	25.2	18.0	77	35.0	102	35°
KC□M-20-M20	20	50	M20 x 2.5	SW24	25	25.2	18.0	77	35.0	102	35°

Rod ends can be ordered in metric dimensions **with stainless steel sleeve** with the addition of **MH** after the part numbers listed here. Example: KCRM-10-MH (Inner Ø: 10mm).

For another spherical bearing material than iglidur® W300, please add "J" to the part number. Example: KCRM-05-J.

Alternative spherical ball materials ▶ Page 993



Rod ends, female thread; 2nd generation: KBRM CL and KBLM CL



- Available with stainless steel sleeve for higher tightening torque
- Dimensional series K following DIN ISO 12240
- Adapter screw with circlip available
▶ Accessories, page 1015



Simple assembly due to the hexagonal body and the integrated lock nut

Online service life calculation
▶ www.igus.eu/igubal-expert

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Min. thread depth [mm]	Max. tightening torque Female thread [Nm]	Max. tightening torque through ball		Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]			without stainless steel sleeve [Nm]	with stainless steel sleeve [Nm]	
KB□M-06-CL	1,400	700	300	150	8	0.75	10	15	4.5
KB□M-08-CL	2,100	1,050	500	250	11	2	12	40	8.6
KB□M-10-CL	3,100	1,550	800	400	13	3	20	50	14.1

Alternative spherical ball materials ▶ Page 993



RKM: Low-cost



JKM: Low moisture absorption

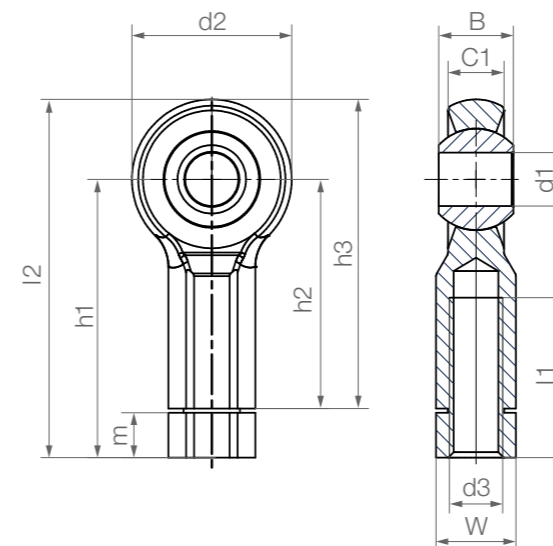


WKM-MH: Standard spherical ball with stainless steel sleeve



J4KM: Low-cost and low moisture absorption

Rod ends, female thread; 2nd generation: KBRM CL and KBLM CL



Order key

Type	Size	Version
K B □ M-06-CL-MH		
K series		
Housing (female thread)		
Thread		
Metric		
Inner Ø [mm]		
2nd generation		

- Options:
- | | |
|----------------------------------|--------------------------------|
| Thread | Spherical ball material |
| L : Left-hand thread | Blank : iglidur® W300 |
| R : Right-hand thread | R : iglidur® R |
| Add-on: | J : iglidur® J |
| MH : With stainless steel sleeve | J4 : iglidur® J4 |

i Material:
Housing: igumid® G ▶ Page 1914
Spherical ball: iglidur® W300 ▶ Page 175

Dimensions [mm]

Part No.	d1 E10	d2	d3	W	B		C1	h3	h1	h2	l1	l2	m	Max. pivot angle
					without stainless steel sleeve	with stainless steel sleeve +0.2								
KB□M-06-CL	6	20	M6	SW10	9	9.2	7	40	36.5	30	20	46.5	5.7	40°
KB□M-08-CL	8	24	M8	SW13	12	12.2	9	48	44.3	36	25	56.3	7.5	35°
KB□M-10-CL	10	30	M10	SW15	14	14.2	10.5	58	52.2	43	30	67.2	8.4	35°

Rod ends can be ordered in metric dimensions with stainless steel sleeve with the addition of **MH** after the part numbers listed here. Example: KBRM-10-CL-**MH** (Inner Ø: 10mm).

For another spherical bearing material than iglidur® W300, please add "J" to the part number. Example: KBRM-10-CL-**J**

Rod ends with female thread: KBRM and KBLM



Standard design

Stainless steel sleeve version (MH)

- Predecessor model of KCRM
- Maintenance-free dry operation
- High rigidity
- Very high durability under alternating loads
- Compensation of misalignment errors
- Compensation of edge loads
- Resistant to dirt, dust and lint
- Resistant to corrosion and chemicals
- Vibration-dampening
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional series K following DIN ISO 12240
- Available with stainless steel sleeve for higher tightening torque
- Adapter screw with circlip available

▶ Accessories, page 1015

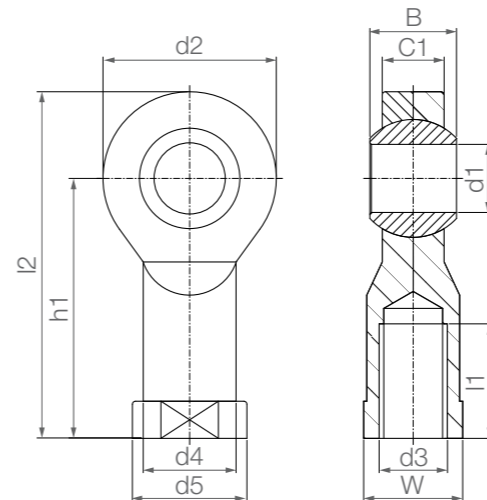
Online service life calculation
▶ www.igus.eu/igubal-expert

Technical data

Part No.	Max. static tensile strain		Max. static axial load		Min. thread depth Threads [mm]	Max. tightening torque Female thread [Nm]	Max. tightening torque through ball		Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]			without stainless steel sleeve [Nm]	with stainless steel sleeve [Nm]	
KB□M-02	200	100	50	25	4	0.30	1	-	0.4
KB□M-03	800	400	100	50	5	0.50	2	4	2.7
KB□M-05-M4	1,000	500	250	125	7	0.75	5	12	3.5
KB□M-05	1,000	500	250	125	7	1.00	5	12	3.4
KB□M-06	1,400	700	400	200	8	1.50	10	15	4.7
KB□M-08	2,100	1,050	700	350	11	5.00	12	40	8.6
KB□M-10	3,100	1,550	800	400	13	15.00	20	50	14.6
KB□M-10-F	3,100	1,550	800	400	13	6.00	20	50	14.6
KB□M-12 ¹²⁹⁾	3,600	1,800	900	450	15	20.00	30	70	22.0
KB□M-12-F	3,600	1,800	900	450	15	15.00	30	70	22.0
KB□M-14	4,000	2,000	1,000	500	17	25.00	35	75	30.9
KB□M-14-F	4,000	2,000	1,000	500	17	25.00	35	75	30.9
KB□M-16	4,200	2,100	1,300	650	19	30.00	40	110	39.6
KB□M-16-F	4,200	2,100	1,300	650	19	27.50	40	110	39.6
KB□M-18	4,600	2,300	1,600	800	21	45.00	45	150	55.0
KB□M-20	5,400	2,700	2,100	1,050	22	60.00	55	200	73.5
KB□M-20-M20	5,400	2,700	2,100	1,050	22	60.00	55	200	73.5
KB□M-22	7,000	3,500	2,200	1,100	25	75.00	60	-	94.8
KB□M-25	8,500	4,250	2,300	1,150	28	120.00	60	-	119.8
KB□M-30	10,500	5,250	2,500	1,250	34	135.00	60	-	177.0
KB□M-30-M27x2	10,500	5,250	2,500	1,250	34	135.00	60	-	189.6

¹²⁹⁾ Integrated lock nut. Drawing as for KCRM, page 879

Rod ends with female thread: KBRM and KBLM



Order key

Type	Size	Options
K B □ M- 02 - MH		
K series		Thread
Housing (female thread)		L : Left-hand thread R : Right-hand thread
Thread		Add-on:
Metric		MH : With stainless steel sleeve
Inner Ø [mm]		F : Fine thread

Material:
Housing: igumid® G ▶ Page 1914
Spherical ball: iglidur® W300 ▶ Page 175

Imperial dimensions available
▶ Page 1874

Dimensions [mm]

Part No.	d1	d2	d3	d4	d5	C1	B		h1	l1	l2	W	Max. pivot angle
							without stainless steel sleeve	with stainless steel sleeve					
	E10							+0.2					
KB□M-02	2	9	M2	4.0	4.6	3.0	4	-	12.5	6	17	SW4	30°
KB□M-03	3	13	M3	6.5	8.0	4.5	6	6.2	18.5	8	25	SW6	30°
KB□M-05-M4	5	18	M4	9.0	12.0	6.0	8	8.2	27	10	36	SW9	30°
KB□M-05	5	18	M5	9.0	12.0	6.0	8	8.2	27	10	36	SW9	30°
KB□M-06	6	20	M6	10.0	13.0	7.0	9	9.2	30	12	40	SW11	29°
KB□M-08	8	24	M8	13.0	16.0	9.0	12	12.2	36	16	48	SW14	25°
KB□M-10	10	30	M10	15.0	19.0	10.5	14	14.2	43	20	58	SW17	25°
KB□M-10-F	10	30	M10 x 1.25	15.0	19.0	10.5	14	14.2	43	20	58	SW17	25°
KB□M-12	12	34	M12	-	-	12.0	16	16.2	50	25	67	SW17	25°
KB□M-12-F	12	34	M12 x 1.25	18.0	22.0	12.0	16	16.2	50	22	67	SW19	25°
KB□M-14	14	38	M14	20.0	25.0	13.5	19	19.2	57	25	76	SW22	25°
KB□M-14-F	14	38	M14 x 1.5	20.0	25.0	13.5	19	19.2	57	25	76	SW22	25°
KB□M-16	16	42	M16	22.0	27.0	15.0	21	21.2	64	28	85	SW22	23°
KB□M-16-F	16	42	M16 x 1.5	22.0	27.0	15.0	21	21.2	64	28	85	SW22	23°
KB□M-18	18	46	M18 x 1.5	25.0	31.0	16.5	23	23.2	71	32	94	SW27	23°
KB□M-20	20	50	M20 x 1.5	28.0	34.0	18.0	25	25.2	77	33	102	SW30	23°
KB□M-20-M20	20	50	M20 x 2.5	28.0	34.0	18.0	25	25.2	77	33	102	SW30	23°
KB□M-22	22	56	M22 x 1.5	30.0	37.0	20.0	28	-	84	37	112	SW32	22°
KB□M-25	25	60	M24 x 2.0	32.0	41.0	22.0	31	-	94	42	124	SW36	22°
KB□M-30	30	70	M30 x 2.0	37.0	50.0	25.0	37	-	110	50	145	SW41	22°
KB□M-30-M27x2	30	70	M27 x 2.0	37.0	50.0	25.0	37	-	110	50	145	SW41	22°

Rod ends can be ordered in metric dimensions with stainless steel sleeve with the addition of MH after the part numbers listed here. Example: KRBM-10-MH (Inner Ø: 10mm).

Rod ends, male thread; 2nd generation: KARM CL



- New design resists dirt
 - Compensation of misalignment errors
 - Lightweight
 - Absolute corrosion resistance
 - Available with stainless steel sleeve for higher tightening torque
 - Dimensional series K following DIN ISO 12240
 - Adapter screw with circlip available
- Accessories, **page 1015**

Technical data

Part No.	Max. static tensile strain		Max. static axial force		min. thread depth	Max. tightening torque	Max. tightening torque through ball		Weight
	Short-term	Long-term	Short-term	Long-term			without stainless steel sleeve	with stainless steel sleeve	
KA□M-05-CL	800	400	80	40	13	0.4	5	12	2.3
KA□M-06-CL	1,000	500	100	50	15	0.5	10	15	3.5
KA□M-08-CL	1,700	850	200	100	18	2.0	12	40	6.2
KA□M-10-CL	2,500	1,250	300	150	20	5.0	20	50	11.2
KA□M-12-CL	2,700	1,350	400	200	22	6.0	30	70	15.6

Alternative spherical ball materials ► Page 993



RKM: Low-cost



JKM: Low moisture absorption



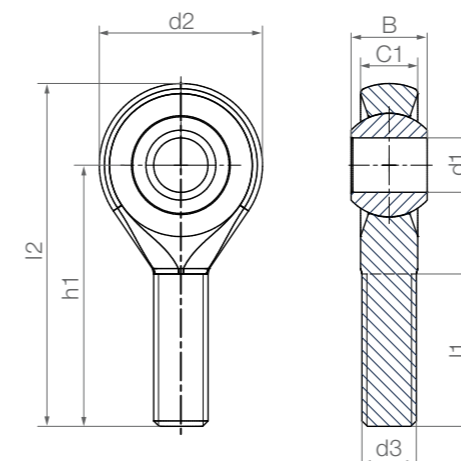
WKM-MH: Standard spherical ball with stainless steel sleeve



J4KM: Low-cost and low moisture absorption

Order key

Type	Size	Version
K A □ M-06-CL-MH		
K series	Housing (male thread)	Thread
	Metric	Inner Ø [mm]
		2nd generation



Options:

Thread

- L : Left-hand thread
- R : Right-hand thread

Add-on:

- MH : With stainless steel sleeve

Spherical ball material

- Blank : iglidur® W300
- R : iglidur® R
- J : iglidur® J
- J4 : iglidur® J4
- EK : Stainless steel (AISI 303)



Material:

- Housing: igumid® G ► Page 1914
- Spherical ball: iglidur® W300 ► Page 175

Dimensions [mm]

Part No.	d1 E10	d2	d3	C1	B		h1	l1	l2	Max. pivot angle
					without stainless steel sleeve	with stainless steel sleeve +0.2				
KA□M-05-CL	5	18	M5	6.0	8	8.2	33	19	42	43°
KA□M-06-CL	6	20	M6	7.0	9	9.2	36	21	46	40°
KA□M-08-CL	8	24	M8	9.0	12	12.2	42	25	55	35°
KA□M-10-CL	10	30	M10	10.5	14	14.2	48	28	63	35°
KA□M-12-CL	12	34	M12	12.0	16	16.2	54	32	71	35°

Rod ends can be ordered in metric dimensions with stainless steel sleeve with the addition of **MH** after the part numbers listed here. Example: KARM-10-CL-MH (Inner Ø: 10mm).

For another spherical bearing material than iglidur® W300, please add "J" to the part number. Example: KARM-10-CL-J.

Alternative spherical ball materials ► Page 993



EK: Stainless steel spherical ball

Rod ends with male thread:
KARM and KALM



Standard design

Stainless steel sleeve
version (MH)

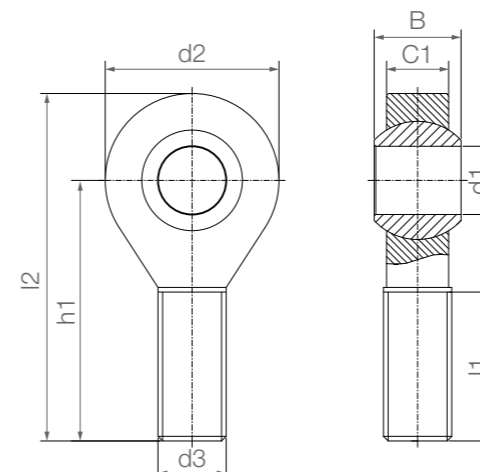
- Predecessor model of KARM-CL
 - Maintenance-free dry operation
 - High rigidity
 - Very high durability under alternating loads
 - Compensation of misalignment errors
 - Compensation of edge loads
 - Resistant to dirt, dust and lint
 - Resistant to corrosion and chemicals
 - Vibration-dampening
 - Suitable for rotating, oscillating and linear movements
 - Lightweight
 - Dimensional series K following DIN ISO 12240
 - Available with stainless steel sleeve for higher tightening torque
 - Adapter screw with circlip available
- Accessories, **page 1015**

Online service life calculation
► www.igus.eu/igubal-expert

Technical data

Part No.	Max. static tensile strain		Max. static axial force		min. thread depth Threads	Max. tightening torque Male thread	Max. tightening torque through ball		Weight [g]
	Short-term	Long-term	Short-term	Long-term			without stainless steel sleeve	with stainless steel sleeve	
KA□M-05	800	400	80	40	13	0.4	5	12	2.7
KA□M-06	1,000	500	100	50	15	0.5	10	15	3.9
KA□M-08	1,700	850	200	100	18	2.0	12	40	7.1
KA□M-10	2,500	1,250	300	150	20	5.0	20	50	12.5
KA□M-10-F	2,500	1,250	300	150	20	3.0	20	50	12.5
KA□M-12	3,400	1,700	400	200	22	6.0	30	70	18.0
KA□M-12-F	3,400	1,700	400	200	22	6.0	30	70	18.0
KA□M-14	3,400	1,700	700	350	25	12.0	35	75	25.0
KA□M-16	3,900	1,950	800	400	26	17.0	40	110	34.0
KA□M-16-F	3,900	1,950	800	400	26	17.0	40	110	34.0
KA□M-18	4,200	2,100	1,000	500	29	20.0	45	150	45.9
KA□M-20	6,000	3,000	1,300	650	32	25.0	55	200	58.0
KA□M-20-M20	6,000	3,000	1,300	650	32	25.0	55	200	58.0
KA□M-22	7,200	3,600	1,500	750	34	25.0	60	-	86.2
KA□M-25	7,500	3,750	1,900	950	39	45.0	65	-	99.1
KA□M-30	8,800	4,400	2,300	1,150	46	85.0	70	-	160.4

Rod ends with male thread:
KARM and KALM



Order key

Type	Size	Options
K A □ M - 05 - MH		
K series	Housing (male thread)	Thread
		Metric
		Inner Ø [mm]
		Thread
		L : Left-hand thread
		R : Right-hand thread
		Add-on:
		MH : With stainless steel sleeve
		F : Fine thread

i Material:
Housing: igumid® G ► **Page 1914**
Spherical ball: iglidur® W300 ► **Page 175**

inch Imperial dimensions available
► **Page 1873**

Dimensions [mm]

Part No.	d1 E10	d2	d3	C1	B		h1	l1	l2	Max. pivot angle
					without stainless steel sleeve	with stainless steel sleeve +0.2				
KA□M-05	5	18	M5	6.0	8	8.2	33	19	42	30°
KA□M-06	6	20	M6	7.0	9	9.2	36	21	46	29°
KA□M-08	8	24	M8	9.0	12	12.2	42	25	55	25°
KA□M-10	10	30	M10	10.5	14	14.2	48	28	63	25°
KA□M-10-F	10	30	M10 x 1.25	10.5	14	14.2	48	28	63	25°
KA□M-12	12	34	M12	12.0	16	16.2	54	32	71	25°
KA□M-12-F	12	34	M12 x 1.25	12.0	16	16.2	54	32	71	25°
KA□M-14	14	38	M14	13.5	19	19.2	61	36	79	25°
KA□M-16	16	42	M16	15.0	21	21.2	66	37	88	23°
KA□M-16-F	16	42	M16 x 1.5	15.0	21	21.2	66	37	88	23°
KA□M-18	18	46	M18 x 1.5	16.5	23	23.2	72	41	96	23°
KA□M-20	20	50	M20 x 1.5	18.0	25	25.2	78	45	104	23°
KA□M-20-M20	20	50	M20 x 2.5	18.0	25	25.2	78	45	104	23°
KA□M-22	22	56	M22 x 1.5	20.0	28	-	84	48	112	22°
KA□M-25	25	61	M24 x 2.0	22.0	31	-	95	55	126	22°
KA□M-30	30	71	M30 x 2.0	25.0	37	-	112	66	147	22°

Rod ends can be ordered in metric dimensions **with stainless steel sleeve** with the addition of **MH** after the part numbers listed here. Example: KARM-10-MH (Inner Ø: 10mm).

Rod ends with female thread: EBRM and EBLM



- Maintenance-free dry operation
- High rigidity
- Very high durability under alternating loads
- Compensation of misalignment errors
- Compensation of edge loads
- Resistant to dirt, dust and lint
- Resistant to corrosion and chemicals
- Vibration-dampening
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional series E following DIN ISO 12240
- For temperatures up to +200°C we recommend EBRM-HT and EBLM-HT ▶ Page 892
- Version for contact with food ▶ Page 894

Online service life calculation
▶ www.igus.eu/igubal-expert

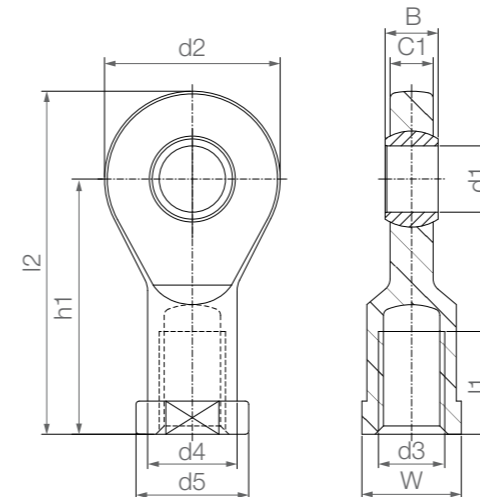
Technical data

Part No.	Max. static tensile strain		Max. static axial force		min. thread depth Thread [mm]	Max. tightening torque Female thread [Nm]	Max. tightening torque through ball [Nm]	Weight [g]
	Short-term	Long-term	Short-term	Long-term				
	[N]	[N]	[N]	[N]				
EB□M-04 ¹⁷⁾	800	400	100	50	7	0.4	2.0	1.8
EB□M-05	1,300	650	150	75	8	0.5	2.0	3.2
EB□M-06	1,500	750	200	100	8	1.5	2.5	4.0
EB□M-08	2,000	1,000	450	225	11	5.0	7.0	6.9
EB□M-10	2,300	1,150	500	250	13	15.0	14.0	11.2
EB□M-10-F	2,300	1,150	500	250	13	6.0	14.0	11.2
EB□M-12	3,300	1,650	550	275	14	20.0	25.0	17.1
EB□M-12-F	3,300	1,650	550	275	14	15.0	25.0	17.1
EB□M-15	4,800	2,400	800	400	18	25.0	30.0	28.9
EB□M-16 ¹⁷⁾	5,000	2,500	850	425	18	20.0	32.0	32.6
EB□M-16-F ¹⁷⁾	5,000	2,500	850	425	18	15.0	32.0	32.6
EB□M-17	5,300	2,650	1,100	550	19	30.0	35.0	42.4
EB□M-17-F	5,300	2,650	1,100	550	19	27.5	35.0	42.4
EB□M-20	7,200	3,600	1,800	900	22	60.0	40.0	65.8
EB□M-20-M20	7,200	3,600	1,800	900	22	60.0	40.0	65.8
EB□M-25	10,000	5,000	2,600	1,300	27	115.0	55.0	125.9
EB□M-30	10,500	5,250	3,000	1,500	33	130.0	70.0	184.1

Alternative spherical ball materials ▶ Page 993



Rod ends with female thread: EBRM and EBLM



i Material:
Housing: igumid® G ▶ Page 1914
Spherical ball: iglidur® W300 ▶ Page 175

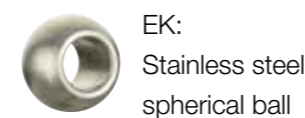
Dimensions [mm]

Part No.	d1 E10	d2	d3	d4	d5	C1	B	h1	l1	l2	W	Max. pivot angle
EB□M-04 ¹⁷⁾	4	15	M4	-	-	3.5	5	22.5	9.5	30.0	SW8	33°
EB□M-05	5	19	M5	9.0	11	4.4	6	30	12.0	39.5	SW9	33°
EB□M-06	6	21	M6	11.0	13	4.4	6	30	12.0	40.5	SW11	27°
EB□M-08	8	24	M8	13.0	16	6.0	8	36	14.0	48.0	SW14	24°
EB□M-10	10	29	M10	15.0	19	7.0	9	43	18.0	57.5	SW17	24°
EB□M-10-F	10	29	M10 x 1.25	15.0	19	7.0	9	43	18.0	57.5	SW17	24°
EB□M-12	12	34	M12	18.0	22	8.0	10	50	20.0	67.0	SW19	21°
EB□M-12-F	12	34	M12 x 1.25	18.0	22	8.0	10	50	20.0	67.0	SW19	21°
EB□M-15	15	40	M14	21.0	26	10.0	12	61	26.0	81.0	SW22	21°
EB□M-16 ¹⁷⁾	16	43	M16	-	-	10.5	13	64.5	26.5	86.0	SW22	21°
EB□M-16-F ¹⁷⁾	16	43	M16 x 1.5	-	-	10.5	13	64.5	26.5	86.0	SW22	21°
EB□M-17	17	46	M16	24.0	30	11.0	14	67	27.0	90.0	SW27	18°
EB□M-17-F	17	46	M16 x 1.5	24.0	30	11.0	14	67	27.0	90.0	SW27	18°
EB□M-20	20	53	M20 x 1.5	27.0	34	13.0	16	77	31.0	103.5	SW30	16°
EB□M-20-M20	20	53	M20 x 2.5	27.0	34	13.0	16	77	31.0	103.5	SW30	16°
EB□M-25	25	64	M24 x 2.0	34.0	41	17.0	20	94	38.0	126.5	SW36	16°
EB□M-30	30	73	M30 x 2.0	41.0	48	19.0	22	110	47.0	146.5	SW41	13°

¹⁷⁾ Special design with hexagonal foot

For another spherical bearing material than iglidur® W300, please add "J" to the part number. Example: EBRM-05-J.

Alternative spherical ball materials ▶ Page 993



Order key

Type	Size
E B □ M- 04	
E series	
Housing (female thread)	
Thread	
Metric	
Inner Ø [mm]	

Options:
Thread
L : Left-hand thread
R : Right-hand thread
Add-on:
F : Fine thread

Spherical ball material

Blank : iglidur® W300
R : iglidur® R
J : iglidur® J
J4 : iglidur® J4
J4V : iglidur® J4V
EK : Stainless steel (AISI 303)

Imperial dimensions available
▶ Page 1872

Rod ends with male thread:
EARM and EALM



- Maintenance-free dry operation
- High rigidity
- Very high durability under alternating loads
- Compensation of misalignment errors
- Compensation of edge loads
- Resistant to dirt, dust and lint
- Resistant to corrosion and chemicals
- Vibration-dampening
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional series E following DIN ISO 12240
- For temperatures up to +200°C we recommend EARM-HT and EALM-HT ▶ Page 893

Online service life calculation
▶ www.igus.eu/igubal-expert

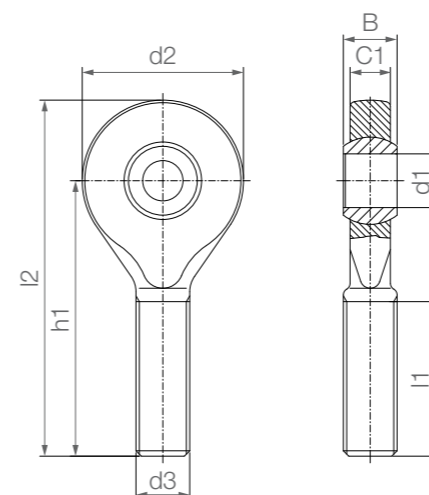
Technical data

Part No.	Max. static tensile strain		Max. static axial force		min. thread depth Thread [mm]	Max. tightening torque Male thread [Nm]	Max. tightening torque through ball [Nm]	Weight [g]
	Short-term	Long-term	Short-term	Long-term				
	[N]	[N]	[N]	[N]				
EA□M-05	550	275	50	25	14	0.4	2.0	2.2
EA□M-06	850	425	80	40	14	0.5	2.5	2.7
EA□M-08	1,600	800	160	80	17	2.0	7.0	5.1
EA□M-10	2,600	1,300	250	125	19	5.0	14.0	8.4
EA□M-10-F	2,600	1,300	250	125	19	3.0	14.0	8.4
EA□M-12	3,100	1,550	300	150	20	6.0	25.0	14.3
EA□M-12-F	3,100	1,550	300	150	20	6.0	25.0	14.3
EA□M-15	3,400	1,700	600	300	24	12.5	30.0	21.1
EA□M-17	3,600	1,800	900	450	26	17.5	35.0	30.2
EA□M-17-F	3,600	1,800	900	450	26	21.0	35.0	30.2
EA□M-20	6,800	3,400	1,700	850	30	25.0	40.0	57.3
EA□M-20-M20	6,800	3,400	1,700	850	30	25.0	40.0	57.3
EA□M-25	7,000	3,500	1,000	500	37	45.0	55.0	94.8
EA□M-30	7,000	3,500	2,000	1,000	46	85.0	70.0	156.4

Alternative spherical ball materials ▶ Page 993



Rod ends with male thread:
EARM and EALM



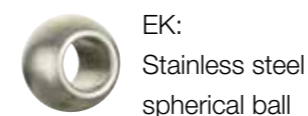
i Material:
Housing: igumid® G ▶ Page 1914
Spherical ball: iglidur® W300 ▶ Page 175

Dimensions [mm]

Part No.	d1 E10	d2	d3	C1	B	h1	l1	l2	Max. pivot angle
EA□M-05	5	19	M5	4.4	6	36.0	20	45.5	33°
EA□M-06	6	21	M6	4.4	6	36.0	20	46.5	27°
EA□M-08	8	24	M8	6.0	8	41.0	24	53.0	24°
EA□M-10	10	29	M10	7.0	9	47.5	27	62.0	24°
EA□M-10-F	10	29	M10 x 1.25	7.0	9	47.5	27	62.0	24°
EA□M-12	12	34	M12	8.0	10	54.0	29	71.0	21°
EA□M-12-F	12	34	M12 x 1.25	8.0	10	54.0	29	71.0	21°
EA□M-15	15	40	M14	10.0	12	63.0	34	83.0	21°
EA□M-17	17	46	M16	11.0	14	69.0	37	92.0	18°
EA□M-17-F	17	46	M16 x 1.5	11.0	14	69.0	37	92.0	18°
EA□M-20	20	53	M20 x 1.5	13.0	16	80.0	43	106,5	16°
EA□M-20-M20	20	53	M20 x 2.5	13.0	16	80.0	43	106,5	16°
EA□M-25	25	64	M24 x 2.0	17.0	20	97.0	53	129.0	16°
EA□M-30	30	73	M30 x 2.0	19.0	22	113.0	65	149.5	13°

For another spherical bearing material than iglidur® W300, please add "J" to the part number. Example: EARM-05-J.

Alternative spherical ball materials ▶ Page 993



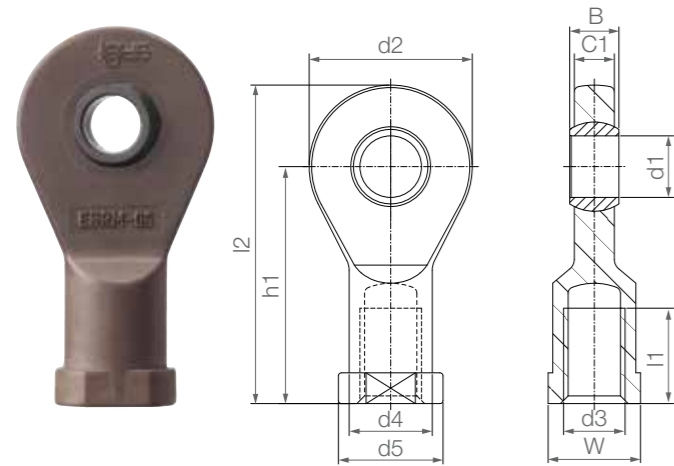
Order key

Type	Size
E A □ M- 05	
E series	
Housing (male thread)	
Thread	
Metric	
Inner Ø [mm]	

Options:
Thread
L : Left-hand thread
R : Right-hand thread
Spherical ball material
Blank : iglidur® W300
R : iglidur® R
J : iglidur® J
J4 : iglidur® J4
J4V : iglidur® J4V
EK : Stainless steel (AISI 303)

High temperature rod ends with female thread: EBRM-HT and EBLM-HT


 Order key



Type	Size	Version
E B □ M- 05 -HT		
E series		
Housing (female thread)		
Thread		
Metric		
Inner Ø [mm]		
High temperature		

- Applicable up to +200°C
- High rigidity
- Very high durability under alternating loads
- Compensation of misalignment and edge loads
- Resistant to corrosion and chemicals (chemical table ► Page 1894)
- Can be used underwater
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional series E following DIN ISO 12240

Options:
Thread
L : Left-hand thread
R: Right-hand thread

 **Material:**
Housing: **iguton G** ► Page 1915
Spherical ball: **iglidur® X** ► Page 291

Technical data


Part No.	Max. static tensile strain		Max. static axial force		min. thread depth Thread [mm]	Max. tightening torque Female thread [Nm]	Max. tightening torque through ball [Nm]	Weight [g]
	Short-term	Long-term	Short-term	Long-term				
	[N]	[N]	[N]	[N]				
EB □ M-05-HT	625	313	140	70	8	0.4	2.0	3.8
EB □ M-06-HT	832	416	172	86	8	0.5	2.5	5.0
EB □ M-08-HT	1,317	658	175	88	11	2.0	7.0	8.5
EB □ M-10-HT	1,470	735	253	126	13	5.0	14.0	13.7
EB □ M-12-HT	1,600	800	279	139	14	6.0	25.0	21.4

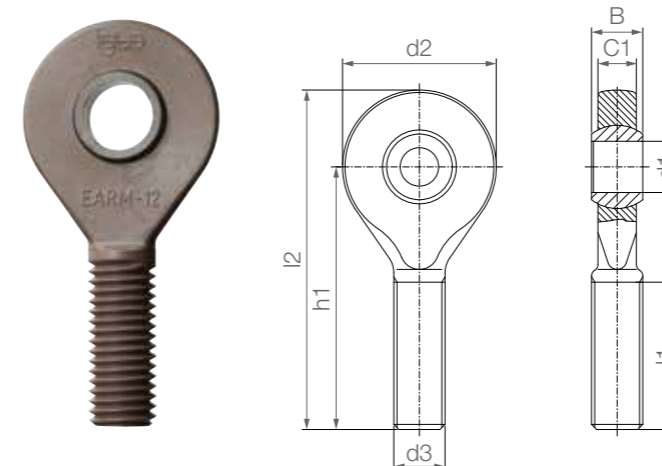
Dimensions [mm]

Part No.	d1 E10	d2	d3	d4	d5	C1	B	h1	l1	l2	W	Max. pivot angle
EB □ M-05-HT	5	19	M5	9.0	11	4.4	6	30	12	39.5	SW9	33°
EB □ M-06-HT	6	21	M6	11.0	13	4.4	6	30	12	40.5	SW11	27°
EB □ M-08-HT	8	24	M8	13.0	16	6.0	8	36	14	48.0	SW14	24°
EB □ M-10-HT	10	29	M10	15.0	19	7.0	9	43	18	57.5	SW17	24°
EB □ M-12-HT	12	34	M12	18.0	22	8.0	10	50	20	67.0	SW19	21°

Other dimensions available upon request

High temperature rod ends with male thread: EARM-HT and EALM-HT

 Order key



Type	Size	Version
E A □ M- 05 -HT		
E series		
Housing (male thread)		
Thread		
Metric		
Inner Ø [mm]		
High temperature		

- Applicable up to +200°C
- High rigidity
- Very high durability under alternating loads
- Compensation of misalignment and edge loads
- Resistant to corrosion and chemicals (chemical table ► Page 1894)
- Can be used underwater
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional series E following DIN ISO 12240

Options:
Thread
L : Left-hand thread
R: Right-hand thread

 **Material:**
Housing: **iguton G** ► Page 1915
Spherical ball: **iglidur® X** ► Page 291

Technical data

Part No.	Max. static tensile strain		Max. static axial force		min. thread depth Thread [mm]	Max. tightening torque Male thread [Nm]	Max. tightening torque through ball [Nm]	Weight [g]
	Short-term	Long-term	Short-term	Long-term				
	[N]	[N]	[N]	[N]				
EA □ M-05-HT	380	190	20	10	14	0.4	2.0	2.8
EA □ M-06-HT	600	300	30	15	14	0.5	2.5	3.4
EA □ M-08-HT	931	465	48	24	17	2.0	7.0	6.1
EA □ M-10-HT	1,125	563	57	28	19	5.0	14.0	10.2
EA □ M-12-HT	1,200	600	65	33	20	6.0	25.0	15.7

Dimensions [mm]

Part No.	d1 E10	d2	d3	C1	B	h1	l1	l2	Max. pivot angle
EA □ M-05-HT	5	19	M5	4.4	6	36.0	20	45.5	33°
EA □ M-06-HT	6	21	M6	4.4	6	36.0	20	46.5	27°
EA □ M-08-HT	8	24	M8	6.0	8	41.0	24	53.0	24°
EA □ M-10-HT	10	29	M10	7.0	9	47.5	27	62.0	24°
EA □ M-12-HT	12	34	M12	8.0	10	54.0	29	71.0	21°

Other dimensions available upon request

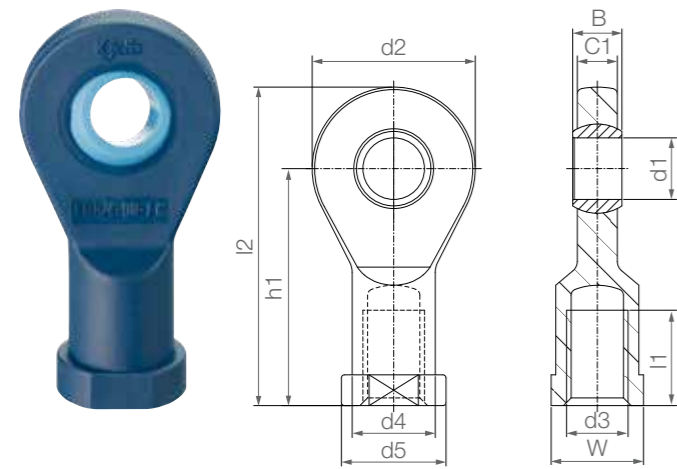
Rod ends with female thread, suitable for food contact: EBRM-FC

Order key

Type	Size	Version
E B R M - 06 - FC		
E series	Housing (female thread)	
	Thread	
	Metric	
	Inner Ø [mm]	
	Suitable for food contact	

Material:
 Housing: **igumid® FC** ► **Page1915**
 Spherical ball: **iglidur® A181** ► **Page 401**
iglidur® FC180 ► upon request

- Cost-effective
- Left-hand thread upon request



- Complies with FDA and EU 10/2011
- Lubrication and maintenance-free
- Visually and magnetically detectable (FC180)
- In industry-standard blue
- Corrosion and media-resistant
- Vibration-dampening

Technical data

Part No.		Max. static tensile strain		Max. static axial force		min. thread depth	Max. tightening torque	Max. tightening torque through ball	Weight
		Short-term	Long-term	Short-term	Long-term				
		[N]	[N]	[N]	[N]				
EBRM-04-FC	New	700	350	100	50	7.0	0.4	1.5	1.9
EBRM-05-FC	New	1,100	550	150	75	8.0	0.5	1.5	3.9
EBRM-06-FC		1,300	650	300	150	8.0	1.5	2.0	4.0
EBRM-08-FC		1,900	950	500	250	11.0	5.0	4.0	7.0
EBRM-10-FC		2,220	1,100	500	250	13.0	10.0	6.0	11.4
EBRM-10-FC-F		2,220	1,100	500	250	13.0	10.0	6.0	11.4
EBRM-12-FC		3,000	1,500	800	400	14.0	15.0	6.0	17.4

Dimensions [mm]

Part No.		d1	d2	d3	d4	d5	C1	B	h1	l1	l2	W	Max. pivot angle
		E10											
EBRM-04-FC	New	4	15	M4	–	–	3.5	5	22.5	9.5	30.0	SW8	33°
EBRM-05-FC	New	5	19	M5	9.0	11	4.4	6	30	12	40.5	SW9	33°
EBRM-06-FC		6	21	M6	11.0	13	4.4	6	30	12	40.5	SW11	27°
EBRM-08-FC		8	24	M8	13.0	16	6.0	8	36	14	48.0	SW14	24°
EBRM-10-FC		10	29	M10	15.0	19	7.0	9	43	18	57.5	SW17	24°
EBRM-10-FC-F		10	29	M10 x 1.25	15.0	19	7.0	9	43	18	57.5	SW17	24°
EBRM-12-FC		12	34	M12	18.0	22	8.0	10	50	20	67.0	SW19	21°

Left-hand thread and other dimensions available upon request

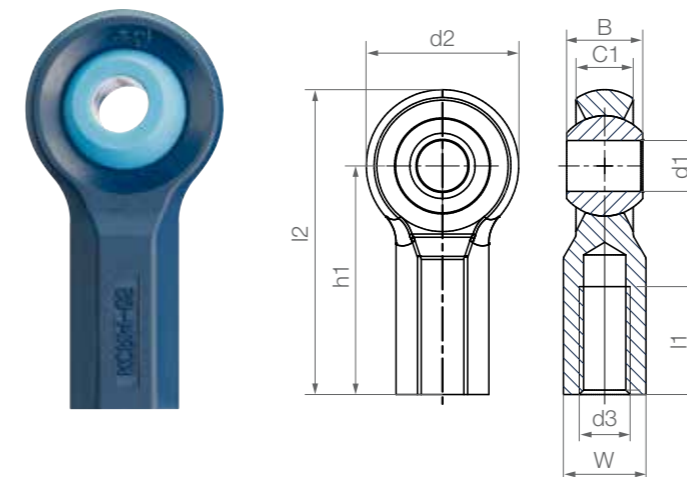
Rod ends with female thread, suitable for food contact: KCRM-FC

Order key

Type	Size	Version
K C R M - 06 - FC		
K series	Housing (female thread)	
	Thread	
	Metric	
	Inner Ø [mm]	
	Suitable for food contact	

Material:
 Housing: **igumid® FC** ► **Page1915**
 Spherical ball: **iglidur® A181** ► **Page 401**
iglidur® FC180 ► upon request

- Cost-effective
- Left-hand thread upon request



- Complies with FDA and EU 10/2011
- Lubrication and maintenance-free
- Visually and magnetically detectable (FC180)
- In industry-standard blue
- Corrosion and media-resistant
- Vibration-dampening

Technical data

Part No.		Max. static tensile strain		Max. static axial force		min. thread depth	Max. tightening torque	Max. tightening torque through ball	Weight
		Short-term	Long-term	Short-term	Long-term				
		[N]	[N]	[N]	[N]				
KCRM-05-FC	New	1,000	500	170	75	7.0	1.0	2.0	3.5
KCRM-06-FC		1,300	650	400	150	8.0	1.0	2.0	4.3
KCRM-12-FC	New	3,200	1,600	600	300	15.0	12.0	20.0	21.0

Dimensions [mm]

Part No.		d1	d2	d3	C1	B	h1	l1	l2	W	Max. pivot angle
		E10				without stainless steel sleeve					
KCRM-05-FC	New	5	18	M5	6.0	8.0	27	12.0	36.0	SW9	43°
KCRM-06-FC		6	20	M6	7.0	9.0	30	13.5	40.0	SW10	40°
KCRM-12-FC	New	12	34	M12	7.0	12.0	50	25.0	67.0	SW17	35°

Left-hand thread and other dimensions available upon request

Rod ends with female thread, metallic housing with maintenance-free inner ring: **KCRM-ES/S**

 **Order key**

Type	Size	Version
K C <input type="checkbox"/> M - <input type="checkbox"/> - 06 - <input type="checkbox"/> - EK		
K series		
Housing (female thread)		
Thread		
Metric		
Housing material		
Inner Ø [mm]		
iglidur® material		
Spherical ball material		

Options:

Thread

L : Left-hand thread
R : Right-hand thread

Housing material

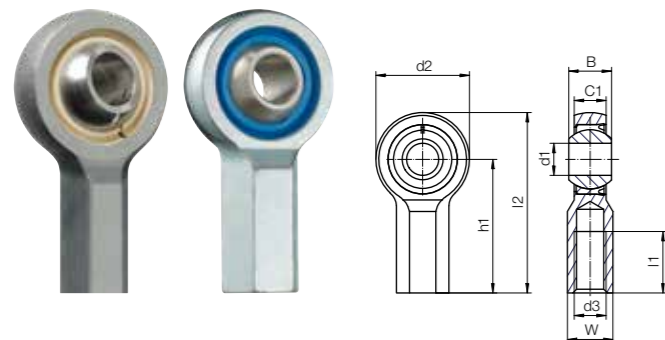
S : Zinc die-casting
ES : Stainless steel

iglidur® material

J : iglidur® J
A181 : iglidur® A181

Spherical ball material

EK : Stainless steel



- Metallic housing: higher breaking strength than igumid® G
- 10 times more abrasion-resistant against metallic spherical balls than polyamide
- Inner ring made of FDA-compliant material (iglidur® A181)



Material:
Housing: **Stainless steel, zinc die-casting**
Inner ring: **iglidur® J** ▶ Page 163
iglidur® A181 ▶ Page 401
Spherical ball: **Stainless steel**

Technical data

Part No.	Max. tensile strain		Max. axial force [N]	Max. axial load [N]	min. thread depth Thread [mm]	Weight [g]
	Short-term [N]	Long-term [N]				
	KC <input type="checkbox"/> M - <input type="checkbox"/> -06 - <input type="checkbox"/> -EK	New 1,900				
KC <input type="checkbox"/> M - <input type="checkbox"/> -08 - <input type="checkbox"/> -EK	New 3,750	1,825	1,150	270	16	43.2
KC <input type="checkbox"/> M - <input type="checkbox"/> -10 - <input type="checkbox"/> -EK	New 4,500	2,250	2,100	500	18	67.4
KC <input type="checkbox"/> M - <input type="checkbox"/> -12 - <input type="checkbox"/> -EK	New 5,500	3,625	2,500	475	20	98.3
KC <input type="checkbox"/> M - <input type="checkbox"/> -16 - <input type="checkbox"/> -EK	New 7,000	6,000	2,600	1,250	23	179.4
KC <input type="checkbox"/> M - <input type="checkbox"/> -20 - <input type="checkbox"/> -EK	New 10,000	8,950	3,300	2,000	27	309.5
KC <input type="checkbox"/> M - <input type="checkbox"/> -20-M20 - <input type="checkbox"/> -EK	New 10,000	8,950	3,300	2,000	27	309.5

All values refer to KCM-S-XX-J-EK

Dimensions [mm]

Part No.	d1	d2	d3	h1	l1	l2	B	C1	W	Max. pivot angle
KC <input type="checkbox"/> M - <input type="checkbox"/> -06 - <input type="checkbox"/> -EK	New 6	22.0	M06	36.0	21	47.00	9	7.0	10	29°
KC <input type="checkbox"/> M - <input type="checkbox"/> -08 - <input type="checkbox"/> -EK	New 8	26.5	M08	42.0	24	55.25	12	9.0	13	25°
KC <input type="checkbox"/> M - <input type="checkbox"/> -10 - <input type="checkbox"/> -EK	New 10	31.0	M10	48.0	27	63.50	14	10.5	15	25°
KC <input type="checkbox"/> M - <input type="checkbox"/> -12 - <input type="checkbox"/> -EK	New 12	35.0	M12	54.5	30	72.00	16	12.0	17	25°
KC <input type="checkbox"/> M - <input type="checkbox"/> -16 - <input type="checkbox"/> -EK	New 16	45.0	M16	66.0	34	88.50	21	15.0	20	23°
KC <input type="checkbox"/> M - <input type="checkbox"/> -20 - <input type="checkbox"/> -EK	New 20	53.0	M20 x 1.5	78.0	40	104.50	25	18.0	24	23°
KC <input type="checkbox"/> M - <input type="checkbox"/> -20-M20 - <input type="checkbox"/> -EK	New 20	53.0	M20 x 2.5	78.0	40	104.50	25	18.0	24	23°

Rod ends with male thread, metallic housing with maintenance-free inner ring: **KARM-ES/S**

 **Order key**

Type	Size	Version
K A <input type="checkbox"/> M - <input type="checkbox"/> - 06 - <input type="checkbox"/> - EK		
K series		
Housing (male thread)		
Thread		
Metric		
Housing material		
Inner Ø [mm]		
iglidur® material		
Spherical ball material		

Options:

Thread

L : Left-hand thread
R : Right-hand thread

Housing material

S : Zinc die-casting
ES : Stainless steel

iglidur® material

J : iglidur® J
A181 : iglidur® A181

Spherical ball material

EK : Stainless steel



- Metallic housing: higher breaking strength than igumid® G
- 10 times more abrasion-resistant against metallic spherical balls than polyamide
- Inner ring made of FDA-compliant material (iglidur® A181)



Material:
Housing: **Stainless steel, zinc die-casting**
Inner ring: **iglidur® J** ▶ Page 163
iglidur® A181 ▶ Page 401
Spherical ball: **Stainless steel, aluminium, steel, iglidur® materials**

Technical data

Part No.	Max. tensile strain		Max. axial force [N]	Max. axial load [N]	min. thread depth Thread [mm]	Weight [g]
	Short-term [N]	Long-term [N]				
	KA <input type="checkbox"/> M - <input type="checkbox"/> -06 - <input type="checkbox"/> -EK	New 1,900				
KA <input type="checkbox"/> M - <input type="checkbox"/> -08 - <input type="checkbox"/> -EK	New 3,750	1,825	330	270	16	34.4
KA <input type="checkbox"/> M - <input type="checkbox"/> -10 - <input type="checkbox"/> -EK	New 4,500	2,250	500	500	18	56.3
KA <input type="checkbox"/> M - <input type="checkbox"/> -12 - <input type="checkbox"/> -EK	New 5,500	3,625	750	475	20	85.5
KA <input type="checkbox"/> M - <input type="checkbox"/> -16 - <input type="checkbox"/> -EK	New 7,000	6,000	1,500	1,250	23	179.3
KA <input type="checkbox"/> M - <input type="checkbox"/> -20 - <input type="checkbox"/> -EK	New 10,000	8,950	2,000	2,000	27	309.0
KA <input type="checkbox"/> M - <input type="checkbox"/> -20-M20 - <input type="checkbox"/> -EK	New 10,000	8,950	2,000	2,000	27	309.0

All values refer to KAMS-XX-J-EK

Dimensions [mm]

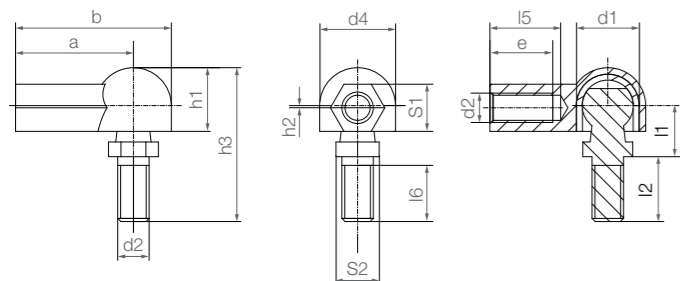
Part No.	d1	d2	d3	h1	l1	l2	B	C1	Max. pivot angle
KA <input type="checkbox"/> M - <input type="checkbox"/> -06 - <input type="checkbox"/> -EK	New 6	22.0	M06	36.0	21	47.00	9	7.0	29°
KA <input type="checkbox"/> M - <input type="checkbox"/> -08 - <input type="checkbox"/> -EK	New 8	26.5	M08	42.0	24	55.25	12	9.0	25°
KA <input type="checkbox"/> M - <input type="checkbox"/> -10 - <input type="checkbox"/> -EK	New 10	31.0	M10	48.0	27	63.50	14	10.5	25°
KA <input type="checkbox"/> M - <input type="checkbox"/> -12 - <input type="checkbox"/> -EK	New 12	35.0	M12	54.5	30	72.00	16	12.0	25°
KA <input type="checkbox"/> M - <input type="checkbox"/> -16 - <input type="checkbox"/> -EK	New 16	45.0	M16	66.0	34	88.50	21	15.0	23°
KA <input type="checkbox"/> M - <input type="checkbox"/> -20 - <input type="checkbox"/> -EK	New 20	53.0	M20 x 1.5	78.0	40	104.50	25	18.0	23°
KA <input type="checkbox"/> M - <input type="checkbox"/> -20-M20 - <input type="checkbox"/> -EK	New 20	53.0	M20 x 2.5	78.0	40	104.50	25	18.0	23°

Angled ball and socket joints: WGRM and WGLM



- Connection for rotating and pivoting movements
- Lightweight
- Easy and quick assembly
- Vibration-dampening
- Insensitive to dirt and dust
- Ball studs made of plastic, galvanised steel and stainless steel¹⁹⁾

► Accessories, page 1011



Order key

Type	Size
WG □ M- 05 - MS	
Angled ball and socket joint	
Thread (housing)	
Metric	
Thread size M ... [mm]	

Options:

Thread (housing)

L : Left-hand thread

R : Right-hand thread

Ball stud¹⁹⁾

Blank : Made of plastic

MS : Made of galvanised steel

ES : Made of stainless steel²⁸⁾

Online service life calculation
► www.igus.eu/igubal-expert

Material:
Housing: igumid® G ► Page 1914
Spherical cap: iglidur® W300 ► Page 175

Technical data

Part No.	Max. static tensile force		Max. static compressive strength		Max. axial tensile force		Max. axial tensile force steel stud		Weight [g]
	(Ball stud axis)		(Ball stud axis)		(Housing axis)		(Housing axis)		
	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	
WG □ M-05-MS	30	15	200	100	100	50	600	300	2.6
WG □ M-06-MS	35	17.5	300	150	140	70	800	400	3.8
WG □ M-08-MS	250	125	500	250	200	100	1,500	750	8.0
WG □ M-10-MS	250	125	900	450	400	200	1,900	950	13.7

Dimensions [mm]

Part No.	d1	d2	d4	l1	l2	l5	l6	h1	h2	h3	a	b	e	S1	S2	Max. pivot angle
	±0.1		±0.5	±0.2	±0.3		min.	±0.4	±0.5	±0.5	±0.3	±0.5	±1.0			
WG □ M-05-MS	8	M5	12.8	9	10.2	14	6.2	10.8	0.65	24.9	22	28.4	11	SW8	SW7	25°
WG □ M-06-MS	10	M6	14.8	11	12.5	16	9.0	12.3	0.70	30.9	25	32.4	13	SW9	SW8	25°
WG □ M-08-MS	13	M8	19.3	13	16.5	18	11.2	16.2	1.15	39.15	30	39.7	16	SW12	SW11	25°
WG □ M-10-MS	16	M10	24.0	16	20.0	20	12.7	20.0	1.15	48.0	35	47.0	18	SW14	SW13	25°

¹⁹⁾ Ball stud with right-hand thread; left-hand thread upon request

²⁸⁾ Stainless steel ball stud upon request

Angled ball and socket joints (low-cost): WGRM-LC and WGLM-LC



Order key

Type	Size	Version
WG □ M- 05 - LC - MS		
Angled ball and socket joint		
Thread (housing)		
Metric		
Thread size M ... [mm]		
Low-cost		

Options:

Thread (housing)

L : Left-hand thread

R : Right-hand thread

Ball stud¹⁹⁾

Blank : Made of plastic

MS : Made of galvanised steel

ES : Made of stainless steel²⁸⁾

- Housing with ball stud
- Lightweight
- Maintenance-free
- Ball studs made of plastic, galvanised steel and stainless steel¹⁹⁾ ► Accessories, page 1011

Online service life calculation
► www.igus.eu/igubal-expert

Material:
Housing: igumid® G ► Page 1914

Technical data

Part No.	Max. static tensile force		Max. static compressive strength		Max. axial tensile force		Max. axial tensile force steel stud		Weight [g]
	(Ball stud axis)		(Ball stud axis)		(Housing axis)		(Housing axis)		
	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	
WG □ M-04-LC-MS ²⁰⁾	100	50	150	75	-	-	500	250	2.4
WG □ M-05-LC-MS	150	75	200	100	100	50	600	300	2.6
WG □ M-06-LC-MS	200	100	300	150	140	70	800	400	4.0
WG □ M-08-LC-MS	250	125	500	250	200	100	1,500	750	8.2
WG □ M-10-LC-MS	250	125	900	450	400	200	1,900	950	13.8

Dimensions [mm] - technical drawing ► Page 898


Part No.	d1	d2	d4	l1	l2	l5	l6	h1	h2	h3	a	b	e	S1	S2	Max. pivot angle
	±0.1		±0.5	±0.2	±0.3		min.	±0.4	±0.5	±0.5	±0.3	±0.5	±1.0			
WG □ M-04-LC-MS ²⁰⁾	6	M4	10.6	8.5	8.0	11.9	6.8	9.0	0.20	21.8	18	23.3	10.5	SW7	SW5	20°
WG □ M-05-LC-MS	8	M5	12.8	9.0	10.2	14.0	6.2	10.8	0.65	24.9	22	28.4	11.0	SW8	SW7	25°
WG □ M-06-LC-MS	10	M6	14.8	11.0	12.5	16.0	9.0	12.3	0.70	30.9	25	32.4	13.0	SW9	SW8	25°
WG □ M-08-LC-MS	13	M8	19.3	13.0	16.5	18.0	11.2	16.2	1.15	39.15	30	39.7	16.0	SW12	SW11	25°
WG □ M-10-LC-MS	16	M10	24.0	16.0	20.0	20.0	12.7	20.0	1.15	48.0	35	47.0	18.0	SW14	SW13	25°

¹⁹⁾ Ball stud with right-hand thread; left-hand thread upon request

²⁰⁾ Only available with galvanised steel stud

²⁸⁾ Stainless steel ball stud upon request

Ball joints, removable:
WGRM-DE and WGLM-DE

 Order key

Type	Size	Version
WG □ M- 05 -DE- MS		
Angled ball and socket joint	Thread (housing) Metric	Thread size M ... [mm] Disassembly

Options:

Thread (housing)

L : Left-hand thread

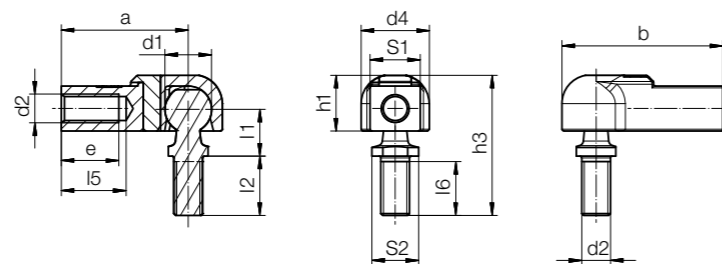
R : Right-hand thread

Ball stud¹⁹⁾

Blank : Made of plastic

MS : Made of galvanised steel

ES : Made of stainless steel²⁸⁾



- Cost-effective ball joint
- Lightweight
- Absolute corrosion resistance
- Easy assembly and disassembly
- High holding strength when assembled (260N)
- Ball studs made of plastic, galvanised steel and stainless steel¹⁹⁾ ▶ Accessories, **page 1011**

 **Material:**
Housing: igumid® G ▶ **Page 1914**

Technical data and dimensions [mm]

Part No.	Assembly force and disassembly force ¹⁷⁶⁾ [N]	Max. static tensile force ¹⁸⁰⁾ [N]		Max. static compressive force ¹⁸⁰⁾ [N]		Max. axial tensile force ¹⁸⁰⁾ [N]		Max. pivot angle	Weight [g]
		Short-term	Long-term	Short-term	Long-term	Short-term	Long-term		
		[N]	[N]	[N]	[N]	[N]	[N]		
WG □ M-05-DE-MS	40	120	60	360	180	1,200	600	23°	3.4
WG □ M-06-DE-MS	55	160	80	460	230	1,400	700	25°	5.5
WG □ M-08-DE-MS New	45	400	200	1,000	500	2,200	1,100	25°	8.4
WG □ M-10-DE-MS New	85	400	200	1,400	700	3,800	1,900	25°	16.0

Dimensions [mm]

Part No.	d1	d2	d4	l1	l2	l5	l6	h1	h3	S1	S2	a	b	e
	±0.1		±0.5	±0.2	±0.5	min.	min.	±0.4	±0.5			±0.3	±0.5	±1.0
WG □ M-05-DE-MS	8.0	M5	12.8	9	10.2	13.0	6.2	10.8	25.6	SW9	SW7	25.0	31.4	11
WG □ M-06-DE-MS	10.0	M6	16.0	11	12.5	15.0	9.0	13.0	32.0	SW11	SW8	30.0	38.0	13.5
WG □ M-08-DE-MS New	13.0	M8	19.0	13	16.5	18.0	15.0	15.75	39.0	SW14	SW11	35.3	44.8	16
WG □ M-10-DE-MS New	16.0	M10	23.0	16	20.0	20.0	16.0	19.0	47.25	SW17	SW13	42.0	53.5	18

¹⁹⁾ Ball stud with right-hand thread; left-hand thread upon request

²⁸⁾ Stainless steel ball stud upon request

¹⁷⁵⁾ Measured values for variant with steel pin (-MS) with open pin

¹⁸⁰⁾ Measured values for variant with steel pin (-MS) with closed pin

In-line ball and socket joints:
AGRM and AGLM

 Order key

Type	Size
AG □ M- 08 - MS	
In-line ball and socket joint	Thread (housing) Metric Thread size M ... [mm]



Options:

Thread (housing)

L : Left-hand thread

R : Right-hand thread

Ball stud¹⁹⁾

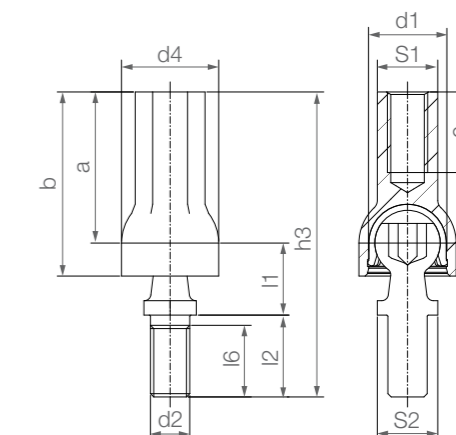
Blank : Made of plastic

MS : Made of galvanised steel

ES : Made of stainless steel²⁸⁾

- For all mechanical combinations
- Easy to assemble
- Maintenance-free, predictable service life
- Resistant to corrosion and chemicals
- Vibration-dampening
- Ball studs made of plastic, galvanised steel and stainless steel¹⁹⁾ ▶ Accessories, **page 1011**

 **Material:**
Housing: igumid® G ▶ **Page 1914**
Spherical cap: iglidur® W300 ▶ **Page 175**



Technical data

Part No.	Max. static axial tensile force		Max. static axial compressive strength		Max. assembly force [N]	Weight [g]
	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]		
AG □ M-08-MS	250	125	1,000	500	110	7.8

Dimensions [mm]

Part No.	d1	d2	d4	l1	l2	l6	h3	S1	S2	a	b	e	pivot angle	
	±0.1		±0.5	±0.2	±0.3	min.	±0.5			±0.3	±0.5	min.	Recom.	max.
AG □ M-08-MS	13.0	M8	19.3	13	16.5	11.2	59.5	SW12	SW11	30	36.5	16	18°	25°

¹⁹⁾ Ball stud with right-hand thread; left-hand thread upon request

²⁸⁾ Stainless steel ball stud upon request

In-line ball and socket joints (low-cost):
AGRM-LC and AGLM-LC

 Order key

Type	Size	Version
------	------	---------

AG □ M- 06 -LC- MS

In-line ball and socket joint	Thread (housing)	Metric	Inner Ø [mm]	Low-cost
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Options:

Thread (housing)

L : Left-hand thread

R : Right-hand thread

Ball stud¹⁹⁾

Blank : Made of plastic

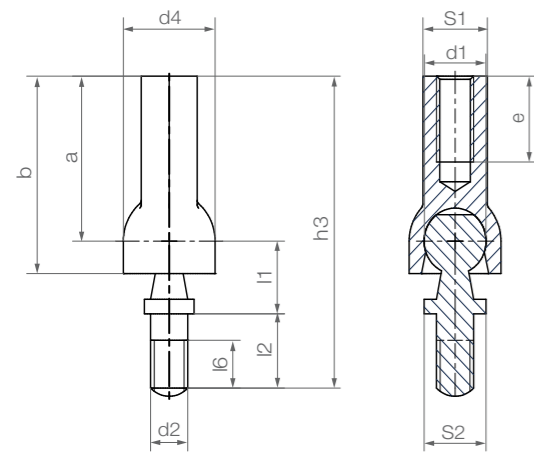
MS : Made of galvanised steel

ES : Made of stainless steel²⁰⁾

 Material:

Housing: igumid® G ► Page 1914

- Housing with ball stud
- Lightweight
- Maintenance-free
- Ball studs made of plastic, galvanised steel and stainless steel¹⁹⁾ ► Accessories, page 1011



Technical data

Part No.	Max. static tensile strain		Max. static compressive force (with steel stud)		Max. static compressive force (with plastic stud)		Max. assembly force [N]	Weight [g]
	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]	[N]	[N]		
AG □ M-04-LC-MS ²⁰⁾ New	120	60	1,600	800	–	–	280	3.3
AG □ M-06-LC-MS	100	50	2,000	1,000	800	400	320	10.8
AG □ M-08-LC-MS	150	75	2,800	1,400	1,400	700	430	23.1

Dimensions [mm]

Part No.	d1	d2	d4	l1	l2	l6	h3	S1	S2	a	b	e	Max. pivot angle	
	±0.1		±0.5	±0.2	±0.3	min.	±0.5			±0.3	±0.5	min.	Recom.	max.
AG □ M-04-LC-MS ²⁰⁾ New	6	M4	10.6	8.5	8.0	6.8	36.5	SW7	SW5	20	23.0	10.25	18°	25°
AG □ M-06-LC-MS	10	M6	14.8	11	12.5	9.0	48.5	SW9	SW8	25	29.9	13	18°	25°
AG □ M-08-LC-MS	13	M8	19.3	13	16.5	11.2	59.5	SW12	SW11	30	35.0	16	18°	25°

¹⁹⁾ Ball stud with right-hand thread; left-hand thread upon request

²⁰⁾ Only available with galvanised steel stud

²⁸⁾ Stainless steel ball stud upon request

igubal® clevis joints

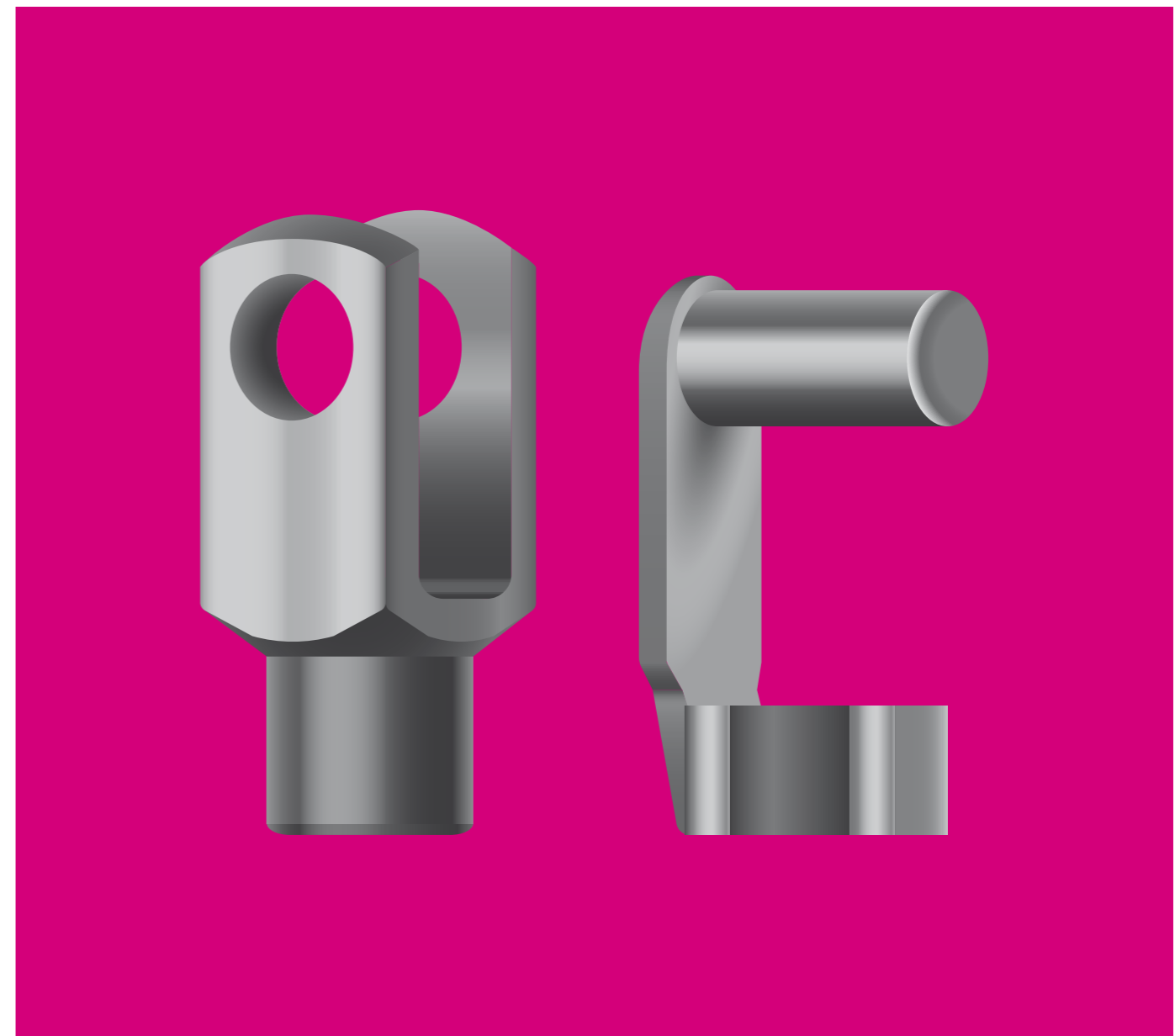
High tensile force

Vibration-dampening

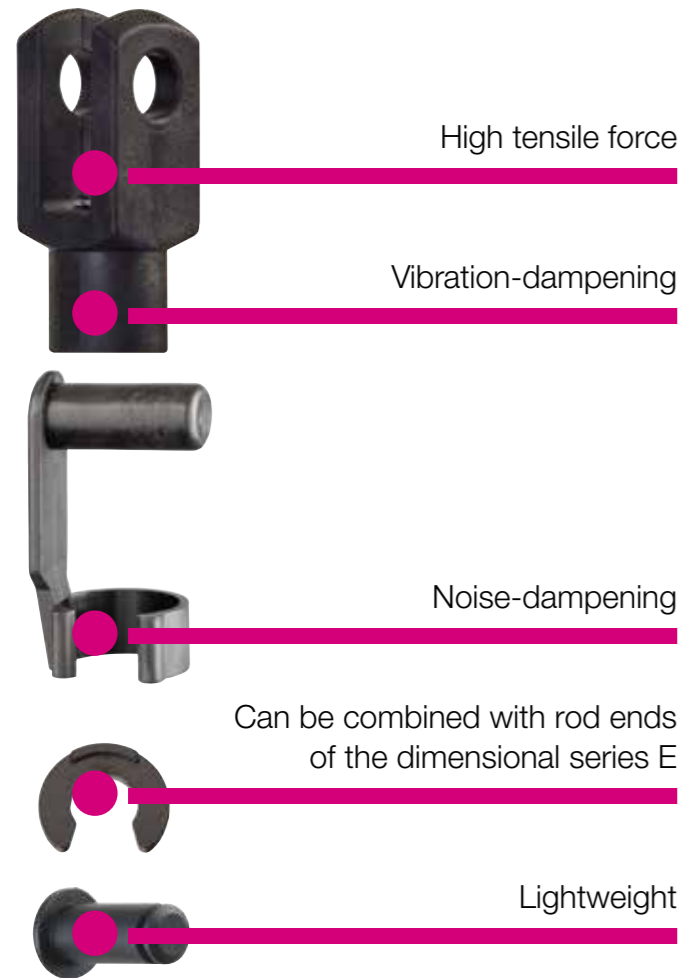
Noise-dampening

Can be combined with rod ends of the dimensional series E

Lightweight



igubal® clevis joints are all made from solid plastic igumid® G to DIN 71752, which can be combined with E series rod ends. Available components are clevis joint, clevis pin and circlip or as an alternative, spring-loaded fixing clip.



When do I take them?

- If high rigidity is required
- If corrosion resistance is required
- If no lubrication is to be used
- If you want to save weight
- If maintenance-free, dry operation is required
- If simple assembly is required
- In combination with pneumatic cylinders and gas struts



When do I not take them?

- When temperatures are higher than +200°C
- When diameters above 20mm are required



Available from stock

Detailed information about delivery time online.



Price breaks online

No minimum order value. No minimum order quantity



Max. +80°C
min. -30°C



4 types
Ø 4 - 20mm



Online product finder
▶ www.igus.eu/igubal-finder

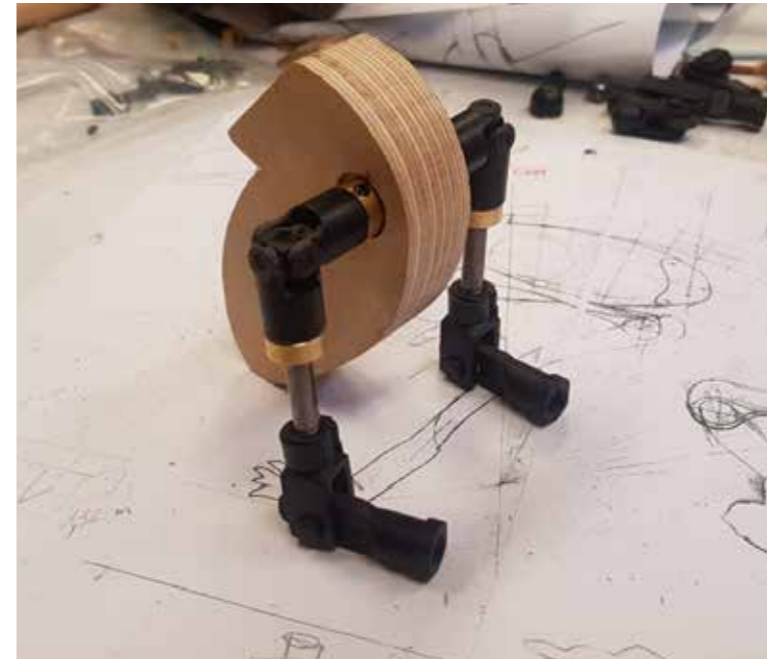


Table

Klaus Thiesler from Bad Pyrmont, Germany is building a table without legs that can be folded out from a kitchen unit when needed. Thiesler is using igubal® spherical thrust bearings (SAM-08) for the swivel axes, iglidur® M250 polymer plain bearings (M250-MFM-06) and igubal® double joints (EGZM-06-25) for the aluminium retaining pins in the support.

Asparagus-harvesting robot

Slovenia's University of Ljubljana is developing a robotic system for automated asparagus harvesting. To ensure that the vision system can operate in wet and dusty environments, the design engineers are using iglidur® polymer plain bearings (GFM-0810-03) and drylin® aluminium shafts (AWMP-08). The components are lightweight, so the robot's mechanical system achieves good dynamics. They require no maintenance, so the system is easy for the end user to handle.



Rabbit puppet

Lutkovno Gledališce Ljubljana, a Slovenian company, has designed a cute bunny for a puppet theatre. To optimise its joints' flexibility and minimise their weight, the company uses lightweight, maintenance-free igubal® angled ball and socket joints.

igubal® - clevis joint combinations



Clevis joints with clevis pin and circlip

E series

► Page 912

Clevis joints with spring-loaded fixing clip

E series

► Page 913

Combination, easy to fit

E series

► Page 914

Combination, easy to fit

E series

► Page 915

igubal® component parts



Clevis joints, high strength

E series

► From page 908

Clevis joint with male thread

E series

► From page 910

Clevis joint combination

► Page 911



Spring-loaded fixing clip

► Page 916



Clevis pin and circlip

GBM - Clevis pin
GSR - Circlip

► Page 917



Clevis joints, detectable, FDA and EU10/2011-compliant

E series

► Page 918

Spring-loaded pin, detectable, FDA and EU10/2011-compliant

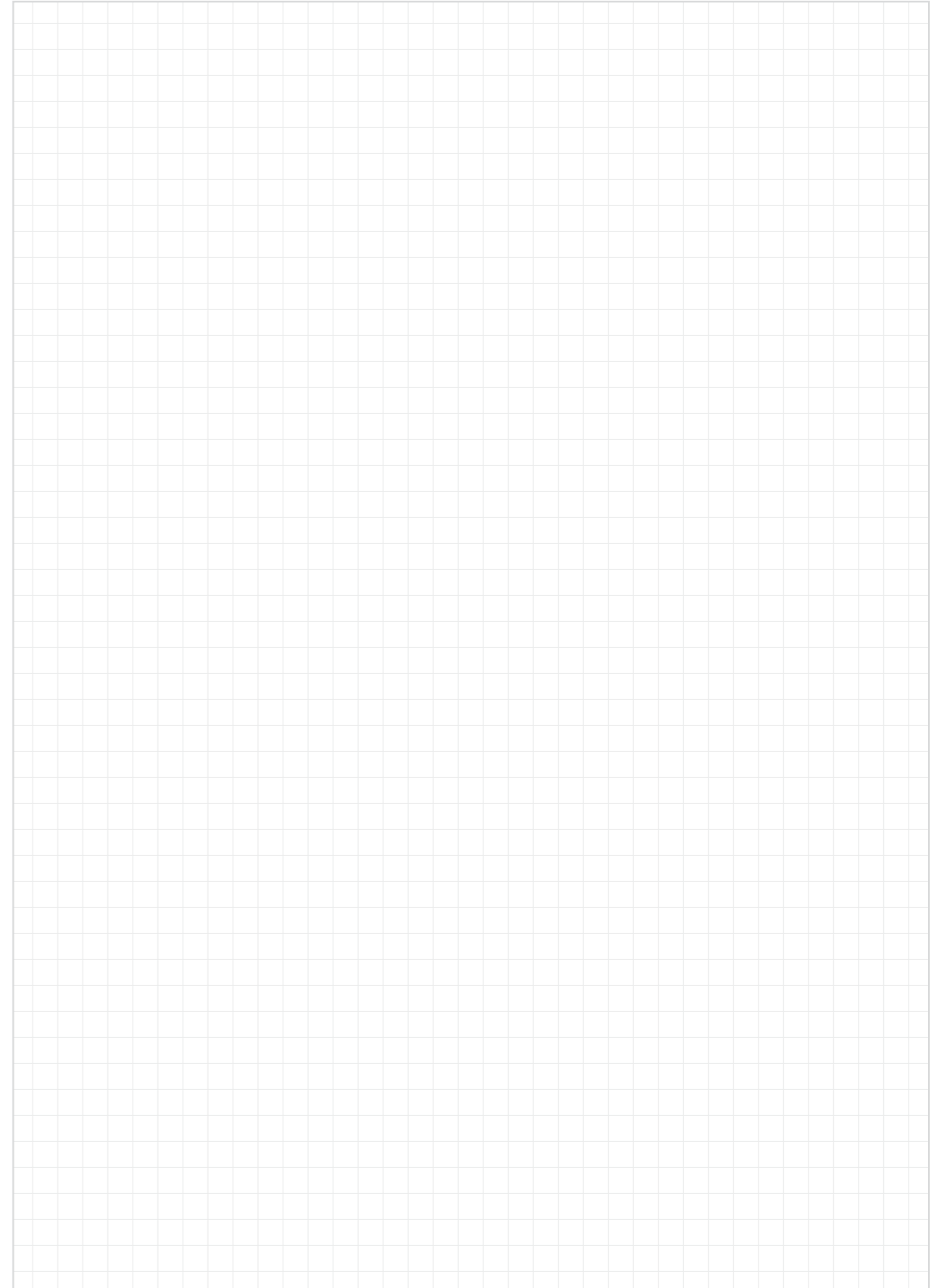
E series

► Page 919

Clevis joints with spring-loaded pin, detectable; FDA and EU10/2011-compliant

E series


► Page 920



Clevis joints: GERM and GELM



- Lightweight
- High rigidity
- Absolute corrosion resistance
- High tensile force
- Can be combined with rod ends of the dimensional series E
- Vibration-dampening
- Noise-dampening
- Available with left- (GELM) and right-hand-thread (GERM)

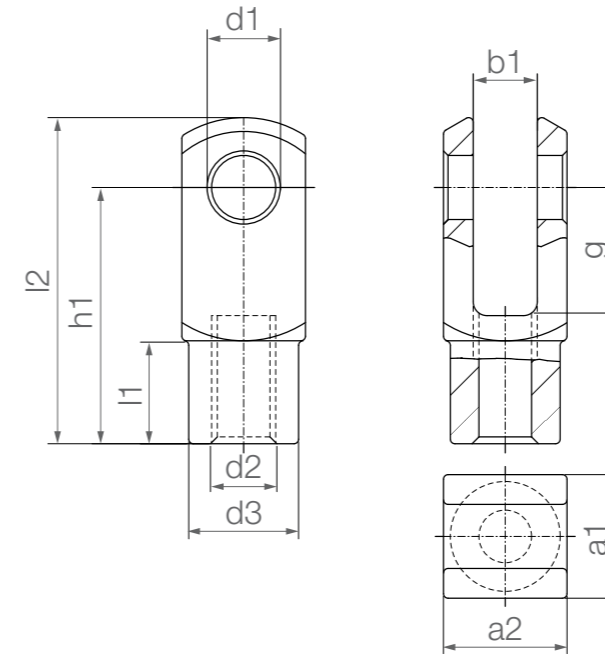
 Online service life calculation
▶ www.igus.eu/igubal-expert


Technical data

Part No.	Max. static tensile strain		Max. static axial force		Max. tightening torque [Nm]	Weight [g]
	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]		
GE□M-04-M3.5	650	325	250	125	0.4	0.9
GE□M-04	650	325	250	125	0.4	0.9
GE□M-05-DIN-M4	1,000	500	250	125	0.4	1.5
GE□M-05-DIN-M5	1,000	500	250	125	0.5	1.5
GE□M-05	1,200	600	250	125	0.5	2.7
GE□M-05-DIN-M5-LS ²²⁾	1,000	500	130	65	0.5	2.3
GE□M-06	1,400	700	300	150	1.5	2.5
GE□M-06-LS ²²⁾	1,400	700	130	65	1.5	3.6
GE□M-08	2,700	1,350	650	325	5.0	6.3
GE□M-10	4,700	2,350	800	400	15.0	13.2
GE□M-10-F	4,700	2,350	800	400	6.0	13.2
GE□M-12	5,700	2,850	900	450	20.0	20.2
GE□M-12-F	5,700	2,850	900	450	15.0	20.2
GE□M-14	6,600	3,300	1,000	500	25.0	29.9
GE□M-14-F	6,600	3,300	1,000	500	20.0	29.9
GE□M-15	3,200	1,600	1,000	500	25.0	30.0
GE□M-16	7,500	3,750	1,200	600	30.0	49.9
GE□M-16-F	7,500	3,750	1,200	600	27.5	49.9
GE□M-17	3,600	1,800	1,200	600	30.0	50.0
GE□M-17-F	3,600	1,800	1,200	600	27.5	50.0
GE□M-20	9,500	4,750	3,000	1,500	60.0	105.0
GE□M-20-M20	9,500	4,750	3,000	1,500	80.0	105.0

²²⁾ LS = longer shank

Clevis joints: GERM and GELM





 Order key

Type	Size	Options
------	------	---------

GE□M-04-LS

Clevis joint	E series	Thread	Metric	Inner Ø [mm]	Thread
					L : Left-hand thread R : Right-hand thread
					Add-on:
					LS : Longer shank F : Fine thread

 Material:
igumid® G ▶ Page 1914

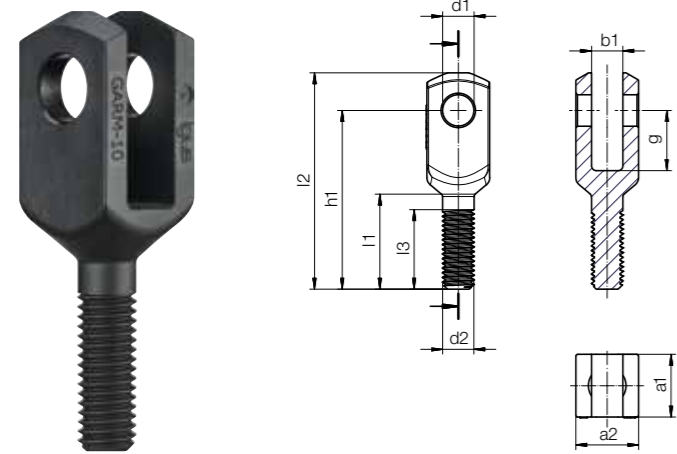
 Imperial dimensions available
▶ Page 1876

Dimensions [mm]

Part No.	d1	g	a1	a2	b1	d2	d3	l2	h1	l1
	+0.1	h11	+0.3 -0.16	+0.3 -0.16	B13		±0.3	±0.5	±0.3	±0.2
GE□M-04-M3.5	4	8	8	8	4	M3.5	8	21.0	16	6.0
GE□M-04	4	8	8	8	4	M4	8	21.0	16	6.0
GE□M-05-DIN-M4	5	10	10	10	5	M4	9	24.5	20	7.5
GE□M-05-DIN-M5	5	10	10	10	5	M5	9	24.5	20	7.5
GE□M-05	5	12	12	12	6	M5	10	31.0	24	9.0
GE□M-05-DIN-M5-LS ²²⁾	5	20	10	10	5	M5	9	36.0	30	7.5
GE□M-06	6	12	12	12	6	M6	10	31.0	24	9.0
GE□M-06-LS ²²⁾	6	24	12	12	6	M6	10	43.0	36	9.0
GE□M-08	8	16	16	16	8	M8	14	42.0	32	12.0
GE□M-10	10	20	20	20	10	M10	18	52.0	40	15.0
GE□M-10-F	10	20	20	20	10	M10 x 1.25	18	51.3	40	15.0
GE□M-12	12	24	24	24	12	M12	20	61.3	48	18.0
GE□M-12-F	12	24	24	24	12	M12 x 1.25	20	61.3	48	18.0
GE□M-14	14	28	27	27	14	M14	24	71.3	56	22.5
GE□M-14-F	14	28	27	27	14	M14 x 1.5	24	71.3	56	22.5
GE□M-15	15	28	27	27	14	M14	24	71.3	56	22.5
GE□M-16	16	32	32	32	16	M16	26	81.9	64	24.0
GE□M-16-F	16	32	32	32	16	M16 x 1.5	26	81.9	64	24.0
GE□M-17	17	32	32	32	16	M16	26	83.0	64	24.0
GE□M-17-F	17	32	32	32	16	M16 x 1.5	26	83.0	64	24.0
GE□M-20	20	40	40	40	20	M20 x 1.5	34	105.0	80	30.0
GE□M-20-M20	20	40	40	40	20	M20 x 2.5	34	105.0	80	30.0

²²⁾ LS = longer shank

Clevis joints with male thread:
GARM-10



- Available from stock in thread size M10 (M8 and M12 in preparation)
- For direct connection to, for example, igubal® rod end bearings
- Lightweight
- Lubrication and maintenance-free
- Absolute corrosion resistance
- Available for right-hand thread (left-hand thread upon request)

Order key

Type	Size
G A R M - 1 0	
Clevis joint	
Male thread	
Thread	
Metric	
Inner Ø [mm]	

Material:
igumid® G ▶ Page 1914

Online service life calculation
▶ www.igus.eu/igubal-expert

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Max. tightening torque [Nm]	Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]		
GARM-10	3,000	1,500	200	100	5.0	12.5

Dimensions [mm]

Part No.	d1	g	a1	a2	b1	d2	l2	l3	h1	l1
GARM-10	+0.1	h11	+0.3	+0.3	B13		±0.5	±0.3	±0.3	±0.2
			-0.16	-0.16						
GARM-10	10	19	20	20	10	M10	69	25	57	30.3

Clevis joint combination:
GARMK-10



- Can be combined with:
- Safety bolt GBM-10 and circlip GSR-10 - part number GARMK-10
 - As clevis joint combination with rod end bearing EARM-10 - part number GARMKE-10
 - All igubal® parts with female thread M10

Order key

Type	Size
G A R M K - 1 0	
Clevis joint	
Male thread	
Thread	
Metric	
With clevis pin and circlip	
Inner Ø [mm]	

Material:
igumid® G ▶ Page 1914

Online service life calculation
▶ www.igus.eu/igubal-expert

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	
GARMK-10	3,000	1,500	200	100	15.7

Clevis joints with spring-loaded fixing clip in combination with E series rod ends, EARM ▶ Page 890

Clevis joints with clevis pin and circlip: GERMK and GELMK



- Lightweight
- Absolute corrosion resistance
- High tensile force
- Can be combined with rod ends of the dimensional series E

Online service life calculation
▶ www.igus.eu/igubal-expert

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	
GE□MK-04-M3.5	500	250	250	125	1.3
GE□MK-04	500	250	250	125	1.3
GE□MK-05-DIN-M4	800	400	250	125	2.1
GE□MK-05-DIN-M5	800	400	250	125	2.1
GE□MK-05	900	450	250	125	3.3
GE□MK-05-DIN-M5-LS ²²⁾	800	400	130	65	2.9
GE□MK-06	1,300	650	300	150	3.3
GE□MK-06-LS ²²⁾	1,300	650	130	65	4.4
GE□MK-08	2,100	1,050	650	325	7.9
GE□MK-10	3,000	1,500	800	400	16.4
GE□MK-10-F	3,000	1,500	800	400	16.4
GE□MK-12	3,500	1,750	900	450	25.3
GE□MK-12-F	3,500	1,750	900	450	25.3
GE□MK-14	6,100	3,050	1,000	500	31.2
GE□MK-15	2,800	1,400	1,000	500	38.9
GE□MK-16	7,000	3,500	1,200	600	60.8
GE□MK-16-F	7,000	3,500	1,200	600	60.8
GE□MK-17	3,600	1,800	1,200	600	62.3
GE□MK-17-F	3,600	1,800	1,200	600	62.3
GE□MK-20	9,000	4,500	3,000	1,500	125.2
GE□MK-20-M20	9,000	4,500	3,000	1,500	125.2

²²⁾ LS = longer shank

Single components: clevis pin GBM and circlip GSR
▶ Page 917

Order key

Type	Size	Options
GE□MK-04-LS		
Clevis joint	E series	Thread
		Metric
		Clevis pin and circlip
	Inner Ø [mm]	Thread
		L : Left-hand thread
		R : Right-hand thread
		Add-on:
		LS : Longer shank
		F : Fine thread

Material:
igumid® G ▶ Page 1914

Imperial dimensions available
▶ Page 1877

Clevis joints with spring-loaded fixing clip: GERMF and GELMF



- One-piece design
- Easy assembly/disassembly
- Easy assembly also for use in hard to reach locations
- Can be combined with rod ends of the dimensional series E
- Corrosion-resistant and lightweight

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	
GE□MF-04-M3.5	500	250	250	125	1.3
GE□MF-04	500	250	250	125	1.3
GE□MF-05-DIN-M4	800	400	250	125	2.3
GE□MF-05-DIN-M5	800	400	250	125	2.3
GE□MF-05-DIN-M5-LS ²²⁾	800	400	130	65	2.3
GE□MF-05	900	450	250	125	3.8
GE□MF-06	1,300	650	300	150	3.9
GE□MF-06-LS ²²⁾	1,300	650	130	65	3.9
GE□MF-08	2,100	1,050	650	325	9.1
GE□MF-10	3,000	1,500	800	400	18.2
GE□MF-10-F	3,000	1,500	800	400	18.2
GE□MF-12	3,500	1,750	900	450	28.6
GE□MF-12-F	3,500	1,750	900	450	28.6
GE□MF-16	7,000	3,500	1,200	600	61.8
GE□MF-16-F	7,000	3,500	1,200	600	61.8

²²⁾ LS = longer shank

Single components: spring-loaded fixing clip GEFM
▶ Page 916

Order key

Type	Size	Options
GE□MF-04-LS		
Clevis joint	E series	Thread
		Metric
		Spring-loaded fixing clip
	Inner Ø [mm]	Thread
		L : Left-hand thread
		R : Right-hand thread
		Add-on:
		LS : Longer shank
		F : Fine thread

Material:
igumid® G ▶ Page 1914

Online service life calculation
▶ www.igus.eu/igubal-expert

Clevis joint combination:
GERMKE and GELMKE



- Lightweight
- Absolute corrosion resistance
- High tensile force
- Can be combined with E series rod end

Order key

Type	Size	Options
GE□MKE - 05		
Clevis joint	E series	Thread
		Metric
		With clevis pin, circlip and rod end
	Inner Ø [mm]	
		Thread L : Left-hand thread R : Right-hand thread F : Fine thread

Material:
igumid® G ► Page 1914

Online service life calculation
► www.igus.eu/igubal-expert

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Weight [g]
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	
GE□MKE-05	900	450	150	75	6.4
GE□MKE-06	1,300	650	200	100	7.3
GE□MKE-08	2,000	1,000	450	225	14.6
GE□MKE-10	2,300	1,150	500	250	27.1
GE□MKE-10-F	2,300	1,150	500	250	27.1
GE□MKE-12	3,300	1,650	550	275	42.7
GE□MKE-12-F	3,300	1,650	550	275	42.7
GE□MKE-15	2,800	1,400	800	400	68.4
GE□MKE-16	5,000	2,500	850	425	86.9
GE□MKE-16-F	5,000	2,500	850	425	86.9
GE□MKE-17	3,600	1,800	1,100	550	98.3
GE□MKE-17-F	3,600	1,800	1,100	550	98.3
GE□MKE-20	7,200	3,600	1,800	900	175.2
GE□MKE-20-M20	7,200	3,600	1,800	900	175.2

Clevis joints with spring-loaded fixing clip in combination with E series rod ends,
EBRM and EARM ► Page 888-891

Clevis joint combination:
GERMFE and GELMFE



- Lightweight
- Absolute corrosion resistance
- High tensile force
- Can be combined with E series rod end

Order key

Type	Size	Options
GE□MFE - 05		
Clevis joint	E series	Thread
		Metric
		With spring-loaded fixing clip and rod end
	Inner Ø [mm]	
		Thread L : Left-hand thread R : Right-hand thread F : Fine thread

Material:
igumid® G ► Page 1914

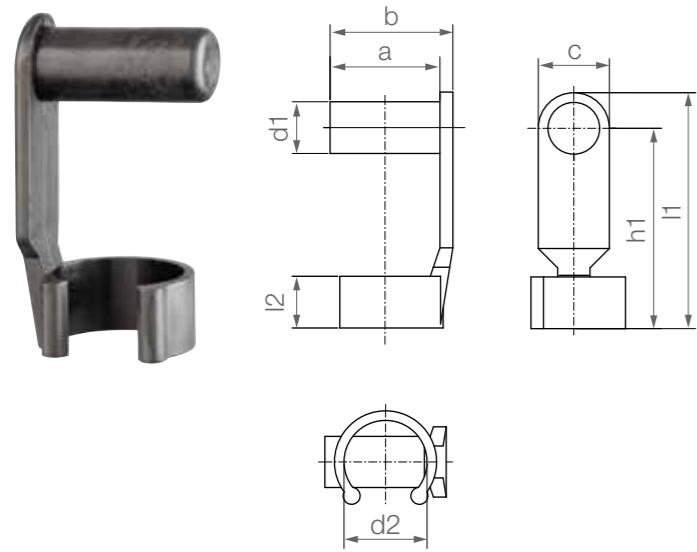
Online service life calculation
► www.igus.eu/igubal-expert

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Weight [g]
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	
GE□MFE-05	900	450	150	75	7.0
GE□MFE-06	1,300	650	200	100	7.9
GE□MFE-08	2,000	1,000	450	225	15.9
GE□MFE-10	2,300	1,150	500	250	29.2
GE□MFE-10-F	2,300	1,150	500	250	29.2
GE□MFE-12	3,300	1,650	550	275	46.0
GE□MFE-12-F	3,300	1,650	550	275	46.0
GE□MFE-16	5,000	2,500	850	425	94.4
GE□MFE-16-F	5,000	2,500	850	425	94.4

Clevis joints with spring-loaded fixing clip in combination with E series rod ends,
EBRM and EARM ► Page 888-891

Spring-loaded fixing clips: GEFM



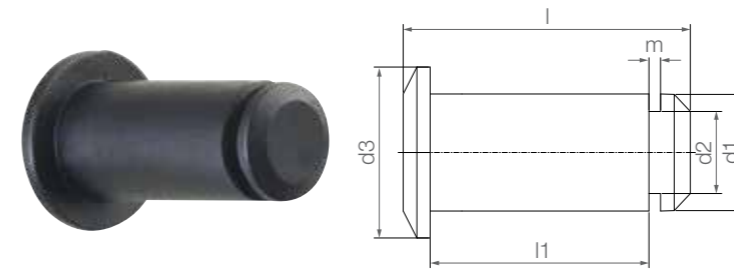
i Material:
igumid® G ▶ Page 1914

Dimensions [mm]

Part No.	d1	d2	a	b	C	l1 ±0.5	h1	l2	Weight [g]
GEFM-04	4	8	9.5	10.5	8	19.0	15	4.5	0.5
GEFM-05-DIN	5	9	12.0	13.5	8	23.0	19	5.5	0.8
GEFM-05-DIN-M5-LS ²²⁾	5	9	12.0	13.5	8	33.0	29	5.5	1.0
GEFM-05	5	10	14.0	15.5	8	27.0	23	6.5	1.1
GEFM-06-LS ²²⁾	6	10	14.0	15.5	8	39.0	35	6.5	1.0
GEFM-06	6	10	14.0	15.5	8	27.0	23	6.5	1.2
GEFM-08	8	14	19.0	21.0	11	35.5	30	8.0	2.8
GEFM-10	10	18	23.0	25.5	14	45.0	38	10.0	5.0
GEFM-12	12	20	28.0	31.0	16	53.0	45	12.0	8.3
GEFM-16	16	26	36.0	40.0	22	73.0	62	16.0	18.3

²²⁾ LS = longer shank

Clevis pins: GBM



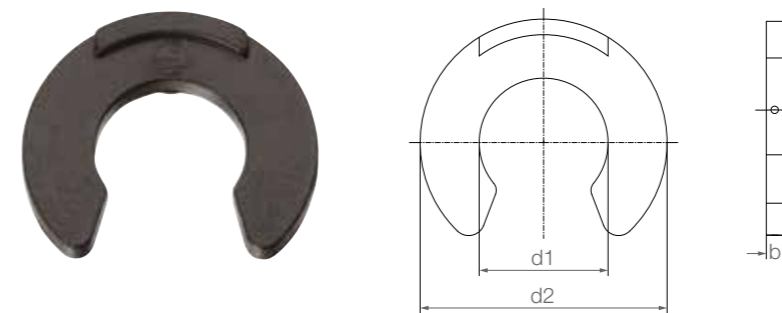
i Material:
igumid® G ▶ Page 1914

inch Imperial dimensions available
▶ Page 1877

Dimensions [mm]

Part No.	d1	d2	d3	l	l1	m	Clip	Weight [g]
GBM-04	4	3.2	7	12.5	8	1.05	GSR-04	0.3
GBM-05	5	4.0	8	16.5	12	1.15	GSR-06	0.5
GBM-05-DIN	5	4.0	8	14.5	10	1.15	GSR-06	0.5
GBM-06	6	4.0	9	16.5	12	1.15	GSR-06	0.7
GBM-08	8	5.0	12	21.5	16	1.15	GSR-08	1.5
GBM-10	10	7.0	15	27.0	20	1.35	GSR-10	3.0
GBM-12	12	9.0	18	31.5	24	1.50	GSR-12	4.8
GBM-14	14	12.0	22	36.0	27	1.70	GSR-16	5.7
GBM-15	15	12.0	23	36.0	27	1.70	GSR-16	8.3
GBM-16	16	12.0	24	42.0	32	1.70	GSR-16	10.4
GBM-17	17	12.0	25	42.0	32	1.70	GSR-16	12.3
GBM-20	20	15.0	30	51.0	40	2.00	GSR-20	19.2

Circlips: GSR

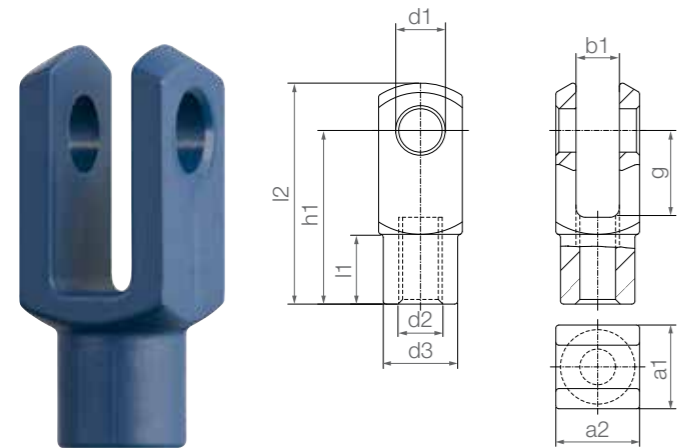


i Material:
POM ▶ Page 1916

Dimensions [mm]

Part No.	d1	d2	b	Weight [g]
GSR-04	3.2	7.0	1.0	0.05
GSR-06	4.0	9.0	1.1	0.06
GSR-08	5.0	11.0	1.1	0.12
GSR-10	7.0	14.0	1.3	0.16
GSR-12	9.0	18.5	1.4	0.31
GSR-16	12.0	23.0	1.6	0.58
GSR-20	15.0	28.0	1.9	0.96

Clevis joints, detectable,
FDA and EU10/2011-compliant: GERM-FC



- Lubrication and maintenance-free
- Visually and magnetically detectable
- Compliant with Regulation (EU) No. 10/2011 and FDA guidelines
- Left-hand thread upon request

Order key

Type	Size	Version
G E R M- 04 - FC		
Clevis joint	E series	Thread Metric
Inner Ø [mm]	Suitable for food contact	

- Corrosion and media-resistant
- Vibration-dampening
- Cost-effective

Material:
igumid® FC ▶ Page 1915

Technical data

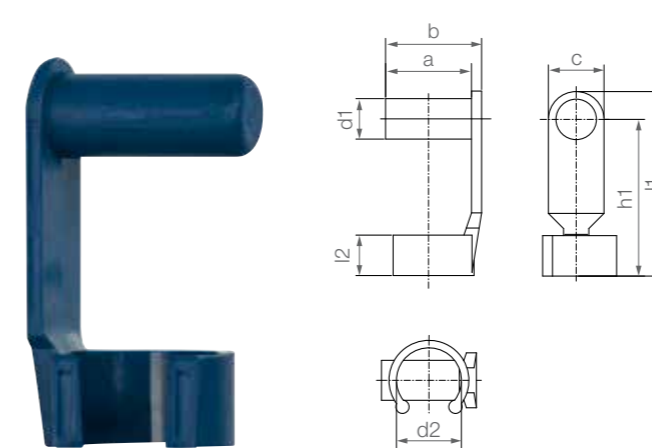
Part No.	Max. static tensile strain		Max. static axial force		Max. tightening torque	Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]		
GERM-04-FC	600	300	200	100	1.0	0.8
GERM-05-DIN-M5-FC	800	400	250	125	1.5	1.5
GERM-05-FC New	900	450	250	125	0.5	3.0
GERM-06-FC	1,400	700	250	125	1.5	2.5
GERM-08-FC	2,300	1,150	650	325	5.0	6.4
GERM-10-FC	4,000	2,000	800	400	10.0	13.2
GERM-10-FC-F	4,000	2,000	800	400	10.0	13.2
GERM-12-FC	5,000	2,500	900	450	15.0	20.7
GERM-12-FC-F	5,000	2,500	900	450	15.0	20.7

Dimensions [mm]

Part No.	d1	g	a1	a2	b1	d2	d3	l2	h1	l1
			+0.3	+0.3						
GERM-04-FC	4	8.0	8.0	8.0	4.1	M4	8	21.0	16.0	6.0
GERM-05-DIN-M5-FC	5	10.0	9.9	9.9	5.3	M5	9	24.5	20.0	7.5
GERM-05-FC New	5	12.0	12.0	12.0	6.0	M5	10	31.0	24.0	9.0
GERM-06-FC	6	12.0	12.0	12.0	6.2	M6	10	31.0	24.0	9.0
GERM-08-FC	8	15.9	15.8	15.8	8.2	M8	14	42.0	32.0	12.0
GERM-10-FC	10	19.5	19.9	19.9	9.5	M10	18	51.3	39.5	14.8
GERM-10-FC-F	10	19.5	19.9	19.9	9.5	M10 x 1.25	18	51.3	39.5	14.8
GERM-12-FC	12	24.0	23.7	23.7	12.2	M12	20	61.3	48.0	18.0
GERM-12-FC-F	12	23.5	23.7	23.7	12.2	M12 x 1.25	20	61.3	48.0	18.0

Left-hand thread and other dimensions available upon request

Spring-loaded fixing clips, detectable,
FDA and EU10/2011-compliant: GEFM-FC



- Lubrication and maintenance-free
- Visually and magnetically detectable
- Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

Order key

Type	Size	Version
G E F M- 04 - FC		
Clevis joint	E series	Spring-loaded fixing clip
Inner Ø [mm]	Suitable for food contact	

- Corrosion and media-resistant
- Vibration-dampening
- Cost-effective

Material:
igumid® FC ▶ Page 1915

Dimensions [mm]

Part No.	d1	d2	a	b	C	l1 ±0.5	h1	l2	Weight [g]
GEFM-04-FC	4	8.0	9.5	10.5	8	19	15	4.5	0.5
GEFM-05-DIN-M5-FC	5	9.0	12.0	13.5	8	23	19	5.5	0.8
GEFM-05-FC New	5	10.0	14.0	15.5	8	27	23	6.5	0.9
GEFM-06-FC	6	10.0	14.0	15.5	8	27	23	6.5	1.2
GEFM-08-FC	8	14.0	19.0	21.0	11	36	30	8.0	2.7
GEFM-10-FC	10	17.5	23.0	25.5	14	45	38	10.5	5.1
GEFM-12-FC	12	20.2	27.5	30.5	16	53	45	12.0	8.3

Clevis joints with spring-loaded fixing clips, detectable, FDA and EU10/2011-compliant: GERMF-FC



- Lubrication and maintenance-free
- Visually and magnetically detectable
- Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

Order key

Type Size Version

G E R M F - 0 4 - F C

Clevis joint	E series	Thread	Metric	Spring-loaded fixing clip	Inner Ø [mm]	Suitable for food contact
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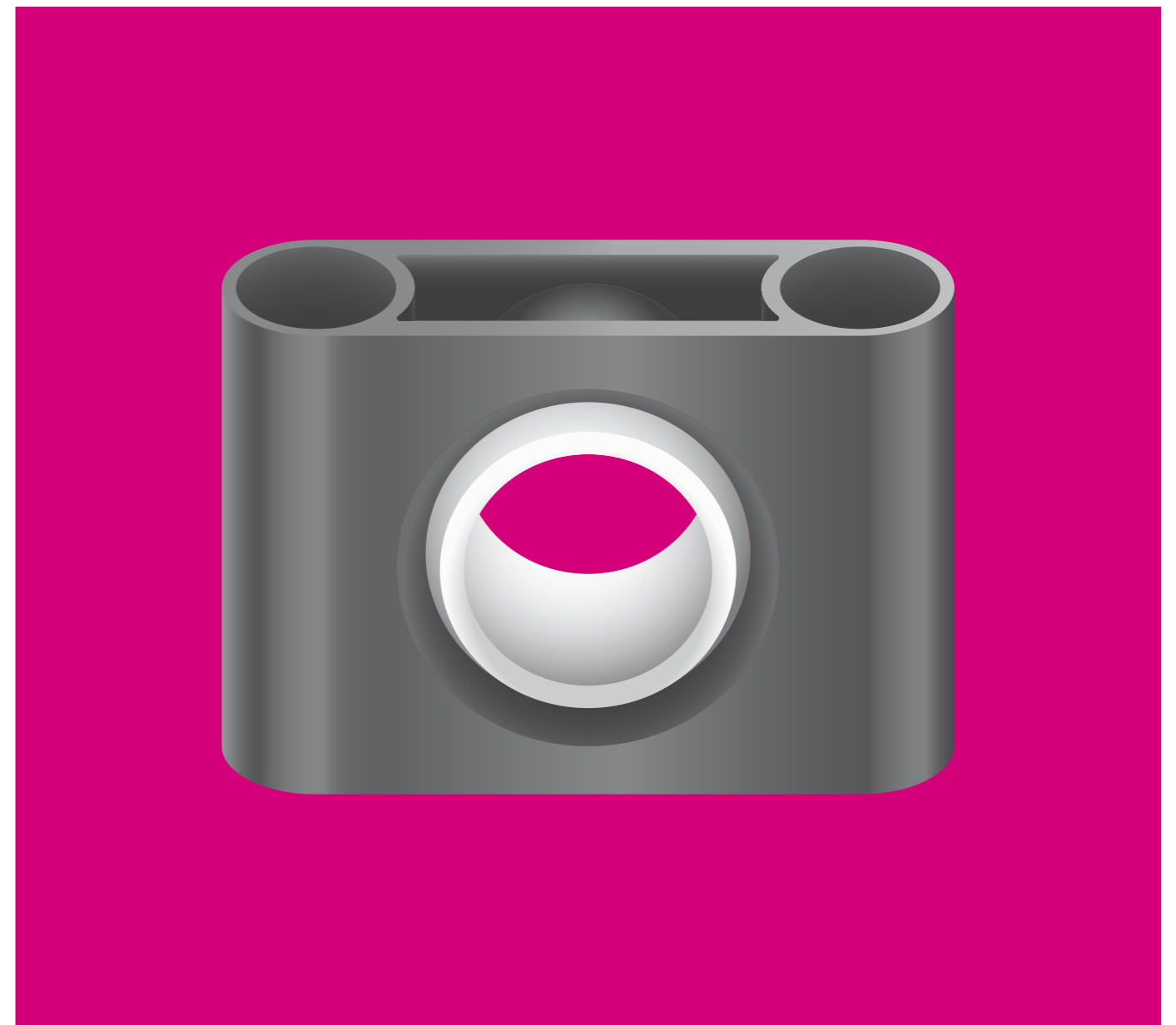
- Corrosion and media-resistant
- Vibration-dampening
- Cost-effective

Material:
igumid® FC ▶ Page 1915

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Weight [g]
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	
GERMF-04-FC	400	200	200	100	1.3
GERMF-05-DIN-M5-FC	700	350	250	125	2.3
GERMF-05-FC New	800	450	250	125	3.9
GERMF-06-FC	1,200	600	250	125	3.9
GERMF-08-FC	2,000	1,000	650	325	9.1
GERMF-10-FC	3,000	1,500	800	400	18.3
GERMF-10-FC-F	3,000	1,500	800	400	18.3
GERMF-12-FC	3,000	1,500	900	450	29.0
GERMF-12-FC-F	3,000	1,500	900	450	29.0

Left-hand thread upon request



igubal® pillow block bearing

Maintenance-free dry operation

High rigidity

Durable

Media-resistant

High radial loads



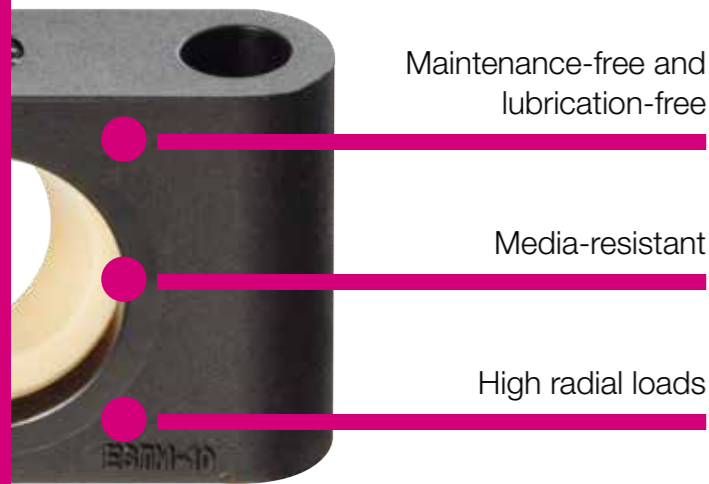
igubal® pillow block bearings are bearing units especially easy to install and which are able to compensate alignment errors and prevent edge pressure.



Maintenance-free dry operation

High rigidity

Durable



Maintenance-free and
lubrication-free

Media-resistant

High radial loads



When do I take them?

- When chemical resistance is required
- If a cost-effective alternative is needed
- When dirt-resistant bearings are required
- To adjust misalignment
- If you need split components



When do I not take them?

- When temperatures are higher than +80°C
- When an integrated fixing collar is required
- When dimensions above 50mm are required
- If rotation speeds of more than 0.5 m/s are to be achieved



Available from stock

Detailed information about delivery time online.



Price breaks online

No minimum order value. No minimum order quantity



Max. +80°C
min. -30°C



6 types
Ø 5 - 150mm



Imperial dimensions available
▶ Page 1875



Online product finder
▶ www.igus.eu/igubal-finder



Pedal boat

The Polish company P.P.H. Samar manufactures pedal boats. The drive system bearings must be waterproof, robust and wear-resistant - and lubrication-free so that the operator does not need to maintain the boats during the season and that oil does not contaminate the water. The engineers therefore chose igubal® pillow block bearings for the drive rotor and drive shafts. (KSTM) of the igubal® series.

Drone

Mo Team, a UK-based company, is developing a drone that is to be lightweight and low-maintenance. That is why the design engineers are using plain bearings, pillow block bearings and rod ends made of igus® high-performance polymer. The components are lightweight and, thanks to the self-lubricating effect, maintenance-free.



Hydro generator

Sailing yachts use so-called hydro-generators, which use the water flow to generate electricity for the on-board battery. The engineers of the company Ocean Power GbR from Eldingen (Germany) use ESTM-30 pillow block bearings from igus® for linear movement of the generator. In order to be able to follow the flow of the sea more effectively, the polymer bearings also enable low-friction rotation by up to 20 degrees in the water.

Benefits

- Maintenance-free dry operation
- High rigidity
- Durable in varying loads
- Compensation of misalignment errors
- Compensation of edge loads
- Corrosion-resistant
- Chemical resistance
- Vibration-dampening
- Suitable for rotating, oscillating and linear movements
- Lightweight
- High radial loads
- Media-resistant
- Space-saving
- Easy to fit
- Predictable service life
- Maintenance-free and lubrication-free

Product range

igubal® pillow block bearings are available in the dimensional K and E series for shaft diameters from 5 to 150mm. The dimensional K series is available in imperial dimensions. Please ask us for other dimensions.

Application areas

igubal® pillow block bearings ideally compensate for shaft misalignment, tilts and bends through their spherical movement. Applications in which these effects cannot be prevented are suitable for igubal® pillow block bearings.

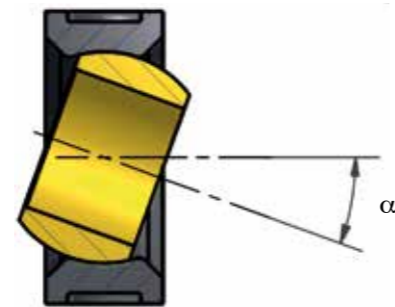
Tolerances

Maintenance-free igubal® pillow block bearings are designed with an inner diameter tolerance according to E10. The shaft tolerance should be between h6 and h9. The bearing clearance compensates for bearing expansion due to warming. All values and tolerances according to ISO 2768-m.

Assembly

igubal® pillow block bearings are designed for mounting with two or four bolts. An exact positioning of the bearing housing is not necessary, since the spherical bearing compensates for alignment errors. Special adjusting rings can be used to fix the shaft.

pivot angle



igubal® pillow block bearing



Clip-on version:
KSTM-CL

K series
▶ Page 926



Compensation of misalignment errors

K series
▶ Page 928



Easy to disassemble, split housing and ball

K series
▶ Page 930



Easy installation

E series
▶ Page 931



For quick assembly and low total moisture absorption

E series
▶ Page 932



Split housing with parallel hole

E series
▶ Page 933



Extremely light, compact design

E series
▶ Page 934



Space-saving

E series
▶ Page 935



Split pillow block bearings for square profiles

E series
▶ Page 936



Pillow block bearings for contact with food

E series
▶ Page 937



Pillow block bearing with polymer housing

▶ Page 938



Pillow block bearing with cast iron housing

▶ Page 939



Pillow block bearings with cost-effective metallic housing

▶ Page 940

igubal® combination with xiros® ball bearings



Low coefficient of friction, fixed and pivoting version

E series
▶ From page 1086

Pillow block bearings: KSTM-CL



- 30% higher strength due to optimised housing (bio-mechanic design) compared to standard KSTM
- Can be combined with all materials for spherical balls for a wide range of requirements
- Fast delivery time
- More even movement of the spherical ball in the housing
- 10% more cost-effective than the overmoulded previous version KSTM

Online service life calculation
▶ www.igus.eu/igubal-expert

Technical data

Part No.	Max. radial load		Max. axial load		Max. tightening torque for longitudinal holes ¹⁴⁴⁾	Weight [g]
	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]		
KSTM-06-CL-□ New	950	475	250	125	1.3	2.9
KSTM-08-CL-□ New	1,400	700	230	115	1.3	4.8
KSTM-10-CL-□ New	2,150	1,075	500	250	2.5	9.0
KSTM-12-CL-□ New	2,300	1,150	350	175	2.5	12.1
KSTM-16-CL-□ New	3,200	1,600	620	310	4.5	23.6
KSTM-20-CL-□ New	6,000	3,000	730	365	10.5	40.7
KSTM-25-CL-□ New	7,200	3,600	850	425	10.5	73.3
KSTM-30-CL-□ New	8,800	4,400	1,200	600	21.5	115.4

¹⁴⁴⁾ To achieve the max. tightening torque, we recommend the use of washers.

Alternative spherical ball materials ▶ Page 993



RKM:
Low-cost

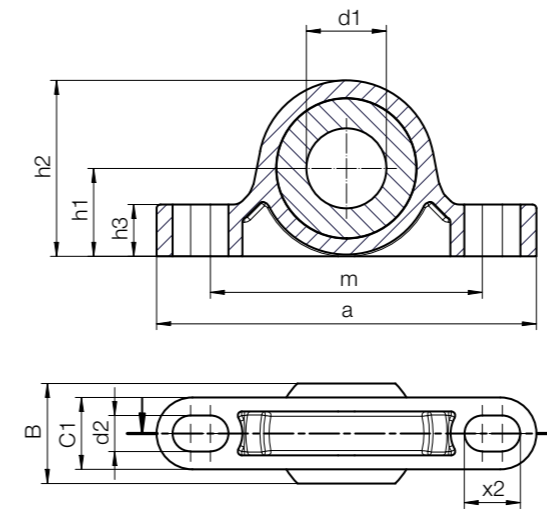


JKM: Low
moisture
absorption



J4KM:
Low-cost and low
moisture absorption

Pillow block bearings: KSTM-CL



Order key

Type	Size
------	------

K STM-06-CL

K series	Pillow block bearing	Metric	Inner Ø [mm]	2nd generation	Spherical ball material
					Blank : iglidur® W300
					R : iglidur® R
					J : iglidur® J
					J4 : iglidur® J4

Material:
Housing: igumid® G ▶ Page 1914
Spherical ball: iglidur® W300 ▶ Page 175


Dimensions [mm]


Part No.	d1 E10	B	C1	h1	h2	m	a	h3	d2	x2	Max. pivot angle
KSTM-06-CL-□ New	6	9	7.0	10	18	33	43	5.5	4.5	6.0	36°
KSTM-08-CL-□ New	8	12	9.0	10	20	33	47	6.0	4.5	7.0	33°
KSTM-10-CL-□ New	10	14	10.5	14	26	46	62	7.5	5.5	8.0	33°
KSTM-12-CL-□ New	12	16	12.0	14	28	46	65	8.5	5.5	9.0	33°
KSTM-16-CL-□ New	16	21	15.0	18	36	60	86	10.5	6.6	12.0	32°
KSTM-20-CL-□ New	20	25	18.0	22	44	68	95	13.0	9.0	14.0	31°
KSTM-25-CL-□ New	25	31	22.0	27	54	86	121	16.0	9.0	17.0	31°
KSTM-30-CL-□ New	30	37	25.0	32	64	96	139	17.0	11.0	20.0	31°

Pillow block bearings: KSTM



- Maintenance-free dry operation
- High rigidity
- Very high durability under alternating loads
- Compensation of misalignment and edge loads
- Resistant to corrosion and chemicals
- Vibration-dampening
- Suitable for rotating, oscillating and linear movements
- Lightweight

 Imperial dimensions available
▶ Page 1875

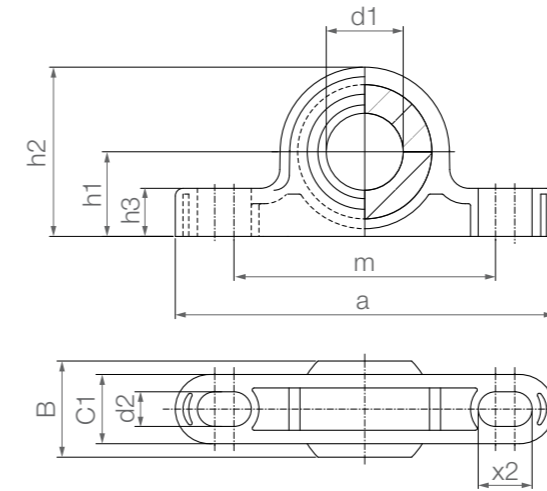
 Online service life calculation
▶ www.igus.eu/igubal-expert


Technical data

Part No.	Max. static tensile strain		Max. axial static compressive force [N]	Max. tightening torque for longitudinal holes ¹⁴⁴⁾ [Nm]	Weight [g]
	Short-term [N]	Long-term [N]			
KSTM-05	700	350	300	0.6	1.7
KSTM-06	1,100	550	300	1.3	2.9
KSTM-08	1,300	650	400	1.3	4.6
KSTM-10	1,500	750	500	2.5	8.6
KSTM-12	2,200	1,100	600	2.5	11.8
KSTM-14	2,400	1,200	600	4.5	18.4
KSTM-16	3,000	1,500	1,800	4.5	23.7
KSTM-18	3,500	1,750	1,200	10.5	32.2
KSTM-20	4,700	2,350	1,300	10.5	40.0
KSTM-22	6,100	3,050	1,400	10.5	54.0
KSTM-25	6,600	3,300	1,600	10.5	75.3
KSTM-30	8,100	4,050	2,100	21.5	116.8

¹⁴⁴⁾ To achieve the max. tightening torque, we recommend the use of washers.

Pillow block bearings: KSTM




 Order key

Type Size

K STM-05

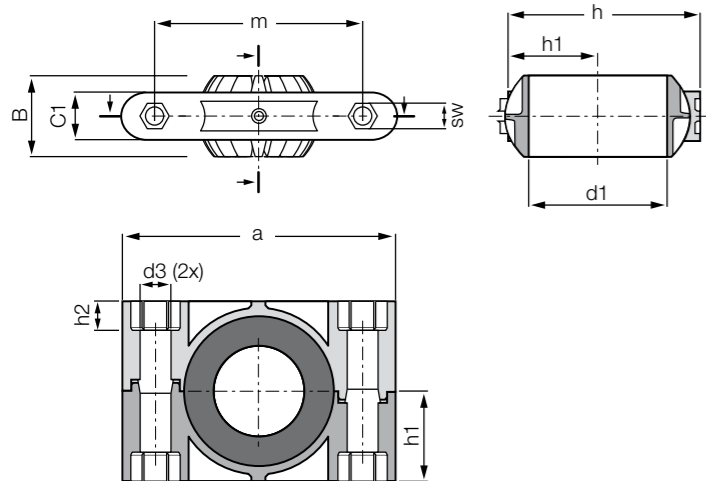
K series
Pillow block bearing
Metric
Inner Ø [mm]

 Material:
Housing: igumid® G ▶ Page 1914
Spherical ball: iglidur® W300 ▶ Page 175

Dimensions [mm]

Part No.	d1 E10	B	C1	h1	h2	m	a	h3	d2	x2	Max. pivot angle
KSTM-05	5	8	6.0	7	14	25	34	4.0	3.3	4.6	30°
KSTM-06	6	9	7.0	10	18	33	43	5.5	4.5	6.0	29°
KSTM-08	8	12	9.0	10	20	33	47	6.0	4.5	7.0	25°
KSTM-10	10	14	10.5	14	26	46	62	7.5	5.5	8.0	25°
KSTM-12	12	16	12.0	14	28	46	65	8.5	5.5	9.0	25°
KSTM-14	14	19	13.5	18	34	60	82	9.5	6.6	11.0	23°
KSTM-16	16	21	15.0	18	36	60	86	10.5	6.6	12.0	23°
KSTM-18	18	23	16.5	22	42	68	93	11.5	9.0	13.0	23°
KSTM-20	20	25	18.0	22	44	68	98	13.0	9.0	14.0	23°
KSTM-22	22	28	20.0	24	48	74	108	14.0	9.0	16.0	22°
KSTM-25	25	31	22.0	27	54	86	124	16.0	9.0	17.0	22°
KSTM-30	30	37	25.0	32	64	96	139	17.0	11.0	20.0	22°

Pillow block bearings with split housing:
KSTM-GT



Order key

Type	Size	Version
------	------	---------

K STM-GT 40 -GT

K series	Pillow block bearing	Metric	Split housing	Inner Ø [mm]	Split ball
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Material:
Housing: RN33 ▶ Page 1916
Spherical ball: iglidur® J ▶ Page 163

Online service life calculation
▶ www.igus.eu/igubal-expert

- Fitting is easy and does not require shaft removal
- Maintenance-free, dry operation
- For high static loads
- Mounting: M12

- Lightweight
- High rigidity and durability
- Predictable service life
- Dimensional series K following DIN ISO 12240

Technical data

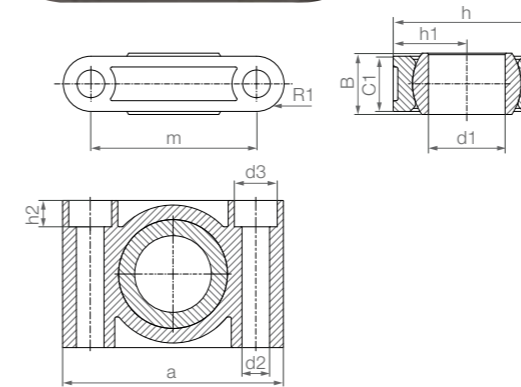
Part No.	Max. radial tensile/compressive strength		Max. axial tensile/compressive strength		Max. Tightening torque through ball fixing holes		Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	[Nm]	[Nm]	
KSTM-GT35 ²³⁾	11,000	5,500	2,500	1,250	5	15	250.3
KSTM-GT40	11,000	5,500	2,500	1,250	5	15	235.0
KSTM-GT40-GT ²⁴⁾	11,000	5,500	2,500	1,250	5	15	235.0
KSTM-GT45 ²³⁾	15,000	7,500	3,000	1,500	5	20	405.2
KSTM-GT50	15,000	7,500	3,000	1,500	5	20	389.2
KSTM-GT50-GT ²⁴⁾	15,000	7,500	3,000	1,500	5	20	389.2

Dimensions [mm]

Part No.	d1 E10	d3	h	h1	h2	SW	a	m	C1	B	Max. pivot angle
KSTM-GT35 ²³⁾	35.0	13.5	79.0	39.5	12.6	19.0	120.5	91.0	29.5	48.5	24°
KSTM-GT40	40.0	13.5	79.0	39.5	12.6	19.0	120.5	91.0	29.5	48.5	24°
KSTM-GT40-GT ²⁴⁾	40.0	13.5	79.0	39.5	12.6	19.0	120.5	91.0	29.5	48.5	24°
KSTM-GT45 ²³⁾	45.0	13.5	100.0	50.0	12.6	19.0	149.0	114.0	35.0	60.0	24°
KSTM-GT50	50.0	13.5	100.0	50.0	12.6	19.0	149.0	114.0	35.0	60.0	24°
KSTM-GT50-GT ²⁴⁾	50.0	13.5	100.0	50.0	12.6	19.0	149.0	114.0	35.0	60.0	24°

²³⁾ Diameter reduced by plain bearing; ²⁴⁾ Split housing and split ball

Pillow block bearings: ESTM



Order key

Type	Size
------	------

E STM-08

E series	Pillow block bearing	Metric	Inner Ø [mm]	Spherical ball material
				Blank : iglidur® W300
				J4V : iglidur® J4V
				R : iglidur® R
				J : iglidur® J
				J4 : iglidur® J4

Material:
Housing: igumid® G ▶ Page 1914
Spherical ball: iglidur® W300 ▶ Page 175
Combination with xiros® ball bearings
▶ From page 1086

- High radial loads
- Media-resistant
- Space-saving design, easy to fit

- Predictable service life
- Maintenance-free and lubrication-free
- Dimensional series E following DIN ISO 12240

Technical data

Part No.	Max. radial tensile force		Max. radial compressive strength		Max. axial strength		Max. tightening torque fixing holes [Nm]	Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]		
ESTM-08	2,500	1,250	4,300	2,150	600	300	1.3	5.0
ESTM-10	3,400	1,700	5,300	2,650	700	350	2.5	7.1
ESTM-12	4,500	2,250	6,500	3,250	750	375	2.5	9.0
ESTM-16	6,700	3,350	8,500	4,250	1,100	550	4.5	17.5
ESTM-20	8,500	4,250	11,000	5,750	1,400	700	4.5	27.4
ESTM-25	13,500	6,750	18,500	9,250	2,300	1,150	10.5	50.8
ESTM-30 ²⁵⁾	10,000	5,000	16,500	8,250	2,500	1,250	10.5	79.7

²⁵⁾ Lower values loads due to different manufacturing method

Dimensions [mm]

Part No.	d1, E10	d2	d3	h	h1	h2	a	m	C1	B	R1	Max. pivot angle
ESTM-08	8	4.5	-	19	9.5	-	31	22	9	8	4.5	22°
ESTM-10	10	5.5	-	22	11.0	-	36	26	10	9	5.0	22°
ESTM-12	12	5.5	-	26	13.0	-	38	28	10	10	5.0	22°
ESTM-16	16	6.6	10.6	34	17.0	6.4	50	37	13	13	6.5	22°
ESTM-20	20	9.0	14.0	40	20.0	8.6	62	46	16	16	8.0	22°
ESTM-25	25	9.0	14.0	48	24.0	8.6	72	54	18	20	9.0	20°
ESTM-30	30	11.0	17.0	56	28.0	10.6	86	64	22	22	11.0	20°

Alternative spherical ball materials ▶ Page 993



Pillow block bearings with split housing and split ball: ESTM-GT-GT

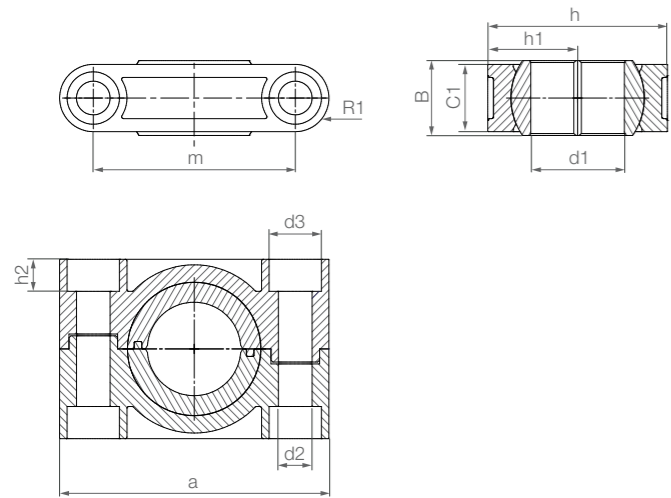


Order key

Type	Size	Version
E STM-GT 16 -GT		
E series	Pillow block bearing	Metric
	Split housing	Inner Ø [mm]
		Split ball

Material:
Housing: RN33 ▶ Page 1916
Spherical ball: iglidur® J ▶ Page 163

- Save time during assembly and disassembly
- Lightweight
- High rigidity and durability
- Spherical ball material iglidur® J for low moisture absorption
- Ideal for outdoor use
- Dimensional series E following DIN ISO 12240



Technical data

Part No.	Max. static radial tensile strain		Max. static radial compressive force		Max. tightening torque fixing holes	Weight [g]
	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]		
ESTM-GT16-GT	2,500	1,250	8,500	4,250	4.5	18
ESTM-GT20-GT	5,000	2,500	11,000	5,750	4.5	28
ESTM-GT25-GT	5,000	2,500	18,500	9,250	10.5	52
ESTM-GT30-GT	8,000	2,500	16,500	8,250	10.5	84

Dimensions [mm]

Part No.	d1	d2	d3	h	h1	h2	a	m	C1	B	R1	Max. pivot angle
ESTM-GT16-GT	16	6.6	10.6	34	17	6.4	50	37	13	13	6.5	22°
ESTM-GT20-GT	20	9.0	14.0	40	20	8.6	62	46	16	16	8.0	22°
ESTM-GT25-GT	25	9.0	14.0	48	24	8.6	72	54	18	20	9.0	22°
ESTM-GT30-GT	30	11.0	17.0	56	28	10.6	86	64	22	22	11.0	22°

Split housings with parallel holes: ESTM-GT

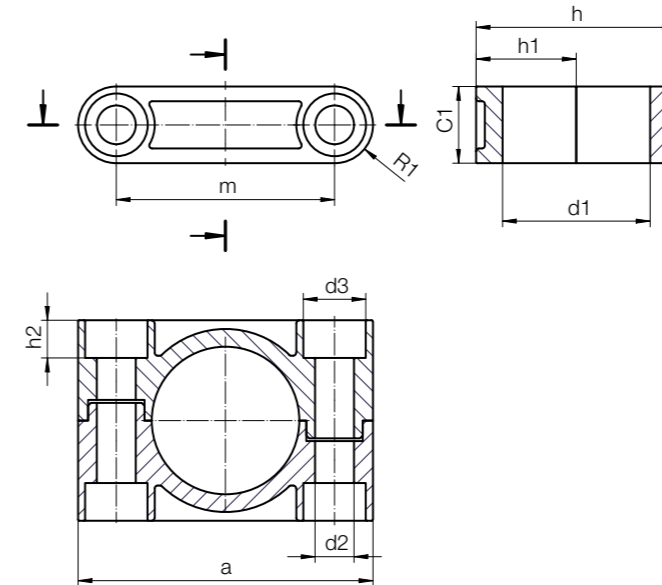


Order key

Type	Size	Version
E STM-GT 16 -25		
E series	Pillow block bearing	Metric
	Split housing	Dimensions [mm]
		Inner Ø

Material:
igumid® G ▶ Page 1914

- Easy to assemble and disassemble
- Perfect for outdoor applications
- High loads
- Dimensional series E following DIN ISO 12240



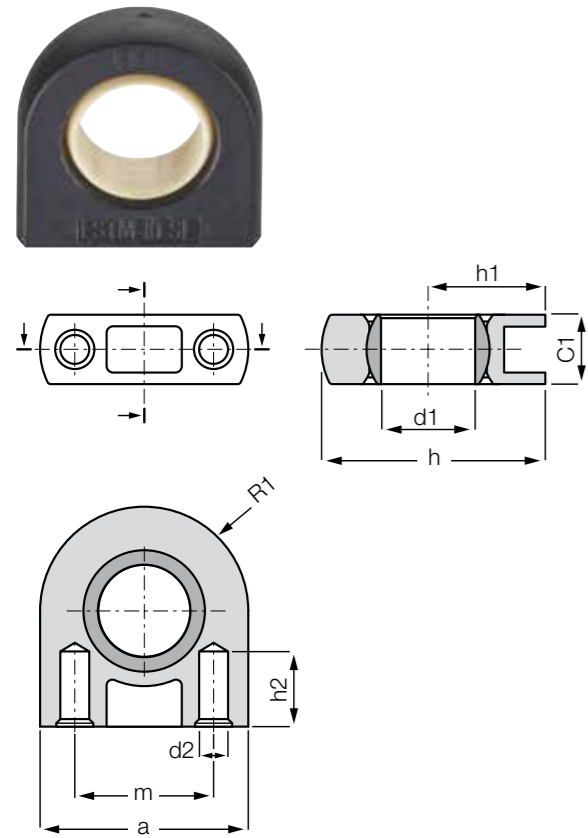
Technical data

Part No.	Max. static radial tensile strain		Max. static radial compressive force		Max. tightening torque fixing holes	Weight [g]
	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]		
ESTM-GT16-25	3,600	1,800	7,000	3,500	4.5	12.6
ESTM-GT20-30	4,800	2,400	9,000	4,500	4.5	21.1
ESTM-GT25-35	8,500	4,250	15,000	7,500	10.5	39.9
ESTM-GT30-40	9,500	4,750	18,500	9,250	10.5	66.5

Dimensions [mm]

Part No.	d1	d2	d3	h	h1	h2	a	m	C1	R1
ESTM-GT16-25	25	6.6	10.6	34	17	6.4	50	37	13	6.5
ESTM-GT20-30	30	9.0	14.0	40	20	8.6	62	46	16	8.0
ESTM-GT25-35	35	9.0	14.0	48	24	8.6	72	54	18	9.0
ESTM-GT30-40	40	11.0	17.0	56	28	10.6	86	64	22	11.0

Pillow block bearings Slim Line: ESTM SL



Order key

Type	Size	Version
E series	STM-05-SL-M3	
Pillow block bearing		
Metric		
Inner Ø [mm]		
Slim Line		

Material:
 Housing: igumid® G ▶ Page 1914
 Spherical ball: iglidur® J ▶ Page 163

- Extremely lightweight
- Space-saving
- Cost-effective
- Predictable service life
- Maintenance-free and lubrication-free
- With M3 thread, e. g. ESTM-10-SL-M3
- For self tapping screw with outer diameter 3.5mm
- Dimensional series E following DIN ISO 12240

Online service life calculation
 ▶ www.igus.eu/igubal-expert

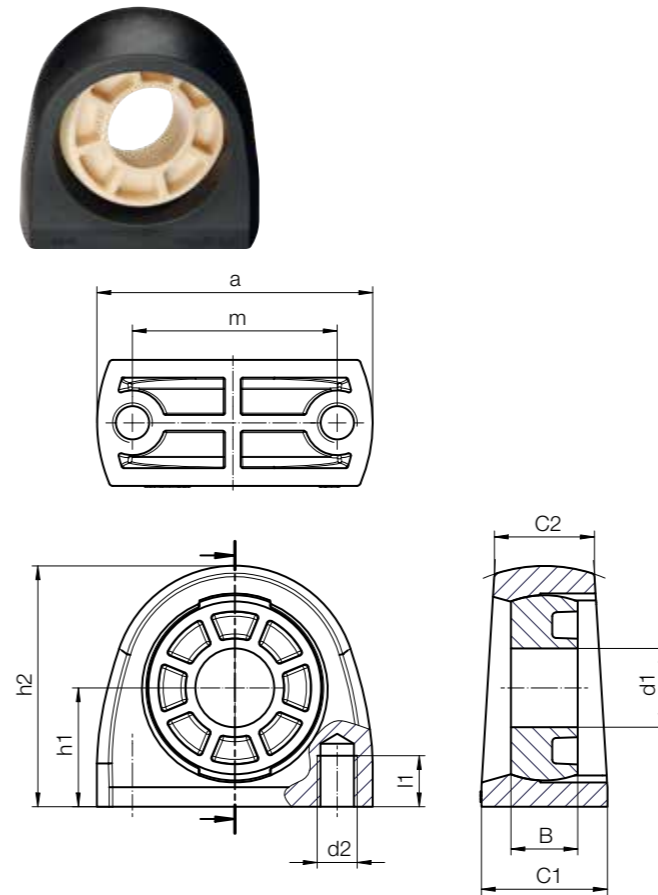
Technical data

Part No.	Max. radial tensile force		Max. radial compressive strength		Max. lateral strength		Max. axial strength		Weight [g]
	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[N]	
ESTM-05-SL-M3	1,500	750	1,400	700	900	450	150	75	1.6
ESTM-06-SL-M3	1,500	750	1,400	700	900	450	150	75	1.7
ESTM-08-SL-M3	1,600	800	1,400	700	950	475	100	50	1.7
ESTM-10-SL-M3	1,600	800	1,400	700	1,000	500	100	50	1.9

Dimensions [mm]

Part No.	d1	d2	h	h1	h2	a	m	C1	R1	Max. pivot angle
ESTM-05-SL-M3	5	2.5	18	10	6.5	16	10	6	8	17°
ESTM-06-SL-M3	6	2.5	18	10	6.5	16	10	6	8	17°
ESTM-08-SL-M3	8	2.5	19	10	6.5	18	12	6	9	17°
ESTM-10-SL-M3	10	2.5	20	10	6.5	20	14	6	10	17°

Compact pillow block bearings: PA-KS-JEM-SP



Order key

Type	Size	Version
PA203-KS-JEM-17-17-SP		
Pillow block bearing		
Polymer		
Spherical ball material		
Dimensional series		
Metric		
Spherical ball inner Ø [mm]		
Spherical ball width [mm]		
Injection moulding		

Material:
 Housing: igumid® G ▶ Page 1914
 Spherical ball: iglidur® J ▶ Page 163

- Extremely lightweight
- Space-saving
- Cost-effective
- Predictable service life
- Maintenance-free and lubrication-free
- Dimensional series E following DIN ISO 12240

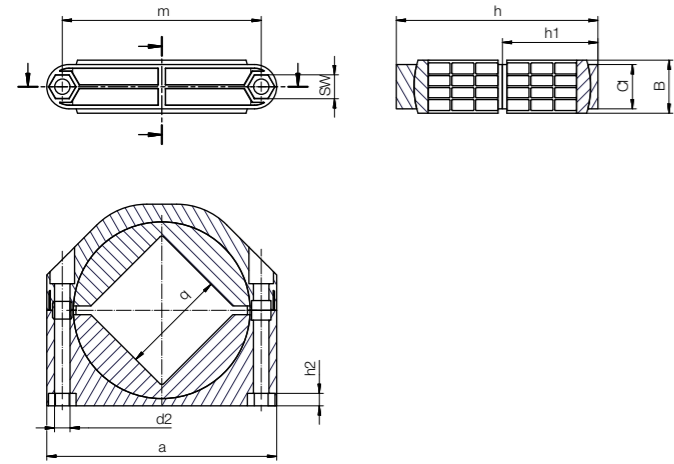
Technical data

Part No.	Max. static radial tensile strain		Max. static axial compressive force		Weight [g]
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	
PA203-KS-JEM-17-17-SP New	7,500	3,750	1,100	550	85.3
PA204-KS-JEM-20-17-SP New	7,500	3,750	1,100	550	85.3
PA205-KS-JEM-25-17-SP New	8,000	4,000	2,300	1,150	103.6
PA206-KS-JEM-30-19-SP New	13,500	6,750	2,500	1,250	164.0
PA207-KS-JEM-35-20-SP New	–	–	–	–	219.3
PA208-KS-JEM-40-21-SP New	–	–	–	–	217.4
PA210-KS-JEM-50-24-SP New	–	–	–	–	284.1

Dimensions [mm]

Part No.	d1	d2	h1	h2	l1	B	C1	C2	m	a
PA203-KS-JEM-17-17-SP New	17	M10	30.2	31.2	13	17	32	25.4	52	70
PA204-KS-JEM-20-17-SP New	20	M10	30.2	31.2	13	17	32	25.4	52	70
PA205-KS-JEM-25-17-SP New	25	M10	36.5	70.6	15	17	34	27.5	56	74
PA206-KS-JEM-30-19-SP New	30	M14	42.9	82.9	18	19	38	30.0	66	89
PA207-KS-JEM-35-20-SP New	35	M14	47.6	92.6	21	20	38	30.0	80	103
PA208-KS-JEM-40-21-SP New	40	M14	49.2	97.2	21	21	39	31.0	84	107
PA210-KS-JEM-50-24-SP New	50	M16	57.2	110.2	26	24	41	33.0	94	119

Split pillow block bearings for square profiles:
ESQM



Order key

Type	Size
E SQ M-110	
E series	
Pillow block bearing for square profiles	
Metric	
Edge length [mm]	

Material:
Housing: igumid® G ▶ Page 1914
Spherical ball: iglidur® J4 ▶ Page 1910

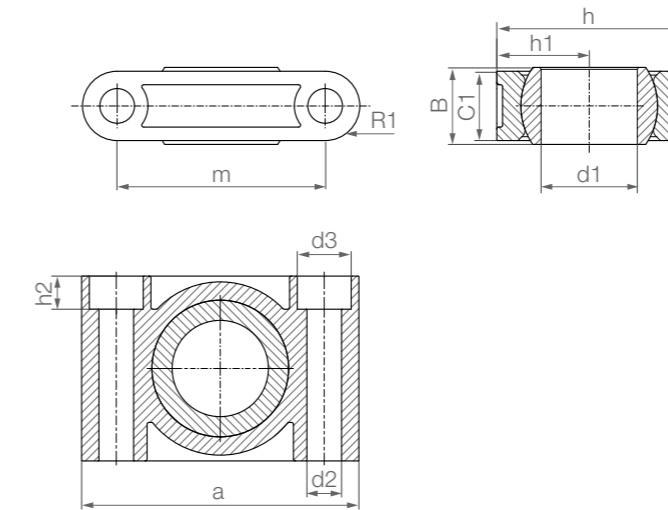
More materials for special parts:
Spherical ball: iglidur® P UV ▶ Page 1913

- Profile 100x100mm, 110x110mm, 120x120mm, 140x140mm or 150x150mm
- Split version of housing and spherical balls
- Easy assembly and disassembly
- High loads
- Lightweight
- Compensation of misalignment errors
- Mounting: M16 screw
- Recommended tightening torque: 50Nm

Dimensions [mm]

Part No.	q +1	SW	d2	h	h1	h2	a	m	B	C1	Weight [g]
ESQM-100	100.5	24	17.5	228	108	13.6	260	225	60	50	1,295
ESQM-110	110.5	24	17.5	228	108	13.6	260	225	60	50	1,255
ESQM-120	120.0	24	17.5	228	108	13.6	260	225	60	50	1,210
ESQM-125 New	125.0	24	17.5	228	108	13.6	260	225	60	50	1,210
ESQM-140	140.5	24	17.5	266	130	15.0	307	269	60	50	1,670
ESQM-150	150.5	24	17.5	266	-	15.0	307	268	60	50	1,640

Pillow block bearings for contact with food:
ESTM-FC



Order key

Type	Size	Version
E STM- 10 - FC		
E series		
Pillow block bearing		
Metric		
Inner Ø [mm]		
Suitable for food contact (Food Contact)		

Material:
Housing: igumid® FC ▶ Page 1915
Spherical ball: iglidur® A181 ▶ Page 401
 iglidur® FC180 ▶ upon request

- Solid polymer solution: corrosion-free, lightweight and still detectable
- Lubrication-free: No lubricants to washout
- For contact with food: FDA and EU 10/2011 compliant

Technical data

Part No.	Max. radial tensile force		Max. radial compressive strength		Max. axial strength		Max. tightening torque fixing holes	Weight [g]
	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]	[N]	[N]		
ESTM-10-FC New	2,600	1,300	3,400	1,700	460	230	1.5	7.5
ESTM-20-FC New	6,800	3,400	8,000	4,000	1,800	900	3.5	31.0

Dimensions [mm]

Part No.	d1	d2	d3	h	h1	h2	a	m	C1	B	R1	Max. pivot angle
ESTM-10-FC New	10	5.5	-	22	11	-	36	26	10	9	5	22°
ESTM-20-FC New	20	9.0	14.0	40	20	8.6	62	46	16	16	8	22°

Pillow block bearings with polymer housing: P-KS-JEM-SP

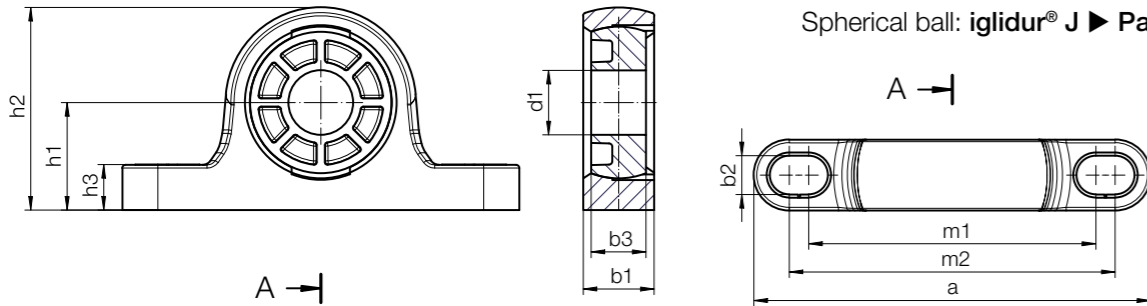


- Dimensionally interchangeable with cast iron housings
- Completely corrosion-free
- Structurally optimised design
- Robust, for high loads

Order key

Type	Size	Version
P204-KS- J E M-20-17-SP		
Pillow block bearing	Polymer	Spherical ball material
		Dimensional series
		Metric
	Spherical ball inner Ø [mm]	Spherical ball width [mm]
		Injection moulding

Material:
 Housing: igumid® G ▶ Page 1914
 Spherical ball: iglidur® J ▶ Page 163



Technical data

Part No.	Max. static radial tensile strain		Max. static axial compressive force		Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	
	P204-KS-JEM-20-17-SP New	7,500	3,750	1,100	
P205-KS-JEM-25-17-SP New	8,300	4,150	800	400	86.4
P206-KS-JEM-30-19-SP New	9,400	4,700	1,200	600	135.2
P207-KS-JEM-35-20-SP New	-	-	-	-	162.1
P208-KS-JEM-40-21-SP New	-	-	-	-	181.0
P209-KS-JEM-45-22-SP New	-	-	-	-	209.7
P210-KS-JEM-50-24-SP New	-	-	-	-	265.2

Dimensions [mm]

Part No.	d1	b1	b2	b3	h1	a	h2	h3	m1	m2
P204-KS-JEM-20-17-SP New	20	22	12	17	33.3	123	62.3	14	89	101
P205-KS-JEM-25-17-SP New	25	22	12	17	36.5	133	68.0	14	99	111
P206-KS-JEM-30-19-SP New	30	26	16	19	42.9	151	79.9	19	117	125
P207-KS-JEM-35-20-SP New	35	26	16	20	47.6	157	89.6	19	123	131
P208-KS-JEM-40-21-SP New	40	26	16	21	49.2	167	95.2	19	133	141
P209-KS-JEM-45-22-SP New	45	26	16	22	54.0	178	103.0	19	140	152
P210-KS-JEM-50-24-SP New	50	30	20	24	57.2	194	108.7	21	154	164

Pillow block bearings with cast iron housing: P-JEM-SP

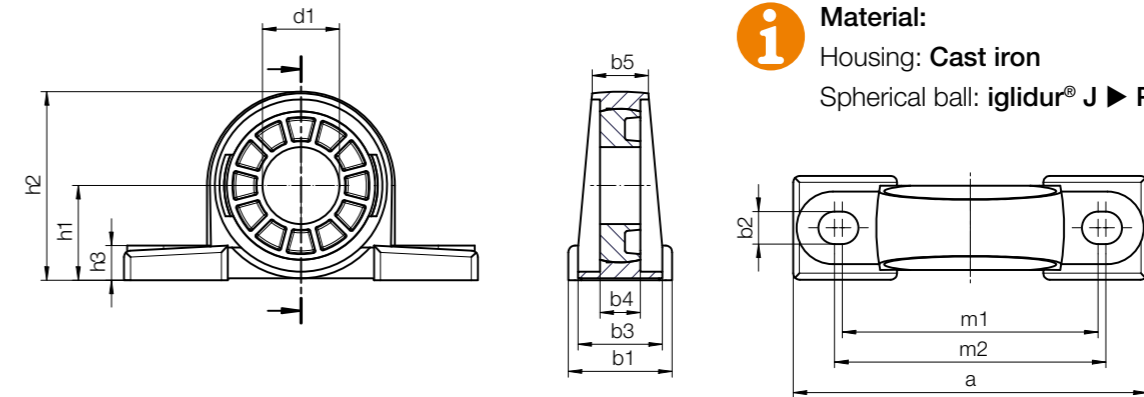


- Service life in dirty environment longer than with ball bearings by up to a factor of 8
- For higher static loads
- No costs due to maintenance or failure times (e.g. due to lack of lubrication)
- Save up to 25% thanks to easy bearing replacement

Order key

Type	Size	Version
P204- J E M-20-17-SP		
Pillow block bearing with cast iron housing	Spherical ball material	Dimensional series
		Metric
	Spherical ball inner Ø [mm]	Spherical ball width [mm]
		Injection moulding

Material:
 Housing: Cast iron
 Spherical ball: iglidur® J ▶ Page 163



Technical data and dimensions [mm]

Part No.	Max. static radial load [N]	Max. static axial load [N]	d1	b1	b2
P205-JEM-25-17-SP New	9,000	3,500	25	38	13
P206-JEM-30-19-SP New	13,500	5,000	30	48	17
P208-JEM-40-21-SP New	21,000	6,000	40	54	17
P210-JEM-50-24-SP New	25,000	5,500	50	60	20

Dimensions [mm]

Part No.	b3	b4	b5	h1	a	h2	h3	m1	m2
P204-JEM-20-17-SP New	30.9	17	22.7	33.3	127	65	14	89	101
P205-JEM-25-17-SP New	30.9	17	23.3	36.5	140	71	15	99	111
P206-JEM-30-19-SP New	39.0	19	25.3	42.9	165	83	17	117	125
P208-JEM-40-21-SP New	43.9	21	29.2	49.2	184	98	18	133	141
P210-JEM-50-24-SP New	48.8	24	31.2	57.2	206	114	21	154	164

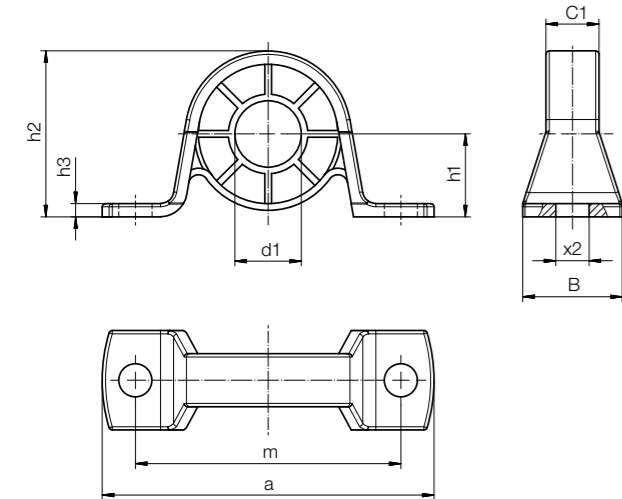
Can be combined with accessories ▶ Page 1012



Pillow block bearings with cost-effective metallic housing: PP-JEM-SP



- Lubrication and maintenance-free
- Cost-effective
- Resistant to dirt
- Cost-effective spherical ball material iglidur® J4 available (order example: PP204-J4EM-20-14-SP)



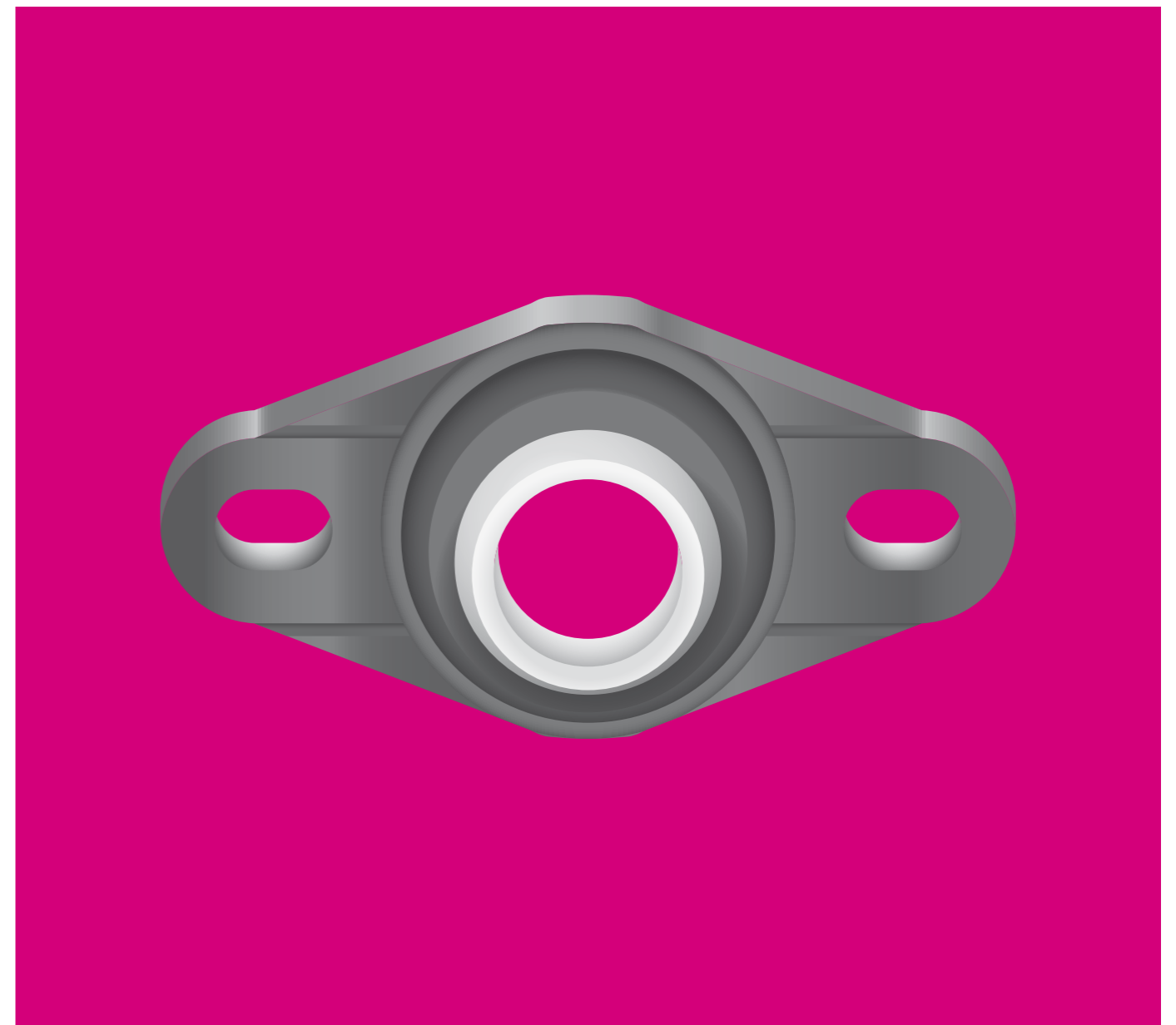
Order key

Type Size Version

PP204- J E M- 20 - 14 - SP

Pillow block bearing	Spherical ball material	Dimensional series	Metric	Spherical ball inner Ø [mm]	Spherical ball width [mm]	Injection moulding
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Material:
Housing: Galvanised steel
(stainless steel upon request)
Spherical ball: iglidur® J
(alternative iglidur® J4)



Technical data

Part No.	Max. static radial tensile strain	Max. static axial compressive force	Weight
	[N]	[N]	[g]
PP203-J4EM-17-12-SP New	1,800	600	68
PP204-□EM-20-14-SP	1,000	3,000	140
PP205-□EM-25-15-SP	1,800	5,000	164
PP206-□EM-30-16-SP	1,800	6,000	206
PP207-JEM-35-17-SP New	2,500	7,000	292
PP208-JEM-40-18-SP New	2,000	5,000	378

Dimensions [mm]

Part No.	d1	h1	h2	h3	a	m	C1	B	x2
	E10								
PP203-J4EM-17-12-SP New	17	22.2	43.8	3.0	86	68	21.0	25	9.5
PP204-□EM-20-14-SP	20	25.4	50.5	3.0	98	76	22.0	32	9.5
PP205-□EM-25-15-SP	25	28.6	56.6	4.0	108	86	24.0	32	11.5
PP206-□EM-30-16-SP	30	33.3	66.3	4.0	117	95	26.5	38	11.5
PP207-JEM-35-17-SP New	35	39.7	78.0	4.6	129	106	27.5	42	11.5
PP208-JEM-40-18-SP New	40	43.6	86.0	5.0	148	120	29.0	44	12.5

Can be combined with SRM fixing collars ► Page 1012

igubal® fixed flange bearings

Maintenance-free dry operation

High rigidity

Durable

Compensation of misalignment errors

Compensation of edge loads

Lightweight



igubal® fixed flange bearings have been developed for supporting the centre or ends of shafts. Like all standard igubal® products, these bearings consist of an igumid® G housing and an iglidur® W300 spherical ball. For temperatures up to +200°C please select the HT version (High Temperature). igubal® fixed flange bearings are made to the dimensional E series and are offered with two or four mounting holes.

Maintenance-free
dry operation

High rigidity

Durable

LIGHTWEIGHT

Low installation
space



When do I take them?

- When chemical resistance is required
- If a cost-effective alternative is needed
- When dirt-resistant bearings are required
- To adjust misalignment
- If you need split components
- If temperatures higher than +200°C are required



When do I not take them?

- When temperatures are higher than +200°C
▶ HT version, page 953-954
- When an integrated fixing collar is required
- When dimensions above 50mm are required
- If rotation speeds of more than 0.5 m/s are to be achieved



Available from stock

Detailed information about delivery time online.



Price breaks online

No minimum order value. No minimum order quantity



Max. +200°C
min. -40°C

(depending on material: standard from -30°C to +80°C; HT from -40°C to +200°C)



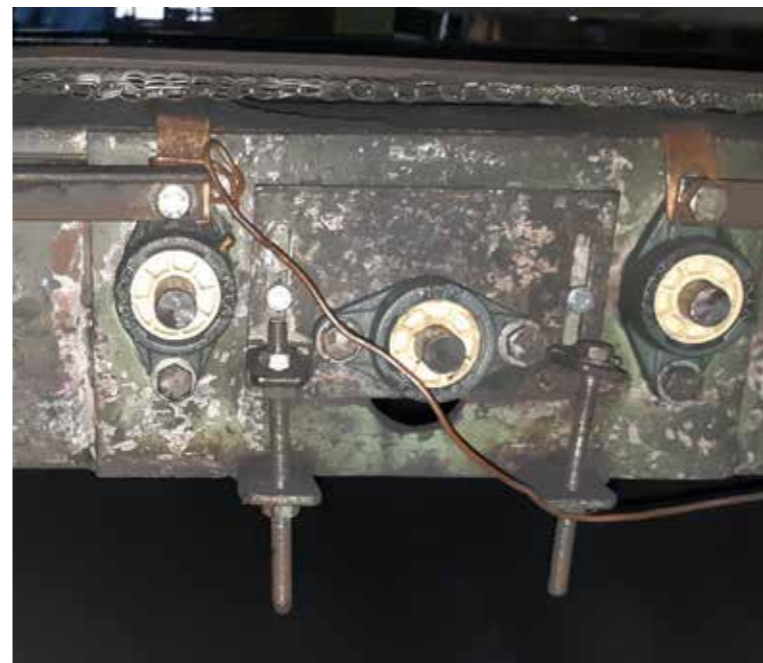
5 types

Ø 4 - 50mm



Online product finder

▶ www.igus.eu/igubal-finder

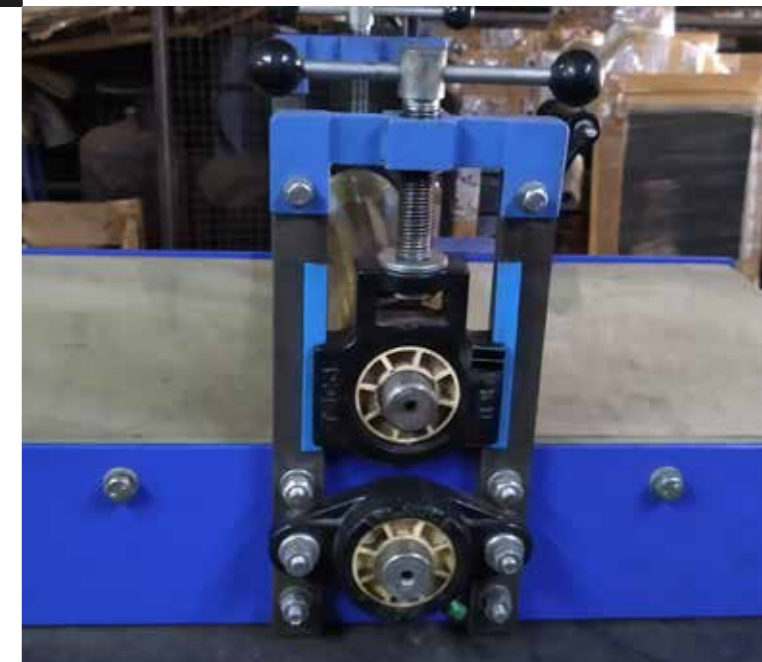


Powder coating system

The Indian company Brakes India manufactures a powder coating system that works with spray booths and drying ovens. In the past, the paint powder was deposited in the difficult-to-reach rolling bearings of the system and resulted in a lot of maintenance work having to be done. The engineers solved the problem by replacing the metal rolling bearings with lubrication-free polymer bearings from igus®.

Printing machine

If manual printing machines for the gravure printing process are not used for a long period of time, the roller bearings will rust in humid environments. Rotating and sliding movements are blocked and uniform printing is almost impossible. That is why the manufacturer Ravi Engineering Works from India switched from metal bearings to spherical bearings and plain bearings made from high-performance plastic from igus®. The bearings now operate reliably in damp environments without a single drop of lubricant.



Railway barrier

The company Bombardier Transportation from Poland is continuously looking for components that function reliably even under the most difficult environmental conditions - in cold, hot and dusty environments alike. For the 90-degree pivoting movement of the barrier, the engineers use weather-resistant and maintenance-free igubal® polymer bearings (JEM-50-24-SP) and iglidur® X linear guide lead screws.

Application areas

Since igubal® fixed flange bearings are made for maintenance-free dry operation, they are especially suitable for applications in which access to the bearing is limited, in wet environments or cleanroom environments. igubal® fixed flange bearings are also found in electric brushes, awnings, conveyor technology, and bakery machines.

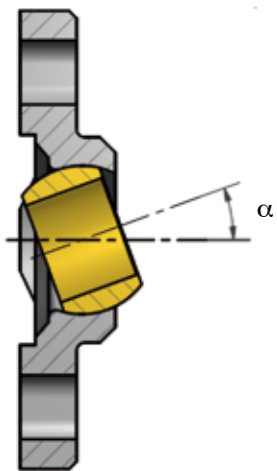
Tolerances

Maintenance-free igubal® fixed flange bearings have an inner diameter tolerance according to E10. The shaft tolerance should be between h6 and h9. The bearing clearance compensates for bearing expansion due to warming. All values and tolerances according to ISO 2768-m. Please contact us if you require lower or other bearing tolerances.

Assembly

igubal® fixed flange bearings are designed for mounting with two or four bolts, depending on the design. The 2-hole types are provided with elongated holes, which allow easy and flexible installation. An exact positioning of the bearing housing is not necessary, since the fixed flange bearing compensates for alignment errors. Special adjusting rings can be used to fix the shaft.





pivot angle



igubal® fixed flange bearings - for temperatures up to +80 °C

			
Easy installation	For high radial loads	Universal and quick assembly	Universal and quick assembly
E series ► From page 946	E series ► From page 948	Female thread ► Page 950	Male thread ► Page 951

igubal® fixed flange bearings - for temperatures up to +200°C

			
High static load, split housing	For high radial loads	Easy installation	Suitable for food contact
K series ► Page 952	E series ► Page 953	E series ► Page 954	E series ► Page 955

igubal® fixed flange bearing with plastic housing - dimensionally interchangeable with cast iron housings

			
Easy installation	Completely corrosion-free	High static loads	Low coefficient of friction
E series ► Page 956	E series ► Page 957	E series ► Page 960	E series ► Page 961

igubal® fixed flange bearings with cost-effective metallic housing



Easy replacement of the spherical ball

► Page 962


igubal® combination with xiros® ball bearings

	
Low coefficient of friction, pivoting version	Low coefficient of friction, pivoting version
E series ► Page 1088	E series ► Page 1089

Fixed flange bearings with 2 mounting holes: EFOM



- iglidur® W300 extremely wear-resistant spherical ball
- Easy installation
- Compensation of misalignment errors
- Absolute corrosion resistance
- Lightweight
- Maintenance-free dry operation

 Online service life calculation
▶ www.igus.eu/igubal-expert

Technical data

Part No.	Max. permissible axial load		Max. permissible radial load		Max. tightening torque Holes [Nm]	Weight [g]
	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]		
EFOM-04	400	200	750	375	0.6	1.9
EFOM-05	400	200	750	375	0.6	2.3
EFOM-06	500	250	800	400	0.6	1.8
EFOM-08	700	350	1,100	550	1.3	4.1
EFOM-10	850	425	2,000	1,000	2.5	6.8
EFOM-12	1,100	550	2,200	1,100	2.5	8.9
EFOM-15	1,300	650	2,400	1,200	4.5	15.0
EFOM-16	1,400	700	2,800	1,400	4.5	17.7
EFOM-17	1,800	900	3,200	1,600	4.5	24.9
EFOM-20	1,800	900	5,500	2,750	10.5	32.8
EFOM-25	3,000	1,500	6,000	3,000	10.5	58.5
EFOM-30	3,500	1,750	6,500	3,250	21.5	78.9

Alternative spherical ball materials ▶ Page 993



J4VEM:
Clearance-free,
pre-loaded



JEM:
low moisture
absorption

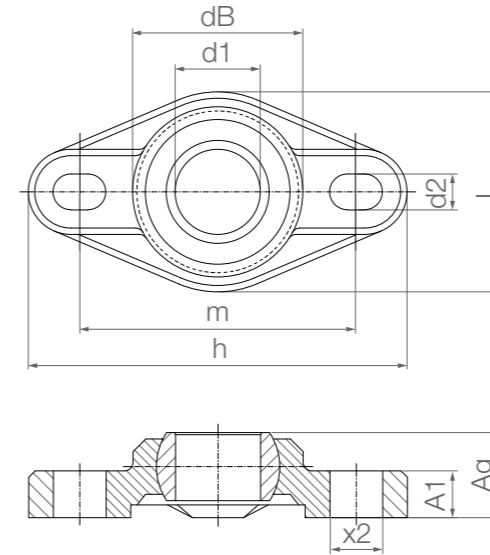


REM:
Low-cost




J4EM:
Low-cost and low
moisture absorption


Fixed flange bearings with 2 mounting holes: EFOM



Order key

Type	Size
E F O M-04	Spherical ball material
E series	Blank : iglidur® W300
	J4V : iglidur® J4V
	R : iglidur® R
	J : iglidur® J
Fixed flange bearing	J4 : iglidur® J4
2 holes	
Metric	
Inner Ø [mm]	

 **Material:**
Housing: igumid® G ▶ Page 1914
Spherical ball: iglidur® W300 ▶ Page 175
Combination with xiros® ball bearings ▶ Page 1089

 **Imperial dimensions available**
▶ Page 1878

Dimensions [mm]

Part No.	d1 E10	dB	h Length	L Width	m Hole pitch ±0.1	A1 Height of plate +1.0	Ag Total height	d2 Elongated hole	x2	Max. pivot angle
EFOM-04	4	14.0	33.8	16.0	24.0	4.5	8.0	3.2	5.0	28°
EFOM-05	5	14.0	33.8	16.0	24.0	4.5	8.5	3.2	5.0	29°
EFOM-06	6	14.0	33.8	16.0	24.0	4.5	8.5	3.2	5.0	25°
EFOM-08	8	18.0	44.2	22.0	31.0	5.5	10.5	4.3	6.5	25°
EFOM-10	10	22.0	52.0	26.0	36.0	6.5	12.0	5.3	8.0	25°
EFOM-12	12	25.0	56.7	31.0	41.0	7.0	13.0	5.3	8.0	21°
EFOM-15	15	29.8	68.6	36.0	50.0	8.5	15.5	6.4	10.0	20°
EFOM-16	16	32.0	72.6	38.0	53.0	10.0	17.5	6.4	10.1	27°
EFOM-17	17	34.8	74.6	41.0	55.0	10.0	18.0	6.4	10.2	21°
EFOM-20	20	40.0	89.0	47.0	65.0	11.0	20.0	8.4	12.5	19°
EFOM-25	25	48.5	101.0	58.5	75.0	14.0	25.0	8.4	12.6	15°
EFOM-30	30	55.0	118.0	65.0	87.5	15.0	26.0	10.5	16.0	14°

Standard tolerances:
from 0.5 to 6mm: ±0.1mm
from 6 to 30mm: ±0.2mm
from 30 to 120mm: ±0.3mm

Fixed flange bearings with 4 mounting holes:
EFSM



- iglidur® W300 extremely wear-resistant spherical ball
- Easy installation
- Compensation of misalignment errors
- Absolute corrosion resistance
- Lightweight
- Maintenance-free dry operation

Online service life calculation
▶ www.igus.eu/igubal-expert

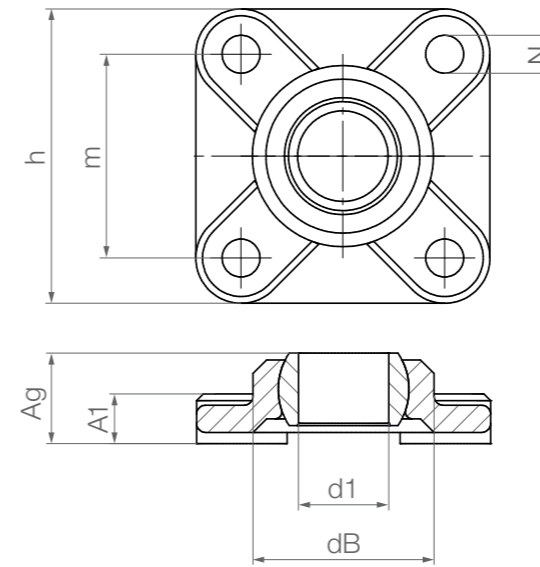
Technical data

Part No.	Max. permissible axial load		Max. permissible radial load		Max. tightening torque Holes [Nm]	Weight [g]
	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]		
EFSM-04	200	100	1,000	500	0.6	2.6
EFSM-05	300	150	1,000	500	0.6	2.7
EFSM-06	300	150	1,000	500	0.6	2.8
EFSM-08	450	225	1,400	700	1.3	5.9
EFSM-10	700	350	2,000	1,000	2.5	9.1
EFSM-12	850	425	2,500	1,250	2.5	11.0
EFSM-15	1,100	550	3,000	1,500	4.5	20.2
EFSM-16	1,350	675	3,200	1,600	4.5	23.3
EFSM-17	1,600	800	3,400	1,700	4.5	27.9
EFSM-20	2,000	1,000	4,000	2,000	10.5	45.0
EFSM-25	2,400	1,200	5,600	2,800	10.5	76.0
EFSM-30	2,800	1,400	6,000	3,000	21.5	100.7

Alternative spherical ball materials ▶ Page 993



Fixed flange bearings with 4 mounting holes:
EFSM



Order key

Type	Size
E F S M-04	
E series	Spherical ball material
Fixed flange bearing	Blank : iglidur® W300
4 holes	J4V : iglidur® J4V
Metric	R : iglidur® R
Inner Ø [mm]	J : iglidur® J
	J4 : iglidur® J4

Material:
Housing: igumid® G ▶ Page 1914
Spherical ball: iglidur® W300 ▶ Page 175
Combination with xiros® ball bearings ▶ Page 1088

Imperial dimensions available
▶ Page 1879

Dimensions [mm]

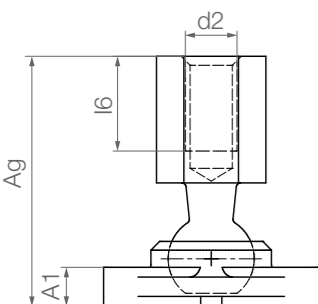
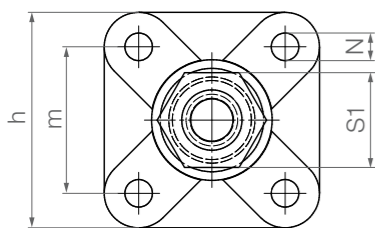
Part No.	d1	dB	h Width	m Hole pitch	A1 Height of plate	Ag Total height	N Hole Ø	Max. pivot angle
	E10							
EFSM-04	4	14.0	25	17	4.5	8.5	3.2	28°
EFSM-05	5	14.0	25	17	4.5	8.5	3.2	29°
EFSM-06	6	14.0	25	17	4.5	8.5	3.2	25°
EFSM-08	8	18.0	33	22	5.5	10.5	4.3	25°
EFSM-10	10	21.9	38	26	6.5	12.0	5.3	25°
EFSM-12	12	25.0	40	28	7.0	13.0	5.3	21°
EFSM-15	15	30.0	49	34	8.5	15.5	6.4	20°
EFSM-16	16	32.0	52	36	9.0	16.5	6.4	27°
EFSM-17	17	35.0	54	38	10.0	18.0	6.4	21°
EFSM-20	20	40.0	65	45	11.0	20.0	8.4	19°
EFSM-25	25	48.5	74	52	14.0	25.0	8.4	15°
EFSM-30	30	54.5	85	60	15.0	26.0	10.5	14°

Standard tolerances:
from 0.5 to 6mm: ±0.1mm
from 6 to 30mm: ±0.2mm
from 30 to 120mm: ±0.3mm

Complete housing with ball stud,
female thread: GF SM-IG



- Maintenance and corrosion-free
- Easy connection - easy assembly
- Compensation of misalignment errors



Order key

Type	Size	Version
------	------	---------

GF S M- 06 - IG - ES

Flange mounted	4 holes	Metric	Inner Ø [mm]	Female thread
----------------	---------	--------	--------------	---------------

Options:

Ball stud

Blank : Galvanised steel

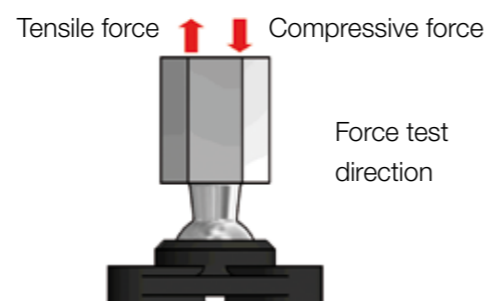
ES : Made of stainless steel^{2B)}

Material:

Housing: igumid® G ▶ Page 1914

Ball stud: galvanised and stainless steel^{2B)}

▶ Accessories, page 1013



Technical data

Part No.	Max. static tensile strain		Max. static compressive force		Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	
GF SM-06-IG	150	75	350	175	16.4
GF SM-08-IG	250	125	750	375	34.0
GF SM-10-IG	140	70	1,200	600	61.1

Dimensions [mm]

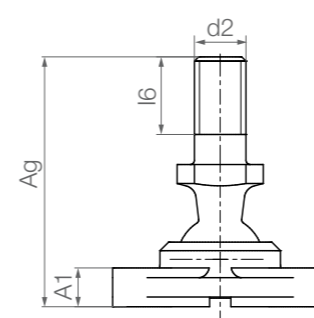
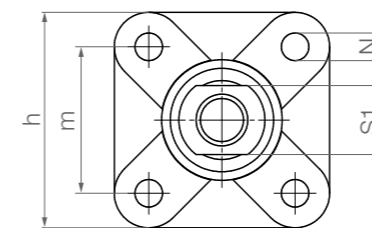
Part No.	d2	m	h	Ag	A1	l6	N	S1	Max. pivot angle
GF SM-06-IG	M6	17	25	29.0	4.5	11	3.2	SW11	32°
GF SM-08-IG	M8	22	33	36.0	5.5	12	4.3	SW14	40°
GF SM-10-IG	M10	26	38	43.5	6.5	16	5.3	SW17	34°

^{2B)} Stainless steel ball stud upon request

Complete housing with ball stud,
male thread: GF SM-AG



- Maintenance and corrosion-free
- Easy connection - easy assembly
- Compensation of misalignment errors



Order key

Type	Size	Version
------	------	---------

GF S M- 06 - AG - ES

Flange mounted	4 holes	Metric	Inner Ø [mm]	Male thread
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Options:

Ball stud¹⁹⁾

Blank : Galvanised steel

PZ : Made of plastic

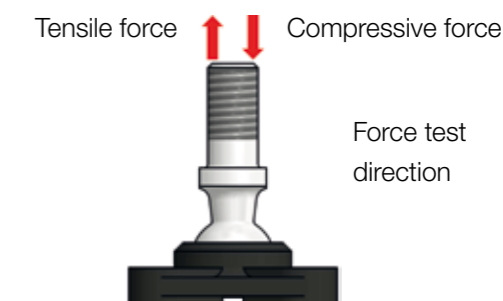
ES : Made of stainless steel^{2B)}

Material:

Housing: igumid® G ▶ Page 1914

Ball studs: plastic, galvanised steel and stainless steel^{2B)} ▶ Accessories, page 1014

▶ Accessories, page 1014



Technical data

Part No.	Max. static tensile strain		Max. static compressive force		Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	
GF SM-06-AG	150	75	350	175	10.6
GF SM-08-AG	250	125	750	375	23.1
GF SM-10-AG	140	70	1,200	600	41.2

Dimensions [mm]

Part No.	d2	m	h	Ag	A1	l6	N	S1	Max. pivot angle
GF SM-06-AG	M6	17	25	29.0	4.5	10.5	3.2	SW8	32°
GF SM-08-AG	M8	22	33	36.0	5.5	13.5	4.3	SW11	34°
GF SM-10-AG	M10	26	38	43.5	6.5	16.0	5.3	SW13	34°

¹⁹⁾ Ball stud with right-hand thread; left-hand thread upon request

^{2B)} Stainless steel ball stud upon request

Fixed flange bearings with 4 mounting holes and split housing: KFSM-GT

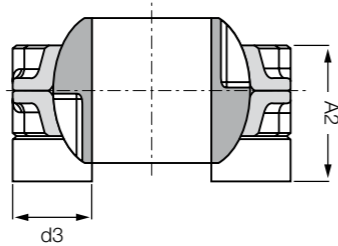
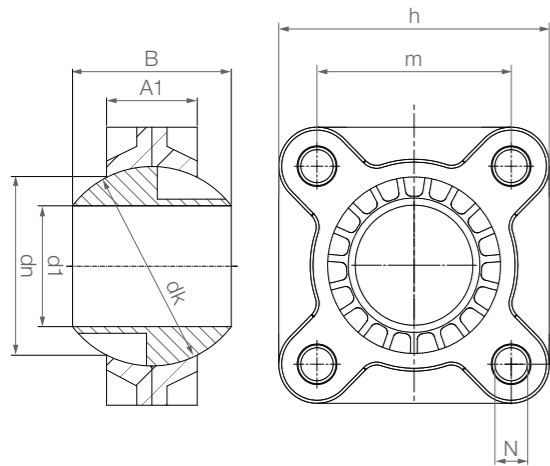


- Pre-assembled
- Option with push-in feet
- Resistant to dirt
- Lightweight
- Low installation space
- For high static loads
- High rigidity and durability
- Predictable service life
- Maintenance-free dry operation
- Mounting: with push-in feet M10, without push-in feet M12

Order key

Type	Size	Options
K F S M-GT	35 - A	
K series	Fixed flange bearing	4 holes
	Metric	Split housing
	Inner Ø [mm]	With push-in feet

Material:
Housing: RN33 ▶ Page 1916
Spherical ball: iglidur® J ▶ Page 163



Example: KFSM-GT-40-A

Technical data

Part No.	Max. permissible radial load		Max. permissible axial load		Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	
KFSM-GT35-A ²³⁾	5,000	2,500	4,500	2,250	183.5
KFSM-GT40-A	5,000	2,500	4,500	2,250	161.6
KFSM-GT45-A ²³⁾	6,000	3,000	5,000	2,500	294.6
KFSM-GT50-A	6,000	3,000	5,000	2,500	260.1

Max. tightening torque for fixing: 30Nm

Dimensions [mm]

Part No.	d1 E10	dn	d3	dk	A1	A2	B	m	h	N	Max. pivot angle
KFSM-GT35-A ²³⁾	35.0	59.0	26.0	66.0	30.0	45.0	48.5	66.0	92.0	13.5	24°
KFSM-GT40-A	40.0	59.0	26.0	66.0	30.0	45.0	48.5	66.0	92.0	13.5	24°
KFSM-GT45-A ²³⁾	45.0	72.0	26.0	82.0	40.0	60.0	60.0	78.0	104.0	13.5	24°
KFSM-GT50-A	50.0	72.0	26.0	82.0	40.0	60.0	60.0	78.0	104.0	13.5	24°

For KFSM with distance pieces, please add an "A" to the Part No. Example: KFSM-GT-50-A

²³⁾ Diameter given by iglidur® J bore reducer

High-temperature fixed flange bearings with 4 mounting holes: EFSM-HT

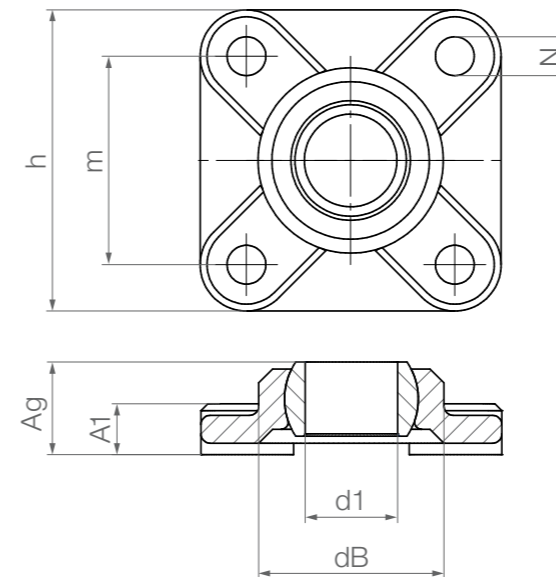


Order key

Type	Size	Version
E F S M- 05 -HT		
E series	Fixed flange bearing	4 holes
	Metric	Inner Ø [mm]
		High temperature

Material:
Housing: iguton G ▶ Page 1915
Spherical ball: iglidur® X ▶ Page 291

- Applicable up to +200°C
- Easy installation
- Compensation of misalignment errors
- Absolute corrosion resistance
- Lightweight
- Chemical-resistant (chemical table ▶ Page 1894)
- Can be used underwater



Technical data

Part No.	Max. permissible axial load		Max. permissible radial load		Max. tightening torque Holes [Nm]	Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]		
EFSM-05-HT	275	138	440	220	0.6	3.5
EFSM-06-HT	339	170	523	262	0.6	3.3
EFSM-08-HT	412	206	713	356	1.3	7.1
EFSM-10-HT	864	432	1,202	601	2.5	11.2
EFSM-12-HT	1,024	512	1,347	674	2.5	13.3

Dimensions [mm]


Part No.	d1 E10	dB	h Width	m Hole pitch ±0.1	A1 Height of plate	Ag Total height	N Bore d	Max. pivot angle
EFSM-05-HT	5	14	25	17	4.5	8.5	3.2	29°
EFSM-06-HT	6	14	25	17	4.5	8.5	3.2	25°
EFSM-08-HT	8	18	33	22	5.5	10.5	4.3	25°
EFSM-10-HT	10	22	38	26	6.5	12.0	5.3	25°
EFSM-12-HT	12	25	40	28	7.0	13.0	5.3	21°

Other dimensions available upon request

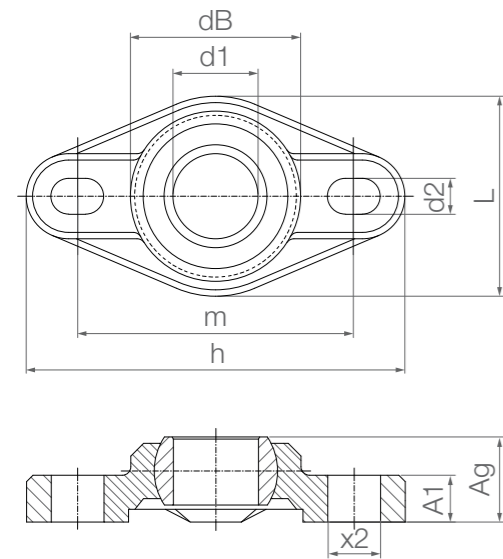
High-temperature fixed flange bearings with 2 mounting holes: EFOM-HT

 Order key

Type	Size	Version
E F O M- 06 -HT		
E series	Fixed flange bearing	2 holes
	Metric	Inner Ø [mm]
		High temperature

 **Material:**
Housing: **iguton G** ▶ Page 1915
Spherical ball: **iglidur® X** ▶ Page 291

- Applicable up to +200°C
- Easy installation
- Compensation of misalignment errors
- Absolute corrosion resistance
- Lightweight
- Chemical-resistant (chemical table ▶ Page 1894)
- Can be used underwater



Technical data

Part No.	Max. permissible axial load		Max. permissible radial load		Max. tightening torque	Weight
	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]	Holes [Nm]	[g]
EFOM-05-HT	275	138	460	230	0.6	2.5
EFOM-06-HT	300	150	611	305	0.6	2.3
EFOM-08-HT	644	322	934	467	1.3	5.0
EFOM-10-HT	764	382	1,000	500	2.5	8.3
EFOM-12-HT	874	437	1,290	645	2.5	10.7

Dimensions [mm]


Part No.	d1	dB	h	L	m	A1	Ag	d2	x2	Max. pivot angle
	E10		Length	Width	Hole pitch ±0.1	Height of plate	Total height	Elongated hole		
EFOM-05-HT	5	14	33.8	16	24	4.5	8.5	3.2	5.0	29°
EFOM-06-HT	6	14	33.8	16	24	4.5	8.5	3.2	5.5	27°
EFOM-08-HT	8	18	44.2	22	31	5.5	10.5	4.3	6.5	24°
EFOM-10-HT	10	22	52.0	26	36	6.5	12.0	5.3	8.0	24°
EFOM-12-HT	12	25	56.7	31	41	7.0	13.0	5.3	8.0	21°

Other dimensions available upon request

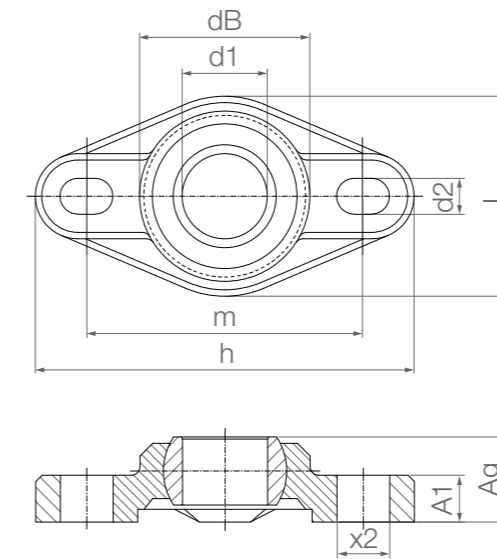
Fixed flange bearings for contact with food: EFOM-FC

 Order key

Type	Size	Version
E F O M- 20 -FC		
E series	Fixed flange bearing	2 holes
	Metric	Inner Ø [mm]
		Suitable for food contact

 **Material:**
Housing: **igumid® FC** ▶ Page 1915
Spherical ball: **iglidur® A181** ▶ Page 401
iglidur® FC180 ▶ upon request

- Complies with FDA and EU 10/2011
- Lubrication and maintenance-free
- Visually and magnetically detectable
- In industry-standard blue
- Corrosion and media-resistant
- Vibration-dampening
- Cost-effective



Technical data

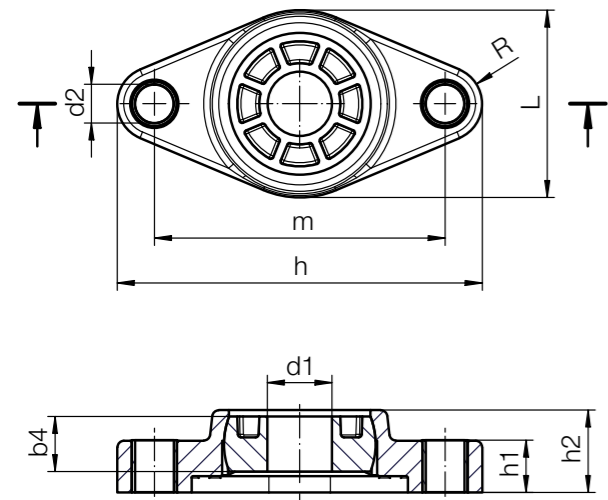
Part No.	Max. permissible axial load		Max. permissible radial load	Max. tightening torque	Weight
	Short-term	Long-term			
	[N]	[N]	[N]	Holes [Nm]	[g]
EFOM-08-FC New	600	300	1,100	1.3	4.4
EFOM-10-FC New	700	350	2,000	2.5	7.3
EFOM-20-FC	1,500	750	5,500	10.0	35.5

Dimensions [mm]

Part No.	d1	dB	h	L	m	A1	Ag	d2	x2	Max. pivot angle
	E10		Length	Width	Hole pitch ±0.1	Height of plate	Total height	Elongated hole		
EFOM-08-FC New	8	18.0	44.2	22.0	31.0	5.5	10.5	4.3	6.5	25°
EFOM-10-FC New	10	22.0	52.0	26.0	36.0	6.5	12.0	5.3	8.0	25°
EFOM-20-FC	20	40.0	89.0	47.0	65.0	11.0	20.0	8.4	12.5	19°

Other dimensions available upon request

Fixed flange bearings with 2 mounting holes, polymer housing: FL-KS-JEM-SP



Order key

Type	Size	Version
FL204-KS- J E M-20-17-SP		
Fixed flange bearing	Polymer	Spherical insert bearing material
Dimensional series	Metric	Spherical ball inner Ø [mm]
Spherical ball width [mm]	Injection moulding	

Material:
Housing: igumid® G ▶ Page 1914
Spherical ball: iglidur® J ▶ Page 163

- Dimensionally interchangeable with cast iron housings
- Completely corrosion-free
- Structurally optimised design
- Robust, for high loads
- Mounting holes reinforced with stainless steel metal sleeves

Technical data

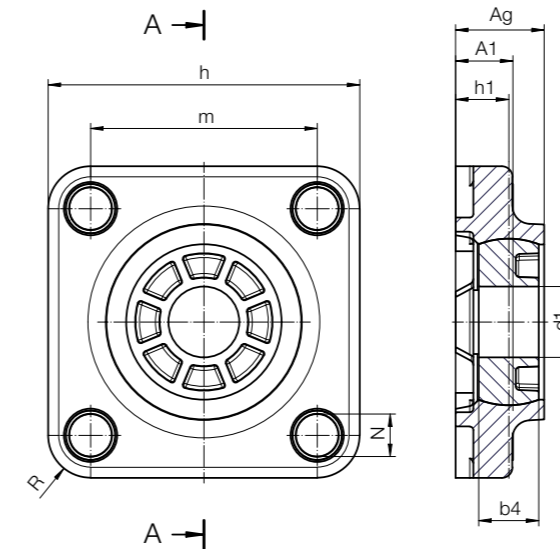
Part No.	Max. permissible radial load		Max. permissible axial load		Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	
FL203-KS-JEM-17-17-SP New	7,500	3,750	2,200	1,100	85.6
FL204-KS-JEM-20-17-SP New	8,000	4,000	2,200	1,100	84.9
FL205-KS-JEM-25-17-SP New	-	-	-	-	143.8
FL206-KS-JEM-30-19-SP New	13,500	6,750	2,500	1,250	164.5
FL207-KS-JEM-35-20-SP New	-	-	-	-	197.3
FL208-KS-JEM-40-21-SP New	14,500	7,250	2,600	1,300	225.5
FL209-KS-JEM-45-22-SP New	-	-	-	-	249.4
FL210-KS-JEM-50-24-SP New	-	-	-	-	271.8

Dimensions [mm]

Part No.	d1	d2	L	h	h1	h2	R	b4	m
FL203-KS-JEM-17-17-SP New	17	12	58	113	16.2	25.5	11.5	17.0	90
FL204-KS-JEM-20-17-SP New	20	12	58	113	16.2	25.5	11.5	17.0	90
FL205-KS-JEM-25-17-SP New	25	16	64	130	21.0	27.5	15.5	17.0	99
FL206-KS-JEM-30-19-SP New	30	16	75	148	21.2	29.5	15.5	19.0	117
FL207-KS-JEM-35-20-SP New	35	16	85	161	21.0	32.0	15.5	20.0	130
FL208-KS-JEM-40-21-SP New	40	16	93	175	21.2	33.5	15.5	21.0	144
FL209-KS-JEM-45-22-SP New	45	18	97	179	23.2	35.0	15.5	22.0	148
FL210-KS-JEM-50-24-SP New	50	18	101	188	23.2	36.0	15.5	24.0	157

EN 06/2023

Fixed flange bearings with 4 mounting holes, polymer housing: F-KS-JEM-SP



Order key

Type	Size	Version
F204-KS- J E M-20-17-SP		
Fixed flange bearing	Polymer	Spherical insert bearing material
Dimensional series	Metric	Spherical ball inner Ø [mm]
Spherical ball width [mm]	Injection moulding	

Material:
Housing: igumid® G ▶ Page 1914
Spherical ball: iglidur® J ▶ Page 163

- Dimensionally interchangeable with cast iron housings
- Completely corrosion-free
- Structurally optimised design
- Robust, for high loads
- Mounting holes reinforced with stainless steel metal sleeves

Technical data

Part No.	Max. permissible radial load		Max. permissible axial load		Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	
F203-KS-JEM-17-17-SP New	7,500	3,750	1,800	900	128.9
F204-KS-JEM-20-17-SP New	8,000	4,000	1,800	900	128.2
F205-KS-JEM-25-17-SP New	-	-	-	-	147.1
F206-KS-JEM-30-19-SP New	12,500	6,250	1,400	700	188.3
F207-KS-JEM-35-20-SP New	-	-	-	-	269.0
F208-KS-JEM-40-21-SP New	15,400	7,700	2,550	1,275	299.5
F209-KS-JEM-45-22-SP New	-	-	-	-	334.3
F210-KS-JEM-50-24-SP New	-	-	-	-	364.3

Dimensions [mm]

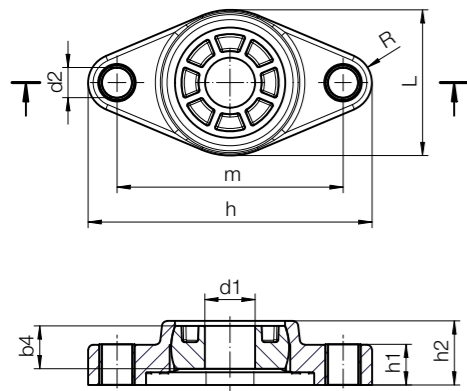
Part No.	d1	h	m	A1	Ag	N	b4	h1	R
F203-KS-JEM-17-17-SP New	17	86	64	16.2	25	12	17	15	11.0
F204-KS-JEM-20-17-SP New	20	86	64	16.2	25	12	17	15	11.0
F205-KS-JEM-25-17-SP New	25	95	70	16.2	26	12	17	16	12.5
F206-KS-JEM-30-19-SP New	30	108	83	16.2	29	12	19	18	12.5
F207-KS-JEM-35-20-SP New	35	120	92	19.2	31	14	20	19	14.0
F208-KS-JEM-40-21-SP New	40	130	102	21.2	33	16	21	21	14.0
F209-KS-JEM-45-22-SP New	45	135	105	21.2	35	16	22	22	15.0
F210-KS-JEM-50-24-SP New	50	141	111	21.2	36	16	24	22	15.0

EN 06/2023

Compact fixed flange bearings with 2 mounting holes, polymer housing: FL208-30-KS



- Dimensions to equal to those of common flange bearings including in the bottling and packaging industry
- Completely corrosion-free
- Structurally optimised design
- Robust, for high loads
- Mounting holes reinforced with stainless steel metal sleeves



Order key

Type	Size	Version
FL208- 30 -KS-□		
Fixed flange bearing	Spherical ball inner Ø [mm]	
	Polymer	
	Spherical ball material	

Material:
 Housing: **igumid® G** ▶ Page 1914
 Spherical ball: **iglidur® J** ▶ Page 163
 machined (hygienic)
iglidur® J-SP ▶ Page 163
 moulded (cost-effective)
iglidur® J3 ▶ Page 187
 machined (longer service life, hygienic)
iglidur® J3-SP ▶ Page 187
 injection moulded
 (longer service life, cost-effective)

Technical data

Part No.	Max. permissible radial load		Max. permissible axial load		Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	
FL208-30-KS-□ New	9,000	4,500	2,200	1,100	175.1
FL208-35-KS-□ New	9,000	4,500	2,200	1,100	172.1
FL208-40-KS-□ New	9,000	4,500	2,200	1,100	168.8

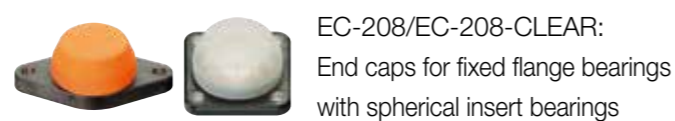
Dimensions [mm]

Part No.	d1	d2	h	L	b4	h1	R	m	h2
FL208-30-KS-□ New	30	10	147	93	21	14.2	15	117	30.5
FL208-35-KS-□ New	35	10	147	93	21	14.2	15	117	30.5
FL208-40-KS-□ New	40	10	147	93	21	14.2	15	117	30.5

Can be combined with accessories ▶ Page 1012



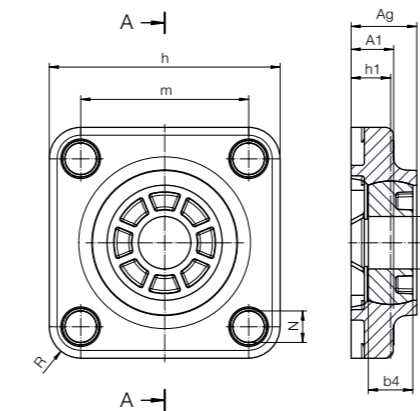
Can be combined with accessories ▶ Page 1016



Compact fixed flange bearings with 4 mounting holes, polymer housing: F208-30-KS



- Dimensions to equal to those of common flange bearings including in the bottling and packaging industry
- Completely corrosion-free
- Structurally optimised design
- Robust, for high loads
- Mounting holes reinforced with stainless steel metal sleeves



Order key

Type	Size	Version
F208- 30 -KS-□		
Fixed flange bearing	Spherical ball inner Ø [mm]	
	Polymer	
	Spherical ball material	

Material:
 Housing: **igumid® G** ▶ Page 1914
 Spherical ball: **iglidur® J** ▶ Page 163
 machined (hygienic)
iglidur® J-SP ▶ Page 163
 moulded (cost-effective)
iglidur® J3 ▶ Page 187
 machined (longer service life, hygienic)
iglidur® J3-SP ▶ Page 187
 injection moulded
 (longer service life, cost-effective)

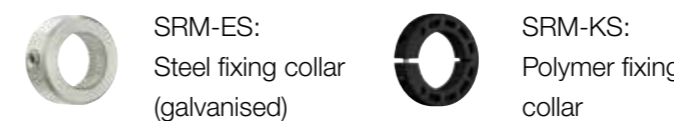
Technical data

Part No.	Max. permissible radial load		Max. permissible axial load		Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	
F208-30-KS-□ New	16,500	8,250	1,200	600	236.8
F208-35-KS-□ New	18,000	9,000	1,200	600	233.8
F208-40-KS-□ New	20,000	10,000	1,200	600	230.5

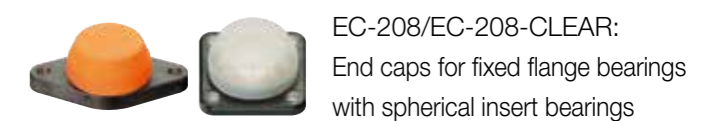
Dimensions [mm]

Part No.	d1	h	m	A1	Ag	N	b4	h1	R
F208-30-KS-□ New	30	115	82.8	16.2	29	12	21	16	16.1
F208-35-KS-□ New	35	115	82.8	16.2	29	12	21	16	16.1
F208-40-KS-□ New	40	115	82.8	16.2	29	12	21	16	16.1

Can be combined with accessories ▶ Page 1012



Can be combined with accessories ▶ Page 1016



Fixed flange bearings with 2 mounting holes,
cast iron housing: FL-JEM-SP

Order key

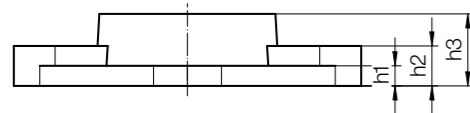
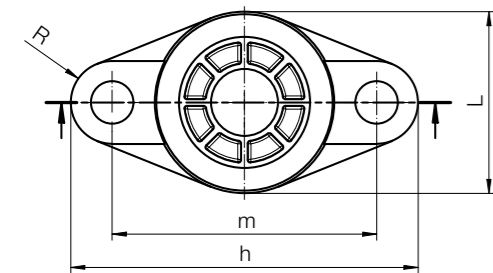
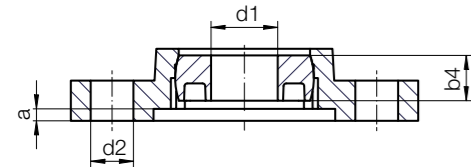
Type	Size	Version
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FL204- J E M-20-17-SP

Fixed flange bearing with cast iron housing	Spherical insert bearing material	Dimensional series	Metric	Spherical ball inner Ø [mm]	Spherical ball width [mm]	Injection moulding
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Material:
Housing: **Cast iron**
Spherical ball: **iglidur® J** ▶ Page 163

- Service life in dirty environment longer than with ball bearings by up to a factor of 8
- For higher static loads
- No costs due to maintenance or failure times (e.g. due to lack of lubrication)
- Save up to 25% thanks to easy bearing replacement



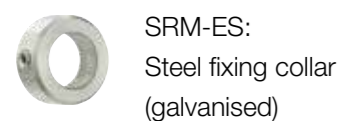
Technical data and dimensions [mm]

Part No.	Max. static radial load [N]	Max. static axial load [N]	d1	m	d2	L
FL204-JEM-20-17-SP New	8,000	4,000	20	90	12	60
FL205-JEM-25-17-SP New	9,000	3,500	25	99	16	68
FL206-JEM-30-19-SP New	13,500	5,000	30	117	16	80
FL208-JEM-40-21-SP New	21,000	6,000	40	144	16	100
FL210-JEM-50-24-SP New	25,000	5,500	50	157	19	115

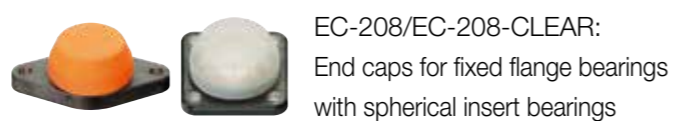
Dimensions [mm]

Part No.	h	h1	h2	h3	R	a	b4
FL204-JEM-20-17-SP New	112	6.0	12	25.5	11.5	3.6	17
FL205-JEM-25-17-SP New	130	7.5	15	25.5	15.5	4.5	17
FL206-JEM-30-19-SP New	147	7.0	14	31.0	15.5	4.2	19
FL208-JEM-40-21-SP New	175	8.0	16	36.0	15.5	4.8	21
FL210-JEM-50-24-SP New	197	9.0	18	40.0	20.0	5.4	24

Can be combined with accessories ▶ Page 1012



Can be combined with accessories ▶ Page 1016



Fixed flange bearings with 4 mounting holes,
cast iron housing: F-JEM-SP

Order key

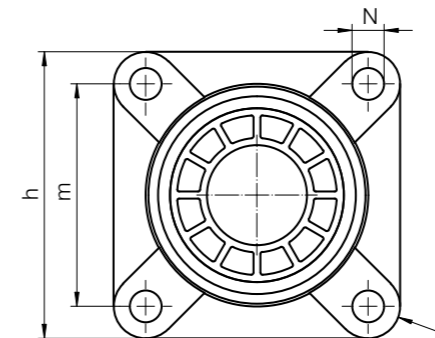
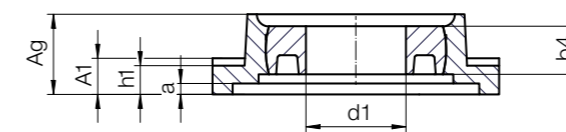
Type	Size	Version
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F204- J E M-20-17-SP

Fixed flange bearing with cast iron housing	Spherical insert bearing material	Dimensional series	Metric	Spherical ball inner Ø [mm]	Spherical ball width [mm]	Injection moulding
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Material:
Housing: **Cast iron**
Spherical ball: **iglidur® J** ▶ Page 163

- Service life in dirty environment longer than with ball bearings by up to a factor of 8
- For higher static loads
- No costs due to maintenance or failure times (e.g. due to lack of lubrication)
- Save up to 25% thanks to easy bearing replacement



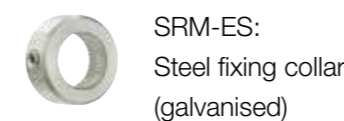
Technical data and dimensions [mm]

Part No.	Max. static radial load [N]	Max. static axial load [N]	d1	a	h	m
F204-JEM-20-17-SP New	8,000	4,000	20	3.6	86	64
F205-JEM-25-17-SP New	9,000	3,500	25	4.2	95	70
F206-JEM-30-19-SP New	13,500	5,000	30	4.2	108	83
F208-JEM-40-21-SP New	21,000	6,000	40	4.8	130	102
F210-JEM-50-24-SP New	25,000	5,500	50	5.4	143	111

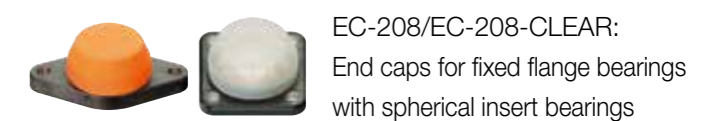
Dimensions [mm]

Part No.	A1	Ag	N	b4	h1	R
F204-JEM-20-17-SP New	12	25.5	12	17	9.6	11.0
F205-JEM-25-17-SP New	14	27.0	12	17	11.2	12.5
F206-JEM-30-19-SP New	14	31.0	12	19	11.2	12.5
F208-JEM-40-21-SP New	16	36.0	16	21	12.8	14.0
F210-JEM-50-24-SP New	18	40.0	16	24	14.4	16.0

Can be combined with accessories ▶ Page 1012



Can be combined with accessories ▶ Page 1016




Fixed flange bearings with cost-effective metallic housing: PFL-JEM-SP

 Order key

Type	Size	Version
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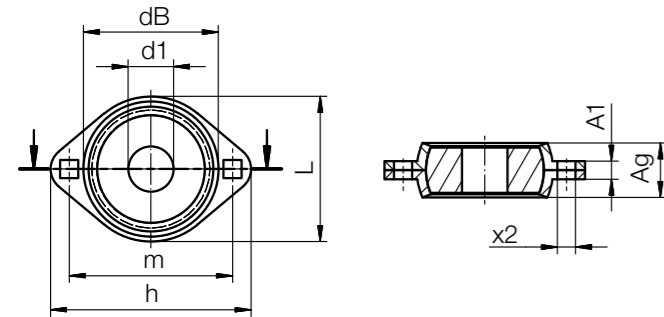
PFL204- J E M- 20 - 14 - SP

Fixed flange bearing	Spherical insert bearing material	Dimensional series	Metric	Spherical ball inner Ø [mm]	Spherical ball width [mm]	Injection moulding
----------------------	-----------------------------------	--------------------	--------	-----------------------------	---------------------------	--------------------

 **Material:**
Housing: Galvanised steel
(stainless steel upon request)
Spherical ball: iglidur® J
(alternative iglidur® J4)



- Cost-effective spherical ball material iglidur® J4 available (order example: PFL204-J4EM-20-14-SP)
- Lubrication and maintenance-free
- Cost-effective
- Resistant to dirt



Technical data

Part No.	Max. permissible axial load		Max. permissible radial load		Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	
PFL203-J4EM-17-12-SP New	1,500	750	3,000	1,500	83.6
PFL204-□EM-20-14-SP	2,000	1,000	4,000	2,000	108.7
PFL205-□EM-25-15-SP	2,000	1,000	5,000	2,500	119.3
PFL206-□EM-30-16-SP	2,000	1,000	7,000	3,500	180.3
PFL207-JEM-35-17-SP New	2,500	1,250	8,000	4,000	242.6
PFL208-JEM-40-18-SP New	2,500	1,250	9,000	4,500	398.6

Dimensions [mm]

Part No.	d1 E10	h	L	m	A1 +0.1	Ag	x2
PFL203-J4EM-17-12-SP New	17	81	59	63.5	4.0	14	7.1
PFL204-□EM-20-14-SP	20	90	67	71.5	4.0	16	9.0
PFL205-□EM-25-15-SP	25	95	71	76.0	4.0	18	9.0
PFL206-□EM-30-16-SP	30	113	84	90.5	5.2	18	11.0
PFL207-JEM-35-17-SP New	35	122	94	100.0	5.2	20	11.0
PFL208-JEM-40-18-SP New	40	148	100	119.0	6.8	21	13.5

Can be combined with SRM fixing collars ► Page 1012

igubal® spherical bearings

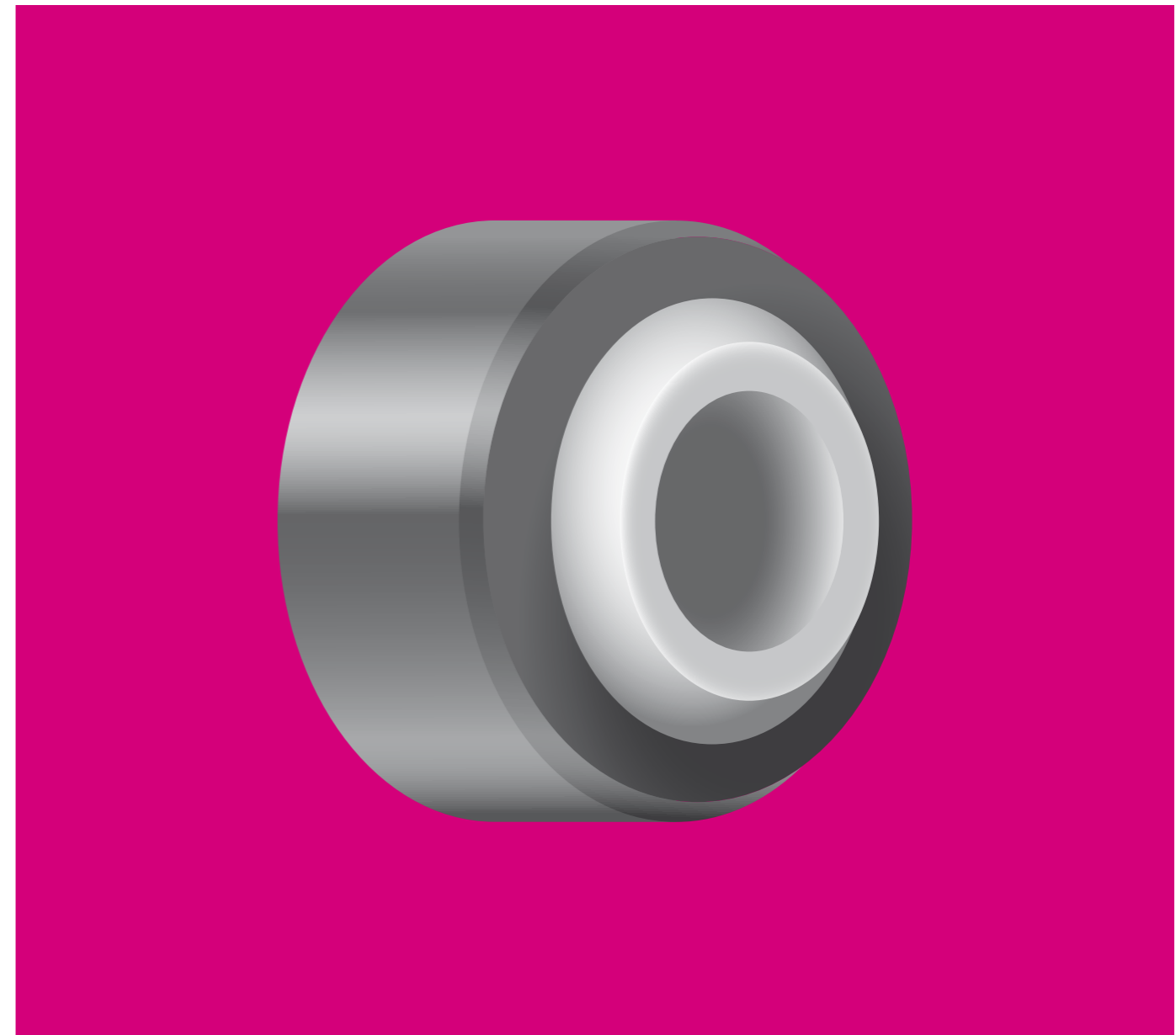
Easy to fit

Cost-effective

Chemical resistance

Lightweight

Very robust



The use of spherical bearings is usually associated with heavy materials, difficult installation, and high costs. Most of the time, maintenance is still necessary long-term, and the bearings are only corrosion-resistant in special designs. igubal® spherical bearings put an end to all of these disadvantages: they are easy to fit, cost-effective, lightweight and robust.



When do I take them?

- For high axial and radial loads
- For the simplest installation
- When extremely small installation spaces are available
- When chemical resistance is required
- If a cost-effective option is requested
- When dirt-resistant bearings are required
- To adjust misalignment



When do I not take them?

- When temperatures are higher than +80°C
- For dimensions above 30mm
- If rotation speeds of more than 0.5m/s are to be achieved



Available from stock

Detailed information about delivery time online.



Price breaks online

No minimum order value. No minimum order quantity



Max. +80°C
min. -30°C



13 types
Ø 2 - 40mm



Imperial dimensions available
► From page 1880

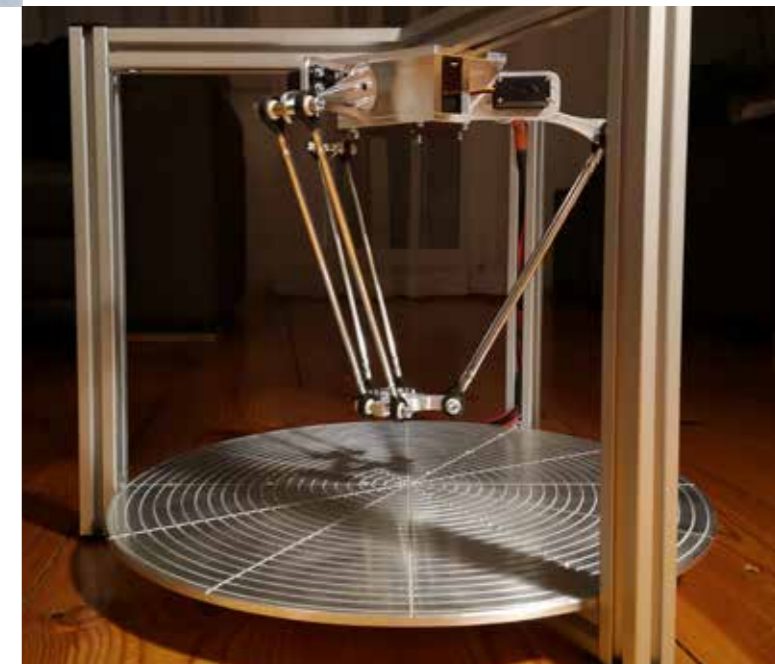


Online product finder
► www.igus.eu/igubal-finder



Saxophone

A saxophone that can be played with one hand. The transmission of force from the stop to the saxophone key was to be silent. Here, the engineers opted for igubal® KGLM polymer spherical bearings from igus®. The bearings operate quietly and ensure the necessary ease with which it should be possible to play high-quality musical instruments.



Delta robot

Contec, a Polish company, develops delta robots that position labels and tags. The company uses igubal® double joints (KDG06-A-ER-J) for the robot arms. The bearings require no external lubrication and are maintenance-free.



Folding table and folding chair

It is the same in most university lecture halls: some students treat folding tables and folding chairs very roughly - for example, by flopping down on them with the full weight of their body. A tough application for the bearings of a chair. The manufacturer Audia Italia therefore places its trust in igubal® KGLM-10 spherical bearings. What the engineers like about them is their resilience, self-lubricating nature and, above all, self-alignment capability.

Spherical bearings are usually associated with heavy materials, difficult installation, and high costs. In most cases, however, maintenance is required in the longer term and the bearings are only corrosion-free in special designs. Often roller bearings or plain bearings malfunction prematurely due to high edge loads, or because they need to be readjusted, reamed, or refitted in order to compensate for alignment errors.

igubal® spherical bearings put an end to all of these disadvantages and open up many new possibilities for your engineering design:

- Easy to use
- Especially cost-effective
- Lightweight
- Very robust

Application areas

Ease of installation makes many applications possible for igubal® spherical bearings. They can be used anywhere. The self-aligning feature offers design advantages and helps to simplify assembly.

Tolerances

Maintenance-free igubal® spherical bearings are designed with an inner diameter tolerance of E10. The shaft tolerance should be manufactured between h6 and h9. These recommended tolerances allow for changes in the bearing due to temperature.

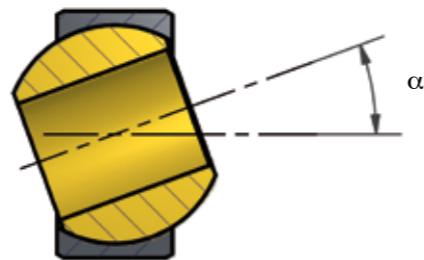
Assembly

igubal® spherical bearings are press-fitted into a recommended H7 housing bore and axially secured. An exact orientation of the bearing housing is not necessary, since the spherical bearing compensates for alignment errors.

Dimensions

igubal® spherical bearings are manufactured according to DIN ISO 12240 for dimensional K and E series. The product range provides standard dimensions from 2 to 40mm. The dimensional K series is available in imperial dimensions.

pivot angle



igubal® spherical bearings



Easy to fit, cost-effective, selectable spherical ball material

K series
▶ Page 968



For extremely narrow installation space

K series
▶ Page 969



Standard, easy to fit

K series
▶ Page 970



Cost-effective, selectable spherical ball material

E series
▶ Page 971

igubal® self-aligning clip bearings



Space-saving

E series
▶ Page 972



Suitable for food contact

E series
▶ Page 973



Simply snap into sheet metal

E series
▶ Page 974



For high axial and radial loads, selectable spherical ball material

E series
▶ Page 975

igubal® self-aligning clip bearings



For tolerance compensation, selectable spherical ball material

E series
▶ Page 976



Simply snap-in into sheet metal, can be assembled on both sides

E series
▶ Page 977

igubal® double joints and coupling joints



Robust plastic, selectable spherical ball material

E series
▶ Page 978



Selectable materials, individual dimensions and alignment

E series
▶ Page 982

igubal® double joints and coupling joints



Selectable materials, individual dimensions and alignment

▶ Page 980



Removable, selectable materials, individual dimensions and alignment

▶ Page 984



Crimped coupling joints, particularly resistant to dirt

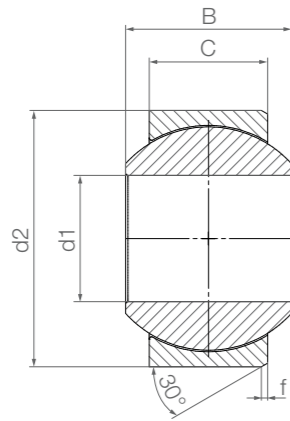
▶ Page 985



Crimped coupling joints with clevis joints

▶ Page 986

Spherical bearings: KGLM low-cost



Order key

Type	Size	Version
------	------	---------

KGLM- 05 - LC

K series	Spherical bearings	Spherical ball material Blank : iglidur® W300 J4V : iglidur® J4V J : iglidur® J R : iglidur® R J4 : iglidur® J4
	Metric	
	Inner Ø [mm]	
	Low-cost	

Material:
Housing: igumid® G ▶ Page 1914
Spherical ball: iglidur® W300 ▶ Page 175
Other spherical ball materials upon request
▶ Page 993

- Successor model of KGLM
- Variety of spherical ball materials
- Easy installation
- Cost-effective
- Split housing

Technical data

Part No.	Max. static load on the housing		Max. tightening torque through ball	Weight
	radial	axial ²⁹⁾		
	[N]	[N]	[Nm]	[g]
KGLM-03-LC	550	200	2	0.5
KGLM-05-LC	1,300	500	5	1.0
KGLM-08-LC	2,700	1,200	12	2.9
KGLM-10-LC	4,000	1,400	20	4.3
KGLM-12-LC	5,400	1,500	30	6.9
KGLM-14-LC	6,000	2,500	35	9.0
KGLM-16-LC	8,000	3,000	40	12.7
KGLM-18-LC	9,000	4,000	45	16.6
KGLM-20-LC	10,000	5,000	55	23.6
KGLM-25-LC	13,600	7,500	65	38.9
KGLM-30-LC	20,000	9,000	70	61.0

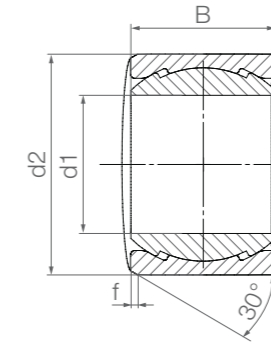
²⁹⁾ The maximum static axial load is determined when fitted into a blind housing

Dimensions [mm]

Part No.	d1 E10	d2 ³⁰⁾	B	C	f	Max. pivot angle
KGLM-03-LC	3	10	6	4.5	0.5	32°
KGLM-05-LC	5	13	8	6.0	0.8	30°
KGLM-08-LC	8	19	12	9.0	0.8	29°
KGLM-10-LC	10	22	14	10.5	0.8	25°
KGLM-12-LC	12	26	16	12.0	0.8	25°
KGLM-14-LC	14	28	19	13.5	0.8	23°
KGLM-16-LC	16	32	21	15.0	0.8	23°
KGLM-18-LC	18	35	23	16.5	0.8	23°
KGLM-20-LC	20	40	25	18.0	0.8	23°
KGLM-25-LC	25	47	31	22.0	0.8	22°
KGLM-30-LC	30	55	37	25.0	1.0	22°

³⁰⁾ In press-fitted condition

Spherical bearings: KGLM Slim Line



Order key

Type	Size	Version
------	------	---------

KGLM- 08 - SL

K series	Spherical bearings	Spherical ball material Blank : iglidur® W300 J4V : iglidur® J4V J : iglidur® J R : iglidur® R J4 : iglidur® J4
	Metric	
	Inner Ø [mm]	
	Slim Line	

Material:
Housing: iglidur® RN33 ▶ Page 1916
Spherical ball: iglidur® W300 ▶ Page 175

- Very small installation space
- Wall thickness halved compared to KGLM
- Angular compensation up to 5°
- Lightweight
- Dimensions according to DIN 1850

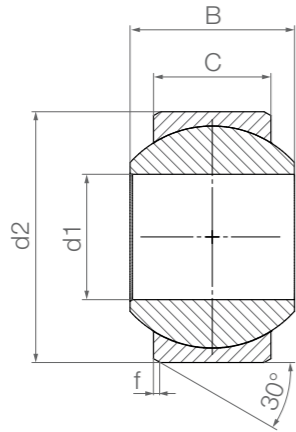
Imperial dimensions available
▶ Page 1881

Online service life calculation
▶ www.igus.eu/igus-expert

Technical data and dimensions [mm]

Part No.	Max static load (short-term)		Max. static load (long-term)		d1 E10	d2	B	f	Weight [g]	Max. pivot angle
	radial	axial	radial	axial						
	[N]	[N]	[N]	[N]						
KGLM-08-SL	2,700	450	1,350	225	8	14	9.0	0.5	1.1	5°
KGLM-10-SL	4,000	750	2,000	375	10	16	10.5	0.5	1.5	5°
KGLM-12-SL	4,500	750	2,250	375	12	18	12.0	0.5	2.0	5°
KGLM-16-SL	6,500	500	3,250	250	16	22	15.0	0.5	3.1	5°

Spherical bearings: KGLM



Order key

Type Size

K GLM-02

K series
Spherical bearings
Metric
Inner Ø [mm]

- Material:**
Housing: **igumid® G** ▶ Page 1914
Spherical ball: **iglidur® W300** ▶ Page 175
- Imperial dimensions available**
▶ Page 1880
- Online service life calculation**
▶ www.igus.eu/igubal-expert

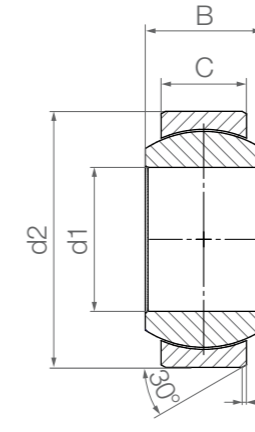
- Predecessor model of KGLM-LC
- Compensation of misalignment and edge loads
- Corrosion-resistant
- Vibration-dampening
- Excellent vibration dampening
- Suitable for rotating, oscillating and axial movements

Technical data and dimensions [mm]

Part No.	Max. static load on the housing		Max. tightening torque through ball [Nm]	d1 E10	d2	B	C	f	Weight [g]	Max. pivot angle
	radial [N]	axial ²⁹⁾ [N]								
KGLM-02	300	60	1	2	8	4	3.0	0.8	0.1	32°
KGLM-03	550	200	2	3	10	6	4.5	0.8	0.5	32°
KGLM-05	1,300	500	5	5	13	8	6.0	0.8	1.0	30°
KGLM-06	1,800	650	10	6	16	9	6.5	0.8	1.6	29°
KGLM-08	2,700	1,200	12	8	19	12	9.0	0.8	2.9	25°
KGLM-10	4,000	1,400	20	10	22	14	10.5	0.8	4.4	25°
KGLM-12	5,400	1,500	30	12	26	16	12.0	0.8	7.0	25°
KGLM-14	6,000	2,500	35	14	28	19	13.5	0.8	9.1	23°
KGLM-16	8,000	3,000	40	16	32	21	15.0	0.8	12.8	23°
KGLM-18	9,000	4,000	45	18	35	23	16.5	0.8	16.6	23°
KGLM-20	10,000	5,000	55	20	40	25	18.0	0.8	24.4	23°
KGLM-22	11,700	6,500	60	22	42	28	20.0	0.8	28.5	22°
KGLM-25	13,600	7,500	65	25	47	31	22.0	0.8	39.3	22°
KGLM-30	20,000	9,000	70	30	55	37	25.0	1.0	62.6	22°

²⁹⁾ The maximum static axial load is determined when fitted into a blind housing

Spherical bearings: EGLM Low-cost



Order key

Type Size Version

E GLM- 15 - LC

E series
Spherical bearings
Metric
Inner Ø [mm]
Low-cost

Spherical ball material
Blank : iglidur® W300
J4V : iglidur® J4V
J : iglidur® J
R : iglidur® R
J4 : iglidur® J4

- Successor model of EGLM
- Easy to fit
- Cost-effective
- Chemical and corrosion-resistant
- Very robust
- Compensation of misalignment errors

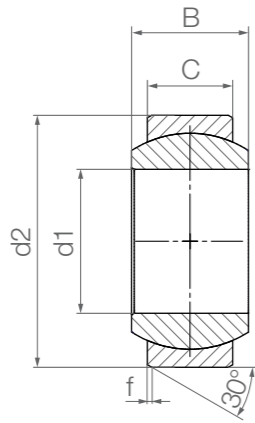
- Material:**
Housing: **igumid® G** ▶ Page 1914
Spherical ball: **iglidur® W300** ▶ Page 175
- Online service life calculation**
▶ www.igus.eu/igubal-expert

Technical data and dimensions [mm]

Part No.	Max. static load on the housing		Max. tightening torque through ball [Nm]	d1 E10	d2	B	C	f	Weight [g]	Max. pivot angle
	radial [N]	axial ²⁹⁾ [N]								
EGLM-15-LC	5,500	1,000	30	15	26	12	9.0	0.5	4.5	21°
EGLM-16-LC	6,000	1,150	32	16	28	13	9.5	0.5	6.0	21°
EGLM-20-LC	9,000	1,400	40	20	35	16	12.0	1.0	11.0	18°
EGLM-25-LC	14,000	2,900	55	25	42	20	16.0	1.0	20.0	16°
EGLM-30-LC	17,000	4,000	70	30	47	22	18.0	1.0	26.0	13°

²⁹⁾ The maximum static axial load is determined when fitted into a blind housing

Spherical bearings: EGLM



Order key

Type	Size
E GLM-04	
E series	
Spherical bearings	
Metric	
Inner Ø [mm]	

- Material:**
 Housing: **igumid® G** ▶ Page 1914
 Spherical ball:
 Spherical balls with 04-30mm diameters made of **iglidur® W300** ▶ Page 175
 Spherical balls with 40mm and 80mm diameter made of **iglidur® J** ▶ Page 163
 Other spherical ball materials upon request (Ø 04-12mm and 40mm) ▶ Page 993

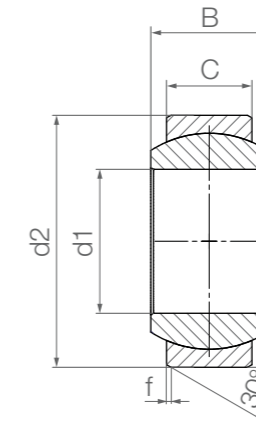
Online service life calculation
 ▶ www.igus.eu/igubal-expert

Technical data and dimensions [mm]

Part No.	Max. static load on the housing		Max. tightening torque through ball [Nm]	d1 E10	d2	B	C	f	Weight [g]	Max. pivot angle
	radial [N]	axial ²⁹⁾ [N]								
EGLM-04	600	50	1.0	4	12	5	3.0	0.5	0.4	37°
EGLM-05	1,000	130	2.0	5	14	6	4.0	0.5	0.8	33°
EGLM-06	1,200	150	2.5	6	14	6	4.0	0.5	0.9	27°
EGLM-08	1,800	175	7.0	8	16	8	5.0	0.5	1.2	24°
EGLM-10	2,500	400	14.0	10	19	9	6.0	0.5	1.9	24°
EGLM-12	3,800	650	25.0	12	22	10	7.0	0.5	2.8	21°
EGLM-15	5,500	1,000	30.0	15	26	12	9.0	0.5	4.5	21°
EGLM-16	6,000	1,150	32.0	16	28	13	9.5	0.5	6.0	21°
EGLM-17	6,300	1,200	35.0	17	30	14	10.0	1.0	6.9	21°
EGLM-20	9,000	1,400	40.0	20	35	16	12.0	1.0	11.0	18°
EGLM-25	14,000	2,900	55.0	25	42	20	16.0	1.0	20.0	16°
EGLM-30	17,000	4,000	70.0	30	47	22	18.0	1.0	26.0	13°
EGLM-40-J	22,500	2,500	80.0	40	62	28	22.0	1.0	57.0	15°
EGLM-80-J	50,000	11,300	-	80	120	55	45	2.0	400.0	18°

²⁹⁾ The maximum static axial load is determined when fitted into a blind housing

Spherical bearings: EGLM-FC



Order key

Type	Size	Version
E GLM- 08 - FC		
E series		
Spherical bearings		
Metric		
Inner Ø [mm]		
Suitable for food contact		

- FDA- and EU10/2011-compliant
 ● Longer service life
 ● Optimised chemical resistance
 ● Housing made of **igumid® FC**, detectable
 ● Also available with detectable spherical ball made of **iglidur® FC180**

- Material:**
 Housing: **igumid® FC** ▶ Page 1915
 Spherical ball: **iglidur® A181** ▶ Page 401
 Other spherical ball materials upon request ▶ Page 993

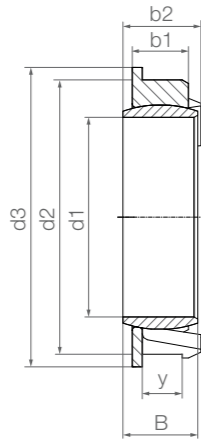
Online service life calculation
 ▶ www.igus.eu/igubal-expert

Technical data and dimensions [mm]

Part No.	Max. static load on the housing		Max. tightening torque through ball [Nm]	d1 E10	d2	B	C	f	Weight [g]	Max. pivot angle
	radial [N]	axial ²⁹⁾ [N]								
EGLM-08-FC New	1,500	130	3.0	8	16	8	5.0	0.5	1.2	24°
EGLM-10-FC New	2,000	210	6.0	10	19	9	6.0	0.5	1.9	24°
EGLM-20-FC New	10,000	1,000	15.0	20	35	16	12.0	1.0	11.0	18°

²⁹⁾ The maximum static axial load is determined when fitted into a blind housing

Clip bearings: ECLM



Order key

Type	Size
E CLM-05-02	
E series	
Clip bearing	
Metric	
Inner Ø [mm]	
Metal sheet thickness	



Material:
Housing: **igumid® G** ▶ Page 1914
Spherical ball: **iglidur® J** ▶ Page 163



Online service life calculation
▶ www.igus.eu/igubal-expert

- Very easy installation by clipping into sheet metal
- No additional locating spigot necessary
- Extremely small installation space: space-saving, thin-walled design

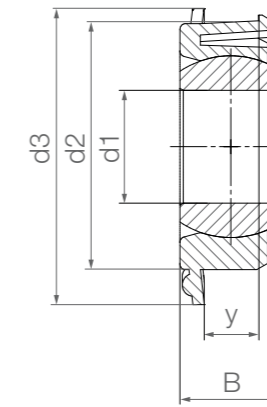
Technical data

Part No.	Max. static compressive force (short-term)		Max. static compressive force (long-term)		Weight [g]
	radial	axial	radial	axial	
	[N]	[N]	[N]	[N]	
ECLM-05-02	700	25	350	12.5	0.5
ECLM-06-02	700	25	350	12.5	0.5
ECLM-08-02	1,000	25	500	12.5	0.5
ECLM-10-03	1,400	30	700	15.0	0.8
ECLM-12-03	1,800	35	900	17.5	0.8
ECLM-16-03	2,800	40	1,400	20.0	1.1

Dimensions [mm]

Part No.	d1	B	d2	d3	y	b1	b2	Max. pivot angle
	E10		±0.2		Sheet metal thickness	±0.1		
ECLM-05-02	5	6	12	13	2	3.9	6.0	25°
ECLM-06-02	6	6	12	13	2	3.9	6.0	18°
ECLM-08-02	8	6	14	15	2	3.9	6.0	16°
ECLM-10-03	10	6	16	17	3	4.5	6.7	12°
ECLM-12-03	12	6	18	19	3	4.5	6.7	12°
ECLM-16-03	16	6	22	24	3	4.5	6.7	12°

Clip bearings: ECLM-HD



Order key

Type	Size	Version
E CLM-08-04-HD		
E series		
Clip bearing		
Metric		
Inner Ø d1 [mm]		
Metal sheet thickness		
Heavy duty		
Spherical ball material		
Blank : iglidur® W300		
R : iglidur® R		
J : iglidur® J		
J4 : iglidur® J4		
J4V : iglidur® J4V		



Material:
Housing: **igumid® G** ▶ Page 1914
Spherical ball: **iglidur® W300** ▶ Page 175

- High axial and radial loads
- Adjustment of axial and radial clearance by pre-loading
- Very easy installation by clipping into sheet metal
- No additional locating spigot necessary
- For plate thickness 4-8mm

Technical data

Part No.	Max. static compressive force (short-term)		Max. static compressive force (long-term)		Weight [g]
	radial	axial	radial	axial	
	[N]	[N]	[N]	[N]	
ECLM-08-04-HD	1,750	125	875	60	2.0
ECLM-10-05-HD	2,500	150	1,250	75	3.1
ECLM-12-06-HD	3,500	175	1,750	85	3.8
ECLM-16-08-HD	4,500	250	2,250	125	7.0
ECLM-20-08-HD	6,000	330	3,000	165	12.0

Dimensions [mm]

Part No.	d1	B	d2	d3	y	Max. pivot angle
	E10		±0.15		±0.1	
ECLM-08-04-HD	8	8	18	25	4	28°
ECLM-10-05-HD	10	9	22	28	5	24°
ECLM-12-06-HD	12	10	24	32	6	24°
ECLM-16-08-HD	16	13	30	38	8	22°
ECLM-20-08-HD	20	16	36	44	8	21°

Alternative spherical ball materials ▶ Page 993



REM:
Low-cost



JEM:
low moisture absorption

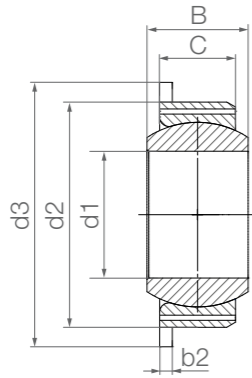


J4EM:
low-cost and low moisture absorption



J4VEM:
clearance-free pre-loaded spherical ball

Clip bearings: EGFM-...T



Order key

Type	Size	Version
E	GF M- 08 - T	
E series	Clip bearing with flange	Spherical ball material
	Metric	Blank : iglidur® W300
	Inner Ø d1 [mm]	R : iglidur® R
	Tolerance compensation	J : iglidur® J
		J4 : iglidur® J4
		J4V : iglidur® J4V

Material:
Housing: **igumid® G** ▶ Page 1914
Spherical ball: **igidur® W300** ▶ Page 175

- Maintenance-free dry operation
- Easy installation
- Max. tolerance compensation ±0.2 mm

Technical data

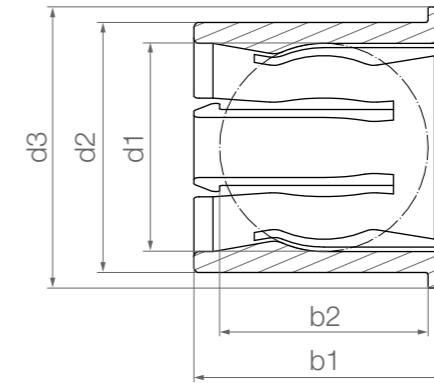
Part No.	Max. stat. compressive force (short-term)		Max. stat. compressive force (long-term)		Weight [g]
	radial [N]	axial [N]	radial [N]	axial [N]	
	EGFM-08-T-SL ³¹⁾	1,100	150	550	
EGFM-10-T	1,900	220	950	110	2.4
EGFM-12-T	2,500	270	1,250	135	3.0
EGFM-16-T	6,000	600	3,000	300	6.6
EGFM-20-T	9,000	800	4,500	400	11.1
EGFM-25-T	14,000	2,800	7,000	1,400	19.0
EGFM-30-T	17,000	3,000	8,500	1,500	24.0

Dimensions [mm]

Part No.	d1	d2		d3	C	B	b2	Housing		Max. pivot angle
	E10	Min.	max.					min.	max.	
EGFM-08-T-SL ³¹⁾	8	15.8	16.5	18	5.0	6	1.1	15.8	16.2	11°
EGFM-10-T	10	20.8	21.6	26	6.0	9	1.0	20.8	21.2	24°
EGFM-12-T	12	22.8	23.6	28	7.0	10	1.0	22.8	23.2	21°
EGFM-16-T	16	29.8	30.6	35	9.5	13	1.5	29.8	30.2	21°
EGFM-20-T	20	34.8	35.6	42	12.0	16	2.0	34.8	35.2	18°
EGFM-25-T	25	41.8	42.6	50	16.0	20	2.0	41.8	42.2	16°
EGFM-30-T	30	46.8	47.6	55	18.0	22	2.0	46.8	47.2	13°

³¹⁾ Spherical ball made of iglidur® J, H10 tolerance

Ball stud clip bearings: ZCLM



Order key

Type	Size	Options
Z	CLM-06-10-MS	
Can be assembled on both sides	Clip bearings	Ball stud ¹⁹⁾
	Metric	MS : Made of galvanised steel
	Ball stud M6 [mm]	ES : Made of stainless steel ²⁸⁾
	Metal sheet thickness [mm]	Blank : without ball stud

Material:
Clip bearing: **igidur® J** ▶ Page 163

- Connection for rotating and pivoting movements
 - Easy and quick assembly
 - Absolute corrosion resistance
 - Lubrication and maintenance-free
 - Lightweight
 - Chemical resistance
 - Ball studs made from galvanised steel and stainless steel²⁸⁾
- ▶ Accessories, page 1013

Technical data and dimensions [mm]

Part No.	Max. static axial load		d1	d2	d3	b1	b2	Weight [g]
	Short-term [N]	Long-term [N]						
	ZCLM-06-10-MS	70						

¹⁹⁾ Ball stud with right-hand thread; left-hand thread upon request

²⁸⁾ Stainless steel ball stud upon request

More dimensions upon request

Fitting:



Assembly film
▶ www.igus.eu/zclm-film



Can be combined with accessories ▶ From page 1011



GZRM-IG

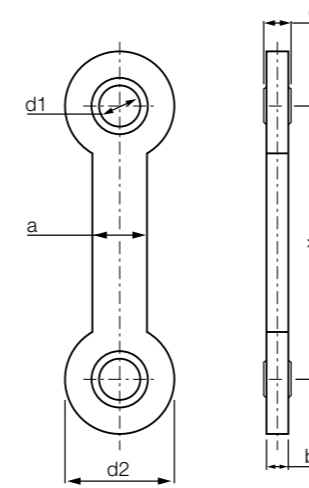
Double joints: EGZM



- Maintenance-free dry operation
- Mechanical joining link between two components
- Compensation of misalignment errors
- Corrosion-resistant
- Double joint turned 90° available upon request

i **Material:**
Housing: igumid® G ▶ Page 1914
Spherical ball: iglidur® W300 ▶ Page 175

Double joints: EGZM



Order key

Type	Size
E GZM-04-25	
E series	Spherical ball material
Double joints	Blank : iglidur® W300
Metric	R : iglidur® R
Inner Ø d1 [mm]	J : iglidur® J
Pitch X [mm]	J4 : iglidur® J4
	J4V : iglidur® J4V

Technical data [mm]

Part No.	Max. static load (short-term)		Max. static load (long-term)		Max. pivot angle	Weight [g]
	Tensile force [N]	Compressive force [N]	Tensile force [N]	Compressive force [N]		
EGZM-04-25	1,100	1,300	550	650	32°	3.5
EGZM-04-50	1,100	750	550	375	32°	4.8
EGZM-04-75	1,100	500	550	250	32°	6.1
EGZM-05-25	1,100	1,300	550	650	37°	2.2
EGZM-05-50	1,100	750	550	375	37°	4.9
EGZM-05-75	1,100	500	550	250	37°	6.3
EGZM-06-25	1,100	1,300	550	650	30°	3.4
EGZM-06-50	1,100	750	550	375	30°	4.8
EGZM-06-75	1,100	500	550	250	30°	6.0
EGZM-08-60	3,000	3,500	1,500	1,750	20°	15.2
EGZM-08-100	3,000	1,900	1,500	950	20°	19.5
EGZM-08-150	3,000	900	1,500	450	20°	24.5
EGZM-10-60	2,500	3,500	1,250	1,750	25°	15.3
EGZM-10-85	2,500	2,300	1,250	1,150	25°	18.1
EGZM-10-100	2,500	1,900	1,250	950	25°	19.4
EGZM-10-150	2,000	900	1,000	450	25°	23.7
EGZM-12-60	2,000	3,500	1,000	1,750	25°	14.7
EGZM-12-100	2,500	1,900	1,000	950	25°	18.8
EGZM-12-150	2,500	900	1,250	450	25°	23.3

Dimensions [mm]

d1	d2	X	b	a	c
E10					
4	20	25	4	10	5
4	20	50	4	10	5
4	20	75	4	10	5
5	20	25	4	10	6
5	20	50	4	10	6
5	20	75	4	10	6
6	20	25	4	10	6
6	20	50	4	10	6
6	20	75	4	10	6
8	30	60	7	15	8
8	30	100	7	15	8
8	30	150	7	15	8
10	30	60	7	15	9
10	30	85	7	15	9
10	30	100	7	15	9
10	30	150	7	15	9
12	30	60	7	15	10
12	30	100	7	15	10
12	30	150	7	15	10

Alternative spherical ball materials ▶ Page 993



Variable double joints: KDGM

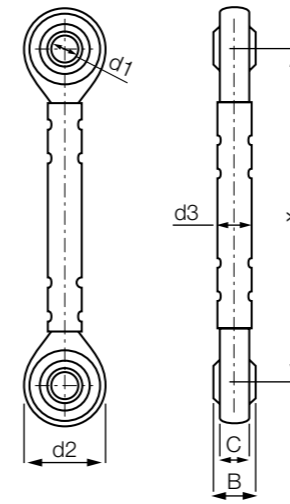


Version A Version B

- Ball diameters 5, 6, 8, 10 and 12mm
- Individual centre distance
- Individual alignment of the bearing position

i **Material:**
Housing: igumid® G ▶ Page 1914
Spherical ball: Variable ▶ Page 993
Tube: Galvanised or stainless steel

Variable double joints: KDGM



Key Order key

Type	Size	Options
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KDGM- 06 - A -ER- J

K series	Double joints	Metric	Inner Ø [mm]	Ball stud direction (A or B)	Tube material	Spherical ball material
-----------------	----------------------	---------------	---------------------	-------------------------------------	----------------------	--------------------------------

Options:	Spherical ball material
Tube material	Blank : iglidur® W300
ER : Stainless steel (AISI 303) J	: iglidur® J
SR : Galvanised steel	J4 : iglidur® J4
	R : iglidur® R
	EK : Stainless steel (AISI 303)

Technical data

Part No.	Max. static tensile strain		Max. static compressive force ¹⁹⁰⁾		Max. pivot angle
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	
KDGM-05-A-ER [] ³²⁾	220	110	1,250	625	45°
KDGM-06-A-ER-J [] ³²⁾	220	110	1,250	625	40°
KDGM-08-A-ER-J [] ³²⁾	500	250	1,500	750	35°
KDGM-10-A-ER-J ¹⁴⁵⁾ [] ³²⁾	700	350	2,500	1,250	35°
KDGM-12-A-ER-J [] ³²⁾	1,000	500	3,500	1,750	35°

³²⁾ Please add the required centre distance in mm

¹⁴⁵⁾ Size only available with stainless steel tube (ER)

¹⁹⁰⁾ The values refer to a length of 200mm

Dimensions [mm]

d1	d2	d3	X	B	C
E10			min.		
5	20	6	72	9	7.0
6	20	6	72	9	7.0
8	24	8	84	12	9.0
10	30	10	96	14	10.5
12	34	12	108	16	12.0

Order example, KDGM-05-A-SR, 100 : Double joint with 5mm inner diameter, version A, tube material made of steel, spherical ball made of iglidur® W300, centre distance 100mm

Variable coupling joints: WDGM

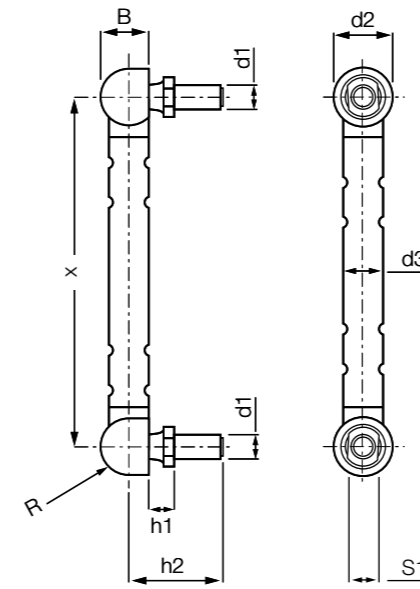


Version A Version B Version C Version D

- Socket cup M5, M6, M8 and M10
- Individual centre distance
- Individual alignment of the bearing position

i **Material:**
Housing: igumid® G ► Page 1914
Ball stud: Plastic, galvanised or stainless steel²⁸⁾
Tube: Galvanised or stainless steel

Variable coupling joints: WDGM



Order key

Type	Size	Options
------	------	---------

WDGM - 05 - A -SR-SZ

Angle	Coupling joint	Metric	Ball stud thread [mm]	Ball stud direction (A, B, C or D)	Tube material	Ball stud material
-------	----------------	--------	-----------------------	------------------------------------	---------------	--------------------

Options:
Tube material SR : Galvanised steel ER : Stainless steel (AISI 303) PZ : igumid® G
Ball stud material SZ : Galvanised steel EZ : Stainless steel²⁸⁾

Technical data

Part No.	Max. static tensile strain		Max. static compressive force ¹⁹⁰⁾		Max. pivot angle
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	
WDGM-05-A-SR-SZ <input type="text"/> ³²⁾	800	400	1,250	625	23°
WDGM-06-A-ER-SZ ¹⁴⁵⁾ <input type="text"/> ³²⁾	1,700	850	2,400	1,200	25°
WDGM-08-A-SR-SZ <input type="text"/> ³²⁾	950	475	3,200	1,600	24°
WDGM-10-A-SR-SZ <input type="text"/> ³²⁾	950	475	3,200	1,600	24°

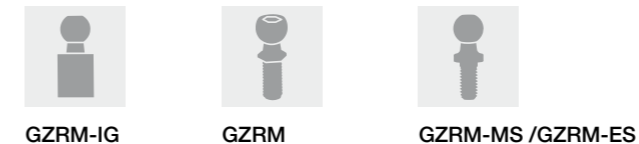
²⁸⁾ Stainless steel ball stud upon request
³²⁾ Please add the required centre distance in mm
³³⁾ Housing's size 8 with a special M10 stud, available only in metal
¹⁴⁵⁾ Size only available with stainless steel tube (ER)
¹⁹⁰⁾ The values refer to a length of 200mm

Dimensions [mm]

d1	d2	d3	X	B	h1	h2	S1	R
			min.				Width across flats	
M5	12.8	8	64	10.8	4.6	19.2	SW8	6.4
M6	14.8	10	80	12.3	6.1	23.5	SW9	7.4
M8	19.3	12	80	16.2	5.9	29.5	SW12	9.7
M10 ³³⁾	19.3	12	80	16.2	7.9	36.0	SW14	9.7

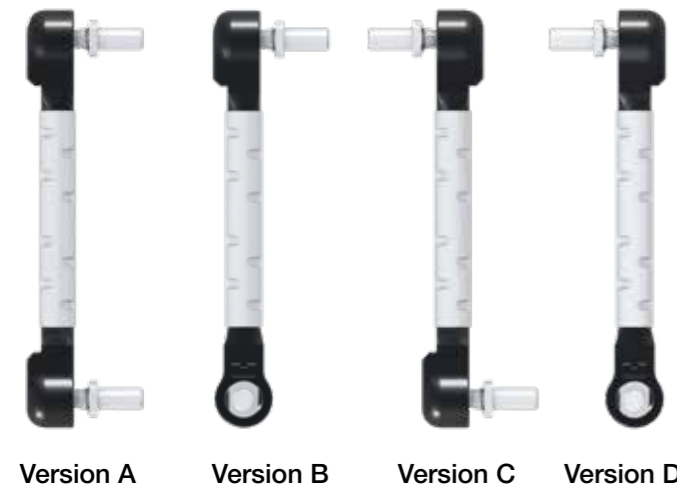
Order example, WDGM-05-A-SR-SZ, 100: Coupling joint with 5mm ball stud thread, version A, tube material made of steel, ball stud made of steel, centre distance 100mm

Can be combined with accessories ► From page 1011:

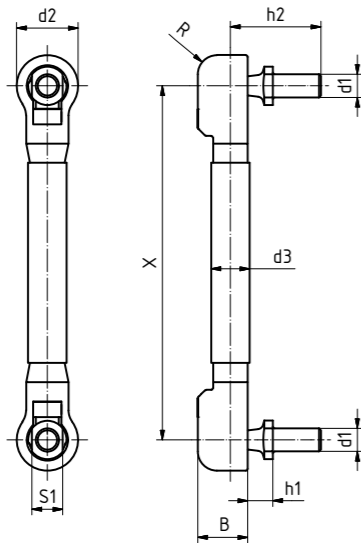


GZRM-IG GZRM GZRM-MS / GZRM-ES

Variable coupling joints, removable:
WDGM-DE



- Socket cup M6
- Individual centre distance
- Individual alignment of the bearing position
- Easy assembly and disassembly
- High holding forces when assembled



Dimensions [mm]

Part No.	d1	d2	d3	X	B	h1	h2	S1	R	Max. pivot angle
				min.				Width across flats		
WDGM-06-A-ER-SZ-DE <input type="text" value="150"/> ³²⁾	M6	16	10	102	13	6.5	23.5	SW8	5	23°

¹⁴⁵⁾ Size only available with stainless steel tube (ER)

²⁸⁾ Stainless steel ball stud upon request

³²⁾ Please add the required centre distance in mm

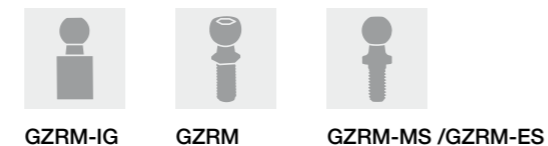
Order example, WDGM-06-A-ER-SZ-DE, 150 : Removable coupling joint with 6mm ball stud thread, version A, tube material made of stainless steel, ball stud made of steel, centre distance 150mm

Fitting:

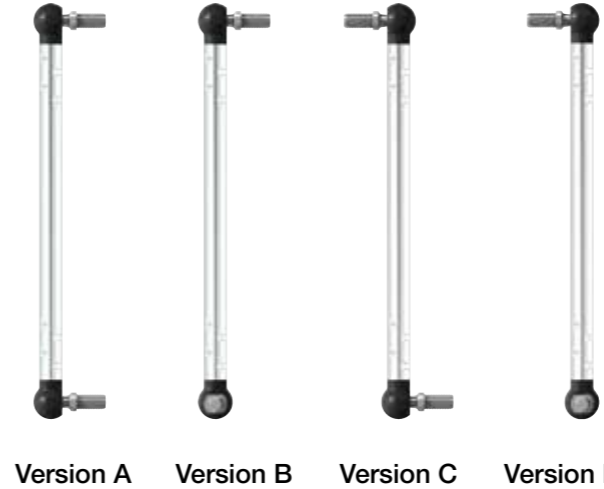


Can be combined with accessories

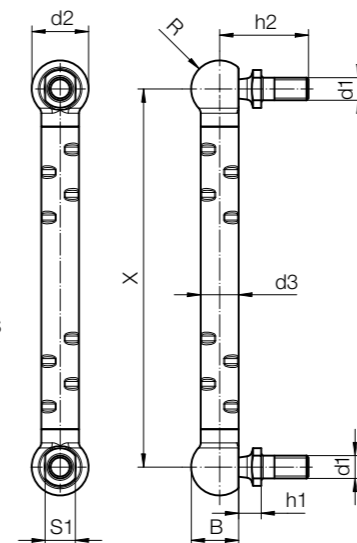
► From page 1011:



Variable coupling joints, for very dirty environments: WDGM-FX



- Shore D hardness 58: 25% more elastic than igumid® G
- 20 times more abrasion-resistant against metallic ball studs than polyamide
- Easy to assemble
- A large undercut prevents the ingress of dirt
- Vibration dampening due to flexible material



Dimensions [mm]

Part No.	d1	d2	d3	X	B	h1	h2	S1	R	Max. pivot angle
				min.				Width across flats		
WDGM-05-A-ER-SZ-FX <input type="text" value="70"/> ³²⁾ New	M5	13	10	70	11.5	4	19.2	SW7	6.5	13°
WDGM-06-A-ER-SZ-FX <input type="text" value="70"/> ³²⁾ New	M6	15	10	70	12.5	6	23.5	SW8	7.5	13°
WDGM-08-A-ER-SZ-FX <input type="text" value="82"/> ³²⁾ New	M8	18	12	82	15.0	7	29.5	SW11	9.0	13°
WDGM-10-A-ER-SZ-FX <input type="text" value="82"/> ³²⁾ New	M10	18	12	82	15.0	7	29.5	SW11	9.0	13°

Technical data

Part No.	Max. static tensile strain		Max. static compressive force ¹⁹⁰⁾	
	Short-term	Long-term	Short-term	Long-term
	[N]	[N]	[N]	[N]
WDGM-05-A-ER-SZ-FX <input type="text" value="70"/> ³²⁾ New	80	40	460	230
WDGM-06-A-ER-SZ-FX <input type="text" value="70"/> ³²⁾ New	100	50	500	250

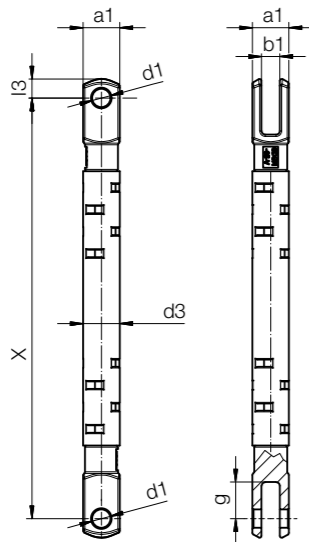
³²⁾ Please add the required centre distance in mm

¹⁹⁰⁾ The values refer to a length of 200mm

Crimped coupling joints with rotatable clevis joints: GDGM-05-V



- Lubrication and maintenance-free
- Diameter 5mm
- Individual alignment of the clevis joint - rotation feature
- Combination with spring-loaded fixing clip or bolt and securing clip possible
- Other installation sizes upon request
- Cost-effective solution for small and medium volumes



Dimensions [mm]

Part No.	d1	d3	X	a1	a2	b1	g	l3	Max. static tensile strain	
									Short-term	Long-term
	+0.1		min.	+0.3	+0.3	+0.3	±0.3	+0.3	[N]	[N]
GDGM-05-V-ER- <input type="text"/>	5	10	90	10	10	5	10	5	150	75

Order example, GDGM-05-V-ER-F, 100: coupling joint with clevis joints for a pin diameter of 5mm. Adjustable alignment of the bearing points. Stainless steel tube, two spring-loaded fixing clips GEFM-05 DIN, centre distance 100mm, included

Can be combined with accessories ► From page 1011:



GEFM GBM GSR

Crimped threaded inserts: TDGM



- Individual centre distance
- Can be adjusted using left and right-hand threads
- Many combination options with clevis joints and rod ends and angled ball and socket joints and in-line ball and socket joints available
- Various thread sizes and diameters possible
- Less weight than solutions with threaded rods

Dimensions [mm]

Part No.	d1	W	d3	X	B	l1
	+0.1			min.		
TDGM-06- <input type="text"/> - <input type="text"/> - <input type="text"/> - <input type="text"/> New	M6	10	8	45	3	18
TDGM-08- <input type="text"/> -ER- <input type="text"/> New	M8	13	10	50	4	21
TDGM-10- <input type="text"/> - <input type="text"/> - <input type="text"/> - <input type="text"/> New	M10	15	12	58	6	24

Order example, TDGM-06-RL-ER-45: threaded inserts with M6 thread. Right-hand thread on one side, left-hand thread on the other side (adjustable). Stainless steel tube. Length X = 45mm.

Can be combined with:



KCR(L)M EBR(L)M GER(L)M WGR(L)M AGR(L)M

Order key

Type	Size	Options
G D G M- 05 - V - E R - F		
Clevis joint	Coupling joint	
	Metric	
	Inner Ø [mm]	
	Twistable	
	Tube material	
	Accessories	

Options:

- F : Spring-loaded fixing clip
- K : Clevis pin and circlip

Material:

Housing: igumid® G ► Page 1914
Tube: Stainless steel (AISI 303)

Order key

Type	Size	Options
T D G M- 06 - <input type="text"/> - <input type="text"/> - <input type="text"/>		
Thread	Coupling joint	
	Metric	
	Inner Ø [mm]	
	Thread direction	
	Tube material	
	Length X	

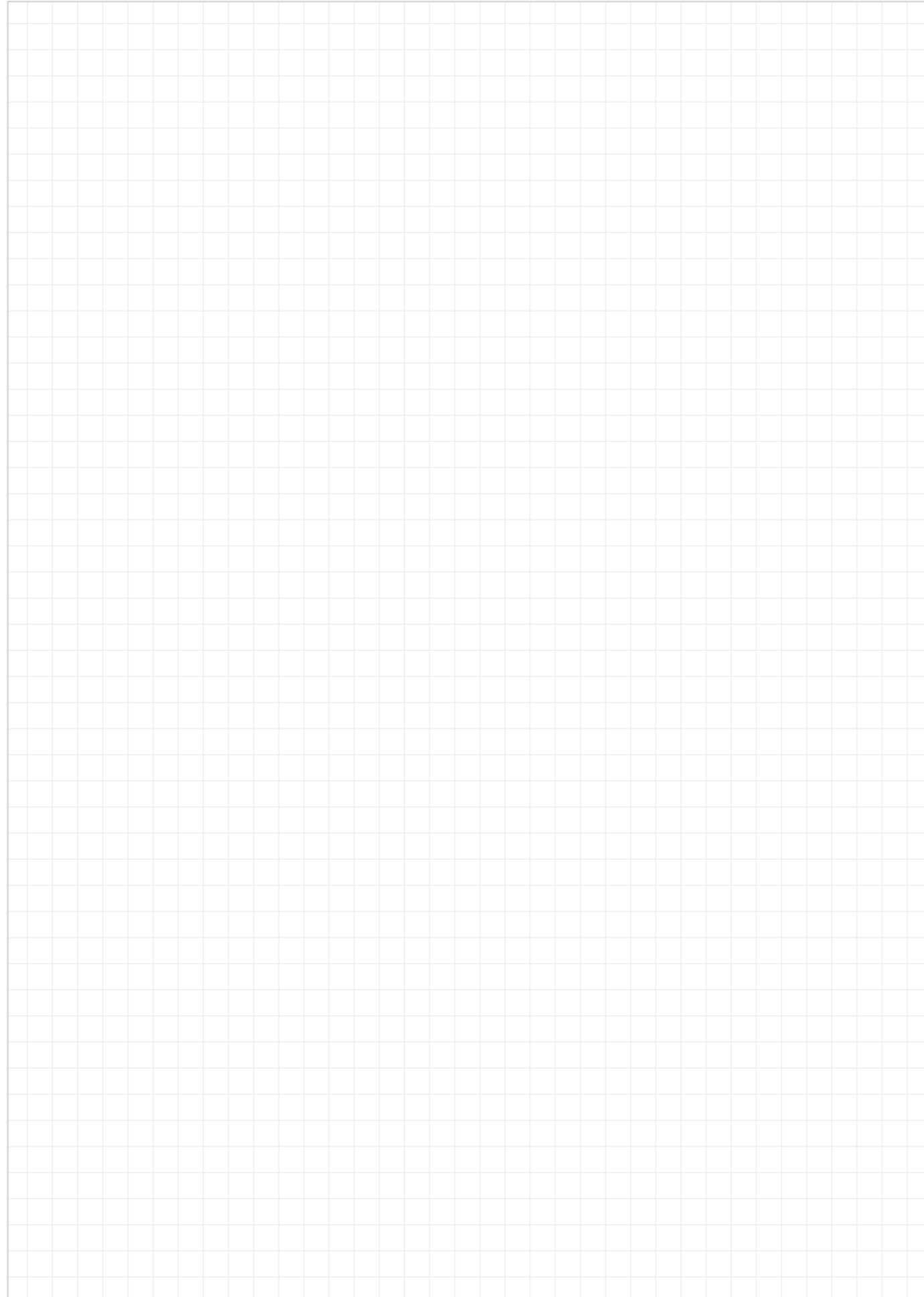
Options:

Thread direction

- RL : Right and left-hand thread
- RH : Right-hand thread on both sides
- LH : Left-hand thread on both sides

Tube material

- ER : Stainless steel (AISI 303)
- SR : Galvanised steel



igubal[®] - spherical thrust bearing

Easy installation

Compensation of misalignment errors

Compensation of edge loads

Very good friction and wear properties



igubal® self-aligning spherical thrust bearings are very easy to fit and help to compensate for alignment errors and prevent edge pressure.



When do I take them?

- If you want to save weight
- If corrosion resistance is requested
- When a bearing with low coefficient of friction is required



When do I not take them?

- At very high loads
- When temperatures are higher than +80°C
- When high speeds have to be achieved



Available from stock

Detailed information about delivery time online.



Price breaks online

No minimum order value. No minimum order quantity



Max. +80°C
min. -30°C



1 type
Ø 5 - 20mm



Online product finder

► www.igus.eu/igubal-finder

Mechanical properties

igubal® self-aligning spherical thrust bearings are very easy to fit and help to compensate for alignment errors and prevent edge pressure. The housing pad is made of the impact-resistant, thermoplastic composite igumid® G. The spherical washer is made of iglidur® W300 material. This combination provides exceptionally good friction and wear properties.

Loads

The load capacity of igubal® spherical thrust bearings is very high in standard ambient temperatures. For high continuous loads and high temperatures, the load capacity of the spherical thrust bearings should be tested in an experiment that simulates the application.

Coefficient of sliding friction and speed

Taking into account the radial load, maximum surface speeds up to 0.5m/s rotating are possible.

Assembly

The housing pad is installed so that it is countersunk and secured. The spherical washer is loosely fitted in the socket and is held in place by the shaft that is placed into the bearing.

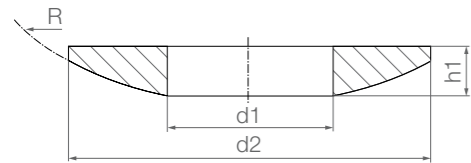
Product range

igubal® spherical thrust bearings are available in standard form to suit diameters from 5 to 20mm. Please contact us if you require other dimensions.

Spherical thrust bearings: SAM



Spherical washer



Housing pad



Order key

Type Size

SA M-05



i Material:
Spherical washer: iglidur® W300 ► Page 175
Housing pad: igumid® G ► Page 1914

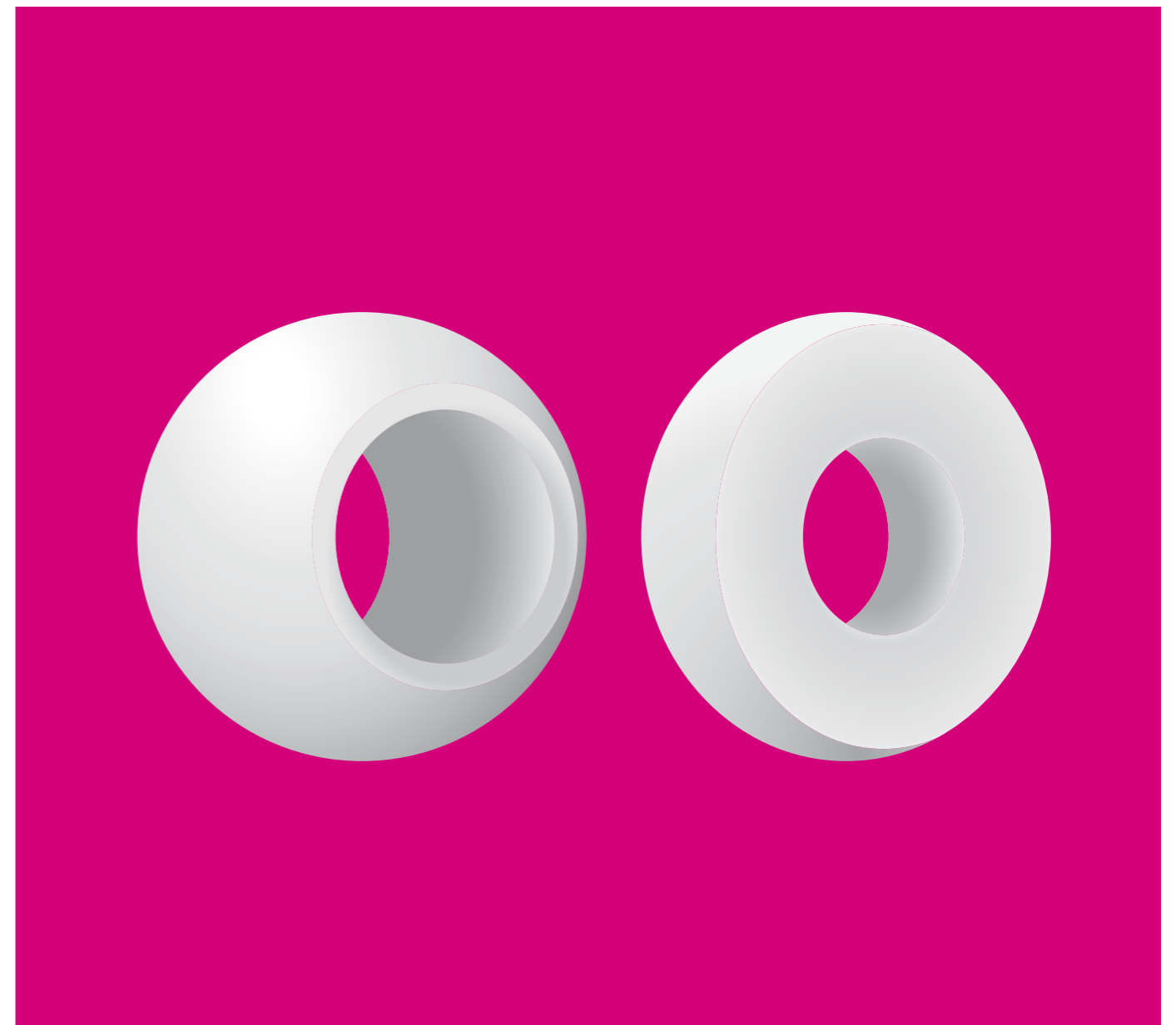
Technical data

Part No.	Max. static axial compressive strength		Weight [g]
	Short-term	Long-term	
	[N]	[N]	
SAM-05	4,000	2,000	0.9
SAM-06	5,000	2,500	1.1
SAM-08	8,000	4,000	2.2
SAM-10	10,000	5,000	3.4
SAM-12	12,000	6,000	5.9
SAM-16	17,000	8,500	8.5
SAM-20	22,000	11,000	12.8

Dimensions [mm]

Part No.	d1 Spherical washer DIN 2768 medium	d3 Housing pad DIN 2768 medium	d2	h1 Spherical washer	h2 Housing pad	H ³⁴⁾ Overall height	R Radius	Compensation angle
SAM-05	5.2	7.0	15	3.0	3.5	4.7	15	3°
SAM-06	6.2	7.5	16	3.0	4.0	5.3	16	3°
SAM-08	8.2	10.0	20	4.0	5.0	6.8	20	2°
SAM-10	10.2	12.0	24	4.5	5.5	7.5	24	2°
SAM-12	12.5	14.5	30	5.0	6.2	8.0	32	2°
SAM-16	16.2	19.0	36	5.5	6.5	8.7	40	2°
SAM-20	20.2	23.0	44	6.0	7.0	8.6	45	2°

³⁴⁾ In assembled condition



igubal® spherical balls

Maintenance-free dry operation

Corrosion-resistant

High compressive strength

High elasticity

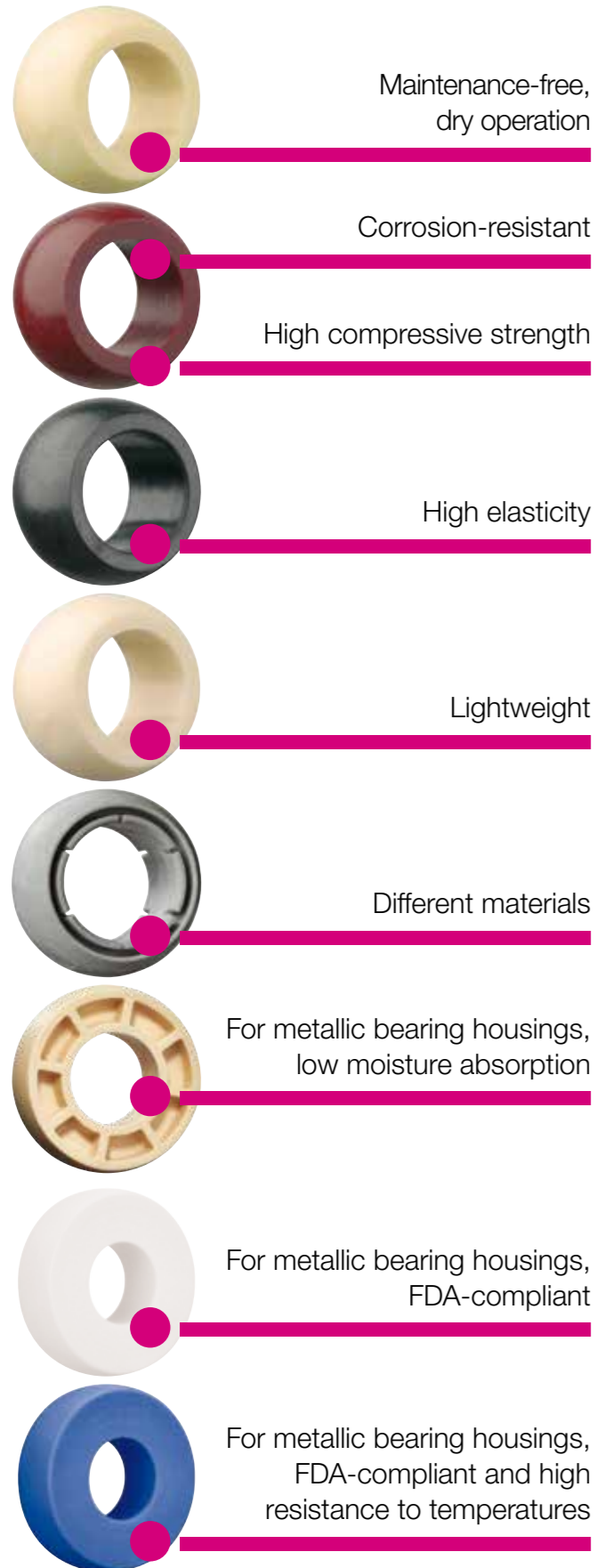
Lightweight

Different materials

Spherical ball for metallic bearing housings



Every single iglidur® material has its own special properties, which determines the suitability for your special applications and requirements. We have available spherical balls made from iglidur® materials W300 (standard), J, J4, R, A181, FC180, UW and X. The spherical balls for metallic bearing housings are available in three materials for housing numbers 203 to 210.



When do I take them?

- If you need maintenance-free material
- When dimensional series E and K components should be fitted
- If different iglidur® materials should be tested
- If high compressive strength is required
- If high flexibility is required
- Replacing ball bearings in metallic housings



When do I not take them?

- When temperatures are higher than +250°C
- When dimensions above 50mm are required
- If rotation speeds of more than 0.5 m/s are to be achieved

Tolerances

Maintenance-free igubal® spherical balls are designed with an inner diameter tolerance according to E10. The shaft tolerance should be between h6 and h9. All values without tolerance are dealt with according to DIN ISO 2768-m.



Available from stock

Detailed information about delivery time online.



Price breaks online

No minimum order value. No minimum order quantity



Depending on material



8 types
Ø 2 - 50mm



Imperial dimensions available
► From page 1882



Online product finder
► www.igus.eu/igubal-finder



Truck gearshift

Cabovel, a South American company, develops gear shifts for lorries. The systems are subjected to millions of cycles at temperatures of -10°C to +80°C. That is why engineers use igubal® bearings manufactured from a high-performance polymer. The bearings are resistant to impacts, mechanical influences and abrasion, and absorb little moisture.



Glider

Avionic Sp., a Polish company, develops gliders. All components must be able to handle changing weather conditions - fluctuating temperatures and moisture. That is why the engineers used around 20 different sizes and types of igus® polymer plain bearings made of high-performance polymers for the rudder, elevator and flaps. igubal® spherical bearings are used to guide the rods.



Cutting machine

The Spanish company Astech Food Machinery builds machines for slicing frozen meat and fish. At the exit of the slicing machine, ejector arms separate sections on a conveyor belt according to preset characteristics. Between the piston rods and the pneumatic pistons, the engineers use polymer spherical bearings from igus®, and two hole flange bearings made of high-performance polymer in the elements where there is movement between the pneumatic piston and the machine frame.

Standard

iglidur® W300
▶ Page 175



WKM/WEM

Dimensional K and E series
▶ Page 997

Low-cost

iglidur® R
▶ Page 251



RKM/REM

Dimensional K and E series
▶ Page 998

High temperature

iglidur® X
▶ Page 291



XKM/XEM

Dimensional K and E series
▶ Page 999

Low moisture absorption

iglidur® J ▶ Page 163



JKM/JEM

Dimensional K and E series
▶ Page 1000-1002

Cost-effective

iglidur® J4
▶ Page 1910



J4KM/J4EM

Dimensional K and E series
▶ Page 1003

For underwater applications

iglidur® UW
▶ Page 569



UWEM

E series
▶ Page 1005

High tightening torque

Stainless steel (AISI 303)
▶ Page 1004



EK

Dimensional K and E series
▶ Page 1004

Clearance-free, pre-loaded

iglidur® J4VEM
▶ Page 1006



J4VEM

E series
▶ Page 1006

Suitable for food contact

iglidur® A181
▶ Page 401



A181□M

Dimensional K and E series
▶ Page 1007

iglidur® FC 180
▶ Page 1910



FC180□M

Dimensional K and E series
▶ Page 1008

For metallic bearing housings - igubal® spherical insert bearings

iglidur® A180
▶ Page 401



FDA-compliant

UC series
▶ Page 1009

iglidur® A350
▶ Page 409



FDA-compliant

UC series
▶ Page 1009

iglidur® J
▶ Page 163



Standard

UC series
▶ Page 1009

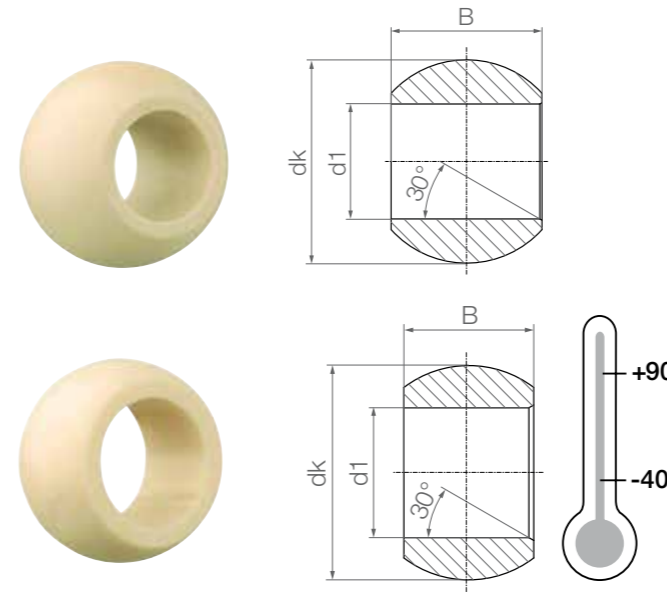
iglidur® J4
▶ Page 1910



Low-cost

UC series
▶ Page 1009

Spherical ball, standard: WKM and WEM



Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
WKM-02-04	2	5.10	4	0.1
WKM-03-06	3	8.10	6	0.3
WKM-05-08	5	11.30	8	0.6
WKM-06-09	6	12.80	9	0.9
WKM-08-12	8	16.00	12	1.6
WKM-10-14	10	19.00	14	2.7
WKM-12-16	12	22.10	16	4.0
WKM-14-19	14	25.40	19	6.0
WKM-16-21	16	28.40	21	8.2
WKM-18-23	18	31.50	23	10.8
WKM-20-25	20	35.10	25	14.5
WKM-22-28	22	38.30	28	18.7
WKM-25-31	25	42.90	31	26.0
WKM-30-37	30	51.20	37	44.7

Order key

Type Size Options

W□M-02-04

Dimensional series
K : Dimensional K series
E : Dimensional E series



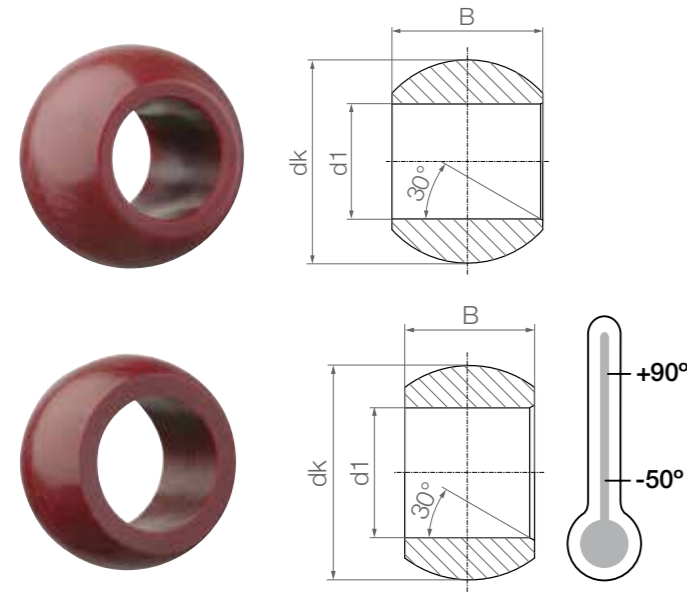
Imperial dimensions available

▶ Page 1883

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
WEM-04-05	4	8.30	5	0.2
WEM-05-06	5	10.30	6	0.3
WEM-06-06	6	10.30	6	0.4
WEM-08-08	8	13.30	8	0.7
WEM-10-09	10	16.10	9	1.2
WEM-12-10	12	18.10	10	1.5
WEM-15-12	15	22.00	12	2.4
WEM-16-13	16	24.10	13	3.3
WEM-17-14	17	25.10	14	3.7
WEM-20-16	20	29.10	16	5.3
WEM-25-20	25	35.60	20	9.5
WEM-30-22	30	40.90	22	12.1

Low-cost spherical balls: RKM and REM



Order key

Type	Size	Options
------	------	---------

R □ M-08-12

iglidur® R spherical balls
Dimensional series
Metric
Inner Ø d1 [mm]
Width [mm]
Dimensional series
K : Dimensional K series
E : Dimensional E series

Imperial dimensions available
▶ Page 1882

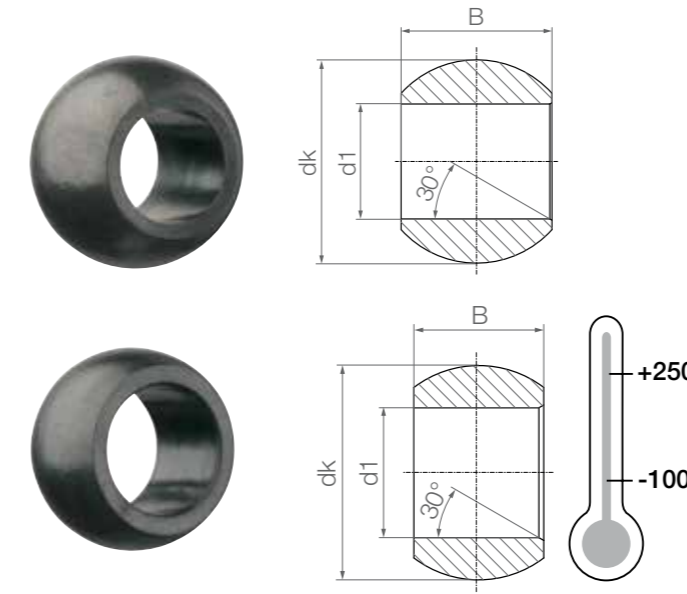
Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
RKM-06-09	6	12.80	9	1.01
RKM-08-12	8	15.90	12	1.80
RKM-10-14	10	19.00	14	2.90
RKM-12-16	12	22.10	16	4.48

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
REM-04-05	4	8.30	5	0.22
REM-05-06	5	10.20	6	0.40
REM-06-06	6	10.20	6	0.40
REM-08-08	8	13.20	8	0.80
REM-10-09	10	16.10	9	1.30
REM-12-10	12	18.10	10	1.60
REM-16-13	16	24.10	14	3.69
REM-20-16	20	29.10	16	5.94

High temperatures spherical balls: XKM and XEM



Order key

Type	Size	Options
------	------	---------

X □ M-10-14

iglidur® X spherical balls
Dimensional series
Metric
Inner Ø d1 [mm]
Width [mm]
Dimensional series
K : Dimensional K series
E : Dimensional E series

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
XKM-10-14	10	19.10	14	2.90
XKM-16-21	16	28.40	21	9.40

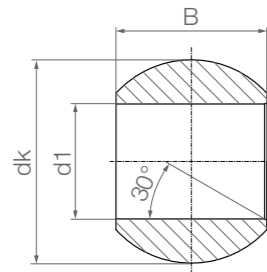
Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
XEM-05-06	5	10.30	6	0.40
XEM-06-06	6	10.20	6	0.40
XEM-08-08	8	13.30	8	0.80
XEM-10-09	10	16.10	9	1.30
XEM-12-10	12	18.10	10	1.60
XEM-16-13	16	24.10	13	3.83
XEM-20-16	20	29.10	16	6.15

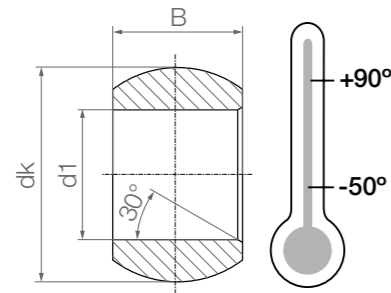
Low moisture absorption spherical balls:
JKM and JEM



JKM



JEM



Order key

Type	Size	Options
------	------	---------

J □ M-03-06

iglidur® J spherical balls
Dimensional series
Metric
Inner Ø d1 [mm]
Width [mm]
Dimensional series
K : Dimensional K series
E : Dimensional E series

Imperial dimensions available
▶ Page 1883

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
JKM-03-06	3	8.10	6	0.3
JKM-05-08	5	11.30	8	0.7
JKM-06-09	6	12.80	9	1.0
JKM-08-12	8	15.90	12	1.9
JKM-10-14	10	19.00	14	3.1
JKM-12-16	12	22.10	16	4.7
JKM-16-21	16	28.40	21	9.4
JKM-18-23	18	31.50	23	13.2
JKM-20-25	20	35.10	25	17.6
JKM-25-31	25	42.80	31	31.6
JKM-30-37	30	51.20	37	53.0

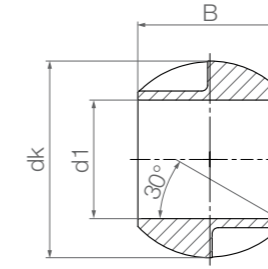
Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
JEM-04-05	4	8.30	5	0.3
JEM-05-06	5	10.20	6	0.4
JEM-06-06	6	10.20	6	0.4
JEM-08-08	8	13.30	8	0.8
JEM-10-09	10	16.10	9	1.3
JEM-12-10	12	18.10	10	1.7
JEM-15-12	15	22.00	12	2.9
JEM-16-13	16	24.10	13	3.9
JEM-17-14	17	25.20	14	4.1
JEM-20-16	20	29.10	16	6.4
JEM-25-20	25	35.60	20	11.5
JEM-30-22	30	40.90	22	14.5
JEM-40-28	40	53.00	28	31.0

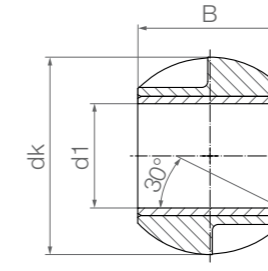
Low moisture absorption spherical balls:
JKM



JKM spherical ball with plain bearing



JKM spherical ball without plain bearing



Order key

Type	Size
------	------

J K M-35-49

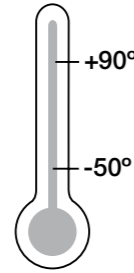
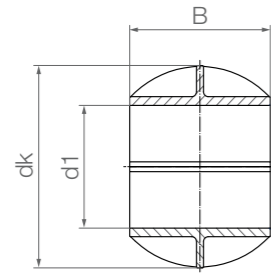
iglidur® J spherical balls
K series
Metric
Inner Ø d1 [mm]
Width [mm]

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
JKM-35-49 ³⁵⁾	35	66.30	49	75.5
JKM-40-49	40	66.30	49	54.5
JKM-45-60 ³⁵⁾	45	82.40	60	125.1
JKM-50-60	50	82.40	60	92.1

³⁵⁾ Diameter reduced by means of a plain bearing

Low moisture absorption split spherical balls: JKM-GT



Order key

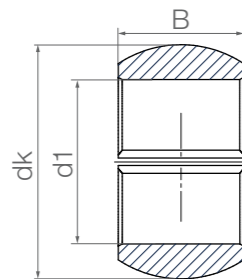
Type	Version	Size
iglidur® J spherical balls	K series	Metric
Split ball		Inner Ø d1 [mm]

J K M- GT -40

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
JKM-GT-40	40	66.30	49	54.5
JKM-GT-50	50	82.40	60	92.1

Low moisture absorption split spherical balls: JEM-GT



Order key

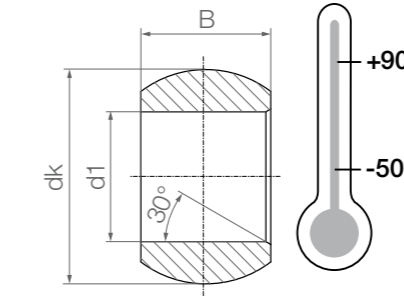
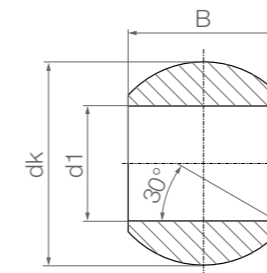
Type	Version	Size
iglidur® J spherical balls	E series	Metric
Split ball		Inner Ø d1 [mm]

J E M- GT -16

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
JEM-GT-16	16	23.7	13	3.7
JEM-GT-20	20	28.9	16	6.1
JEM-GT-25	25	35.6	20	10.9
JEM-GT-30	30	40.8	22	14.6

Spherical balls, cost-effective: J4KM and J4EM



Order key

Type	Size	Options
iglidur® J4 spherical balls	Metric	Dimensional series
Dimensional series	Inner Ø d1 [mm]	Width [mm]

J4 □ M-10-14

Dimensional series
K: Dimensional K series
E: Dimensional E series

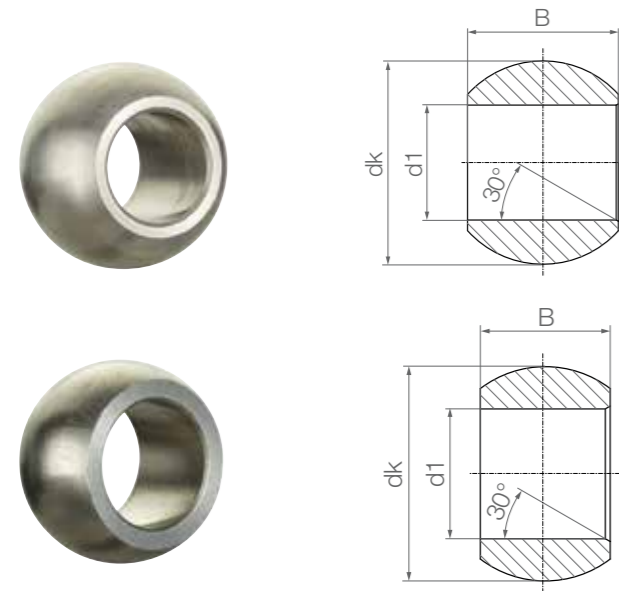
Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
J4KM-06-09	6	12.80	9	1.0
J4KM-08-12	8	15.90	12	1.9
J4KM-10-14	10	19.10	14	3.1
J4KM-12-16	12	22.10	16	4.7
J4KM-14-19	14	25.40	19	7.0
J4KM-16-21	16	28.40	21	9.4
J4KM-25-31	25	42.80	31	31.6

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
J4EM-04-05	4	8.25	5	0.3
J4EM-05-06	5	10.20	6	0.4
J4EM-06-06	6	10.20	6	0.4
J4EM-08-08	8	13.30	8	0.8
J4EM-10-09	10	16.00	9	1.3
J4EM-12-10	12	18.00	10	1.7
J4EM-15-12	15	22.00	12	2.9
J4EM-16-13	16	24.00	13	3.9
J4EM-17-14	17	25.10	14	4.1
J4EM-20-16	20	28.90	16	6.4
J4EM-25-20	25	35.50	20	11.5
J4EM-30-22	30	40.90	22	14.5

Spherical balls, stainless steel: EK



Order key

Type	Size	Version	Options
------	------	---------	---------

EK - 03 - K

Spherical ball made of stainless steel

Inner Ø d1 [mm]

K series

Dimensional series
K : Dimensional K series
E : Dimensional E series

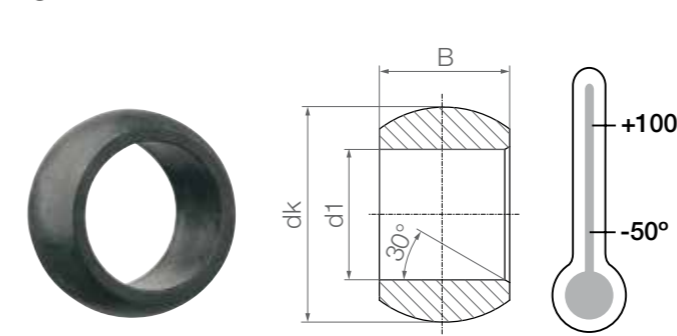
Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
EK-03-K	3	8.10	6	1.7
EK-05-K	5	11.30	8	4.0
EK-06-K	6	12.80	9	5.5
EK-08-K	8	16.00	12	10.4
EK-10-K	10	19.00	14	16.8
EK-12-K	12	22.10	16	25.7
EK-16-K	16	28.40	21	52.3
EK-20-K	20	35.00	25	95.7
EK-25-K	25	42.90	31	171.1
EK-30-K	30	51.20	37	286.6

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
EK-04	4	8.30	5	1.4
EK-05	5	10.30	6	2.5
EK-06	6	10.30	6	2.1
EK-08	8	13.30	8	4.4
EK-10	10	16.10	9	7.4
EK-12	12	18.10	10	9.3
EK-15	15	22.00	12	15.7
EK-16	16	24.10	13	21.2
EK-20	20	29.10	16	34.6
EK-25	25	35.46	20	61.6
EK-30	30	40.70	22	80.7

Spherical balls for underwater applications:
UWEM



Order key

Type	Size
------	------

UW E M-16-13

iglidur® UW spherical balls

E series

Metric

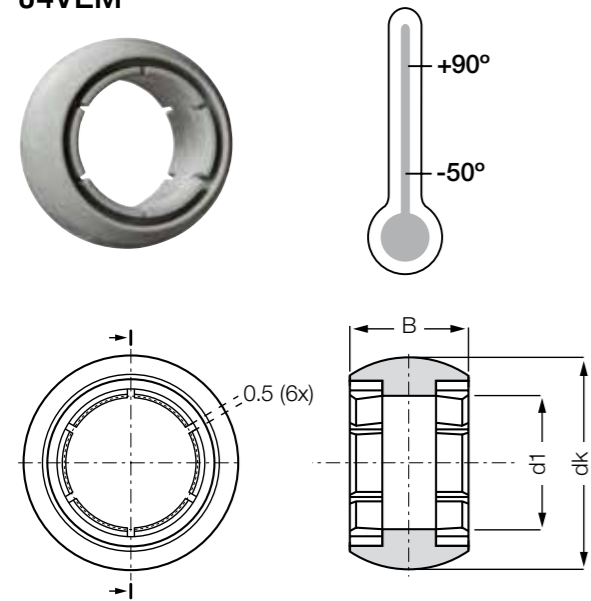
Inner Ø d1 [mm]

Width [mm]

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
UWEM-10-09	10	16.10	9	1.4
UWEM-16-13	16	23.80	13	4.0
UWEM-20-16	20	28.80	16	6.5
UWEM-25-20	25	35.30	20	11.6
UWEM-30-22	30	40.50	22	15.2

Spherical balls, clearance-free, pre-loaded:
J4VEM



Order key

Type	Size
J4 V E M-08-08	
iglidur® J4 spherical balls	
pre-tensioned	
E series	
Metric	
Inner Ø d1 [mm]	
Width [mm]	

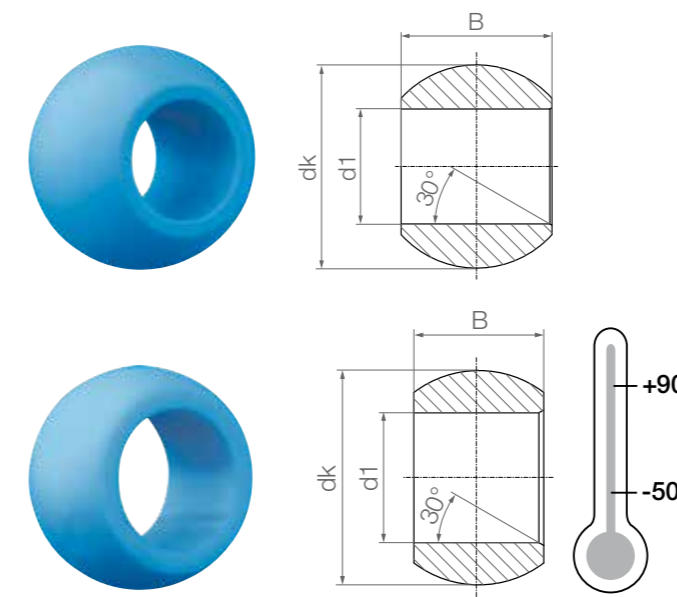
Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
J4VEM-08-08	8	13.20	8	0.7
J4VEM-10-09	10	16.10	9	1.2
J4VEM-12-10	12	18.10	10	1.5
J4VEM-16-13	16	24.10	13	3.7
J4VEM-20-16	20	29.10	16	6.2

5 sizes available: Ø 8, 10, 12, 16, 20mm combinable with:

igubal® rod ends	EA(L)RM	► Page 890	igubal® fixed flange bearings	EFSM	► Page 948
igubal® rod ends	EB(L)RM	► Page 888	igubal® clip bearings	EGFM-T	► Page 976
igubal® pillow block bearings	ESTM	► Page 931	igubal® spherical bearing	EGLM	► Page 972
igubal® fixed flange bearings	EFOM	► Page 946	igubal® double joints	EGZM	► Page 978

Spherical balls, for contact with food:
A181KM and A181EM



Order key

Type	Size	Options
A181 □ M-05-08		
Spherical ball made of iglidur® A181		
Dimensional series		
Metric		
Inner Ø d1 [mm]		
Width [mm]		

Dimensional series
K : Dimensional K series
E : Dimensional E series

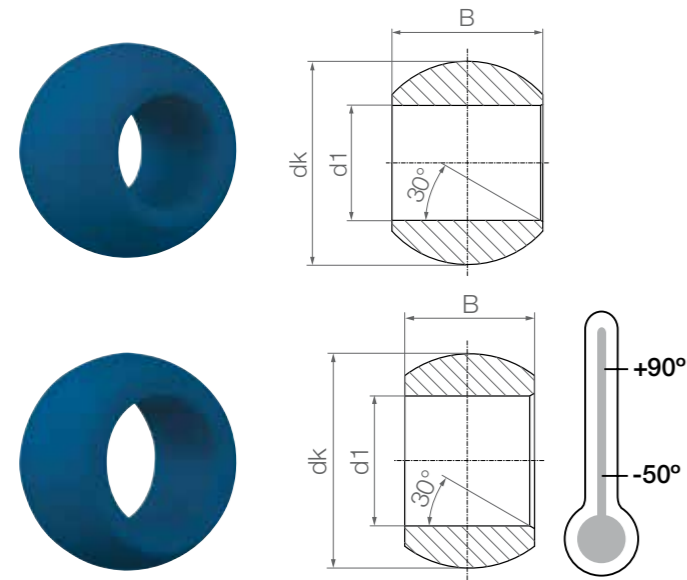
Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
A181KM-05-08 New	5	11.3	8	0.75
A181KM-06-09 New	6	12.8	9	0.97
A181KM-12-16 New	12	22.1	16	4.45

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
A181EM-04-05 New	4	8.3	5	0.21
A181EM-05-06 New	5	10.3	6	0.40
A181EM-06-06 New	6	10.3	6	0.35
A181EM-08-08 New	8	13.3	8	0.76
A181EM-10-09 New	10	16.1	9	1.28
A181EM-12-10 New	12	18.1	10	1.16
A181EM-20-16 New	20	29.1	16	6.05

Spherical balls, for contact with food:
FC180KM and FC180EM



Order key

Type	Size	Options
FC180 □ M-06-09		
Spherical ball made of iglidur® FC180	Dimensional series	Dimensional series
	Metric	
	Inner Ø d1 [mm]	
	Width [mm]	

Dimensional series
K : Dimensional K series
E : Dimensional E series

Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
FC180KM-06-09 New	6	12.8	9	1.26

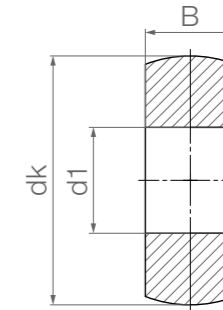
Dimensions [mm]

Part No.	d1 E10	dK	B	Weight [g]
FC180EM-04-05 New	4	8.3	5	0.55
FC180EM-05-06 New	5	10.3	6	0.55
FC180EM-06-06 New	6	10.3	6	0.56
FC180EM-08-08 New	8	13.3	8	0.97
FC180EM-10-09 New	10	16.1	9	1.61
FC180EM-12-10 New	12	18.1	10	2.09
FC180EM-20-16 New	20	29.1	16	7.83

Slim spherical insert bearings made of iglidur® materials for various metallic bearing housings



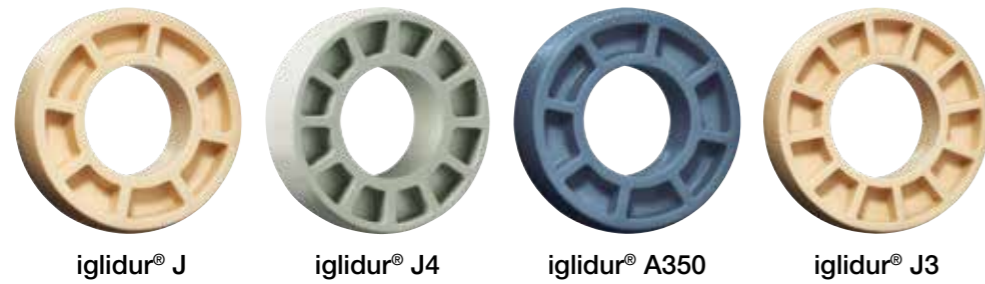
- 4 different spherical ball materials available: iglidur® J, A180, A350 and J3
- Eight dimensions for housing numbers range includes UC203 to UC210
- Maintenance-free, dry operation
- Durable
- Corrosion-resistant
- Resistant to dirt



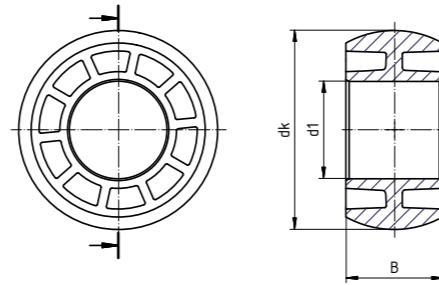
Dimensions [mm]

Part No.	Housing No.	d1 E10	dk	B	Max. static compressive force	
					radial [N]	axial [N]
made of iglidur® J, low coefficient of friction (material information ► From page 163)						
JEM-17-17	UC203	17	47	17	10,000	7,500
JEM-20-17	UC204	20	47	17	11,500	7,500
JEM-25-17	UC205	25	52	17	14,500	7,500
JEM-30-19	UC206	30	62	19	19,500	9,500
JEM-35-20	UC207	35	72	20	24,000	10,500
JEM-40-21	UC208	40	80	21	29,000	12,000
JEM-45-22	UC209	45	85	22	34,000	13,000
JEM-50-24	UC210	50	90	24	41,500	15,500
made of iglidur® A180, FDA-compliant all-rounder (material information ► From page 425)						
A180EM-17-17	UC203	17	47	17	7,500	6,000
A180EM-20-17	UC204	20	47	17	9,000	6,000
A180EM-25-17	UC205	25	52	17	11,500	6,000
A180EM-30-19	UC206	30	62	19	15,500	7,500
A180EM-35-20	UC207	35	72	20	19,000	8,500
A180EM-40-21	UC208	40	80	21	23,000	9,000
A180EM-45-22	UC209	45	85	22	27,000	10,000
A180EM-50-24	UC210	50	90	24	33,000	12,000
made of iglidur® A350, for high temperatures and chemicals (material information ► From page 409)						
A350EM-17-17	UC203	17	47	17	17,000	13,000
A350EM-20-17	UC204	20	47	17	20,000	13,000
A350EM-25-17	UC205	25	52	17	25,000	13,000
A350EM-30-19	UC206	30	62	19	34,000	17,000
A350EM-35-20	UC207	35	72	20	41,500	18,500
A350EM-40-21	UC208	40	80	21	50,000	20,000
made of iglidur® J3, for longer service life (material information ► From page 187)						
J3EM-30-21-80 New	UC208	30	80	21	26,500	12,000
J3EM-40-21 New	UC208	40	80	21	29,000	12,000

Cost-effective spherical insert bearings for various metallic bearing housings



- Cost-effective due to injection moulding method
- Eight dimensions for housing numbers range includes UC203 to UC210
- Durable
- Low moisture absorption



Imperial dimensions available ▶ Page 1883

Dimensions [mm]

Part No.	Housing No.	d1 E10	dk	B	Max. static compressive force				
					radial		axial		
					Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	
made of iglidur® J, low coefficient of friction (material information ▶ From page 163)									
JEM-17-12-SP	New P203	17	40	12	–	–	–	–	–
JEM-17-17-SP	UC203	17	47	17	7,500	3,750	4,000	2,000	
JEM-20-14-SP	P204	20	47	14	8,000	4,000	4,000	2,000	
JEM-20-17-SP	UC204	20	47	17	8,000	4,000	4,000	2,000	
JEM-25-15-SP	P205	25	52	15	9,000	4,500	4,000	2,000	
JEM-25-17-SP	UC205	25	52	17	9,000	4,500	3,500	1,750	
JEM-30-16-SP	P206	30	62	16	13,500	6,750	5,000	2,500	
JEM-30-19-SP	UC206	30	62	19	13,500	6,750	5,000	2,500	
JEM-30-21-80-SP	New UC208	30	80	21	16,500	8,250	6,000	3,000	
JEM-35-17-SP	New P207	35	72	17	14,500	7,250	6,500	3,250	
JEM-35-20-SP	UC207	35	72	20	14,500	7,250	6,500	3,250	
JEM-35-21-80	New UC208	35	80	21	–	–	–	–	
JEM-35-21-80-SP	New UC208	35	80	21	18,000	9,000	6,000	3,000	
JEM-40-18-SP	New P208	40	80	18	17,000	8,500	6,000	3,000	
JEM-40-21-SP	UC208	40	80	21	21,000	10,500	6,000	3,000	
JEM-45-22-SP	UC209	45	85	22	23,000	11,500	5,500	2,750	
JEM-50-24-SP	UC210	50	90	24	25,000	12,500	5,500	2,750	
made of iglidur® J4, low-cost material (material information ▶ From page 1910)									
J4EM-17-12-SP	New P203	17	40	12	–	–	–	–	
J4EM-20-14-SP	P204	20	47	14	8,000	4,000	4,000	2,000	
J4EM-25-15-SP	P205	25	52	15	9,000	4,500	4,000	2,000	
J4EM-30-16-SP	P206	30	62	16	13,500	6,750	5,000	2,500	
made of iglidur® A350, for high temperatures and chemicals (material information ▶ From page 409)									
A350EM-20-17-SP	UC204	20	47	17	9,000	4,500	4,500	2,250	
made of iglidur® J3, for longer service life (material information ▶ From page 187)									
J3EM-30-21-80-SP	New UC208	30	80	21	16,500	8,750	6,000	3,000	
J3EM-40-21-SP	New UC208	40	80	21	21,000	10,500	6,000	3,000	



igubal® accessories

Ball studs made of plastic, galvanised steel and stainless steel

Adapter screw made from plastic

Fixing collars for spherical insert bearings



Fixing collar, galvanised steel with threaded pin



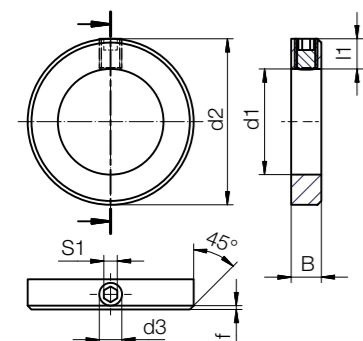
Fixing collar made of polymer



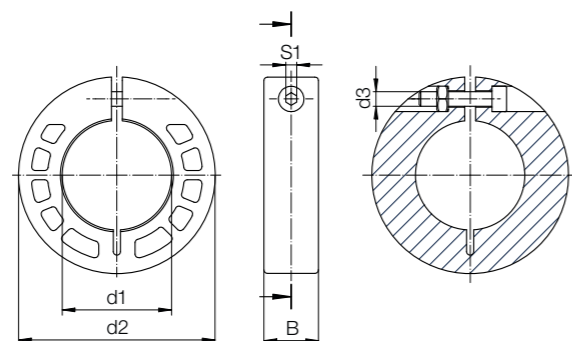
Order key

Type	Size	Version
SR M-S	20	V-ES
Fixing collar	Metric	without thread
	Shaft diameter [mm]	Pre-assembled (screw)

Material: Galvanised and stainless steel (AISI 303)



Fixing collar, steel



Polymer fixing collar



Image exemplary

Dimensions [mm]

Part No.	d1	d2	B	f	d3	l1	S1	Weight [g]
SRM-S17-V	17	28	12	1.2	M6	6	SW3	38.0
SRM-S20-V	20	32	14	1.4	M6	6	SW3	53.0
SRM-S25-V	25	40	16	1.6	M8	8	SW4	95.6
SRM-S30-V	30	45	16	1.6	M8	8	SW4	111.0
SRM-S35-V	35	56	16	1.6	M8	10	SW4	187.0
SRM-S40-V	40	63	18	1.8	M10	10	SW5	261.0
SRM-S45-V	45	70	18	1.8	M10	12	SW5	317.0
SRM-S50-V	50	80	18	1.8	M10	14	SW5	429.0

Part No.	d1	d2	B	d3	S1	Weight [g]
SRM-S20-V-KS New	20	40	14	M4	SW3	19.9
SRM-S25-V-KS New	25	45	14	M4	SW3	20.4
SRM-S30-V-KS New	30	54	14	M4	SW3	29.8
SRM-S40-V-KS New	40	60	14	M4	SW3	31.2
SRM-S50-V-KS New	50	78	18	M6	SW5	65.4

Available from stock
Upon request

Ball studs with female thread



- Easy installation
- DIN connection size
- Corrosion-resistant

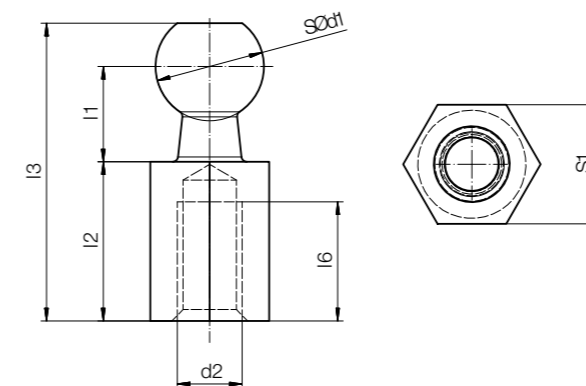
Order key

Type	Size	Version
GZ R M-	05	-IG-ES
Threaded pin	Thread direction	Metric
	Thread size M ... [mm]	Female thread

Options: Thread
R : Right-hand thread
L : Left-hand thread (upon request)

Add-on: Blank : Galvanised steel
ES : Stainless steel^{2B)}

Material: Galvanised and stainless steel (AISI 303)



Dimensions [mm]

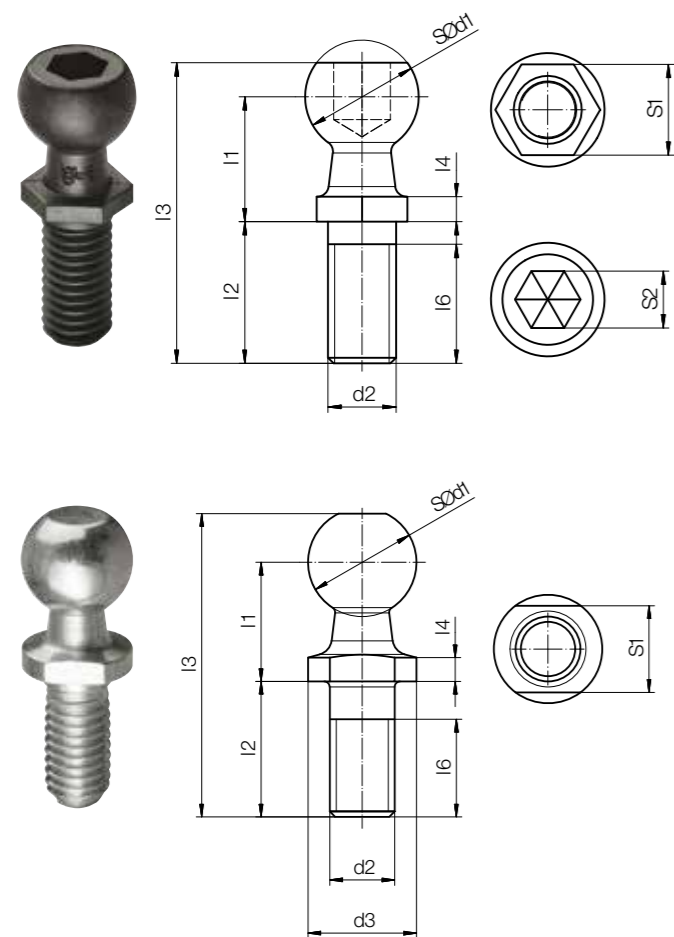
Part No.	d1	d2	l1	l2	l6	l3	S1	Weight [g]
	-0.05							
GZRM-05-IG	8	M5	7.0	12.2	9	22.7	SW10	10
GZRM-06-IG	10	M6	8.8	14.7	11	27.5	SW11	15
GZRM-08-IG	13	M8	10.8	18.7	12	35.2	SW14	30
GZRM-10-IG	16	M10	13.3	22.7	16	43.0	SW17	55

^{2B)} Stainless steel ball stud upon request

Can be combined with:



Ball studs with male thread



Order key

Type	Size
------	------

GZ R M- 05 - MS

Threaded pin	Thread direction	Metric	Thread size M...
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Options:
 Thread
 R : Right-hand thread
 L : Left-hand thread (upon request)

Add-on:
 Blank : Plastic
 MS : Galvanised steel
 ES : Stainless steel (upon request)

i Material:
 Polymer: igumid® G ▶ Page 1914
 Galvanised and stainless steel (AISI 303)

- Easy installation
- DIN connection size
- Corrosion-resistant

Dimensions [mm] - ball studs made from plastic

Part No.	d1 ±0.1	d2	l1	l2	l3	l4 ±0.2	l6	S1	S2	Weight [g]
GZRM-05	8	M5	9	10.2	21.7	2.0	8.2	SW7	4	1
GZRM-06	10	M6	11	12.5	26.5	2.2	10.5	SW8	5	1
GZRM-08	13	M8	13	16.5	33.5	2.4	13.5	SW11	6	3
GZRM-10	16	M10	16	20.0	40.5	2.7	16.0	SW13	8	6

Dimensions [mm] - ball studs made of galvanised and stainless steel

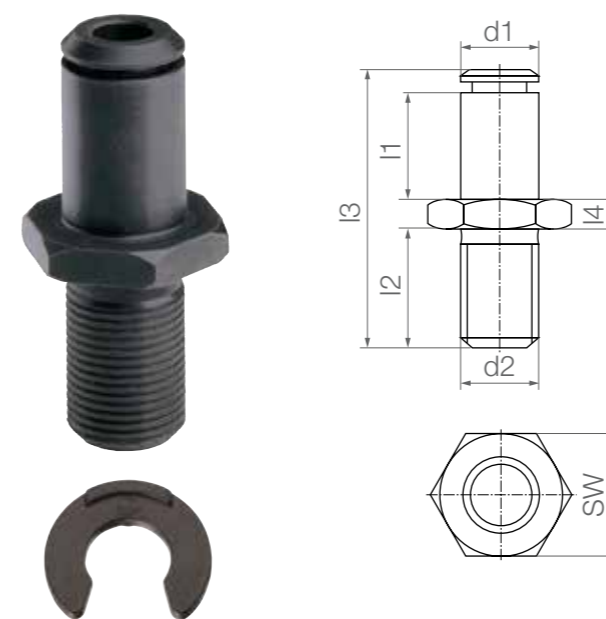
Part No.	d1 h9	d2	d3 h14	l1 ±0.3	l2 ±0.3	l3 ±0.3	l4 ±0.4	l6 min.	S1 h14	Weight [g]
GZRM-05-MS ¹¹⁵⁾	8	M5	8	9	10.2	22.7	2.0	6.2	SW7	4.5
GZRM-06-MS ¹¹⁵⁾	10	M6	10	11	12.5	28.0	2.2	8.5	SW8	8.5
GZRM-08-MS ¹¹⁵⁾	13	M8	13	13	16.5	35.0	2.4	11.2	SW11	17.7
GZRM-10-MS ¹¹⁵⁾	16	M10	16	16	20.0	43.0	2.7	12.7	SW13	35.1

¹¹⁵⁾ For the stainless steel version please replace the suffix MS by ES

Can be combined with:



Adapter screw



Order key

Type	Size	Options
------	------	---------

P K □ M- 05

Adapter screw	K series	Thread direction	Metric	Thread size M...
---------------	----------	------------------	--------	------------------

Thread
 L : Left-hand thread²¹⁾
 R : Right-hand thread

i Material:
 POM ▶ Page 1916

- Lightweight
- Absolute corrosion resistance
- Can be combined with K series rod end
- Vibration-dampening
- Easy installation
- Left-hand thread upon request
- Circlip (GSR) included

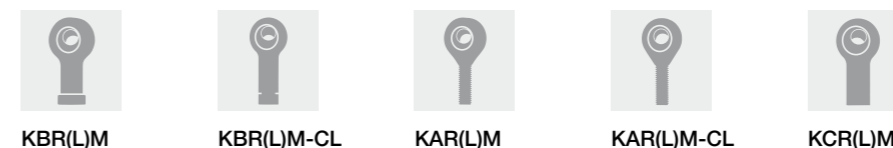
Solid plastic adapter screws with corresponding circlips are used as accessories for dimensional K series rod ends. In contrast to other "black" components of stock igubal® parts, the igubal® adapter screws consist of the material POM. This component effectively transforms a standard K series rod end into an angled ball and socket joint.

Technical data and dimensions [mm]

Part No.	Max. static tensile strain		Max. static radial load		d1 h11	d2 Thread	l1 Length adjusting bolt	l2 Thread length	l3 Total length	l4 Nut width	SW Width across flats	Weight [g]
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]								
PK□M-05	100	50	200	100	5	M5	8.5	11.3	25.0	2.7	SW8	0.7
PK□M-06	150	75	250	125	6	M6	9.5	12.8	28.0	3.2	SW10	1.2
PK□M-08	250	125	400	200	8	M8	12.5	12.5	32.0	4.0	SW13	2.6
PK□M-10	500	250	600	300	10	M10	14.5	14.5	37.5	5.0	SW16	4.0
PK□M-12	700	350	900	450	12	M12	16.5	15.5	42.0	6.0	SW18	7.5
PK□M-14	800	400	1,100	550	14	M14	19.5	15.5	47.0	7.0	SW21	11.4
PK□M-16	900	450	1,400	700	16	M16	22.0	16.5	52.0	8.0	SW24	16.9
PK□M-18	800	400	1,700	850	18	M18 x 1.5	24.0	20.5	59.0	9.0	SW27	16.9
PK□M-20	500	250	2,200	1,100	20	M20 x 1.5	26.0	25.0	67.0	10.0	SW30	34.4

²¹⁾ Delivery time: 4-6 weeks

Can be combined with:



End caps for fixed flange bearings with spherical insert bearings



- Easy assembly and disassembly by attaching to the housings
- For 2- and 4-hole fixed flange bearings with 40mm diameter
- No damage due to flexible material

Dimensions [mm]

Part No.		D1	D2	B	Weight [g]
EC-204	New	59.0	45.6	32.0	23.0
EC-206	New	74.2	59.4	31.5	31.9
EC-208	New	93.2	73.5	39.0	43.0
EC-208-CLEAR	New	93.2	73.5	39.0	43.0

Large grid area for notes.

xiros[®]

Polymer ball bearings



...plastics

xiros® polymer ball bearings | Application examples

Other exciting applications ► www.igus.eu/xiros-applications



Labelling machine

Depending on the size of the system, between 12 and 36 conveyor rollers are used in the SleeveMatic's film storage. Two xiros® ball bearings are used per conveyor roller.



Pellet ovens

Two lubrication-free polymer ball bearings are used in the mechanical drive unit. These ensure that the pellets are fed into the combustion chamber via the roller.

Bike washing system

To mount the washing brushes, the manufacturer of the "cycleWash" has used two xiros® slewing ring ball bearings with stainless steel balls. The bearing rings consist of the wear-resistant ball bearing material xirodur® B180.



Heating cable drum

Bodenbender GmbH was looking for a suitable bearing for the cable of a heating cable drum used to cure hose liners. Key properties were smooth operation, freedom from lubrication and long service life.



Film guide rollers

There is no contamination of the films through lubricants, due to the use of maintenance-free xiros® flange bearings.



Pool cleaner

xiros® B180 polymer ball bearings from igus® allow pool cleaners a lubrication-free underwater operation. Resistant to chemicals, lightweight and maintenance-free.

xiros® radial deep groove ball bearings - standard product range



The classic:
PA cage
▶ Page 1038



Cost-effective and FDA-compliant:
B180 cage
▶ Page 1038



FDA-compliant
J3 cage
▶ Page 1038



With shield or labyrinth seal:
LCC with B180 cage
▶ Page 1044



Black (for visible parts):
xirodur® S180,
PA cage
▶ Page 1038



High resistance to chemicals:
xirodur® C160, PP cage
▶ Page 1046



For temperatures up to +120°C:
xirodur® A500, PA cage
▶ Page 1050



For heat and chemicals:
xirodur® A500,
PEEK cage
▶ Page 1050

xiros® radial deep groove ball bearings - standard product range



Lightweight and non-metallic:
xirodur® A500, PAI balls
▶ Page 1050



Antistatic:
xirodur® F180,
PA cage
▶ Page 1054



Antistatic and FDA-compliant:
xirodur® F180, PE cage
▶ Page 1054

xiros® radial deep groove ball bearings with flange



Single flange:
xirodur® B180,
PA cage
▶ Page 1056



With double flange:
xirodur® B180,
PA cage
▶ Page 1056

xiros® conveyor rollers and end caps



Guide roller:
aluminium tube with fixed flange bearing
▶ Page 1058



New

Guide roller:
with sandblasted surface
▶ Page 1059



New

Guide roller:
black anodised
▶ Page 1061



New

Guide roller:
non-metallic with PVC tube and glass balls
▶ Page 1062



Guide roller:
plastic approved for food contact
▶ Page 1063



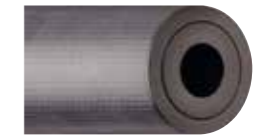
New

Guide roller:
with stainless steel tube for food contact
▶ Page 1064



New

Guide roller:
with stainless steel tube for chemicals and heat
▶ Page 1064



Guide roller:
carbon fibre tube with fixed flange bearing
▶ Page 1065

xiros® conveyor rollers and end caps



Guide roller:
carbon fibre tube with ball bearing
▶ Page 1065



End caps:
xirodur® B180,
PA cage
▶ Page 1067

xiros® - other designs



With profile:
xirodur® B180
▶ Page 1068



Skate wheel with spherical outer diameter:
xirodur® B180
▶ Page 1069



Double row for higher loads:
xirodur® B180
▶ Page 1070



Self-aligning ball bearings:
xirodur® B180,
PA cage
▶ Page 1071

xiros® polymer ball transfer units



Polymer ball transfer units:
xirodur® B180 and F182
▶ Page 1072



Polymer ball transfer units:
with stainless-steel support balls
▶ Page 1073



Polymer ball transfer units:
with stainless steel balls
▶ Page 1074



Polymer ball transfer units:
sliding version
▶ Page 1075



Axial polymer ball transfer units:
with spherical roller
▶ Page 1076

xiros® thrust bearings and slewing ring ball bearings



Single row:
xirodur® B180,
glass/stainless steel balls
▶ Page 1078



Axial thrust washer:
xirodur® B180,
glass/stainless steel balls
▶ Page 1079



Slewing ring ball bearings:
xirodur® B180,
with gear teeth or with cage
▶ Page 1080

xiros® special and fixed flange ball bearings, pillow block ball bearings and spherical insert bearings



Fixed flange ball bearings, FDA-compliant, fixed version:
xirodur® B180
▶ Page 1082



Pillow block ball bearings, FDA-compliant, fixed version:
xirodur® B180
▶ Page 1083



UC pillow block:
with UC housing,
stainless steel balls
▶ Page 1084



Spherical insert bearings:
for UC housing,
stainless steel balls
▶ Page 1085

xiros® combinations with igubal®



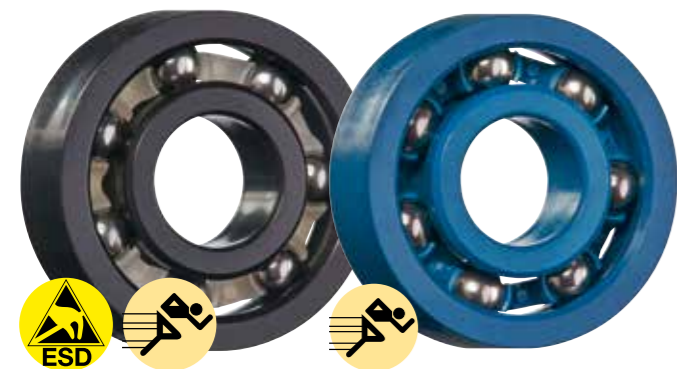
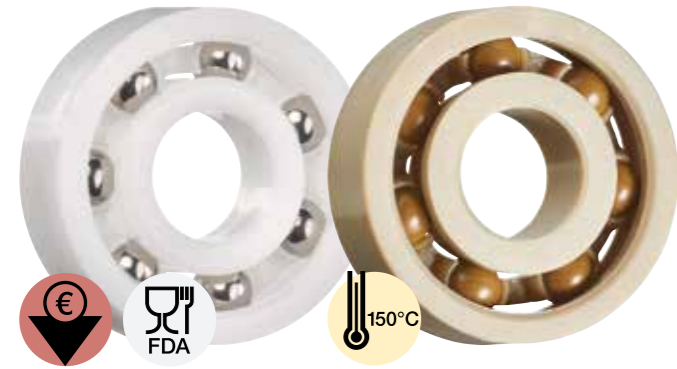
Pillow block ball bearings, fixed or pivoting
▶ Page 1086



4-hole fixed flange ball bearings, pivoting
▶ Page 1088



2-hole fixed flange ball bearings, pivoting
▶ Page 1089



Lubrication-free polymer ball bearings

xiros® polymer ball bearings revolutionise the ball bearing market. Thanks to their maintenance-free dry operation and the use of xirodur® high-performance polymers, many applications can be successfully implemented in which conventional metal ball bearings are not suitable.

- Lubrication and maintenance-free
- Corrosion-resistant
- Non-metallic (due to the use of glass and plastic balls), therefore non-magnetic
- For temperatures up to +150°C (depending on material)
- High media resistance, suitable for washdown
- Lightweight
- ESD or antistatic properties
- FDA-compliant (depending on material)
- Predictable service life

Typical application areas

- Packaging
- Textile industry
- Test engineering and quality assurance
- Optical industry
- Model making

Available from stock
Detailed information about delivery time online.

Price breaks online
No minimum order value. No minimum order quantity

max. +150°C
min. -100°C

12 xirodur® materials
Ø 3 - 120mm

Imperial dimensions available
► **Page 1884**

Service life calculation
► **www.igus.eu/xiros-expert**

Overview types



xiros® radial deep groove ball bearings - standard product range for 3 materials:

- xirodur® B180 - cost-effective standard
 - xirodur® C160 - resistant to chemicals
 - xirodur® A500 - for heat and chemicals
- **From page 1038**

xiros® radial deep groove ball bearings with flange and conveyor rollers

- With single or double flange
 - Made from xirodur® B180, S180 or F180
 - xiros® system solution: aluminium, PVC or carbon fibre tube with 2 fixed flange ball bearings
- **From page 1056**



xiros® radial deep groove ball bearings - materials for special applications

- xirodur® S180 - black (for visible parts)
 - xirodur® F180 - antistatic
 - xirodur® F182 - conductive
 - xirodur® D180 - high speeds
 - xirodur® K220 - suitable for applications in vacuum
 - xirodur® MT180 - for medical devices
 - xirodur® F500 - conductive and resistant to chemicals
 - xirodur® ECO B180 - environmentally friendly rotation
- **From page 1060**



xiros® radial deep groove ball bearings - further designs

- Skate wheel with spherical outer diameter
 - Double row for higher loads
 - Self-aligning ball bearings for rotary and linear movements
- **From page 1068**

xiros® thrust bearings

- For absorbing axial loads
 - Various options
- **From page 1078**



xiros® slewing ring ball bearings

- With glass or stainless steel balls
 - Outer toothed profile
 - With cage
- **From page 1080**



xiros® combinations with igubal®

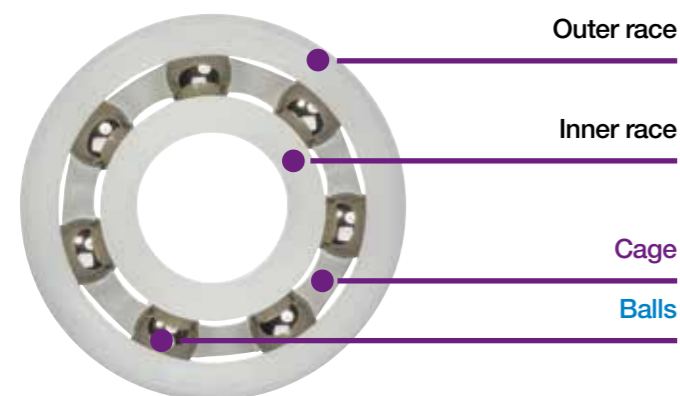
- Fixed or pivoting versions
 - For maintenance-free use in conveyor belts and conveyor rollers
- **From page 1086**

Radial deep groove ball bearings design

The xiros® polymer ball bearings are single-row deep groove ball bearings based on DIN 625. The lubrication and maintenance-free ball bearings consist of four components:

The outer and inner races

The suitability of a xiros® polymer ball bearings is largely determined by the materials of the two races. These are made from igus® tribo-polymers to maximise service life and minimise friction. Choice of 5 materials. They allow different values of application temperature, media resistance and price. The table of materials (► Page 824) provides exact information on this topic.



The cage

The material of the ball bearing cage must fit well to the application. The various material options have quite different chemical and temperature resistance values. The cage materials are compatible with all the different race options within xiros®.

The balls

The ball materials differ most significantly. In addition to steel, glass or plastics are used. This produces a large difference in mass, which in turn affects quiet operation, weight and media resistance. Stainless steel balls (1.4401) are cost-effective, resistant to chemicals and suitable for high temperatures, but are the heaviest in the range. Glass balls (soda-lime glass) are also resistant to chemicals and have a medium weight. Just like polymer balls, they are non-metallic and non-magnetic. In addition to their excellent chemical resistance, the polymer balls (PAI) are even lighter than stainless steel or glass balls.

Other types

xiros® radial deep groove ball bearings

The other designs include:

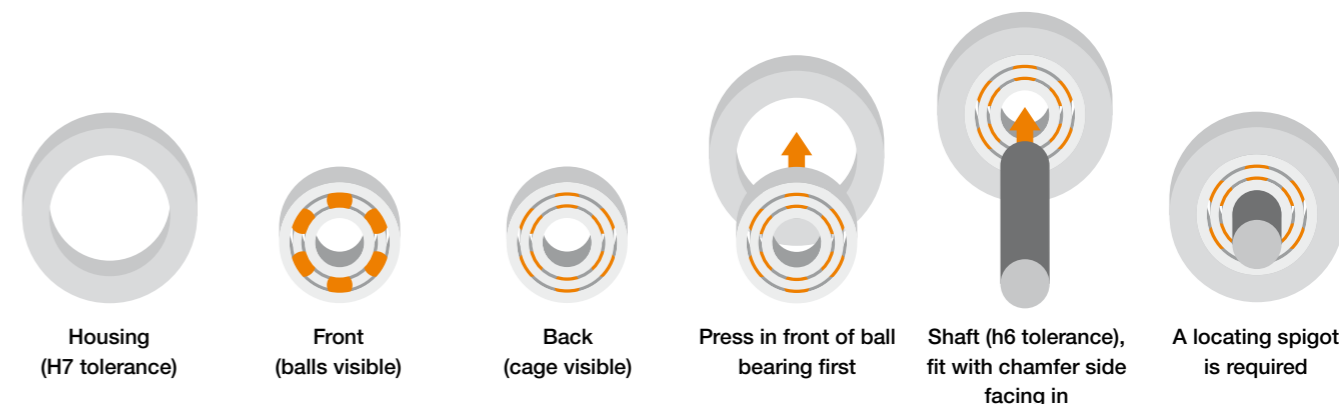
- Convex rollers which can run directly on a profile
- Profiled rollers, e.g. for thread/cable guidance
- Thrust and slewing ring ball bearings for absorbing axial loads
- Self-aligning ball bearings
- Ball bearings designed e.g. for installation in tube ends (also for conveyor rollers)
- Double-row bearings for absorbing higher forces

Pillow block and fixed flange bearings

This range is made up by combining xiros® polymer ball bearings with the igubal® pillow block and fixed flange housings, resulting in a higher flexibility in terms of installation of the bearings. The bearing housings make it easy for the user to install these maintenance-free components. Both fixed flange and pillow block bearings are available as fixed or as pivoting design. The difference between the two options is that the pivoting type can compensate for shaft and/or bearing misalignment. A spherical outer race is pressed into the bearing housing, ensuring self-aligning action. If necessary, the inner bearing can be pivoted in all directions. Possible misalignment of two bearing points lying together can thus be compensated for.

Measurement requirement for injection-moulded xiros® polymer ball bearings

The outer race of our ball bearings has a conical shape. This simplifies the installation in a suitable housing (with the narrow side first). After press-fit into a housing machined to a H7 tolerance, the bearing clearance is reduced. Therefore the bearings must be measured over the entire width of the ball bearing. Starting at an angle of 90° from the injection point.



To press in the xiros® polymer ball bearing over the entire width of the housing, apply pressure on the outer race. xiros® radial deep groove ball bearings are only suitable for limited axial loads.

Development and tests

Through numerous tests the race materials were optimised. The polymers we have developed for use with ball bearings allow higher speeds, greater loads, and longer service life. But the development continues. We believe that polymer ball bearing technology will continue to advance, especially with our experience in the development of tribological polymer materials. Challenge us, talk to us about your applications, tell us what you need from a polymer ball bearing. In the igus® test laboratory the service life and wear of xiros® polymer ball bearings are tested. In addition to the actual material comparison, tests indicate these experiments also answer questions about the impact of external influences such as temperature, humidity or dust.

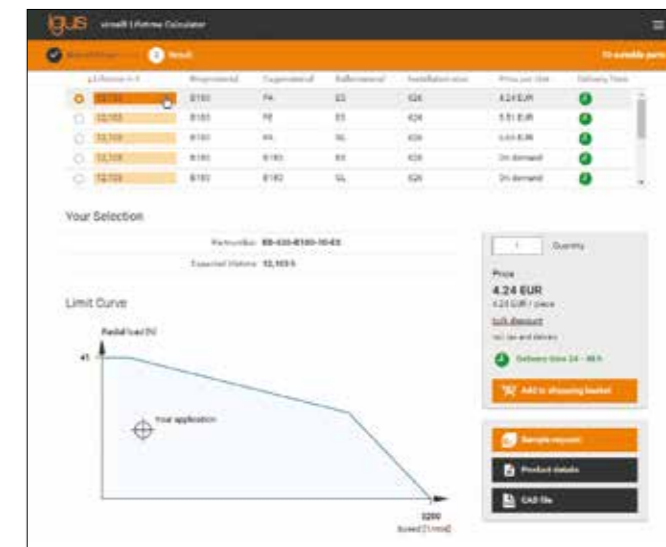


igus® extends the xiros® test stand in the industry's largest test laboratory for plastics in motion

Predictability

As part of the development of xiros® polymer ball bearing tests are carried out continuously. The high number of test results makes it very difficult to present this information in tabular form. It is for this reason that igus® has developed the online service life calculator, which uses real test results to give an accurate calculation. The predictability of xiros® polymer ball bearings is one of the most important advantages. Based on the results of many wear tests, the user can calculate the service life of xiros® polymer ball bearings reliably and interpret the application.

► www.igus.eu/xiros-expert



Download the online tool app now

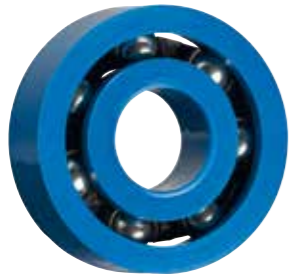


In this overview you will find some special materials for special application areas. Contact us!



xirodure® K220 - no outgassing in vacuum
 The xirodure® K220 material is especially well-suited to autoclaving and coating applications, and its service life is longer than that of comparable xirodure® materials.

- Maximum water absorption: 0.4% weight
- 60% more cost-effective than comparable materials for applications in vacuum



xirodure® D180 - high speeds

- Soft material
- For quiet operation
- Higher speeds
- Only suitable for small loads



xirodure® MT180 - for medical devices
 The material xirodure® MT180 conforms to DIN EN ISO 10993.

- Individual components with USP class VI/DIN EN ISO 10993
- Customers save costs for assembly certification



xirodure® F500 - conductive and resistant to chemicals
 Due to their high chemical resistance, the conductive ball bearings made of xirodure® F500 are ideal for the semiconductor industry.

- Surface resistance $<10^4 \Omega$
- Temperature-resistant up to +150°C
- Extremely resistant to chemicals (strong acids)



xirodure® ECO B180 - environmentally friendly rotation
 This ECO all-rounder not only stands out visually, but also technically. Extremely resistant to media with low moisture absorption. And that from at least 97% regranulate.

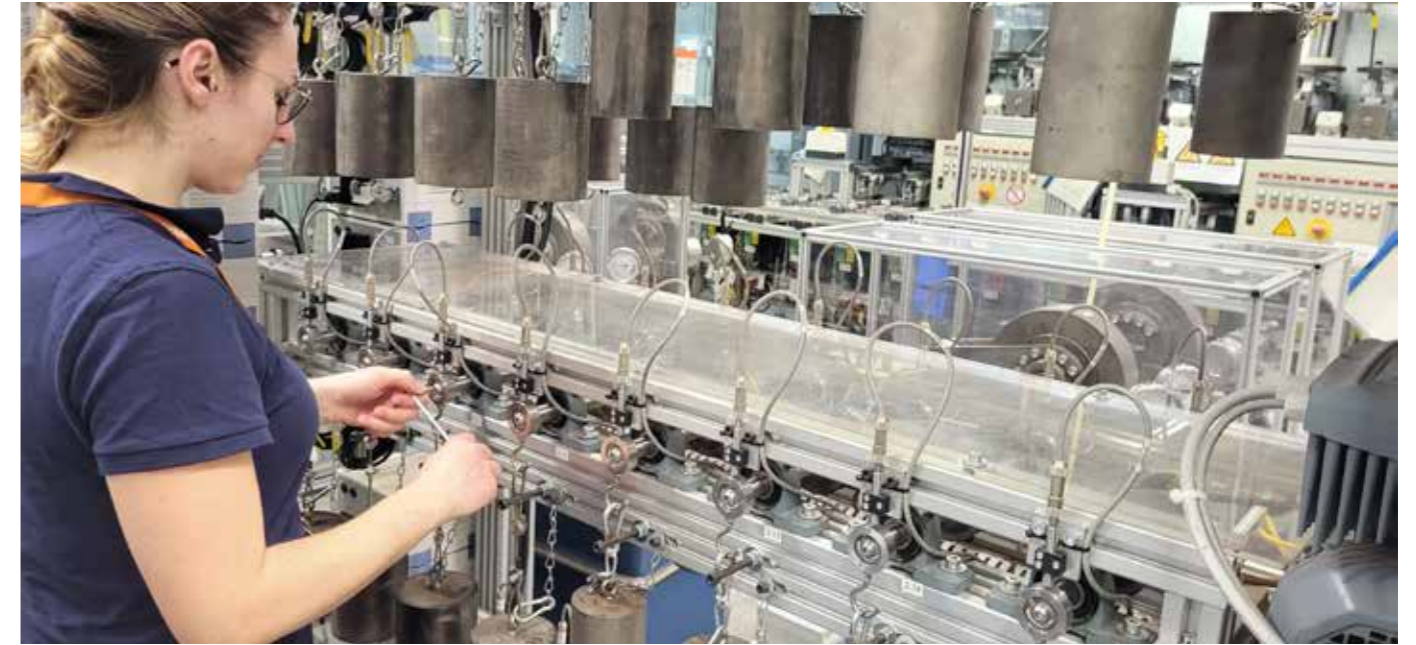
- Low moisture absorption
- High media resistance
- Cost-effective, due to reuse of already processed raw materials



xirodure® S180LF - for automotive interiors

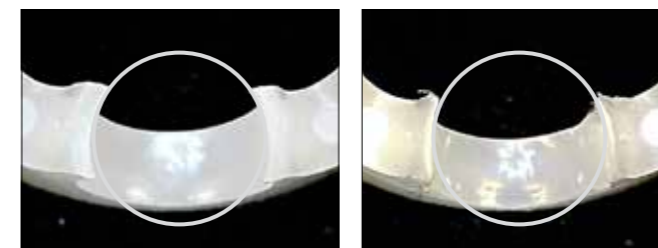
- Low outgassing (low fogging)
- Especially for automotive interiors
- Bespoke designs possible

xiros® test laboratory ... 21x longer service life



igidur® cage materials contain enhanced additives that improve stability and sliding properties. This results in longer service life and less downtime.

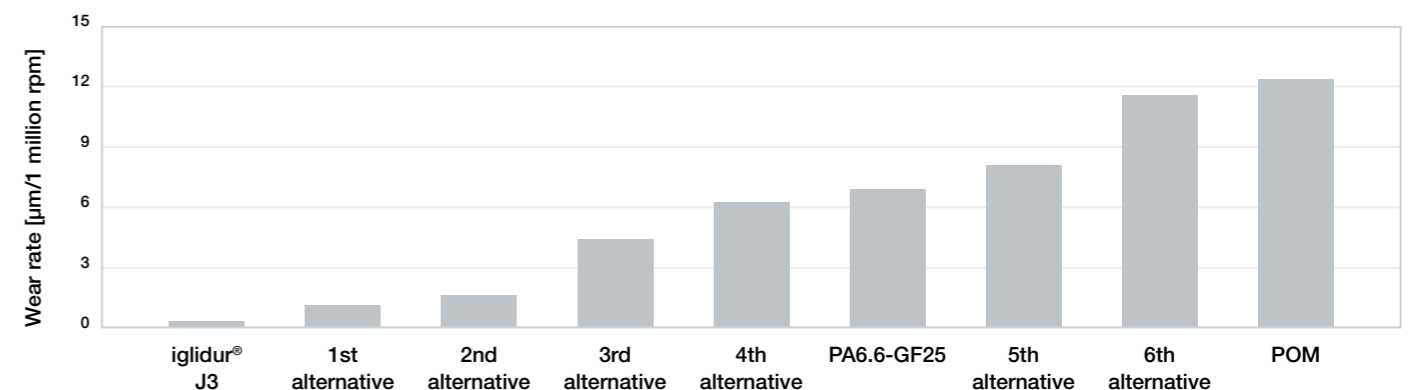
- Longer service life than the current standard range
- Less wear
- Lower maintenance costs thanks to a longer service life
- Less downtime
- Reduce operating costs due to less frequent replacement



Picture on the left: unreinforced material, before the test
 Picture on the right: unreinforced material, after the test



Picture on the left: reinforced iglidur® material, before the test
 Picture on the right: reinforced iglidur® material, after the test



Cage made from iglidur® J3 for the best combination with lowest wear



xirodur® B180 - cost-effective all-rounder

- Longest service life
- Extensive product range
- Low wear values
- Good resistance to chemicals and temperature fluctuations/extremes

Temperature [°C]	-40 / +80		+
Chemical resistance	-		+
Moisture absorption [% weight]	0.7		+
Wear resistance	-		+
Price index	-		+



xirodur® A500

- Temperature-resistant
- Excellent chemical resistance
- Special product
- For vacuum and autoclave applications

Temperature [°C]	-100 / +150		+
Chemical resistance	-		+
Moisture absorption [% weight]	0.4		+
Wear resistance	-		+
Price index	-		+



xirodur® F180

- Anti-static dissipative material
- Supports the removal of undesired electrostatic charge

Temperature [°C]	-40 / +80		+
Chemical resistance	-		+
Moisture absorption [% weight]	1.3		+
Wear resistance	-		+
Price index	-		+



xirodur® F182

- Electrostatically conductive
- Lower surface resistance (volume resistance <math><10^4\Omega\text{cm}</math>) than xirodur® F180

Temperature [°C]	-40 / +80		+
Chemical resistance	-		+
Moisture absorption [% weight]	0.7		+
Wear resistance	-		+
Price index	-		+



xirodur® C160

- Excellent chemical resistance
- Low-cost material compared to xirodur® A500
- Low absorption of different media

Temperature [°C]	0 / +60		+
Chemical resistance	-		+
Moisture absorption [% weight]	0.2		+
Wear resistance	-		+
Price index	-		+



xirodur® S180

- The all-rounder in black for visible parts

Temperature [°C]	-40 / +80		+
Chemical resistance	-		+
Moisture absorption [% weight]	0.7		+
Wear resistance	-		+
Price index	-		+



xirodur® MT180

- Individual components with USP class VI // DIN EN ISO 10993
- For use in medical technology

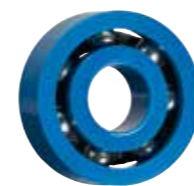
Temperature [°C]	-40 / +80		+
Chemical resistance	-		+
Moisture absorption [% weight]	0.7		+
Wear resistance	-		+
Price index	-		+



xirodur® F500

- Ideal for use in the semiconductor industry
- Electrostatically conductive (volume resistance <math><10^4\Omega\text{cm}</math>)
- Extremely resistant to chemicals

Temperature [°C]	-55 / +150		+
Chemical resistance	-		+
Moisture absorption [% weight]	0.5		+
Wear resistance	-		+
Price index	-		+



xirodur® D180

- Soft material
- For quiet operation
- Higher speeds
- Only suitable for small loads

Temperature [°C]	-50 / +80		+
Chemical resistance	-		+
Moisture absorption [% weight]	1.4		+
Wear resistance	-		+
Price index	-		+








xirodur® S180LF

- Low outgassing (low fogging)
- Especially for automotive interiors
- Bespoke designs possible

Temperature [°C]	-40 / +80		+
Chemical resistance	-		+
Moisture absorption [% weight]	0.7		+
Wear resistance	-		+
Price index	-		+

xiros® polymer ball bearings | Material properties

xirodur®	Unit	B180	S180	C160	A500	F180
General properties						
Density	[g/cm³]	1.41	1.40	1.11	1.30	1.36
Colour						
Max. moisture absorption at +23 °C/50% r.h.	[% weight]	0.2	0.2	0.1	0.1	0.2
Max. moisture absorption	[% weight]	0.7	0.7	0.2	0.4	1.3
Mechanical properties						
Flexural modulus	[MPa]	2,500	2,700	1,900	4,300	1,600
Flexural strength at +20°C	[MPa]	68	65	35	130	70
Shore D hardness		77	78	67	85	79
Physical and thermal properties						
Max. continuous operating temperature	[°C]	+80	+80	+60	+150 (PEEK) +120 (PA)	+80
Min. long-term application temperatures (in combination with cage material)	[°C]	-40	-40	0	-100 (PEEK) -40 (PA)	-40
Electrical properties						
Specific transitional resistance ¹⁾	[Ωcm]	> 10 ¹⁴	> 10 ¹³	> 10 ¹⁴	> 10 ¹⁴	> 10 ^{12 1)}
Surface resistance ¹⁾	[Ω]	> 10 ¹⁴	> 10 ¹³	> 10 ¹⁴	> 10 ¹⁴	> 10 ^{12 1)}
Medium						
Alcohols		+	+	+	+	+
Diluted acid		0 up to –	0 up to –	+	+	0 up to –
Diluted base		+	+	+	+	+
Fuels		+	+	+ up to 0	+	+
Greases, oils without additives		+	+	+	+	+
Hydrocarbons		+	+	+ up to 0	+	+
Strong acids		–	–	+ up to 0	+	–
Strong alkaline		+ up to 0	+ up to 0	+	+	+ up to 0
UV radiation		–	0	0	+	0









¹⁾ Depending on the geometry

Table 01: Material data and chemical resistance of xiros® materials

Recommended tolerances

Fitting	Housing hole	Shaft
Standard:	H7	h6
Press-fit		

For further questions about the dimensioning of the hole and the shaft please contact us.

F182	F500	D180	K220	MT180	ECO B180	S180LF	igumid® G
1.42	1.40	1.22	1.35	1.41	1.41	1.41	1.37
							
0.2	0.3	0.5	0.2	0.2	0.2	0.2	1.4
0.7	0.45	1.4	0.4	0.65	0.7	0.8	5.6
Mechanical properties							
3,000	24,000	135	2,200	2,700	2,500	2,550	7,800
95	380	n.a.	60	n.s.	68	87	240
79	87.5	48	77	n.s.	77	77	79
Physical and thermal properties							
+80	+150	+80	+120	+80	+100	+100	+120
-40	-50	-50	+140	-40	-40	-40	-40
Electrical properties							
> 10 ⁴	> 10 ⁵	> 10 ¹⁴	> 10 ¹²	> 10 ¹⁴	> 10 ¹⁴	> 10 ¹⁴	> 10 ¹¹
> 10 ⁴	> 10 ⁴	> 10 ¹⁴	> 10 ¹⁰	> 10 ¹⁴	> 10 ¹⁴	> 10 ¹⁶	> 10 ¹¹
Medium							
+	+	+ up to 0	+	+	+	+	+
0 up to –	+	+ up to 0	+	+	+	+	+
+	+	+ up to 0	+	+	+	+	0 up to –
+	+	+	+	+	+	+	+
+	+	+	+	+	+	+	+
+	+	+	+	+	+	+	+
–	+	0	+	+	+	+	+ up to 0
+ up to 0	+	+ up to 0	+	+	+	+	–
0	+	–	+	+	+	+	–

+ resistant 0 conditionally resistant – non-resistant

Detailed chemicals resistance table for xiros® products ► From page 1894

Ball materials

Designation	Description
ES: Stainless steel	1,4401
GL : Glass	Soda-lime glass or borosilicate glass
PAI: Plastic	Polyamide-imide
PP: Plastic	Polypropylene

Cage materials

Designation	Description
10:	PA
20:	PP
30:	xirodur® B180
35:	iglidur® J3
50:	PE
70:	PEEK

xiros[®] polymer ball bearings | Selection guide

According to material properties

xirodur [®]	B180						S180	C160			A500				
Cage material	PA		B180		PE	J3	PA	PP			PA		PEEK		
Ball material	ES	GL	ES	GL	ES	ES	ES	ES	GL	ES	GL	ES	GL	PAI	
Descriptive technical specifications															
Smooth running	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Low moisture absorption	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Chemical resistance			●	●	●	●		●	●			●	●	●	
Seawater-resistant			●	●		●		●	●			●	●		
Dirt-resistant	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Higher temperatures										●	●	●	●	●	
Higher speeds						●									
Cost-effective			●	●			●	●	●						
Approvals and standards															
For contact with food			●		●							●			
Antistatic															
Conductive															
Non-metallic		●		●					●		●		●	●	
Detectable															
Availabilities / variants															
Radial deep groove ball bearings	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Radial deep groove ball bearings with flange	●	●	●	●			●								
End cap	●	●													
Spherical outer diameter	●	●													
Double row	●	●													
Slewing ring ball bearings			●	●											
Thrust bearings			●	●											

EN 06/2023



F180		F182	F500	D180	K220	MT180	ECO B180	S180LF	igumid [®] G
PA	PE	PA	F500	PA	K230	MT180	J4	PA	
ES	ES	ES	ES	ES	ES	ES	ES	ES	
Descriptive technical specifications									
Smooth running	●	●	●	●		●	●	●	●
Low moisture absorption	●	●	●	●		●	●	●	
Chemical resistance			●						
Seawater-resistant						●	●		
Dirt-resistant	●	●	●	●		●	●	●	●
Higher temperatures			●						
Higher speeds				●					
Cost-effective								●	●
Approvals and standards									
For contact with food		●							
Antistatic	●	●							
Conductive			●	●					
Non-metallic									
Detectable									
Availabilities / variants									
Radial deep groove ball bearings	●	●	●	●	●	●	●	●	●
Radial deep groove ball bearings with flange	●								
End cap									
Spherical outer diameter									
Double row									
Slewing ring ball bearings									
Thrust bearings									

EN 06/2023



Races made from xirodur® B180 - cost-effective standard

FDA



xirodur® B180 cage, stainless steel balls



xirodur® B180 cage, glass balls



PA cage, stainless steel balls



PA cage, glass balls

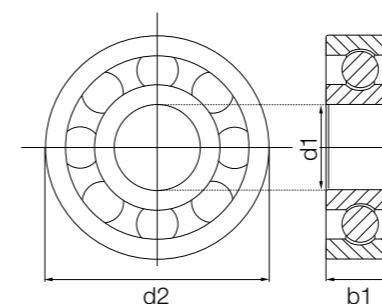
FDA



igidur® J3 cage, stainless steel balls



Also available with S180 races for visible parts (xirodur® S180 and PA cage), upon request



- The largest standard product range of DIN dimensions from stock
- All-rounder with minimal wear
- Suitable for contact with food
- Operating temperature: from -40°C up to +80°C

Order key

Type Material

BB-623-B180-10-ES

Ball bearing	Dimensions according to DIN 625-1	Race material	Cage material	Ball material	Options:
					Cage material
					10 : PA
					30 : xirodur® B180
					35 : iglidur® J3
					Ball material
					ES : Stainless steel
					GL : Glass
					Race material
					xirodur® B180
					xirodur® S180

Technical data

Installation size	Radial load capacity		Max. speed [rpm]	Weight					
	stat. [N]	dyn. [N]		B180/ES [g]	B180/GL [g]	PA/ES [g]	PA/GL [g]	J3/ES [g]	J3/GL [g]
623	25	34	4,500	0.37	0.31	0.40	0.32	0.37	0.31
633	33	45	4,000	0.83	0.64	-	-	0.83	0.64
684	10	11	4,600	0.26	0.20	-	-	0.26	0.20
694	12	14	4,000	0.42	0.35	-	-	0.42	0.35
604	30	32	3,600	0.65	0.45	-	-	0.65	0.45
624	33	45	4,000	0.79	0.60	0.85	0.62	0.79	0.60
634	40	40	3,700	1.50	1.00	-	-	1.50	1.00
685	12	14	4,000	0.45	0.37	-	-	0.45	0.37
695	29	30	3,500	0.73	0.53	-	-	0.73	0.53
605	32	33	3,500	0.96	0.77	-	-	0.96	0.77
625	40	40	3,700	1.42	0.96	1.55	1.01	1.42	0.96
635	41	43	3,200	2.59	1.76	-	-	2.59	1.76
686	29	30	3,500	0.76	0.57	-	-	0.76	0.57
696	29	30	3,500	1.05	0.85	-	-	1.05	0.85
606	50	53	3,300	1.89	1.25	-	-	1.89	1.25
626	60	62	3,200	2.06	1.60	2.44	1.69	2.06	1.60
636	80	94	2,200	3.96	2.71	-	-	3.96	2.71
687	32	34	3,200	0.80	0.61	-	-	0.80	0.61
697	39	41	3,000	1.47	1.05	-	-	1.47	1.05
607	41	43	3,200	1.97	1.52	-	-	1.97	1.52
627	80	94	2,400	3.85	2.60	-	-	3.85	2.60
688	39	41	3,000	1.17	0.76	1.19	0.75	1.17	0.76
698	60	62	3,200	2.34	1.52	-	-	2.34	1.52
608	80	94	2,400	3.76	2.51	3.79	2.54	3.76	2.51

Dimensions [mm]

Inner Ø	Outer Ø	Width	Cage/ball material combination						Part No.
			B180/ES	B180/GL	PA/ES	PA/GL	J3/ES	J3/GL	
d1	d2	b1	B180/ES	B180/GL	PA/ES	PA/GL	J3/ES	J3/GL	
3	10	4	●	●	●	●	●	●	BB-623-B180- <input type="text"/> - <input type="text"/>
3	13	5	●	●	-	-	●	●	BB-633-B180-30- <input type="text"/>
4	9	4	●	●	-	-	●	●	BB-684-B180-30- <input type="text"/>
4	11	4	●	●	-	-	●	●	BB-694-B180-30- <input type="text"/>
4	12	4	●	●	-	-	●	●	BB-604-B180-30- <input type="text"/>
4	13	5	●	●	●	●	●	●	BB-624-B180- <input type="text"/> - <input type="text"/>
4	16	5	●	●	-	-	●	●	BB-634-B180-30- <input type="text"/>
5	11	5	●	●	-	-	●	●	BB-685-B180-30- <input type="text"/>
5	13	4	●	●	-	-	●	●	BB-695-B180-30- <input type="text"/>
5	14	5	●	●	-	-	●	●	BB-605-B180-30- <input type="text"/>
5	16	5	●	●	●	●	●	●	BB-625-B180- <input type="text"/> - <input type="text"/>
5	19	6	●	●	-	-	●	●	BB-635-B180-30-i <input type="text"/>
6	13	5	●	●	-	-	●	●	BB-686-B180-30- <input type="text"/>
6	15	5	●	●	-	-	●	●	BB-696-B180-30- <input type="text"/>
6	17	6	●	●	-	-	●	●	BB-606-B180-30- <input type="text"/>
6	19	6	●	●	●	●	●	●	BB-626-B180- <input type="text"/> - <input type="text"/>
6	22	7	●	●	-	-	●	●	BB-636-B180-30- <input type="text"/>
7	14	5	●	●	-	-	●	●	BB-687-B180-30- <input type="text"/>
7	17	5	●	●	-	-	●	●	BB-697-B180-30- <input type="text"/>
7	19	6	●	●	-	-	●	●	BB-607-B180-30- <input type="text"/>
7	22	7	●	●	-	-	●	●	BB-627-B180-30- <input type="text"/>
8	16	5	●	●	●	●	●	●	BB-688-B180- <input type="text"/> - <input type="text"/>
8	19	6	●	●	-	-	●	●	BB-698-B180-30- <input type="text"/>
8	22	7	●	●	●	●	●	●	BB-608-B180- <input type="text"/> - <input type="text"/>

Order example: BB-623-B180-10-ES = Radial deep groove ball bearing with race material xirodur® B180, PA cage and stainless steel balls

Available from stock Upon request

Imperial dimensions available ▶ Page 1884

Technical data

Installation size	Radial load capacity		Max. speed [rpm]	Weight					
	stat. [N]	dyn. [N]		B180/ES [g]	B180/GL [g]	PA/ES [g]	PA/GL [g]	J3/ES [g]	J3/GL [g]
628	100	110	2,300	5.57	3.4	-	-	5.57	3.4
638	110	130	2,200	7.82	5.65	-	-	7.82	5.65
689	40	42	2,500	1.30	0.88	-	-	1.30	0.88
699	43	45	2,250	2.08	1.66	-	-	2.08	1.66
609	100	110	2,300	5.12	2.95	-	-	5.12	2.95
629	110	128	2,200	6.20	4.03	6.14	-	6.20	4.03
6800	43	45	2,250	1.56	1.07	-	-	1.56	1.07
6900	60	64	2,000	3.24	2.04	-	-	3.24	2.04
6000	110	130	2,200	5.98	3.83	5.95	3.78	5.98	3.83
6200	130	147	2,000	9.32	6.56	9.26	6.51	9.32	6.56
6300	140	150	1,800	13.83	11.02	13.75	-	13.83	11.02
6701	16	18	2,200	0.68	0.57	-	-	0.68	0.57
6801	60	64	2,000	1.82	1.40	-	-	1.82	1.40
6901	80	83	1,800	3.12	2.10	-	-	3.12	2.10
6001	130	147	2,000	6.36	4.18	6.78	4.34	6.36	4.18
6201	140	150	1,800	10.04	7.25	9.97	7.12	10.04	7.25
6301	160	220	1,600	15.69	12.90	-	-	15.69	12.90
6702	19	21	1,800	0.94	0.81	-	-	0.94	0.81
6802	80	83	1,800	2.46	1.46	-	-	2.46	1.46
6902	90	94	1,700	4.37	3.12	-	-	4.37	3.12
6002	140	150	1,800	8.68	5.92	8.72	6.23	8.68	5.92
6202	160	220	1,600	11.71	8.96	12.26	9.11	11.71	8.96
6302	250	320	1,400	10.56	3.95	10.49	-	10.56	3.95
6703	23	25	1,600	0.66	-	-	-	0.66	-
6803	90	94	1,700	2.83	1.65	-	-	2.83	1.65
6903	90	94	1,700	-	0.79	-	-	-	0.79
6003	160	220	1,600	10.23	7.45	10.72	7.61	10.23	7.45
6203	250	320	1,400	19.36	12.75	17.45	12.68	19.36	12.75
6303	280	360	1,200	21.68	13.60	-	-	21.68	13.60
6704	30	36	1,400	1.39	1.17	-	-	1.39	1.17
6804	100	120	1,500	5.19	3.59	-	-	5.19	3.59
6904	140	144	1,150	9.76	-	-	-	9.76	-
6004	250	320	1,400	20.81	12.93	19.46	12.89	20.81	12.93
6204	280	360	1,200	30.22	22.14	28.87	22.33	30.22	22.14
6304	380	400	1,000	43.85	31.05	-	-	43.85	31.05
6705	32	38	1,200	1.58	1.40	-	-	1.58	1.40
6805	140	144	1,150	6.48	4.16	-	-	6.48	4.16
6905	160	162	900	4.49	4.49	-	-	4.49	4.49
6005	280	360	1,200	24.14	16.07	22.93	15.67	24.14	16.07
6205	310	370	1,000	35.99	27.92	34.82	27.51	35.99	27.92
6305	480	520	850	61.12	45.48	-	-	61.12	45.48

Dimensions [mm]

Inner Ø	Outer Ø	Width	Cage/ball material combination						Part No.
			B180/ES	B180/GL	PA/ES	PA/GL	J3/ES	J3/GL	
d1	d2	b1	B180/ES	B180/GL	PA/ES	PA/GL	J3/ES	J3/GL	
8	24	8	●	●	-	●	●	●	BB-628-B180-30-□
8	28	9	●	●	-	-	●	●	BB-638-B180-30-□
9	17	5	●	●	-	-	●	●	BB-689-B180-30-□
9	20	6	●	●	-	-	●	●	BB-699-B180-30-□
9	24	7	●	●	-	-	●	●	BB-609-B180-30-□
9	26	8	●	●	●	-	●	●	BB-629-B180-□-□
10	19	5	●	●	-	-	●	●	BB-6800-B180-30-□
10	22	6	●	●	-	-	●	●	BB-6900-B180-30-□
10	26	8	●	●	●	●	●	●	BB-6000-B180-□-□
10	30	9	●	●	●	●	●	●	BB-6200-B180-□-□
10	35	11	●	●	●	-	●	●	BB-6300-B180-□-□
12	18	4	●	●	-	-	●	●	BB-6701-B180-30-□
12	21	5	●	●	-	-	●	●	BB-6801-B180-30-□
12	24	6	●	●	-	-	●	●	BB-6901-B180-30-□
12	28	8	●	●	●	●	●	●	BB-6001-B180-□-□
12	32	10	●	●	●	●	●	●	BB-6201-B180-□-□
12	37	12	●	●	-	-	●	●	BB-6301-B180-30-□
15	21	4	●	●	-	-	●	●	BB-6702-B180-30-□
15	24	5	●	●	-	-	●	●	BB-6802-B180-30-□
15	28	7	●	●	-	-	●	●	BB-6902-B180-30-□
15	32	9	●	●	●	●	●	●	BB-6002-B180-□-□
15	35	11	●	●	●	●	●	●	BB-6202-B180-□-□
15	42	13	●	●	●	-	●	●	BB-6302-B180-□-□
17	23	4	●	-	-	-	●	●	BB-6703-B180-30-ES
17	26	5	●	●	-	-	●	●	BB-6803-B180-30-□
17	30	7	-	●	-	-	●	●	BB-6903-B180-30-GL
17	35	10	●	●	●	●	●	●	BB-6003-B180-□-□
17	40	12	●	●	●	●	●	●	BB-6203-B180-□-□
17	47	14	●	●	-	-	●	●	BB-6303-B180-30-□
20	27	4	●	●	-	-	●	●	BB-6704-B180-30-□
20	32	7	●	●	-	-	●	●	BB-6804-B180-30-□
20	37	9	●	-	-	-	●	●	BB-6904-B180-30-ES
20	42	12	●	●	●	●	●	●	BB-6004-B180-□-□
20	47	14	●	●	●	●	●	●	BB-6204-B180-□-□
20	52	15	●	●	-	-	●	●	BB-6304-B180-30-□
25	32	4	●	●	-	-	●	●	BB-6705-B180-30-□
25	37	7	●	●	-	-	●	●	BB-6805-B180-30-□
25	42	9	●	●	-	-	●	●	BB-6905-B180-30-□
25	47	12	●	●	●	●	●	●	BB-6005-B180-□-□
25	52	15	●	●	●	●	●	●	BB-6205-B180-□-□
25	62	17	●	●	-	-	●	●	BB-6305-B180-30-□



Order example:

BB-628-B180-30-ES = Radial deep groove ball bearing with race material xirodur® B180, xirodur® B180 cage and stainless steel balls



Available from stock

Upon request

Technical data

Installation size	Radial load capacity		Max. speed [rpm]	Weight					
	stat. [N]	dyn. [N]		B180/ES [g]	B180/GL [g]	PA/ES [g]	PA/GL [g]	J3/ES [g]	J3/GL [g]
6706	34	41	1,000	1.76	1.59	–	–	1.76	1.59
6806	160	162	900	4.49	1.82	–	–	4.49	1.82
6906	190	193	850	13.15	10.13	–	–	13.15	10.13
16006	380	420	900	–	–	28.53	17.33	–	–
6006	380	400	1,000	–	–	34.15	22.70	–	–
6206	480	520	850	55.89	39.73	–	–	55.89	39.73
6306	520	660	750	27.00	8.52	–	–	27.00	8.52
6007	480	520	850	–	–	47.29	30.71	–	–
6008	520	660	750	–	–	54.84	38.73	–	–
6009	660	690	650	–	–	33.52	57.52	–	–
6010	740	780	600	–	–	82.33	54.00	–	–
6011	930	950	550	–	–	119.64	75.80	–	–
6012	990	1,050	500	–	–	126.66	80.54	–	–
6024	2,300	2,350	250	578.8	–	–	–	578.8	–

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination						Part No.
			B180/ES	B180/GL	PA/ES	PA/GL	J3/ES	J3/GL	
30	37	4	●	●	–	–	●	●	BB-6706-B180-30- <input type="text"/>
30	42	7	●	●	–	–	●	●	BB-6806-B180-30- <input type="text"/>
30	47	9	●	●	–	–	●	●	BB-6906-B180-30- <input type="text"/>
30	55	9	–	–	●	●	●	●	BB-16006-B180-10- <input type="text"/>
30	55	13	–	–	●	●	●	●	BB-6006-B180-10- <input type="text"/>
30	62	16	●	●	–	–	–	–	BB-6206-B180-30- <input type="text"/>
30	72	19	●	●	–	–	–	–	BB-6306-B180-30- <input type="text"/>
35	62	14	–	–	●	●	–	–	BB-6007-B180-10- <input type="text"/>
40	68	15	–	–	●	●	–	–	BB-6008-B180-10- <input type="text"/>
45	75	16	–	–	●	●	–	–	BB-6009-B180-10- <input type="text"/>
50	80	16	–	–	●	●	–	–	BB-6010-B180-10- <input type="text"/>
55	90	18	–	–	●	●	–	–	BB-6011-B180-10- <input type="text"/>
60	95	18	–	–	●	●	–	–	BB-6012-B180-10- <input type="text"/>
120	180	28	●	–	–	–	–	–	BB-6024-B180-30-ES New



Order example:

BB-6706-B180-30-ES = Thin ring bearing with race material xirodur® B180, xirodur® B180 cage and stainless steel balls



Available from stock

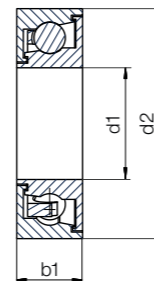
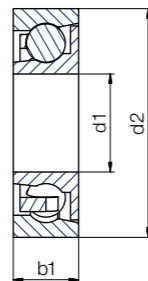
Upon request



PA cage, with shield on one side stainless steel or glass balls



B180 cage, with labyrinth seal, stainless steel balls



- Protects against coarse dirt
- Operating temperature: from -40°C up to +80°C
- Suitable for contact with food

Technical data

Installation size	Radial load capacity		Max. speed [rpm]	Weight	
	stat. [N]	dyn. [N]		ES [g]	GL [g]
623	10	25	4,500	0.41	0.33
626	41	43	3,200	2.56	1.71
608	80	94	2,200	3.93	2.67
6000	110	130	2,200	6.21	4.15
6001	138	147	2,000	7.09	4.61
6202	142	155	1,700	12.73	9.63
6003	160	220	1,600	11.12	8.03
6004	250	320	1,400	20.20	13.60
6005	280	360	1,200	23.89	16.51

With labyrinth seal

Installation size	Radial load capacity		Max. speed [rpm]	Weight	
	stat. [N]	dyn. [N]		ES [g]	GL [g]
6003	160	220	1,600	11.02	8.27
6004	250	320	1,400	20.81	12.93

Order example:

BB-623-B180-10-ES-C = Radial deep groove ball bearing with race material xirodur® B180, PA cage, stainless steel balls and shield



Order key

Type Material

BB-623-B180-10-ES-C

Ball bearing	Dimensions according to DIN 625-1	Race material	Cage material	Ball material	With shield
--------------	-----------------------------------	---------------	---------------	---------------	-------------

Options:

Cage material

10 : PA

30 : xirodur® B180

Ball material

ES : Stainless steel

GL : Glass

Shield or labyrinth seal

C : One-sided shield

LCC : Labyrinth seal

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination		Part No.
			PA/ES	PA/GL	
3	10	4	●	●	BB-623-B180-10- -C
6	19	6	●	●	BB-626-B180-10- -C
8	22	7	●	●	BB-608-B180-10- -C
10	26	8	●	●	BB-6000-B180-10- -C
12	28	8	●	●	BB-6001-B180-10- -C
15	35	11	●	●	BB-6202-B180-10- -C
17	35	10	●	●	BB-6003-B180-10- -C
20	42	12	●	●	BB-6004-B180-10- -C
25	47	12	●	●	BB-6005-B180-10- -C

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination		Part No.
			B180/ES	B180/GL	
17	35	10	●	●	BB-6003-B180-30- -LCC
20	24	12	●	●	BB-6004-B180-30- -LCC



Available from stock

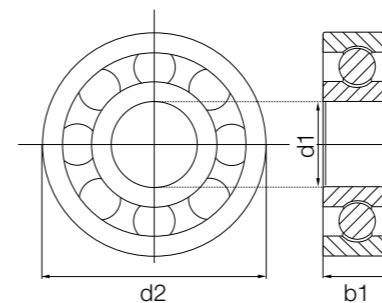


PP cage,
stainless steel
balls



PP cage,
glass balls

- Good chemical resistance
- Cost-effective
- Operating temperature: from 0°C up to +60°C



Order key

Type	Material
BB-623-C160-20-ES	
Ball bearing	
Dimensions according to DIN 625-1	
Race material	
Cage material	
Ball material	
	Cage material 20 : PP
	Options: Ball material ES : Stainless steel GL : Glass

Technical data

Installation size	Radial load capacity		Limit speed [rpm]	Weight	
	stat. [N]	dyn. [N]		PP/ES [g]	PP/GL [g]
623	10	11	4,000	0.35	0.26
624	12	13	3,650	–	–
625	20	22	3,100	–	0.21
635	30	31	2,900	1.76	1.03
626	30	34	2,600	2.15	1.43
636	40	42	2,050	2.06	–
627	40	43	2,000	–	–
688	20	21	2,750	1.06	0.24
608	40	46	2,200	3.37	2.21
628	57	61	1,800	–	–
638	60	62	1,670	6.27	4.10
629	60	63	1,680	–	–
6800	20	24	2,100	–	–
6000	60	65	1,700	5.48	3.33
6200	78	81	1,540	7.50	4.71
6801	30	32	1,920	0.84	0.92
6001	70	74	1,580	6.59	3.80
6201	80	83	1,260	–	–
6802	40	43	1,700	–	0.46
6002	80	85	1,500	5.72	4.86
6202	80	85	1,130	–	–
6803	50	51	1,650	–	–
6003	90	96	1,300	9.10	6.22
6203	140	142	1,010	–	–
6804	50	54	1,480	–	–

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination		Part No.
			PP/ES	PP/GL	
3	10	4	●	●	BB-623-C160-20- <input type="checkbox"/>
4	13	5	●	●	BB-624-C160-20- <input type="checkbox"/>
5	16	5	●	●	BB-625-C160-20- <input type="checkbox"/>
5	19	6	●	●	BB-635-C160-20- <input type="checkbox"/>
6	19	6	●	●	BB-626-C160-20- <input type="checkbox"/>
6	22	7	●	●	BB-636-C160-20- <input type="checkbox"/>
7	22	7	●	●	BB-627-C160-20- <input type="checkbox"/>
8	16	5	●	●	BB-688-C160-20- <input type="checkbox"/>
8	22	7	●	●	BB-608-C160-20- <input type="checkbox"/>
8	24	8	●	●	BB-628-C160-20- <input type="checkbox"/>
8	28	9	●	●	BB-638-C160-20- <input type="checkbox"/>
9	26	8	●	●	BB-629-C160-20- <input type="checkbox"/>
10	19	5	●	●	BB-6800-C160-20- <input type="checkbox"/>
10	26	8	●	●	BB-6000-C160-20- <input type="checkbox"/>
10	30	9	●	●	BB-6200-C160-20- <input type="checkbox"/>
12	21	5	●	●	BB-6801-C160-20- <input type="checkbox"/>
12	28	8	●	●	BB-6001-C160-20- <input type="checkbox"/>
12	32	10	●	●	BB-6201-C160-20- <input type="checkbox"/>
15	24	5	●	●	BB-6802-C160-20- <input type="checkbox"/>
15	32	9	●	●	BB-6002-C160-20- <input type="checkbox"/>
15	35	11	●	●	BB-6202-C160-20- <input type="checkbox"/>
17	26	5	●	●	BB-6803-C160-20- <input type="checkbox"/>
17	35	10	●	●	BB-6003-C160-20- <input type="checkbox"/>
17	40	12	●	●	BB-6203-C160-20- <input type="checkbox"/>
20	32	7	●	●	BB-6804-C160-20- <input type="checkbox"/>



Order example:

BB-623-C160-20-ES = Radial deep groove ball bearing with race material xirodur® C160, PP cage and stainless steel balls



Available from stock

Upon request

Technical data

Installation size	Radial load capacity		Limit speed [rpm]	Weight	
	stat. [N]	dyn. [N]		PP/ES [g]	PP/GL [g]
6004	140	142	1,000	17.81	11.20
6204	140	145	950	22.85	4.89
6805	80	82	1,075	–	–
6005	140	151	960	20.63	13.29
6205	170	181	810	26.70	4.89

Dimensions [mm]

Inner Ø d1	OuterØ d2	Width b1	Cage/ball material combination		Part No.
			PP/ES	PP/GL	
20	42	12	●	●	BB-6004-C160-20- <input type="checkbox"/>
20	47	14	●	●	BB-6204-C160-20- <input type="checkbox"/>
25	37	7	●	●	BB-6805-C160-20- <input type="checkbox"/>
25	47	12	●	●	BB-6005-C160-20- <input type="checkbox"/>
25	52	15	●	●	BB-6205-C160-20- <input type="checkbox"/>



Order example:

BB-6004-C160-20-ES = Radial deep groove ball bearing with race material xirodur® C160, PP cage and stainless steel balls



Available from stock

Upon request



PA cage,
stainless steel balls



PEEK cage,
stainless steel balls



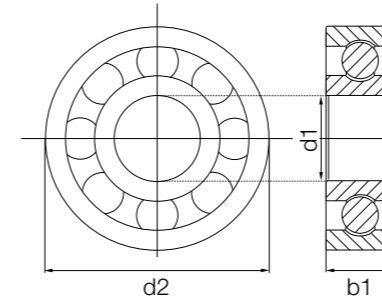
PEEK cage,
glass balls



PEEK cage,
PAI balls



Do you need an electrically conductive material for your application? xirodur® F500 is conductive and resistant to chemicals. Please contact us!



- Temperature and chemicals resistance
- Operation temperature: from -100°C up to +150°C



Order key

Type	Material
BB-623-A500-10-ES	
Ball bearing	Options: Cage material 10 : PA 70 : PEEK Ball material ES : Stainless steel GL : Glass PAI : Polyamide-imide
Dimensions according to DIN 625-1	
Face material	
Cage material	
Ball material	

Technical data

Installation size	Radial load capacity				Limit speed [rpm]	Weight			
	stat.	dyn.	stat.	dyn.		PA/ES	PEEK/ES	PEEK/GL	PEEK/PAI
	[N]	[N]	[N]	[N]		[g]	[g]	[g]	[g]
623	27	30	-	-	5,000	0.4	0.4	0.3	-
624	30	40	-	-	4,500	1.9	1.0	0.9	-
625	36	43	-	-	3,700	-	-	-	-
635	48	52	-	-	3,400	-	-	-	-
626	54	60	15	20	3,400	2.3	2.3	1.6	1.4
636	72	76	-	-	2,450	-	-	-	-
627	72	74	-	-	2,600	-	-	-	-
688	36	38	-	-	3,150	-	-	-	-
608	72	78	18	25	2,700	3.7	3.7	2.4	2.2
628	98	104	-	-	2,500	-	-	-	-
638	102	108	-	-	2,300	-	-	-	-
629	102	112	-	-	2,350	-	-	-	-
6800	42	46	-	-	2,300	-	-	-	-
6000	102	107	25	34	2,100	6.0	6.0	3.8	3.4
6200	126	132	-	-	2,100	-	-	-	-
6801	54	57	-	-	2,150	-	-	-	-
6001	105	124	-	-	2,040	-	-	-	-
6201	132	141	-	-	1,820	-	-	-	-
6802	72	76	-	-	1,920	-	-	-	-
6002	132	145	32	41	1,900	9.1	9.1	5.2	5.6
6202	135	146	-	-	1,600	-	-	-	-
6803	84	84	-	-	1,760	-	-	-	-
6003	138	152	-	-	1,790	-	-	-	-
6203	228	232	-	-	1,450	-	-	-	-

Dimensions [mm]

Inner Ø	Outer Ø	Width	Cage/ball material combination				Part No.
d1	d2	b1	PA/ES	PEEK/ES	PEEK/GL	PEEK/PAI	
3	10	4	●	●	●	-	BB-623-A500- <input type="text"/> - <input type="text"/>
4	13	5	●	●	●	-	BB-624-A500- <input type="text"/> - <input type="text"/>
5	16	5	●	●	●	-	BB-625-A500- <input type="text"/> - <input type="text"/>
5	19	6	●	●	●	-	BB-635-A500- <input type="text"/> - <input type="text"/>
6	19	6	●	●	●	●	BB-626-A500- <input type="text"/> - <input type="text"/>
6	22	7	●	●	●	-	BB-636-A500- <input type="text"/> - <input type="text"/>
7	22	7	●	●	●	-	BB-627-A500- <input type="text"/> - <input type="text"/>
8	16	5	●	●	●	-	BB-688-A500- <input type="text"/> - <input type="text"/>
8	22	7	●	●	●	●	BB-608-A500- <input type="text"/> - <input type="text"/>
8	24	8	●	●	●	-	BB-628-A500- <input type="text"/> - <input type="text"/>
8	28	9	●	●	●	-	BB-638-A500- <input type="text"/> - <input type="text"/>
9	26	8	●	●	●	-	BB-629-A500- <input type="text"/> - <input type="text"/>
10	19	5	●	●	●	-	BB-6800-A500- <input type="text"/> - <input type="text"/>
10	26	8	●	●	●	●	BB-6000-A500- <input type="text"/> - <input type="text"/>
10	30	9	●	●	●	-	BB-6200-A500- <input type="text"/> - <input type="text"/>
12	21	5	●	●	●	-	BB-6801-A500- <input type="text"/> - <input type="text"/>
12	28	8	●	●	●	●	BB-6001-A500- <input type="text"/> - <input type="text"/>
12	32	10	●	●	●	-	BB-6201-A500- <input type="text"/> - <input type="text"/>
15	24	5	●	●	●	-	BB-6802-A500- <input type="text"/> - <input type="text"/>
15	32	9	●	●	●	●	BB-6002-A500- <input type="text"/> - <input type="text"/>
15	35	11	●	●	●	-	BB-6202-A500- <input type="text"/> - <input type="text"/>
17	26	5	●	●	●	-	BB-6803-A500- <input type="text"/> - <input type="text"/>
17	35	10	●	●	●	●	BB-6003-A500- <input type="text"/> - <input type="text"/>
17	40	12	●	●	●	-	BB-6203-A500- <input type="text"/> - <input type="text"/>



Order example:

BB-623-A500-10-ES = Radial deep groove ball bearing with race material xirodur® A500, PA cage and stainless steel balls



Available from stock

Upon request

Technical data

Installation size	Radial load capacity				Limit speed	Weight			
	stat.	dyn.	PEEK/PAI			PA/ES	PEEK/ES	PEEK/GL	PEEK/PAI
			stat.	dyn.					
	[N]	[N]	[N]	[N]	[rpm]	[g]	[g]	[g]	[g]
6804	90	93	–	–	1,560	–	–	–	–
6004	234	250	62	88	1,700	19.7	19.7	13.2	11.7
6204	234	238	–	–	1,270	–	–	–	–
6805	132	135	–	–	980	–	–	–	–
6005	405	420	–	–	1,500	–	–	–	–
6205	422	440	–	–	1,100	–	–	–	–

Dimensions [mm]

Inner Ø	OuterØ	Width	Cage/ball material combination				Part No.
			PA/ES	PEEK/ES	PEEK/GL	PEEK/PAI	
d1	d2	b1	PA/ES	PEEK/ES	PEEK/GL	PEEK/PAI	
20	32	7	●	●	●	–	BB-6804-A500- <input type="text"/> - <input type="text"/>
20	42	12	●	●	●	●	BB-6004-A500- <input type="text"/> - <input type="text"/>
20	47	14	●	●	●	–	BB-6204-A500- <input type="text"/> - <input type="text"/>
25	37	7	●	●	●	–	BB-6805-A500- <input type="text"/> - <input type="text"/>
25	47	12	●	●	●	●	BB-6005-A500- <input type="text"/> - <input type="text"/>
25	52	15	●	●	●	–	BB-6205-A500- <input type="text"/> - <input type="text"/>



Order example:

BB-623-A500-10-ES = Radial deep groove ball bearing with race material xirodur® A500, PA cage and stainless steel balls



Available from stock

Upon request



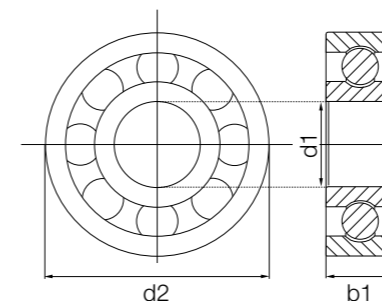
PA cage,
stainless steel balls



PE cage,
stainless steel balls

- Static dissipation
- Suitable for food contact according to the FDA/EU regulations (combined with PE cage)
- Specific volume resistance $<10^{12}\Omega\text{cm}$
- Operating temperature: from -40°C up to $+80^{\circ}\text{C}$

i Do you need an electrically conductive material for your application?
xirodur® F182 is even more conductive (without FDA/food approval).
Please contact us!



Order key

Type Material

BB-623-F180-10-ES



Options:

Cage material

10 : PA

50 : PE

Ball material

ES : Stainless steel

Technical data

Installation size	Radial load capacity		Limit speed [rpm]	Weight	
	stat. [N]	dyn. [N]		PA/ES [g]	PE/ES [g]
623	10	25	4,500	0.39	0.39
624	20	33	4,000	0.83	0.82
625	40	40	3,700	1.54	1.50
626	41	43	3,200	2.50	2.36
608	80	94	2,200	3.79	3.67
6000	110	130	2,200	5.86	5.76
6001	138	147	2,000	6.72	6.62
6002	140	150	1,800	8.59	8.50
6003	160	220	1,600	10.53	10.39
6004	250	320	1,400	19.24	19.18
6005	280	360	1,200	22.43	22.04

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination		Part No.
			PA/ES	PE/ES	
3	10	4	●	●	BB-623-F180- <input type="text"/> -ES
4	13	5	●	●	BB-624-F180- <input type="text"/> -ES
5	16	5	●	●	BB-625-F180- <input type="text"/> -ES
6	19	6	●	●	BB-626-F180- <input type="text"/> -ES
8	22	7	●	●	BB-608-F180- <input type="text"/> -ES
10	26	8	●	●	BB-6000-F180- <input type="text"/> -ES
12	28	8	●	●	BB-6001-F180- <input type="text"/> -ES
15	32	9	●	●	BB-6002-F180- <input type="text"/> -ES
17	35	10	●	●	BB-6003-F180- <input type="text"/> -ES
20	42	12	●	●	BB-6004-F180- <input type="text"/> -ES
25	47	12	●	●	BB-6005-F180- <input type="text"/> -ES



Order example:

BB-623-F180-10-ES = Radial deep groove ball bearing with race material xirodur® F180, PA cage and stainless steel balls



Available
from stock

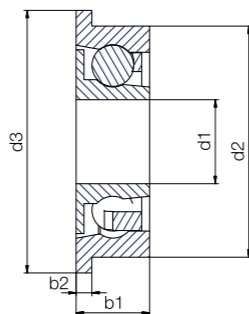
Single flange with shield



xirodur® B180, PA cage, stainless steel balls



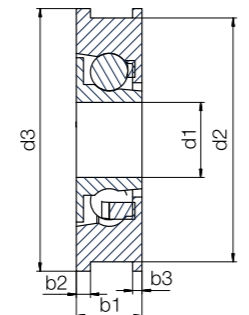
xirodur® S180, PA cage, stainless steel balls



Double flange with shield



xirodur® B180 races, PA cage, stainless steel or glass balls



Technical data

Installation size	Double flange	Radial load capacity		Max. speed [rpm]	Weight				
		stat. [N]	dyn. [N]		PA/ES [g]	B180 PA/GL [g]	B180/ES [g]	F180 PA/ES [g]	S180 PA/ES [g]
Radial deep groove ball bearing with single flange with shield for conveyor roller									
606	-	80	94	2,200	2.40	-	-	-	-
688	-	80	94	2,200	1.90	-	-	-	-
608	-	80	94	2,200	5.55	-	-	-	-
6000	-	110	130	1,900	7.55	-	-	-	-
6000	-	110	130	1,900	10.06	-	-	-	-
6001	-	130	147	1,750	7.53	5.09	-	-	-
6001	-	130	147	1,750	12.02	-	-	-	-
6002	-	140	150	1,600	11.44	-	-	-	-
6003	-	160	220	1,550	11.42	-	-	-	-
6004	-	250	320	1,400	-	-	16.36	-	-
6004	-	250	320	1,400	-	-	29.60	-	-
Radial deep groove ball bearing with single or double flange and shields									
608	-	80	94	2,200	5.69	4.47	-	5.49	-
608	●	80	94	2,200	5.82	5.93	-	5.61	-
626	-	60	62	3,200	-	-	-	-	1.32
688	-	39	41	3,000	-	-	-	-	0.66
608	-	80	94	2,400	-	-	-	-	2.00

Order example:

BB-6000F2830-B180-10-ES = Radial deep groove ball bearing with single flange for system solution BBT (conveyor roller), race material xirodur® B180, PA cage and stainless steel balls

Order key with single flange

BB-6000 F 2830-B180-10-ES

Type	Material
Ball bearing	Race material
Dimensions according to DIN 625-1	Cage material
Single flange	Ball material
Outer Ø [mm]	

Also available as complete system solution
▶ Page 1058

Order key with double flange

BB-608FF-B180-10-ES-CC

Type	Material	Design
Ball bearing	Race material	Shield
Dimensions according to DIN 625-1	Cage material	
Double flange	Ball material	Double shield

Flange
F : Single flange
FF : Double flange
Race material
B180 : xirodur® B180
S180 : xirodur® S180
Cage material
10 : PA
30 : xirodur® B180
Ball material
ES : Stainless steel
GL : Glass
Shield
C : With shield
CC : Double shield

Dimensions [mm]

Inner Ø	Outer Ø		Width		Cage/ball material combination				Part No.
	d1	d2	d3	b1	b2	PA/ES	PA/GL	B180/ES	
6.0	18.0	20.0	6.0	2.0	●	-	-	-	BB-606F1820-B180-30-ES
8.0	18.0	20.0	6.0	2.0	●	-	-	-	BB-688F1820-B180-30-ES
8.0	28.0	30.0	7.0	2.0	●	-	-	-	BB-608F2830-B180-10-ES
10.0	28.0	30.0	9.0	2.0	●	-	-	-	BB-6000F2830-B180-10-ES
10.0	35.0	38.0	9.0	2.0	●	-	-	-	BB-6000F3538-B180-10-ES
12.0	28.0	30.0	9.0	2.0	●	-	-	-	BB-6001F2830-B180-10-ES
12.0	35.0	38.0	9.0	2.0	●	-	-	-	BB-6001F3538-B180-10-ES
15.0	35.0	38.0	9.0	2.0	●	-	-	-	BB-6002F3538-B180-10-ES
17.0	35.0	38.0	10.0	2.0	●	-	-	-	BB-6003F3538-B180-10-ES
20.0	46.0	50.0	12.0	2.0	-	-	●	-	BB-6004F4650G-B180-30-ES
20.0	56.0	60.0	12.0	2.0	-	-	●	-	BB-6004F5660G-B180-30-ES
8.0	26.0	28.0	8.5	1.5	●	●	-	-	BB-608F-B180-10-□-CC
8.0	26.0	28.0	7.0	1.5/1.0 (b3)	●	●	-	-	BB-608FF-B180-10-□-CC
6.0	19.0	22.0	6.0	1.5	-	-	-	●	BB-626F-S180-10-ES-C
8.0	16.0	18.0	5.0	1.0	-	-	-	●	BB-688F-S180-10-ES-C
8.0	22.0	25.0	7.0	1.5	-	-	-	●	BB-608F-S180-10-ES-C

Available from stock

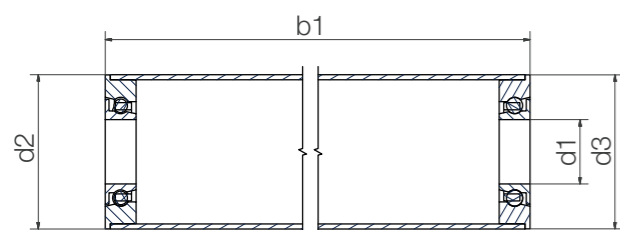


Order key

Type	Material
BBT-AC38-6000-B180-10-ES	
Ball bearing conveyor roller	Aluminium tube
Outer Ø	Dimensions according to DIN 625-1
Race material	Cage material
	Ball material

Cage material
 10 : PA
 30 : xirodur® B180
Ball material
 ES : Stainless steel

i Radial deep groove ball bearings with flange also available as individual parts ▶ Page 1056



Dimensions [mm]

Inner Ø	Outer Ø	Flange Ø	Length	Part No.
d1	d2	d3	b1 Tolerance	
6	20	19.9	50-500 ±0.5	BBT-AC20-606-B180-30-ES
8	20	19.9	50-500 ±0.5	BBT-AC20-688-B180-30-ES
8	30	29.9	50-1,500 ±0.5	BBT-AC30-608-B180-10-ES
10	30	29.9	50-1,500 ±0.5	BBT-AC30-6000-B180-10-ES
12	30	29.9	50-1,500 ±0.5	BBT-AC30-6001-B180-10-ES
10	38	37.9	50-1,500 ±0.5	BBT-AC38-6000-B180-10-ES
12	38	37.9	50-1,500 ±0.5	BBT-AC38-6001-B180-10-ES
15	38	37.9	50-1,500 ±0.5	BBT-AC38-6002-B180-10-ES
17	38	37.9	50-1,500 ±0.5	BBT-AC38-6003-B180-10-ES
20	50	49.9	50-1,500 ±0.5	BBT-AC50-6004-B180-30-ES
20	60	59.9	50-1,500 ±0.5	BBT-AC60-6004-B180-30-ES

Online configurator for xiros® system solutions
 ▶ www.igus.eu/xirosAlu

Order example:
BBT-AC38-6000-B180-10-ES, L = 500mm = Aluminium tube with 2 ball bearings with race material xirodur® B180, PA cage and stainless steel balls, total length 500mm

Available from stock
 Delivery time: approx. 1-2 weeks

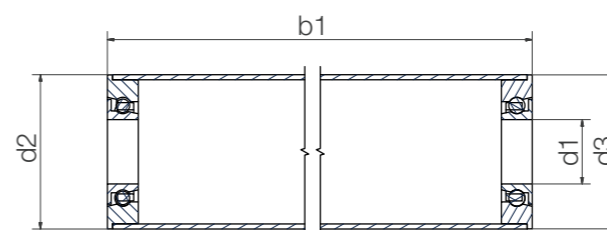


Order key

Type	Material
BBT-S AC30-6000-B180-10-ES	
Ball bearing conveyor roller	Aluminium tube
Outer Ø	Black
Race material	Dimensions according to DIN 625-1
	Cage material
	Ball material

Cage material
 10 : PA
 30 : xirodur® B180
Ball material
 ES : Stainless steel

i Radial deep groove ball bearings with flange also available as individual parts ▶ Page 1056



Dimensions [mm]

Inner Ø	Outer Ø	Flange Ø	Length	Part No.
d1	d2	d3	b1 Tolerance	
6	20	20	100-1,000 ±0.5	BBT-SAC20-606-B180-30-ES New
8	20	20	100-1,000 ±0.5	BBT-SAC20-608-B180-30-ES New
8	30	30	100-1,000 ±0.5	BBT-SAC30-608-B180-10-ES New
10	30	30	100-1,000 ±0.5	BBT-SAC30-6000-B180-10-ES New
12	30	30	100-1,000 ±0.5	BBT-SAC30-6001-B180-10-ES New
10	38	38	100-1,000 ±0.5	BBT-SAC38-6000-B180-10-ES New
12	38	38	100-1,000 ±0.5	BBT-SAC38-6001-B180-10-ES New
15	38	38	100-1,000 ±0.5	BBT-SAC38-6002-B180-10-ES New
17	38	38	100-1,000 ±0.5	BBT-SAC38-6003-B180-10-ES New
20	50	50	100-1,000 ±0.5	BBT-SAC50-6004-B180-30-ES New
20	60	60	100-1,000 ±0.5	BBT-SAC60-6004-B180-30-ES New

Online configurator for xiros® system solutions
 ▶ www.igus.eu/xirosAlu

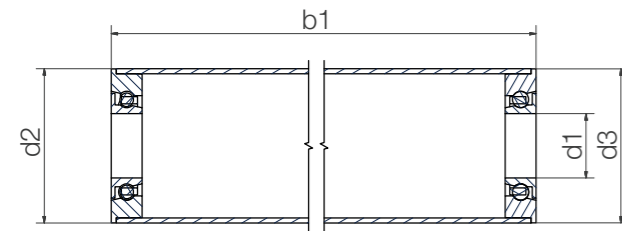
Order example:
BBT-SAC20-606-B180-30-ES, L = 200mm = Aluminium tube, sandblasted, installation size 606 with xirodur® B180 fixed flange ball bearing, xirodur® B180 cage and stainless steel balls, total length 200mm

Available from stock
 Delivery time: approx. 3-4 weeks



Aluminium conveyor roller with non-stick coating

- Up to 70% less sticking of adhesive labels



Order key

Type	Material
BBT-AH30-6000-S180-10-ES	
Ball bearing conveyor roller	Aluminium tube
Outer Ø	Dimensions according to DIN 625-1
Race material	Cage material
	Ball material

Cage material
10 : PA
Ball material
ES : Stainless steel

Dimensions [mm]

Inner Ø	OuterØ	Flange Ø	Length	Part No.	
d1	d2	d3	b1	Tolerance	
8	30	30	100 - 1,000	±0.5	BBT-AH30-608-S180-10-ES New
10	30	30	100 - 1,000	±0.5	BBT-AH30-6000-S180-10-ES New
12	30	30	100 - 1,000	±0.5	BBT-AH30-6000-S180-10-ES New
10	30	30	100 - 1,000	±0.5	BBT-AH30-6001-S180-10-ES New
10	38	38	100 - 1,000	±0.5	BBT-AH38-6000-S180-10-ES New
10	38	38	100 - 1,000	±0.5	BBT-AH38-6000-S180-10-ES New
15	38	38	100 - 1,000	±0.5	BBT-AH38-6002-S180-10-ES New



Order example:

BBT-AH30-6000-S180-10-ES, L = 100mm, = Aluminium tube with 2 ball bearings with race material xirodur® S180, PA cage and stainless steel balls, total length 100mm



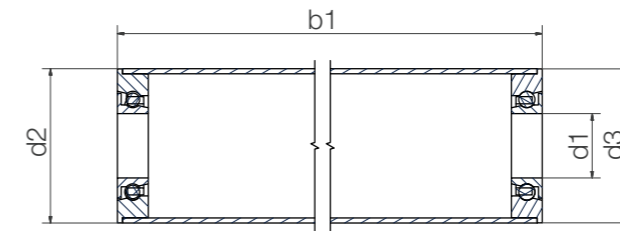
Upon request

Delivery time: 3-4 weeks



Aluminium tube with xirodur® S180 ball bearing

- Black design



Order key

Type	Material
BBT-AC S 30-6000-S180-10-ES	
Ball bearing conveyor roller	Aluminium tube
Black	Outer Ø
Dimensions according to DIN 625-1	Race material
	Cage material
	Ball material

Cage material
10 : PA
Ball material
ES : Stainless steel

Dimensions [mm]

Inner Ø	OuterØ	Flange Ø	Length	Part No.	
d1	d2	d3	b1	Tolerance	
8	30	29.9	50 - 1,500	±0.5	BBT-ACS30-608-S180-10-ES New
10	30	29.9	50 - 1,500	±0.5	BBT-ACS30-6000-S180-10-ES New
12	30	29.9	50 - 1,500	±0.5	BBT-ACS30-6001-S180-10-ES New
10	38	37.9	50 - 1,500	±0.5	BBT-ACS38-6000-S180-10-ES New



Order example:

BBT-ACS30-6000-S180-10-ES, L = 200mm = Aluminium tube with 2 ball bearings with race material xirodur® S180, PA cage and stainless steel balls, total length 200mm



Upon request

Delivery time: 3-4 weeks

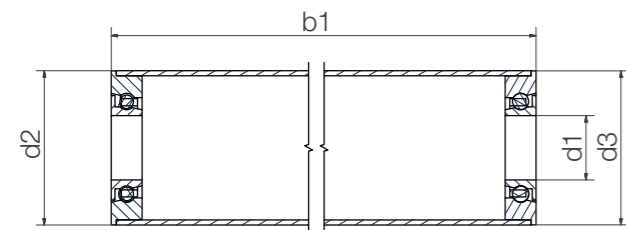
xiros® conveyor rollers | Product range **New**

xiros® system solution - non-metallic with PVC tube and glass balls



PVC tube with xirodur® B180 ball bearing

- 100% non-metallic, non-magnetic
- Application in the chemical, medical and semiconductor industry



Order key

Type	Material
BBT-PVC 30-6000-B180-30-GL	
Ball bearing conveyor roller	PVC tube
Outer Ø	Dimensions according to DIN 625-1
Race material	Cage material
	Ball material

Cage material
30 : xirodur® B180
Ball material
GL : Glass

Dimensions [mm]

Inner Ø	OuterØ	Flange Ø	Length		Part No.
			d1	d2	
8	30	30	100-1,000	±0.5	BBT-PVC30-608-B180-30-GL New
8	30	30	100-1,000	±0.5	BBT-PVC30-6000-B180-30-GL New
10	40	40	100-1,000	±0.5	BBT-PVC40-6000-B180-30-GL New
12	40	40	100-1,000	±0.5	BBT-PVC40-6001-B180-30-GL New
15	40	40	100-1,000	±0.5	BBT-PVC40-6002-B180-30-GL New
17	40	40	100-1,000	±0.5	BBT-PVC40-6003-B180-30-GL New
20	50	50	100-1,000	±0.5	BBT-PVC50-6004-B180-30-GL New
20	63	63	100-1,000	±0.5	BBT-PVC63-6004-B180-30-GL New



Order example:
BBT-PVC30-6000-B180-30-GL, L = 200mm = Aluminium tube with 2 ball bearings with race and cage material xirodur® B180 and glass balls, total length 200mm



Available from stock
 Delivery time: approx. 1-2 weeks

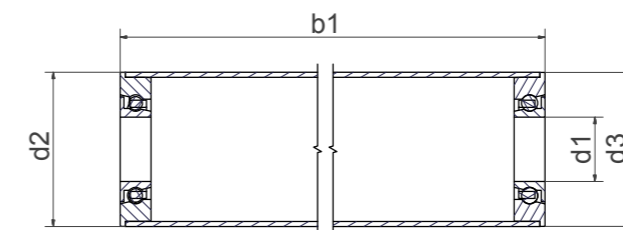
xiros® conveyor rollers | Product range

xiros® system solution - plastic for food contact



PVC tube with xirodur® B180 ball bearing

- Components for use in food in accordance with 10/2011/EU and 1935/2004/EG



Order key

Type	Material
BBT-PVC 50-6004-B180-30-ES	
Ball bearing conveyor roller	PVC tube
Outer Ø	Dimensions according to DIN 625-1
Race material	Cage material
	Ball material

Cage material
30 : xirodur® B180
Ball material
ES : Stainless steel

Dimensions [mm]

Inner Ø	OuterØ	Flange Ø	Length		Part No.
			d1	d2	
8	30	30	50-1,000	±0.5	BBT-PVC30-608-B180-30-ES
10	30	30	50-1,000	±0.5	BBT-PVC30-6000-B180-30-ES
10	40	40	50-1,000	±0.5	BBT-PVC40-6000-B180-30-ES
12	40	40	50-1,000	±0.5	BBT-PVC40-6001-B180-30-ES
15	40	40	50-1,000	±0.5	BBT-PVC40-6002-B180-30-ES
17	40	40	50-1,000	±0.5	BBT-PVC40-6003-B180-30-ES
20	50	50	50-1,000	±0.5	BBT-PVC50-6004-B180-30-ES
20	63	63	50-1,000	±0.5	BBT-PVC63-6004-B180-30-ES



Order example:
BBT-PVC50-6004-B180-30-ES, L = 200mm = PVC tube with 2 ball bearings with race material xirodur® B180, xirodur® B180 cage and stainless steel balls, total length 200mm



Available from stock
 Delivery time: approx. 1-2 weeks



Stainless steel tube with xirodur® B180 ball bearing

- Application in the food and medical sector



Stainless steel conveyor rollers with xirodur® F180 ball bearings

- Prevents static charge



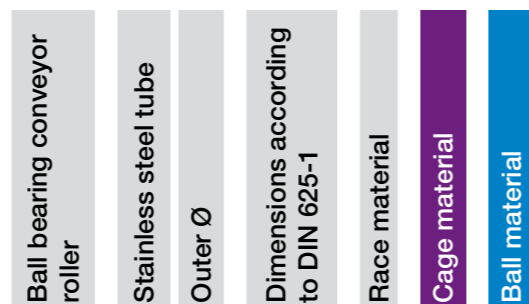
Stainless steel tube with xirodur® A500 ball bearing

- Operating temperature up to +150°C
- With FDA-compliant components
- Resistant to a wide range of chemicals

Order key

Type	Material
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BBT-ES 30-6000-□-□-ES

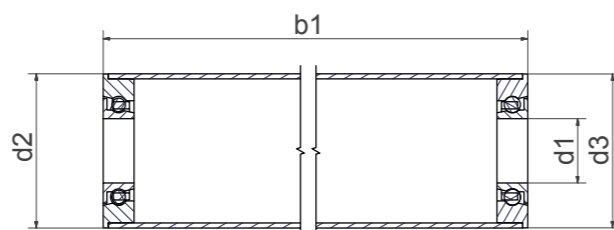


Cage material

- 10 : PA
- 30 : xirodur® B180
- 70 : PEEK

Ball material

- ES : Stainless steel



Dimensions [mm]

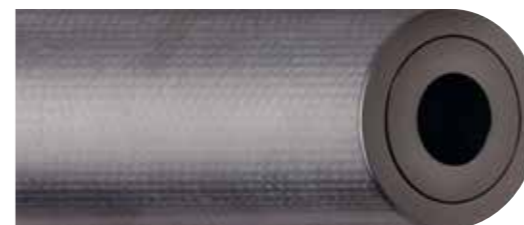
Inner Ø	Outer Ø	Flange Ø	Length	Part No.
d1	d2	d3	b1 Tolerance	
8	30	30	100 - 1,500 ±0.5	BBT-ES30-608-A500-70-ES New
8	30	30	50 - 1,500 ±0.5	BBT-ES30-608-B180-30-ES
8	30	30	100 - 1,500 ±0.5	BBT-ES30-608-F180-10-ES New
10	30	30	100 - 1,500 ±0.5	BBT-ES30-6000-A500-70-ES New
10	30	30	50 - 1,500 ±0.5	BBT-ES30-6000-B180-30-ES
10	30	30	100 - 1,500 ±0.5	BBT-ES30-6000-F180-10-ES New
12	30	30	100 - 1,500 ±0.5	BBT-ES30-6001-A500-70-ES New
12	30	30	50 - 1,500 ±0.5	BBT-ES30-6001-B180-30-ES
12	30	30	100 - 1,500 ±0.5	BBT-ES30-6001-F180-10-ES New

Order example:

BBT-ES30-6000-B180-30-ES, L = 200mm = stainless steel tube with 2 ball bearings with race material xirodur® B180, xirodur® B180 cage and stainless steel balls, total length 200mm

Available from stock - Delivery time approx. 2-3 weeks

With xirodur® F180 as ESD version available upon request



Carbon fibre tube with xirodur® S180 ball bearing, available as ESD version (with xirodur® F180 ball bearing)



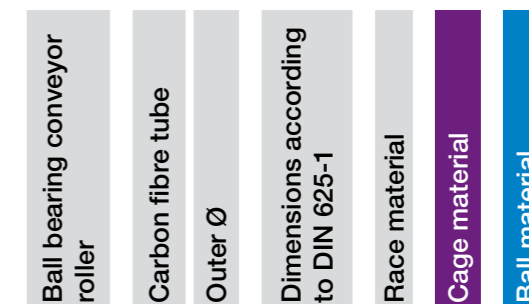
Carbon fibre tube with xirodur® F180 ball bearing

- Low inertia
- Antistatic version

Order key

Type	Material
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BBT-CF 50-6004-□-30-ES

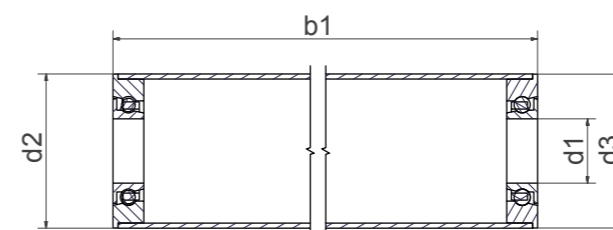


Cage material

- 10 : PA
- 30 : xirodur® B180

Ball material

- ES : Stainless steel



Dimensions [mm]

Inner Ø	Outer Ø	Flange Ø	Length	Part No.
d1	d2	d3	b1 Tolerance	
10	30	30	100 - 1,000 ±0.5	BBT-CF30-6000-F180-10-ES New
12	30	30	100 - 1,000 ±0.5	BBT-CF30-6001-F180-10-ES New
20	50	49.9	50 - 1,000 ±0.5	BBT-CF50-6004-S180-30-ES
20	100	100.0	50 - 1,000 ±0.5	BBT-CF100-6004-F180-30-ES

Order example:

BBT-CF50-6004-S180-30-ES, L = 370mm = Carbon fibre tube with 2 ball bearings with race material xirodur® S180, xirodur® B180 cage and stainless steel balls, total length 370mm

Delivery time: approx. 3 weeks

With xirodur® F180 as ESD version available upon request



Order key

Type Material

BBTG-AC30-□-30-ES

Ball bearing conveyor roller	Aluminium tube	Outer Ø	Length - upon request	Cage material	Ball material
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Cage material

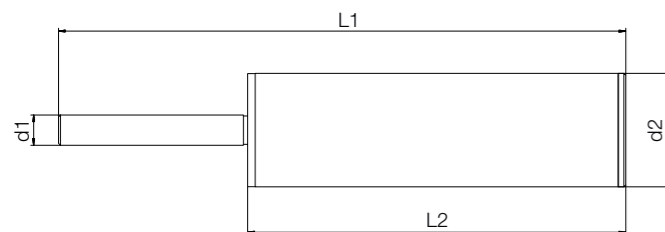
30 : xirodur® B180

Ball material

ES : Stainless steel

- Closed design
- Resistant to dirt
- Simple installation
- Dimensions according to customer request

i Ready-to-install complete systems with shaft to required size upon request



Dimensions [mm]

OuterØ d2	Length L1	Part No.
30	According to customer request	BBTG-AC30-XX-30-ES
38	According to customer request	BBTG-AC38-XX-30-ES
50	According to customer request	BBTG-AC50-XX-30-ES
60	According to customer request	BBTG-AC60-XX-30-ES

U Upon request
For a ready-to-install complete system, please contact us.



Order key

Type Material

BB-6204EC44.5-B180-10-ES

Ball bearing type	Dimensions according to DIN 625-1	End cap	Outer Ø (d2)	Race material	Cage material	Ball material
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Cage material

10 : PA

Options:

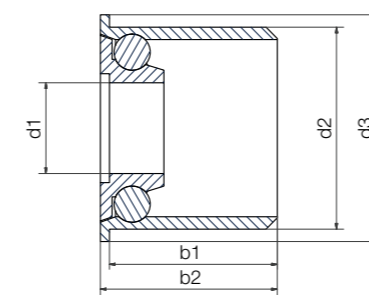
Ball material

ES : Stainless steel

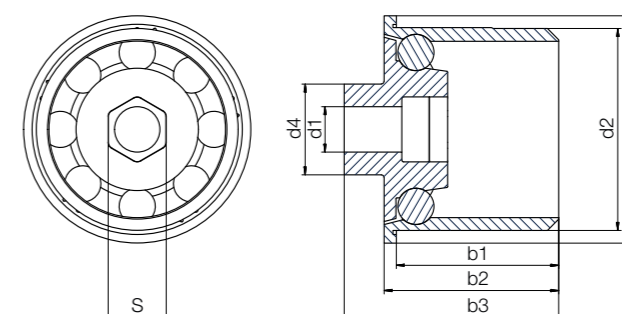
GL : Glass

- Suitable for all conveyor roller tubes 50x2.8mm
- Lubrication-free and corrosion-resistant
- Operating temperature: from -40°C up to +80°C

Example "6204EC"



Example "6204ECM8"



Technical data

Installation size	Radial load capacity		Limit speed [rpm]	Weight	
	stat. [N]	dyn. [N]		PA/ES [g]	PA/GL [g]
6204	245	294	1,800	41.66	29.85
6204	245	294	1,800	48.44	-

Dimensions [mm]

Inner Ø d1	Outer Ø		Width	S	Cage/ball material combination		Part No.
	d2	d3			PA/ES	PA/GL	
20	44.5	50	-	-	●	●	BB-6204EC44.5-B180-10-□
10	44.5	50	20	M8	●	-	BB-6204ECM8-B180-10-ES

U Order example:
BB-6204EC44.5-B180-10-ES = End cap with race material xirodur® B180, PA cage and stainless steel balls

U Available from stock



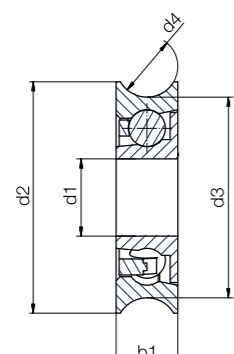
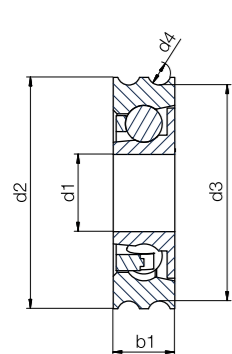
xirodur® B180 cage, stainless steel balls
Type 6000PP3

xirodur® B180 cage, stainless steel balls
Type 608P6

- One-piece design
- Replaces several components
- Different profiles and installation sizes
- Suitable for contact with food
- Operating temperature: from -40°C up to +80°C

Example "Profile PP3"

Example "Profile P8"



Technical data

Installation size	Radial load capacity		Limit speed	Weight
	stat.	[N]		
608P6	80	2,200	2,200	3.96
608P8	140	1,800	1,800	23.37
6000P8	110	2,200	2,200	7.14
6000PP3	110	2,200	2,200	7.86
6201P9	160	1,600	1,600	27.05

Dimensions [mm]

Inner Ø	OuterØ	Base Ø	Groove Ø	Width	Part No.
d1	d2	d3	d4	b1	
8	24	20.5	6	7	BB-608P6-B180-30-ES-C
8	48	32	8	14	BB-608P8-B180-30-ES
10	30	26	8	8	BB-6000P8-B180-30-ES-C
10	30	28	3	8	BB-6000PP3-B180-30-ES-C
12	60	43.5	9	12	BB-6201P9-B180-30-ES



Order example:

BB-608P6-B180-30-ES = Radial deep groove ball bearing, Profil P8 with race material xirodur® B180, xirodur® B180 cage and stainless steel balls



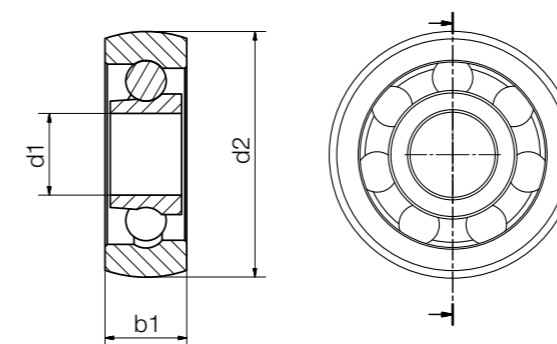
Available from stock



xirodur® B180 races PA cage, stainless steel balls

xirodur® B180 races PA cage, glass balls

- Replaces several components
- Different profiles and installation sizes
- Operating temperature: from -40°C up to +80°C



Technical data

Installation size	Radial load capacity		Limit speed	Weight	
	stat.	dyn.		PA/ES	PA/GL
	[N]	[N]	[rpm]	[g]	[g]
608	80	94	2,200	4.63	3.34
6000	110	130	1,900	7.86	5.70
6001	138	147	1,750	13.51	11.10

Dimensions [mm]

Inner Ø	OuterØ	Width	Width	Cage/ball material combination		Part No.
d1	d2	b1	b2	PA/ES	PA/GL	
8	24.00	8	7	●	●	BB-608SO-B180-10-□
10	28.96	10	8	●	●	BB-6000SO-B180-10-□
12	35.56	12	8	●	●	BB-6001SO-B180-10-□



Order example:

BB-608SO-B180-10-ES = Ball bearing with spherical outer diameter, race material xirodur® B180, PA cage and stainless steel balls



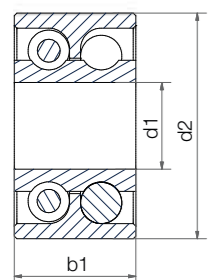
Available from stock

Races made from xirodur® B180



PA cage,
stainless steel or
glass balls

- Higher loads
- More cost-effective than two comparable bearings



Order key

Type	Material	Design
------	----------	--------

BB-6000-B180-10-ES-D



Cage material

10 : PA

Options:

Ball material

ES : Stainless steel

GL : Glass

Technical data

Installation size	Radial load capacity		Limit speed [rpm]	Weight	
	stat. [N]	dyn. [N]		PA/ES [g]	PA/GL [g]
6000	200	240	1,000	11.23	6.90
6004	420	470	650	35.60	22.55

Dimensions [mm]

Inner Ø d1	OuterØ d2	Width b1	Cage/ball material combination		Part No.
			PA/ES	PA/GL	
10	26	14	●	●	BB-6000-B180-10- -D
20	42	20	●	●	BB-6004-B180-10- -D

Order example:

BB-6000-B180-10-ES-D = Double row ball bearing with race material xirodur® B180, PA cage and stainless steel balls

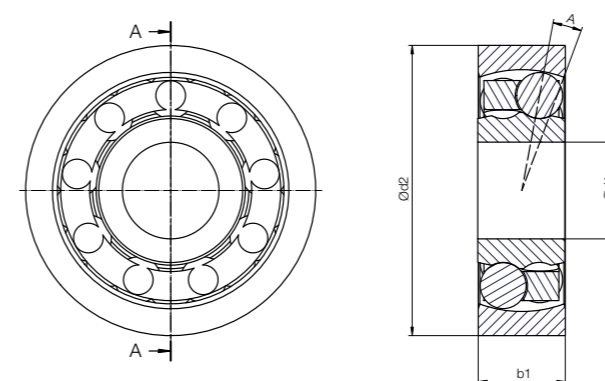
Available from stock

Races made from xirodur® B180



PA cage and stainless steel balls

- Angular misalignment compensation
- Lubrication-free and corrosion-resistant
- Operating temperature: from -40°C up to +80°C



Order key

Type	Material	Design
------	----------	--------

BB-1200-B180-10-ES-D



Cage material

10 : PA

Ball material

ES : Stainless steel

Technical data

Installation size	Max. pivot angle [°]	Permissible radial load [N]	Max. speed [rpm]	Weight [g]
1201	3.92	150	1,800	10.4
1204	3.31	290	1,150	28.8

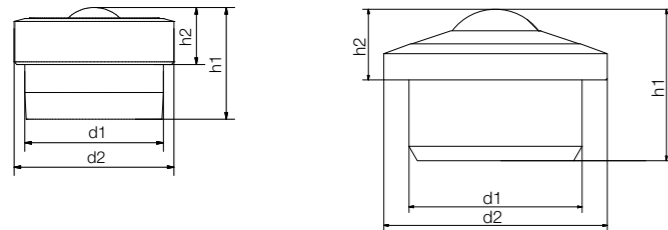
Dimensions [mm]

Inner Ø d1	OuterØ d2	Width b1	Part No.
12	31	10	BB-1201-B180-10-ES-D New
20	47	14	BB-1204-B180-10-ES-D New

Order example:

BB-1200-B180-10-ES-D = Double row ball bearing with race material xirodur® B180, PA cage and stainless steel balls

Available from stock
Delivery time: approx. 1-2 weeks



Installation size 505(B) Installation size 508, 505(B),
512, 515(B), 522(B), 530B

- All-rounder for sensitive transportation
- 5XXB series suitable for overhead installation and lateral guidance

Technical data and dimensions [mm]

Installation size	Max. stat. load capacity axial [N]	Inner Ø		Height		Weight [g]	Part No.
		d1	d2	h1	h2		
505	35	10.4	12.0	8.4	4.3	0.88	BB-505-B180-POM
508	40	12.6	17.0	11.2	4.8	1.65	BB-508-B180-POM New
512	60	18.0	23.0	15.4	7.4	4.69	BB-512-B180-POM New
515	80	24.0	31.0	21.0	9.8	10.73	BB-515-B180-POM
522	110	36.0	45.0	30.0	9.8	28.80	BB-522-B180-POM

Technical data and dimensions [mm]

Installation size	Max. stat. load capacity axial [N]	Inner Ø		Height		Weight [g]	Part No.
		d1	d2	h1	h2		
505B	150	10.4	12.0	8.4	4.3	0.92	BB-505B-B180-POM
515B	300	24.0	31.0	21.0	9.8	11.19	BB-515B-B180-POM
522B	500	36.0	45.0	30.0	9.8	29.97	BB-522B-B180-POM
530B	1000	45.0	55.0	37.0	13.8	67.40	BB-530B-B180-POM



Recommended tolerances

We recommend the following hole tolerances for the ball transfer units housings:

Installation size 505 ▶ 10.40H7 515/515B ▶ 24H7 522/522B ▶ 36H7

In general: The height tolerance of all installation sizes is ± 0.2mm

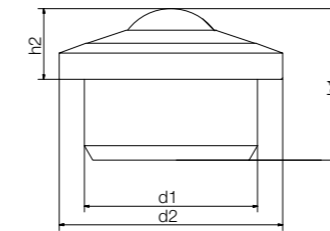


Order example:

[BB-505-B180-POM](#) = Polymer ball transfer unit with housing material xirodur® B180 and POM ball



Available from stock



- Higher load capacity and smooth operation
- Up to 45% lower rolling friction compared to BB-515B/522B-B180-POM

Technical data and dimensions [mm]

Installation size	Max. static load capacity axial [N]	Inner Ø		Height		Weight [g]	Part No.
		d1	d2	h1	h2		
515	180	24.0	31.0	21.0	9.8	15.59	BB-515-B180-POM-ES New
522	300	36.0	45.0	30.0	9.8	35.56	BB-522-B180-POM-ES New



Recommended tolerances

We recommend the following hole tolerances for the ball transfer units housings:

Installation size

515 ▶ 24H7

522 ▶ 36H7

In general: The height tolerance of all installation sizes is ± 0.2mm



Order example:

[BB-515-B180-POM-ES](#) = Polymer ball transfer unit with housing material xirodur® B180 and stainless steel support balls



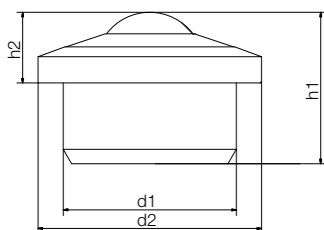
Available from stock



With stainless steel balls



Electrostatically conductive



Order key

Type	Material
BB-522 B - -ES	
Ball bearing	
Type	
New generation	
Housing material	
Ball material	

Housing material:
xirodur® B180
xirodur® F182 (ESD version)
Ball material
ES: Stainless steel

- For semiconductors and electronic components
- Suitable for overhead installation and lateral guidance

Technical data and dimensions [mm]

Installation size	Max. static axial load capacity [N]	Inner Ø		Height		Weight [g]	Part No.
		d1	d2	h1	h2		
515	300	24.0	31.0	21.0	9.8	22.8	BB-515B-B180-ES
515	300	24.0	31.0	21.0	9.8	22.8	BB-515B-F182-ES
522	500	36.0	45.0	30.0	9.8	66.6	BB-522B-B180-ES

Technical data and dimensions [mm]

Installation size	Max. static axial load capacity [N]	Inner Ø		Height		Weight [g]	Part No.
		d1	d2	h1	h2		
515B	300	24.0	31.0	21.0	9.8	11.19	BB-515B-B180-ES
522B	500	36.0	45.0	30.0	9.8	29.97	BB-522B-B180-ES



Recommended tolerances

We recommend the following hole tolerances for the ball transfer units housings:

Installation size

515B ▶ 24H7

522B ▶ 36H7

In general: The height tolerance of all installation sizes is ± 0.2mm



Order example:

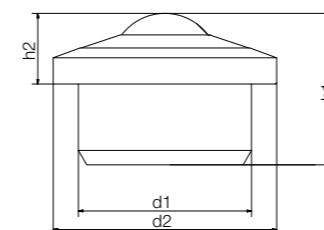
BB-515B-B180-ES = Polymer ball transfer unit with housing material xirodur® B180 and stainless steel balls



Available from stock



- High load carrying capacity with low friction
- For high impact loads



Order key

Type	Material
BB-522 G - J3B -ES	
Ball bearing	
Type	
Sliding version	
Housing material	
Ball material	

Ball material
ES: Stainless steel

Technical data and dimensions [mm]

Installation size	Max. static load capacity axial [N]	Inner Ø		Height		Weight [g]	Part No.
		d1	d2	h1	h2		
515G	700	24.0	31.0	21.0	9.8	23.02	BB-515G-J3B-ES New
522G	1,470	36.0	45.0	30.0	9.8	69.43	BB-522G-J3B-ES New



Recommended tolerances

We recommend the following hole tolerances for the ball transfer units housings:

Installation size

515G ▶ 24H7

522G ▶ 36H7

In general: The height tolerance of all installation sizes is ± 0.2mm



Order example:

BB-515G-J3B-ES = Polymer ball transfer unit with sliding insert, housing material J3B and stainless steel balls



Available from stock

Delivery time: approx. 3-4 weeks

Axial polymer ball transfer unit made from xirodur® B180



For high loads (HH)



With soft roller made from xirodur® D180 (HS)

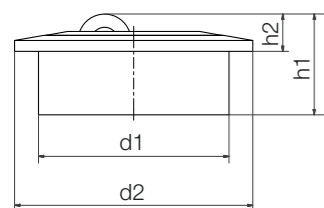
Order key

Type	Material
------	----------

BB-522 A -B180-HS

Ball bearing	Type	Axial ball transfer unit	Housing material	Ball material
				Options: Ball material HH (Hard roller) : xirodur® B180 HS (Soft roller) : xirodur® D180

- Self-aligning
- Low installation height



BB-515A-B180-HH/-HS
 BB-522A-B180-HH/-HS

Technical data and dimensions [mm]

Installation size	Max. stat. load capacity axial [N]	Inner Ø		Height		Weight		Part No.
		d1	d2	h1	h2	HS	HH	
						[g]	[g]	
515A	150	24.0	31.0	14.3	5.3	9.96	9.99	BB-515A-B180-□
522A	300	36.0	45.0	19.2	7.05	24.69	24.71	BB-522A-B180-□



Order example:

BB-515A-B180-HS = axial polymer ball transfer unit with housing material xirodur® B180 and xirodur® D180 soft roller

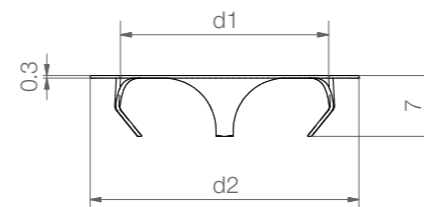


Available from stock

Accessories: Clamping rings for xiros® polymer ball transfer units



xiros® clamping rings made of stainless steel offer the possibility to install xiros® polymer ball transfer units in another orientation than the standard horizontal position. Easy assembly and disassembly.



Dimensions [mm]

For ball transfer unit	d1	d2	Housing hole	Weight [g]	Part No.
BB-515-B180-POM/BB-515A-B180-□	24	31	25H7	0.91	BB-515-CR
BB-522-B180-POM/BB-522A-B180-□	36	41	37H7	1.61	BB-522-CR



Available from stock

Races made from xirodur® B180



Order key

Type	Material
------	----------

BB-51104-B180-ES-D

Ball bearing	Dimensions according to DIN 711	Race/cage material	Ball material	Double row
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Options:

Ball material

ES : Stainless steel

GL : Glass

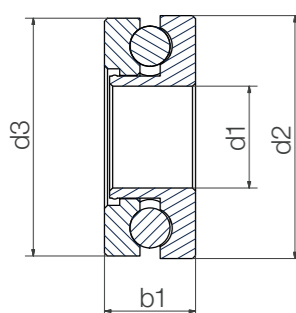
Suffix

Blank : Single row

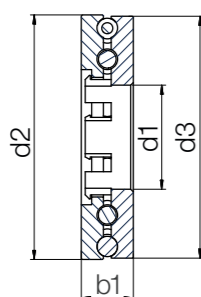
D : Double row

Single or double row, with stainless steel or glass balls

- Higher load capacity
- Good resistance to chemicals and seawater
- Suitable for contact with food
- Operating temperature: from -40°C up to +80°C



Single row bearing



Double row bearing

Technical data

Installation size	Single row	Double row	load capacity		Limit speed [rpm]	Weight	
			stat. [N]	dyn. [N]		B180/ES [g]	B180/GL [g]
51100	●	-	200	250	600	6.61	4.12
51104	●	-	650	810	460	13.72	8.19
51104	-	●	975	1,215	460	18.96	8.99

Dimensions [mm]

Inner Ø		OuterØ		Width	Cage/ball material combination		Part No.
d1	d2	d3	b1		B180/ES	B180/GL	
10	24	23.5	9		●	●	BB-51100-B180-□
20	35	34.5	10		●	●	BB-51104-B180-□
20	47	46.5	10		●	●	BB-51104-B180-□-D

Order example:

BB-51100-B180-ES = Thrust bearing with race material xirodur® B180, xirodur® B180 cage and stainless steel balls



Available from stock

Races made from xirodur® B180

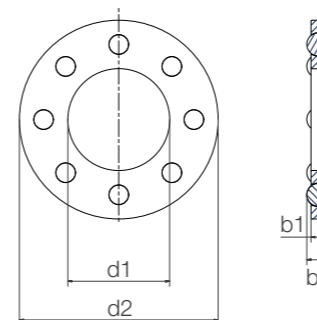


Standard type with stainless steel or glass balls



Slim Line design with stainless steel or glass balls

- Good resistance to chemicals and seawater
- Suitable for contact with food
- Operating temperature: from -40°C up to +80°C



Technical data (related to metallic shafts)

Installation size	Slim Line	Recommended load capacity		Limit speed [rpm]	Weight	
		stat. [N]	dyn. [N]		B180/ES [g]	B180/GL [g]
626	-	341	425	2,000	1.35	0.81
608	-	482	600	1,700	2.25	1.17
6000	-	610	782	1,500	3.04	1.50
6000	●	405	500	1,500	2.09	1.20
6004	-	975	1,215	700	6.87	4.41
6006	-	925	1,540	600	5.51	3.39
6006	●	520	680	600	4.23	2.98

Dimensions [mm]

Inner Ø	OuterØ	Width		Race/ball material combination		Part No.
		b1	b2	B180/ES	B180/GL	
6.2	18.8	2.0	3.18	●	●	BB-626TW-B180-□
8.2	21.8	2.0	3.97	●	●	BB-608TW-B180-□
10.2	25.8	2.0	4.76	●	●	BB-6000TW-B180-□
10.2	25.8	2.0	3.97	●	●	BB-6000TW-B180-□-SL
21.0	41.0	3.0	4.76	●	●	BB-6004TW-B180-□
29.9	45.5	2.5	4.76	●	●	BB-6006TW-B180-□
29.9	45.5	2.5	3.97	●	●	BB-6006TW-B180-□-SL

Order example:

BB-6000TW-B180-ES-SL = Thrust washer with race material xirodur® B180, stainless steel balls, Slim Line version



Available from stock



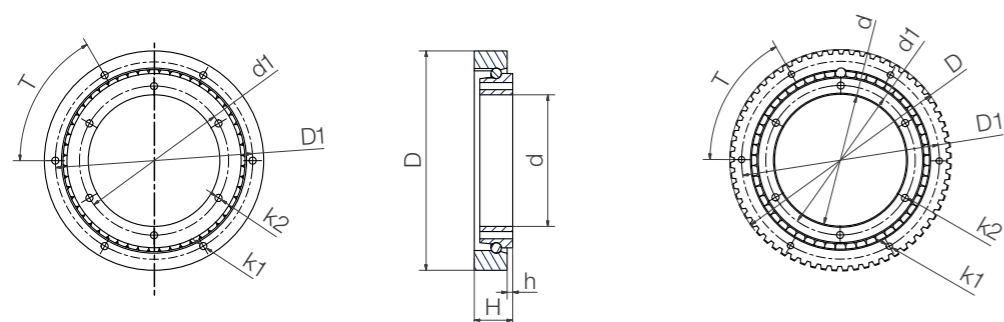
Stainless steel balls



Glass balls

Stainless steel balls,
with cage made from
xirodur® B180Stainless steel balls,
with outer drive ring
(HDT5)

- Good resistance to chemicals and seawater
- Suitable for contact with food
- Operating temperature: from -40°C up to +80°C



Technical data

Type	Load capacity		Max. permissible tilting moment [Nm]	Limit speed [rpm]	Weight	
	axial [N]	radial [N]			ES [g]	GL [g]
Standard with stainless steel or glass balls						
RT-01-60	800	720	40	350	111.68	98.3
RT-01-100	1,600	1,250	60	250	283.85	243.76
Slewing ring ball bearings with xirodur® B180 cage						
RT-01-40-B180-30	500	260	30	900	63.46	-
RT-01-60-B180-30	600	300	30	800	101.22	-
RT-01-100-B180-30	1,020	760	55	650	248.90	-
RT-01-150-B180-30	2,000	1,100	75	600	398.00	-
Slewing ring ball bearings with outer drive ring and cage						
RT-01-60HDT5-B180	800	720	40	320	97.00	-
Slewing ring ball bearings with outer drive ring without cage						
RT-01-60HDT5-B180-30	600	300	30	800	109.00	-

Order example:

BB-RT-01-60-ES

= Standard-Standard slewing ring ball bearing with race material xirodur® B180 and [stainless steel balls](#)

BB-RT-01-60-B180-30-ES

= Slewing ring ball bearing with race material xirodur® B180, [xirodur® B180 cage](#) and [stainless steel balls](#)

BB-RT-01-60-HDT5-B180-ES

= Slewing ring ball bearing with race material xirodur® B180, outer drive ring and [stainless steel balls](#)BB-RT-01-60-HDT5-B180-30-ES = Slewing ring ball bearing with race material xirodur® B180, outer drive ring, [xirodur® B180 cage](#) and [stainless steel balls](#)

Order key

Type	Type	Material
Ball bearing	Slewing ring ball bearings	Type 01
		Inner Ø
		Ball material

Options:

Cage material

30 : xirodur® B180

Ball material

ES : Stainless steel

GL : Glass

Order key with cage

Type	Type	Material
Ball bearing	Slewing ring ball bearings	Type 01
		Inner Ø
		Race material
		Cage material
		Ball material

Dimensions [mm]

d	d1	D	D1	h	H	T	k1	k2	Part No.
Standard with stainless steel or glass balls									
60	68	100	90	2.5	17.5	60	3.3	3.3	BB-RT-01-60- <input type="text"/>
100	110	160	150	5.0	20.0	60	5.2	5.2	BB-RT-01-100- <input type="text"/>
Slewing ring ball bearings with xirodur® B180 cage									
40	47	80	72	2.5	15	60	3.3	3.2	BB-RT-01-40-B180-30-ES
60	68	100	90	2.5	17.5	60	3.3	3.3	BB-RT-01-60-B180-30-ES
100	110	160	150	5.0	20	60	5.2	5.2	BB-RT-01-100-B180-30-ES
150	163	210	197	5.0	22.5	60	6.1	6.1	BB-RT-01-150-B180-30-ES
Slewing ring ball bearings with outer drive ring and cage									
60	68	100	90	2.5	17.5	60	M3	3.3	BB-RT-01-60HDT5-B180-30-ES
Slewing ring ball bearings with outer drive ring without cage									
60	68	100	90	2.5	17.5	60	M3	3.3	BB-RT-01-60HDT5-B180-30-ES

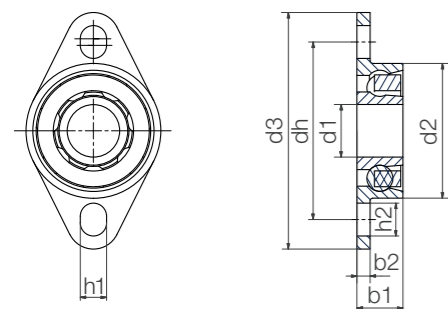
Available
from stock

FDA



xirodur® B180 cage
Stainless steel balls

- For less precise holding fixtures



Order key

Type Material

BB-FL-608-B180-30-ES

Ball bearing	Fixed flange ball bearings	Dimensions according to DIN 625-1	Housing material	Cage material	Ball material
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Cage material

30 : xirodur® B180

Ball material

ES : Stainless steel

Technical data

Installation size	Radial load capacity		Limit speed [rpm]	Weight B180/ES [g]
	stat. [N]	dyn. [N]		
626	60	62	3,200	2.89
608	80	92	2,200	3.65
6000	110	130	2,200	6.49
6001	130	147	2,000	7.68
6003	160	220	1,600	11.13
6004	250	320	1,400	25.06

Dimensions [mm]

d1	d2	d3	b1	b2	DH	h1	h2	Part No.
6	19	33.5	6	2	25	3	4.5	BB-FL-626-B180-30-ES
8	20.7	35.8	7	2	26.8	4	5	BB-FL-608-B180-30-ES
10	26	41	8	2	32	4	5	BB-FL-6000-B180-30-ES
12	28	44	8	2	35	4	5	BB-FL-6001-B180-30-ES
17	35	54	10	2.5	44	4	6	BB-FL-6003-B180-30-ES
20	42	84	12	4	63	8	12	BB-FL-6004-B180-30-ES



Order example:

BB-FL-608-B180-30-ES = Fixed flange ball bearing with housing material xirodur® B180, xirodur® B180 cage and stainless steel balls

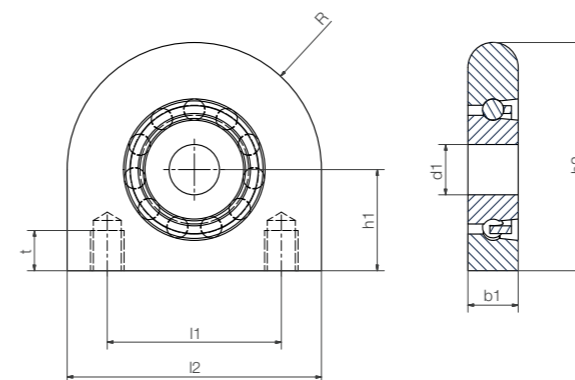


Available from stock

FDA



- Easy to assemble with integrated thread
- Suitable for contact with food
- Operating temperature: from -40°C up to +80°C



Technical data

Type	Load capacity, radial		Limit speed [rpm]	Weight ES [g]
	stat. [N]	dyn. [N]		
ESTM-F15	270	350	1,250	86
ESTM-F17	280	360	1,200	85
ESTM-F20	290	370	1,150	83
ESTM-F25	480	520	850	119
ESTM-F30	500	550	840	163

Dimensions [mm]

d1	b1	h1	h2	l1	l2	R	Thread	t	Part No.
15	15	30.2	68.2	52	76	38	M10	12	ESTM-BB1-F15-B180-ES-SL
17	15	30.2	68.2	52	76	38	M10	12	ESTM-BB1-F17-B180-ES-SL
20	15	30.2	68.2	52	76	38	M10	12	ESTM-BB1-F20-B180-ES-SL
25	17	36.5	78.5	56	84	42	M10	15	ESTM-BB1-F25-B180-ES-SL
30	19	42.9	89.9	66	94	47	M14	18	ESTM-BB1-F30-B180-ES-SL



Order example:

ESTM-BB1-F25-B180-ES-SL = pillow block ball bearing with race material xirodur® B180, xirodur® B180 cage, stainless steel balls, Slim Line version



Available from stock

Pillow block ball bearings with metal housings



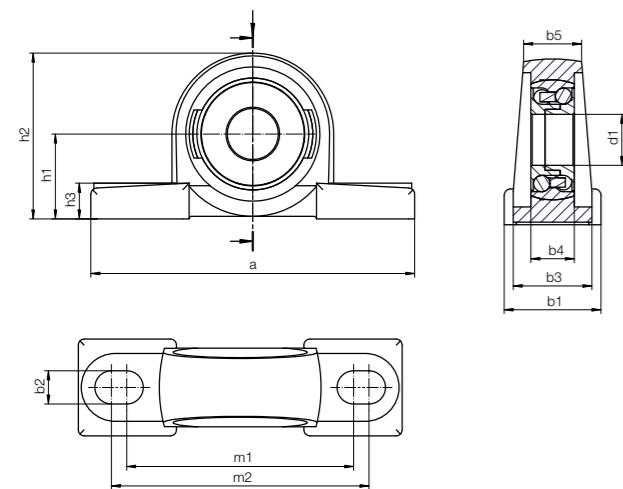
Order key

Type	Material
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P204-BB-6004-B180-ES

Pillow block bearing	Ball bearing	Installation size	Race/cage material	Ball material
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Race/cage material
B180 : xirodur® B180
Ball material
ES : Stainless steel



Technical data

Type	Load capacity [N]	Limit speed [rpm]	Weight ES [g]
P204	310	1,200	524
P205	400	1,000	598
P206	480	850	1,082

Technical data

d1	b1	b2	b3	b4	b5	h1	a	h2	h3	m1	m2	Part No.
20	38	13	30.9	17	22.7	33.3	127	65	14	89	101	P204-BB-6004-B180-ES New
25	38	13	30.9	17	23.3	36.5	140	71	15	99	111	P205-BB-6005-B180-ES New
30	48	17	39.0	19	25.3	42.9	165	83	17	117	125	P206-BB-6006-B180-ES New

Spherical insert bearing for pillow block ball bearing



Order key

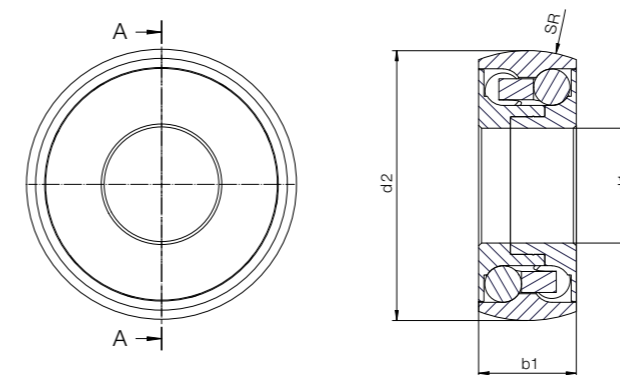
Type	Material
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BB-6004 SO-B180-ES-D

Ball bearing	Installation size	Spherical	Race/cage material	Ball material	Double row
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Race/cage material
B180 : xirodur® B180
Ball material
ES : Stainless steel

- One-to-one replacement of metallic ball bearings in common UC pillow block sizes
- Smooth operation
- Operating temperature: from -40°C up to +80°C



Technical data

d1	d2	b1	Load capacity [N]	Limit speed [rpm]	Weight ES [g]	Part No.
20	65	38	310	1,200	44.9	BB-6004SO-B180-ES-D New
25	71	38	400	1,000	58.4	BB-6005SO-B180-ES-D New
30	83	48	480	850	82.3	BB-6006SO-B180-ES-D New

Fixed version



igumid® G housing, PA cage, stainless steel balls

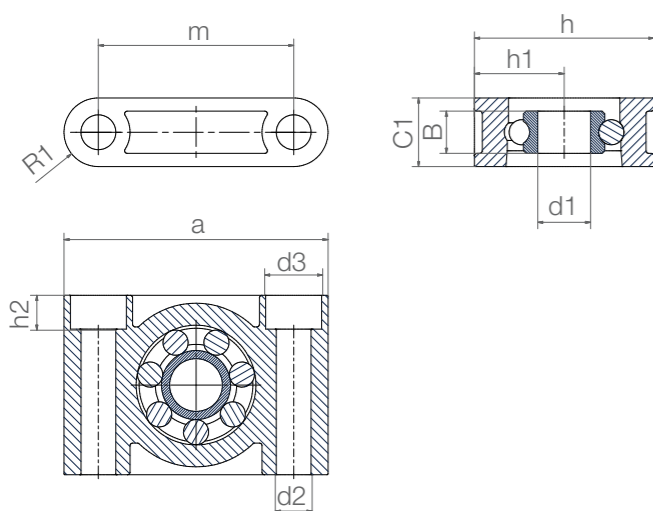
igumid® G housing, PA cage, glass balls

- Good resistance to chemicals and seawater
- Smooth operation
- Operating temperature: from -40°C up to +80°C

Order key

Type	Material
ESTM-BB1- F 06-B180-ES	
Pillow block bearing	
Ball bearing, single row	
Fixed version	
Inner Ø	
Race material	
Ball material	

Race material
B180 : xirodur® B180
Options:
Ball material
ES : Stainless steel
GL : Glass



Technical data

Type	Radial load capacity		Limit speed [rpm]	Weight	
	stat. [N]	dyn. [N]		B180/ES [g]	B180/GL [g]
ESTM-F06	41	43	2,600	7.7	6.7
ESTM-F10	110	130	1,900	20.2	18.2
ESTM-F20	250	320	1,150	54.1	47.7

Dimensions [mm]

Inner Ø d1	Hole Ø d2	d3	h	h1	h2	a	m	C1	B	R1	Part No.
6	5.5	-	22	11	-	36	26	10	6	5.0	ESTM-BB1-F06-B180-□
10	6.6	10.6	34	17	6.6	50	37	13	8	6.5	ESTM-BB1-F10-B180-□
20	9.0	14.0	48	24	8.6	72	54	18	12	9.0	ESTM-BB1-F20-B180-□

Order example:
ESTM-BB1-F06-B180-ES = Pillow block bearing, fixed version, made from xirodur® B180 with stainless steel balls

Available from stock

Pivoting version



igumid® G housing, PA cage, stainless steel balls

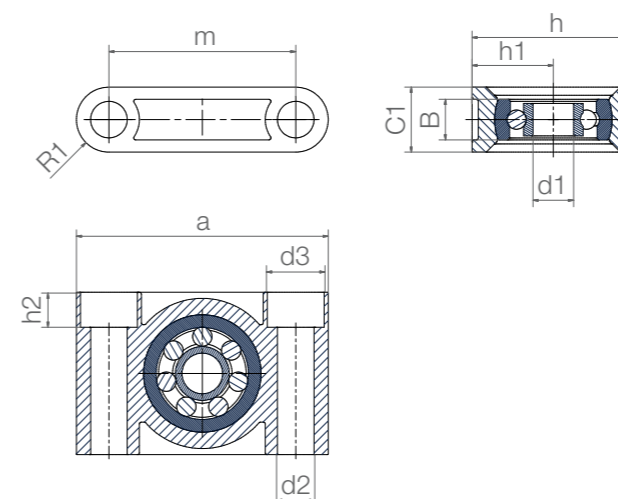
igumid® G housing, PA cage, Glass balls

- Self-aligning
- Good resistance to chemicals and seawater
- Spherical ball bearing
- Operating temperature: from -40°C up to +80°C

Order key

Type	Material
ESTM-BB1- P 08-B180-ES	
Pillow block bearing	
Ball bearing, single row	
Fixed version	
Inner Ø	
Race material	
Ball material	

Race material
B180 : xirodur® B180
Options:
Ball material
ES : Stainless steel
GL : Glass



Technical data

Type	Radial load capacity		Limit speed [rpm]	Weight	
	stat. [N]	dyn. [N]		B180/ES [g]	B180/GL [g]
ESTM-P08	80	94	2,200	19.6	18.2
ESTM-P10	110	130	1,900	32.9	30.3
ESTM-P12	130	147	1,750	54.8	52.8

Dimensions [mm]

Inner Ø d1	Hole Ø d2	d3	h	h1	h2	a	m	C1	B	R1	Max. pivot angle	Part No.
8	6.6	10.6	34	17	6.4	50	37	13	8	6.5	±5°	ESTM-BB1-P08-B180-□
10	9.0	14.0	40	20	8.6	62	46	16	10	8	±5°	ESTM-BB1-P10-B180-□
12	9.0	14.0	48	24	8.6	72	54	18	12	9	±5°	ESTM-BB1-P12-B180-□

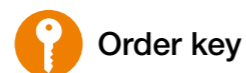
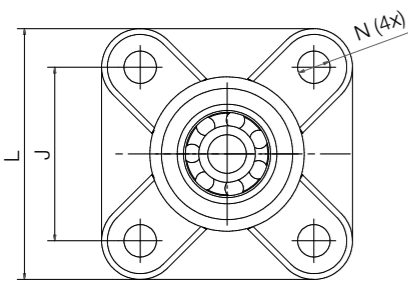
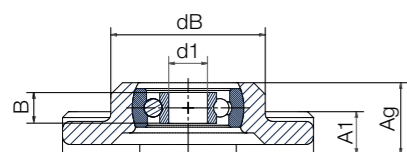
Order example:
ESTM-BB1-P08-B180-ES = Pillow block bearing, pivoting version, made from xirodur® B180 with stainless steel balls

Available from stock



igumid® G housing,
PA cage,
stainless steel balls or
glass balls

- Compensation of misalignment



Order key

Type Material

EFSM-BB1- P 08-B180-ES

Four-hole fixed flange ball bearings	Ball bearing, single row	Pivoting version	Inner Ø	Race material	Ball material
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Race material

B180 : xirodur® B180

Options:

Ball material

ES : Stainless steel

GL : Glass

Technical data

Type	Radial load capacity		Limit speed [rpm]	Weight	
	stat. [N]	dyn. [N]		B180/ES [g]	B180/GL [g]
EFSM-P08	80	94	2,200	25.2	24.0
EFSM-P10	110	130	1,900	48.8	46.2
EFSM-P12	130	147	1,750	80.0	77.7

Dimensions [mm]

Inner Ø d1	dB d2	L	J	A1	Ag	B	N	Max. pivot angle	Part No.
8	32.5	52	36	9	15.5	7	6.4	±20°	EFSM-BB1-P08-B180-□
10	40.0	65	45	11	18.5	8	8.4	±20°	EFSM-BB1-P10-B180-□
12	48.5	74	52	14	23.5	8	8.4	±20°	EFSM-BB1-P12-B180-□

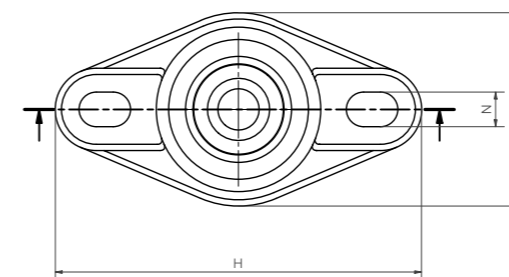
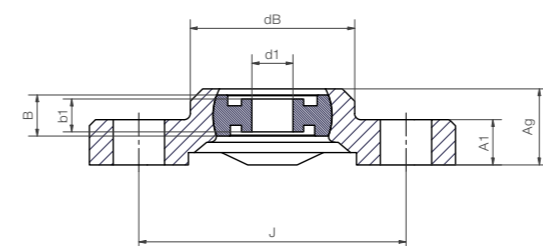
Order example:

EFSM-BB1-P08-B180-ES = 4-hole fixed flange ball bearing with race material xirodur® B180 and stainless steel balls

Available
from stock

igumid® G housing,
PA cage,
stainless steel balls or
glass balls

- Trouble-free readjustment thanks to elongated holes
- Precise alignment of the bearings not necessary



Order key

Type Material

EFOM-BB1- P 08-B180-ES

2-hole fixed flange ball bearings	Ball bearing, single row	Pivoting version	Inner Ø	Race material	Ball material
-----------------------------------	--------------------------	------------------	---------	---------------	---------------

Race material

B180 : xirodur® B180

Options:

Ball material

ES : Stainless steel

GL : Glass

Technical data

Type	Radial load capacity		Limit speed [rpm]	Weight	
	stat. [N]	dyn. [N]		B180/ES [g]	B180/GL [g]
EFOM-P08	80	94	2,200	19.5	18.1
EFOM-P10	110	130	1,900	36.3	33.6
EFOM-P12	130	147	1,750	61.7	59.4

Dimensions [mm]

Inner Ø d1	b1	dB d2	H	L	J	A1	Ag	B	N	Max. pivot angle	Part No.
8	7	32.0	72.6	38	53	10	15.25	8.0	6.4x10.1	±20°	EFOM-BB1-P08-B180-□
10	8	40.0	89.1	47	65	11	18.5	9.9	8.4x12.5	±20°	EFOM-BB1-P10-B180-□
12	9	48.5	101.0	58.5	75	14	23.5	12.0	8.4x12.5	±20°	EFOM-BB1-P12-B180-□

Order example:

EFOM-BB1-P08-B180-ES = 2-hole fixed flange ball bearing with race material xirodur® B180 and stainless steel balls

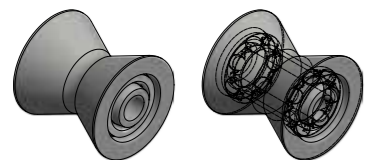
Available
from stock



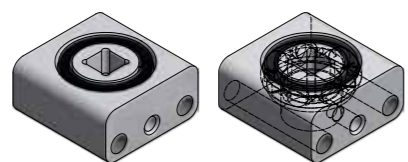
Infinite possibilities

Customised & cost-effective: your polymer ball bearing in the required design, material and quantity.

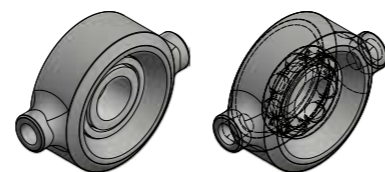
- Machined or injection-moulded
- Square or round
- With flange, outer toothed profile, etc.
- In customised quantity
- Lubrication and maintenance-free
- Cost-effective
- Select from different xirodur® materials



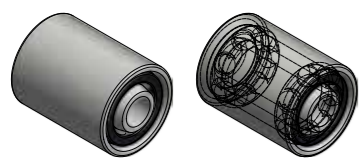
Guide roller for rubber seals in car production: which replaced a special unavailable roller



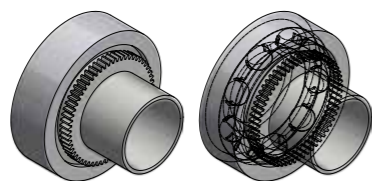
Non-magnetic for drylin® linear guide: design of a ball bearing with square housing, square shaft and glass balls



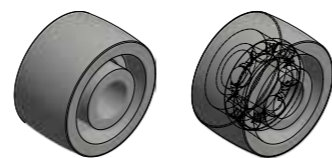
Consumer product camera stabilizer: injection-moulded special parts to improve engineered solution



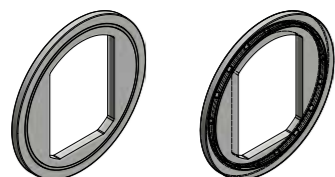
Blood pumps (peristaltic): lubrication-free and longer service life



Gear-driven shaft: one-part solution for full integration



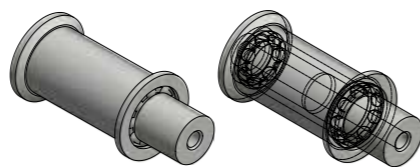
Roller for belt guide in ATM cash machines



Tension rollers in rubber production



Bearings for cash machines: lubrication-free and integration of 2 rubber rings for better paper grip



Tension roller for tape deflection: one-part solution (6 in 1)

In 3 steps to your individual ball bearing

1. Submit an enquiry

Fill in the form with some basic information: quantity and requirement, such as food contact, dirt resistance, etc. and upload the CAD files, for example.

After one of our specialists has contacted you for a consultation, you will receive a quotation.

2. We manufacture your required component

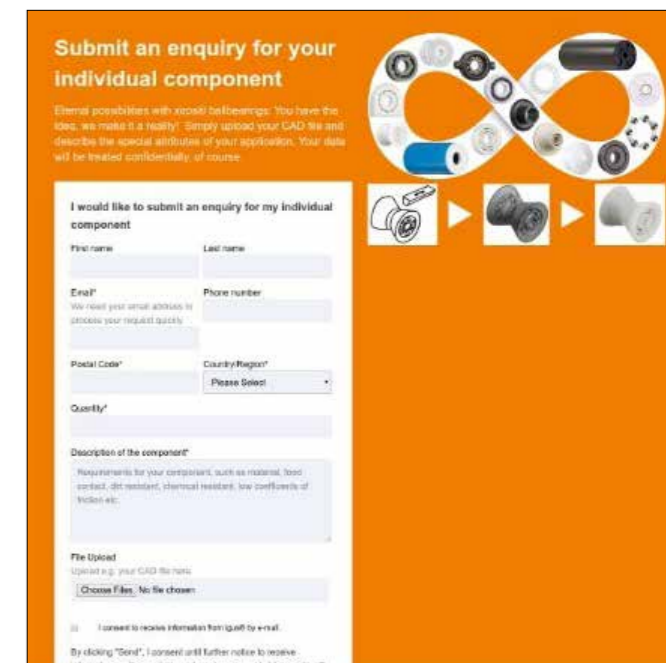
Upon order, igus® starts the production process.

3. You receive your product

Your required component is ready to ship and delivered quickly.

Submit an enquiry:

► www.igus.eu/xiros-specialparts



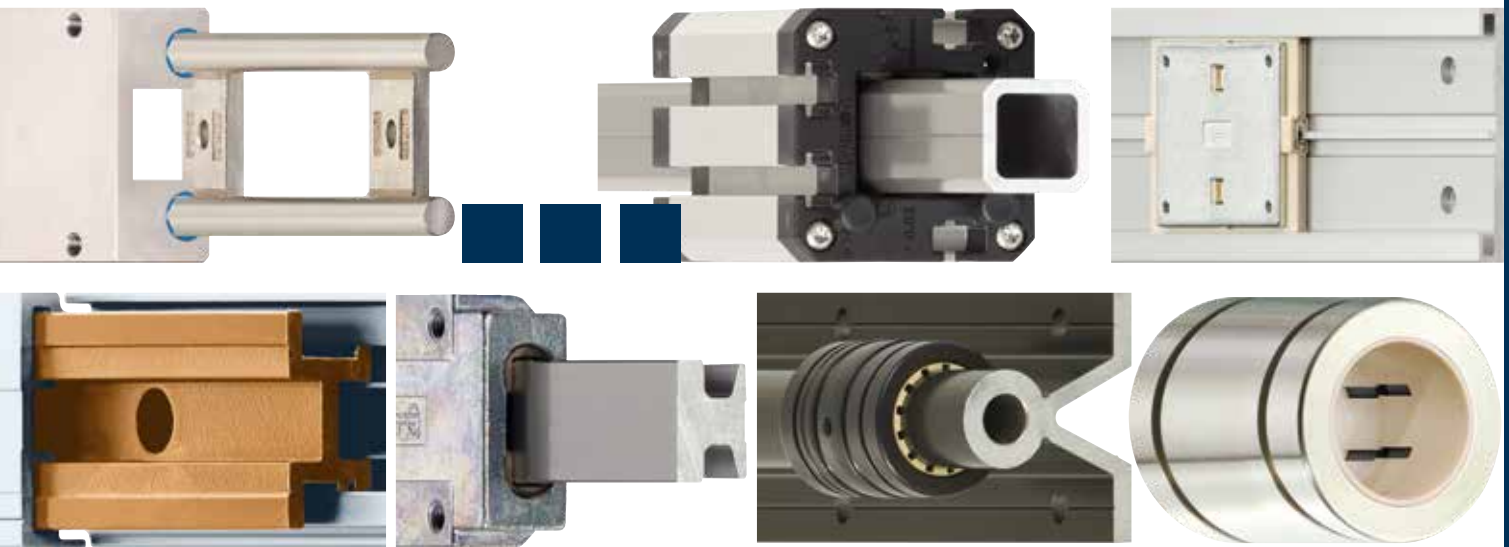
igus® test laboratory

The material combinations included in xiros® ball bearings are subjected to a large number of load and speed tests in the igus® test laboratory. The test results can be used to determine service life and suitability for both standard and special parts.



drylin[®]

Linear technology



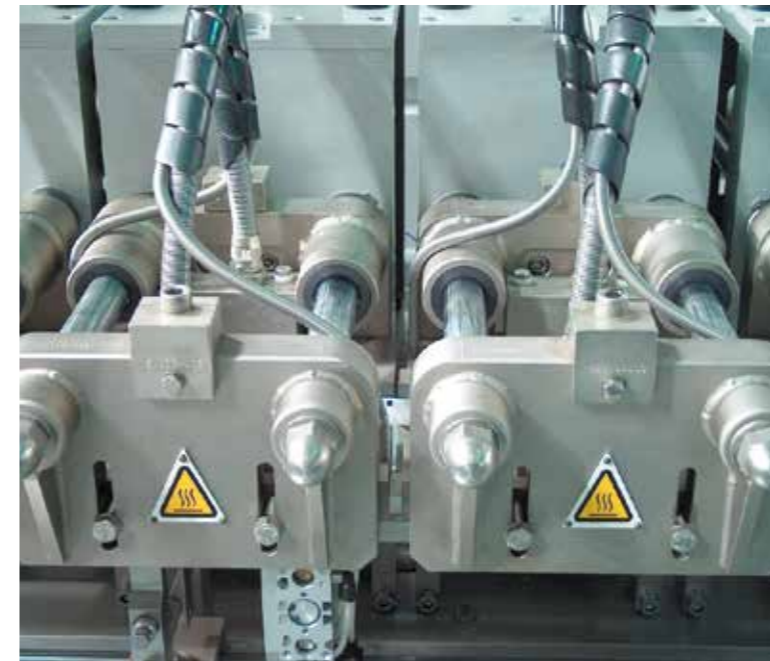
...plastics

Tech up ... Cost down

For years the igus® motto has been motion plastics® - high-performance polymers for motion. By this we mean the production of innovative plastic products which reduce maintenance work, achieve technical improvements, at the same time as reducing costs and increasing service life, everything delivered immediately from stock. Our references from the practice show the proven employment from drylin® guides in a wide variety of applications.

Label feeding system (packaging technology)

Quick and flexible lubrication-free format adjustment at lower costs - implemented with drylin® T rail guide. Further advantage: guide carriage with manual clamp. (Geset Etikettier-Systeme GmbH, Germany)



Forming, filling and sealing machine

Lubrication-free drylin® high temperature linear bearings (up to +120°C) are used in the tool guide system of this forming, filling and sealing machine. (Unifill SpA, Italy)

Door adjustment

The smooth, quiet operation and the enormous cost advantages are obtained by the use of drylin® R linear plain bearings on the hard-anodised guide shafts to guide the doors of machine tools. (Alzmetall GmbH + Co. KG, Germany)



Champagne bottle sealing machine









Due to freedom from lubricants and chemical resistance, drylin® guides score highly in facilities in the food sector. (Sick International Kellereimaschinen GmbH, Germany)






System for the production of aluminium cartridges

The absolute freedom from lubricants and the resistance to prevailing paint mist led to the application of drylin® R linear plain bearings. (Mall + Herlan GmbH, Germany)









drylin® W profile guides

		 New					 New
Single rails, square: WSQ-XX ▶ Page 1132	Pillow blocks, square: WJ200QM ▶ Page 1134	Pillow blocks, square, for narrow assemblies: WJ200QMS ▶ Page 1135	Single rails, round: WS-XX ▶ Page 1136	Single rails, round made of stainless steel: WS-XX-ES-(FG) ▶ Page 1138	Pillow blocks, round: WJ200UM ▶ Page 1139	Pillow blocks, round made of stainless steel: WJUM-XX-ES-(FG) ▶ Page 1139	Pillow blocks, single, round, made from solid plastic: WJBMP-01-10 ▶ Page 1140









drylin® W profile guides

				 New	 New	 New	
Tandem pillow blocks: WJ200UMT-XX-AL ▶ Page 1141	Manual clearance adjustment: WJ(200)UME ▶ Page 1142	With spring pre-load: WJ(200)UM-XX-P ▶ Page 1143	Pillow blocks, single, round: WJ200UMA-XX-AL ▶ Page 1144	Pillow blocks, round made of stainless steel: WXUMA-01-10-ES ▶ Page 1145	Pillow blocks, round, for narrow assemblies: WJ200UMS ▶ Page 1146	Pillow blocks, tandem, round, for narrow assemblies: WJ200UMTS ▶ Page 1147	Double rails: square WSQ ▶ Page 1148









drylin® W profile guides

							
High torsional rigidity: high profile rails, square WSX ▶ Page 1149	Linear guides - lightweight, non-metallic: WSPC ▶ Page 1150	Linear guides - lightweight, non-metallic: WSPG ▶ Page 1151	Complete carriages: square WWQ ▶ Page 1152	Mono-slide carriages: WWC ▶ Page 1153	Double rails: round WS-XX-XX ▶ Page 1154	High torsional rigidity: high profile rails, round WSX ▶ Page 1156	Round double rails, made of stainless steel: WS-XX-XX-ES-(FG) ▶ Page 1157

drylin® W profile guides

	 New	 New		 New	 New	 New	 New
Complete carriages: round WW ▶ Page 1158	Linear sliding carriage directly replace ball bearings guide: WW-XX-XX-T15 ▶ Page 1160	Slim linear carriages: WWS ▶ Page 1161	Assembled stainless steel guide carriages, round: WW-XX-XX-GESG-PES ▶ Page 1162	Mono-slide carriages, with snap mechanism: WWC-06-30-06-LM ▶ Page 1163	Linear carriages with wear measurement, round: WW-XX-XX-IS-LED ▶ Page 1164	Linear carriages with integrated manual clamp: WW-XX-XX-XX-HKX ▶ Page 1165	Clip-on linear carriages: WW-10-40-10-TC ▶ Page 1166

drylin® W profile guides

 New							
Clip-on linear carriages with clamping: WW-10-40-10-CC ▶ Page 1167	Curved rail profiles: WSB ▶ Page 1168	Curved rail profiles: WSB-XX-XX-RX300Q ▶ Page 1170	Single bearings for curved rails: WI3UBP-XX-LLZ ▶ Page 1172	Carriage for curved rails: WWB ▶ Page 1173	Double rails with machine recesses: WS(Q)-XX-CAM ▶ Page 1174	Complete carriages for slider: WW-XX-SL ▶ Page 1175	Hybrid slider carriages with four double roller bearings: WWH-XX-SL ▶ Page 1176

drylin® W hybrid roller bearings



Hybrid rails for lateral installation:
WSR
▶ Page 1182



Hybrid roller bearings for hybrid lateral rail:
WJRM-31/41
▶ Page 1183



Single hybrid roller bearings:
WJRM-01
▶ Page 1184



Double hybrid roller bearings:
WJRM-21
▶ Page 1185



New

Hybrid roller bearings with two rollers:
WRJM-XX-XX-AL
▶ Page 1186



New

Tandem roller bearings with ball bearings:
WRJM-XX-XX-BB-AL
▶ Page 1187



Hybrid single and double rollers, stainless steel:
WRJM-XX-ES-FG
▶ Page 1188



Hybrid carriages for lateral installation:
WWR-21-XX
▶ Page 1189

drylin® W hybrid roller bearings



Hybrid carriages with four double roller bearings:
WWH-21
▶ Page 1190



Hybrid carriages for horizontal installation:
WWH-10
▶ Page 1191



Mounting plate for drylin® W hybrid roller bearing:
WWYR
▶ Page 1192

drylin® linear technology - accessories



Manual clamp for simple positioning:
WHKA-XX-(AL)/WHKAQ
▶ Page 1194/1195



Manual clamp for higher holding force:
WHKD
▶ Page 1195



Manual clamp for drylin® W hybrid roller bearings:
WJRM-21-XX-HKA
▶ Page 1196



Liners made from dry-tech® polymers
▶ Page 1197

drylin® linear technology - accessories



Plastic liners:
J200UMA-XX
▶ Page 1198



New

End caps for drylin® W rails:
WSZ-101201-KIT
▶ Page 1198



New

End caps for drylin® W single rails:
WSZ-16-KIT
▶ Page 1198



End caps for drylin® high profile rails WSX:
WSX-XX-EC
▶ Page 1199



Mounting plate for linear carriage:
WWY
▶ Page 1200

drylin® N low-profile guides



For small spaces and high load capacity:
Installation size 17
▶ Page 1208



The largest variety of carriages (options):
Installation size 27
▶ Page 1210



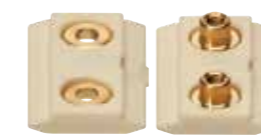
Suitable for aluminium construction profiles:
Installation size 40
▶ Page 1212



High loads with reduced height:
Installation size 80
▶ Page 1214



Prism rails:
NSV-01-27
▶ Page 1216



Prism carriages:
NWW-XX
▶ Page 1217



Accessories:
Manual clamp
NW-XX-HKA
▶ Page 1220



Accessories:
end caps
NSKB, NSK
▶ Page 1221

drylin® N low-profile guides



New

Accessories:
End caps
NSVK
▶ Page 1222



Telescopic rails:
NT-35
▶ Page 1224



Telescopic rails with locking mechanism:
NT-LM-35
▶ Page 1225



Telescopic guide for higher loads:
NT-60
▶ Page 1226



New









Telescopic rails with prism carriages:
NTV-27
▶ Page 1227











New

Telescopic rails made of solid plastic:
NTP-27
▶ Page 1228









drylin® T rail guides

							
Guide rails: TS-01 ▶ Page 1236	High performance carriages: TW-12 ▶ Page 1237	Manual clearance adjustment: TW-01 ▶ Page 1238	Automatic clearance adjustment: TWA-01 ▶ Page 1239	With manual clamp: TW-01-XX-HKA ▶ Page 1240	Heavy-duty version: TW-02 ▶ Page 1241	Compact design: TW-03 ▶ Page 1242	Accessories: TWBM-11 ▶ Page 1243

drylin® T rail guides

		 New		 New			
Accessories: TWBM-01 ▶ Page 1243	Miniature guides: TS-04 ▶ Page 1244	Miniature guide carriages with iglidur® E3 liners: TW-14-XX ▶ Page 1244	Miniature guide carriages: TW-04 ▶ Page 1245	Miniature guides, pre-loaded: TW-04-XX-XX ▶ Page 1245	Adjustable miniature guides: TWE-04 ▶ Page 1246	Accessories: End caps for holes TSZ ▶ Page 1246	Accessories: Replacement plastic sliders TEK ▶ Page 1246

drylin® R liners made from iglidur® J

							
Long, closed design for shafts: JUM-01 ▶ Page 1258	Long, open design for supported shafts: JUMO-01 ▶ Page 1259	Long, closed design, precise: JUM-11 ▶ Page 1260	Long, open design, precise: JUMO-11 ▶ Page 1261	Short, closed design for shafts: JUM-02 ▶ Page 1262	Long, closed design for shafts: J200UM-01 ▶ Page 1263	Long, open design for shafts: J200UMO-01 ▶ Page 1264	Long, closed design for shafts: E7UM-01 ▶ Page 1265

... made from iglidur® J200

... made from iglidur® E7

... made from iglidur® E7

... made from iglidur® X

... made from iglidur® A180

						
Long, open design for supported shafts: E7UM-01 ▶ Page 1266	Short, closed design for shafts: E7UM-02 ▶ Page 1267	Long, closed design, high temperature: XUM-01 ▶ Page 1268	Long, open design, high temperature: XUMO-01 ▶ Page 1269	Short, closed design, high temperature: XUM-02 ▶ Page 1270	Long, closed design for shafts: A180UM-01 ▶ Page 1271	Long, open design for supported shafts: A180UMO-01 ▶ Page 1272

... made from iglidur® A160

drylin® R special designs

	 New	 New			
Long, closed design for shafts: A160UM-01 ▶ Page 1273	Long, open design for supported shafts: A160UMO-01 ▶ Page 1274	Short, closed design for shafts: A160UM-02 ▶ Page 1275	Slide disks for large force displacement: RSDJ ▶ Page 1276	Clip-on liners: JUCM ▶ Page 1277	Press-fit bearings made from iglidur® L100: WLM/WLFM ▶ Page 1278/1279

drylin® R solid plastic bearings



Standard design made from iglidur® J: RJM-01
▶ Page 1280



Standard design, precise, made from iglidur® J: RJMP-01
▶ Page 1281



New
Standard design made from iglidur® A180: RA180M-01-10
▶ Page 1282



New
Standard design made from iglidur® A160: RA160M-01-10
▶ Page 1283



Japanese dimensions made from iglidur® J4: RJ4JP-01
▶ Page 1284



Low-cost made from iglidur® J260: RJ260UM-02
▶ Page 1285

drylin® R linear plain bearings



Closed aluminium adapters: RJUM-01
▶ Page 1286



Closed aluminium adapters, precise: RJUM-11
▶ Page 1287



New
Adapter with clip-in liners made from iglidur® W360: RW360CM-01-12
▶ Page 1288



Closed adapters made of stainless steel 303: RJUM-ES
▶ Page 1290



Closed, anodised aluminium adapters: RE7UM-01
▶ Page 1291



Closed, aluminium adapters, short design: RJUM-02
▶ Page 1292



Closed, anodised aluminium adapters, short design: RE7UM-02
▶ Page 1293



Closed aluminium adapters floating bearings: RJUM-03
▶ Page 1294

drylin® R linear plain bearings



Split aluminium adapters: TJUM-01
▶ Page 1295



Split aluminium adapters, floating bearings: TJUM-03
▶ Page 1296



Open, anodised aluminium adapters, for supported shafts: OJUM-01
▶ Page 1297



Open aluminium adapters, floating bearing: OJUM-03
▶ Page 1298

drylin® R pillow blocks



Closed aluminium adapters, short design: RJUM-05
▶ Page 1300



Closed, adjustable aluminium adapters, short design: RJUME-05
▶ Page 1301



Split aluminium adapters, short design: TJUM-05
▶ Page 1302



Closed aluminium adapters, tandem design: RJUMT-05
▶ Page 1303

drylin® R pillow blocks



Closed aluminium adapters, long design: RJUM-06
▶ Page 1304



Closed aluminium adapters, with manual clamp: RJUM-06-XX-HK
▶ Page 1305



Closed housings, floating bearings: RJUM-06-XX-LL
▶ Page 1306



Open housings, floating bearings: OJUM-06-XX-LL
▶ Page 1307



Open aluminium adapters, long design: OJUM-06
▶ Page 1308



Open aluminium adapters, with manual clamp: OJUM-06-XX-HK
▶ Page 1309



Open, adjustable aluminium adapters, long design: OJUME-06
▶ Page 1310



New
Split linear housings made of solid plastic: RJUMP-05-12
▶ Page 1311

drylin® R flanged linear plain bearings



Closed aluminium adapters, round flange: FJUM-01
▶ Page 1312



Closed aluminium adapters, square flange: FJUM-02
▶ Page 1314



Closed aluminium adapters, round flange, tandem design: FJUMT-01
▶ Page 1316



Closed aluminium adapters, square flange, tandem design: FJUMT-02
▶ Page 1318



New
Adapter with clip-in liners made from iglidur® W360, round flange: FRW360CM-XX-XX
▶ Page 1320

drylin® R pillow blocks



Quad blocks, closed design:

RQA
▶ Page 1322



Quad blocks, open design:

OQA
▶ Page 1323



Closed tandem design:

RTA
▶ Page 1324



Open tandem design:

OTA
▶ Page 1325



Closed, long design:

RGA
▶ Page 1326



Open, long design:

OGA
▶ Page 1327



Closed, short design:

RGAS
▶ Page 1328



Open, short design:

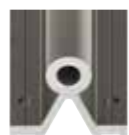
OGAS
▶ Page 1329

drylin® shafts



Precision aluminium shafts:

AWMP/AWMR
▶ Page 1338



Supported aluminium shafts:

AWMU
▶ Page 1339



Steel shafts:

SWM/SWMH
▶ Page 1340



Supported steel shafts:

SWUM/SWUMN
▶ Page 1341



Stainless steel shafts:

EWM/EEWM/EWMR
▶ Page 1342



Supported stainless steel shafts:

EWUM
▶ Page 1344



Low-level supported stainless steel shafts:

EWUMN
▶ Page 1345



Partially supported stainless steel shafts:

EWUM-ES/EWUMS-ES
▶ Page 1346

drylin® shafts



Low-level partially supported stainless steel shafts:

EWUMN-/EWUMSN-ES
▶ Page 1348



Carbon fibre shafts:

CWM
▶ Page 1350



Shaft end supports, floating:

TA
▶ Page 1351



Shaft end supports, fixed:

TAF
▶ Page 1352



Shaft end blocks, standard design:

WA
▶ Page 1353



Shaft end blocks, compact design:

WAC
▶ Page 1354



Shaft end blocks, narrow design:

WAS
▶ Page 1355



Flanged shaft end blocks:

WAF
▶ Page 1356

drylin® Q square linear guides



Square section linear rails:

AWMQ
▶ Page 1362



Adjustable linear carriages:

QWE-01
▶ Page 1363



Adjustable linear carriages with manual clamp:

QWE-01-XX-HKA
▶ Page 1364



Pillow blocks:

QJRM(T)-05
▶ Page 1365



Fixed flange bearings with round flange:

QJFM(T)-01
▶ Page 1366



Fixed flange bearings with square flange:

QJFM(T)-02
▶ Page 1366



Solid plastic linear bearings:

QJRM(T)-01
▶ Page 1367



Accessories for drylin® Q

▶ Page 1368

drylin® Q square linear guides



Clearance adjustment for columns:

ASDJ
▶ Page 1369



Integrated measuring systems for drylin® Q:

QKM
▶ Page 1376



Ready-to-install measuring systems for drylin® SLW linear modules:

SLWM
▶ Page 1377



Digital measuring system for drylin® W:

WKM2
▶ Page 1378



Measuring system with positionable readout display for drylin® W:

WKMEDR
▶ Page 1379



Measuring systems for external data output for drylin® W:

WKMEK
▶ Page 1380



Stop motion measuring system with rail scale:

NKV-27-MES-XXXX
▶ Page 1381

drylin® carbon fibre



Extremely lightweight linear guides:
WSPC, WWPL
▶ Page 1386



Non-metallic toothed belt axis:
ZLW-XX-P
▶ Page 1387



Linear module with carbon fibre high profile:
SAW-XX-P
▶ Page 1388



Linear module with carbon fibre hollow shaft:
SHTP-XX-CWM
▶ Page 1389



Carbon fibre hollow shafts:
CWM
▶ Page 1390

drylin® stainless steel



Closed adapters made of stainless steel 303:
RJUM-XX-ES
▶ Page 1393



Stainless steel guides, single rails:
WS-XX-ES-FG
▶ Page 1394



Pillow blocks, made from 316 stainless steel:
WJUM-XX-ES-FG
▶ Page 1395



Hybrid roller bearings made of stainless steel:
WJRM-01/WJRM-21
▶ Page 1396



New

Pillow blocks, round made of stainless steel:
WXUMA-01-10-ES
▶ Page 1397



Stainless steel guides, double rails:
WS-10-XX-ES-FG
▶ Page 1398



Assembled stainless steel guide carriages, round:
WW-XX-GESG-PES
▶ Page 1399



Supported single rails, hygienic design:
WS-20-ES2-HYD
▶ Page 1400

drylin® stainless steel



Supported double rails, hygienic design:
WS-20-120-ES2-HYD
▶ Page 1401



Stainless steel shafts:
EWM/EEWM/EWMR
▶ Page 1402



Supported stainless steel shafts:
EWUM
▶ Page 1404



Partially supported stainless steel shafts:
EWUM-ES/EWUMS-ES
▶ Page 1406



Low-level supported stainless steel shafts:
EWUMN
▶ Page 1408



Low-level partially supported stainless steel shafts:
EWUMN
▶ Page 1410



Stainless-steel linear modules:
SHT-ESJ
▶ Page 1412



"Hygienic design" linear module:
SHTC-XX-HYD
▶ Page 1413

drylin® stainless steel



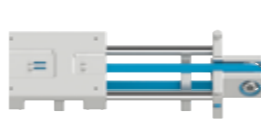
Stainless steel linear modules:
SLW-ES
▶ Page 1414



XY table stainless steel version:
SLW-XY-ES
▶ Page 1415



Stainless steel toothed belt modular drive system:
ZLW-20
▶ Page 1416



New

ZLW linear module, hygienic design:
ZLW-20120-HYD
▶ Page 1417

Lubrication-free drylin® linear guides


drylin® is a product range of lubrication-free linear plain bearings based on the principle of sliding instead of rolling. Tribologically optimised iglidur® high-performance polymers are used as sliding surfaces. The drylin® linear systems use dry operation and are maintenance-free. Linear guides with rails or shafts are available.


The focus is on, besides the freedom from maintenance and lubrication, the ruggedness and insensitivity to influences such as dirt, water, chemicals, heat or impacts.


- Lubrication-free and resistant to dust and dirt
- High static load capacity
- Light, quiet and clean
- Robust and cost-effective

Typical application areas

- Mechanical engineering
- Woodworking industry
- Medical and rehabilitation technologies
- Interior design (furniture/aircraft)
- Automation

 **Available from stock**
Detailed information about delivery time online.

 **Price breaks online**
No minimum order value. No minimum order quantity

 **Service life calculation**
▶ www.igus.eu/drylin-expert

Superior operating properties by combining iglidur® bearing elements and anodised rails with round shaft profiles

Corrosion-resistant with hard-anodised running surface

Quiet operation

Profiles available in various geometries, installation sizes and clearances

Clean as no lubrication required

Lightweight due to the use of plastics and aluminium

Maintenance-free due to integrated lubricants

Smooth operation with iglidur® sliding elements

drylin® rail guides

drylin® W profile guides

- Complex modular systems with more than 30 different profiles and more than 50 carriage options
 - Versatile
 - Easy installation
- ▶ From page 1123

drylin® N low-profile guides

- Low profile installation heights from 6 to 12mm
 - Lightweight
 - Many carriage options - also with pre-load
 - Pre-load prism slide for controlled adjustment
- ▶ From page 1201

drylin® T rail guides

- Same dimensions as ball guide systems
 - Adjustable bearing clearance
 - Automatic clearance adjustment
 - High static load capacity
- ▶ From page 1229

drylin® shaft guides

drylin® R shaft guides

- Dimensions identical to recirculating ball bearings
 - For all shaft materials
 - Lightweight
 - Replaceable liners
- ▶ From page 1249

drylin® Q square linear guides

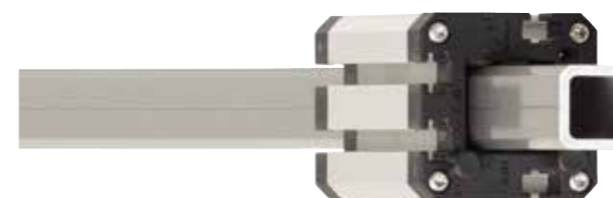
- Lubrication-free, torque-resistant square linear guides
 - Lightweight profiles made from hard-anodised aluminium
 - Manual adjustable carriages with/without manual clamp
 - Numerous fastening options
- ▶ From page 1359

Measuring systems

▶ From page 1371

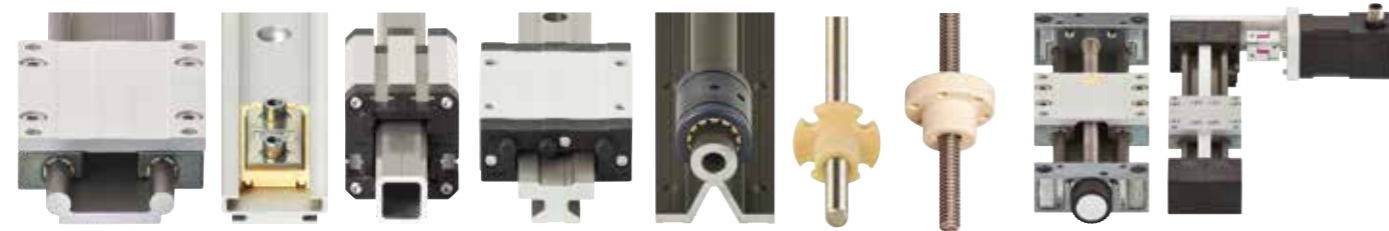
Special solutions with carbon fibre and stainless steel

▶ From page 1383



drylin® linear technology | Slides instead of rolling!

drylin® is a range of maintenance and lubrication-free linear plain bearings. This range includes linear units with lead screw, rack and toothed belt drives. The focus is on, besides the freedom from maintenance and lubrication, the ruggedness and insensitivity to influences such as dirt, water, chemicals, heat or impacts.



- Maintenance-free
- Wear-resistant
- Resistant to impacts and vibrations
- Corrosion-resistant
- Resistant to dirt, dust and humidity
- Low coefficient of friction
- Weight reduction
- Dry operation
- Suited for short-stroke applications
- High static load capacity
- High speeds and accelerations possible
- Self-lubricating
- Extremely quiet operation
- Low level of magnetism



Rolling bearings - Point contact



Plain bearings - Surface contact



Resistant to dirt, dust and moisture - by lubrication free insert and dirt channels.

Optimum load distribution

drylin® linear plain bearings operate on sliding elements unlike the traditional recirculating ball bearing systems. This gives a larger contact surface resulting in lower surface pressure. This leads to advantages which include:

- The use of non-hardened shafts
- The use of non-metallic shafts
- Scratching and shaft damage is completely excluded

Shafts and rail materials

The large surface area of drylin® linear plain bearings, when compared to traditional ball bearings, means that under a given load the bearing pressure is greatly reduced. This allows soft shaft materials to be used, including hard-anodised aluminium, which in turn gives additional benefits in friction and wear rate values, carbon fibre shafts, which offer the lightest option and stainless steel for the highest chemical resistance. Of course, hardened steel and stainless steel shafts as well as hard-chromed shafts can also be used with drylin® linear bearings.

Dry operation, without lubrication

drylin® linear bearing systems are designed for dry operation. As there is no grease or oil present, the application tends to naturally self clean, any particles are wiped away from the sliding surface by the ribbed design of the drylin® polymer bearing. This works well in coarse dirt or even sand. Particles are repelled from the contact surface by the movement itself. Here the front of the sliders works like a wiper. The contact surface remains clean.

drylin® linear technology | Slides instead of rolling!

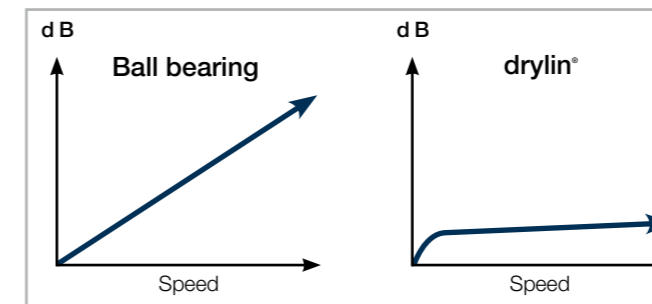
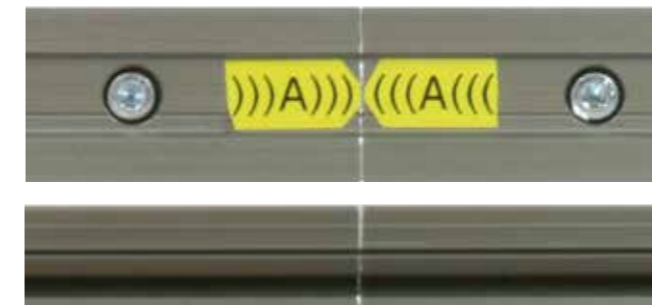


Figure 01: Comparison of noise development



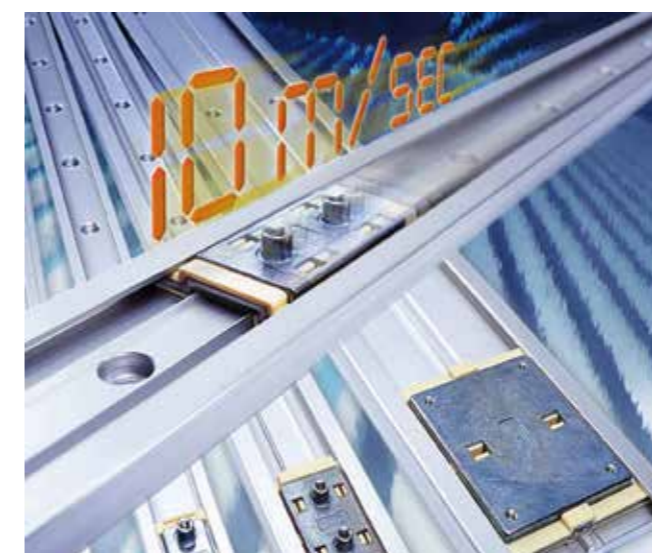
Track joint

Quiet

The quiet operation is also a benefit of sliding rather than rolling. There are no loud collisions between a hard steel ball and the glide surface. The sliding motion is extremely quiet and only a light friction noise is audible.

Maximum stroke lengths

The lining up of guide rails (joining) poses no challenge for drylin® linear guides. The guide rails are slightly chamfered, aligned and simply placed behind each other. The joint can be passed over by the sliding element without problems. With the drylin® linear plain bearings, a ball or roller cannot get stuck. In this way stroke lengths of more than 20 meters can be implemented. Assembly is simplified by the distinctive joint marking provided at the factory.



Permitted speeds/acceleration

drylin® linear plain bearings do without rollers and balls. This makes the bearing independent of the mass inertia of this body and can be used with high speeds up to 10m/s and accelerations up to 100g.

drylin® linear bearings are therefore especially suitable for applications with light loads, where the speeds should be increased. The use of hard-anodised aluminium as a friction partner lowers the operating temperature in the bearing due to the high thermal conductivity of aluminium. Thus the operation can be carried out with a high frequency even at very short stroke lengths.

The maximum average surface speed results from the load on the bearings. With decreasing surface load, higher speeds can be achieved. More important than the maximum speed reached is the average speed over a period of time, because this has the most influence on the heating of the bearing system. In cases with breaks between the individual cycles, the maximum average surface speed is critical, which is achieved during a period of 10 to 30 minutes.

Thermal conductivity	[W / m · K]
Aluminium	235
Unalloyed steel	48-58
High-alloyed steel	15

Table 01: Thermal conductivity

Average surface speed

= Travel distance per cycle [m] / total cycle time [sec].



Extreme application conditions in the offshore industry



Filling machine, Kronen AG, Rosenheim (Germany)

Corrosion behaviour

The low humidity absorption of iglidur® J, J200 and X permits even underwater applications. The application of stainless steel or anodised aluminium shafts provide for a corrosion-resistant guide. Anodised aluminium is resistant to chemically neutral substances in the range pH 2 to 7. For special applications separate tests are recommended for coated aluminium sample parts for that specific application.

Chemical resistance

igidur® J is resistant to weak acids, diluted alkalis as well as to fuels and all kinds of lubricants. The intensive cleaning of machines with standard commercial cleaning agents, even in the food sector, is therefore not a problem for the guides. For applications in environments with aggressive chemicals, it is recommended to use drylin® R linear bearings equipped with iglidur® X liners. The resistance of linear bearing systems is equally dependent on the counter partner. The most chemical-resistant option can be a high-alloyed steel stainless steel shaft, for instance high grade steel (AISI 440B), or alternatively the use of soft VA steels (e.g. (AISI 316Ti)).

Operating temperatures

Sliding elements made from iglidur® J and J200 can be used in the temperature range between -40 and +90°C. The continuous operating temperature for overmoulded sliding elements is +50°C. In applications with aluminium shafts and/ or rails, distinctly higher loads and speeds can be attained due to the excellent thermal conductivity. Sliding elements made from iglidur® X can be used in the range of -100°C to +250°C.

Use in dirt

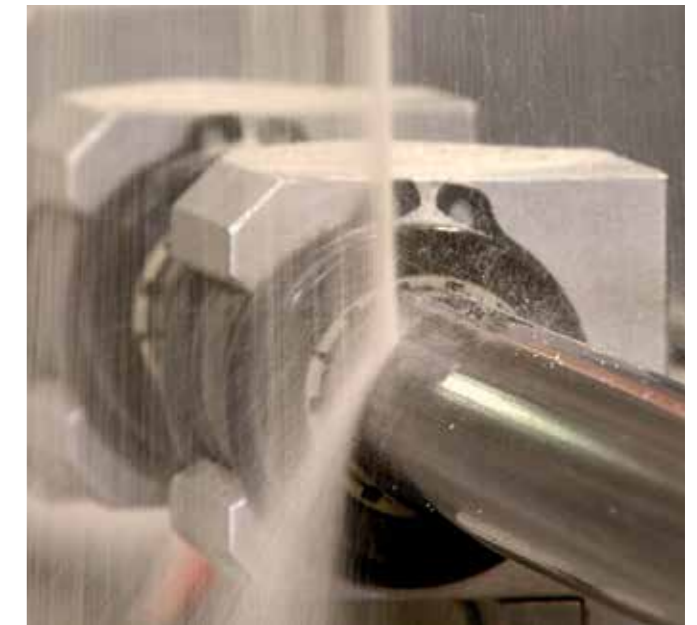
Even the application under coarse dirt and sand is possible. Particles are repelled from the contact surface by the movement itself. Seals can be dispensed with due to the dry operation. Dust and dirt cannot stick to grease or oil.

Surfaces

Hard-anodised surfaces are characterised by good wear properties, high chemical resistance and a high degree of hardness. It is a technical and not a decorative surface. Colour alteration and slight cracking may occur, but do not influence the resistance, the corrosion behaviour or the sliding properties.

Eloxal stands for the electrolytic oxidation of aluminium. This gives the CA rail profiles a silver/colourless surface that is resistant to corrosion and wear. A lot of aluminium profiles are also available as black anodised (AR anti-reflect) versions. Both variants (CA/AR) are suitable for applications that require consistent colouring.







Cutting surfaces and machined surfaces are uncoated.



Lubrication-free and resistant to dust and dirt



The iglidur® X material in heavy-duty use under high temperatures in foundries

	 The All-rounder - iglidur® J	 The specialist - iglidur® J200	 The extreme - iglidur® X
Application temperature	-50 up to +90°C	-50 up to +90°C	-100°C up to +250°C
Best coefficient of friction with	Steel shaft	Aluminium, hard-anodised	Hard-chromed steel
Volume resistance	> 10 ¹³ Ωcm	> 10 ⁸ Ωcm	< 10 ⁵ Ωcm
Moisture absorption	1.3% weight	0.7% weight	0.5% weight
Maximum service life with	Hard-anodised aluminium	Aluminium, hard-anodised	Hardened stainless steel
Potential counter partner	All shaft materials	Aluminium, hard-anodised	Hardened stainless steel
Permissible stat. surface pressure	35MPa	23MPa	150MPa
Part No.	JUM-...	J200UM-...	XUM-...
	 The endurance runner - iglidur® E7	 The FDA-compliant - iglidur® A180	 Blue Sky Thinking FDA/ EU-compliant - iglidur® A160
Application temperature	-50°C up to +70°C	-50 up to +90°C	-50 up to +90°C
Best coefficient of friction with	Steel/stainless steel shaft	Stainless steel shaft	Hardened stainless steel shafts
Volume resistance	> 10 ⁹ Ωcm	> 10 ¹² Ωcm	> 10 ¹² Ωcm
Moisture absorption	< 0.1wt.-%	0.2% weight	< 0.1wt.-%
Maximum service life with	Steel/stainless steel shaft	Stainless steel shaft	Hardened stainless steel shafts
Potential counter partner	Steel/stainless steel shaft	All shaft materials	Stainless steel
Permissible stat. surface pressure	18MPa	28MPa	15MPa
Part No.	E7UM-...	A180UM-...	A160UM-...

igus® provides various materials for sliding elements and mating partners for drylin® linear systems. Extensive lab tests and years of field experience have shown that iglidur® J, J200 and X are the ideal materials for most linear applications due to their favourable wear and friction properties.

Ideal material combinations

iglidur® J:

- Maintenance-free dry operation
 - Low coefficient of friction with all materials
 - Excellent wear resistance
 - Low moisture absorption
- More about iglidur® J ► **From page 163**

iglidur® J200:

- Completely maintenance-free
 - Extremely long service life on hard-anodised aluminium
 - Low coefficient of friction with anodised aluminium
 - Excellent wear resistance with anodised aluminium
- More about iglidur® J200 ► **From page 265**

iglidur® X:

- Completely maintenance-free
 - Temperature-resistant from -100°C to +250°C
 - Continuous operation
 - Universal chemical resistance
 - Low moisture absorption
- More about iglidur® X ► **From page 291**

Other possible materials:

iglidur® A180, FDA-compliant

► More about iglidur® A180 ► **From page 425**

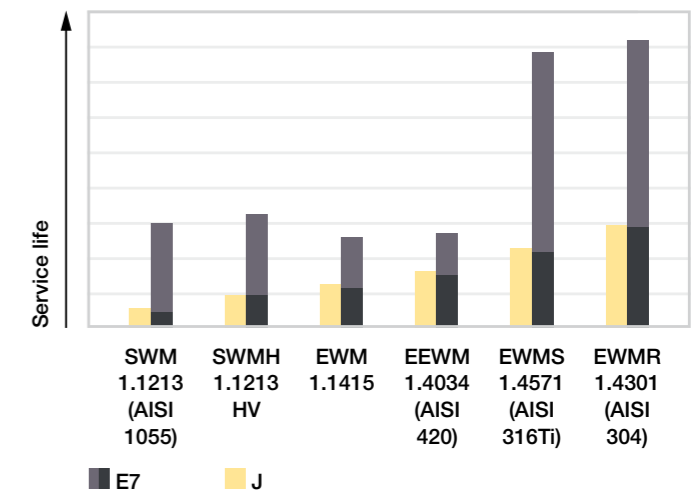
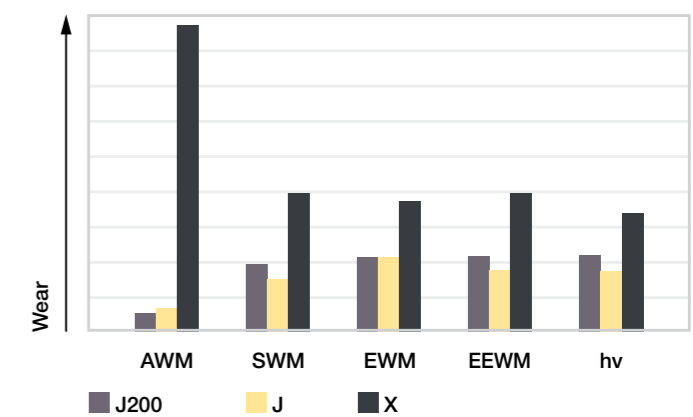
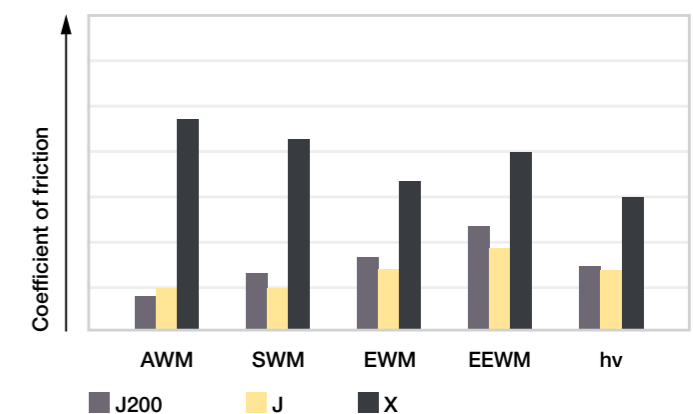
iglidur® A160, Compliant with Regulation (EU)

No. 10/2011 and FDA guidelines

► More about iglidur® A160 ► **From page 443**

iglidur® E7, the endurance runner all-rounder

► More about iglidur® E7 ► **From page 271**



drylin® linear technology | Product selection

Properties									
	Installation sizes	Lubrication-free and quiet operation	Dimensionally interchangeable with recirculating ball bearings	Profile rails	Shafts	Square profiles	Single pillow block	Complete carriage	Hybrid roller bearing
drylin® W	5	●	●	●			●	●	●
drylin® N	4	●		●				●	
drylin® Q	3	●				●	●	●	
drylin® T	4	●	●	●				●	
drylin® T mini	4	●	●	●				●	
drylin® R	12	●	●		●		●		

Special features								
	Loads > 100kg	For robust requirements	Resistant to dirt	Compact, space-saving	Particularly light weight	Torque-resistant	Torsionally stable	Unsupported installation
drylin® W	+	+	+++	+	+	+	+++	+
drylin® N			+	++	++	+		
drylin® Q			+	+	+	+++	+	+++
drylin® T	+	+	+			+	+	
drylin® T mini			+	++	++	+		
drylin® R	++	++	+++					+

Technical options								
	Manual adjustable bearing clearance	Automatic adjustable bearing clearance	Automatic pre-load	Floating bearing function	Manual clamp	with measuring system	with lead screw drive	with toothed belt drive
drylin® W	+		+++	+	+	+	+	+
drylin® N			+++	+	+		+	+
drylin® Q	+				+	+		
drylin® T	+	+		+	+			
drylin® T mini	+			+			+	
drylin® R				+			+	

Application areas								
	Stainless steel components	Temperatures above +90°C	Chemical-resistant	FDA-compliant	Cleanroom and ESD	Door/control panel adjustments	Camera slider	3D-print components
drylin® W	+++	++	+++	++	+	+++	+++	+++
drylin® N		+			+	+	+	+++
drylin® Q					+			
drylin® T		+			+++			
drylin® T mini					+	+		+++
drylin® R	+++	++	+++	++	+			+++

+ suitable ++ particularly suitable

drylin® linear technology | Technical data rails/profiles/shafts

Aluminium profiles	
	Aluminium, extruded section according to EN AW 6061/6060
Shafts and rail profiles	Surfaces
drylin® W, drylin® T ¹⁵⁵⁾ , drylin® R, drylin® Q	hard-anodised, bare surface
drylin® N, profile with CA marking	clear-anodised, bare surface
drylin® N, profile with AR marking	black-anodised (anti-reflect), bare surface

¹⁵⁵⁾ Exception: TS-11-20 clear-anodised

Profile straightness tolerances	
Shafts AWMP/AWMR	DIN 754-3; 2mm/m, local 0.6mm/300mm
	DIN EN 12020-2
	Total length up to 1,000mm; Straightness 0.7mm
Profile rails AWMU/AWMQ, WS/NS/TS	Total length up to 2,000mm; Straightness 1.3mm
	Total length up to 3,000mm; Straightness 1.8mm
	Total length up to 4,000mm; Straightness 2.2mm

Length tolerances of the profiles cut-to-length by igus® [mm]

Length	<400	>400-1,000	>1,000-2,000	>2,000-4,000
Permissible variations of the standard saw length according to DIN ISO 2768-m	±0.5	±0.8	±1.2	±2.0

Minimum rail profile saw lengths [mm]

drylin® W	Hole spacing				Without holes
	C4 = 60 ¹⁶²⁾	C4 = 120 ¹⁶²⁾			
Rail profiles WS, WSQ, WSX	100	160		100	
drylin® N	C4 = 150 ¹⁶²⁾				
Size 17/27 (miniature) NS, NS-AR, NSV, NSV-AR	100	-		70	
Size 40/80 NS, NS-AR	100	200		100	
drylin® T	C4 = 15/20/25/40	C4 = 60 ¹⁶²⁾	C4 = 80 ¹⁶²⁾	C4 = 120 ¹⁶²⁾	
Installation size 04 (miniature) TS-04	70	-	-	-	70
Installation size 01/11 TS-01/TS-11	-	100	120	160	100

¹⁶²⁾ L min: C5 min + C4 + C6 min; saw length examples: drylin® WS-20 rail: C5 min = 20 mm; C4 = 120mm; C6 = 20mm; 20mm + 120mm + 20mm = 160mm (min. saw lengths). Lengths less than the minimum saw length upon request

Minimum shaft/square shaft saw lengths [mm]

drylin® R	Hole spacing				
	Shafts AWMP/AWMR				
	100				
	T1 = 75 ¹⁶³⁾	T1 = 100 ¹⁶³⁾	T1 = 120 ¹⁶³⁾	T1 = 150 ¹⁶³⁾	T1 = 200 ¹⁶³⁾
Supported shaft AWMU	115	140	160	190	240
drylin® Q	Square profile AWMQ				
	100				

¹⁶³⁾ L min: C5 min + T1 + C6 min; saw length examples: AWMU-20 supported shaft: C5 min = 20mm; T1 = 100mm; C6 min = 20mm; 20mm + 100mm + 20mm = 140mm (min. saw length)

Lengths less than the minimum saw length upon request

drylin® curved linear guide profiles


igus® provides customised curved rails for the drylin® W product range. This is especially for the requirements in operating ergonomics, e.g. guiding monitors and control systems in a radius to ensure safe and easy accessibility. New standards can be set in design and construction with a drylin® curved guide.


- Lubrication-free drylin® W carriages for curved rails
 - ▶ Page 1173
- Variable profile directions
- Torque-resistant alternative to curved tube profiles
- Bending option depending on the radius, rail length, bearing/carriage and mounting
- Customised project service

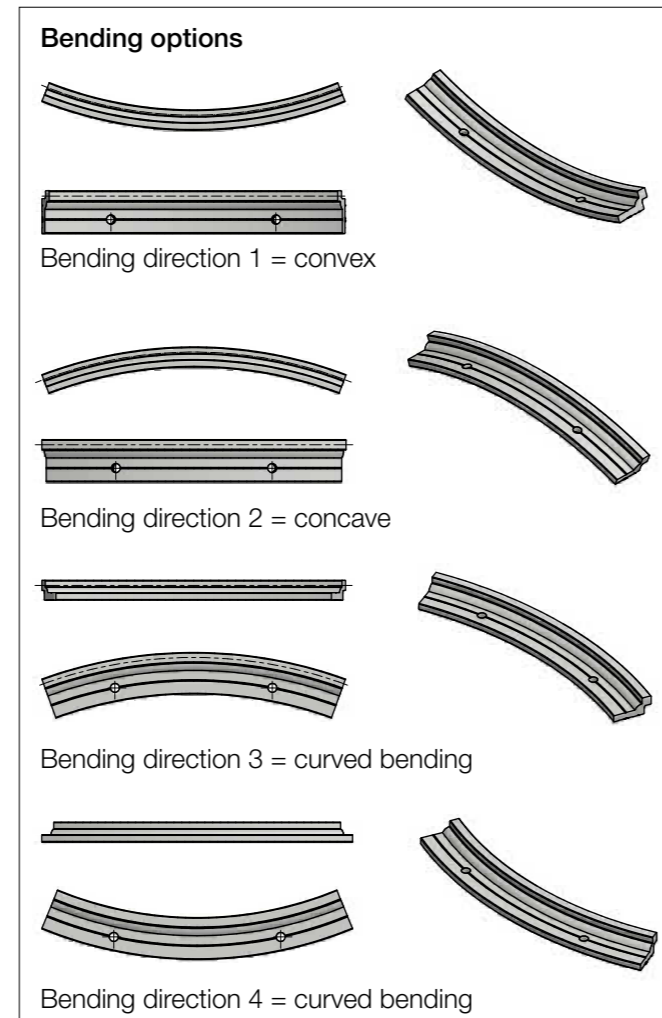


Curved drylin® linear technology - for ergonomic operation and optimal field of view

Bending can give rise to surface changes (anodising, torsion) as a result of the deformation. Rail profiles with clear anodised (CA) surfaces that are undersized by up to 0.15 below nominal diameters are used to improve the surface finish of the curved rails. We recommend a bend radius of no less than 300mm and would like to point out that the surface finish quality after the bending process depends on the material quality. It may vary from batch to batch.

 **Curved rail profiles**
▶ Page 1168

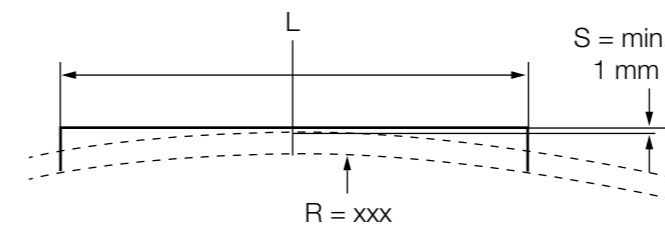
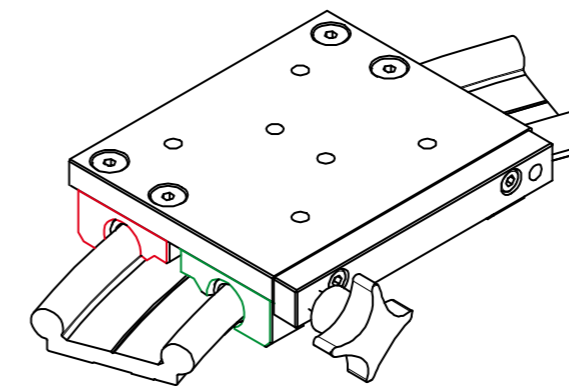
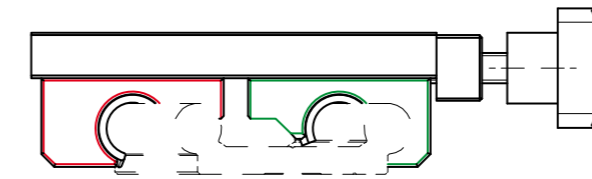
 **More Information and checklist online**
▶ www.igus.eu/curved



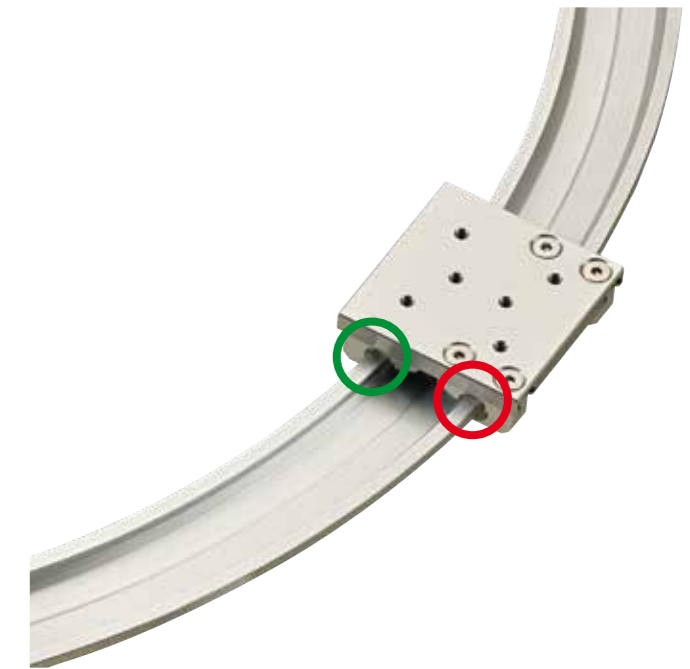
Different radii and bending directions available upon request

Installation of curved guides

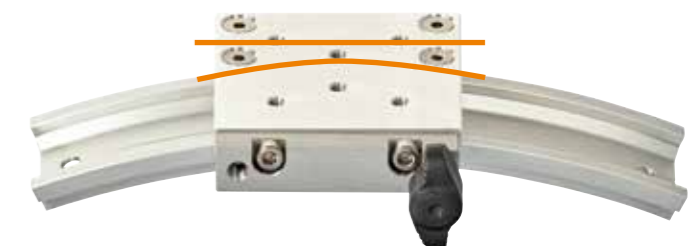
The floating bearing side should always be located on the inner guidance when bending in a curve. This is due to the fact that the rail is compressed on the inside and requires a larger bearing diameter. The fixed bearing can be easily identified by the bearing housings, which are attached with four screws. The floating bearings are also marked on the bearing element.



With the concave/convex rails, the length (L) of the carriage is decisive for the desired radius. If the radius decreases and the sliding distance (L) increases, the gap (S) shrinks. The gap must be at least 1mm wide to prevent the rail from colliding with the carriage even after the wear limit has been reached.



 **Floating bearing**  **Fixed bearing**



Floating bearings for guide systems

In the case of a system with two parallel guides, one side needs to be fitted with floating bearings. A suitable solution comprising fixed and floating bearings is available for every installation position, whether horizontal, vertical or lateral. This type of assembly prevents jamming and blockage on the guides resulting from discrepancies in parallelism. Floating bearings are created through a controlled extension of the clearance in the direction of the expected parallelism error.

During installation, take care that the floating bearing has approximately the same clearance on both sides. You can see the version of the fixed/floating bearing system recommended by us in the designs shown in the individual sections about the systems. The mounting surfaces of the guides and carriages should possess a good evenness (e.g. machined surface) to prevent twisting in the system. Smaller areas of mounting surface unevenness can be compensated to a certain extent by the floating bearing.

Eccentric forces

To ensure successful use of maintenance-free drylin® linear bearings, it is necessary to follow certain recommendations: if the distance between the driving force point and the fixed bearings is more than twice the bearing spacing (2:1 rule), a static friction value of 0.25 can theoretically result in jamming on the guides.

This principle applies regardless of the value of the load or drive force. The friction product is always related to the fixed bearings. The greater the distance between the drive and the guide bearing, the higher the wear and required drive force.

Failure to observe the 2:1 rule during a use of linear plain bearings can result in uneven motion or even system blockage. Such situations can often be remedied with relatively simple modifications.

If you have any questions on design and/or assembly, please make use of our technical support.

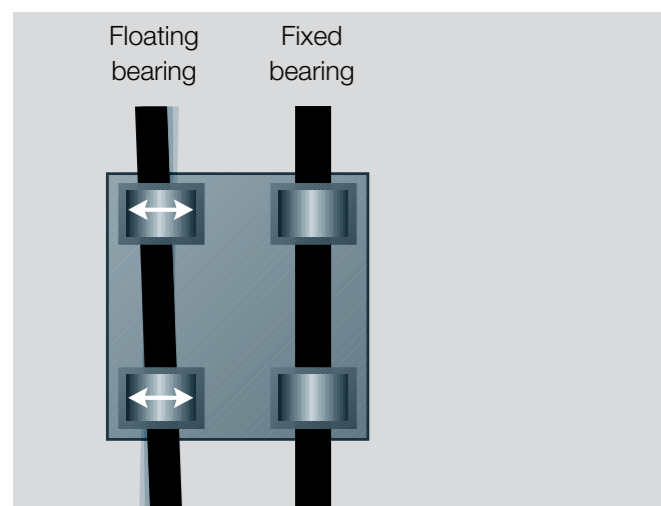


Figure 02: Automatic compensation of parallelism errors

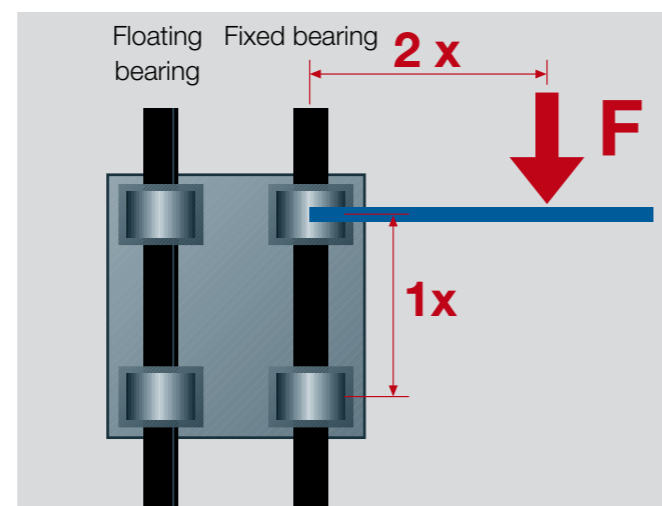


Figure 03: The 2:1 rule

Tightening torque for drylin® metallic screws

Metric thread (Da)	tightening torque	Recommended tightening torque	
	[Nm]	[Nm]	[Nm]
M3	0.5 - 1.1	0.7	
M4	1.0 - 2.8	1.5	
M5	2.0 - 5.5	3.0	
M6	4.0 - 10.0	6.0	
M8	8.0 - 23.0	15.0	
M10	22.0 - 46.0	30.0	

Please be aware of the minimal screw-in depth for aluminium and zinc die-casting parts: 1.5x D_a

Cleanroom suitability and ESD compatibility of drylin®

drylin® linear guides from igus®

All drylin® guides are clearly qualified for cleanroom applications. The differentiation between the various cleanroom classes is only dependent on load and speed of the application. The combination of iglidur® J and hard-anodised aluminium is classified as level 1 in the ESD compatibility according to SEMI E78-0998 (highest rank).



The measurement results of the ESD compatibility according to SEMI E78-0998 show that the linear guide system drylin® NK-02-40-02 can be classified as "level 1" (highest rank). See Fraunhofer IPA Report No.: IG 0308-295 73

TK-01-25-02 drylin® linear guide system

"For the linear guide system drylin®

The following drylin® guides from igus® were tested: N40, W10, T25 and T30.

See below for detailed results.

drylin® TK-10-30-01 linear guide system

"For the linear guide system drylin® TK-10-30-01 by igus® GmbH, it is possible, on the calculations of the likelihood of violation of threshold values of the detection sizes 0.2µm, 0.3µm, 0.5µm, and 5µm with motion speed of $v = 0.1\text{m/s}$, to clearly derive suitability for cleanrooms classified as ISO Class 3 according to DIN EN ISO 14644-1."

NK-02-40-02 drylin® linear guide system

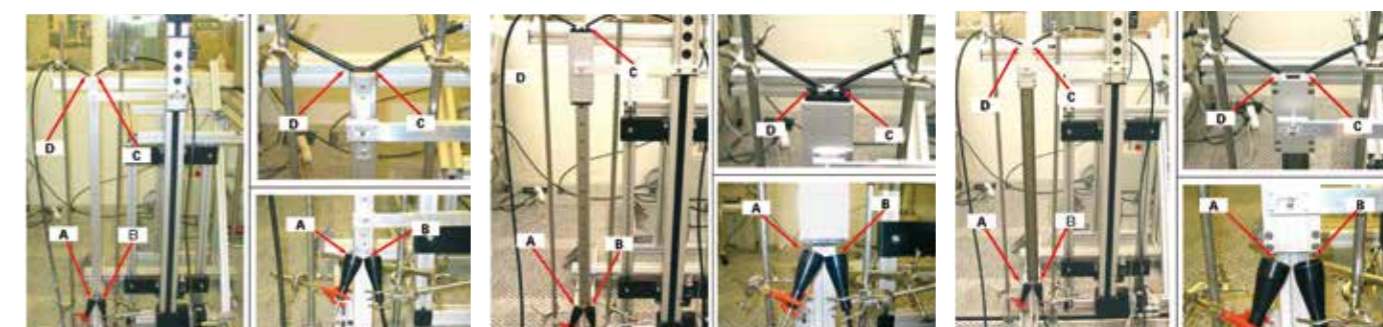
"For the linear guide system drylin® NK-02-40-02 by igus® GmbH, it is possible, on the calculations of the likelihood of violation of threshold values of the detection sizes 0.2µm, 0.3µm, 0.5µm, and 5µm with motion speed of $v = 1\text{m/s}$, to clearly derive suitability for cleanrooms classified as ISO Class 6 according to DIN EN ISO 14644-1."

TK-01-25-02 by igus® GmbH, it is possible, on the calculations of the likelihood of violation of threshold values of the detection sizes 0.2µm, 0.3µm, 0.5µm, and 5µm with motion speed of $v = 1\text{m/s}$, to clearly derive suitability for cleanrooms classified as ISO Class 5 according to DIN EN ISO 14644-1." The measurement results of the ESD compatibility according to SEMI E78-0998 show that the linear guide system drylin® TK-01-25-02 can be classified as "level 1" (highest rank).

WK-10-40-15-01 drylin® linear guide system

"For the linear guide system drylin® WK-10-40-15-01 by igus® GmbH, it is possible, on the calculations of the likelihood of violation of threshold values of the detection sizes 0.2µm, 0.3µm, 0.5µm, and 5µm with motion speed of $v = 1\text{m/s}$, to clearly derive suitability for cleanrooms classified as ISO Class 6 according to DIN EN ISO 14644-1." The measurement results of the ESD compatibility according to SEMI E78-0998 show that the linear guide system drylin® WK-10-40-15-01 can be classified as "level 1" (highest rank).

See Fraunhofer IPA Report No.: IG 0308-295 74





Expert for linear guides: System selection and service life calculation with CAD
 Configure and calculate the service life of linear bearings - constantly expanded by new sizes and products
 Easily calculate the service life of your required linear guide and configure with a few clicks. Select a drylin® system and add the relevant environmental parameters. Select the bearing size, carriage, number and position. Then enter the distance between the rails and the mounting. Define more relevant parameter of the guidance and select a rail length. The results are displayed.



► www.igus.eu/drylin-expert



Download the online tool
 app now



drylin® CAD configurator: Generate complete 3D models for drylin® linear technology according to your specifications
 The igus® CAD online configurator gives you the ability to design and save your linear guide as a system, individual components directly as a 3D model in all commonly used formats, or to have these sent by e-mail - free of charge and without registration.



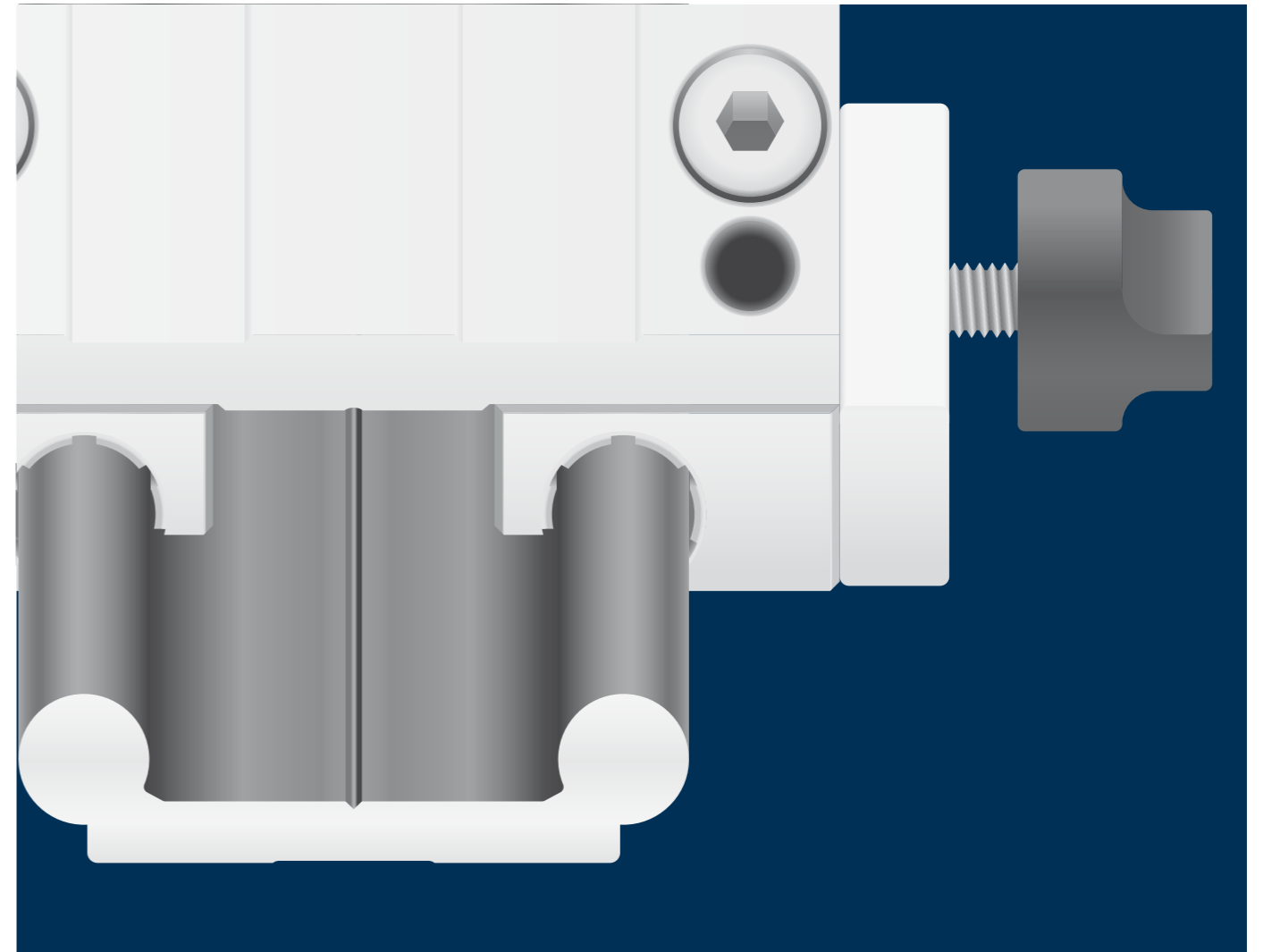
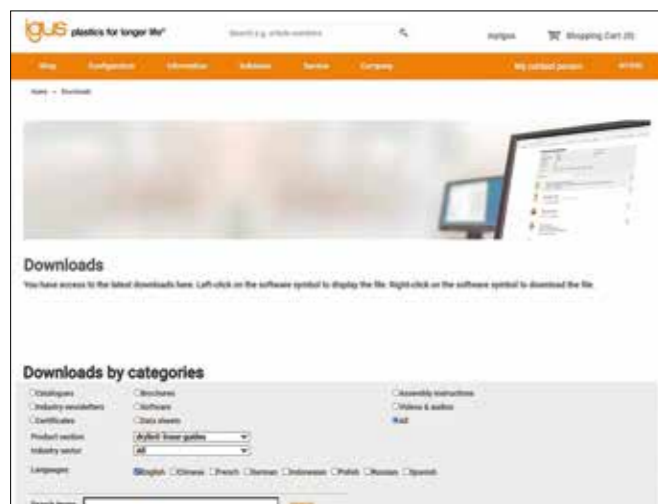
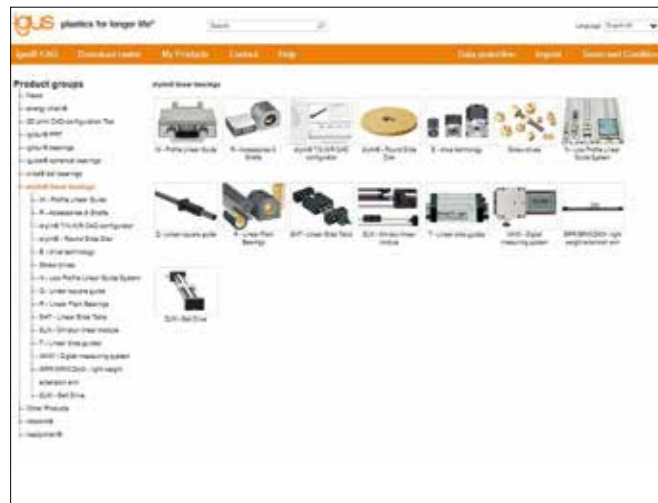
► www.igus.eu/drylin-CAD

More information about the products can be found in the igus® download area

- Assembly instructions
- Assembly videos
- System design
- Catalogues



► www.igus.eu/downloads



drylin® linear technology - drylin® W profile guides

Modular linear guides

Replaceable lubrication-free drylin® liners

Robust linear housings

Ready-to-install linear carriages

Single and double rails



Lubrication-free, light, quiet, long service life, cost-effective

Superior operating properties by combining iglidur® bearing elements and anodised rails with round shaft profiles

Corrosion-resistant with hard-anodised running surface

Quiet operation

Clean as no lubrication required

Lightweight due to the use of plastics and aluminium

Smooth operation with sliding elements made from lubrication-free iglidur® high-performance polymers

Maintenance-free due to integrated lubricants

Profiles with various geometric designs, installation sizes and clearances


Lubrication-free linear system - drylin® W


drylin® W profile guides are a cost-effective pre-assembled system. The design allows extremely high flexibility in the construction and installation due to the use of individual or double rails. Hard-anodised aluminium is used as rail material and provides the best friction and wear results. The absence of lubrication makes the profile guide system extremely insensitive to dirt and, due to its cleanliness, it is also suitable for applications in clean and hygienic environments.


- Easy installation, maintenance-free
- Resistant to dirt thanks to dry operation
- Lightweight and quiet
- Square rail with floating bearing function for 90° installation
- Bearing with manual clearance adjustment available


Typical application areas


- Agricultural machinery
- Automotive
- Medical technology
- Packaging industry
- Furniture

 **Available from stock**
Detailed information about delivery time online.

 **Price breaks online**
No minimum order value. No minimum order quantity

 **Max. +200°C**
Min. -40°C

 **Carriage lengths: 60-250mm**
Carriage widths: 54-195mm
Rail length: up to 4,000mm

 **Service life calculation**
▶ www.igus.eu/drylin-expert

Profile guides for almost unlimited design freedom



Individual components: Pillow blocks

- Material: Zinc die-casting, aluminium or stainless steel
 - Round or square design
 - Liners made from iglidur® high-performance polymers
- ▶ From page 1134



Assembled systems: Complete carriages

- Pre-assembled
 - Variable lengths and widths
 - Mono-slide carriage made from aluminium
- ▶ From page 1152



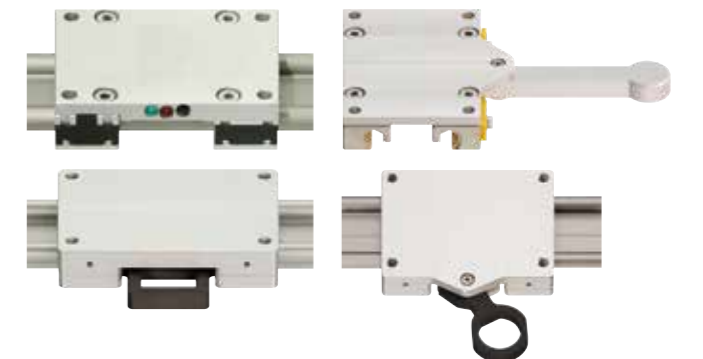
Hybrid guides

- Linear housing with integrated single or double roller
 - Low drive forces
 - Available as single housing or complete carriage
- ▶ From page 1177



Single components: Single and double rails

- Material: Aluminium, hard-anodised
 - Design freedom
 - 316 stainless steel rails
- ▶ From page 1132



Linear carriage with optional features

- Carriage with wear measurement
 - Carriage with hand lever
 - Clip carriage with/without manual clamp
 - Locking carriages
- ▶ From page 1164



Accessories

- Manual clamp for single bearing housing and complete carriages
 - End caps for high profile rails
- ▶ From page 1194

Based on drylin® W



Measuring systems
▶ From page 1371



Linear modules
SLW/SAW/GRW/ZLW
▶ From page 1338

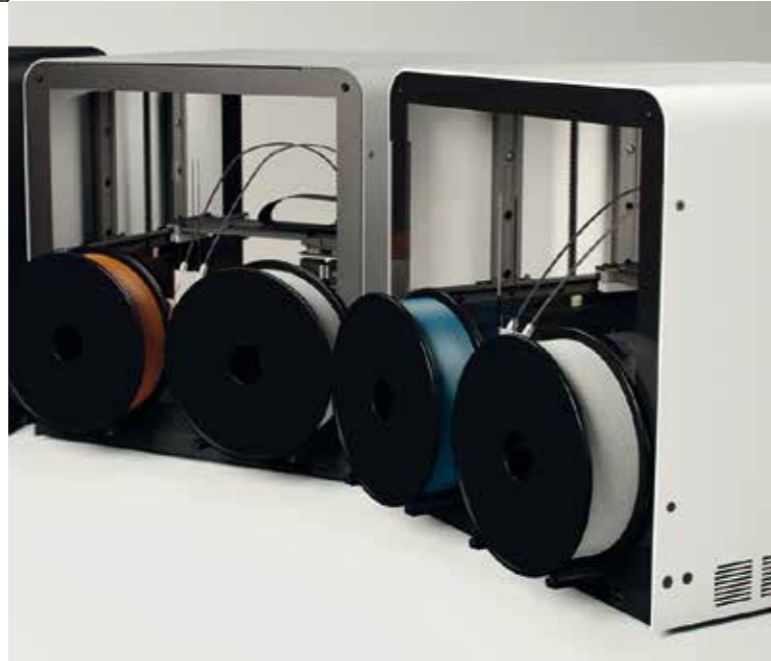


Pick & place

drylin® linear bearings enable precise positioning at high speeds. Unlike conventional bearings, they do not require lubrication and are corrosion free.

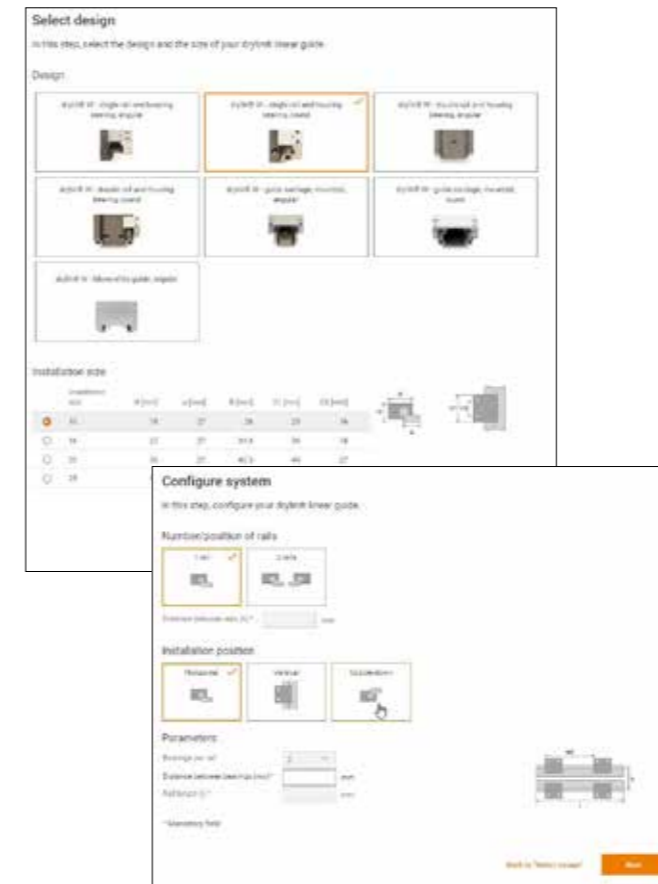
3D printer

Lightweight due to the use of plastic and aluminium with a corrosion-free coating, the guides in the drylin® range impress with their quiet and precise running.



Casting machine

The closing mechanism on this casting machine is subjected to high temperatures and dirt. To make it as durable as possible despite this, it is mounted with a drylin® W profile guide.



Expert for linear guides: System selection and service life calculation with CAD

Configure and calculate the service life of linear bearings - constantly expanded by new sizes and products

Easily calculate the service life of your required linear guide and configure with a few clicks. Select a drylin® system and add the relevant environmental parameters. Select the bearing size, carriage, number and position. Then enter the distance between the rails and the mounting. Define more relevant parameter of the guidance and select a rail length. The results are displayed.



► www.igus.eu/drylin-expert



Download the online tool app now

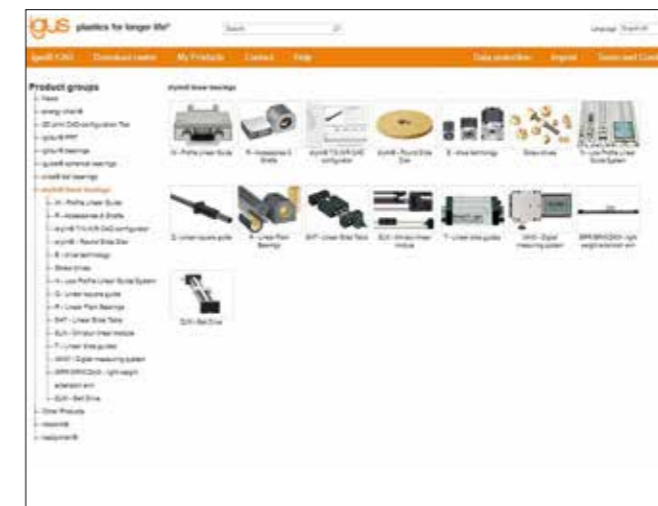


drylin® CAD configurator: Generate complete 3D models for drylin® linear technology according to your specifications

The igus® CAD online configurator gives you the ability to design and save your linear guide as a system, individual components directly as a 3D model in all commonly used formats, or to have these sent by e-mail - free of charge and without registration.



► www.igus.eu/drylin-CAD

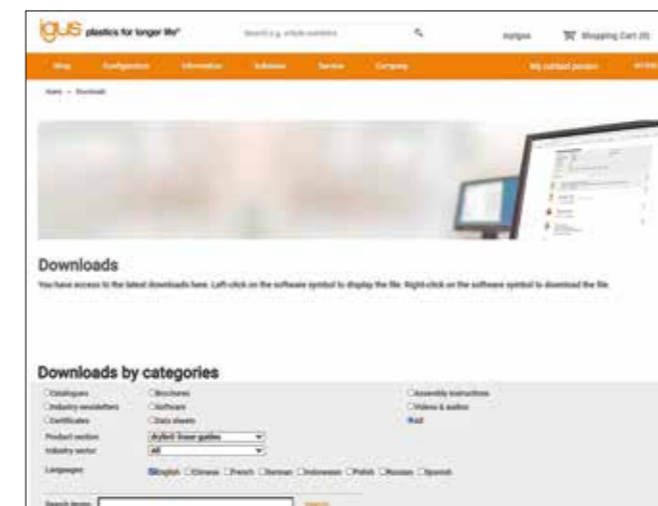


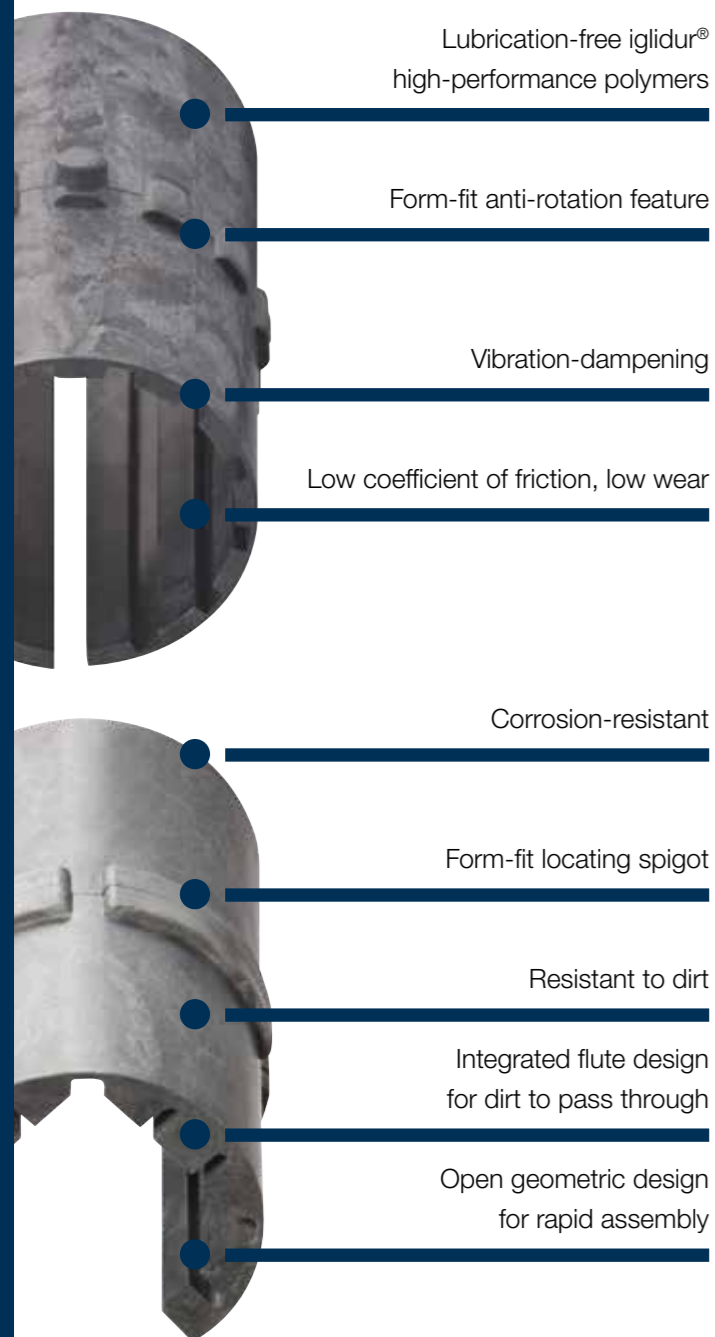
More information about the products can be found in the igus® download area

- Assembly instructions
- Assembly videos
- System design
- Catalogues



► www.igus.eu/downloads






drylin® liners made from high-performance polymers

Extremely wear-resistant tribopolymers improved by precisely blended additions of strengthening materials and solid lubricants, tested a thousand times and proved a million times - that is iglidur®. Further to the general properties, every iglidur® bearing material has a series of special features, which account for its particular suitability for certain applications and requirements. The detailed description of the materials can be found in the respective sections.

- Lubrication-free
- Corrosion-resistant
- Low coefficient of friction
- Maintenance-free
- High resistance to dirt
- Lightweight
- High wear resistance
- Excellent price-performance ratio

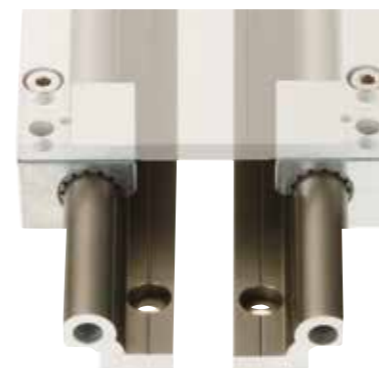
						
Application temperature	-50 up to +90°C	-50 up to +90°C	-100°C up to +250°C	-50°C up to +70°C	-50 up to +90°C	-50 up to +90°C
Best coefficient of friction with	Steel shaft	Aluminium, hard-anodised	Hard-chromed steel	Steel/stainless steel shaft	Stainless steel shaft	Hardened stainless steel shafts
Volume resistance	> 10 ¹³ Ωcm	> 10 ⁸ Ωcm	< 10 ⁵ Ωcm	> 10 ⁹ Ωcm	> 10 ¹² Ωcm	> 10 ¹² Ωcm
Moisture absorption	1.3% weight	0.7% weight	0.5% weight	< 0.1wt.-%	0.2% weight	< 0.1wt.-%
Maximum service life with	Hard-anodised aluminium	Aluminium, hard-anodised	Hardened stainless steel	Steel/stainless steel shaft	Stainless steel shaft	Hardened stainless steel shafts
Potential counter partner	All shaft materials	Aluminium, hard-anodised	Hardened stainless steel	Steel/stainless steel shaft	All shaft materials	Stainless steel
Permissible stat. surface pressure	35MPa	23MPa	150MPa	18MPa	28MPa	15MPa
Part No.	JUM-...	J200UM-...	XUM-...	E7UM-...	A180UM-...	A160UM-...



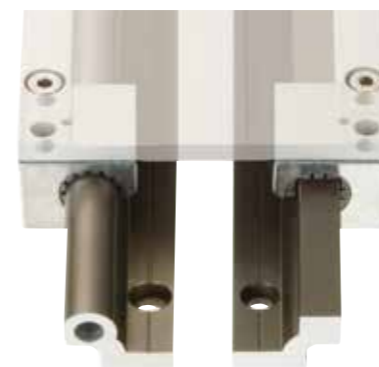
Floating bearings for all directions (up to ±1mm) compensate misalignments and parallelism errors.

Possible combinations in assembled rail systems

Fixed bearing Floating bearing



Fixed bearing Floating bearing



Fixed bearing Floating bearing



Floating bearings aid assembly - when using single rails

Assembly is easy with the drylin® WQ square profile. Floating bearings for all directions (±1mm) compensate misalignments and parallelism errors between rails. This eliminates jamming, otherwise only prevented by time-consuming manual alignment of the system. Although drylin® W is a profile rail system, it is able to compensate angular errors about the x-axis. An angular adjustment of ±7° is possible here. This effectively eliminates the misalignment known to occur when assembling to sheet metal fabrications.

Available floating bearing blocks



drylin® W profile guides | Product selection

Profiles	Installation sizes					Liner material					
	06	10	16	20	25	J	J200	X	A180	E7	A160
Single rail, round		●	●	●	●	●	●	●	●	●	●
Single rail, square	●	●	●	●	●		●				
Double rail, round		●	●	●	●	●	●	●	●	●	●
Double rail, square	●	●	●	●			●				
High profile, round		●	●			●	●	●	●	●	●
High profile, square	●						●				
Stainless steel		●	●	●	●	●	●	●	●	●	●
Carbon fibre/fibreglass	●										
Curved rail	●	●									
Bearing housing - material											
Zinc die-cast	●	●	●	●	●	●	●	●	●	●	●
Aluminium	●	●	●	●	●	●	●	●	●	●	●
Stainless steel		●	●	●	●	●	●	●	●	●	●
Bearing housing - options											
With manual clamp	●	●	●	●	●	●	●	●	●	●	●
Clearance adjustment		●	●	●		●	●				
Hybrid roller bearings		●	●	●	●	●					
Pre-load		●	●	●							
Bearing can be changed on the rail		●	●	●	●		●				
linear guides											
Pre-assembled carriages	●	●	●	●	●	●	●	●	●	●	●
Hybrid carriage		●	●	●		●					
Mono-slide carriage	●	●	●	●		●					
Systems											
Lead screw modules	●	●	●	●	●	●	●	●	●	●	●
Toothed belt axis	●	●	●	●			●				
With measuring system		●		●		●					

● Standard
● Optional

drylin® W profile guides | Liners

Available pillow blocks and carriages	Suitable liners					
	iglidur® J200	iglidur® J	iglidur® X	iglidur® E7	iglidur® A180	iglidur® A160
Pillow block, square						
Standard	●					
Aluminium	●					
Pillow block, round						
Standard	●	●	●	●	●	●
Stainless steel	●	●	●	●	●	●
Aluminium	●	●	●	●	●	●
Aluminium, tandem	●	●	●	●	●	●
"Turn-to-fit"	●	●				
Spring pre-load	●					
Bearing can be changed on the rail	●					
Hybrid - roll and slide		●				
Guide carriage, fitted						
Standard, assembled, square	●					
Standard, assembled, round	●	●	●	●	●	●
Hybrid, round		●				
"Turn-to-fit", round		●				
Complete carriages						
Mono-slide, square		●				
Mono-slide, round	●					

● Standard ● Optional



WSQ-06

WSQ-10

WSQ-16

WSQ-20

WSQ-25

i Hard-anodised surfaces
▶ Page 1113

o Curved rail profiles
▶ Page 1118

Technical data and dimensions [mm]

Part No.	Weight [kg/m]	H ⁵⁷⁾ ±0.25	da -0.1	L max.	a	h	h1	h2	G1	G2	A1	Q1	Q2
WSQ-06	0.23	14	5.0	3,000	14	4.0	4.0 ⁵⁸⁾	7.5	18.0	10.5	13.5	17.0	15
WSQ-10	0.54	20	7.5	4,000	25	5.5	5.5 ⁵⁸⁾	11.0	27.0	17.0	18.5	26.0	21
WSQ-16	0.94	27	11.5	4,000	27	7.5	3.5	14.0	33.0	19.0	25.0	32.0	28
WSQ-20	1.41	36	15.0	4,000	27	9.5	4.5	20.0	38.0	21.0	30.0	37.0	37
WSQ-25	1.94	45	18.5	4,000	32	11.5	5.5	25.0	46.5	25.5	37.5	45.5	46

Standard hole pattern: C5 = C6, please order with drawing for C5 ≠ C6

⁵⁷⁾ Height dimension minus the bearing clearance tolerance

⁵⁸⁾ Plain holes

Can be combined with:



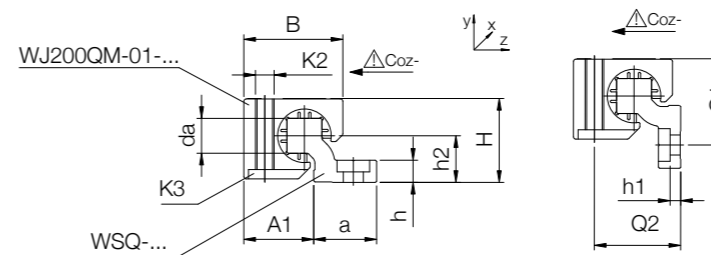
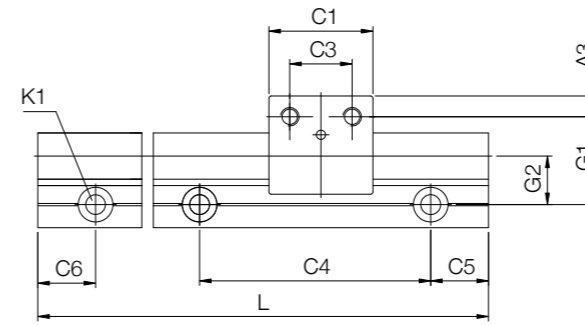
WJ200QM-...

o Order key - single rail

Type Length

WSQ-06 - □

Guide rail
Square
Shafts Ø
Rail length [mm]



Part No.	C4	C5 min.	C5 max.	C6 min.	C6 max.	K1 for screw DIN 912	Geometrical moment of inertia		Moment of resistance	
							ly [mm ⁴]	lz [mm ⁴]	Wby [mm ³]	Wbz [mm ³]
WSQ-06	60	20	49.5	20	49.5	M4 ⁵⁸⁾	2,200	640	220	100
WSQ-10	120	20	79.5	20	79.5	M6 ⁵⁸⁾	16,100	3,300	950	350
WSQ-16	120	20	79.5	20	79.5	M8	33,000	10,800	1,700	910
WSQ-20	120	20	79.5	20	79.5	M8	56,500	34,000	2,600	2,100
WSQ-25	150	25	99.5	25	99.5	M10	115,900	73,500	4,500	3,700



Order key - pillow block

Type	Size
WJ200QM-01-10	
drylin® W	Options:
Liner material igidur® J200	Blank: Fixed bearing
Pillow block, square	LLY: Floating bearing in y-direction
Standard	LLZ: Floating bearing in z-direction
Size	AL: Pillow block made from aluminium

Suitable mounting plate
▶ Page 1200

Technical data and dimensions [mm]

Part No.	Floating bearing clearance	Floating bearing direction	Weight [g]	-AL	B	C1	C3	A3	K2	K3 for countersunk head screw	Static load capacity		
											Coy [N]	Coz+ [N]	Coz- [N]
WJ200QM-01-06	-	-	16	7	18.0	19	10	4.5	M4	M3	420	420	140
WJ200QM-01-06-AL	-	-	16	7	18.0	19	10	4.5	M4	M3	420	420	140
WJ200QM-01-06-LLY	± 0.5	y / z	16	7	18.0	19	10	4.5	M4	M3	420	420	140
WJ200QM-01-06-LLZ	± 0.5	y / z	16	7	18.0	19	10	4.5	M4	M3	420	420	140
WJ200QM-01-10	-	-	41	21	26.0	29	16	6.5	M6	M5	1,200	1,200	250
WJ200QM-01-10-AL	-	-	41	21	26.0	29	16	6.5	M6	M5	1,200	1,200	250
WJ200QM-01-10-LLY	± 0.7	y / z	41	21	26.0	29	16	6.5	M6	M5	1,200	1,200	250
WJ200QM-01-10-LLZ	± 0.7	y / z	41	21	26.0	29	16	6.5	M6	M5	1,200	1,200	250
WJ200QM-01-16	-	-	100	51	34.5	36	18	9.0	M8	M6	2,100	2,100	400
WJ200QM-01-16-AL	-	-	100	51	34.5	36	18	9.0	M8	M6	2,100	2,100	400
WJ200QM-01-16-LLY	± 1.0	y / z	100	51	34.5	36	18	9.0	M8	M6	2,100	2,100	400
WJ200QM-01-16-LLZ	± 1.0	y / z	100	51	34.5	36	18	9.0	M8	M6	2,100	2,100	400
WJ200QM-01-20	-	-	190	104	42.5	45	27	9.0	M8	M6	3,200	3,200	500
WJ200QM-01-20-AL	-	-	190	104	42.5	45	27	9.0	M8	M6	3,200	3,200	500
WJ200QM-01-20-LLY	± 1.0	y / z	190	104	42.5	45	27	9.0	M8	M6	3,200	3,200	500
WJ200QM-01-20-LLZ	± 1.0	y / z	190	104	42.5	45	27	9.0	M8	M6	3,200	3,200	500
WJ200QM-01-25	-	-	435	212	52.5	58	36	11.0	M10	M8	4,800	4,800	950
WJ200QM-01-25-AL	-	-	435	212	52.5	58	36	11.0	M10	M8	4,800	4,800	950
WJ200QM-01-25-LLY	± 1.0	y / z	435	212	52.5	58	36	11.0	M10	M8	4,800	4,800	950
WJ200QM-01-25-LLZ	± 1.0	y / z	435	212	52.5	58	36	11.0	M10	M8	4,800	4,800	950

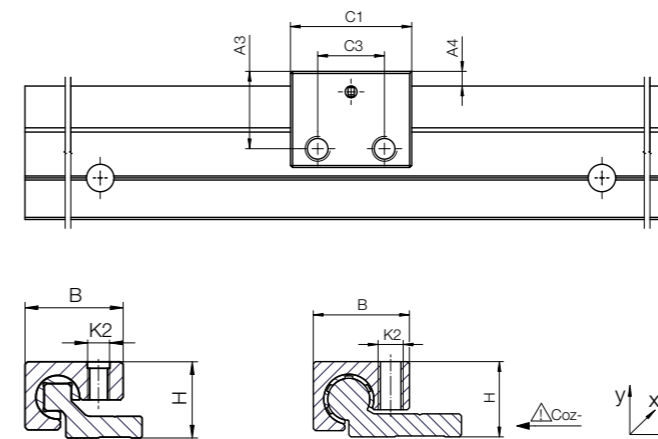
Order example: **WJ200QM-01-06:** Pillow block, square
WJ200QM-01-06-LLZ: Pillow block, square, with floating bearing in z-direction
WJ200QM-01-06-AL: Pillow block, square, made from aluminium

Can be combined with:



Order key - pillow block

Type	Size
WJ200QM S-01-10-AL	
drylin® W	Options:
Liner material igidur® J200	Blank: Fixed bearing
Pillow block, square	LLY: Floating bearing in y-direction
Narrow	LLZ: Floating bearing in z-direction
Standard	AL: Pillow block made from aluminium
Size	
Aluminium	



Technical data and dimensions [mm]

Part No.	Weight [g]	B	C1	C3	A3	A4	K2	H ±0.25	Static load capacity		
									Coy [N]	Coz+ [N]	Coz- [N]
WJ200QMS-01-06-AL New	6.3	18	19	10	13.5	3.50	M4	14	210	140	210
WJ200QMS-01-10-AL New	17.1	23	29	16	18.5	4.75	M6	20	600	250	600
WJ200QMS-01-16-AL New	43.1	35	36	18	28.5	7.25	M8	27	1,050	400	1,050
WJ200QMS-01-20-AL New	90.1	42	45	27	35.0	9.00	M8	36	1,600	500	1,600
WJ200QMS-01-25-AL New	182.4	52	58	36	43.0	10.75	M10	45	2,400	950	2,400

Can be combined with:





WS-10

WS-10-CA,

aluminium, clear anodised

WS-16

WS-20

WS-25



Hard-anodised surfaces

► Page 1113

Clear anodised surface

► Page 1113



Stainless steel version available

► Page 1394



Curved rail profiles

► Page 1118

Technical data and dimensions [mm]

Part No.	Weight [kg/m]	H ⁵⁷⁾ ±0.25	da -0.1	di max.	L	a	h	h1	h2	G1	G2	A1	Q1	Q2
WS-10	0.62	18	10	-	4,000	27	5.5	5.5 ⁵⁸⁾	9	27.0	17.0	16.5	-	-
WS-10-CA New	0.62	18	10	-	4,000	27	5.5	5.5	9	27.0	17.0	16.5	-	-
WS-16	0.98	27	16	8.0	4,000	27	7.5	3.5	14	33.0	19.0	25.0	32.0	28
WS-16-CA New	0.98	27	16	8.0	4,000	27	7.5	3.5	14	33.0	19.0	25.0	32.0	28
WS-20	1.32	36	20	10.2	4,000	27	9.5	4.5	20	38.0	21.0	30.0	37.0	37
WS-20-CA New	1.32	36	20	10.2	4,000	27	9.5	4.5	20	38.0	21.0	30.0	37.0	37
WS-25	2.03	45	25	14.0	4,000	32	11.5	5.5	25	46.5	25.5	37.5	45.5	46

Standard hole pattern: C5 = C6, please order with drawing for C5 ≠ C6

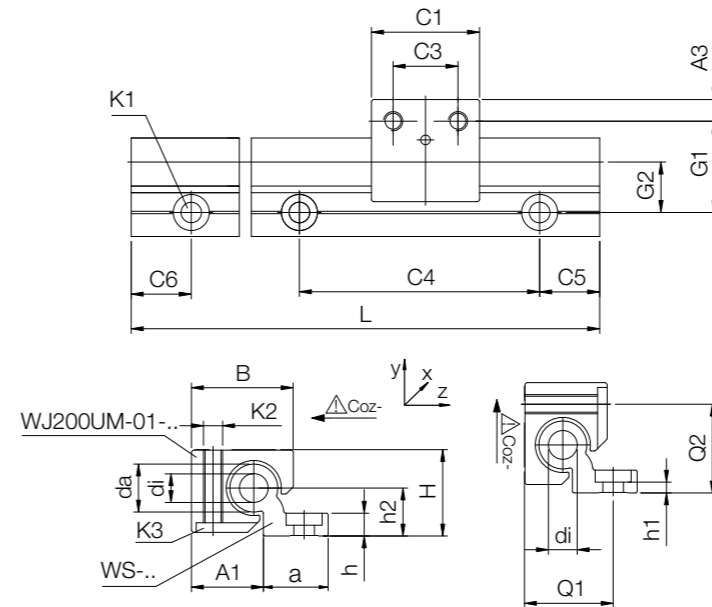
⁵⁷⁾ Height dimension minus the bearing clearance tolerance

⁵⁸⁾ Plain holes

Can be combined with:



WJ200UM(T)-... WJ200UME-... WJ200UMS-... WJUM-...-ES-FG WJRM-...



This assembled position
not possible for WS-10



Order key - single rail

Type Option

WS-10-CA

Guide rail	Shafts Ø	Clear anodised	Option: CA: Clear anodised
			Optional: Econ series with clear anodising (silver)

C1	C3	C4	C5		C6	C6	A3	K1 for screw	Geometrical moment of inertia		Moment of resistance	
			min.	max.					ly [mm ⁴]	lz [mm ⁴]	Wby [mm ³]	Wbz [mm ³]
29	16	120	20	79.5	20	79.5	6.5	M6 ⁵⁸⁾	19,000	2,850	1,000	310
29	16	120	20	79.5	20	79.5	6.5	M6 ⁵⁸⁾	19,000	2,850	1,000	310
36	18	120	20	79.5	20	79.5	9	M8	36,000	12,900	1,800	940
36	18	120	20	79.5	20	79.5	9	M8	36,000	12,900	1,800	940
45	27	120	20	79.5	20	79.5	9	M8	57,100	35,000	2,700	1,900
45	27	120	20	79.5	20	79.5	9	M8	57,100	35,000	2,700	1,900
58	36	150	25	99.5	25	99.5	11	M10	129,000	86,000	4,900	3,800

Single rails round, made of 316 stainless steel



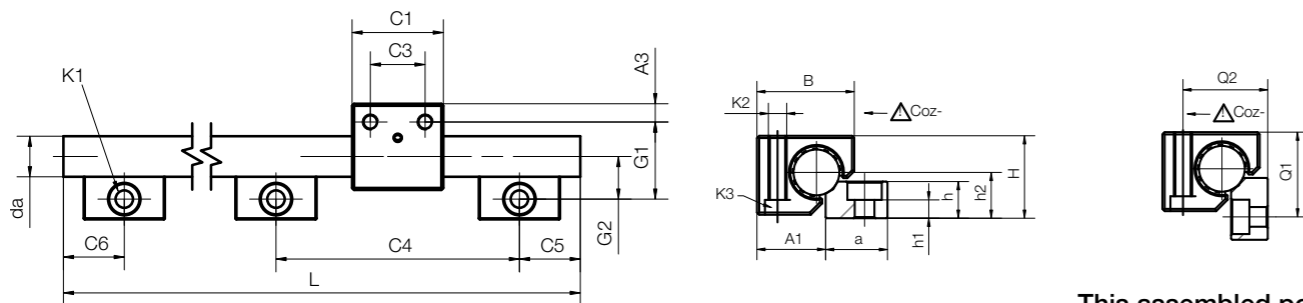
Order key - single rail

Type	Material
------	----------

WS-10-ES-FG

Guide rail	Shafts Ø	Stainless steel	Precision casting
------------	----------	-----------------	-------------------

i Housing and shaft support material
AISI 316
Shafts material
(AISI 316Ti)



This assembled position is not possible for WS-10

Technical data and dimensions [mm]

Part No.	Weight [kg/m]	H ⁵⁷⁾ ±0.25	da -0.1	L max.	a -0.3	h	h ¹⁾	h ²⁾	G1	G2	A1	Q1	Q2
WS-10-ES-FG	0.87	18	10	3,000	27	5.5	5.5 ⁵⁸⁾	9	27.0	17.0	16.5	-	-
WS-16-ES-FG	2.22	27	16	3,000	27	12.0	4.5	14	33.0	19.0	25.0	32.0	28
WS-20-ES-FG	3.37	36	20	3,000	27	16.0	8.0	20	38.0	21.0	30.0	37.0	37
WS-25-ES-FG	5.21	45	25	3,000	32	20.0	9.0	25	46.5	25.5	37.5	45.5	46

Part No.	C1	C3	C4	C5 min.	C5 max.	C6 min.	C6 max.	A3	K1 for screw DIN 912	Geometrical moment of inertia		Moment of resistance	
										ly [mm ⁴]	lz [mm ⁴]	Wby [mm ³]	Wbz [mm ³]
WS-10-ES-FG	29	16	120	20	79.5	20	79.5	6.5	M6 ⁵⁸⁾	491	491	98	98
WS-16-ES-FG	36	18	120	20	79.5	20	79.5	9.0	M8	3,217	3,217	402	402
WS-20-ES-FG	45	27	120	20	79.5	20	79.5	9.0	M8	7,854	7,854	785	785
WS-25-ES-FG	58	36	150	25	99.5	25	99.5	11.0	M10	19,175	19,175	1,534	1,534

⁵⁷⁾ Height dimension minus the bearing clearance tolerance

⁵⁸⁾ Plain holes

Can be combined with:



Suitable liner material:



Pillow blocks, round, made from zinc die-casting or aluminium



Order key

Type	Size	Options
------	------	---------

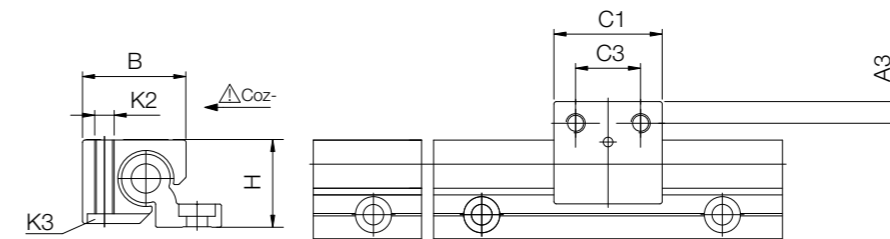
WJ200UM-01-10-AL

drylin® W	Liner material igidur® J200	Pillow block, round	Standard	Size	Aluminium
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Order example:
WJ200UM-01-10:
Pillow block, round
WJ200UM-01-10-LL:
Pillow block, round, floating bearing
WJ200UM-01-10-AL:
Pillow block, round, made from aluminium

Suitable mounting plate
► Page 1200

Options:
Blank: Fixed bearing
LL: Floating bearing
AL: Pillow block made from aluminium
ES: Stainless steel
ES-FG: Stainless steel precision casting



Technical data and dimensions [mm]

Part No.	Floating bearing clearance	Weight [g]	B	C1	C3	A3	K2	K3 for countersunk head screw	Static load capacity		
									Coy [N]	Coz+ [N]	Coz- [N]
WJ200UM-01-10	-	41	26.0	29	16	6.5	M6	M5	1,200	1,200	250
WJ200UM-01-10-LL	±0.2	41	26.0	29	16	6.5	M6	M5	1,200	1,200	250
WJ200UM-01-10-AL	-	20	26.0	29	16	6.5	M6	M5	1,200	1,200	250
WJUM-01-10-ES-FG ⁵⁹⁾	-	57	26.0	29	16	6.5	M6	M5	3,800	3,800	950
WJ200UM-01-16	-	100	34.5	36	18	9.0	M8	M6	2,100	2,100	400
WJ200UM-01-16-LL	±0.2	100	34.5	36	18	9.0	M8	M6	2,100	2,100	400
WJ200UM-01-16-AL	-	48	34.5	36	18	9.0	M8	M6	2,100	2,100	400
WJUM-01-16-ES-FG ⁵⁹⁾	-	134	34.5	36	18	9.0	M8	M6	6,900	6,900	1,450
WJ200UM-01-20	-	190	42.5	45	27	9.0	M8	M6	3,200	3,200	500
WJ200UM-01-20-LL	±0.25	190	42.5	45	27	9.0	M8	M6	3,200	3,200	500
WJ200UM-01-20-AL	-	99	42.5	45	27	9.0	M8	M6	3,200	3,200	500
WJUM-01-20-ES-FG ⁵⁹⁾	-	280	42.5	45	27	9.0	M8	M6	11,000	11,000	1,900
WJ200UM-01-25	-	425	52.5	58	36	11.0	M10	M8	4,800	4,800	950
WJ200UM-01-25-LL	±0.25	425	52.5	58	36	11.0	M10	M8	4,800	4,800	950
WJ200UM-01-25-AL	-	250	52.5	58	36	11.0	M10	M8	4,800	4,800	950
WJUM-01-25-ES-FG ⁵⁹⁾	-	564	52.5	58	36	11.0	M10	M8	16,000	16,000	3,600

⁵⁹⁾ Alternative with XUMO-01-... liners for high temperatures available. Part No.: WXUM-01-...

Pillow blocks, single, round, made from solid plastic



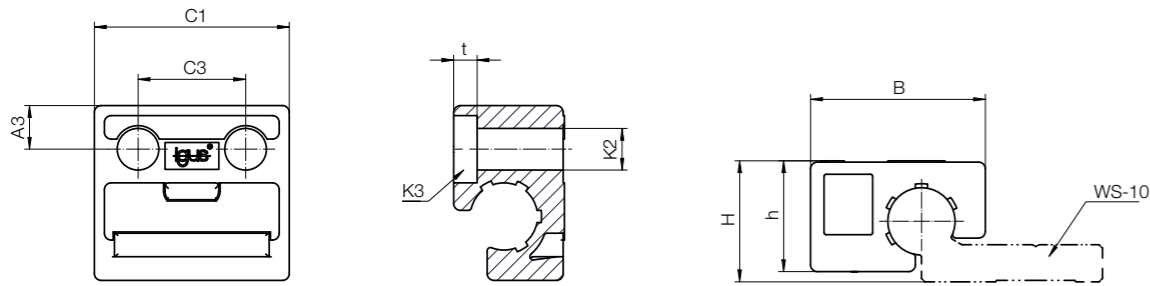
Order key

Type Size

WJBM P-01-10

drylin® W
iglidur® JB
Metric
Solid plastic
Standard
Size

Material:
iglidur® JB ▶ Page 1917



Technical data and dimensions [mm]

Part No.	Weight [g]	B	C1	C3	A3	K2	H	h	t	K3 Hexagonal design for M6 hexagon nut (ISO 4035)	Static load capacity		
											Coy± [N]	Coz± [N]	Coz- [N]
WJBMP-01-10 New	10	26	29	16	6.5	Ø6.2	18	16.5	3.5	10	25	15	

Pillow blocks, tandem, round, anodised aluminium

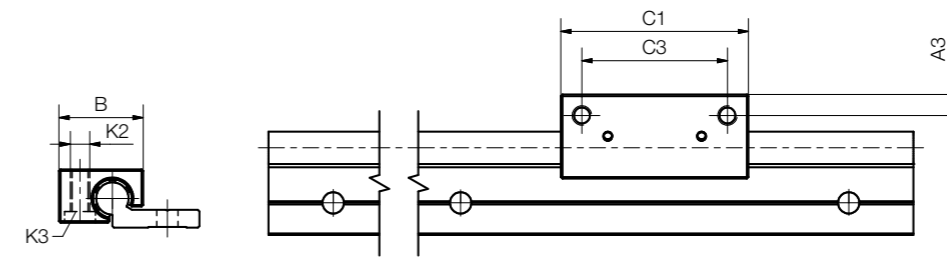


Order key

Type Size Material

WJ200UM T-01-10-AL

drylin® W
Liner material iglidur® J200
Pillow block, round
Tandem
Standard
Size
Aluminium



Technical data and dimensions [mm]

Part No.	Weight [g]	B	C1	C3	A3	K2	K3 for countersunk head screw	Static load capacity		
								Coy [N]	Coz+ [N]	Coz- [N]
WJ200UMT-01-10-AL	43	26	58	45	6.5	M6	M5	2,000	2,000	420
WJ200UMT-01-16-AL	102	34.5	72	54	9	M8	M6	3,400	3,400	670
WJ200UMT-01-20-AL	182	42.5	80	62	9	M8	M6	5,300	5,300	830

Can be combined with:



Suitable liner material:

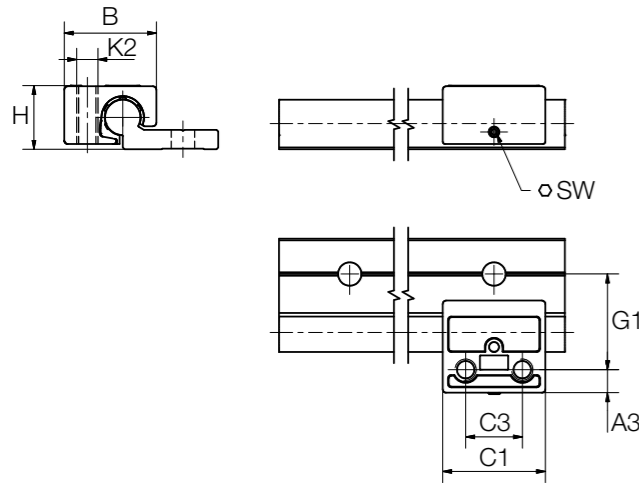


Order key

Type	Size
WJ200UM E -01-10	
drylin® W	
Liner material iglidur® J200	
Pillow block, round	
Adjustable	
Standard	
Size	

Allen key supplied

Suitable mounting plate
▶ Page 1200



Technical data and dimensions [mm]

Part No.	Weight [g]	B	C1	C3	A3	K2	H	SW	G1	Static load capacity		
										Coy [N]	Coz+ [N]	Coz- [N]
WJUME-01-10	43	26	29	16	6.5	M6	18	1.5	27	560	560	250
WXUME-01-10	43	26	29	16	6.5	M6	18	1.5	27	560	560	250
WJUME-01-10-AL	19	26	29	16	6.5	M6	18	1.5	27	560	560	250
WJUME-01-10-ES	56	26	29	16	6.5	M6	18	1.5	27	560	560	250
WJ200UME-01-10	43	26	29	16	6.5	M6	18	1.5	27	560	560	250
WJ200UME-01-16	110	34.5	36	18	9	M8	27	2.5	33	980	980	400
WJ200UME-01-16-AL	45	34.5	36	18	9	M8	27	2.5	33	980	980	400
WJ200UME-01-16-ES	132	34.5	36	18	9	M8	27	2.5	33	980	980	400
WJ200UME-01-20	222	42.5	45	27	9	M8	36	2.5	38	1,500	1,500	500
WJ200UME-01-20-AL	95	42.5	45	27	9	M8	36	2.5	38	1,500	1,500	500
WJ200UME-01-20-ES	275	42.5	45	27	9	M8	36	2.5	38	1,500	1,500	500
WJ200UME-01-25	431	52.5	58	36	11	M10	45	2.5	46.5	2,250	2,250	950
WJ200UME-01-25-AL	194	52.5	58	36	11	M10	45	2.5	46.5	2,250	2,250	950
WJ200UME-01-25-ES	539	52.5	58	36	11	M10	45	2.5	46.5	2,250	2,250	950

Can be combined with:



Suitable liner material:



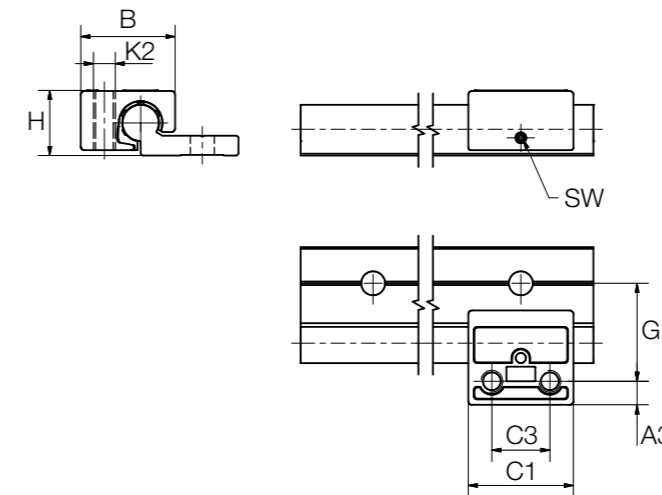
Order key

Type	Size	Material
WJ200UM-01-16-□-P40		
drylin® W		
Liner material iglidur® J200		
Pillow block, round		
Standard		
Size		
Housing material		
Pre-load		

Options:
Blank: Zinc die-casting (Zn)
AL: Aluminium
ES: Stainless steel (AISI 316Ti, machined)

Suitable mounting plate
▶ Page 1200

drylin® stop motion full product range online
▶ www.igus.eu/drylinstopmotion



Technical data and dimensions [mm]

Part No.	Spring colour	Pre-load [N]	Weight			B	C1	C3	A3	K2	H	SW	G1
			(Zn) [g]	-ES [g]	-AL [g]								
WJ200UM-01-10-□-P40	Blue	4	43	56	19	26	29	16	6.5	M6	18	1.5	27
WJ200UM-01-10-□-P90	Yellow	9	43	56	19	26	29	16	6.5	M6	18	1.5	27
WJ200UM-01-10-□-P140	Red	14	43	56	19	26	29	16	6.5	M6	18	1.5	27
WJ200UM-01-16-□-P40	Blue	4	110	132	46	34.5	36	18	9	M8	27	2.5	33
WJ200UM-01-16-□-P90	Yellow	9	110	132	46	34.5	36	18	9	M8	27	2.5	33
WJ200UM-01-16-□-P140	Red	14	110	132	46	34.5	36	18	9	M8	27	2.5	33
WJ200UM-01-16-□-P230	green	23	110	132	46	34.5	36	18	9	M8	27	2.5	33
WJ200UM-01-20-□-P40	Blue	4	222	275	95	42.5	45	27	9	M8	36	2.5	38
WJ200UM-01-20-□-P90	Yellow	9	222	275	95	42.5	45	27	9	M8	36	2.5	38
WJ200UM-01-20-□-P140	Red	14	222	275	95	42.5	45	27	9	M8	36	2.5	38
WJ200UM-01-20-□-P230	green	23	222	275	95	42.5	45	27	9	M8	36	2.5	38

Can be combined with:



Suitable liner material:

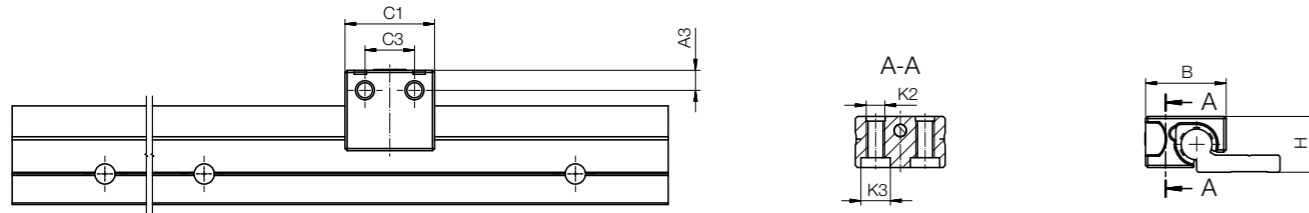
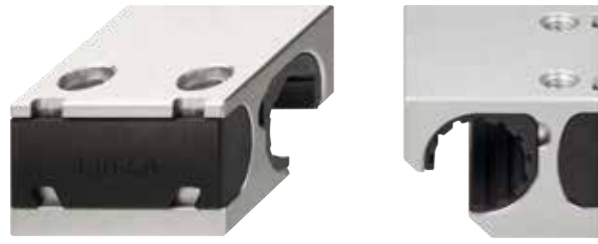


drylin® W profile guides | Product range

Pillow blocks, round; change the liner without disassembly

Order key

Type	Size
WJ200UM A-01-10-AL	
drylin® W	Aluminium
Liner material iglidur® J200	Standard
Pillow block, round	Size
Replaceable	Standard



Technical data and dimensions [mm]

Part No.	Weight [g]	B	C1	C3	A3	K2	K3 ¹⁵⁰⁾	H ±0.25	Static load capacity		
									Coy [N]	Coz+ [N]	Coz- [N]
WJ200UMA-01-10-AL	18	26.0	29	16	6.5	M6	M5	18	1,000	1,000	200
WJ200UMA-01-16-AL	44	34.5	36	18	9.0	M8	M6	27	1,250	1,250	275
WJ200UMA-01-20-AL	91	42.5	45	27	9.0	M8	M6	36	1,500	1,500	350

¹⁵⁰⁾ Counterbore for socket cap bolt



Simple bearing liner replacement.

Suitable mounting plate
▶ Page 1200

More installation can be found online
▶ www.igus.eu/replacement-bearing-installation

Can be combined with:



Suitable liner material/accessories



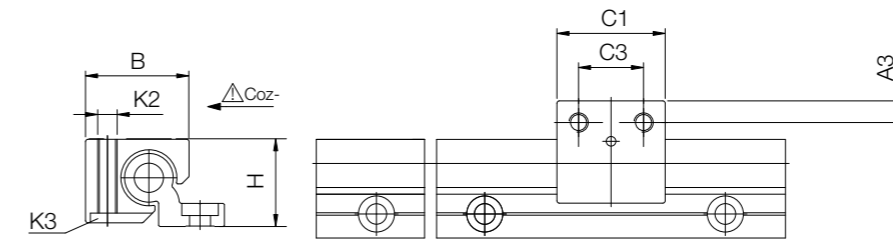
drylin® W profile guides | Product range **New**

Stainless steel pillow blocks, round; change the liner without disassembly

Order key

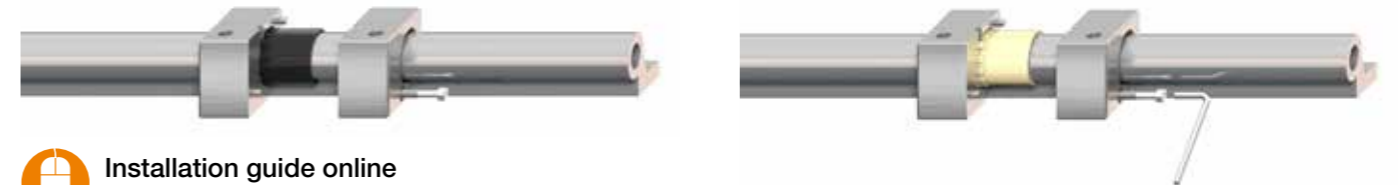
Type	Size
W□UMA A-01-10-ES	
drylin® W	Stainless steel
igidur® material	Standard
Pillow block, round	Size
Replaceable	Standard

igidur® material
X: iglidur® X
A180: iglidur® A180
A160: iglidur® A160
E7: iglidur® E7



Technical data and dimensions [mm]

Part No.	Weight [g]	B	C1	C3	A3	K2	H ±0.25	K3 for countersunk head screw	Static load capacity		
									Coy [N]	Coz+ [N]	Coz- [N]
W□UMA-01-10-ES New	57	26.0	29	16	6.5	M6	18	M5	1,200	1,200	250
W□UMA-01-16-ES New	138	34.5	36	18	9.0	M8	27	M6	2,100	2,100	400
W□UMA-01-20-ES New	283	42.5	45	27	9.0	M8	36	M6	3,200	3,200	500
W□UMA-01-25-ES New	575	52.5	58	36	11.0	M10	45	M8	4,800	4,800	950



Installation guide online
▶ www.igus.eu/WXUMA

drylin® W profile guides | Product range **New**

Pillow blocks, round, anodised aluminium,
for narrow assemblies

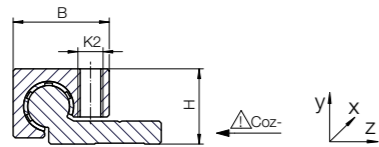
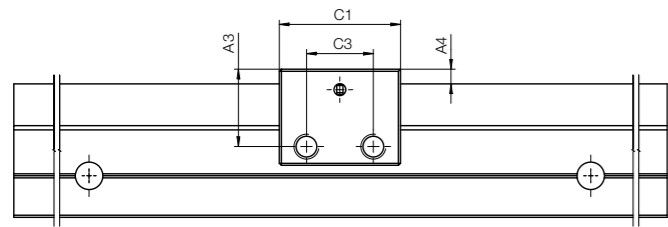


Order key

Type Size

WJ200UM S-01-10-AL

drylin® W	Liner material iglidur® J200	Pillow block, round	Narrow	Standard	Size	Aluminium
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Technical data and dimensions [mm]

Part No.	Weight [g]	B	C1	C3	A3	A4	K2	H ±0.25	Static load capacity		
									Coy [N]	Coz+ [N]	Coz- [N]
WJ200UMS-01-10-AL New	16.0	23	29	16	18.5	3.5	M6	18	600	250	600
WJ200UMS-01-16-AL New	40.5	35	36	18	28.5	5.0	M8	27	1,050	400	1,050
WJ200UMS-01-20-AL New	85.0	42	45	27	35.0	6.5	M8	36	1,600	500	1,600
WJ200UMS-01-25-AL New	172.6	52	58	36	43.0	7.5	M10	45	2,400	950	2,400

Can be combined with:



1146 Online tools and more information ► www.igus.eu/drylinW



EN 06/2023

drylin® W profile guides | Product range **New**

Pillow blocks, tandem, round, anodised aluminium,
for narrow assemblies

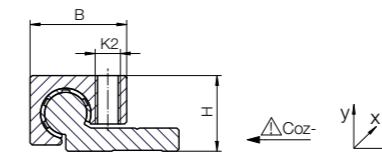
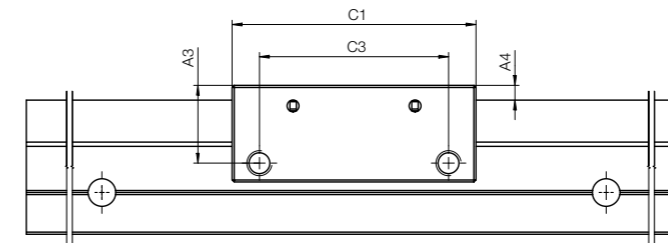


Order key

Type Size

WJ200UM T S-01-10-AL

drylin® W	Liner material iglidur® J200	Pillow block, round	Tandem	Narrow	Standard	Size	Aluminium
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Technical data and dimensions [mm]

Part No.	Weight [g]	B	C1	C3	A3	A4	K2	H ±0.25	Static load capacity		
									Coy [N]	Coz+ [N]	Coz- [N]
WJ200UMTS-01-10-AL New	33	23	58	45	18.5	3.5	M6	18	1,200	420	1,200
WJ200UMTS-01-16-AL New	84	35	72	54	28.5	5.0	M8	27	2,100	670	2,100

Can be combined with:



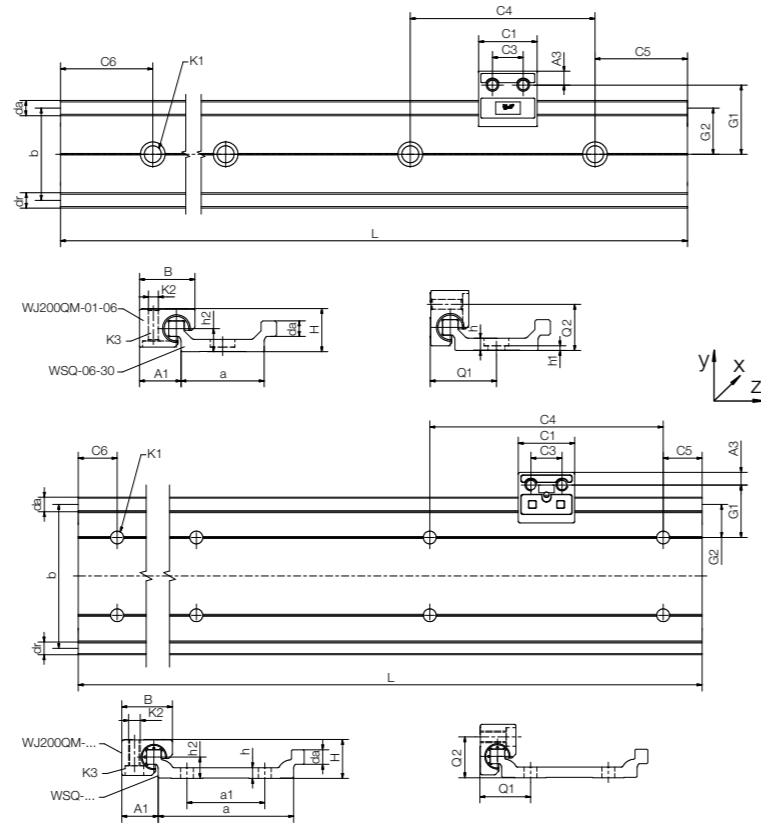
Suitable liner material:



EN 06/2023



3D CAD files, prices and delivery time online ► www.igus.eu/drylinW 1147



i Hard-anodised surfaces
▶ Page 1113

o Curved rail profiles
▶ Page 1118

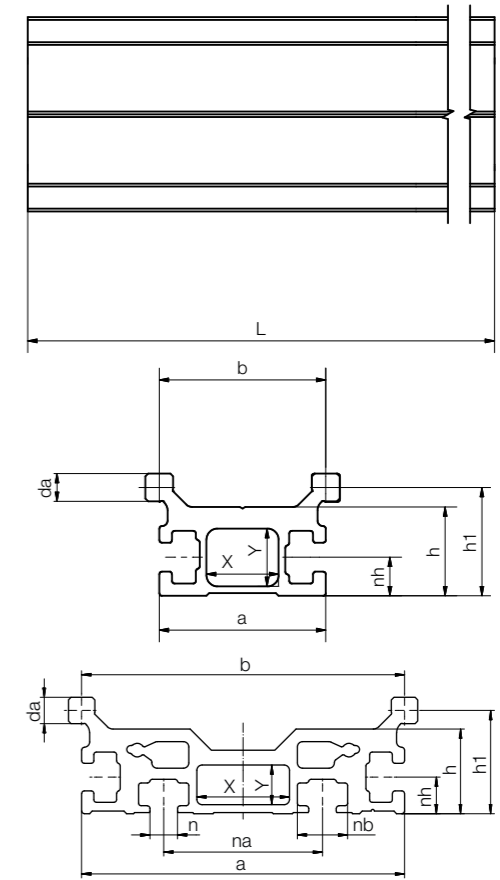
Technical data and dimensions [mm]

Part No.	Weight [kg/m]	H ⁵⁷⁾ ±0.25	da -0.1	dr max.	L	a	A1	b	h	h1	h2	G1	G2	a1 ⁶¹⁾	Q1	Q2
WSQ-06-30	0.45	14	5	5	3,000	27-0.4	13.5	30	4	4 ⁵⁸⁾	7.5	22.5	15	-	21.5	15
WSQ-06-60	0.70	14	5	5	3,000	58-0.4	13.5	61	4	4 ⁵⁸⁾	7.0	42.5	30.5	40	17	15
WSQ-10-40	0.92	20	7.5	6.7	4,000	36-0.5	18.5	40	5.5	5.5 ⁵⁸⁾	11	30	20	-	29	21
WSQ-10-80	1.41	20	7.5	6.7	4,000	70-0.7	18.5	74	5.5	5.5 ⁵⁸⁾	11	27	17	40	26	21
WSQ-10-120	2.02	20	7.5	6.7	4,000	116-0.7	18.5	120	5.5	5.5 ⁵⁸⁾	11	30	20	80	29	21
WSQ-16-60	1.84	27	11.5	10.7	4,000	54-0.5	25.0	58	7.5	3.5	14	43	29	-	42	28
WSQ-20-80	3.30	36	15	14.1	4,000	74-0.7	30.0	82	9.5	4.5	20	38	21	40	37	37

Part No.	C4	C5		C6		K1 for screw DIN 912	Geometrical moment of inertia		Moment of resistance	
		min.	max.	min.	max.		ly [mm ⁴]	lz [mm ⁴]	Wby [mm ³]	Wbz [mm ³]
WSQ-06-30	60	20	49.5	20	49.5	M5 ⁵⁸⁾	19,000	1,250	1,100	200
WSQ-06-60	60	20	49.5	20	49.5	M4 ⁵⁸⁾	117,900	1,600	3,500	290
WSQ-10-40	120	20	79.5	20	79.5	M6 ⁵⁸⁾	71,600	5,580	3,000	610
WSQ-10-80	120	20	79.5	20	79.5	M6 ⁵⁸⁾	335,000	7,070	8,300	700
WSQ-10-120	120	20	79.5	20	79.5	M6 ⁵⁸⁾	1,175,000	8,000	18,400	760
WSQ-16-60	120	20	79.5	20	79.5	M8	324,700	20,500	9,400	1,700
WSQ-20-80	120	20	79.5	20	79.5	M8	1,145,000	75,300	23,600	4,500

⁵⁷⁾ Height dimension minus the bearing clearance tolerance ⁵⁸⁾ With plain holes ⁶¹⁾ WSQ-06-30/-10-40/-16-60 a single row of mounting holes down the centreline; WSQ-06-60/10-80/-10-120/-20-80 two parallel rows of mounting holes

Can be combined with:



i Suitable end caps
▶ Page 1199

o Order example:
WSX-06-30/06-60: High profile rail, square
WSQ-06-30: Standard double rail, square

Technical data and dimensions [mm]

Part No.	Weight [kg/m]	da -0.1	L max.	a	b	h	h1	nh	n	nb	na	X	Y	Geometrical moment of inertia		Moment of resistance	
														ly [mm ⁴]	lz [mm ⁴]	Wby [mm ³]	Wbz [mm ³]
WSX-06-30	0.76	5	4,000	29.7	30	16	19.5	7	-	-	-	12	10	30,391	11,674	1,736	845
WSX-06-60	1.39	5	4,000	61	61	16	19.5	6.9	5.2	9.5	30	17.5	7.5	212,826	17,018	6,448	1,398

o Order key

Type	Length
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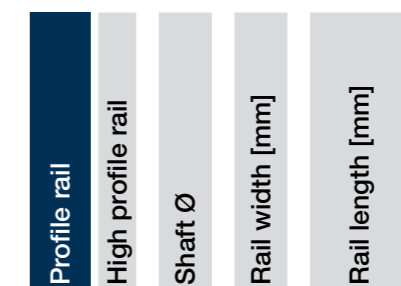
WS Q - 06 - 30 - 3000



o Order key

Type	Length
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WS X - 06 - 30 - 4000



Can be combined with:



drylin® W profile guides | Product range

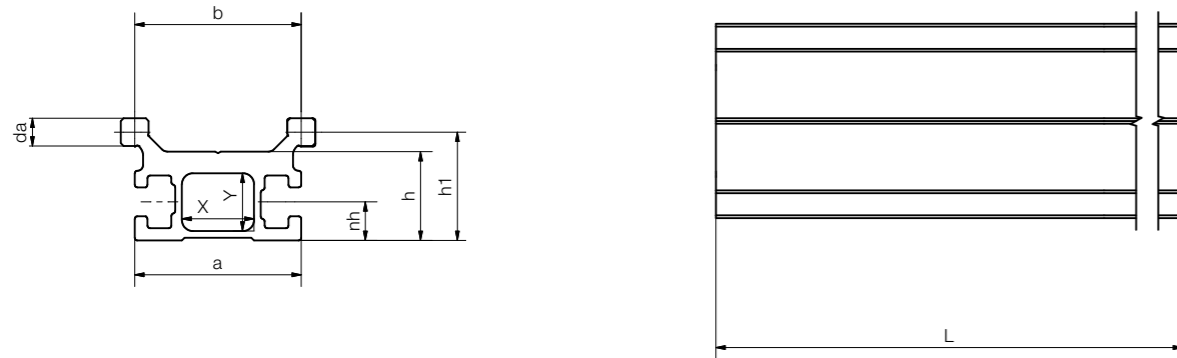
Linear guides - lightweight, non-metallic, strong and X-ray transparent

 Order key

Type Dimensions [mm]/Type

W S P C-06-30-1000

drylin® W	Rail	Polymer	Carbon	Shaft Ø	Rail width	Rail length
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Technical data - guide rail


Part No.	Fmax. radial		Weight	I _y	I _z
	stat.	dyn.			
	[N]	[N]	[g/m]	[mm ⁴]	[mm ⁴]
WSPC-06-30	300	60	410	30,391	11,674

Dimensions [mm] - guide profile

Part No.	a	b	da	h	h1	nh	X	Y	L
WSPC-06-30	30	30	-0.1	16	19.5	7	13	10	3,000

drylin® W profile guides | Product range

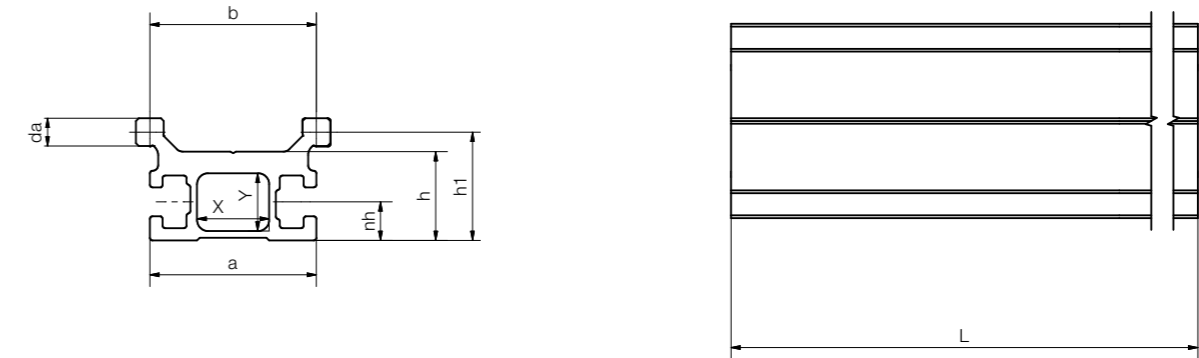
Linear guides - lightweight, non-metallic, strong and cost-effective

 Order key

Type Dimensions [mm]/Type

W S P G-06-30-1000

drylin® W	Rail	Polymer	Glas fibre	Shaft Ø	Rail width	Rail length
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Technical data - guide rail

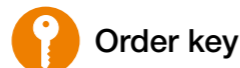
Part No.	Fmax. radial		Weight	I _y	I _z
	stat.	dyn.			
	[N]	[N]	[g/m]	[mm ⁴]	[mm ⁴]
WSPG-063001	200	50	505	30,391	11,674

Dimensions [mm] - guide profile

Part No.	a	b	da	h	h1	nh	X	Y	L
WSPG-063001	30	30	-0.1	16	19.5	7	13	10	2,000

Dimensions [mm] - complete system

Part No.	H	A1	A	A2	C	C2
WSPG-063001	30	12	52	45	60	51

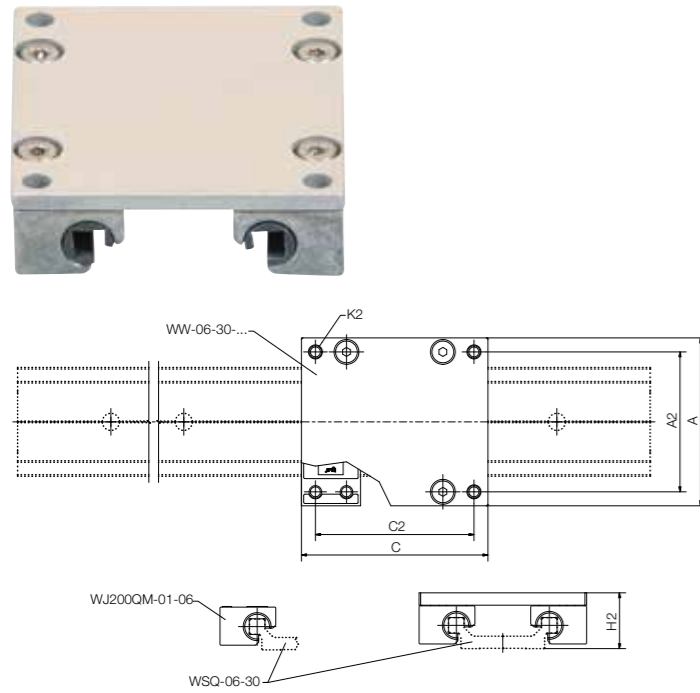


Order key

Type Size

WW Q -06-30-06

- Guide carriage
- Square
- Shafts Ø [mm]
- Profile width
- Carriage length



Technical data and dimensions [mm]

Part No. ⁵⁴⁾	Weight [kg]	A		A2	C2	K2	H2 ⁵⁷⁾ ±0.25	Static load capacity				
		Width	Length					Coy [N]	Coz [N]	Mox [Nm]	Moy [Nm]	Moz [Nm]
WWQ-06-30-06	0.10	54	60	45	51	M4	18	1,680	840	25	34	34
WWQ-06-30-08	0.11	54	80	45	71	M4	18	1,680	840	25	51	51
WWQ-06-30-10	0.12	54	100	45	91	M4	18	1,680	840	25	68	68
WWQ-06-60-06	0.13	85	60	76	51	M4	18	1,680	840	50	34	34
WWQ-06-60-08	0.15	85	80	76	71	M4	18	1,680	840	50	51	51
WWQ-06-60-10	0.17	85	100	76	91	M4	18	1,680	840	50	68	68
WWQ-10-40-10	0.29	73	100	60	87	M6	26	4,800	2,400	96	170	170
WWQ-10-40-15	0.34	73	150	60	137	M6	26	4,800	2,400	96	290	290
WWQ-10-40-20	0.40	73	200	60	187	M6	26	4,800	2,400	96	410	410
WWQ-10-80-10	0.34	107	100	94	87	M6	26	4,800	2,400	178	170	170
WWQ-10-80-15	0.42	107	150	94	137	M6	26	4,800	2,400	178	290	290
WWQ-10-80-20	0.50	107	200	94	187	M6	26	4,800	2,400	178	410	410
WWQ-10-120-10	0.41	153	100	140	87	M6	26	4,800	2,400	288	170	170
WWQ-10-120-15	0.54	153	150	140	137	M6	26	4,800	2,400	288	290	290
WWQ-10-120-20	0.66	153	200	140	187	M6	26	4,800	2,400	288	410	410
WWQ-16-60-10	0.71	104	100	86	82	M8	35	8,400	4,200	240	270	270
WWQ-16-60-15	0.84	104	150	86	132	M8	35	8,400	4,200	240	480	480
WWQ-16-60-20	0.97	104	200	86	182	M8	35	8,400	4,200	240	690	690
WWQ-20-80-15	1.20	134	150	116	132	M8	44	12,800	6,400	525	670	670
WWQ-20-80-20	1.30	134	200	116	182	M8	44	12,800	6,400	525	990	990
WWQ-20-80-25	1.50	134	250	116	232	M8	44	12,800	6,400	525	1,250	1,250

⁵⁷⁾ Height dimension minus the bearing clearance tolerance ⁶⁴⁾ Optional with manual clamp, suffix "-HKA"

Can be combined with:



Suitable liner material:

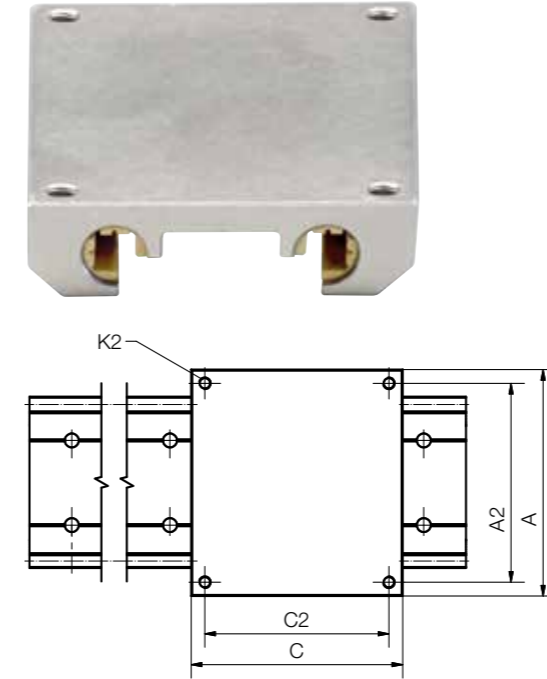


Order key

Type Size

WWC-10-40-10

- Mono-slide guide carriage
- Shafts Ø [mm]
- Profile width
- Carriage length

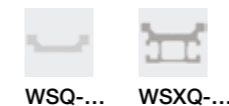


Technical data and dimensions [mm]

Part No.	Weight [kg]	A		A2	C2	K2	H2 ⁵⁷⁾ ±0.2	Static load capacity				
		Width	Length					Coy [N]	Coz [N]	Mox [Nm]	Moy [Nm]	Moz [Nm]
WWC-06-30-06	0.07	54	60	45	51	M4	16	1,680	840	25	34	34
WWC-06-30-08	0.09	54	80	45	71	M4	16	1,680	840	25	51	51
WWC-06-30-10	0.12	54	100	45	91	M4	16	1,680	840	25	68	68
WWC-06-60-06	New 0.09	85	60	76	51	M4	16	1,680	840	50	34	34
WWC-06-60-08	New 0.12	85	80	76	71	M4	16	1,680	840	50	51	51
WWC-06-60-10	New 0.15	85	100	76	91	M4	16	1,680	840	50	68	68
WWC-10-40-10	0.21	73	100	60	87	M6	22	4,800	2,400	96	170	170
WWC-10-40-15	0.32	73	150	60	137	M6	22	4,800	2,400	96	290	290
WWC-10-40-20	0.42	73	200	60	187	M6	22	4,800	2,400	96	410	410
WWC-10-80-10	0.28	107	100	94	87	M6	22	4,800	2,400	178	170	170
WWC-10-80-15	0.42	107	150	94	137	M6	22	4,800	2,400	178	290	290
WWC-10-80-20	0.56	107	200	94	187	M6	22	4,800	2,400	178	410	410
WWC-10-120-10	0.36	153	100	140	87	M6	22	4,800	2,400	288	170	170
WWC-10-120-15	0.54	153	150	140	137	M6	22	4,800	2,400	288	290	290
WWC-10-120-20	0.72	153	200	140	187	M6	22	4,800	2,400	288	410	410
WWC-16-60-10	0.41	104	100	86	82	M8	30	8,400	4,200	240	270	270
WWC-16-60-15	0.61	104	150	86	132	M8	30	8,400	4,200	240	480	480
WWC-16-60-20	0.80	104	200	86	182	M8	30	8,400	4,200	240	690	690
WWC-20-80-15	0.99	134	150	116	132	M8	40	12,800	6,400	525	670	670
WWC-20-80-20	1.33	134	200	116	182	M8	40	12,800	6,400	525	990	990
WWC-20-80-25	1.66	134	250	116	232	M8	40	12,800	6,400	525	1,250	1,250

⁵⁷⁾ Height dimension minus the bearing clearance tolerance

Can be combined with:



Suitable liner material:





WS-10-30

WS-10-30-CA

i Hard-anodised surfaces
▶ Page 1113

Clear anodised surface
▶ Page 1113

o Curved rail profiles
▶ Page 1118

Technical data and dimensions [mm]

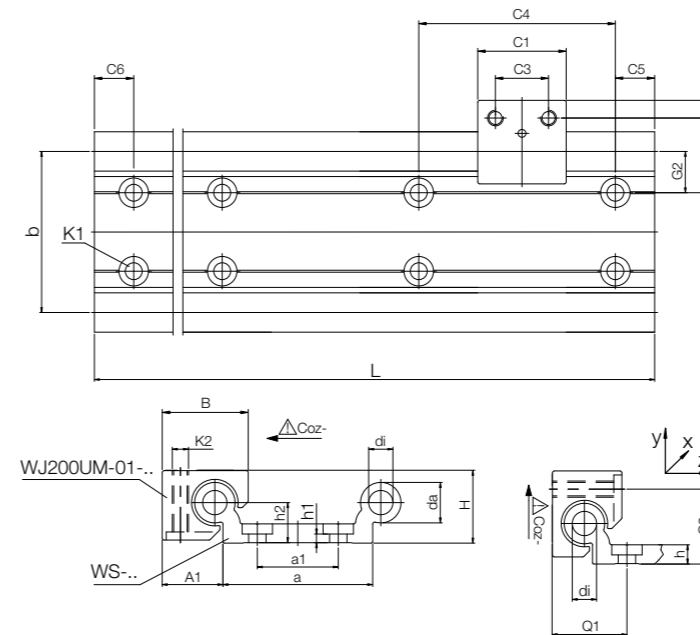
Part No.	Weight [kg/m]	H ⁵⁷⁾ ±0.25	da	di	L max.	a	A1	b	h	h1	h2	G1	G2
WS-10-30	0.85	18	10-0.1	-	4,000	30-0.5	16.5	30	5.5	5.5 ⁵⁸⁾	9	25	15
WS-10-30-CA New	0.85	18	10	-	4,000	30-0.5	16.5	30	5.5	5.5	9	25	15
WS-10-40	1.00	18	10-0.1	-	4,000	40-0.5	16.5	40	5.5	5.5 ⁵⁸⁾	9	30	20
WS-10-40-CA New	1.00	18	10	-	4,000	40-0.5	16.5	40	5.5	5.5	9	30	20
WS-10-80	1.50	18	10-0.1	-	4,000	74-0.7	16.5	74	5.5	5.5 ⁵⁸⁾	9	27	17
WS-10-80-CA New	1.50	18	10	-	4,000	74-0.7	16.5	74	5.5	5.5	9	27	17
WS-10-120	2.02	18	10-0.1	-	4,000	120-0.7	16.5	120	5.5	5.5 ⁵⁸⁾	9	30	20
WS-10-120-CA New	2.02	18	10	-	4,000	120	16.5	120	5.5	5.5	9	30	20
WS-16-60	1.96	27	16-0.1	8.0	4,000	54-0.5	25.0	58	7.5	3.5	14	43	29
WS-16-60-CA New	1.96	27	16	8.0	4,000	54-0.5	25.0	58	7.5	3.5	14	43	29
WS-16-120 New	3.14	27	16-0.1	8.0	4,000	116-0.4	25.0	120	7.5	3.5	14	34	20
WS-20-80	3.30	36	20-0.1	10.2	4,000	74-0.7	30.0	82	9.5	4.5	20	38	21
WS-20-80-CA New	3.30	36	20	10.2	4,000	74-0.7	30.0	82	9.5	4.5	20	38	21
WS-25-120	5.8	45	25-0.15	14.0	4,000	120-0.7	37.5	131	11.5	5.5	25	46.5	25.5

⁵⁷⁾ Height dimension minus the bearing clearance tolerance

⁵⁸⁾ Plain holes

⁶²⁾ WS-10-40/-16-60 a single row of mounting holes down the centreline; WS-10-80/-10-120/-20-80/-25-120 two parallel rows of mounting holes

Standard hole pattern: C5 = C6, please order with drawing for C5 ≠ C6.

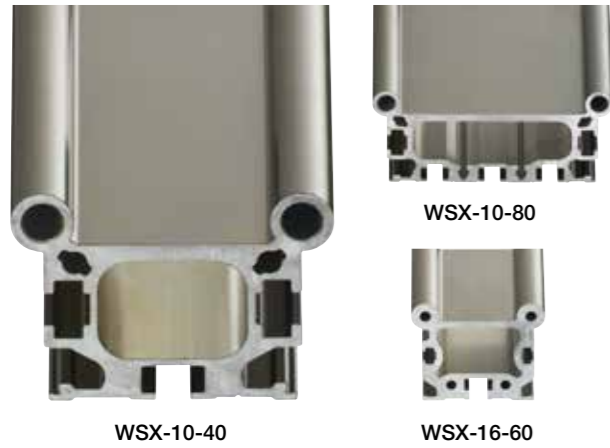


This orientation not possible for
WS-10-30/WS-10-40/
WS-10-80/WS-10-120

Order key

Type	Option
WS-10-40-CA	
Profile rail, round	Option: CA: Clear anodised
Shaft Ø	Optional: Econ series with clear anodising (silver)
Rail width [mm]	
Clear anodised	

a1 ⁶²⁾	Q1	Q2	C4	C5		C6		K1 for screw DIN 912	Surface inertia-moment		Moment of resistance	
				min.	max.	min.	max.		ly [mm ⁴]	lz [mm ⁴]	Wby [mm ³]	Wbz [mm ³]
-	-	-	120	20	79.5	20	79.5	M5 ⁵⁸⁾	47,500	4,400	2,370	540
-	-	-	120	20	79.5	20	79.5	M5 ⁵⁸⁾	47,500	4,400	2,370	540
-	-	-	120	20	79.5	20	79.5	M6 ⁵⁸⁾	91,000	5,100	3,600	590
-	-	-	120	20	79.5	20	79.5	M6 ⁵⁸⁾	91,000	5,100	3,600	590
40	-	-	120	20	79.5	20	79.5	M6 ⁵⁸⁾	388,000	6,100	9,200	650
40	-	-	120	20	79.5	20	79.5	M6 ⁵⁸⁾	388,000	6,100	9,200	650
80	-	-	120	20	79.5	20	79.5	M6 ⁵⁸⁾	1,303,000	7,100	20,000	720
80	-	-	120	20	79.5	20	79.5	M6 ⁵⁸⁾	1,303,000	7,100	20,000	720
-	32	28	120	20	79.5	20	79.5	M8	367,600	26,100	9,900	1,900
-	32	28	120	20	79.5	20	79.5	M8	367,600	26,100	9,900	1,900
80	33	28	120	20	79.5	20	79.5	M8	2,114,000	33,200	31,100	2,150
40	37	37	120	20	79.5	20	79.5	M8	1,080,000	78,700	21,000	4,000
40	37	37	120	20	79.5	20	79.5	M8	1,080,000	78,700	21,000	4,000
80	45.5	46	150	25	99.5	25	99.5	M10	4,867,000	215,000	62,400	8,500

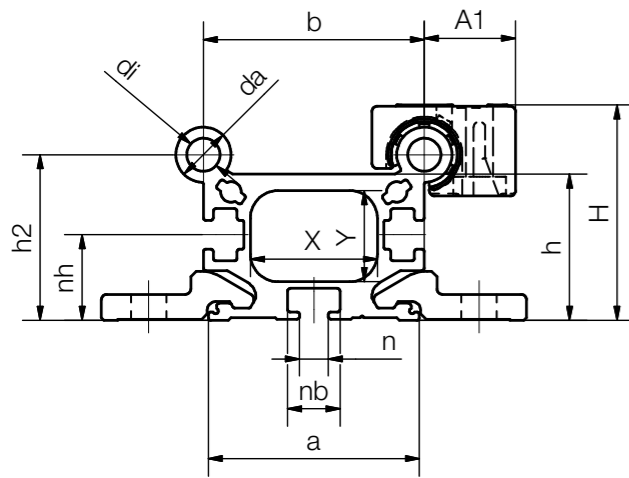


Order key

Type	Length
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WS X - 10 - 40 - 4000

Profile rail	High profile rail	Shaft Ø	Rail width [mm]	Rail length [mm]
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Technical data and dimensions [mm]

Part No.	Weight [kg/m]	H ⁵⁷⁾ ±0.25	da -0.1	di	L max.	a	A1	b	h	h2	Øs	K1	C1	C3	G1
WSX-10-40	1.3	39	10	6	4,000	38.2	16.5	40	26.5	30	60	M6	29	16	30
WSX-10-80	2.0	39	10	6	4,000	72.2	16.5	74	26.5	30	94	M6	29	16	47
WSX-16-60	4.2	65	16	6	4,000	62.0	25.0	58	49.0	52	100	M8	36	18	50

Part No.	nh	n	nb	X	Y	Surface inertia-moment		Moment of resistance	
						I _y [mm ⁴]	I _z [mm ⁴]	W _{by} [mm ³]	W _{bz} [mm ³]
WSX-10-40	15.5	5.2	9.5	23	16.0	97,560	54,910	3,902	3,074
WSX-10-80	15.5	5.2	9.5	55	16.0	483,653	83,613	11,515	4,684
WSX-16-60	27.6	10.0	15.4	40	27.0	540,876	773,489	14,618	24,586

⁵⁷⁾ Height dimension minus the bearing clearance tolerance



Order key

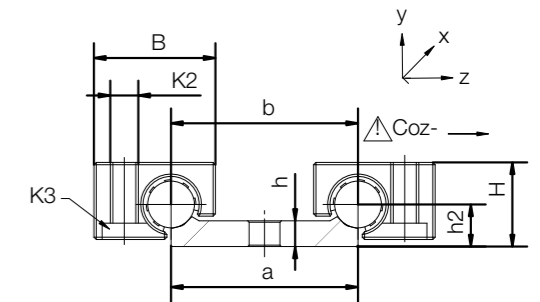
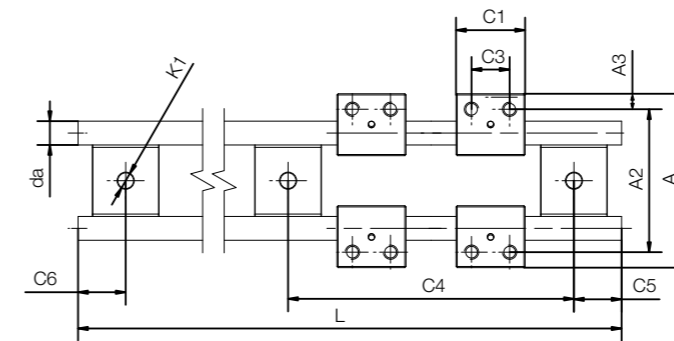
Type

WS - 10 - 40 - ES - FG

Profile rail, round	Shaft Ø	Rail width [mm]	Stainless steel	Precision casting
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i Installation size 10-20
Housing and shaft support material
AISI 316
Shaft material AISI 316Ti

Installation size 25
Shaft, shaft support
and housing material AISI 316Ti



Technical data and dimensions [mm]

Part No.	Weight [kg/m]	H ⁵⁷⁾ ±0.25	da h9	L max.	a -0.3	b	h	h2	A	A2
WS-10-30-ES New	1.53	24	10	3,000	30	30	5.5	9	47	38
WS-10-40-ES-FG	1.58	18	10	3,000	40	40	5.5	9	73	60

Part No.	C4	C5 min.	C5 max.	C6 min.	C6 max.	K1 for screw DIN 912
WS-10-30-ES	120	30	30.0	30	30.0	M6
WS-10-40-ES-FG	120	20	79.5	20	79.5	M6

⁵⁷⁾ Height dimension minus the bearing clearance tolerance



i In the following sizes, also available with adjustable bearing clearance:
10, 16 and 20; order example: WWE-10-40-15

Technical data and dimensions [mm]

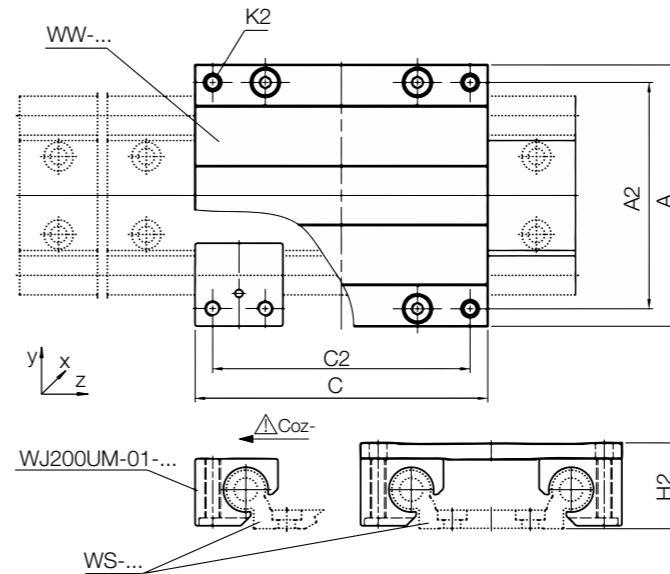
Part No. ⁶⁴⁾	Weight [kg]	A	C	A2	C2	K2
		Width	Length			
WW-10-30-08	0.26	63	80	50	67	M6
WW-10-30-10	0.28	63	100	50	87	M6
WW-10-30-15	0.32	63	150	50	137	M6
WW-10-40-10	0.29	73	100	60	87	M6
WW-10-40-15	0.34	73	150	60	137	M6
WW-10-40-20	0.40	73	200	60	187	M6
WW-10-80-10	0.34	107	100	94	87	M6
WW-10-80-15	0.42	107	150	94	137	M6
WW-10-80-20	0.50	107	200	94	187	M6
WW-10-120-10	0.41	153	100	140	87	M6
WW-10-120-15	0.54	153	150	140	137	M6
WW-10-120-20	0.66	153	200	140	187	M6
WW-16-60-10	0.71	104	100	86	82	M8
WW-16-60-15	0.84	104	150	86	132	M8
WW-16-60-20	0.97	104	200	86	182	M8
WW-16-120-15 New	1.00	166	150	148	132	M8
WW-16-120-20 New	1.17	166	200	148	182	M8
WW-16-120-25 New	1.35	166	250	148	232	M8
WW-20-80-15	1.20	134	150	116	132	M8
WW-20-80-20	1.30	134	200	116	182	M8
WW-20-80-25	1.50	134	250	116	232	M8
WW-25-120-15	2.54	195	150	173	128	M10
WW-25-120-20	2.80	195	200	173	178	M10
WW-25-120-25	3.07	195	250	173	228	M10

⁵⁷⁾ Height dimension minus the bearing clearance tolerance ⁶⁴⁾ Optional with manual clamp, suffix "-HKA"

Can be combined with:



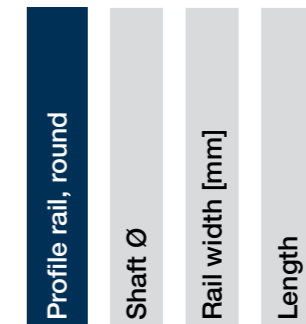
Suitable liner material:



Order key

Type

WS-10-30-08



H2 ⁵⁷⁾ ±0.25	Static load capacity				
	Co _y [N]	Co _z [N]	Mo _x [Nm]	Mo _y [Nm]	Mo _z [Nm]
24	4,800	2,400	72	120	120
24	4,800	2,400	72	170	170
24	4,800	2,400	72	290	290
24	4,800	2,400	96	170	170
24	4,800	2,400	96	290	290
24	4,800	2,400	96	410	410
24	4,800	2,400	178	170	170
24	4,800	2,400	178	290	290
24	4,800	2,400	178	410	410
24	4,800	2,400	288	170	170
24	4,800	2,400	288	290	290
24	4,800	2,400	288	410	410
35	8,400	4,200	240	270	270
35	8,400	4,200	240	480	480
35	8,400	4,200	240	690	690
35	8,400	4,200	504	480	480
35	8,400	4,200	504	690	690
35	8,400	4,200	504	900	900
44	12,800	6,400	525	670	670
44	12,800	6,400	525	990	990
44	12,800	6,400	525	1,250	1,250
55	19,200	9,600	1,250	880	880
55	19,200	9,600	1,250	1,360	1,360
55	19,200	9,600	1,250	1,840	1,840

Linear sliding carriage directly replace ball bearing guide

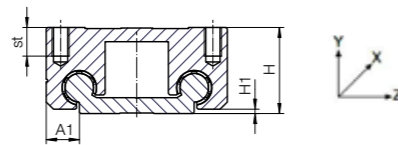
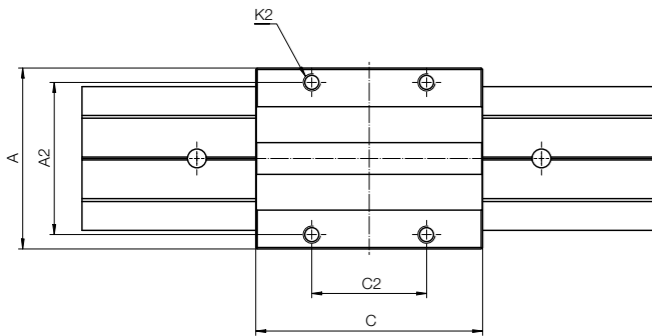


Order key

Type

WW-10-30-T15-AL

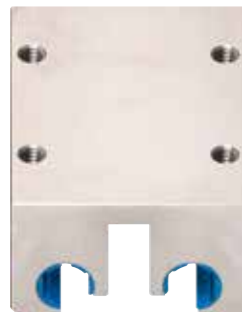
Guide carriage	Shaft Ø	Rail width [mm]	Installation size	Aluminium
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Technical data and dimensions [mm]

Part No.	H	A	C	A1	A2	C2	K2	st	H1	Weight [g]
WW-10-30-T15-AL New	24	47	59	8.5	38	30	M5	6	1.5	87.8
WW-10-30-T20-AL New	30	63	79	11.5	53	40	M6	10	1.5	210.0

Linear sliding carriage directly replace ball bearing guide - made of stainless steel



Order key

Type

WW-10-30-T15-ES2-□

Guide carriage	Shaft Ø	Rail width [mm]	Installation size	Stainless steel	igidur® material
					igidur® material A160: igidur® A160 E7: igidur® E7

Technical data and dimensions [mm]

Part No.	H	A	C	A1	A2	C2	K2	st	H1	Weight [kg]
WW-10-30-T15-ES2-□ New	24	47	59	8.5	38	30	M5	6	1.5	0.25
WW-10-40-T20-ES2-□ New	30	63	79	11.5	53	40	M6	10	1.5	0.60

Slim linear carriages

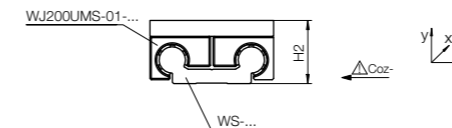
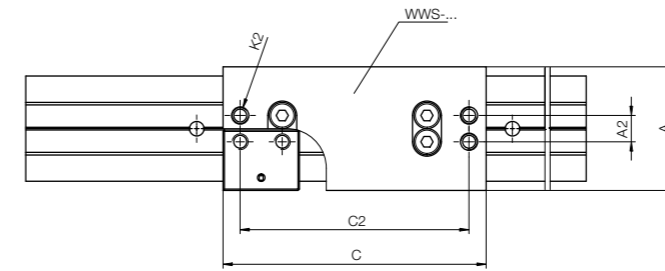


Order key

Type

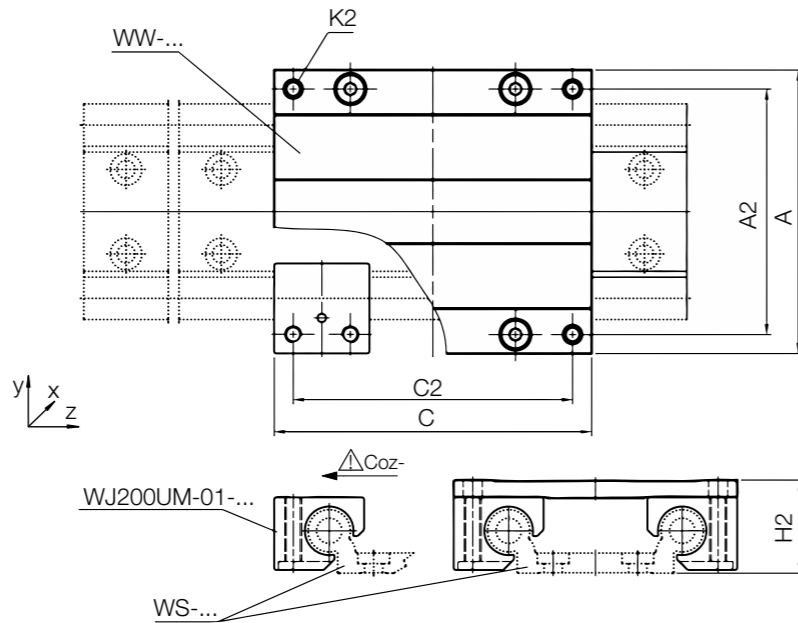
WWS-10-30-10-AL

Guide carriage, slim	Shaft Ø	Rail width [mm]	Length	Aluminium
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Technical data and dimensions [mm]

Part No.	A C		A2	C2	K2	H2 ±0.25	Weight [kg]	Static load capacity				
	Width	Length						Coy [N]	Coz [N]	Mox [N]	Moy [N]	Moz [N]
WWS-10-30-10-AL New	47	100	10	87	M6	24	0.15	2,400	1,200	36	85	85
WWS-16-60-15-AL New	84	150	27	132	M8	35	0.45	4,200	2,100	120	240	240



Technical data and dimensions [mm]

Part No. ⁶⁴⁾	Weight [kg]	A		A2	C2	K2	H2 ⁵⁷⁾ ±0.25	Static load capacity				
		Width	Length					Coy	Coz	Mox	Moy	Moz
WW-10-40-10-J200-GESG-PES	0.29	73	100	60	87	M6	24	4,800	2,400	96	170	170
WW-10-40-15-J200-GESG-PES	0.34	73	150	60	137	M6	24	4,800	2,400	96	290	290
WW-10-40-20-J200-GESG-PES	0.40	73	200	60	187	M6	24	4,800	2,400	96	410	410

⁵⁷⁾ Height dimension minus the bearing clearance tolerance

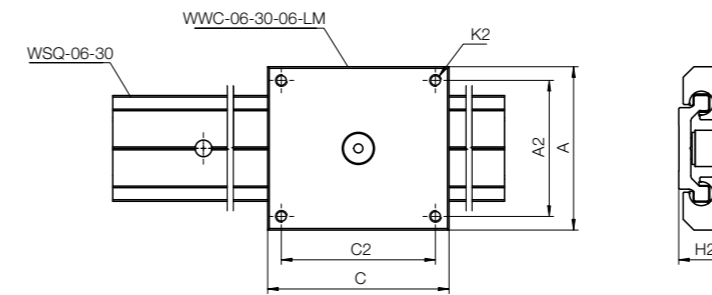
⁶⁴⁾ Optional with manual clamp, suffix "-HKA"



Type Size

WWC-06-30-06-LM

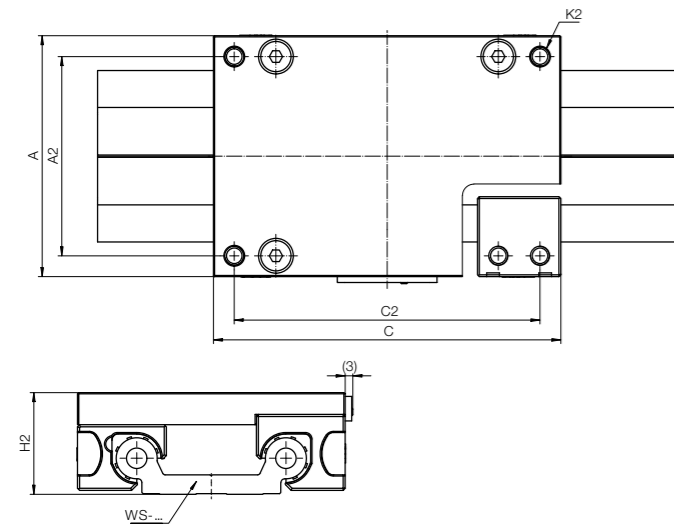
Mono-slide guide carriage	Shafts Ø [mm]	Profile width	Carriage length	Locking mechanism
------------------------------	---------------	---------------	-----------------	-------------------



Technical data and dimensions [mm]

Part No.	Weight [kg]	A		A2	C2	K2	H2 ⁵⁷⁾ ±0.2	Static load capacity				
		Width	Length					Coy	Coz	Mox	Moy	Moz
WWC-06-30-06-LM New	0.07	54	60	45	51	M4	16	1,680	840	25	34	34

⁵⁷⁾ Height dimension minus the bearing clearance tolerance



Order key

Type	Size	Option
------	------	--------

WW-10-40-10-IS-LED

Guide carriage, round	Shaft Ø	Profile width [mm]	Carriage length [mm]	i.Sense	LED display
-----------------------	---------	--------------------	----------------------	---------	-------------

Option:
LED: With LED display

Technical data and dimensions [mm]

Part No.	Weight [kg]	Width Length						Static load capacity				
		A	C	A2	C2	K2	H2 ⁵⁷⁾ ±0.25	Coy [N]	Coz [N]	Mox [Nm]	Moy [Nm]	Moz [Nm]
WW-10-40-10-IS.LED New	0.3	73	100	60	87	M6	30.5	4,800	2,400	96	170	170
WW-10-40-10-IS.LED-02 New	0.3	73	100	60	87	M6	30.5	4,800	2,400	96	170	170
WW-10-40-15-IS.LED New	0.4	73	150	60	137	M6	30.5	4,800	2,400	96	290	290
WW-10-80-10-IS.LED New	0.4	107	100	94	87	M6	30.5	4,800	2,400	178	170	170
WW-16-60-15-IS.LED New	0.7	104	150	86	132	M8	39.5	8,400	4,200	240	480	480
WW-20-80-15-IS.LED New	1.0	134	150	116	132	M8	48.5	12,800	6,400	525	670	670

⁵⁷⁾ Height dimension minus the bearing clearance tolerance



Simple bearing liner replacement. Version with signal transmission, without LED.

Also available with online condition monitoring.
▶ www.igus.eu/led

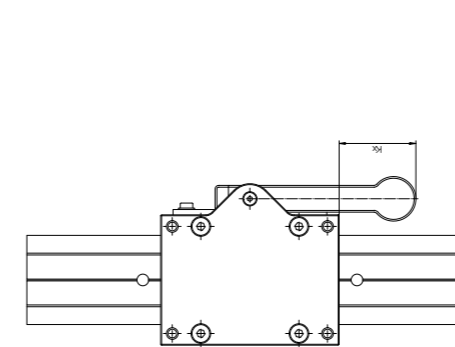


Order key

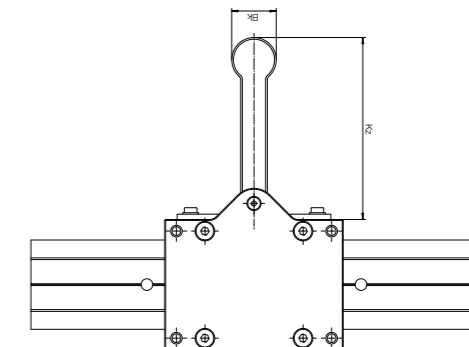
Type	Size
------	------

WW-10-40-10-HKX

Guide carriage, round	Shaft Ø	Profile width [mm]	Carriage length [mm]	Clamp system
-----------------------	---------	--------------------	----------------------	--------------



Open clamp



Closed clamp

Technical data and dimensions [mm]

Part No.	Min. holding force [N]	Static load capacity				
		Coy [N]	Coz [N]	Mox [Nm]	Moy [Nm]	Moz [Nm]
WW-10-40-10-HKX New	30	4,800	2,400	96	170	170
WW-16-60-15-HKX New	60	8,400	4,200	240	480	480
WW-20-80-15-HKX New	60	12,800	6,400	525	670	670

Part No.	Weight [kg]	A	C	A2	C2	K2	H2 ±0.25	Kx	Kz	Bk
		WW-10-40-10-HKX New	0.41	73	100	60	87	M6	24	45.5
WW-16-60-15-HKX New	0.98	104	150	86	132	M8	35	28.0	108.0	25
WW-20-80-15-HKX New	1.51	134	150	116	132	M8	44	28.0	107.0	25

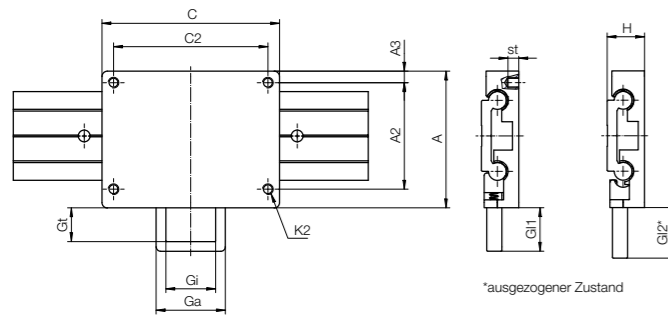


Order key

Type Size

WW-10-40-10-TC

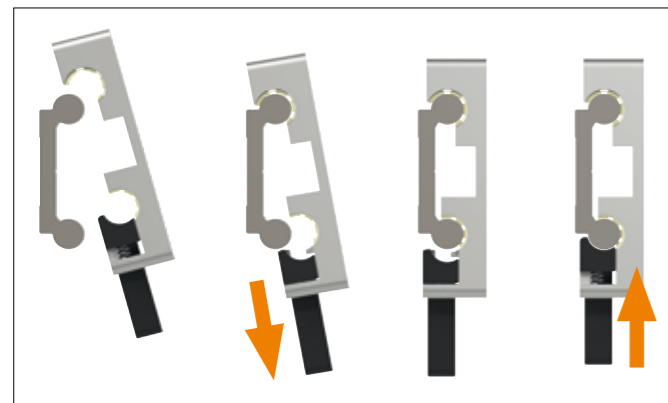
Guide carriage, round	Shaft Ø	Profile width [mm]	Carriage length [mm]	Clip mechanism
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Technical data and dimensions [mm]

Part No.	Weight [g]	Gt	Gi	Ga	GI1	GI2
WW-10-40-10-TC New	176	19	28	39	24.5	28.5

Part No.	H	A	C	A2	A3	C2	K2	st	H1
WW-10-40-10-TC New	21	77	100	60	6.5	87	M6	6	1.5



Install and remove the linear carriage at the desired position. Put the carriage on, pull the lever down and clip it in place.

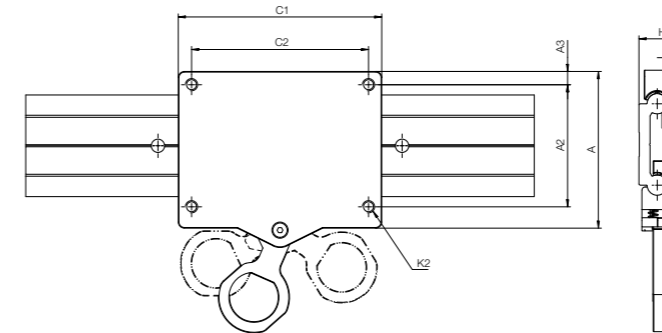


Order key

Type Size

WW-10-40-10-CC

Guide carriage, round	Shaft Ø	Profile width [mm]	Carriage length [mm]	Clip and clamping mechanisms
-----------------------	---------	--------------------	----------------------	------------------------------

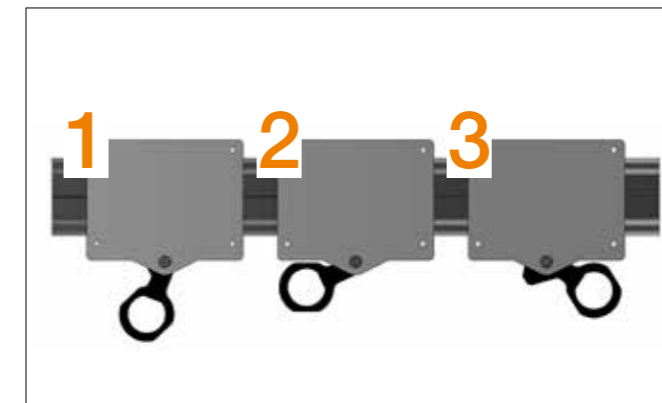


Technical data and dimensions [mm]

Part No.	Weight [g]	Min. holding force ⁶⁷⁾ [N]
WW-10-40-10-CC New	212	30

Part No.	H	A	C1	A2	A3	C2	K2	st	H
WW-10-40-10-CC New	22	77	100	60	6.5	87	M6	6	1.5

⁶⁷⁾ Condition: dry rail surface

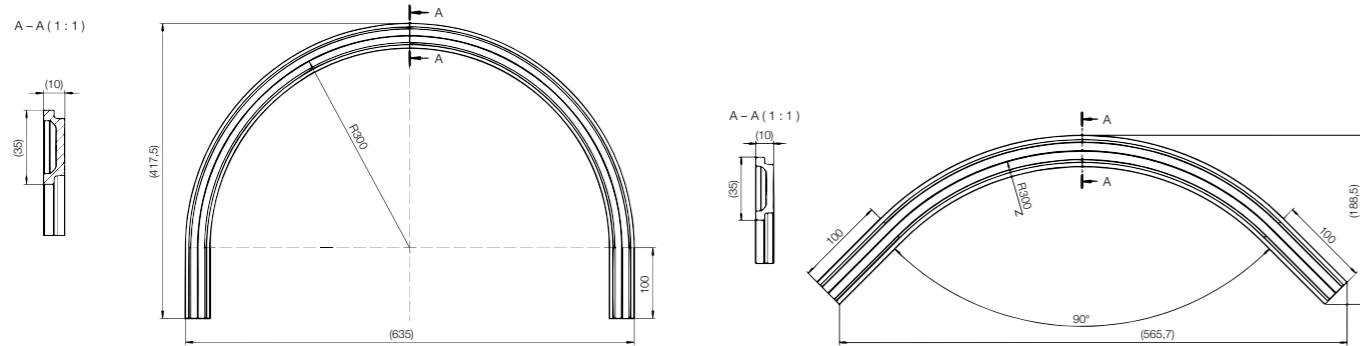
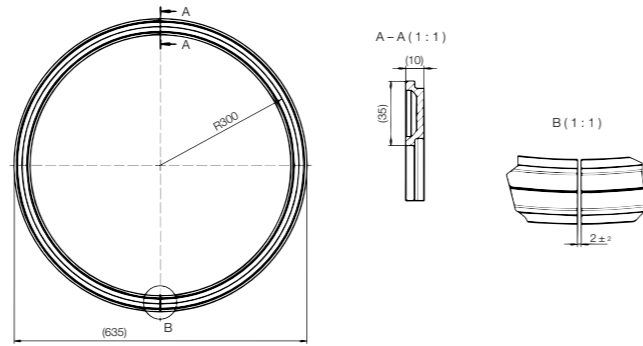


1. Adjustment as linear carriage on drylin® W double rail
2. Clamping position (no linear movement possible)
3. Clip-on mechanism for removing the linear carriage from the rail

The manual clamp was developed for simple tasks. The creep behaviour of the clamped plastic causes a reduction in clamping force over time, so no safety-relevant parts should be clamped. The actual holding force depends on environmental influences.



WSB-06-30-RK300QS



More information
▶ www.igus.eu/curved

Curved rail profiles
▶ Page 1118

Technical data and dimensions [mm]

Part No.	Matching carriage for curved rail	Form	Bend radius	End straight
WSB-06-30-RK300F ¹⁵¹⁾	WWB-06-30-06-R300-□ ¹⁸⁸⁾ -□ ⁶⁴⁾	Full circle	300	-
WSB-06-30-RK300HS	WWB-06-30-06-R300-□ ¹⁸⁸⁾ -□ ⁶⁴⁾	Half circle	300	100
WSB-06-30-RK300QS	WWB-06-30-06-R300-□ ¹⁸⁸⁾ -□ ⁶⁴⁾	Quarter circle	300	100
WSB-06-30-RK500HS	WWB-06-30-06-R500-□ ¹⁸⁸⁾ -□ ⁶⁴⁾	Half circle	500	100
WSB-06-30-RK500QS	WWB-06-30-06-R500-□ ¹⁸⁸⁾ -□ ⁶⁴⁾	Quarter circle	500	100

¹⁵¹⁾ The F version (full circle) has a transition of 2mm (±0.2). Due to the bending process, material displacement tolerances, which can be up to several millimetres depending on the bend direction and radius, must be taken into account.

¹⁸⁸⁾ Optional with spring pre-load

⁶⁴⁾ Optional with manual clamp, suffix "-HKA"

RK: Radius curved bending

S: Straight rail ends in the case of semicircle and quarter circle

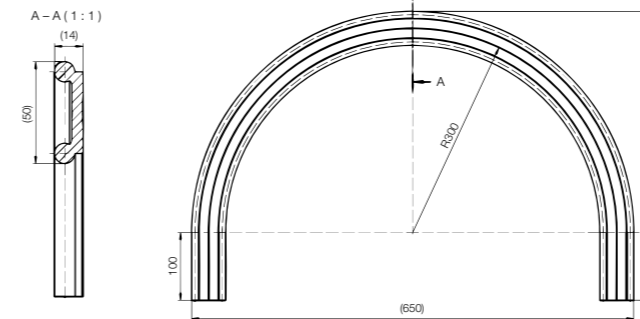
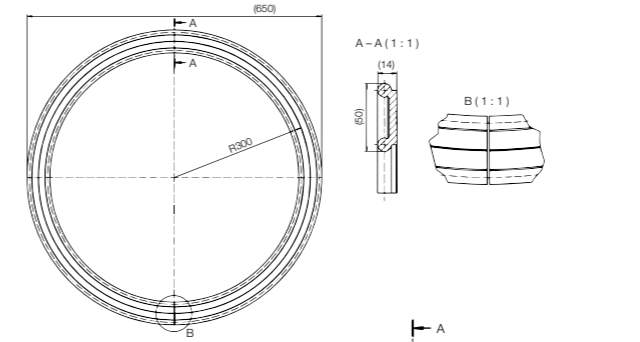
Can be combined with:



WWB-...



WSB-10-40-RK300QS



Order key

Type Size Option

WSB-06-30-RK 300- F

Curved rail profile	Shaft Ø	Profile width [mm]	Radius curved bending	Bend radius	Form
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Options:

F: Full circle

H: Half circle, end straight (HS)

Q: Quarter circle, end straight (QS)

Technical data and dimensions [mm]

Part No.	Matching carriage for curved rail	Form	Bend radius	End straight
WSB-10-40-RK300F ¹⁵¹⁾	WWB-10-40-10-R300-□ ¹⁸⁸⁾ -□ ⁶⁴⁾	Full circle	300	-
WSB-10-40-RK300HS	WWB-10-40-10-R300-□ ¹⁸⁸⁾ -□ ⁶⁴⁾	Half circle	300	100
WSB-10-40-RK300QS	WWB-10-40-10-R300-□ ¹⁸⁸⁾ -□ ⁶⁴⁾	Quarter circle	300	100
WSB-10-40-RK500F ¹⁵¹⁾	WWB-10-40-10-R500-□ ¹⁸⁸⁾ -□ ⁶⁴⁾	Full circle	500	-
WSB-10-40-RK500HS	WWB-10-40-10-R500-□ ¹⁸⁸⁾ -□ ⁶⁴⁾	Half circle	500	100
WSB-10-40-RK500QS	WWB-10-40-10-R500-□ ¹⁸⁸⁾ -□ ⁶⁴⁾	Quarter circle	500	100

¹⁵¹⁾ The F version (full circle) has a transition of 2mm (±0.2). Due to the bending process, material displacement tolerances, which can be up to several millimetres depending on the bend direction and radius, must be taken into account.

¹⁸⁸⁾ Optional with spring pre-load

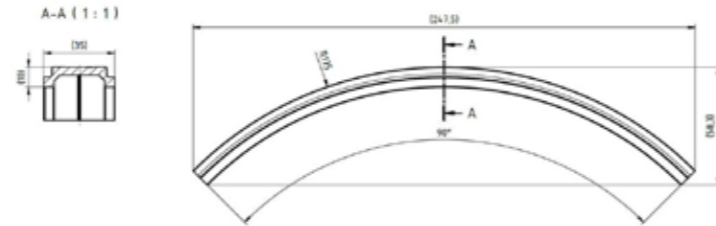
⁶⁴⁾ Optional with manual clamp, suffix "-HKA"

RK: Radius curved bending

S: Straight rail ends in the case of semicircle and quarter circle



WSB-06-30-RX300Q



More information

► www.igus.eu/curved

Technical data and dimensions [mm]

Part No.	Matching carriage for curved rail	Form	Bend radius	Profile direction
WSB-06-30-RX300Q New	WWB-06-30-04 WWB-06-30-06-□ ¹⁸⁸⁾ -□ ⁶⁴⁾	Quarter circle	300	concave/convex

¹⁸⁸⁾ Optional with spring pre-load

⁶⁴⁾ Optional with manual clamp, suffix "-HKA"

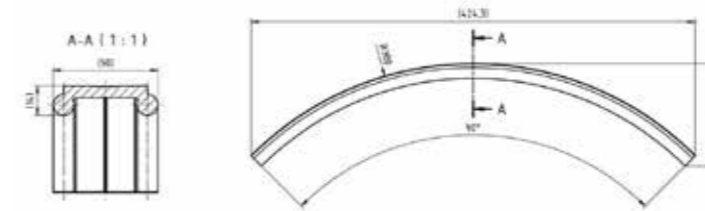
Can be combined with:



WWB-...



WSB-10-40-RX300Q



Technical data and dimensions [mm]

Part No.	Matching carriage for curved rail	Form	Bend radius	Profile direction
WSB-10-40-RX300Q New	WWB-10-40-10-□ ¹⁸⁸⁾ -□ ⁶⁴⁾	Quarter circle	300	concave/convex

¹⁸⁸⁾ Optional with spring pre-load

⁶⁴⁾ Optional with manual clamp, suffix "-HKA"



Order key

Type	Size	Option
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WSB-06-30-RX 300-Q

Curved rail profile	Shaft Ø	Profile width [mm]	Radius concave/convex	Bend radius	Form
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Design options:

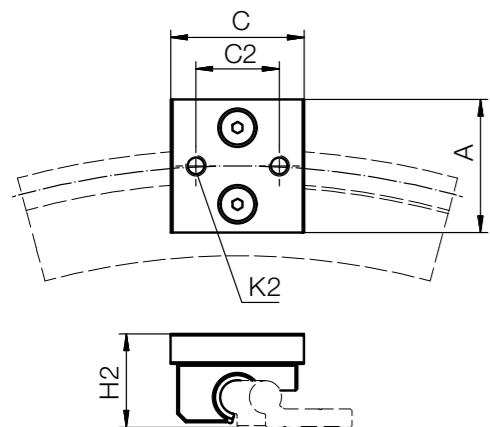
Q: Quarter circle

Order key

Type	Option	Option
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WI3U B P -01-10-LLZ

drylin® W	Liner material iglidur® i3	Curved	Pre-load	Standard	Size	Floating bearing in y-direction
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Dimensions [mm]

Part No.	Weight [g]	A	C	C2	K2	H2
WI3UBP-01-10	50	40	40	25	M6	28
WI3UBP-01-10-R300-LLZ	44	40	40	25	M6	28
WI3UBP-01-10-R500-LLZ	44	40	40	25	M6	28
WI3UBP-01-10-LLZ	44	40	40	25	M6	28

Can be combined with:



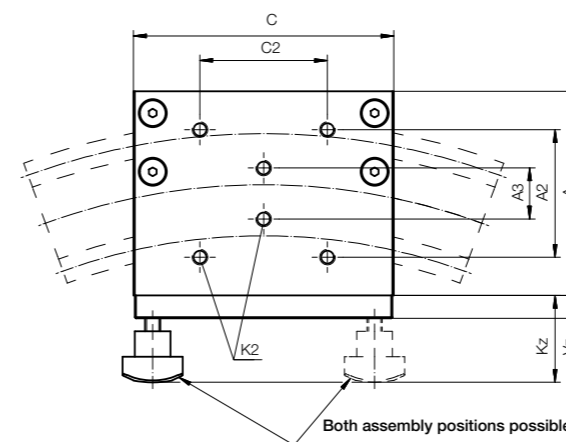
WSB-...

Order key

Type	Size	Option
------	------	--------

WWB-10-40-10-P-HKA

Guide carriage for curved rails	Shaft Ø	Profile width [mm]	Carriage length [mm]	With spring pre-load	With manual clamp
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Technical data and dimensions [mm]

Part No.	Weight [kg]	A	C	A2	A3	C2	K2	H2	Vz	Kz
		±0.25	-0.1							
WWB-06-30-06-R300-□-□	0.31	58	60	30	16	30	M4	20	7.5	29
WWB-06-30-06-R500-□-□	0.31	58	60	30	16	30	M4	20	7.5	29
WWB-10-40-10-R300-□-□	0.35	80	102	50	20	50	M6	28	9	34
WWB-10-40-10-R500-□-□	0.35	80	102	50	20	50	M6	28	9	34

Options:

Blank: Standard

P: With spring pre-load

P-HKA: With spring pre-load and manual clamp

HKA: With manual clamp

Curved rail profiles
► Page 1118



Can be combined with:



WS-...



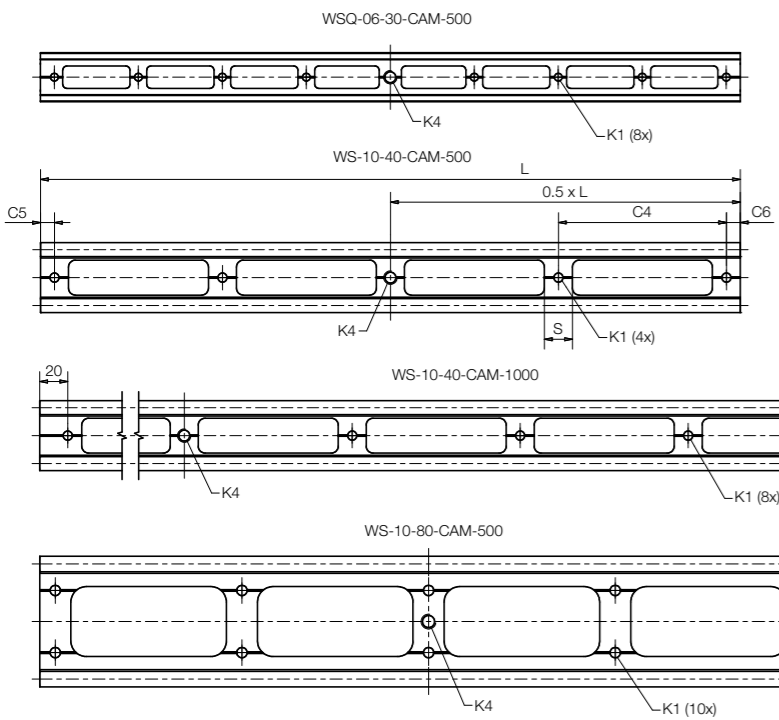
WS-...-ES-FG



WSB-...



- 30 % weight reduction through machined recesses
- Suitable pillow blocks and carriages made from plastic, aluminium, zinc die-casting or stainless steel



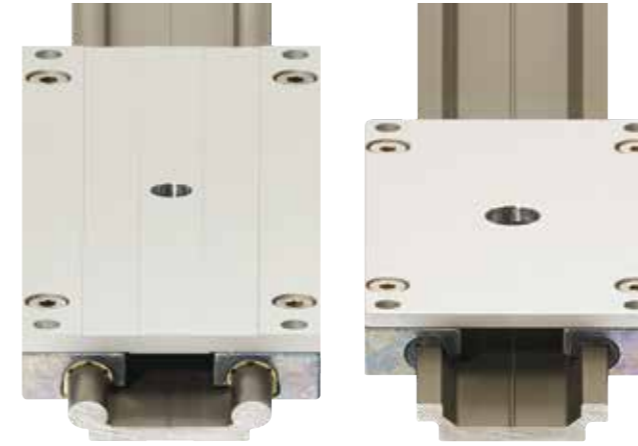
drylin® W guide rails - dimensions [mm]

Part No.	Identical profile	L	C4	C5	C6	S	K1 for screw DIN 192	K4	Weight [g]
WSQ-06-30-CAM-500	WSQ-06-30	500	60	10	10	12	M5	3/8" 16-UNC ⁶³⁾	159
WS-10-40-CAM-500	WS-10-40	500	120	10	10	20	M6	3/8" 16-UNC ⁶³⁾	353
WS-10-40-CAM-1000	WS-10-40	1,000	120	20	20	20	M6	3/8" 16-UNC ⁶³⁾	706
WS-10-80-CAM-500	WS-10-80	500	120	10	10	20	M6	3/8" 16-UNC ⁶³⁾	482

⁶³⁾ UNC = Unified National Coarse, Anglo-American. Screw thread standard



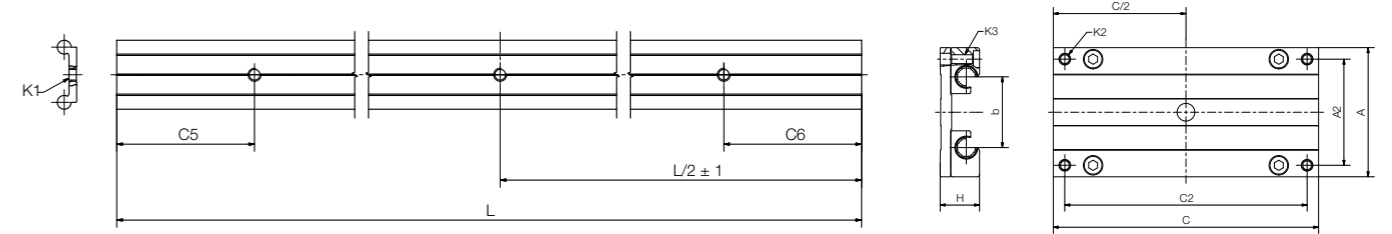
Application example:
camera slider with standard rail and carriage
► www.igus.eu/camera



- Wear-resistant, smooth and quiet motion
- Adjustable brake level due to the turn-to-fit function
- Easy and fast assembly
- Further dimensions such as standard WS rails
► Page 1154

Technical options:

- Adjustable bearing housing ► Page 1142
- Manual clamp ► Page 1194



drylin® W special rails with 3 holes, 3/8" thread

Dimensions [mm]

Part No.	Size	L	C5 ± 1	C6 ± 1	Weight [kg/m]
WSQ-06-30-SL-1000	06	1,000	100	100	0.45
WSQ-06-30-SL-1500	06	1,500	100	100	0.45
WS-10-30-SL-1000	10	1,000	100	100	0.85
WS-10-30-SL-1500	10	1,500	100	100	0.85
WS-10-40-SL-1500	10	1,500	100	100	1.00
WS-10-80-SL-1000	10	1,000	100	100	1.50
WS-10-80-SL-1500	10	1,500	100	100	1.50
WS-16-60-SL-1000	16	1,000	100	100	1.96
WS-16-60-SL-1500	16	1,500	100	100	1.96
WS-20-80-SL-1000	20	1,000	100	100	3.30
WS-20-80-SL-1500	20	1,500	100	100	3.30


drylin® W complete carriage with Ø10mm through hole for 3/8" thread

Dimensions [mm]

Part No.	Size	C	A	Part No.	Size	C	A
WW-06-30-06-SL	06	60	54	WW-10-80-15-SL ^{64) 65)}	10	150	107
WW-06-30-08-SL	06	80	54	WW-10-80-20-SL ^{64) 65)}	10	200	107
WW-06-30-10-SL	06	100	54	WW-16-60-10-SL ⁶⁵⁾	16	100	104
WW-10-30-10-SL ^{64) 65)}	10	100	63	WW-16-60-15-SL ^{64) 65)}	16	150	104
WW-10-30-15-SL ^{64) 65)}	10	150	63	WW-16-60-20-SL ^{64) 65)}	16	200	104
WW-10-40-10-SL ^{64) 65)}	10	100	73	WW-20-80-15-SL ^{64) 65)}	20	150	134
WW-10-40-15-SL ^{64) 65)}	10	150	73	WW-20-80-20-SL ^{64) 65)}	20	200	134
WW-10-40-20-SL ^{64) 65)}	10	200	73	WW-20-80-25-SL ^{64) 65)}	20	250	134
WW-10-80-10-SL ^{64) 65)}	10	100	107				

⁶⁴⁾ Optional with manual clamp, suffix "-HKA"


⁶⁵⁾ Optional with adjustable "Turn-To-Fit" bearing (Order example: WWE-...)

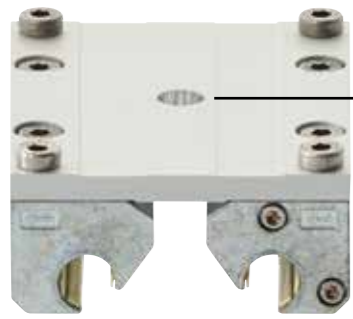
 Order key

Type	Dimensions	Design
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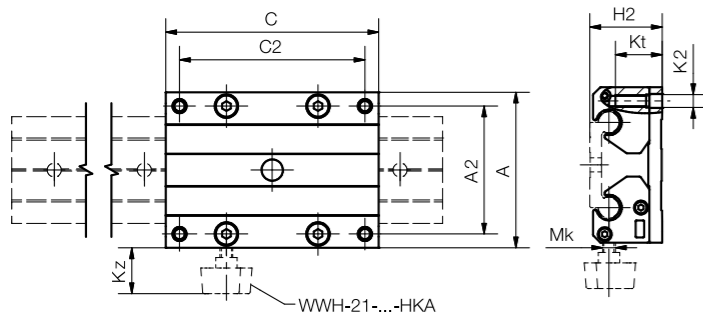
WWH-21-10-40-10-SL

drylin® W	Hybrid carriage	Double roller bearing	Installation size	Carriage length [mm]	Slider carriage
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 Optional with manual clamp, suffix "-HKA"



Ø 10mm
through hole for
3/8" thread for
cameras



Technical data and dimensions [mm]

Part No.	Weight [kg]	A Width	C Length	A2	C2	K2	Kt	H2	Stat. load capacity Coy [N]
WWH-21-10-40-10-SL	0.59	73	100	60	87	M6	21	34	1,400
WWH-21-10-40-15-SL	0.64	73	150	60	137	M6	21	34	1,400
WWH-21-10-40-20-SL	0.70	73	200	60	187	M6	21	34	1,400
WWH-21-10-80-10-SL	0.64	107	100	94	87	M6	21	34	1,400
WWH-21-10-80-15-SL	0.72	107	150	94	137	M6	21	34	1,400
WWH-21-10-80-20-SL	0.80	107	200	94	187	M6	21	34	1,400
WWH-21-16-60-10-SL	1.31	104	100	86	82	M8	29	49	2,400
WWH-21-16-60-15-SL	1.44	104	150	86	132	M8	29	49	2,400
WWH-21-16-60-20-SL	1.57	104	200	86	182	M8	29	49	2,400
WWH-21-20-80-15-SL	1.72	134	150	116	132	M8	24	57	3,360
WWH-21-20-80-20-SL	1.82	134	200	116	182	M8	24	57	3,360
WWH-21-20-80-25-SL	2.02	134	250	116	232	M8	24	57	3,360

Can be combined with:

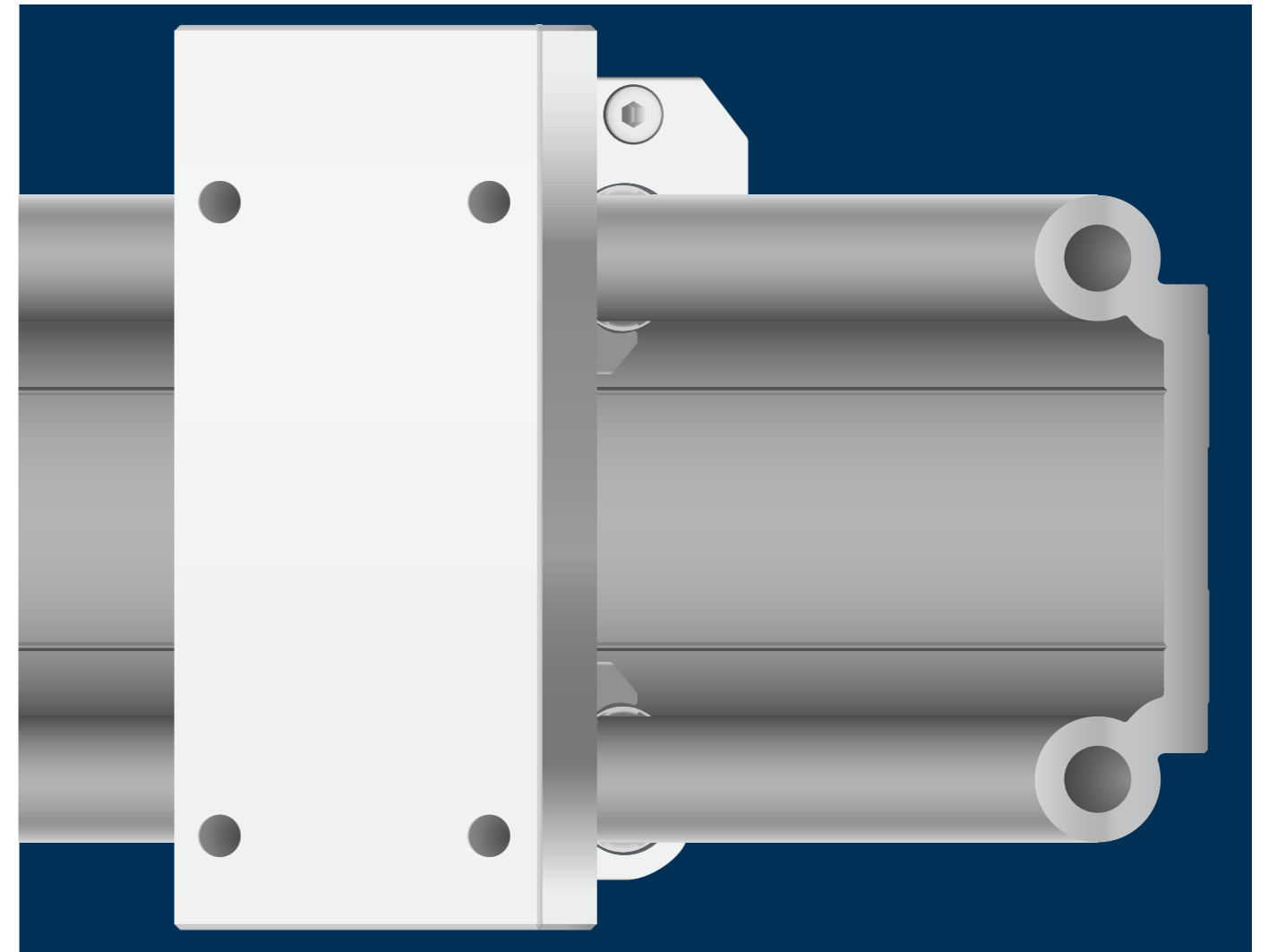


WS-20-80 WS-...-ES-FG WSX-...

Can be combined with camera slider rails

► Page 1174

1176 Online tools and more information ► www.igus.eu/drylinW



drylin® linear technology - drylin® W hybrid roller bearings

Lubrication-free roll and slide
and roller bearings

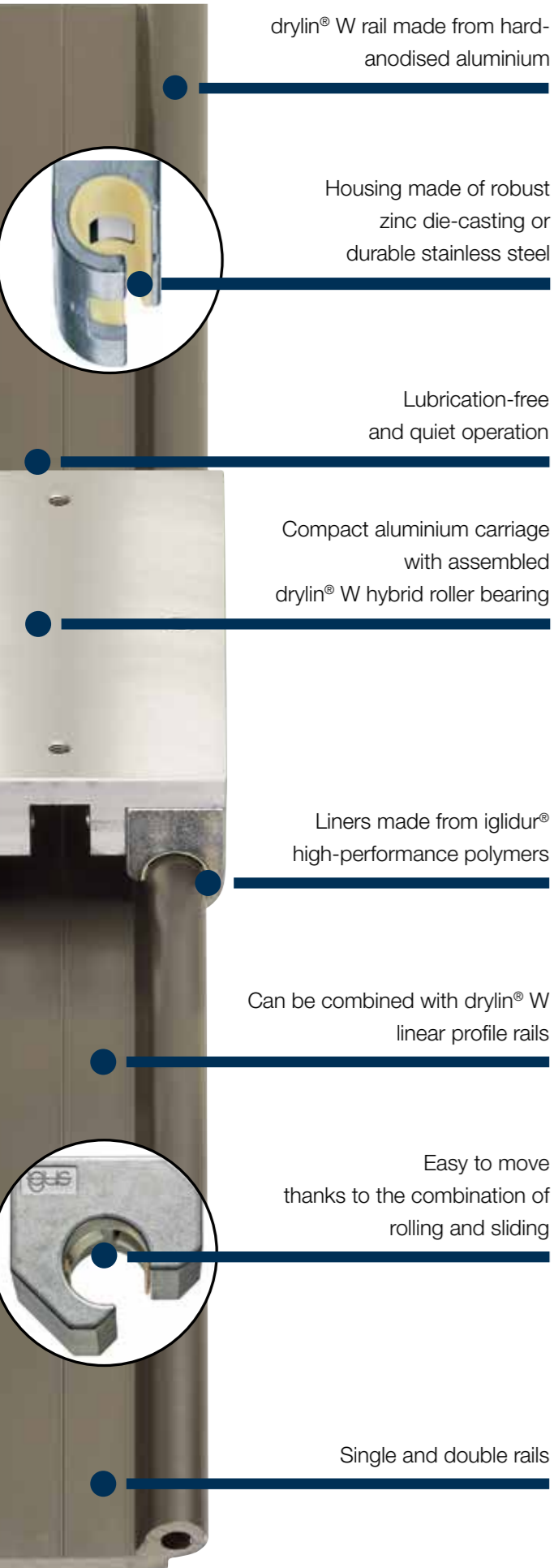
Low drive forces

For manual adjustment

Suitable for radial loads

Single bearings and complete carriages





drylin® W rail made from hard-anodised aluminium

Housing made of robust zinc die-casting or durable stainless steel

Lubrication-free and quiet operation

Compact aluminium carriage with assembled drylin® W hybrid roller bearing

Liners made from iglidur® high-performance polymers

Can be combined with drylin® W linear profile rails

Easy to move thanks to the combination of rolling and sliding

Single and double rails


Combined sliding and rolling for low driving forces


drylin® hybrid roller bearings offer an unique lubrication-free combination of plain and roller bearings. The integrated rollers achieve low drive forces, while the sliding effect simultaneously protect against radial loads. This makes drylin® hybrid roller bearings ideal for manual adjustments in door applications (e.g. machine doors, safety doors), but also in mobile control panels. The efficient design using plastics with zinc die-casting also cuts costs. Hybrid bearings can be used on various hard-anodised aluminium profiles from the drylin® W linear system.


- Smooth operation
- Low-profile
- Offset and abuse forces are easily absorbed by sliding elements
- Location on rail ensures reliability
- Matching guide rails made from hard-anodised aluminium
- Low drive force required
- Cost-effective


Typical application areas

- Machine doors
- Safety doors
- Operator panels

 **Available from stock**
Detailed information about delivery time online.

 **Price breaks online**
No minimum order value. No minimum order quantity

 **Service life calculation**
▶ www.igus.eu/drylin-expert

 **Tightening torque for drylin® metallic screws**
▶ Page 1120

Slide and roll



Hybrid roller bearing rails

- Ideal for flat structures
 - Geometry optimised for hybrid roller bearings
 - Low profile design with wide support
- ▶ Page 1182



Hybrid roller bearings with single roller/tandem roller

- Lubrication-free due to bearing supported plastic roller
 - Low drive forces
 - Can be combined with drylin® W single and double rails
- ▶ Page 1184



Complete carriages WWR

- Complete carriage for lateral adjustments
 - Guidance via a double rail without support
 - Also available as a short, compact carriage for variable multi-carriage solution
- ▶ Page 1189

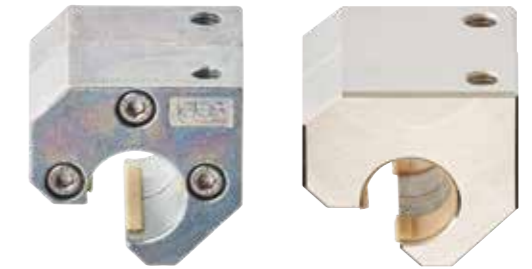


Suitable rail profiles
▶ From page 1136



Hybrid roller bearings for WSR roller bearing rails

- Suitable for WAS hybrid roller bearing rails
 - Hybrid roller bearing with double rollers for better force absorption
 - Hybrid roller bearings with single rollers as support
- ▶ Page 1183



Hybrid roller bearings with double rollers

- Low coefficient of rolling friction is still maintained with deviating load directions
 - Increased load capacity
 - Variable bearing removed, but the housing is now available in corrosion-resistant stainless steel as well.
- ▶ Page 1185



Complete carriages WWH

- Complete carriage with 4 integrated hybrid roller bearings
 - For horizontal installation
 - Variable carriage lengths and widths
- ▶ Page 1190



Camera slider
▶ From page 1175



Machine tools

The smooth, quiet operation and the enormous cost advantages are obtained by the use of the drylin® linear bearings on the hard-anodised guide shaft to guide the doors of machine tools.

Control panel unit

Lightweight due to the use of plastic and aluminium with a corrosion-free coating, the guides in the drylin® range impress with their quiet and precise running.



Camera adjustment

Lightweight due to the use of plastic and aluminium with a corrosion-free coating, the guides in the drylin® range impress with their quiet and precise running.

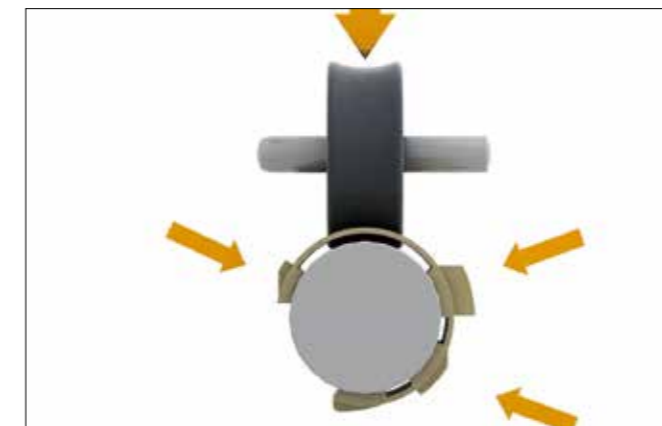


drylin® W hybrid roller bearings type 01

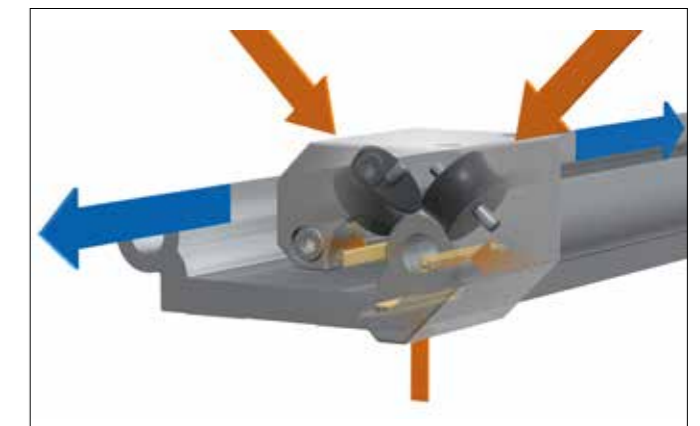
The drylin® W hybrid roller bearings from the WJRM-01-... type series are each equipped with a bearing-supported plastic roller. The bearing housing is available in three installation sizes and can be used with drylin® W single or double shaft rails in two installation positions. The hybrid roller bearing should be installed so that the load capacity is applied in the roll direction. Different load directions are possible but causes higher displacement forces.

drylin® W hybrid roller bearings type 21

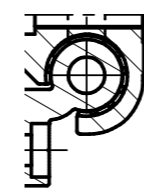
The drylin® W hybrid roller bearings in the WJRM-21-... type series are each equipped with two bearing-supported plastic rollers at an angle of 70° or 80°. Available in three installation sizes, they can be combined with drylin® W single and double rails. The double roller bearings offer a higher load capacity than with a vertical bearing load on the installation area (y-direction). The low coefficient of rolling friction is still maintained with load directions that slightly deviate from this.



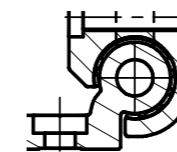
Forces absorbed by hybrid roller bearing



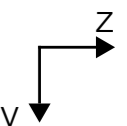
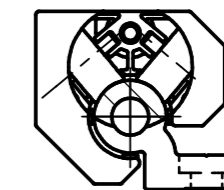
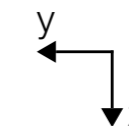
Hybrid double roller bearing applicable force absorption



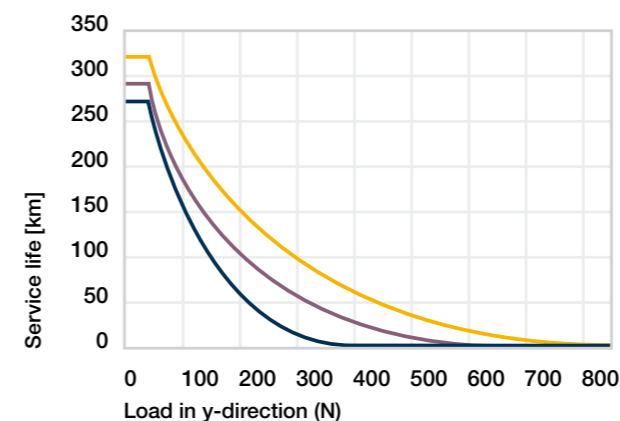
Installation position 01



Installation position 02

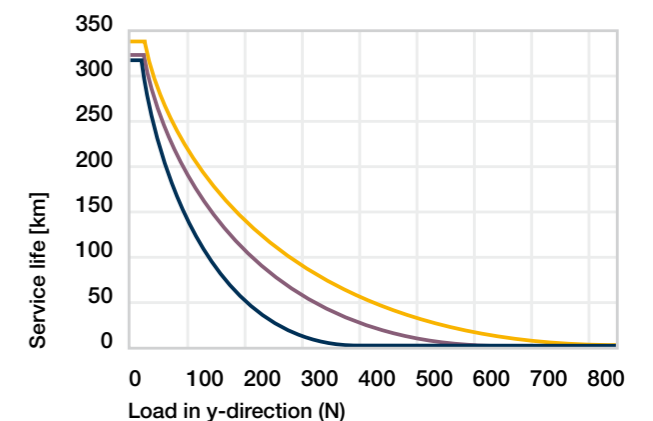


Installation position WJRM-01-...

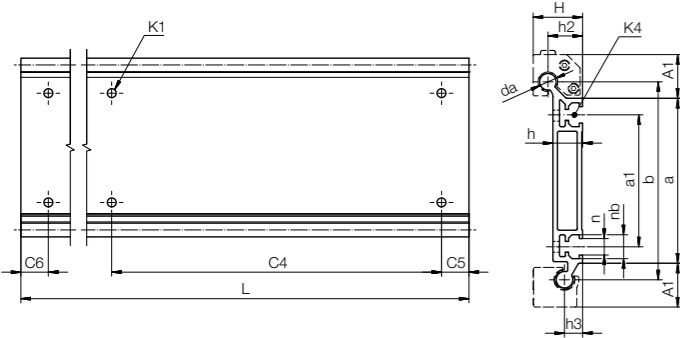


■ WJRM-01-10 ■ WJRM-01-16 ■ WJRM-01-20

Installation position WJRM-21-...



■ WJRM-21-10 ■ WJRM-21-16 ■ WJRM-21-20



Order key

Type	Size
------	------

WSR-10-120-4000

Hybrid roller bearing rail	Shaft Ø	Rail width [mm]	Rail length [mm]
----------------------------	---------	-----------------	------------------

Technical data and dimensions [mm]

Part No.	Geometrical moment of inertia		Moment of resistance		K1 for screw	K4 for slot nut	Weight [kg/m]
	ly	lz	Wby	Wbz			
	[mm ⁴]	[mm ⁴]	[mm ³]	[mm ³]			
WSR-10-120	1,443,000	38,700	22,000	2,600	M6	-	2.58
WSR-10-120-UNGEBOHRT	1,443,000	38,700	22,000	2,600	-	MSX-B-0001-M6	2.58

Part No.	H	da	L	a	A1	b	h	h2	h3	a1	n	nb	C4	C5 = C6	
	±0.25	-0.1	max.	±0.6										min.	max.
WSR-10-120	30	10	4,000	100	26.5	120	18	21	11	80	10	14.5	240	20	199.5
WSR-10-120-UNGEBOHRT	30	10	4,000	100	26.5	120	18	21	11	80	10	14.5	-	-	-

End caps for roller bearing rails ▶ Page 1198



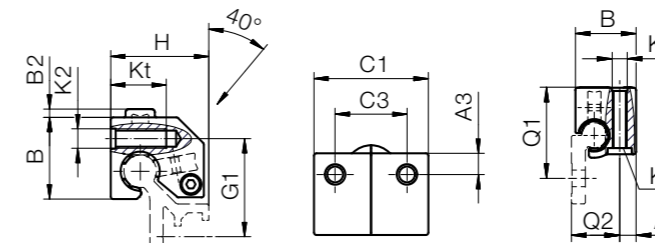
WJRM-31-10



WJRM-41-10



WJRM-41



WJRM-31
Installation
position 01

Technical data [mm]

Part No.	Stat. load capacity Co [N]	Dyn. load capacity Cz+ at total running distance [km]				Coefficient of friction in z-direction [μ]	F · v max. [N · m/s]	Weight [g]
		10	100	200				
		[N]	[N]	[N]				
WJRM-31-10	250	250	90	50	< 0.1	50	91	
WJRM-41-10	250	250	90	50	< 0.1	50	97	
WJRM-31-10-BB New	250	250	90	50	< 0.03	100	85	
WJRM-41-10-BB New	250-350	250-350	90-125	50-70	< 0.03	50	91	

Dimensions [mm]

Part No.	A3	B	B2	C1	C3	H	G1	K2 for thread	K3 for screw	Q1	Q2	kt
WJRM-31-10	6.5	24	-	35	22	28	27	M6	M5	36	19	16
WJRM-41-10	6.5	25	2.5	35	22	30	30	M6	M5	-	-	-
WJRM-31-10-BB New	6.5	24	-	35	22	28	27	M6	M5	36	19	-
WJRM-41-10-BB New	6.5	25	2.5	35	22	30	30	M6	M5	-	-	16

Can be combined with:



WSR-...

Order key

Type	Size	Option
------	------	--------

WJRM-31- 10 -BB

Hybrid roller bearings	Double roller bearing	Size 10	Ball bearing
------------------------	-----------------------	---------	--------------

Options:

- 31:** Single roller bearing, bottom assembly for better support
- 41:** Double roller bearing, top assembly for better force absorption
- BB:** Ball bearing supported plastic roller



Suitable mounting plate

▶ Page 1192



Order key

Type Size

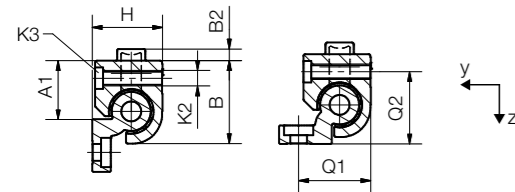
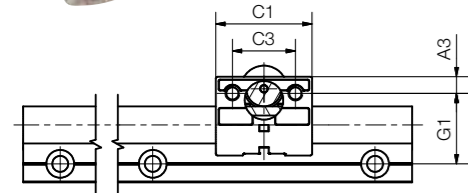
WJRM-01-10

Hybrid roller bearings
With single roller
Size 10

Options:
Blank: Bearing supported plastic roller
BB: Ball bearing supported plastic roller

Suitable mounting plate
► Page 1192

Installation position 02 in installation size Ø10 when using a WJRM-02-10 hybrid roller bearing



Installation position 01

Installation position 02

Technical data and dimensions [mm]

Part No.	Stat. load capacity	Dyn. load capacity Cy+			F · v	Weight
	Co	at total running distance [km]				
	[N]	10	100	200	max.	[g]
		[N]	[N]	[N]	[N · m/s]	
WJRM-01-10 ⁷¹⁾	250	250	90	50	50	46
WJRM-01-10-BB ⁷¹⁾	250	250	90	50	100	46
WJRM-01-16	400	400	140	70	80	131
WJRM-01-16-BB	400	400	140	70	160	131
WJRM-01-20	550	550	200	100	80	232
WJRM-01-20-BB	550	550	200	100	160	232

Part No.	Coefficient of friction in z-direction [μ]	A1	A3	B	B2	C1	C3	G1	H	K2 for thread	K3 for screw	Q1	Q2
WJRM-01-10-BB ⁷¹⁾	< 0.03	16.5	6.5	26.0	2.5	35	22	27	18	M6	M5	-	-
WJRM-01-16	< 0.10	25.0	9.0	34.5	5.0	48	30	33	27	M8	M6	32	28
WJRM-01-16-BB	< 0.03	25.0	9.0	34.5	5.0	48	30	33	27	M8	M6	32	28
WJRM-01-20	< 0.10	30.0	9.0	42.5	6.0	52	34	38	36	M8	M6	37	37
WJRM-01-20-BB	< 0.03	30.0	9.0	42.5	6.0	52	34	38	36	M8	M6	37	37

⁷¹⁾ Deviating from WJRM-02-10, available with an expanded opening angle for installation position 02

Can be combined with:



Order key

Type Size

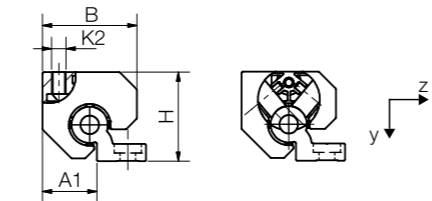
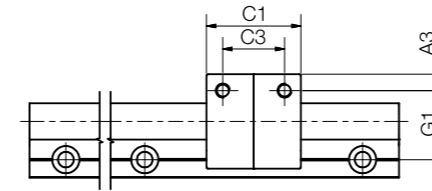
WJRM-21-10

Hybrid roller bearings
Double roller bearing
Size 10

Options:
Blank: Bearing supported plastic roller
BB: Ball bearing supported plastic roller

Suitable mounting plate
► Page 1192

Optional with manual clamp, suffix "-HKA"



Technical data and dimensions [mm]

Part No.	Stat. load capacity	Dyn. load capacity Cz+			F · v	Weight
	Co	at total running distance [km]				
	[N]	10	100	200	max.	[g]
		[N]	[N]	[N]	[N · m/s]	
WJRM-21-10	350	350	125	70	50	115
WJRM-21-10-BB	350	350	125	70	100	115
WJRM-21-16	600	600	210	105	80	250
WJRM-21-16-BB	600	600	210	105	160	250
WJRM-21-20	840	840	300	150	80	320
WJRM-21-20-BB	840	840	300	150	160	320

Part No.	Coefficient of friction in y-direction [μ]	A1	A3	B	C1	C3	G1	H	K2 for screw
WJRM-21-10-BB	< 0.03	16.5	6.5	31	35	22	27	28	M6
WJRM-21-16	< 0.10	25.0	9.0	44	48	30	33	41	M8
WJRM-21-16-BB	< 0.03	25.0	9.0	44	48	30	33	41	M8
WJRM-21-20	< 0.10	30.0	9.0	52	52	34	38	49	M8
WJRM-21-20-BB	< 0.03	30.0	9.0	52	52	34	38	49	M8

WJRM-21-10 and WJRM-21-16: 70° angle between the rollers / WJRM-21-20: 80° angle between the rollers

Can be combined with:

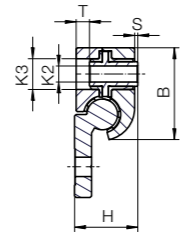
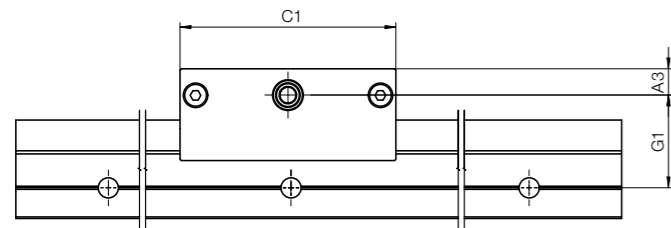


Hybrid roller bearings with two rollers

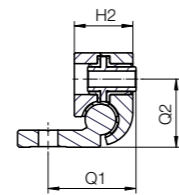


Order key

Type	Size	Material
Hybrid roller bearings	With double roller	Size 10
Material AL: Aluminium		



Installation position 01



Installation position 02

Technical data and dimensions [mm]

Part No.	Stat. load capacity	Dyn. load capacity Cy+ at total running distance [km]			F · v	Weight
	Co	10	100	200	max.	
	[N]	[N]	[N]	[N]	[N · m/s]	[g]
WJRM-51-10-AL New	500	500	180	100	50	70
WJRM-51-16-AL New	800	800	280	140	80	123
WJRM-51-20-AL New	1,100	1,100	400	200	80	215

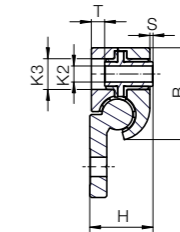
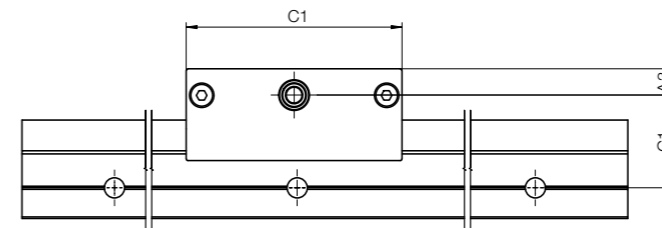
Part No.	Coefficient of friction in z-direction [μ]	A3	B	C1	G1	S	H	H2	T	K2	K3	Q1	Q2
										∅	∅		
WJRM-51-10-AL New	< 0.10	8.5	29.8	70	30.1	1	20.5	19.0	4.3	5.2	10	28.5	22.1
WJRM-51-16-AL New	< 0.10	9.5	39.5	85	37.5	1	27.5	25.0	7.0	6.2	12	31.5	32.5
WJRM-51-20-AL New	< 0.10	11.0	48.5	100	42.0	1	36.0	34.5	14.0	8.2	17	37.0	41.0

Tandem roller bearings with ball bearings

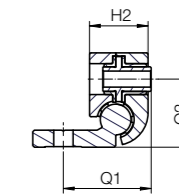


Order key

Type	Size	Material
Hybrid roller bearings	With double roller	Size 10
Roller with ball bearing		
Material AL: Aluminium		



Installation position 01



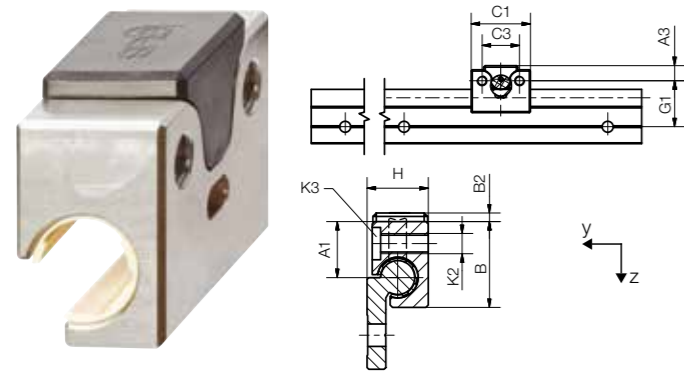
Installation position 02

Technical data and dimensions [mm]

Part No.	Stat. load capacity	Dyn. load capacity Cy+ at total running distance [km]			F · v	Weight
	Co	10	100	200	max.	
	[N]	[N]	[N]	[N]	[N · m/s]	[g]
WJRM-51-10-BB-AL New	500	500	180	100	50	70
WJRM-51-16-BB-AL New	800	800	280	140	80	123
WJRM-51-20-BB-AL New	1,100	1,100	400	200	80	215

Part No.	Coefficient of friction in y-direction [μ]	A3	B	C1	G1	S	H	H2	T	K2	K3	Q1	Q2
										∅	∅		
WJRM-51-10-BB-AL New	< 0.03	8.5	29.8	70	30.1	1	20.5	19.0	4.3	5.2	10	28.5	22.1
WJRM-51-16-BB-AL New	< 0.03	9.5	39.5	85	37.5	1	27.5	25.0	7.0	6.2	12	31.5	32.5
WJRM-51-20-BB-AL New	< 0.03	11.0	48.5	100	42.0	1	36.0	34.5	14.0	8.2	17	37.0	41.0

WJRM-01 with single roller



Order key

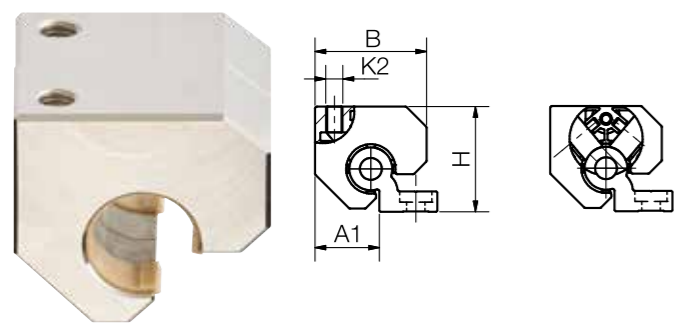
Type	Size	Material
Hybrid roller bearings	With single roller	Size 10
WJRM-01- 10 - ES Material ES: Stainless steel 1.4571 (AISI 316Ti) ES-FG: Stainless steel precision casting AISI 316 AL: Aluminium		

Technical data and dimensions [mm]

Part No.	Stat. load capacity		Dyn. load capacity Cz+ at total running distance [km]				F · v
	Co [N]	Co [N]	10 [N]	100 [N]	200 [N]	max. [N · m/s]	
WJRM-01-10-ES-FG	250	250	90	50	50	50	
WJRM-01-10-AL	250	250	90	50	50	50	

Part No.	Coefficient of friction		Weight [g]	A1	A3	B	B2	C1	C3	G1	H	K2	K3 for screw
	z-direction [μ]	y-direction [μ]											
WJRM-01-10-ES-FG	< 0.1	-	57	16.5	6.5	26	2.5	35	22	22	18	M6	M5
WJRM-01-10-AL	< 0.1	-	18	16.5	6.5	26	2.5	35	22	22	18	M6	M5

WJRM-21 with double roller



Order key

Type	Size	Material
Hybrid roller bearings	Double roller bearing	Size 20
WJRM-21- 20 - ES Material ES: Stainless steel 1.4571 (AISI 316Ti) ES-FG: Stainless steel precision casting AISI 316		

Technical data and dimensions [mm]

Part No.	Stat. load capacity		Dyn. load capacity Cz+ at total running distance [km]				F · v
	Co [N]	Co [N]	10 [N]	100 [N]	200 [N]	max. [N · m/s]	
WJRM-21-20-ES-FG	840	840	300	150	80	80	

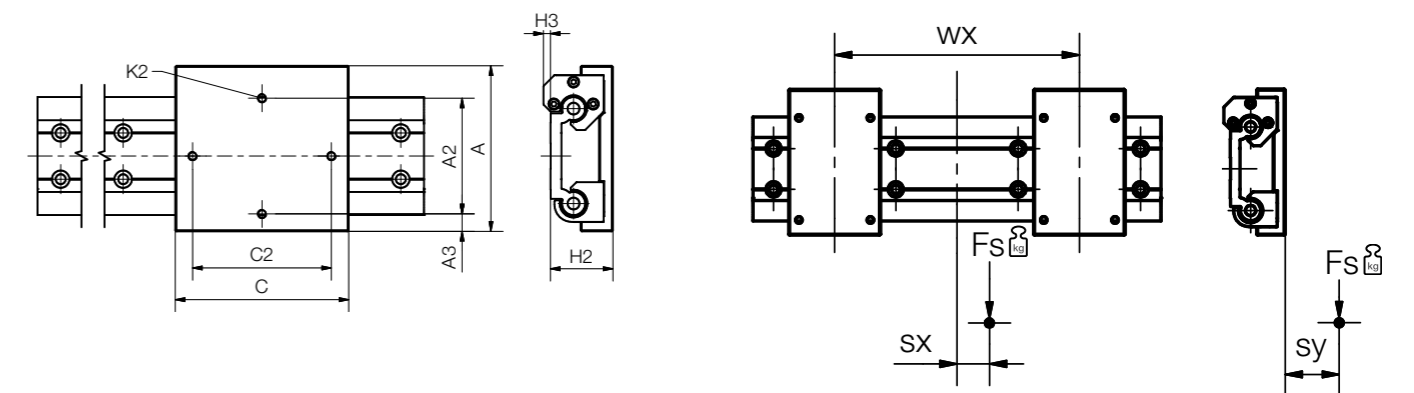
Part No.	Coefficient of friction		Weight [g]	A1	A3	B	C1	C3	G1	H	K2	K3 for screw
	z-direction [μ]	y-direction [μ]										
WJRM-21-20-ES-FG	-	< 0.1	504	30	9	52	52	34	38	49	M8	M5



Order key

Type	Size	Option
drylin® W	Hybrid carriage	Double roller bearing
WWR-21- 80 - 01 Installation size Compact		

Options:
 01: Carriage, short design
 15: Carriage, long design



Technical data and dimensions [mm]

Part No.	A	C	A2	C2	K2	H2	A3	H3	sx min.	sx max.	sy min.	sy max.
	Width Length				±0.17							
WWR-21-80-01	143	90	100	70	M8	54	15	6	-49	+49	-34	+34
WWR-21-80-15	143	150	100	120	M8	54	15	6	-wx/2	+wx/2	-34	+34

Order example:

WWR-21-80-01 = Assembled single hybrid carriage as a "door opener" with two single roller hybrid bearings and two double roller hybrid bearings

Can be combined with:



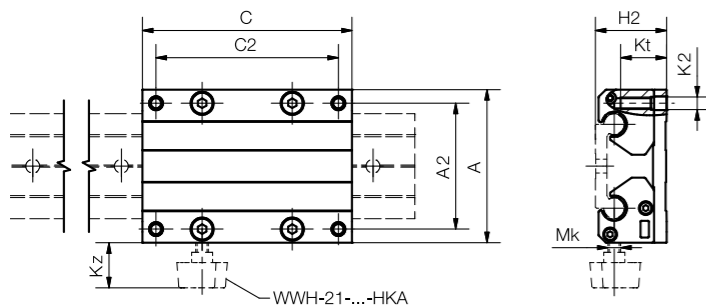


Order key

Type	Dimensions
------	------------

WWH-21-10-40-10

drylin® W	Hybrid carriage	Double roller bearing	Installation size	Carriage length [mm]
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i Optional with manual clamp, suffix "-HKA"

Technical data and dimensions [mm]

Part No.	Weight [kg]	Width		A2	C2	K2	Kt	H2	Stat. load capacity Coy [N]
		A	C						
WWH-21-10-40-10	0.59	73	100	60	87	M6	21	34	1,400
WWH-21-10-40-15	0.64	73	150	60	137	M6	21	34	1,400
WWH-21-10-40-20	0.70	73	200	60	187	M6	21	34	1,400
WWH-21-10-80-10	0.64	107	100	94	87	M6	21	34	1,400
WWH-21-10-80-15	0.72	107	150	94	137	M6	21	34	1,400
WWH-21-10-80-20	0.80	107	200	94	187	M6	21	34	1,400
WWH-21-10-120-10	0.71	153	100	140	87	M6	21	34	1,400
WWH-21-10-120-15	0.84	153	150	140	137	M6	21	34	1,400
WWH-21-10-120-20	0.96	153	200	140	187	M6	21	34	1,400
WWH-21-16-60-10	1.31	104	100	86	82	M8	29	49	2,400
WWH-21-16-60-15	1.44	104	150	86	132	M8	29	49	2,400
WWH-21-16-60-20	1.57	104	200	86	182	M8	29	49	2,400
WWH-21-16-120-15 New	1.58	166	150	148	132	M8	29	49	2,400
WWH-21-16-120-20 New	1.76	166	200	148	182	M8	29	49	2,400
WWH-21-16-120-25 New	1.93	166	250	148	232	M8	29	49	2,400
WWH-21-20-80-15	1.72	134	150	116	132	M8	24	57	3,360
WWH-21-20-80-20	1.82	134	200	116	182	M8	24	57	3,360
WWH-21-20-80-25	2.02	134	250	116	232	M8	24	57	3,360

Can be combined with:

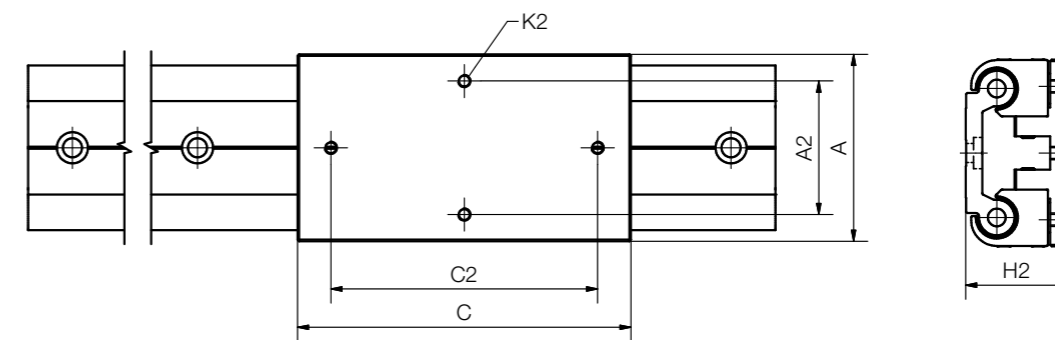


Order key

Type	Dimensions
------	------------

WWH-10-40-10

drylin® W	Hybrid carriage	Installation size	Carriage length [mm]
-----------	-----------------	-------------------	----------------------



Technical data and dimensions [mm]

Part No.	Weight [kg]	A	A2	C	C2	K2	H2	Static load capacity					
								Coy [N]	Coz [N]	Mox [Nm]	Moy [Nm]	Moz [Nm]	
WWH-10-40-10	0.35	58	40	100	80	M5	34	±0.17	1,000	1,000	20	16	32
WWH-16-60-15	0.96	84	60	150	120	M6	46		1,600	1,600	45	38	77
WWH-20-80-25	1.78	114	90	250	220	M6	55		2,200	2,200	90	435	435

Can be combined with:



drylin® W hybrid roller bearings | Product range

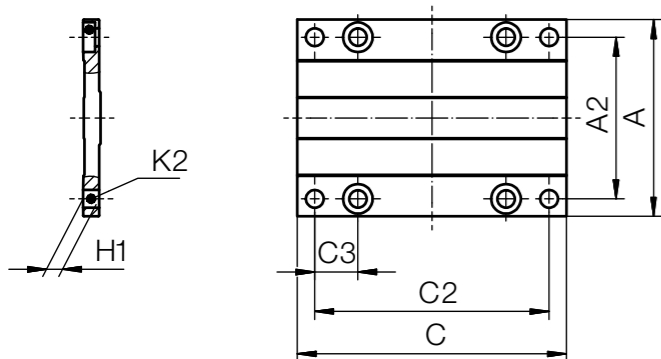
Carriage plates for drylin® W hybrid roller bearings



With four pillow blocks and the mounting plate, a linear carriage can be installed in less than a minute. Mounting plates are available in 3 lengths in each installation size and width.

- Robust corrosion-resistant anodised aluminium
- A variety of combinations of liners/bearings/slide plates are possible, also with manual clamp
- Required combination bearing and mounting plate also available pre-assembled

i **Modular system:**
Can be combined with the complete drylin® linear bearing product range. 4 screws included in delivery.

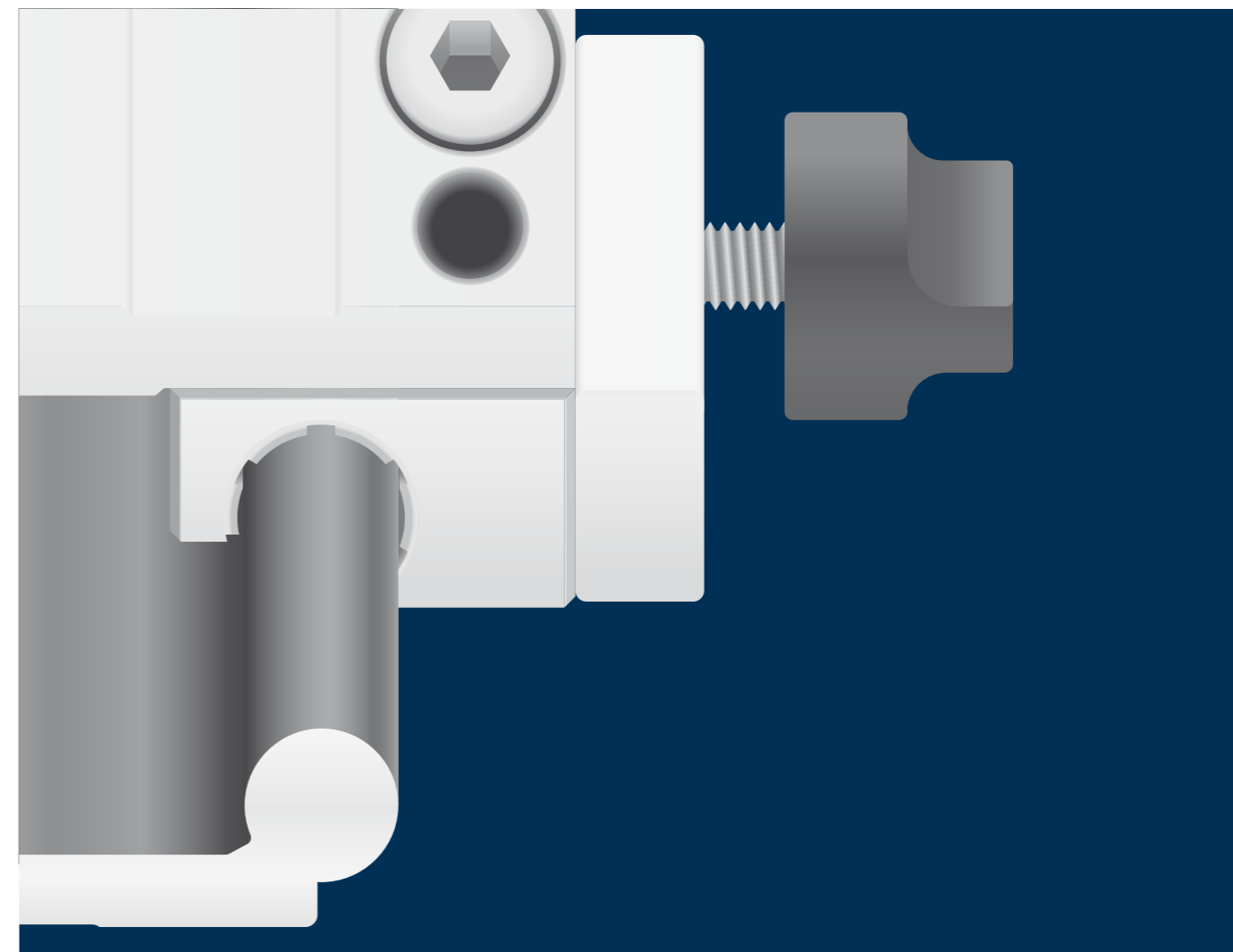


Technical data and dimensions [mm]

Part No.	C	C3	A	H1	A2	K2	Mounting screws included
WWYR-10-30-08-AL	80	22	63	6.5	50	M6	M6
WWYR-10-30-10-AL	100	22	63	6.5	50	M6	M6
WWYR-10-30-15-AL	150	22	63	6.5	50	M6	M6
WWYR-10-40-10-AL	100	22	73	6.5	60	M6	M6
WWYR-10-40-15-AL	150	22	73	6.5	60	M6	M6
WWYR-10-40-20-AL	200	22	73	6.5	60	M6	M6
WWYR-10-80-10-AL	100	22	107	6.5	94	M6	M6
WWYR-10-80-15-AL	150	22	107	6.5	94	M6	M6
WWYR-10-80-20-AL	200	22	107	6.5	94	M6	M6
WWYR-10-120-10-AL	100	22	153	6.5	140	M6	M6
WWYR-10-120-15-AL	150	22	153	6.5	140	M6	M6
WWYR-10-120-20-AL	200	22	153	6.5	140	M6	M6
WWYR-16-60-10-AL	100	30	104	8.5	86	M8	M8
WWYR-16-60-15-AL	150	30	104	8.5	86	M8	M8
WWYR-16-60-20-AL	200	30	104	8.5	86	M8	M8
WWYR-20-80-15-AL	150	34	134	8.5	116	M8	M8
WWYR-20-80-20-AL	200	34	134	8.5	116	M8	M8
WWYR-20-80-25-AL	250	34	134	8.5	116	M8	M8

Suitable for rails ► Page 1154, 1156, 1182

Suitable for bearings ► Page 1183, 1184, 1185, 1188



drylin® linear technology - accessories

Manual clamps

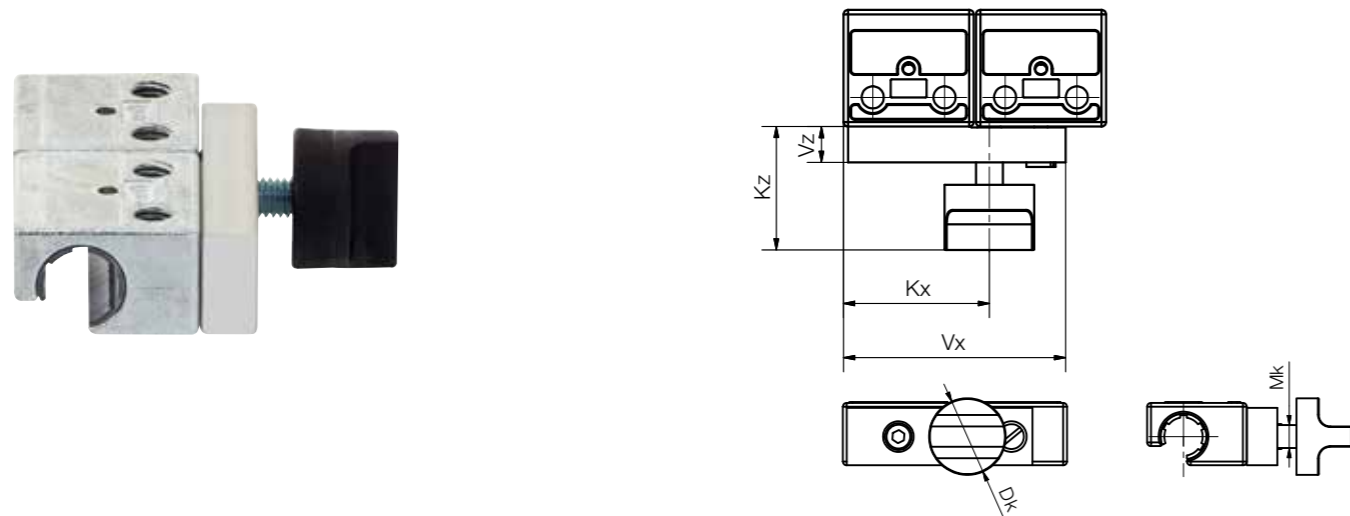
Liners

End caps

Slot nuts

Clamps





Technical data and dimensions [mm]

Part No.	Mk	Vx	Kx	Vz	Kz	Dk	Min. holding force ⁶⁷⁾	Min. tightening torque
WHKA-10 ⁶⁶⁾	M6	50	33	8	28	20	30N	0.8 Nm
WHKA-16 ⁶⁶⁾	M8	72	41	10	31	28	60 N	1.5 Nm
WHKA-20 ⁶⁶⁾	M8	90	62	10	31	28	70 N	1.5 Nm
WHKA-25 ⁶⁶⁾	M8	96	65	12	31	28	70 N	1.5 Nm

⁶⁷⁾ Condition: dry rail surface

⁶⁶⁾ The manual clamp is also available assembled as a complete carriage (suffix "-HKA", order example: WW-10-40-10-HKA). Dimensions complete carriage WWQ ► Page 1158

Accessories: Aluminium manual clamp

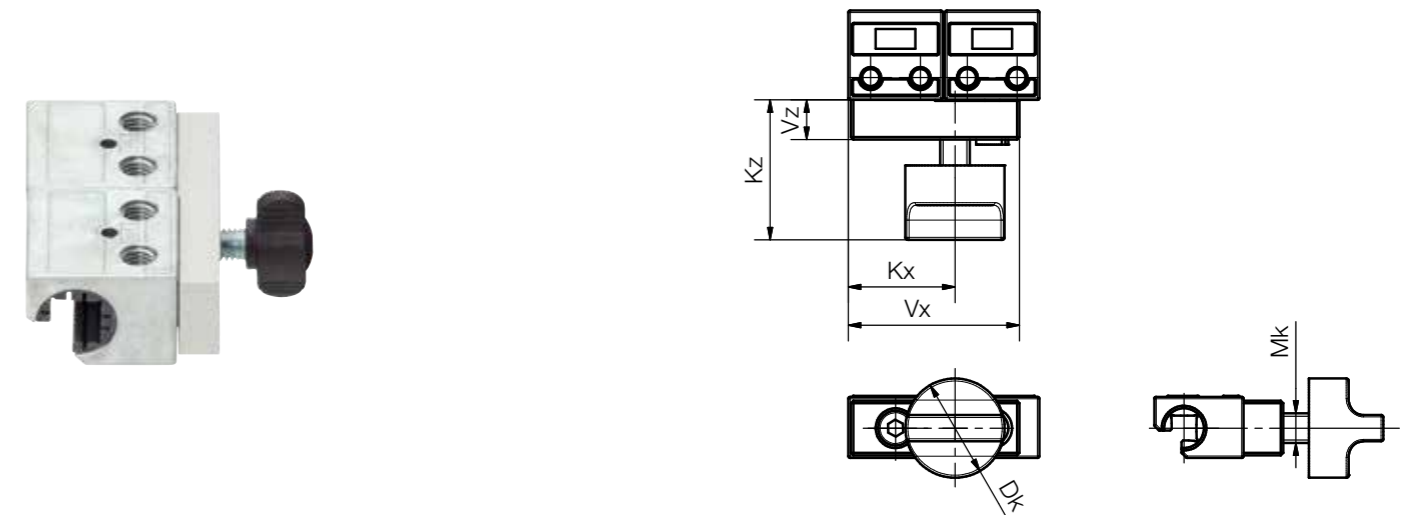


Technical data and dimensions [mm]

Part No.	Mk	Vx	Kx	Vz	Kz	Dk	Min. holding force ⁶⁷⁾	Min. tightening torque
WHKA-10-AL ⁶⁸⁾	M6	50	33	8	28	20	30N	0.8 Nm
WHKA-16-AL ⁶⁸⁾	M8	72	41	10	31	28	60 N	1.5 Nm
WHKA-20-AL ⁶⁸⁾	M8	90	62	10	31	28	70 N	1.5 Nm
WHKA-25-AL ⁶⁸⁾	M8	96	65	12	31	28	70 N	1.5 Nm

⁶⁷⁾ Condition: dry rail surface

⁶⁸⁾ The manual clamp is also available assembled as a complete carriage (suffix "AL-HKA", order example: WW-10-40-10-AL-HKA). Dimensions complete carriage WWQ ► Page 1158



Technical data and dimensions [mm]

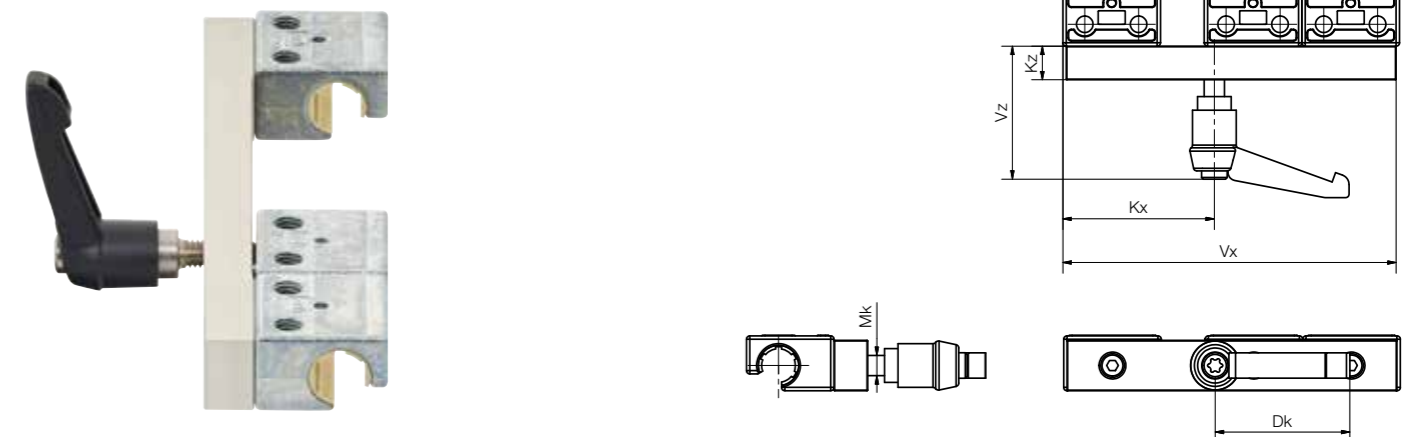
Part No.	Mk	Vx	Kx	Vz	Kz	Dk	Min. holding force ⁶⁷⁾	Min. tightening torque
WHKAQ-06 ¹³³⁾ ¹³⁷⁾	M6	34.5	21.5	8	28	20	30N	0.8 Nm
WHKAQ-10 ¹³⁷⁾	M6	50	33	8	28	20	30N	0.8 Nm
WHKAQ-16 ¹³⁷⁾	M8	72	41	10	31	28	60 N	1.5 Nm
WHKAQ-20 ¹³⁷⁾	M8	90	62	10	31	28	70 N	1.5 Nm

⁶⁷⁾ Condition: dry rail surface

¹³³⁾ Aluminium version available, suffix "-AL"

¹³⁷⁾ The manual clamp is also available assembled as a complete carriage (suffix "-HKAQ", order example: WW-06-30-06-HKAQ). Dimensions complete carriage WWQ ► Page 1152

Accessories: Manual clamp for higher holding forces

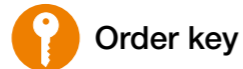


Technical data and dimensions [mm]

Part No.	Mk	Vx	Kx	Vz	Kz	Dk	Min. holding force ⁶⁷⁾	Min. tightening torque
WHKD-1010 ⁶⁹⁾	M6	100	45	40	10	40	70 N	2.5 Nm
WHKD-1015 ⁶⁹⁾	M6	150	95	40	10	40	70 N	2.5 Nm
WHKD-1615 ⁶⁹⁾	M8	150	81	40	12	40	90 N	3.5Nm
WHKD-1620 ⁶⁹⁾	M8	200	131	40	12	40	90 N	3.5Nm
WHKD-2015 ⁶⁹⁾	M8	150	63	40	12	40	90 N	3.5Nm
WHKD-2020 ⁶⁹⁾	M8	200	113	40	12	40	90 N	3.5Nm

⁶⁷⁾ Condition: dry rail surface

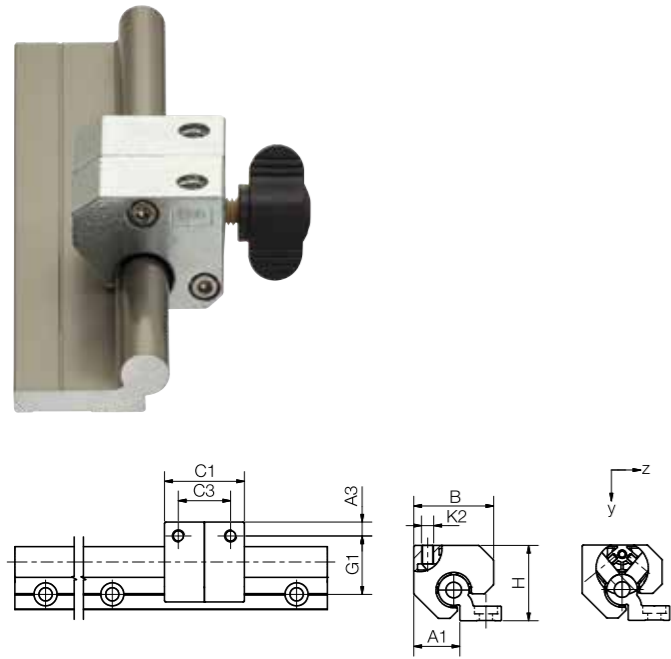
⁶⁹⁾ The manual clamp is also available assembled as a complete carriage (suffix "-HKD", order example: WW-10-40-10-HKD). Dimensions complete carriage WWQ ► Page 1158



Type	Size	Material
------	------	----------

WJRM-21- 10 -HKA

Hybrid roller bearings	Double roller bearing	Size 10	Material
			ES: Stainless steel 1.4571 (AISI 316Ti)
			ES-FG: Stainless steel precision casting AISI 316
			AL: Aluminium



Technical data and dimensions [mm]

Part No.	Weight	A1	A3	B	C1	C3	G1	H	K2 for screw	Kz max.
	[g]									
WJRM-21-10-HKA	115	16.5	6.5	31	35	22	27	28	M6	25
WJRM-21-16-HKA	250	25	9	44	48	30	32	41	M8	25
WJRM-21-20-HKA	320	30	9	52	52	34	38	49	M8	25

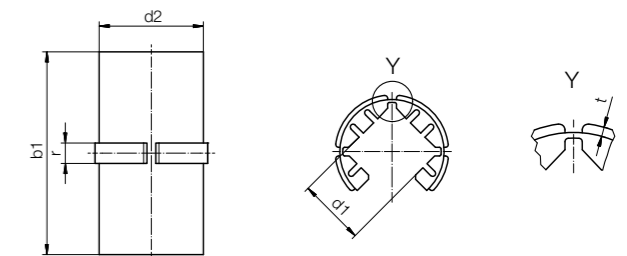
drylin® W plastic liners - long, open design



Size	Material	Pillow blocks	Part No. Liners	in the drylin® R chapter
10/16/20/25 (standard)	iglidur® J200	WJ200UM-01-Ø WJ200UM-11-Ø	J200UMO-01-Ø ⁷⁰⁾ J200UMO-11-Ø ⁷⁰⁾	► Page 1264
10/16/20/25	iglidur® J	WJUM-01-Ø WJUM-11-Ø	JUMO-01-Ø JUMO-11-Ø	► Page 1258
10/16/20/25 (High temperature)	iglidur® X	WXUM-01-Ø	XUMO-01-Ø	► Page 1269
10/16/20/25	iglidur® E7	WE7UM-01-Ø	E7UMO-01-Ø	► Page 1266
10/16/20/25	iglidur® A160	WA160UM-01-Ø	A160UMO-01-Ø	► Page 1274
10/16/20/25	iglidur® A180	WA180UM-01-Ø	A180UMO-01-Ø	► Page 1272

⁷⁰⁾ Available also as floating bearing, Part No. J200UMO-01-Ø-LL

drylin® W liners - long design, square

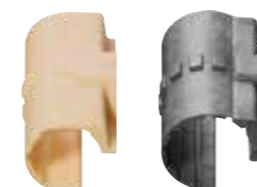


Dimensions [mm]

Part No.	d1	d1 tolerance	d2	b1	r	t
J200QM-01-06	5.0	+0.020 +0.080	8	19	3.0	0.5
J200QM-01-10	7.5	+0.020 +0.080	12	28	3.0	0.8
J200QM-01-16	11.5	+0.020 +0.080	18	35	3.0	0.8
J200QM-01-20	15.0	+0.020 +0.080	23	44	3.5	0.8

Available also as floating bearing J200QM-01-Ø-LLZ (z-direction), J200QM-01-Ø-LLY (y-direction)

drylin® W plastic liners - adjustable



Size	Material	Pillow blocks	Part No. Liners
10 (adjustable)	iglidur® J	WJUME-01-10	JUME-01-10
16/20 (adjustable)	iglidur® J200	WJ200UME-01-Ø	J200UME-01-Ø

drylin® W replacement plastic liners



Size	Material	Pillow blocks	Part No. Liners
10	iglidur® J200	WJ200UMA-01-10-AL	J200UMA-01-10
16	iglidur® J200	WJ200UMA-01-16-AL	J200UMA-01-16
20	iglidur® J200	WJ200UMA-01-20-AL	J200UMA-01-20

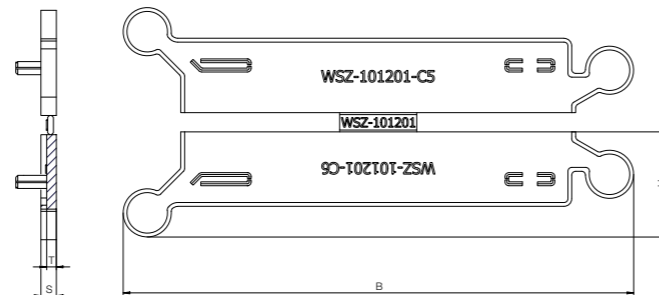
Replacement kit for WJ200UMA-01-10-AL pillow block

- Consisting of
- 4 liners
 - 4 housing end caps
 - Assembly tool

- Part No.:
- WEKA-01-10-J200
 - WEKA-01-16-J200
 - WEKA-01-20-J200



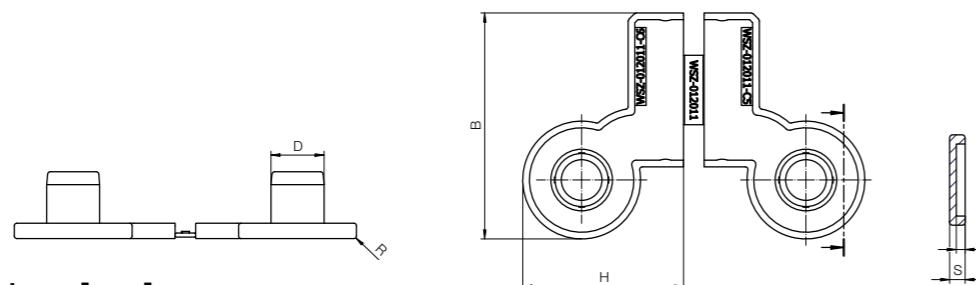
Accessories: Stop ends for drylin® W roller bearing rails **New**



Technical data and dimensions [mm]

Part No.	B	H	S	T	Weight [g]	Suitable for
WSZ-101201-KIT New	132.4	27.3	4.0	2.5	20	WSR-10-120

Accessories: Stop ends for drylin® W single rails **New**



Technical data and dimensions [mm]

Part No.	B	H	D	R	S	T	Suitable for
WSZ-16-KIT New	39.3	23.0	(8.0)	0.3	2.5	1.5	WS-16/WS-16-CA
WSZ-20-KIT New	44.0	31.3	(10.3)	0.5	3.0	1.7	WS-20/WS-20-CA
WSZ-25-KIT New	53.3	39.0	(14.1)	0.5	3.5	2.0	WS-25/WS-25-CA

End caps for drylin® high profile rails WSX



- For drylin® W high profile rails WSX
- ▶ Page 1156
- 4 installation sizes
- Protection of the hollow chambers against the entry of foreign particle
- Easy to fit, easy sideways
- End caps for cutting edges

- Part No.:
- WSX-063001-EC
 - WSX-104001-EC
 - WSX-108001-EC
 - WSX-166001-EC

Slot nuts for mounting



- Fully adjustable
- Ideal for drylin® limit and reference switches
- Suitable for T-slots of the drylin® WSX high-profile rails
- ▶ Page 1149 1156
- Secure retention
- Can be retrofitted

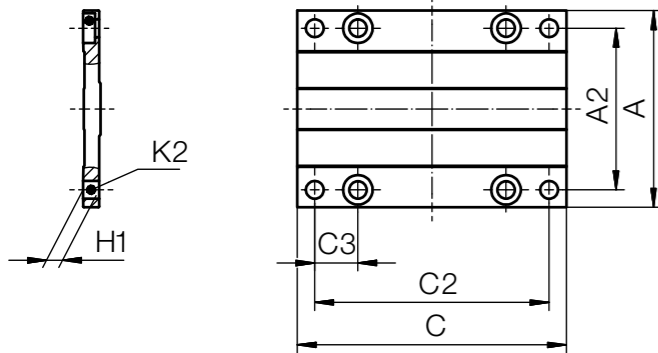
Part No.	Suitable for rail profile
NOR-20602	WSX-06-30
NOR-20602	WSX-10-40
NOR-20602	WSX-10-80
NOR-20602	AWMQ-12/20
NOR-20602	WSX-16-60
NOR-20605	WSX-16-60

Clamps for WSX high profile rails



- Secure mounting
- Fully adjustable
- For drylin® SAW linear modules and ZLW toothed belt axes
- For drylin® WSX high-profile rails
- ▶ Page , 11491156

Part No.	Suitable for toothed belt axis
ZTZ-063006	ZLW-0630
75.40-ZLW	ZLW-1040
75.40-ZLW	ZLW-1080
75.50-ZLW	ZLW-1660



With four pillow blocks and the mounting plate, a linear carriage can be installed in less than a minute. Mounting plates are available in 3 lengths in each installation size and width.

- Robust corrosion-resistant anodised aluminium
- A variety of combinations of liners/bearings/slide plates are possible, also with manual clamp
- Required combination bearing and mounting plate also available pre-assembled

i **Modular system:**
Can be combined with the complete drylin® linear bearing product range. 4 screws included in delivery.

Technical data and dimensions [mm]

Part No.	C	A	H1	A2	K2	Mounting screws included
WWY-06-30-06-AL	60	54	4.0	45	M4	M4
WWY-06-30-08-AL	80	54	4.0	45	M4	M4
WWY-06-30-10-AL	100	54	4.0	45	M4	M4
WWY-06-60-06-AL	60	85	4.0	76	M4	M4
WWY-06-60-08-AL	80	85	4.0	76	M4	M4
WWY-06-60-10-AL	100	85	4.0	76	M4	M4
WWY-10-30-08-AL	80	63	6.5	50	M6	M6
WWY-10-30-10-AL	100	63	6.5	50	M6	M6
WWY-10-30-15-AL	150	63	6.5	50	M6	M6
WWY-10-40-10-AL	100	73	6.5	60	M6	M6
WWY-10-40-15-AL	150	73	6.5	60	M6	M6
WWY-10-40-20-AL	200	73	6.5	60	M6	M6
WWY-10-80-10-AL	100	107	6.5	94	M6	M6
WWY-10-80-15-AL	150	107	6.5	94	M6	M6
WWY-10-80-20-AL	200	107	6.5	94	M6	M6
WWY-10-120-10-AL	100	153	6.5	140	M6	M6
WWY-10-120-15-AL	150	153	6.5	140	M6	M6
WWY-10-120-20-AL	200	153	6.5	140	M6	M6
WWY-16-60-10-AL	100	104	8.5	86	M8	M8
WWY-16-60-15-AL	150	104	8.5	86	M8	M8
WWY-16-60-20-AL	200	104	8.5	86	M8	M8
WWY-20-80-15-AL	150	134	8.5	116	M8	M8
WWY-20-80-20-AL	200	134	8.5	116	M8	M8
WWY-20-80-25-AL	250	134	8.5	116	M8	M8
WWY-25-120-15-AL	150	195	10.0	173	M10	M10
WWY-25-120-20-AL	200	195	10.0	173	M10	M10
WWY-25-120-25-AL	250	195	10.0	173	M10	M10

Suitable for rails ► Page 1148, 1149, 1150, 1151, 1154, 1156

Suitable for bearings ► Page 1132, 1139, 1148, 1143, 1144

1200 Online tools and more information ► www.igus.eu/drylinW



drylin® linear technology - drylin® N low-profile guide systems

Low profile and lightweight

Lubrication-free **dry-tech®** sliding elements

Anodised aluminium rails

High speed and acceleration possible

Quiet operation



Lightweight, maintenance-free, corrosion-resistant


Lubrication-free low-profile linear guides - drylin® N


The low-profile range drylin® N offers extremely low profiles in several widths. Like all drylin® products the carriages run without lubrication in an anodised aluminium profile. The selected materials and the unique design make drylin® N a cost-effective and flexible guide system.


- Low profile between 6 and 12mm
- Lightweight
- Many carriage options - also with pre-load
- Maintenance-free dry operation
- Corrosion-resistant
- Low wear with low coefficient of friction
- Silver or black-anodised rails

Typical application areas


- Agricultural machinery
- Automotive
- Medical technology
- Facade construction
- Packaging industry

 **Available from stock**
Detailed information about delivery time online.

 **Price breaks online**
No minimum order value. No minimum order quantity

 **Max. +90°C**
(+50°C for overmoulded sliding elements)
Min. -40°C

 **17mm - 80mm**

 **Service life calculation**
▶ www.igus.eu/drylin-expert

Low profile due to C-profile geometry

Clear or black anodised aluminium rails

Interchangeable sliding elements as clip version or captive overmoulded sliding surfaces

Lightweight due to the use of plastics and aluminium

Variable carriage lengths

Carriage with threaded or plain hole

Precise due to pre-load

Lubrication-free sliding elements/carriage made from high-performance polymer iglidur® J/J200

Quiet operation through gliding motion

Rails with standard hole pattern Or without holes



Cleanroom certified
IPA Fraunhofer



Free from toxins
2011/65/EU (RoHS)



ESD-compatible
(electrostatic discharge)

EN 06/2023



Numerous options in four different widths for small installation heights



Guide rails

- Four installation sizes: 17, 27, 40 and 80mm
- Low profile, lightweight design
- Clear anodised (silver) or black anodised surfaces

▶ From page 1208



Guide carriage - installation size 27

- Carriage with changeable sliding elements
- Sliding carriages with captive overmoulded sliding elements
- Variable lengths and screw on options

▶ Page 1211



Guide carriage - installation size 80

- Carriage with wide load-bearing surface
- Lubrication-free due to high-performance polymers iglidur® J/J200
- Low profile design due to threaded holes

▶ Page 1215



Pre-load prism slides

- No rattling and precisely adjustable
- Four pre-load classes
- Guaranteed drive force and holding force
- Extremely lightweight and low-profile

▶ From page 1216



Guide carriage - installation size 17

- Solid plastic made from high-performance polymer iglidur® J
- Compact for the smallest installation spaces
- Length of carriage up to 40mm

▶ Page 1209



Guide carriage - installation size 40

- Carriage with thread pin or plain hole
- Pre-load version available

▶ Page 1213



Telescopic system

- Continuous lengths up to 2,000mm (total extension)
- Available with partial, total or overextension
- With locking mechanism if required

▶ Page 1224

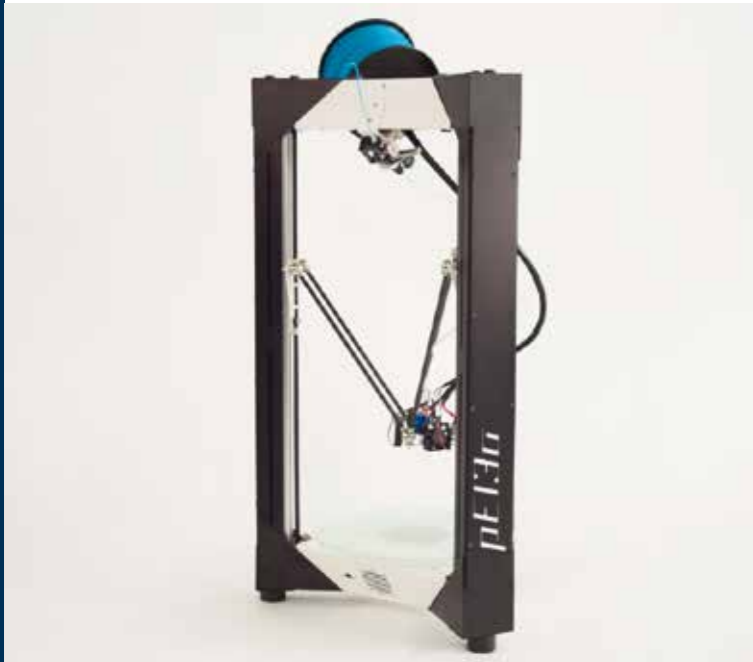


Based on drylin® N

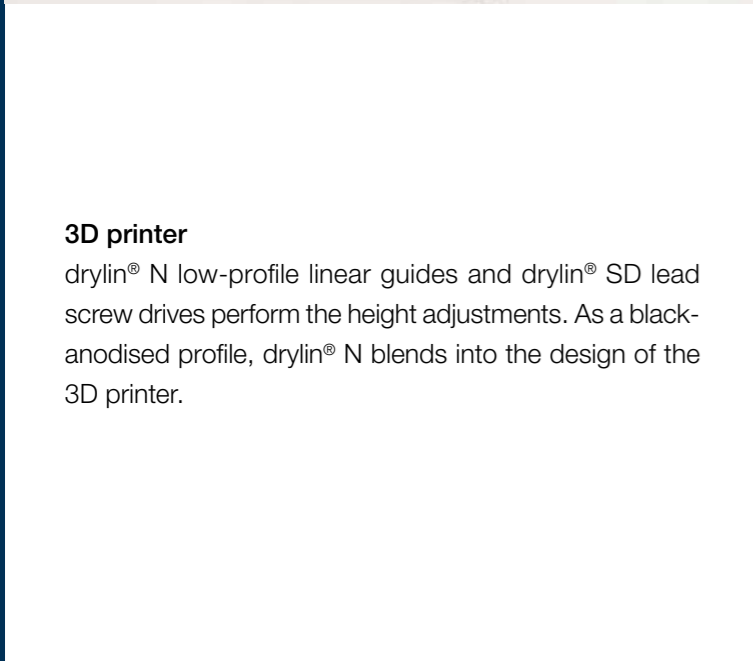
drylin® SLN miniature linear module
▶ From page 1417

EN 06/2023





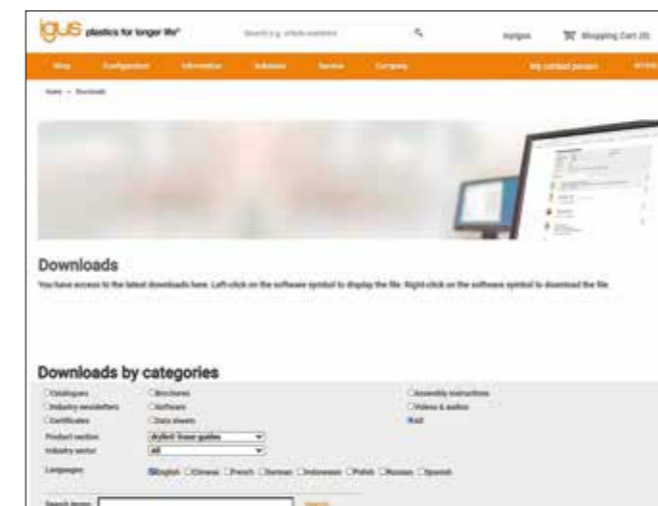
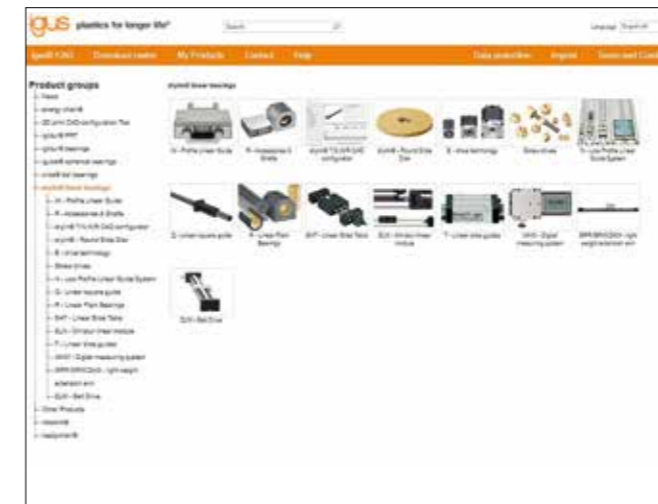
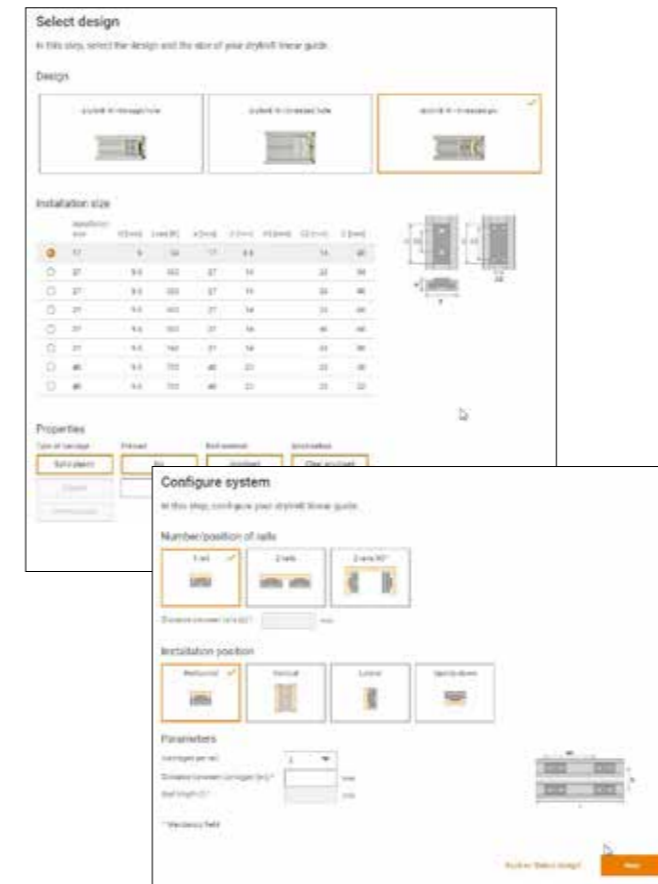
3D printer
The most important decision criterion for drylin® N low-profile linear guides is the low installation height as this makes it possible to achieve a maximum load.



3D printer
drylin® N low-profile linear guides and drylin® SD lead screw drives perform the height adjustments. As a black-anodised profile, drylin® N blends into the design of the 3D printer.



Vending machine
In the redesigning of the table guidance for this automated teller, the focus was on a ready-to-install, cost-effective, durable and lubrication-free bearing and system.



Expert for linear guides: System selection and service life calculation with CAD
Configure and calculate the service life of linear bearings - constantly expanded by new sizes and products
Easily calculate the service life of your required linear guide and configure with a few clicks. Select a drylin® system and add the relevant environmental parameters. Select the bearing size, carriage, number and position. Then enter the distance between the rails and the mounting. Define more relevant parameter of the guidance and select a rail length. The results are displayed.



► www.igus.eu/drylin-expert



Download the online tool app now



drylin® CAD configurator: Generate complete 3D models for drylin® linear technology according to your specifications
The igus® CAD online configurator gives you the ability to design and save your linear guide as a system, individual components directly as a 3D model in all commonly used formats, or to have these sent by e-mail - free of charge and without registration.



► www.igus.eu/drylin-CAD

More information about the products can be found in the igus® download area

- Assembly instructions
- Assembly videos
- System design
- Catalogues



► www.igus.eu/downloads

Floating bearings version



- NW-... LLZ Floating bearing in z-direction
- NW-... LLY Floating bearing in y-direction
- NW-... LLYZ Floating bearing in yz-direction

i Technical details on floating bearings
 ▶ Page 1120
 The 2:1 Rule ▶ Page 1120

Technical options for drylin® low-profile linear guides

Clip-on sliding elements

Depending on the installation size, up to three lubrication-free sliding elements made from the high-performance polymer iglidur® J are clipped on around the zinc die-casting carriage body. These can be changed any time simply and fast, the zinc die-casting carriage can be reused. A set of appropriate sliding elements is available for every clip-on carriage (Part No. NEK...)
 ▶ Page .1222

Overmoulded sliding elements

With this carriage type, the zinc die-casting body is made as an integral part of the high-performance polymer iglidur® J/ J200 during the injection moulding process. For the user this production process offers the advantage, that the sliding surface is connected captive and insolubly to the carriage. This makes it quicker to install the carriages in the profile. Robust storage is possible, including in the form of bulk goods, as the sliding elements cannot come loose. It is not possible to retrofit sliding elements; the carriages must be entirely replaced at the end of their service life. The continuous operating temperature for overmoulded sliding elements is +50°C

Tightening torque for drylin® metallic screws

Metric thread (Da)	tightening torque	Recommended tightening torque	
	[Nm]	[Nm]	
M3	0.5 - 1.1	0.7	
M4	1.0 - 2.8	1.5	
M5	2.0 - 5.5	3.0	
M6	4.0 - 10.0	6.0	
M8	8.0 - 23.0	15.0	
M10	22.0 - 46.0	30.0	

Please be aware of the minimal screw-in depth for aluminium and zinc die-casting parts: 1.5xDa

Floating bearing	NW-17	NW-27	NW-40	NW-80
LLY	0.6	0.45	0.4	0.6
LLZ	0.5	0.8	0.8	0.8
LLYZ	Y: 0.6	Y: 0.3	Y: 0.4	Y: 0.6
	Z: 0.5	Z: 0.4	Z: 0.8	Z: 0.8

Pre-load function

The use of sliding elements with an integrated spring pre-load function prevents the carriages in the rail profile from rattling. Adjustment occurs silently using the pre-load principle, making the guide suitable for use in noise-sensitive environments such as the automotive, medical or furniture sectors. Pre-load increases the displacement force by max. 10N.

Anodised surfaces

All drylin® N guide rails are anodised and are distinguished by good wear properties and corrosion resistance. All rail sizes are available as clear-anodised version (silver) as well as anti-reflect version with black-anodised surface. These are technical surfaces and not decorative. Slight crack formations and colour variations cannot be prevented during production, but they do not affect the resistance, the corrosion behaviour or the sliding properties. Cutting surfaces and machined surfaces are uncoated.

System selection				
System	N17	N27	N40	N80
Rail width	17mm	27mm	40mm	80mm
Installation height	6mm	9.5mm	9.5mm	12mm
General properties				
Rail weight	150g/m	290g/m	450g/m	1,140g/m
Carriage weight	1.7g	9-12.5g	30g	100g
Max. rail length	2,000mm	3,000mm	3,000mm	4,000mm
Load capacity, static				
Fy	50N	500N	700N	1,000N
Fz	50N	500N	700N	1,000N
Mx	0.31 Nm	5Nm	10Nm	32.4Nm
My, Mz	0.18Nm	2.5 Nm	6Nm	15Nm
Carriage options				
Floating bearing in y-direction	●	●	●	●
Floating bearing in z-direction	●	●	●	●
Floating bearing in yz-direction	●	●	●	●
Pre-load (1N)	●	●	●	–
Overmoulded version	–	●	●	●
Carriage with plain hole	–	●	●	–
Carriage with threaded pin	●	●	●	–
Carriage with threaded hole	–	–	–	●

Table 01: System selection ● available – not available

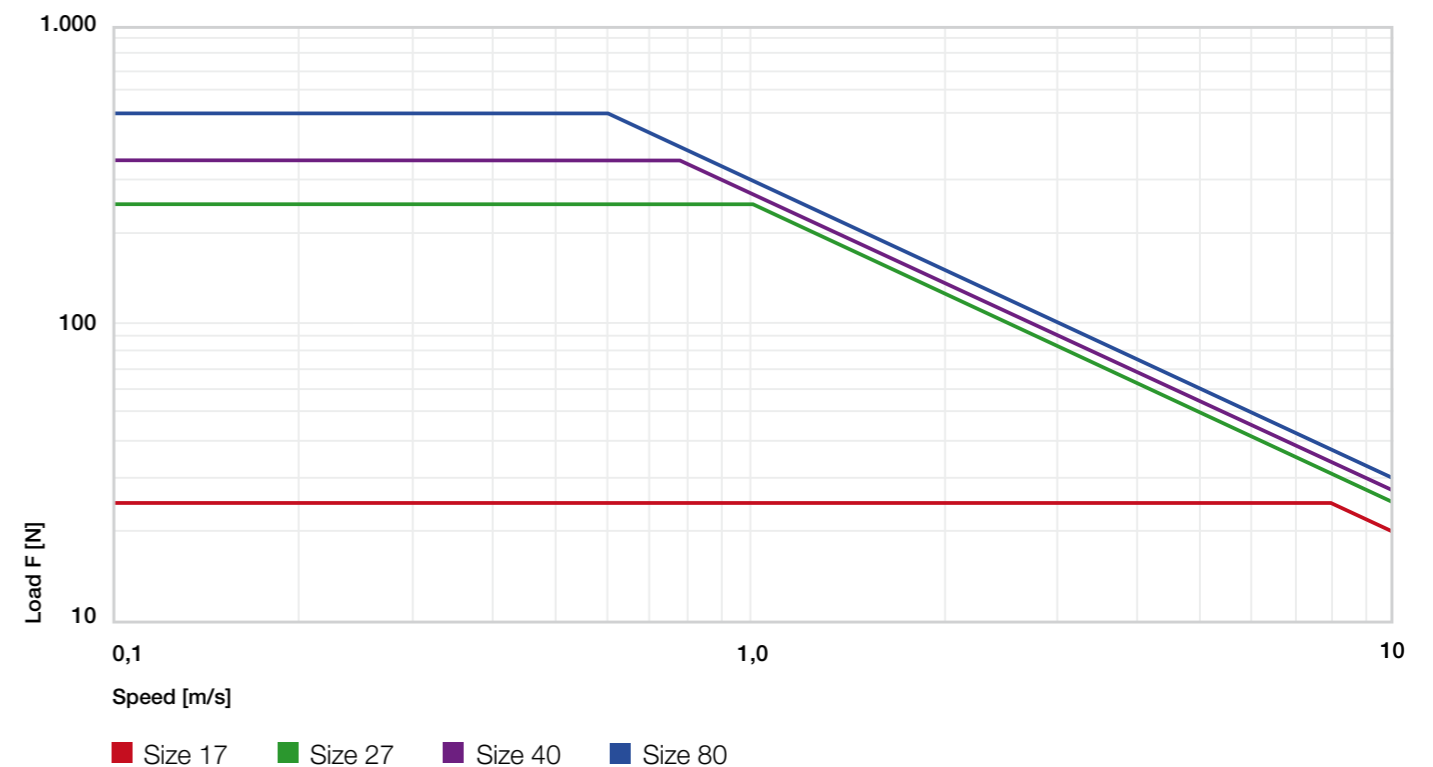


Diagram 01: F v diagram, maximum permissible dynamic load



Complete system

Order key

Type	Installation size	Options
------	-------------------	---------

N W- 22 - 17 - 30 - LLY

drylin® N	Guide carriages	Type of carriage	Rail width	Carriage length	Floating bearing in y-direction
-----------	-----------------	------------------	------------	-----------------	---------------------------------

Type of carriage:

- 02: Carriage with threaded pin
- 22: Double carriage with threaded pin

Options:

- P: Pre-load
- Floating bearing
- LLY: y-direction (not possible with "P" option)
- LLZ: z-direction
- LLYZ: yz-direction

Guide rail - dimensions [mm]

Part No.	L	a	C4	C5 C6	h	h1	K1 ⁷³⁾	ly	lz	Weight
	max.			min. max.				[mm ²]	[mm ²]	
NS-01-17-□ ⁷²⁾	2,000	17	60	20 49.5	5.5	0.9	Ø3.5	1,700	120	150
NS-01-17-UNGEBOHRT-□ ⁷²⁾	2,000	17	-	-	5.5	0.9	-	1,700	120	150
NS-01-17-AR-□ ⁷²⁾	2,000	17	60	20 49.5	5.5	0.9	Ø3.5	1,700	120	150

Guide carriage - dimensions [mm]

Part No.	H	A	C	C2	K3 ⁷⁴⁾	Sp	Dp ¹⁵⁹⁾	Weight
	±0.35							
NW-02-17	6.0	9.6	20	14	M3	2.5	5.0	1.7
NW-02-17-P	6.0	9.6	20	14	M3	2.5	5.0	1.7
NW-22-17-30	6.0	9.6	30	18	M3	2.5	5.0	2.4
NW-22-17-40	6.0	9.6	40	28	M3	2.5	5.0	2.6

⁷²⁾ Please give the required length in mm, symmetrical standard hole pattern C5=C6

⁷³⁾ For cap screw with low head (e.g. DIN 7984, DIN 6912, DIN 84, EN ISO 1707)

⁷⁴⁾ Metal thread

¹⁵⁹⁾ Hole min. Ø



All elements can be ordered individually or as assembled systems

NS-01-17-1500: Guide rail, installation size 17, 1,500mm length

NK-02-17-02-500-LLY: Complete system with two solid plastic guide carriages with threaded pins, installation size 17, floating bearing in y-direction and 500mm guide rails with standard holes



Standard

without holes

Anti-reflect



NW-02-17



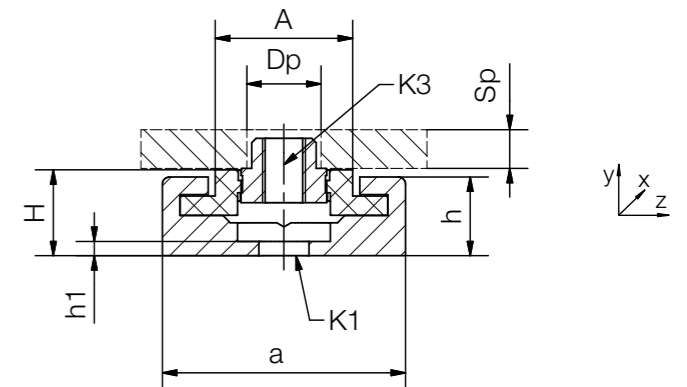
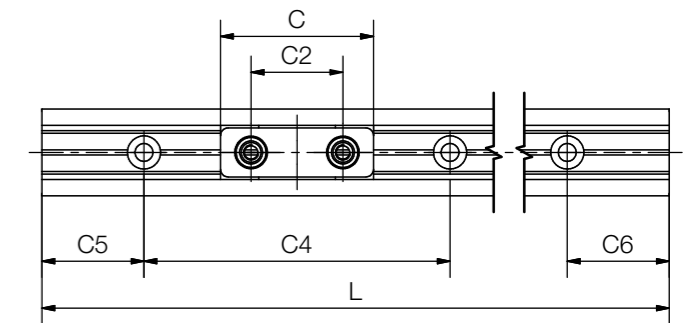
NW-02-17-P



NW-22-17-30

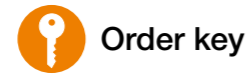


NW-22-17-40



Selection aid - guide carriage

Part No.	Single	Double	Plain hole	Threaded pin	Threaded hole	Pre-load	Solid plastic	Clipped-on	Over-moulded	High temp.
NW-02-17	●			●			●			
NW-02-17-P	●			●		●	●			
NW-22-17-30		●		●			●			
NW-22-17-40		●		●			●			



Order key

Type	Size	Options
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N W-01- 27 -HT-LLY

drylin® N	Guide carriages	Type of carriage	Rail width	Carriage length	Floating bearing in y-direction
-----------	-----------------	------------------	------------	-----------------	---------------------------------

Type of carriage:
See selection aid
Options:
P: Pre-load
HT: High temperature
Floating bearing
LLY: y-direction
LLZ: z-direction
LLYZ: yz-direction



Complete system

Guide rail - dimensions [mm]

Part No.	L	a	C4	C5	C6	h	h1	K1 ⁷³⁾	ly	lz	Weight
	max.			min.	max.				[mm ²]	[mm ²]	[g/m]
NS-01-27-□ ⁷²⁾	3,000	27	60	20	49.5	9	1.1	Ø4.5	6,524	588	290
NS-01-27-UNGEBOHRT-□ ⁷²⁾	3,000	27	-	-	-	9	1.1	-	6,524	588	290
NS-01-27-AR-□ ⁷²⁾	3,000	27	60	20	49.5	9	1.1	Ø4.5	6,524	588	290

Guide carriage - dimensions [mm]

Part No.	H	A	C	C1	C2	H2	K ⁷³⁾	K3 ⁷⁴⁾	M ⁷⁵⁾	Sp	Dp ¹⁵⁹⁾	Weight
	±0.35								[Nm]			[g]
NW-01-27	9.5	14.0	40	30	20	1.2	Ø4.5	-	-	-	-	10.8
NW-11-27	9.5	14.0	34	30	20	1.2	Ø4.5	-	-	-	-	10.8
NW-01-27-P	9.5	14.0	40	30	20	1.2	Ø4.5	-	-	-	-	10.8
NW-01-27-HT	9.5	14.0	40	30	20	1.2	Ø4.5	-	-	-	-	11.0
NW-02-27	9.5	14.0	40	30	20	-	-	M4	1.2	5.0	6.5	12.5
NW-12-27	9.5	14.0	34	30	20	-	-	M4	1.2	5.0	6.5	12.5
NW-02-27-P	9.5	14.0	40	30	20	-	-	M4	1.2	5.0	6.5	12.5
NW-02-27-HT	9.5	14.0	40	30	20	-	-	M4	-	5.0	6.5	13.0
NW-21-27-60-P	9.5	14.0	60	60	20	0.7	Ø4.5	-	-	-	-	9.0
NW-22-27-60-P	9.5	14.0	60	60	20	-	-	M4	1.2	5.0	6.5	12.0
NW-31-27-60-P	9.5	14.0	60	60	40	0.7	-	M4	-	-	-	9
NW-32-27-60-P	9.5	14.0	60	60	40	-	-	M4	1.2	5	6.5	12
NW-11-27-80	9.5	14.0	80	76	60	1.2	Ø4.5	-	-	-	-	25.0
NW-12-27-80	9.5	14.0	80	76	60	-	-	M4	1.2	5.0	6.5	25.0

⁷²⁾ Please give the required length in mm, symmetrical standard hole pattern C5=C6

⁷³⁾ For cap screw with low head (e.g. DIN 7984, DIN 6912, DIN 84, EN ISO 1707)

⁷⁴⁾ Metal thread ⁷⁵⁾ Max. screw tightening torque ¹⁵⁹⁾ Hole min. Ø

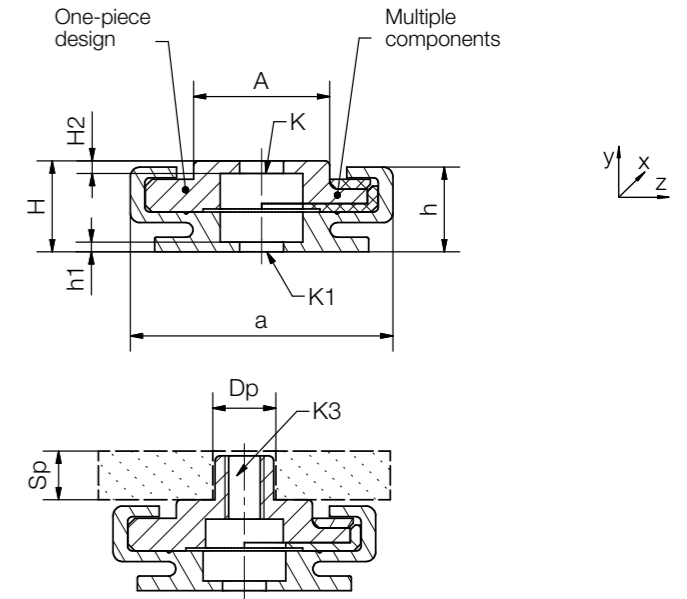
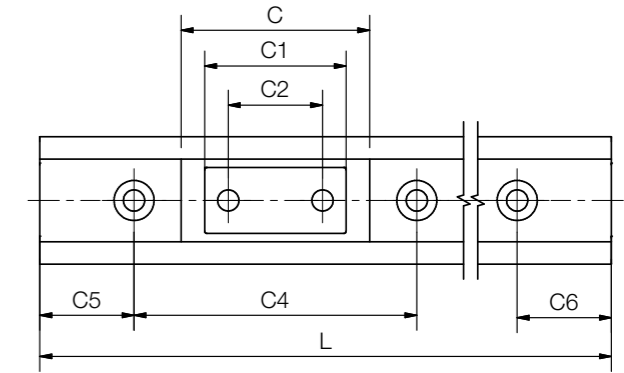
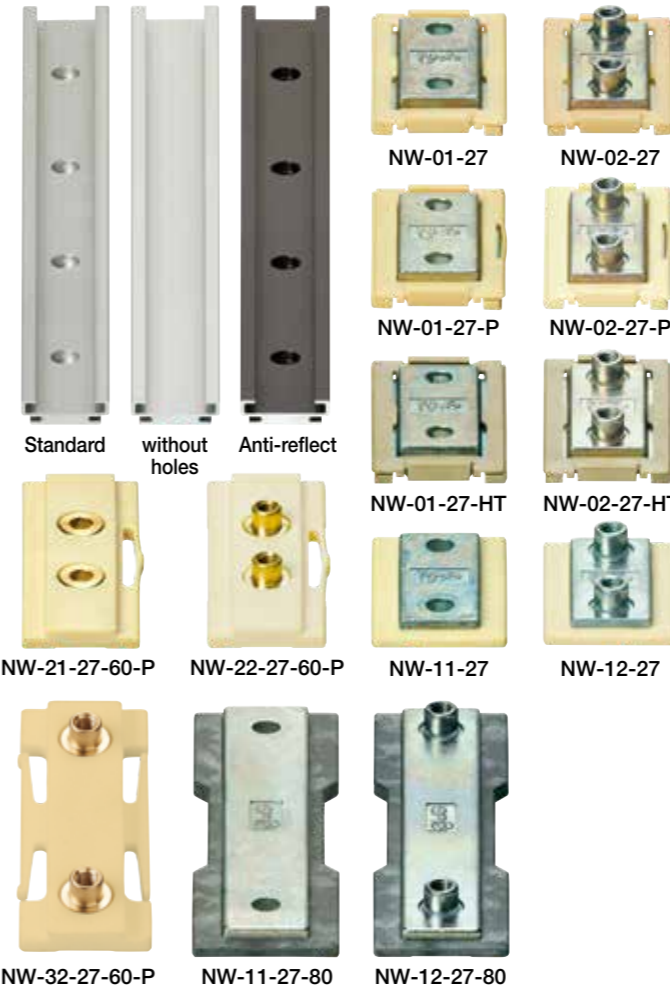


All elements can be ordered individually or as assembled systems

NS-01-27-1500: Guide rail, installation size 27, 1,500mm length

NW-02-27-P-LL: Guide carriage with threaded pin, installation size 27, pre-load, floating bearing in y-direction

NK-02-27-02-500-LLY: Complete system with two clipped-on guide carriages with threaded pins, installation size 27, floating bearing in y-direction and 500mm guide rails with standard holes

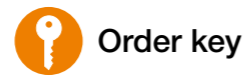


Selection aid - guide carriage

Part No.	Single	Double	Plain hole	Threaded pin	Threaded hole	Pre-load	Solid plastic	Clipped-on	Over-moulded	High temp.
NW-01-27	●		●					●		
NW-11-27	●		●						●	
NW-01-27-P	●		●			●		●		
NW-01-27-HT	●		●					●		●
NW-02-27	●			●				●		
NW-12-27	●			●					●	
NW-02-27-P	●			●		●		●		
NW-02-27-HT	●			●				●		●
NW-21-27-60-P	●		●			●	●			
NW-22-27-60-P	●			●		●	●			
NW-31-27-60-P	●		●			●	●			
NW-32-27-60-P	●			●		●	●			
NW-11-27-80		●	●						●	
NW-12-27-80		●		●					●	



Complete system



Order key

Type	Size	Options
------	------	---------

N W-01- 40 - P -LLY

drylin® N	Guide carriages	Type of carriage	Rail width	Pre-load	Floating bearing in y-direction
-----------	-----------------	------------------	------------	----------	---------------------------------

Type of carriage:
See selection aid
Options:
P: Pre-load

Floating bearing
LLY: y-direction
LLZ: z-direction
LLYZ: yz-direction

Guide rail - dimensions [mm]

Part No.	L	a	C4	C5	C6	h	h1	K1 ⁷³⁾	ly	lz	Weight
	max.			min.	max.				[mm ⁴]	[mm ⁴]	[g/m]
NS-01-40-□ ⁷²⁾	3,000	40	60	20	49.5	8.7	1.3	Ø4.5	26,400	970	450
NS-01-40-UNGEBOHRT-□ ⁷²⁾	3,000	40	-	-	-	8.7	1.3	-	26,400	970	450
NS-01-40-AR-□ ⁷²⁾	3,000	40	60	20	49.5	8.7	1.3	Ø4.5	26,400	970	450

Guide carriage - dimensions [mm]

Part No.	H	A	C	C1	C2	H2	K ⁷³⁾	K3 ⁷⁴⁾	Sp	Dp ¹⁵⁹⁾	Weight
	±0.35										[g]
NW-01-40	9.5	23.0	50	40	20	1.3	Ø4.5	-	-	-	30.0
NW-01-40-P	9.5	23.0	50	40	20	1.3	Ø4.5	-	-	-	30.0
NW-11-40	9.5	23.0	52	40	20	1.3	Ø4.5	-	-	-	30.0
NW-02-40	9.5	23.0	50	40	20	-	-	M4	5.0	6.5	30.0
NW-02-40-P	9.5	23.0	50	40	20	-	-	M4	5.0	6.5	30.0
NW-12-40	9.5	23.0	52	40	20	-	-	M4	5.0	6.5	30.0
NW-22-40 New	9.3	23.0	50	40	20	-	-	M4	-	-	12.0

⁷²⁾ Please give the required length in mm, symmetrical standard hole pattern C5=C6

⁷³⁾ For cap screw with low head (e.g. DIN 7984, DIN 6912, DIN 84, EN ISO 1707)

⁷⁴⁾ Metal thread

¹⁵⁹⁾ Hole min. Ø



All elements can be ordered individually or as assembled systems

NS-01-40-1500: Guide rail, installation size 40, 1,500mm length

NW-02-40-P-LLY: Guide carriage with threaded pin, installation size 40, pre-load, floating bearing in y-direction

NK-02-40-02-500-LLY: Complete system with two clipped-on guide carriages with threaded pins, installation size 40, floating bearing in y-direction and 500mm guide rails with standard holes



Standard

without holes

Anti-reflect



NW-01-40

NW-02-40



NW-01-40-P

NW-02-40-P

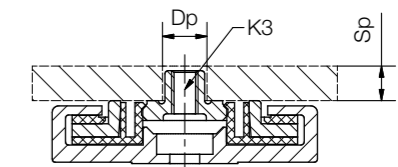
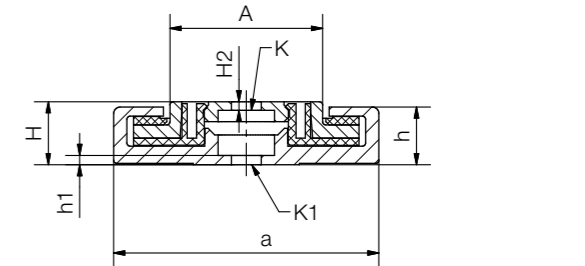
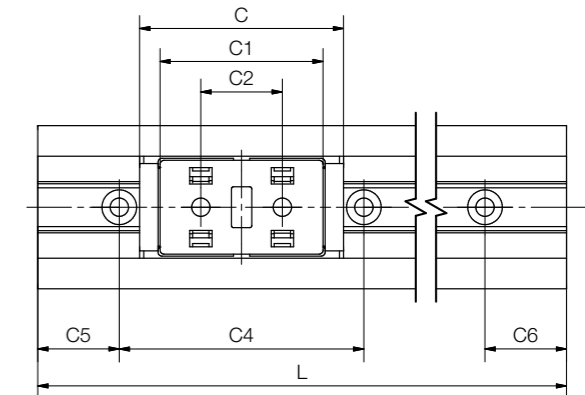


NW-11-40

NW-12-40



NW-22-40



Selection aid - guide carriage

Part No.	Single	Double	Plain hole	Threaded pin	Threaded hole	Pre-load	Solid plastic	Clipped-on	Overmoulded	High temp.
NW-01-40	●		●					●		
NW-01-40-P	●		●			●		●		
NW-11-40	●		●						●	
NW-02-40	●			●				●		
NW-02-40-P	●			●		●		●		
NW-12-40	●			●					●	
NW-22-40 New	●				●		●			



Order key

Type Size Options

N W-02- 80 - P -LLY

drylin® N	Guide carriages	Type of carriage	Rail width	Pre-load	Floating bearing in y-direction
-----------	-----------------	------------------	------------	----------	---------------------------------

Type of carriage:

See selection aid

Options:

P: Pre-load

Floating bearing

LLY: y-direction

LLZ: z-direction

LLYZ: yz-direction



Complete system

Guide rail (standard/without holes/AR anti-reflect) - dimensions [mm]

Part No.	L	a	C4	A3	C5	C6	h	h1	K1 ⁷³⁾	ly	lz	Weight [g/m]
	max.				min.	max.				[mm ²]	[mm ²]	
NS-01-80-□ ⁷²⁾	4,000	80	150	40	25	99.5	11	1.5	Ø4.5	271,200	2,900	1,140
NS-01-80-UNGEBOHRT-□ ⁷²⁾	4,000	80	-	-	-	-	11	1.5	-	271,200	2,900	1,140
NS-01-80-AR-□ ⁷²⁾	4,000	80	150	40	25	99.5	11	1.5	Ø4.5	271,200	2,900	1,140

Guide carriage - dimensions [mm]

Part No.	H	A	C	C1	C2	A2	K4 ⁷⁴⁾	Weight [g]
	±0.35							
NW-02-80	12.0	57.0	80	68	56	45	M4	100.0
NW-02-80-P New	12.0	57.0	80	68	56	45	M4	100.0
NW-12-80	12.0	57.0	83	68	56	45	M4	146.3

⁷²⁾ Please give the required length in mm, symmetrical standard hole pattern C5=C6

⁷³⁾ For cap screw with low head (e.g. DIN 7984, DIN 6912, DIN 84, EN ISO 1707)

⁷⁴⁾ Metal thread



All elements can be ordered individually or as assembled systems

NS-01-80-1500: Guide rail, size 80, 1,500mm length

NW-02-80-LLY: Guide carriage, clip-on, installation size 80, floating bearing in y-direction,

NK-02-80-02-500-LLY: Complete system with two clipped-on guide carriages with threaded pins, installation size 80, floating bearing in y-direction and 500mm guide rails with standard holes



Standard

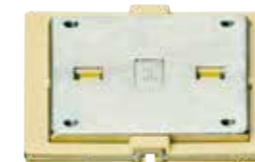
without holes



Anti-reflect



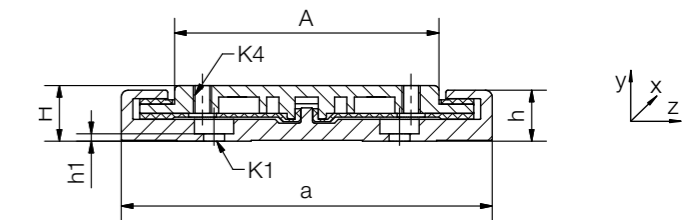
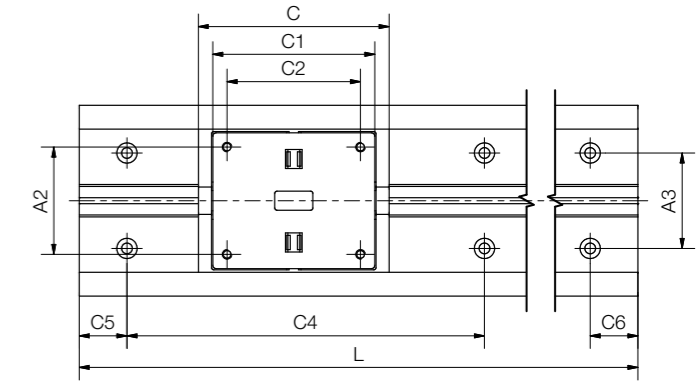
NW-12-80



NW-02-80



NW-02-80-P



Selection aid - guide carriage

Part No.	Single	Double	Plain hole	Threaded pin	Threaded hole	Pre-load	Solid plastic	Clipped-on	Over-moulded	High temp.
NW-02-80	●				●			●		
NW-02-80-P New	●				●	●		●		
NW-12-80	●				●				●	

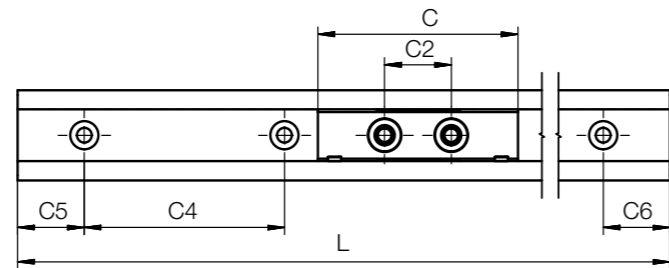


Order key

Type	Installation size	Options
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NSV- 01 - 27 - AR - UNGEBOHRT

Guide rail for pre-load prism slide	Type	Installation size	Anti-reflect
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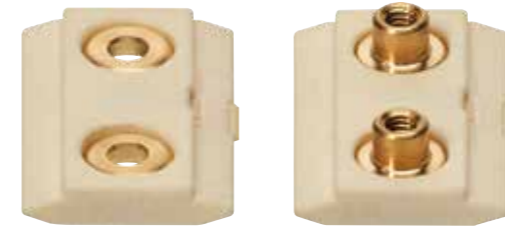
Guide rail - dimensions [mm]

Part No.	L	a	C4	C5	C6	h	h1	K1	ly	lz	Weight [g/m]
	max.			min.	max.				[mm ²]	[mm ²]	
NSV-01-27	3,000	27	60	20	49.5	8.8	1.1	Ø4.5	11,250	766	409
NSV-01-27-AR	3,000	27	60	20	49.5	8.8	1.1	Ø4.5	11,250	766	409
NSV-01-27- ⁷²⁾	3,000	27	-	-	-	8.8	1.1	-	11,250	766	409
NSV-01-27--AR ⁷²⁾	3,000	27	-	-	-	8.8	1.1	-	11,250	766	409

⁷²⁾ Please give the required length in mm, symmetrical standard hole pattern C5=C6

- Accessories:
- NSVK-27 ► Page 1222
 - NSVZ-27 ► Page 1222
 - NSVA-27 ► Page 1222

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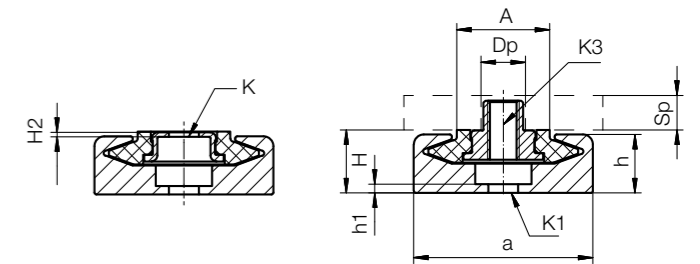
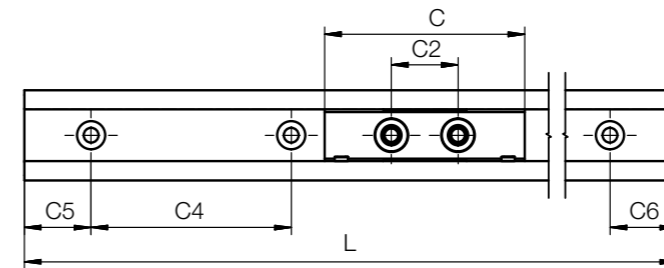
With threaded pin 22 or with plain hole 21

Order key

Type	Installation size	Options
------	-------------------	---------

NWV- 21 - 27 - 35 - P05

Pre-load prism slide	Type of carriage	Rail width	Carriage length	Pre-load
----------------------	------------------	------------	-----------------	----------



Guide carriage - dimensions [mm]

Part No.	Pre-load	H	A	C	C2	H2	K	K3	M ⁷⁵⁾	SP	Dp ¹⁵⁹⁾	Weight [g]
		±0.35					Ø4.5		[Nm]	min.		
NWV-21-27-35-P05	0.5	9.5	14	35	20	0.7	Ø4.5	-	-	-	-	6
NWV-21-27-35-P11	1.1	9.5	14	35	20	0.7	Ø4.5	-	-	-	-	6
NWV-21-27-35-P23	2.3	9.5	14	35	20	0.7	Ø4.5	-	-	-	-	6
NWV-21-27-35-P38	3.8	9.5	14	35	20	0.7	Ø4.5	-	-	-	-	6
NWV-21-27-35-P80	8.0	9.5	14	35	20	0.7	Ø4.5	-	-	-	-	6
NWV-22-27-35-P05	0.5	9.5	14	35	20	-	-	M4	1.2	5	6.5	11
NWV-22-27-35-P11	1.1	9.5	14	35	20	-	-	M4	1.2	5	6.5	11
NWV-22-27-35-P23	2.3	9.5	14	35	20	-	-	M4	1.2	5	6.5	11
NWV-22-27-35-P38	3.8	9.5	14	35	20	-	-	M4	1.2	5	6.5	11
NWV-22-27-35-P80	8.0	9.5	14	35	20	-	-	M4	1.2	5	6.5	11

⁷⁵⁾ Max. screw tightening torque

¹⁵⁹⁾ Hole min. Ø

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Long prism carriage with dual pre-load



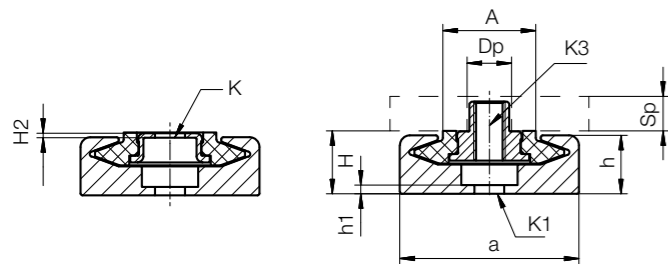
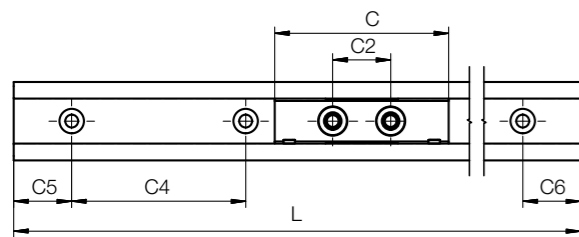
With threaded pin 22 or with plain hole 21

Order key

Type	Installation size	Options
------	-------------------	---------

NWV-21-27-60-P10

Pre-load prism slide	Type of carriage	Rail width	Carriage length	Pre-load
----------------------	------------------	------------	-----------------	----------



Guide carriage - dimensions [mm]

Part No.	Pre-load	H	A	C	C2	H2	K	K3	M ⁷⁵⁾	SP	Dp ¹⁵⁹⁾	Weight
	[N]	±0.35							[Nm]	min.		[g]
NWV-21-27-60-P10	1.0	9.5	14	60	20	0.7	Ø4.5	-	-	-	-	10
NWV-21-27-60-P22	2.2	9.5	14	60	20	0.7	Ø4.5	-	-	-	-	10
NWV-21-27-60-P46	4.6	9.5	14	60	20	0.7	Ø4.5	-	-	-	-	10
NWV-21-27-60-P76	7.6	9.5	14	60	20	0.7	Ø4.5	-	-	-	-	10
NWV-21-27-60-P160	16.0	9.5	14	60	20	0.7	Ø4.5	-	-	-	-	6
NWV-22-27-60-P10	1.0	9.5	14	60	20	-	-	M4	1.2	5	6.5	13
NWV-22-27-60-P22	2.2	9.5	14	60	20	-	-	M4	1.2	5	6.5	13
NWV-22-27-60-P46	4.6	9.5	14	60	20	-	-	M4	1.2	5	6.5	13
NWV-22-27-60-P76	7.6	9.5	14	60	20	-	-	M4	1.2	5	6.5	13
NWV-22-27-60-P160	16.0	9.5	14	60	20	-	-	M4	1.2	5	6.5	11

⁷⁵⁾ Max. screw tightening torque

¹⁵⁹⁾ Hole min. Ø

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1218 Online tools and more information ► www.igus.eu/drylinN



EN 06/2023



Standard carriages

Part No.	Average displacement force [N]
NWV-21/22-27-35-P05	1.0
NWV-21/22-27-35-P11	2.2
NWV-21/22-27-35-P23	4.6
NWV-21/22-27-35-P38	7.6
NWV-21/22-27-35-P80	16.0

Part No.	Guaranteed holding force [N]
NWV-21/22-27-35-P05	0.5
NWV-21/22-27-35-P11	1.1
NWV-21/22-27-35-P23	2.3
NWV-21/22-27-35-P38	3.8
NWV-21/22-27-35-P80	8.0

Long carriages

Part No.	Average displacement force [N]
NWV-21/22-27-60-P10	2.0
NWV-21/22-27-60-P22	4.4
NWV-21/22-27-60-P46	9.2
NWV-21/22-27-60-P76	15.2
NWV-21/22-27-60-P160	32.0

Part No.	Guaranteed holding force [N]
NWV-21/22-27-60-P10	1.0
NWV-21/22-27-60-P22	2.2
NWV-21/22-27-60-P46	4.6
NWV-21/22-27-60-P76	7.6
NWV-21/22-27-60-P160	16.0



Note:

The average displacement force values apply to unloaded carriages at centric drive. The real displacement forces depend to a large extent on the displacement speed. At creep movement (few mm/min.), the values are slightly over the guaranteed holding force. At higher displacement forces, the values can considerably exceed the average displacement force. The values do not apply for applications in which dirt and moisture ingress into the system. The holding force cited is a minimum value - the displacement force required to move the carriage may be higher.



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EN 06/2023

3D CAD files, prices and delivery time online ► www.igus.eu/drylinN 1219

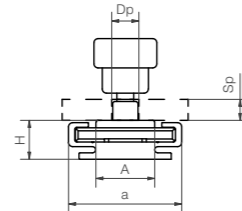
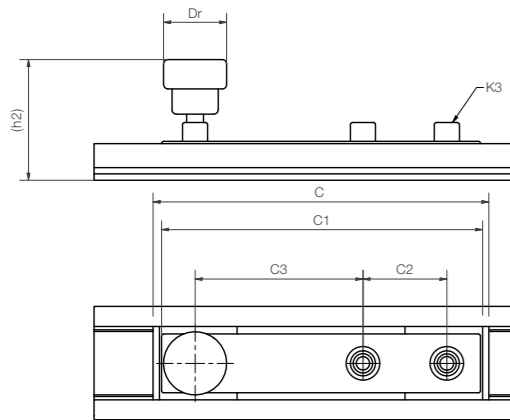


Order key

Type	Size	Version
------	------	---------

N W-12-27-80-HKA

drylin® N	Guide carriages	Type of carriage	Rail width	Carriage length	Manual clamp
-----------	-----------------	------------------	------------	-----------------	--------------



Dimensions [mm]

Part No.	H	(h2)	A	a	C	C1	C2	C3	K3	M	Sp	Dp	Dr	Weight [g]
NW-12-27-80-HKA	9.5	32	14	27	80	76	20	40	M4	1.2	5	6.5	15	32

M: Permissible torque of the complete system



Order example:

NW-12-27-80-HKA: Manual clamp for NW-12-27-80 carriage

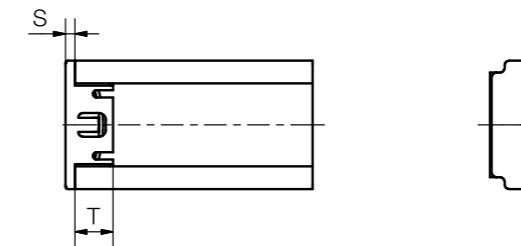


Order key

Type	Size
------	------

NSK B - 40

drylin® N - end caps	Push-fit	Rail width
----------------------	----------	------------



Dimensions [mm]

Part No.	S	T	For rail
NSKB-17	1.5	7	NS-01-17
NSKB-27	2.0	8	NS-01-27
NSK-40	1.5	8	NS-01-40
NSKB-80	2.0	17	NS-01-80



Order example:

NSK-40: End caps for guide rail size 40, bolted



Easily assembled and disassembled by hand using a screwdriver. Part No.: NSKB



End caps for rail size 40, screwed Part No.: NSK-40

Accessories: End caps



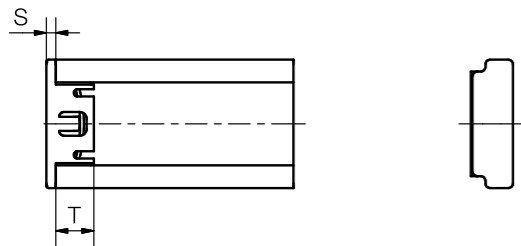
Order key

Type	Size
------	------

NSV K - 27

drylin® N - end caps	Type	Rail width
-------------------------	------	------------

Type:
K: Aesthetic end cap for prism rail
A: Rail end cap, bolted
Z: Variable rail end cap, can be clamped



Dimensions [mm]

Part No.	S	T	For rail	Min. static holding force [N]
NSVK-27 New	1.5	8	NSV-01-27	-
NSVZ-27 New	-	10	NSV-01-27	200
NSVA-27 New	-	10	NSV-01-27	100

drylin® N replacement plastic sliders (set)

Material iglidur® J

Carriage type	Part No.
Sliding part set	
NW-01/02/27	NEK-01-27
NW-01/02-27P	NEK-01-27-P
NW-01/02-27-LLY	NEK-01-27-LLY
NW-01/02-27-LLZ	NEK-01-27-LLZ
NW-01/02-40	NEK-02-40
NW-01/02-40P	NEK-01-40-P
NW-01/02-40-LLY	NEK-02-40-LLY
NW-01/02-40-LLZ	NEK-02-40-LLZ
NW-02-80	NEK-02-80
NW-02-80-LLY	NEK-02-80-LLY
NW-02-80-LLZ	NEK-02-80-LLZ



drylin® linear technology - drylin® N telescopic rails

Continuously extendable

Lubrication-free dry-tech® sliding elements

Quiet, sliding movement

Full extension, partial extension, overextension



Telescopic rails



Order key partial extension

Type	Size	Option
N T - 35 - 300 - 200 - AR		
drylin® N	Telescopic system	
	Rail width	
	Length [mm]	
	Partial extension [mm]	
	Anti-reflect	

Option:

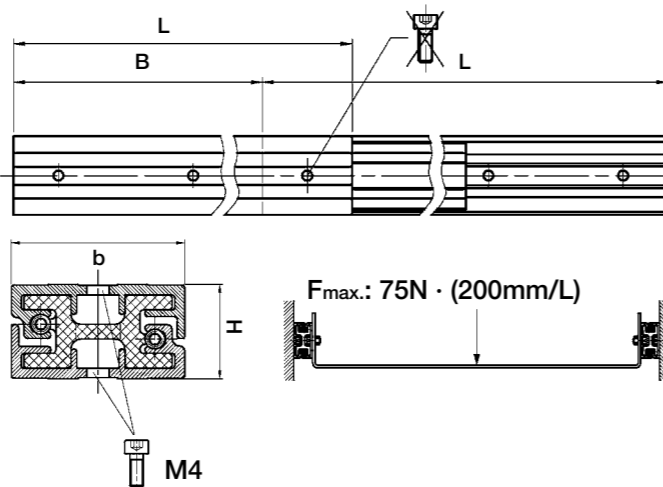
For partial extension "-200", for overextension "-320"
partial extension

(example: compressed length 300mm, extended length 500mm)

AR: Anti-reflect, black

HT: Temperature-resistant up to +130°C with sliding element made of iglidur® Q2

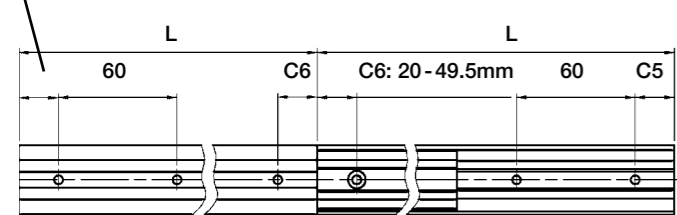
NT-35-"L"-"B" - Partial extension



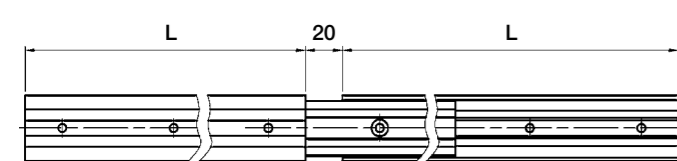
- Robust polymer/aluminium version
- Lightweight
- Cost-effective
- Corrosion-resistant
- Continuous lengths of up to 1,200mm (total extension)

NT-35-"L" - Total extension

C5: 20 - 49.5mm



NT-35-"L"-"L+20" - Overextension



Dimensions [mm]

Part No.	b	H	C4	C5 = C6		L	
				min.	max.	min.	max.
NT-35-... mm	35	19	60	20	49.5	100	600
NT-35-AR	New 35	19	60	20	49.5	100	600
NT-35-HT-... mm	New 35	19	60	20	49.5	100	600
NT-LM-35-HT-... mm	New 35	19	60	20	49.5	140	600



Tip:

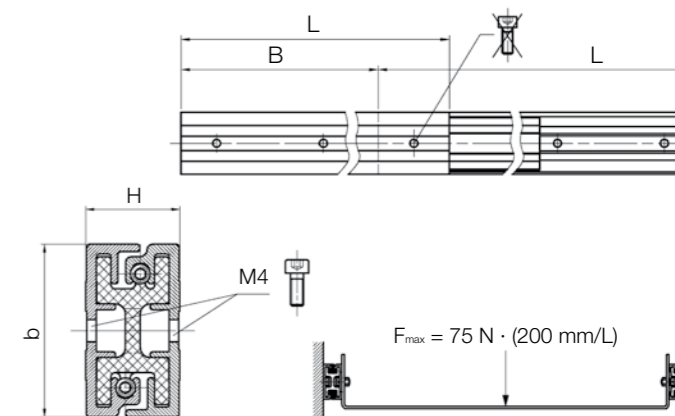
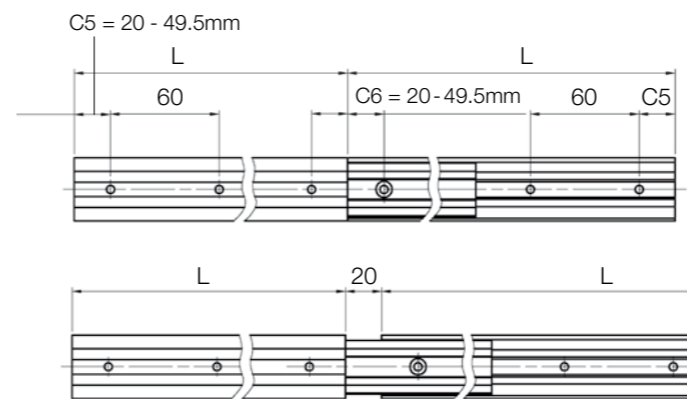
F_{max} calculated using this formula allows an easy manual use. Higher loads can be taken up by the system, but need a higher drive force.

Telescopic rails with locking mechanism



Order key

Type	Size	Option
N T - LM - 35 - 300		
drylin® N	Telescopic system	
	Locking mechanism	
	Rail width	
	Length [mm]	



drylin® NT LM in adjustment of Perspex guard



drylin® NT LM in guard door adjustment in a machine tool

drylin® detent in end and centre position at full extension - dimensions [mm]

Part No.	b	H	Lmin.	Lmax.
NT-LM-35-...mm	35	19	140	600

Individual position detent upon request; The length divided by the locking distance must be an even number.
e.g. length 250mm, latching in 62.5mm step: 250/62.5: 4



Order example:

NT-LM-35-300: drylin® N telescopic rail with locking mechanism, 35mm width, retracted length 300mm



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Telescopic guide for heavy loads and rigidity

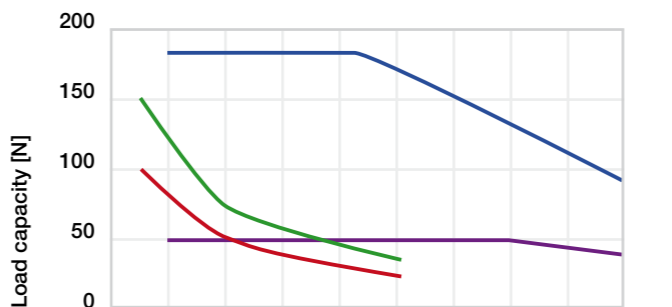


Order key partial extension

Type	Size	Option
drylin® N	Telescopic system	AR
	Rail width	
	Length [mm]	
	Partial extension [mm]	
	Anti-reflect	

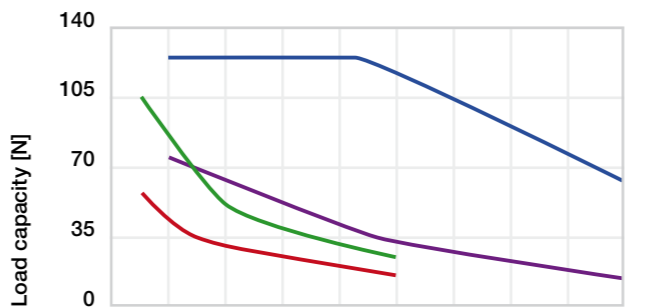
N T - 60 - 200 - 200 - AR

Option: For partial extension „-200“, for overextension „-320“
Partial extension: (example: compressed length 300mm, extended length 500mm)
AR: Anti-reflect, black



Legend for load capacity graph:
 ■ NT-35 limit for manual actuation
 ■ NT-35 structural load limit
 ■ NT-60 limit for manual actuation
 ■ NT-60 structural load limit

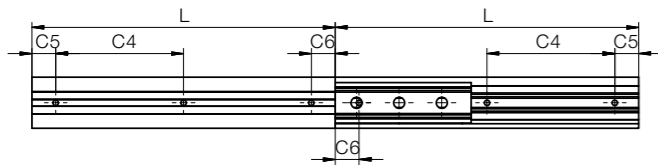
drylin® N telescope systems load capacity of a drawer with two systems installed upright



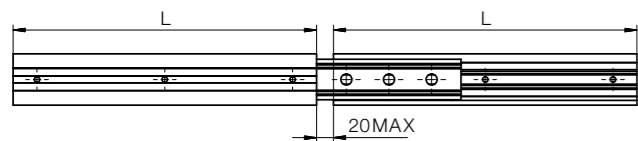
Legend for drawer load capacity graph:
 ■ NT-35 Fsy ■ NT-35 Fsz ■ NT-60 Fsy ■ NT-60 Fsz

drylin® N telescope static load capacity in different load directions

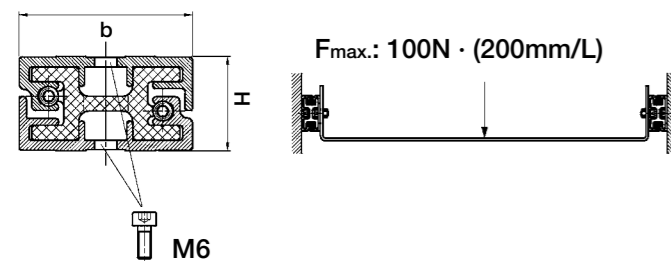
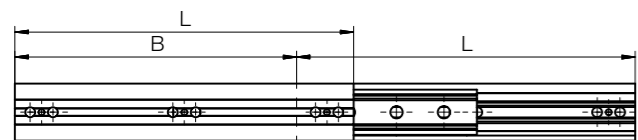
NT-60-“L” - Total extension



NT-60-„L“-„L+max. 20“ - Overextension



NT-60-“L”-“B” - Partial extension



Tip: F_{max} calculated using this formula allows an easy manual use. Higher loads can be taken up by the system, but need a higher drive force.

Dimensions [mm]

Part No.	b	H	C4	C5 = C6		L	
				min.	max.	min.	max.
NT-60-... mm	60	24	150	25	99.5	200	1,000
NT-60-AR New	60	24	150	25	99.5	200	1,000

Telescopic rails with prism carriages

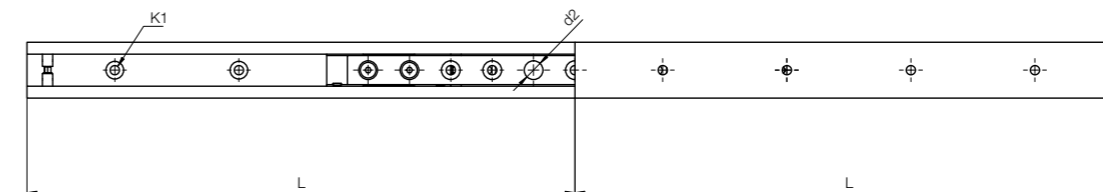
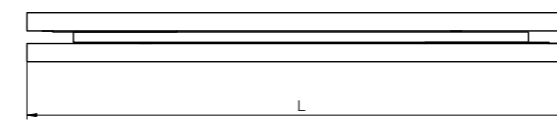
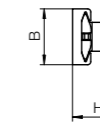
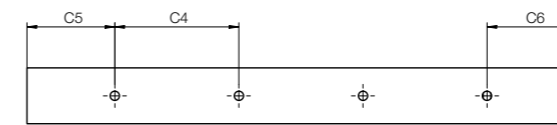


- Consistent telescopic rail due to spring pre-load mechanism
- Constant drive forces with various
- Spring pre-load
- Extension lengths in 50mm increments

Order key

Type	Size
drylin® N	Telescopic system
	Pre-loaded
	Rail width

N T V - 27



Dimensions [mm]

Part No.	d2	K1 Ø	B	H	C4	C5 = C6		L	
						min.	max.	min.	max.
NTV-27 New	9	4.5	27	23.7	60	25	49.5	150	500

Order example:
NTV-27-300: drylin® N telescopic rail with locking mechanism, 27mm width, retracted length 300mm

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 ► www.igus.eu/drylinstopmotion

Telescopic rails made of solid plastic



- 100% self-lubricating with iglidur® high-performance polymers
- Rattle-free and quiet due to pretensioning segments

Order key

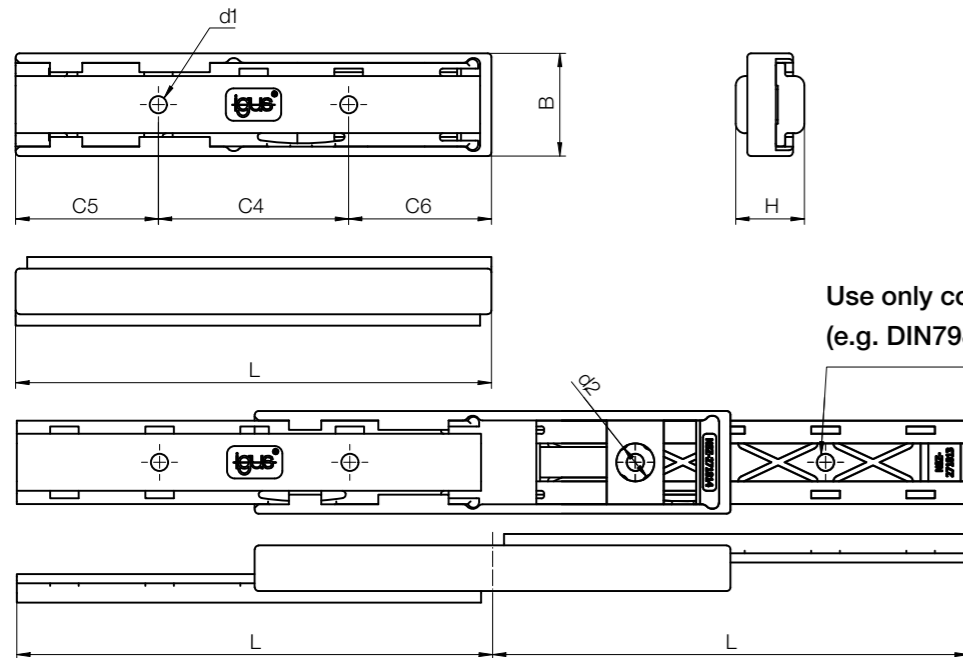
Type Size

N T P -27-18-□-125

drylin® N	Telescopic system	Polymer	Rail width	Rail height	Colour	Length
-----------	-------------------	---------	------------	-------------	--------	--------

Colour options:

01: anthracite, 02: white, 03: light grey, 04: blue, 05: orange



Dimensions [mm]

Part No.	d	C4	C5 = C6	B	H	d2	L	Weight [g]
NTP-27-18-□-125 New	4.5	50	37.5	27	18	10	125	45
NTP-27-18-□-150 New	4.5	75	37.5	27	18	10	150	53

Forces - installation situation

	Fsx	Fsy	Fsz	F
Fmax. [N]	40	8	12.5	-
F [N]	-	-	-	27



Order example:

NTP-27-125: drylin® N telescopic rail with locking mechanism, 27mm width, retracted length 125mm



drylin® stop motion full product range online ►

www.igus.eu/drylinstopmotion

1228 Online tools and more information ► www.igus.eu/drylinN



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drylin® linear technology - drylin® T rail guides

Robust linear guides

Adjustable bearing clearance

Wear-resistant and durable

Dimensionally identical to recirculating ball-bearing guides

Lubrication and maintenance-free



Resistant to dirt, low vibration, quiet, long service life



Profile rail with hard-anodised surface

All steel parts are made of durable stainless steel

Clear, anodised aluminium carriage body

Sliding elements made from high-performance polymer iglidur® J and J200 serve as a guide bearing and ensure optimum running properties

End cap made of solid plastic or stainless steel

Adjustable bearing clearance

Lubrication-free rail guides - drylin® T

drylin® T rail guides were originally developed for applications in both automation and materials handling. The goal was to create a robust linear guide for use in the most diverse, even extreme environments. Their dimensions are identical to most recirculating ball bearing guides.

- 100 % lubrication-free
- Adjustable bearing clearance
- Automatic clearance adjustment
- High static load capacity
- Service life up to 50,000km
- Resistant to dirt
- Low vibration and quiet

Typical application areas

- Mechanical engineering
- Woodworking industry
- Machine tools
- Handling

Available from stock
Detailed information about delivery time online.

Price breaks online
No minimum order value. No minimum order quantity

Max. +90°C
Min. -40°C

7 carriage types
Rail length up to 4,000mm

Service life calculation
▶ www.igus.eu/drylin-expert

Cleanroom certified
IPA Fraunhofer

Free from toxins
2011/65/EU (RoHS)

ESD-compatible
(electrostatic discharge)

Dimensionally identical to most recirculating ball-bearing guides



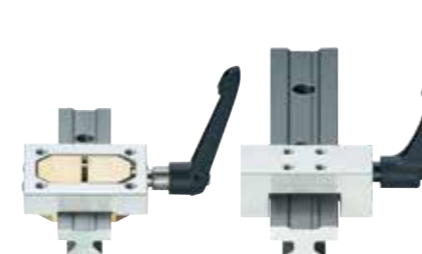
Performance

- 50% longer service life due to iglidur® J200 sliding elements
 - Fast assembly
 - Adjustable bearing clearance
- ▶ **From page 1237**



Heavy duty

- Robust design, factory clearance adjustment
 - Long service life with iglidur® J sliding elements
 - Fast assembly
- ▶ **Page 1241**



Clamps

- Compact or heavy duty design
 - Available for installation sizes 15-30mm
 - Holding force up to 500N
- ▶ **Page 1243**



Standard / with manual clamp

- Manual clearance adjustment on the carriage
 - Long service life with iglidur® J sliding elements
 - Manual clamp on carriage (optional)
- ▶ **From page 1238**



Compact

- Narrow guide carriages for small spaces
 - Captive plastic sliders
 - Corrosion-resistant
- ▶ **Page 1242**



drylin® T rails

- Lightweight, aluminium extruded section
 - Robust and corrosion-resistant hard-anodised surfaces
 - Shaft length delivered with millimetre precision up to max. 4,000mm
- ▶ **Page 1236**

Automatic

- Automatic clearance adjustment
 - Easy assembly with pre-load key
 - Long service life with iglidur® J sliding elements
- ▶ **Page 1239**



Miniature guides / adjustable miniature guides

- Small compact design
 - Easy to fit
 - Clearance adjustment or pre-load (optional)
- ▶ **Page 1244**



Based on drylin® T

- drylin® SLT linear module
- ▶ **From page 1637**

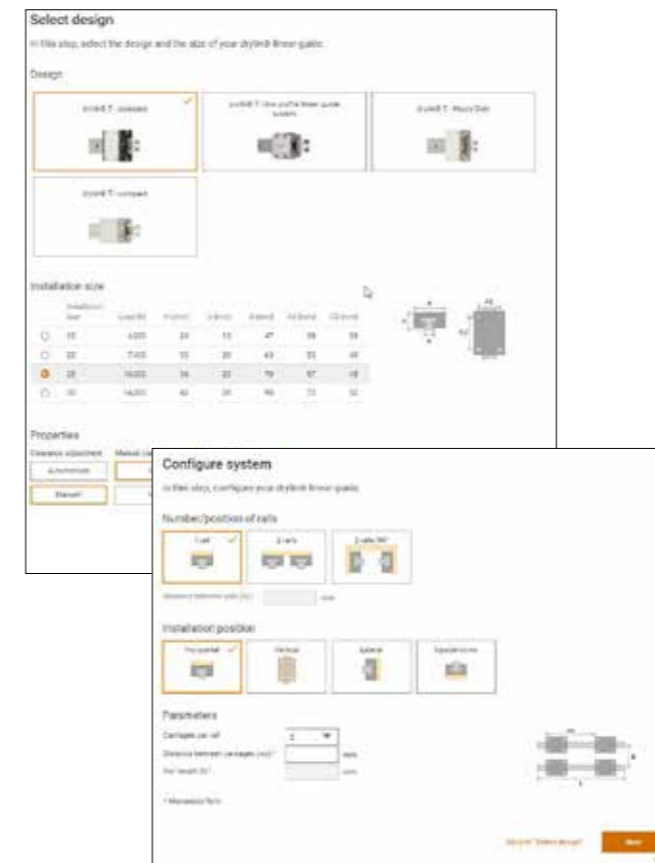


Long service life and food grade quality are also prerequisites for the application like insensitivity to pungent detergents and humidity.

The adjustment of the pressing roller and the compensation of the imbalance of the grinding tools are implemented with drylin® T in place of recirculating ball bearing guides.



The drylin® T linear guides are used in these enveloping machines to guide an envelope suction opener that is mounted on one side.



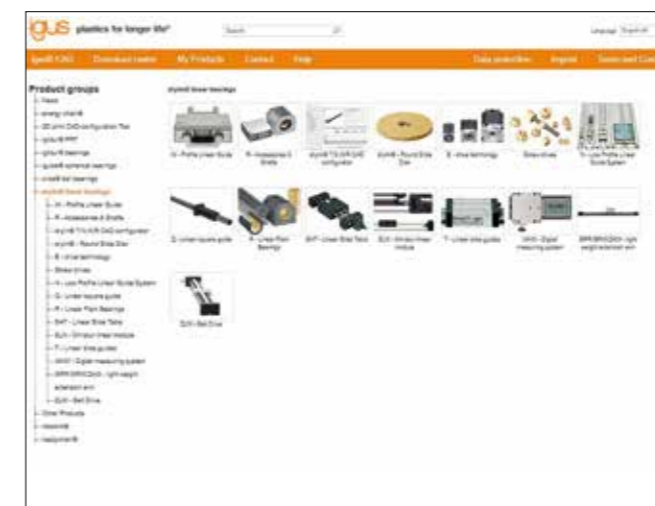
Expert for linear guides: System selection and service life calculation with CAD

Configure and calculate the service life of linear bearings - constantly expanded by new sizes and products

Easily calculate the service life of your required linear guide and configure with a few clicks. Select a drylin® system and add the relevant environmental parameters. Select the bearing size, carriage, number and position. Then enter the distance between the rails and the mounting. Define the coordinates for the drive location and the centre of gravity, or enter these via the keyboard. Define the weight, acceleration, and distance of the bearing and select a rail length. The results are displayed.



► www.igus.eu/drylin-expert

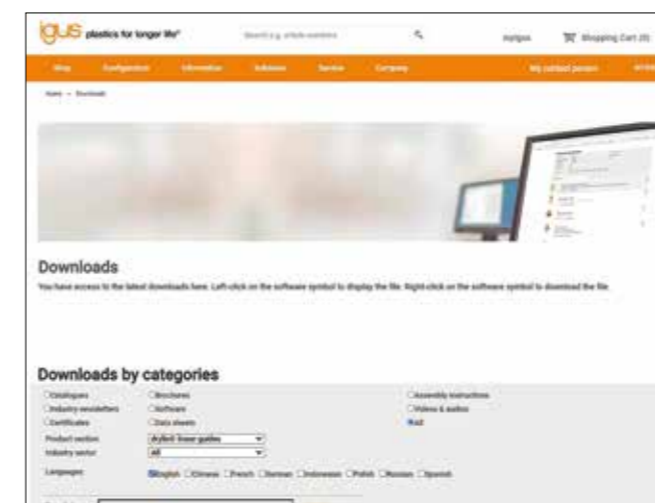


drylin® CAD configurator: Generate complete 3D models for drylin® linear technology according to your specifications

The igus® CAD online configurator gives you the ability to design and save your linear guide as a system, individual components directly as a 3D model in all commonly used formats, or to have these sent by e-mail - free of charge and without registration.



► www.igus.eu/drylin-CAD



More information about the products can be found in the igus® download area

- Assembly instructions
- Assembly videos
- System design
- Catalogues



► www.igus.eu/downloads

Design tip

The compensation of parallelism errors up to a maximum of 0.5mm between mounted rails is possible with a fixed/floating bearing. During installation, take care that the floating bearing has approximately the same clearance on both sides.

In the adjacent designs you can see the version of the fixed/floating bearing system recommended by us.

The mounting surfaces of the rails and guide carriages should be very flat (e.g. machined surface) to prevent twisting in the system. Small discrepancies in the mounting surfaces can be compensated up to a certain amount (0.5mm) by a greater clearance adjustment. The clearance adjustment is possible only in unloaded state. If you have any questions on design and/or assembly, please make use of our technical support.

Technical details on floating bearings

► Page 1120

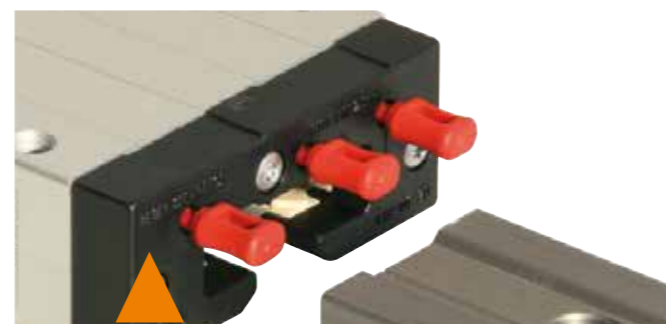
The 2:1 Rule ► Page 1120

Installation drylin® T linear guide system

Make sure to assemble the side of the carriage saying "Reset Clearance" onto the rail first (see picture).



TW series, adjustable clearance



TWA series, automatic

Tightening torque for drylin® metallic screws

Metric thread (Da)	tightening torque [Nm]	Recommended tightening torque [Nm]
M3	0.5-1.1	0.7
M4	1.0-2.8	1.5
M5	2.0-5.5	3.0
M6	4.0-10.0	6.0
M8	8.0-23.0	15.0
M10	22.0-46.0	30.0

Minimal screw-in depth for aluminium and zinc die-casting parts: 1.5 x Da

Floating bearing clearances for drylin® T miniature guides

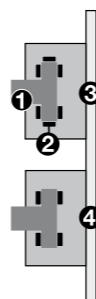
LLZ: Floating bearing in z-direction

LLY: Floating bearing in y-direction

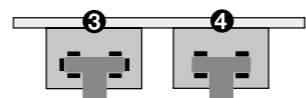
Floating bearing clearances	TW-04-07	TW-04-09	TW-04-12	TW-04-15
LLY	-	0.4	0.5	0.7
LLZ	0.4	0.4	0.5	0.7

Version with floating bearing in z-direction

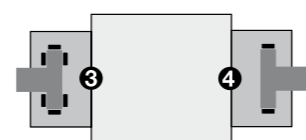
- 1 Rail
- 2 Sliding elements
- 3 Carriage with fixed bearings
- 4 Carriage with floating bearings LLZ or LLY



Horizontal version with floating bearing in z-direction



Horizontal version with floating bearing in the y-direction and lateral guide carriage



Guide rail	
Material	Aluminium, extruded section
Material	EN AW-6060 T66
Coating	Hard-anodised aluminium, 50µm
Hardness	500 HV
Guide carriages	
Base structure	Aluminium, extruded section
Material	EN AW-6060 T66
Coating	Anodised aluminium
Sliding elements	Maintenance-free plain bearings materials iglidur® J, iglidur® J200 (TW-12/TW-04-07)
Bolts, springs	Stainless steel
Lid	Plastic (TW-01/TWA-01), steel (TW-02)/TW-03/TW-12
Max. surface speed	5m/s
Temperature range	from -40°C up to +90°C

Table 01: drylin® - technical data

Type	C _{0Y} [kN]	C _{0(-Y)} [kN]	C _{0Z} [kN]	M _{0X} [Nm]	M _{0Y} [Nm]	M _{0Z} [Nm]
04-07	0.2	0.2	0.1	1.2	0.6	0.6
04-/14-09	0.48	0.48	0.24	3.4	1.8	1.8
04-/14-12	0.96	0.96	0.48	9.2	4.4	4.4
04-12 (TWE)	0.48	0.48	0.24	4.6	2.2	2.2
04-/14-15	1.4	1.4	0.7	17	8	8
04-15 (TWE)	0.7	0.7	0.35	8.5	4	4
01-/12-15	4	4	2	32	25	25
01-/02-/12-20	7.4	7.4	3.7	85	45	45
01-/02-/03-/12-25	10	10	5	125	65	65
01-/02-/12-30	14	14	7	200	100	100

Table 02: drylin® - permissible static load capacity

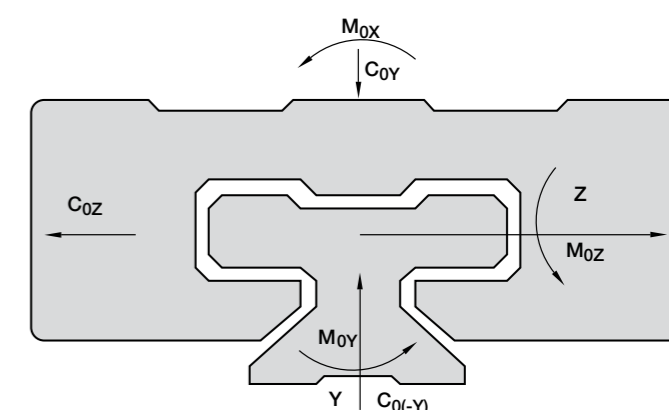


Diagram 01: Marking of the directions

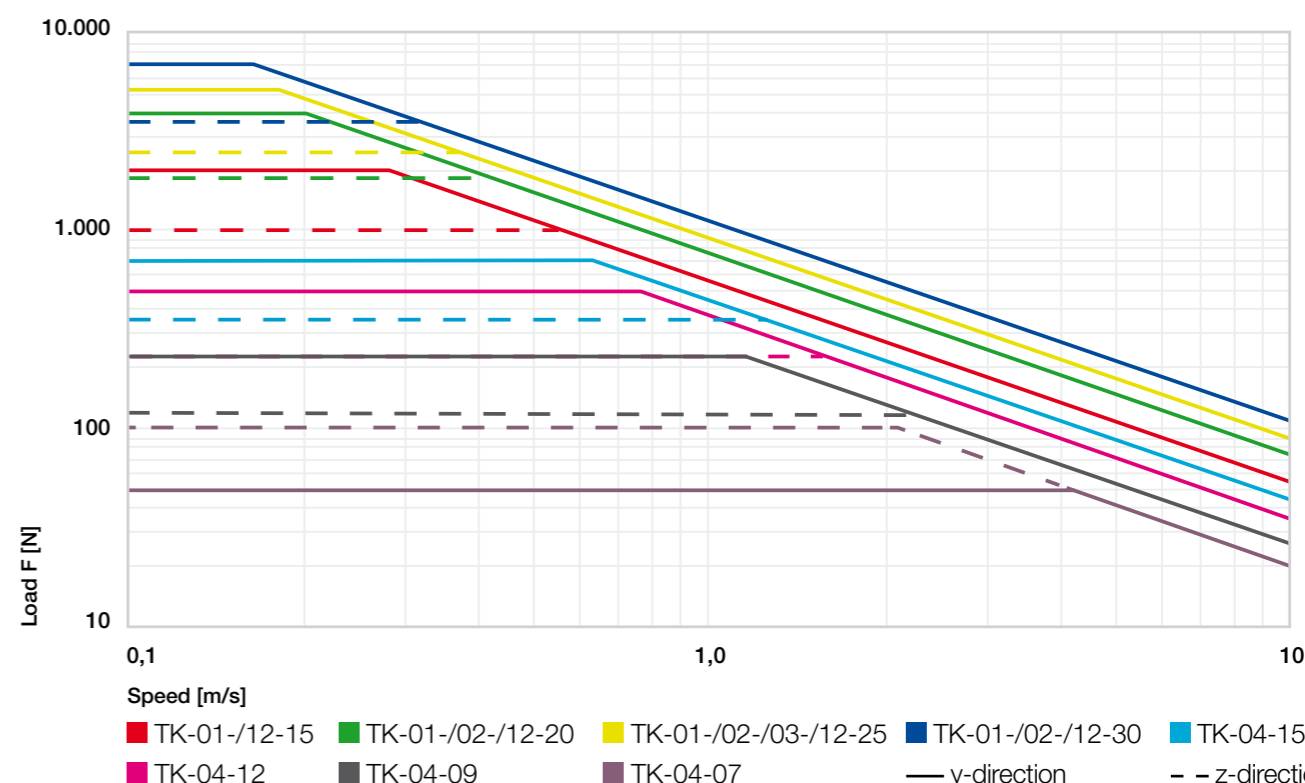
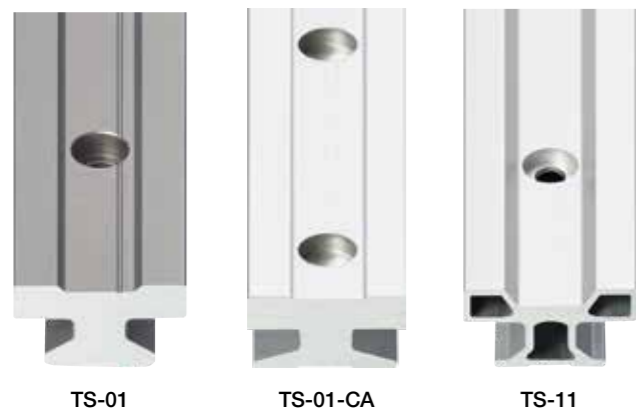


Diagram 02: drylin® T - permissible dynamic load capacity



TS-01

TS-01-CA

TS-11

Order key

Type Options

TS-01-15-1000-CA

- Guide rail
- Standard
- Installation size
- Rail length [mm]
- Aluminium, clear anodised

Options:

TS-01: Standard rail, hard-anodised

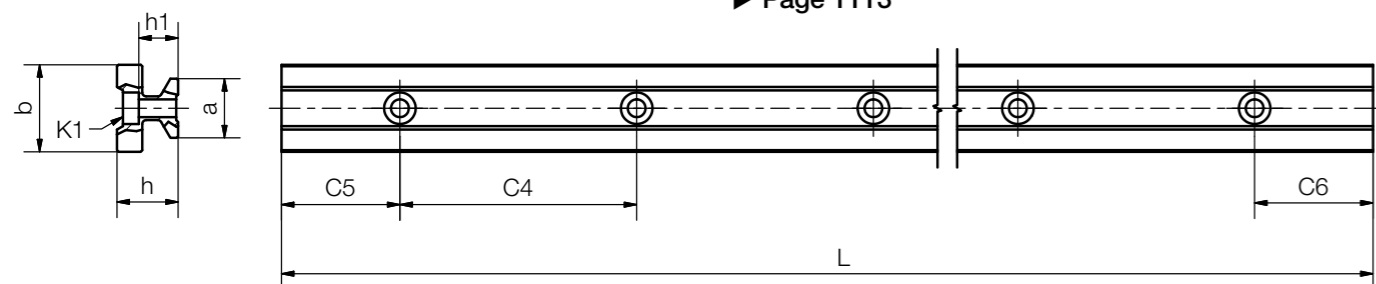
TS-01-CA: Clear anodised aluminium/econ version

TS-11: Weight-reduced rail, clear-anodised

Hard-anodised surfaces

► Page 1113

Curved rail profiles
► Page 1118



Dimensions [mm]

Part No.	Weight [kg/m]	L	a	C4		C5		C6		h	h1	K1 for screw DIN 912	b	ly	lz	Wby	Wbz
				max.	-0.2	min.	max.	min.	max.								
TS-01-15	0.6	4,000	15	60	20	49.5	20	49.5	15.5	10.0	M4	22	6,440	4,290	585	488	
TS-01-15-CA New	0.6	4,000	15	60	20	49.5	20	49.5	15.5	10.0	M4	22	6,440	4,290	585	488	
TS-01-20	1.0	4,000	20	60	20	49.5	20	49.5	19.0	12.3	M5	31	22,570	11,520	1,456	1,067	
TS-01-20-CA New	1.0	4,000	20	60	20	49.5	20	49.5	19.0	12.3	M5	31	22,570	11,520	1,456	1,067	
TS-11-20	0.5	4,000	20	120	20	79.5	20	79.5	19.0	12.3	M5	31	12,140	6,360	780	620	
TS-01-25	1.3	4,000	23	60	20	49.5	20	49.5	21.5	13.8	M6	34	34,700	19,300	2,041	1,608	
TS-01-25-CA New	1.3	4,000	23	60	20	49.5	20	49.5	21.5	13.8	M6	34	34,700	19,300	2,041	1,608	
TS-01-30	1.9	4,000	28	80	20	59.5	20	59.5	26.0	15.8	M8	40	70,040	40,780	3,502	2,832	
TS-01-30-CA New	1.9	4,000	28	80	20	59.5	20	59.5	26.0	15.8	M8	40	70,040	40,780	3,502	2,832	

Standard hole pattern symmetric C5 : C6

For rails without mounting holes, please use part number suffix "UNGEBOHRT"

Can be combined with:



Technical data
► Page 1235

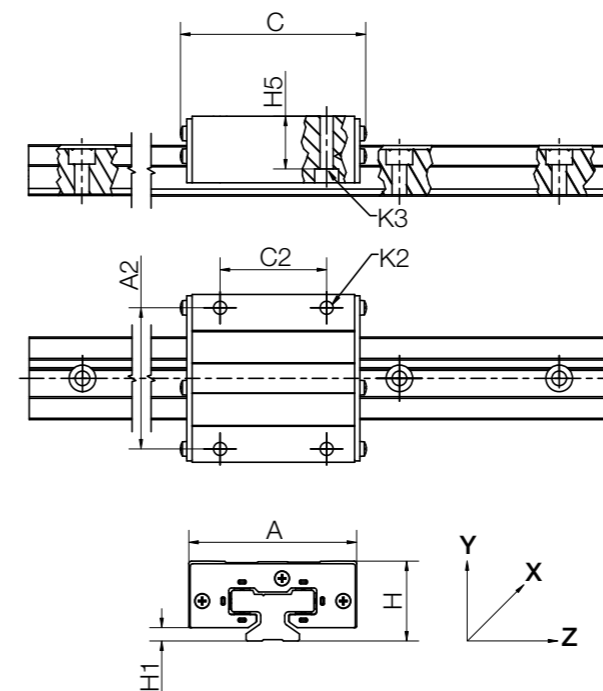


Order key

Type

TW-12-15

- Guide carriages
- Performance
- Installation size



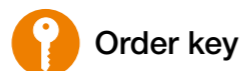
Dimensions [mm]

Part No.	Weight [kg]	H ±0.35	H5	A	C	A2	C2	H1 ±0.35	K2 thread	K3 for cap screw	Sliding elements
TW-12-20	0.19	30	19.8	63	72	53	40	5.0	M6	M5	iglidur® J200
TW-12-25	0.29	36	24.8	70	82	57	45	5.0	M8	M6	iglidur® J200
TW-12-30	0.50	42	27.0	90	94	72	52	6.5	M10	M8	iglidur® J200

Can be combined with:



Technical data
► Page 1235



Order key

Type

TW-01-15

Guide carriages
Standard
Installation size

Options:

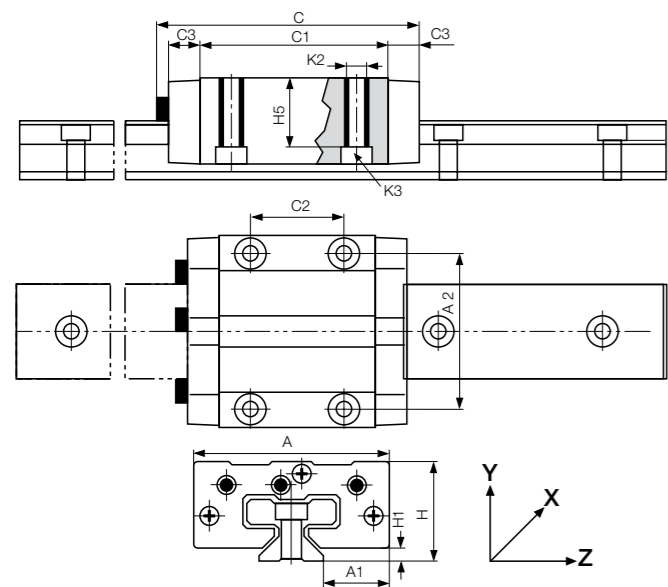
LLY: Floating bearing in y-direction

LLZ: Floating bearing in z-direction



TW-01

Complete system
online



Dimensions [mm]

Part No.	Weight [kg]	H ±0.35	A	C	A1 ±0.35	A2	C1	C2	C3	H1 ±0.35	H5	K2 thread	Tightening torque max. [Nm]	K3 for screw DIN 912
TW-01-15	0.11	24	47	74	16.0	38	50	30	9	4.0	16.0	M5	1.5	M4
TW-01-20	0.19	30	63	87	21.5	53	61	40	10	5.0	19.8	M6	2.5	M5
TW-01-25	0.29	36	70	96	23.5	57	68	45	11	5.0	24.8	M8	6.0	M6
TW-01-30	0.50	42	90	109	31.0	72	79	52	12	6.5	27.0	M10	15.0	M8



All elements can be ordered individually or as assembled systems

TW-01-20-LLY: Standard guide carriage with manually adjustable clearance, installation size 20 and floating bearing in y-direction

TK-01-20-2-500: Complete system with two standard guide carriages type 01, installation size 20 and standard guide rail, 500mm length

Can be combined with:



TS-01-...



Technical data

► Page 1235



Order key

Type

TWA-01-15

Guide carriages
Automatic version
Standard
Installation size

Options:

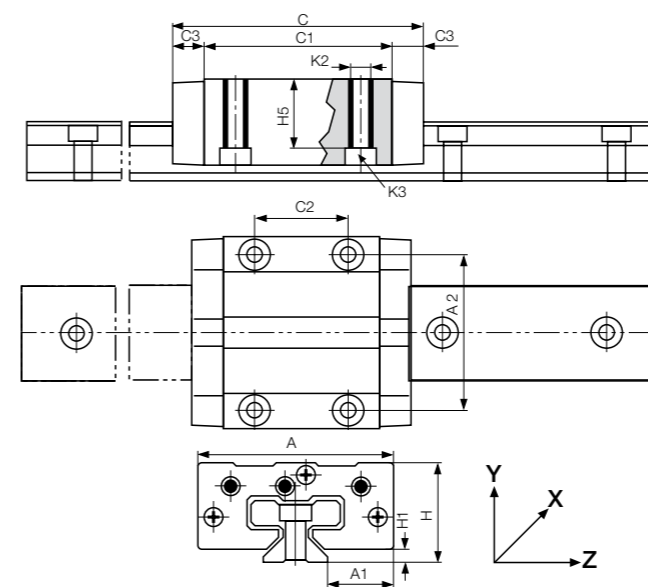
LLY: Floating bearing in y-direction

LLZ: Floating bearing in z-direction



TWA-01

Complete system
online



Dimensions [mm]

Part No.	Weight [kg]	H ±0.35	A	C	A1 ±0.35	A2	C1	C2	C3	H1 ±0.35	H5	K2- Thread	Tightening torque max. [Nm]	K3 for screw DIN 912
TWA-01-15	0.11	24	47	68	16.0	38	50	30	9	4.0	16.0	M5	1.5	M4
TWA-01-20	0.19	30	63	81	21.5	53	61	40	10	5.0	19.8	M6	2.5	M5
TWA-01-25	0.29	36	70	90	23.5	57	68	45	11	5.0	24.8	M8	6.0	M6
TWA-01-30	0.50	42	90	103	31.0	72	79	52	12	6.5	27.0	M10	15.0	M8



All elements can be ordered individually or as assembled systems

TWA-01-20-LLY: Guide carriage with automatic clearance adjustment, installation size 20 and floating bearing in y-direction

TKA-01-20-2-500: Complete system with two standard guide carriages type 01, automatic clearance adjustment, installation size 20 and standard guide rail, 500mm length

Can be combined with:



TS-01-...



Technical data

► Page 1235



TW-01-HKA

Complete system
online

Order key

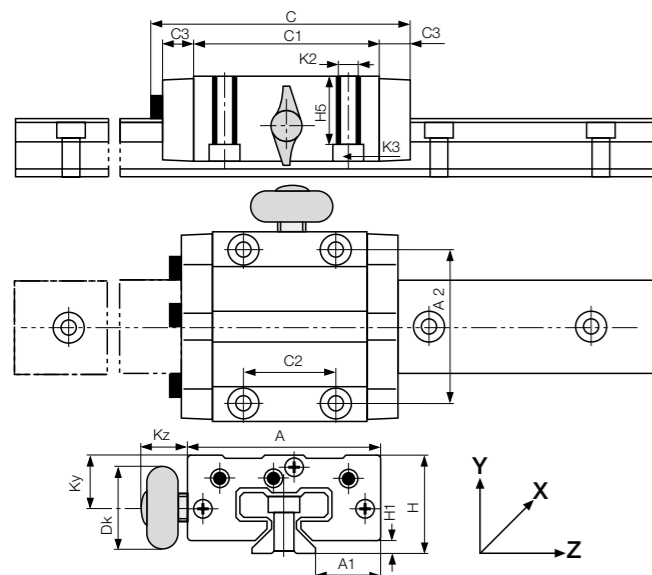
Type Options

TW-01-15-HKA

Guide carriages

- Standard
- Installation size
- Manual clamp

Other dimensions as standard design
TW-01-... ▶ Page 1239



Dimensions [mm]

Part No.	Size	Kz	Ky	Dk	Manual clamp thread
TW-01-15-HKA	15	19.0	11.5	20.0	M6
TW-01-20-HKA	20	18.0	15.0	28.0	M8
TW-01-25-HKA	25	17.0	19.0	28.0	M8
TW-01-30-HKA	30	20.0	21.5	28.0	M8

All elements can be ordered individually or as assembled systems

TW-01-20-HKA: Guide carriage with manually adjustable clearance, installation size 20 and manual clamp

TK-01-20-HKA-2-500: Complete system with two standard guide carriages type 01 with manual clamp, installation size 20 and standard guide rail, 500mm length

The manual clamp was developed for simple tasks. The creep behaviour of the clamped plastic causes a reduction in clamping force over time (up to 70%). so no safety-relevant parts should be clamped. Please contact our technical consultant, if you require other options for the clamping.

Can be combined with:



TS-01-...

Technical data
▶ Page 1235



TW-02

Complete system
online

Order key

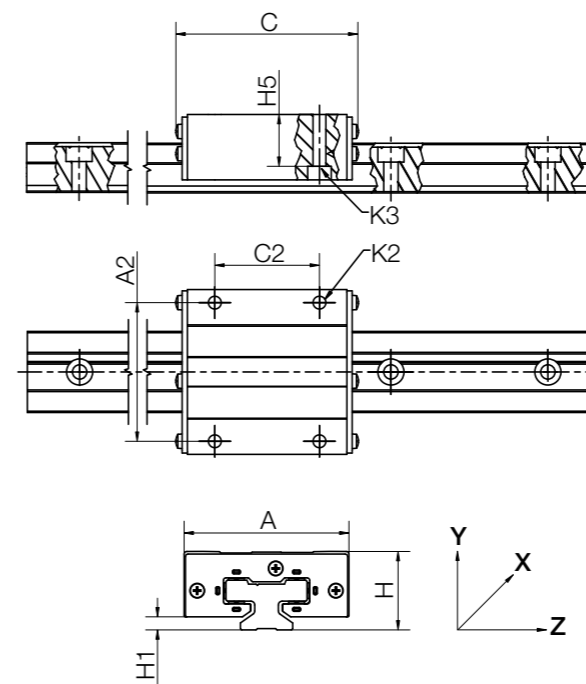
Type Options

TW-02-20

Guide carriages

- Heavy duty
- Installation size

Floating bearing upon request



Dimensions [mm]

Part No.	Weight [kg]	H ±0.35	H5	A	C	A2	C2	H1 ±0.35	K2	K3
TW-02-20	0.19	30	19.8	63	70	53	40	5.0	M6	M5
TW-02-25	0.29	36	24.8	70	77	57	45	5.0	M8	M6
TW-02-30	0.50	42	27.0	90	92	72	52	6.5	M10	M8

All elements can be ordered individually or as assembled systems

TW-02-20: Heavy duty guide carriage, installation size 20

TK-02-20-2-500: Complete system with two heavy duty guide carriages type 02, installation size 20 and standard guide rail, 500mm length

Can be combined with:



TS-01-...

Technical data
▶ Page 1235



TW-03



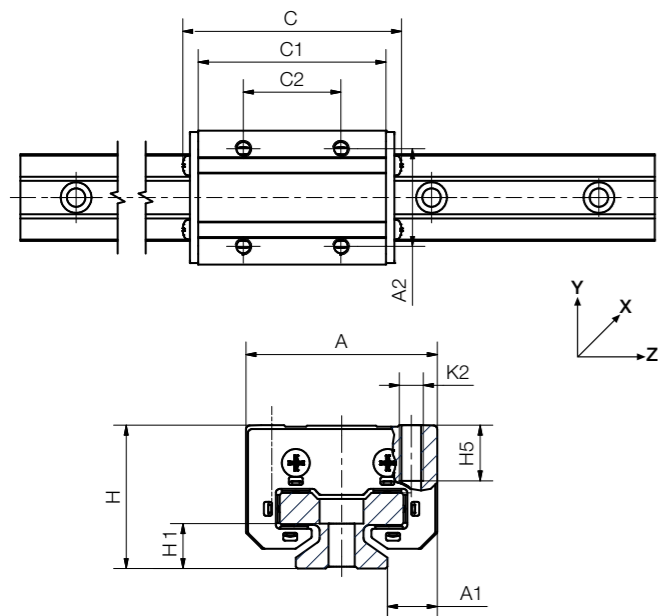
Complete system online

Order key

Type

TW-03-25

- Guide carriages
- Reduced weight
- Installation size



Dimensions [mm]

Part No.	Weight [kg]	H ±0.35	A	C	A1	A2	C1 ±0.35	C2 ±0.35	H1	H5	K2	Tightening torque max. [Nm]
TW-03-25	0.16	36	48	81	14	35	67.4	35	5	13	M6	6.0



All elements can be ordered individually or as assembled systems

TW-03-25: Compact guide carriage, installation size 25

TK-03-25-2-500: Complete system with two compact guide carriages type 03, installation size 25 and standard guide rail, 500mm length

Can only be combined with:



TS-01-20



TS-11-20

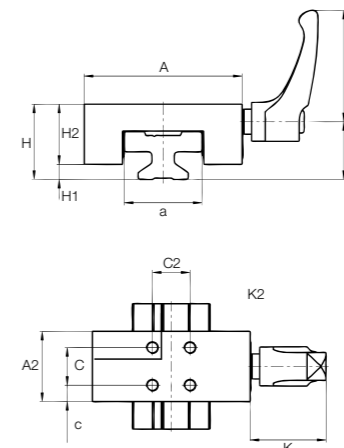
Technical data
▶ Page 1235

Compact design

Plastic clamping elements



TWBM-11



Dimensions [mm]

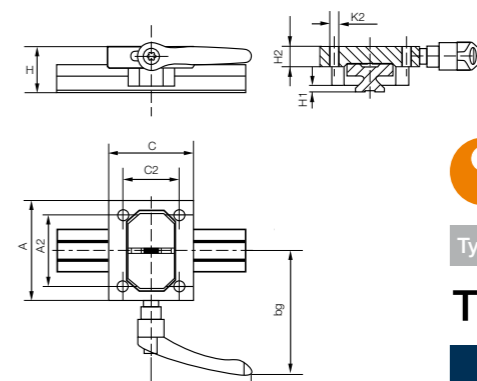
Part No.	Clamp force [N]	A	a	A2	H	H1	H2	K	K2	C	C2	c	lg	b
TWBM-11-15	180	47	22	23	24	4	20	30	M4	15	15	4	44	18.9
TWBM-11-20	180	63	31	28	30	5	24	30	M5	15	15	6.5	44	23.0
TWBM-11-25	400	70	34	35	36	5	31	39	M6	20	20	7.5	63.63	26.2
TWBM-11-30	500	90	40	38	42	6.5	35.5	47	M6	20	20	9	78	32.4

Standard design

with brass clamp



TWBM-01



Dimensions [mm]

Part No.	Clamp force [N]	A	A2	H	H1	H2	K2	C	C2	lg	bg
TWBM-01-25	500	80	57	36	5	16	M8	68	45	80	99

Can only be combined with:



TS-01-...

Order key

Type

TWBM-11-15

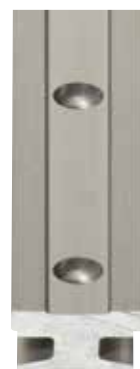
- Manual clamp
- Compact
- Installation size

Order key

Type

TWBM-01-25

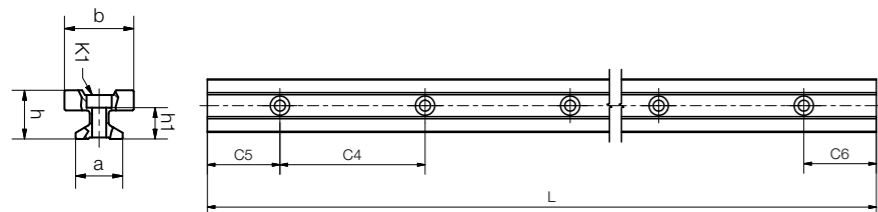
- Manual clamp
- Standard
- Installation size



TS-04



Complete system online



Order key

Type

TS-04-07

- Guide rail
- Miniature
- Installation size



Curved rail profiles
▶ Page 1118

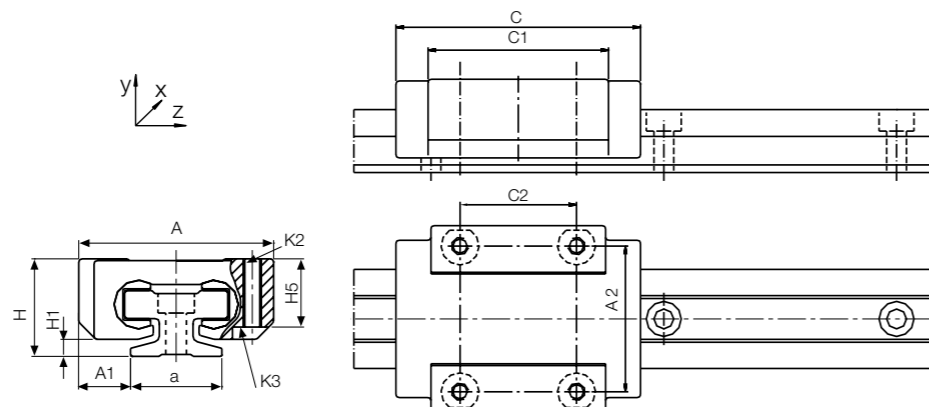
Dimensions [mm]

Part No.	Weight [kg/m]	L max.	a -0.2	C4	C5 min.	C5 max.	C6 min.	C6 max.	h	h1	K1 for screw DIN 912	b	ly [mm²]	lz [mm²]	Wby [mm³]	Wbz [mm³]
TS-04-07	0.08	2,000	7	15	5	12	5	12	5.5	3.7	M2	8	131	90	32	29
TS-04-09	0.11	2,000	9	20	5	14.5	5	14.5	6.3	4.6	M2	9.6	252	169	52	49
TS-04-12	0.20	2,000	12	25	5	17.0	5	17.0	8.6	5.9	M3	13	856	574	132	120
TS-04-15	0.33	3,000	15	40	10	29.5	10	29.5	10.8	7.0	M3	17	2,420	1,410	285	239

Miniature guide carriages with iglidur® E3 liners **New**



TW-14



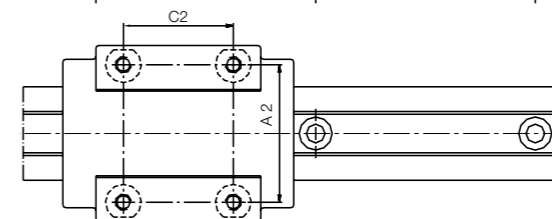
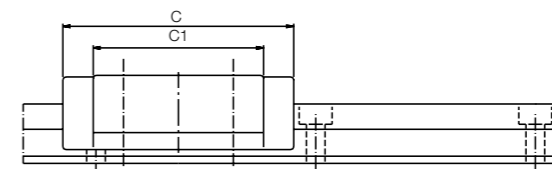
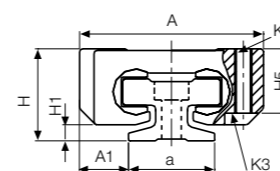
Dimensions [mm]

Part No.	Weight [g]	H ±0.2	A -0.2	C ±0.35	A1	A2	C1	C2	H1 ±0.35	H5	K2 thread	Tightening torque [Nm]	K3 for screw DIN 912
TW-14-09 New	17	10	20	29	5.5	15	18	13	1.7	7.2	M2	0.25	-
TW-14-12 New	34	13	27	34	7.5	20	22	15	2.2	9.5	M3	0.50	M2
TW-14-15 New	61	16	32	42	8.5	25	31	20	2.8	11.0	M3	0.50	M2

EN 06/2023



TW-04



Order key

Type

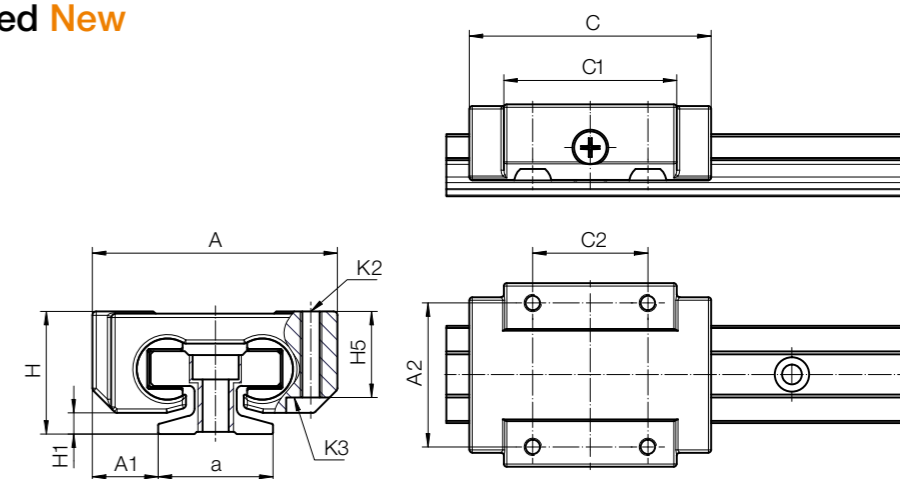
TW-04-07

- Guide rail
- Miniature
- Installation size

Dimensions [mm]

Part No.	Weight [g]	H ±0.2	A -0.2	C ±0.3	A1 ±0.35	A2	C1	C2	H1 ±0.35	H5	K2 thread	Tightening torque [Nm]	K3 for screw DIN 912
TW-04-07	8	8	17	23	5	12	21	8	1.5	-	M2	0.25	-
TW-04-09	17	10	20	29	5.5	15	18	13	1.7	7.2	M2	0.25	-
TW-04-12	34	13	27	34	7.5	20	22	15	2.2	9.5	M3	0.50	M2
TW-04-15	61	16	32	42	8.5	25	31	20	2.8	11	M3	0.50	M2

Miniature guides, pre-loaded **New**



Dimensions [mm]

Part No.	Weight [g]	Pre-load [N]	H ±0.2	A -0.2	C ±0.3	A1 ±0.35	A2	C1	C2	H1 ±0.35	H5	a -0.2	K2 thread	Tightening torque [Nm]	K3 for screw DIN 912
TW-04-09-P30 New	18.0	3	10	20	29	5.5	15	18	13	1.7	7.2	9	M2	0.25	-
TW-04-12-P40 New	36.0	4	13	27	34	7.5	20	22	15	2.2	9.5	12	M3	0.5	M2
TW-04-12-P90 New	36.0	9	13	27	34	7.5	20	22	15	2.2	9.5	12	M3	0.5	M2
TW-04-15-P40 New	64.0	4	16	32	42	8.5	25	31	20	2.8	11.0	15	M3	0.5	M2
TW-04-15-P90 New	64.0	9	16	32	42	8.5	25	31	20	2.8	11.0	15	M3	0.5	M2

EN 06/2023





TWE-04



Complete system
online



Order key

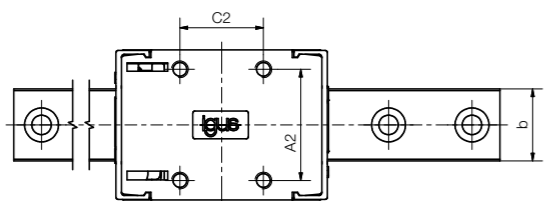
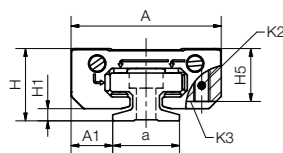
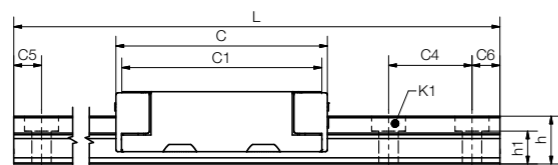
Type

TW E -04-12

Guide carriages	Adjustable clearance	Miniature	Installation size
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High corrosion resistance by use of e-coating finish



Dimensions [mm]

Part No.	Weight	H	A	C	A1	A2	C1	C2	H1	H5	K2 thread	K3 for screw
	[g]	±0.2	-0.2	±0.3	±0.35				±0.35			DIN 912
TWE-04-12	36	13	27	38	7.5	20	36	15	2.2	9.5	M3	M2
TWE-04-15	61	16	32	45	8.5	25	31	20	2.8	11	M3	M2



Press in, turn, snap into place



Tool: screwdriver with 3mm edge wide



Right side: setting the height clearance



Left side: setting the lateral clearance

Can be combined with:



TS-04-...



Technical data
▶ Page 1235



drylin® T replacement plastic sliding elements (set)

Material iglidur® J ▶ Page 159

Material iglidur® J200 ▶ Page 261

Material iglidur® E3

Guide carriages	Part No. Sliding part set
TW-12-15	TEK-12-15 (J200)
TW-12-20	TEK-12-20 (J200)
TW-12-25	TEK-12-25 (J200)
TW-12-30	TEK-12-30 (J200)
TW-14-09	TEK-14-09 (E3)
TW-14-12	TEK-14-12 (E3)
TW-14-15	TEK-14-15 (E3)
TW-01-15	TEK-01-15 (J)
TW-01-20	TEK-01-20 (J)
TW-01-25	TEK-01-25 (J)
TW-01-30	TEK-01-30 (J)
TW-02-20	TEK-02-20 (J)
TW-02-25	TEK-02-25 (J)
TW-02-30	TEK-02-30 (J)
TW-04-09	TEK-04-09 (J)
TW-04-12	TEK-04-12 (J)
TWE-04-12	TEK-E-04-12 (J)
TW-04-15	TEK-04-15 (J)
TWE-04-15	TEK-E-04-15 (J)



drylin® T end caps for series 01 guide rail holes:

Rail	Part No. End cap
TS-01-15	TSZ-011501
TS-01-20	TSZ-012001
TS-01-25	TSZ-012501
TS-01-30	TSZ-013001

When using the end caps, screws with a low screw head must be used to attach the rail.

Part No.	F _{ymax.} , F _{zmax.} [N]
TW-01/-12-15	2,000
TW-01/-02/-12-20	3,700
TW-01/-02/-03/-12-25	5,000
TW-01/-02/-12-30	7,000

drylin® T - system design

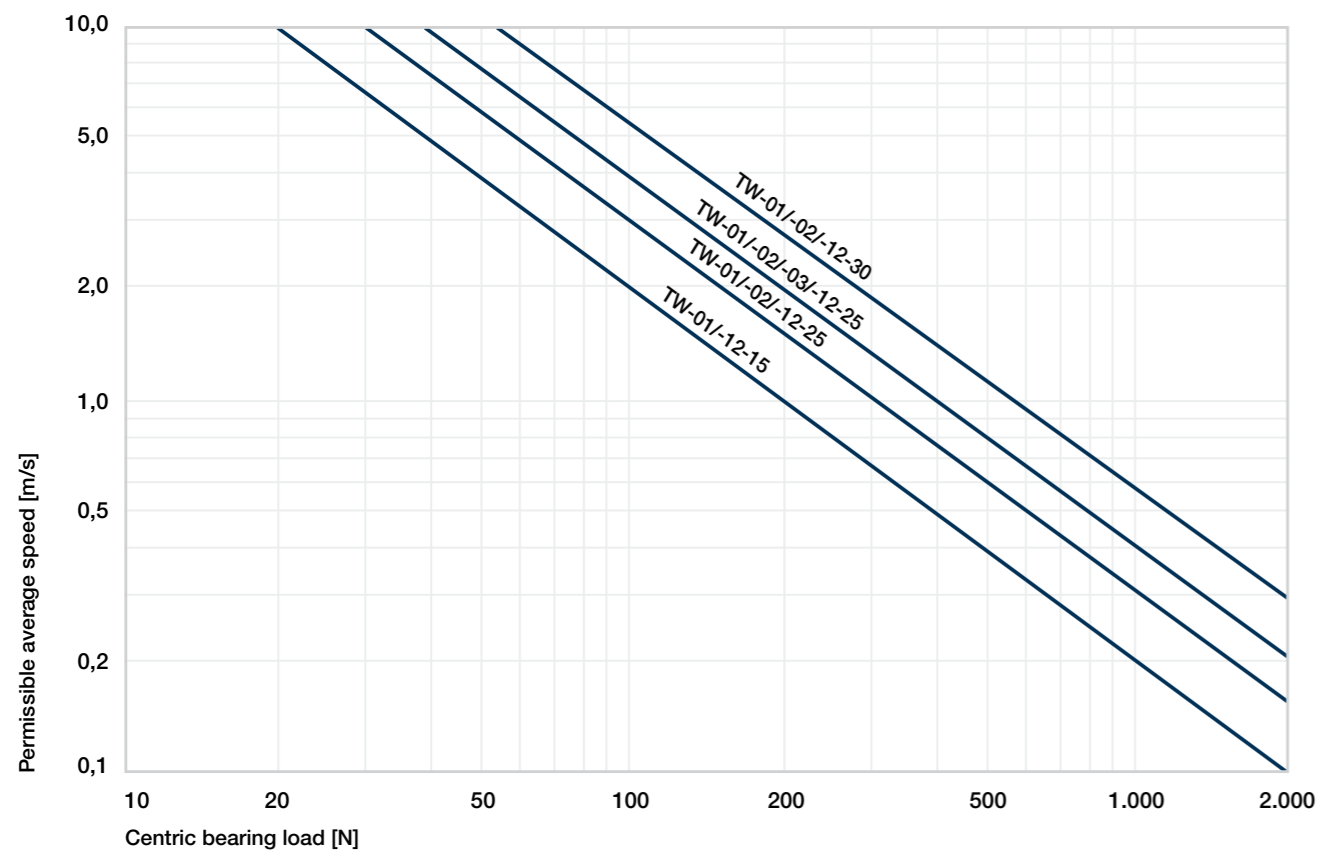


Diagram 04: Determination of the maximum permitted speed for the load



drylin® linear technology - drylin® R shaft guides

Lubrication-free drylin® liners

Resistance to dust and dirt

Low coefficient of friction

Extremely quiet operation

Many adapter and housing options



Extremely wear-resistant, robust in challenging environments and lightweight



Hard-anodised aluminium shafts guarantee optimum running properties

Shafts made from steel, stainless steel or carbon fibre

Shafts and supported shafts available

Linear adapter made from solid plastic or aluminium

Complete housing made from anodised aluminium

drylin® liners made from five different lubrication-free iglidur® high-performance polymers

Hard-anodised aluminium tubes - lightweight

Lubrication-free shaft guides - drylin® R

drylin® R shaft guides are based on extremely wear-resistant polymers specially developed for the linear technology. The dimensions are compatible with standard ball bearings. The special geometry guarantees reliability even in extreme environments.

- 100% lubrication-free
- Dimensionally interchangeable with standard recirculating ball bearings
- Large variety of choice in housing shapes
- Shafts, shaft end blocks and accessories available from stock
- Replaceable liners
- Stainless steel housings available

Typical application areas

- Agricultural machinery
- Automotive
- Medical technology
- Facade construction
- Packaging industry

Available from stock
Detailed information about delivery time online.

Price breaks online
No minimum order value. No minimum order quantity

Max. +200°C
Min. -40°C

Up to Ø 60mm
More dimensions upon request.

Imperial dimensions available
► **From page 1885**

Service life calculation
► www.igus.eu/drylin-expert

ESD-compatible
(electrostatic discharge)

Cleanroom certified
IPA Fraunhofer

Free from toxins
2011/65/EU (RoHS)

Dimensions correspond to standard for recirculating ball bearings



Liners and press-fit bearings

- Made from iglidur® high-performance polymers
 - Easy to fit
 - Unaffected by dirt and dust
 - Low coefficient of friction, optimised wear quality
- **Page 1258**



W360CM linear plain bearing (precision)

- High rigidity
 - Low bearing clearance
 - Linear bearings or flanged bearings
- **Page 1288**



Flanged linear plain bearings

- Pre-assembled housings with drylin® liners
 - Round or square flange
 - Tandem flange housing for additional stability
- **Page 1312**



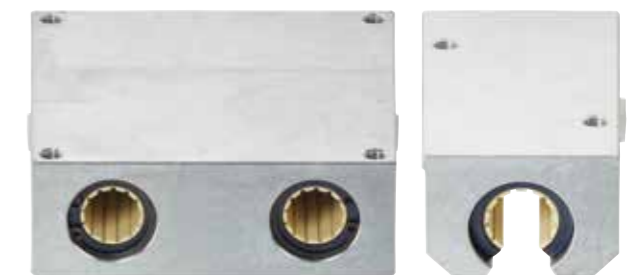
Linear plain bearings

- Dimensionally interchangeable with standard recirculating ball bearings
 - Extremely lightweight solid plastic bearing
 - Aluminium and stainless steel adapters equipped with iglidur® liners
- **Page 1280**



Linear bearings and pillow blocks, open/closed design

- For unsupported shafts ► **Page 1338**
 - For supported shafts ► **Page 1339**
 - Fixed bearing/floating bearing/tandem bearing/clearance adjustment
- **Page 1307**



Quad block

- Closed and open design
 - Torque-resistant quad block housing with four linear adapters
 - Also available as tandem housing
- **Page 1322**



Cutting table

drylin® R linear plain bearings on supported aluminium shafts are used in this grinder to guide the cutting table. The drylin® components stand for extreme dirt resistance, accurate guidance and smooth operation.

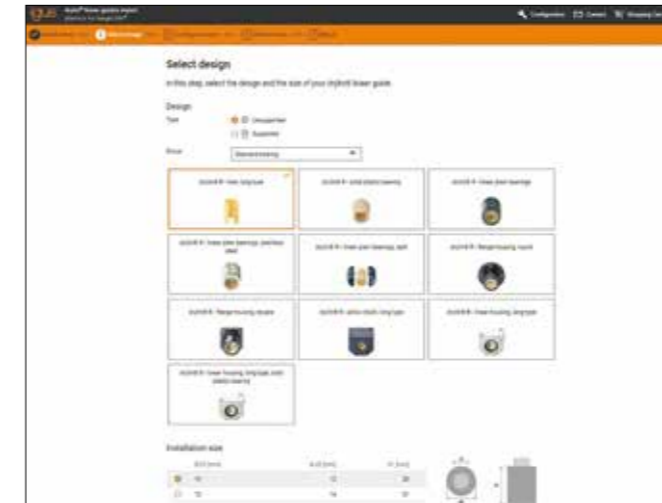
Angle stop in sawmill

Saw mill: linear guide with iglidur® J plastic liner for the angle stops. iglidur® J liners are best suited for most linear applications due to their low wear and low friction properties.



Concrete pipe cutter

The machine now runs entirely free of troubles for multiple years with drylin® RJUM-01 linear bearings despite the extremely heavy-duty operation.



Expert for linear guides: System selection and service life calculation with CAD
Configure and calculate the service life of linear bearings - constantly expanded by new sizes and products

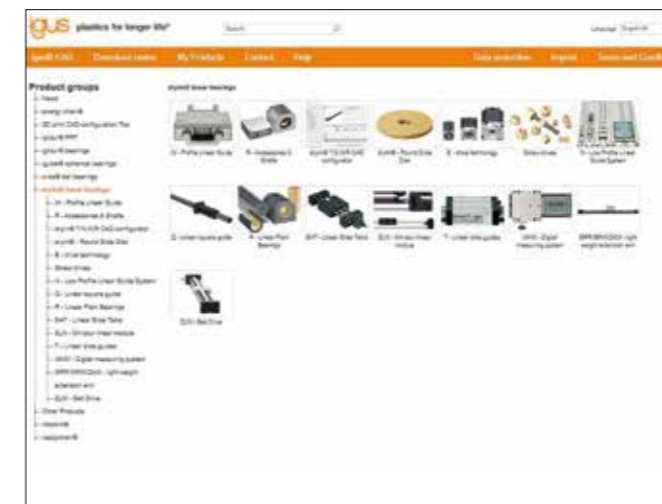
Easily calculate the service life of your required linear guide and configure with a few clicks. Select a drylin® system and add the relevant environmental parameters. Select the bearing size, carriage, number and position. Then enter the distance between the rails and the mounting. Define more relevant parameter of the guidance and select a rail length. The results are displayed.



► www.igus.eu/drylin-expert



Download the online tool
app now

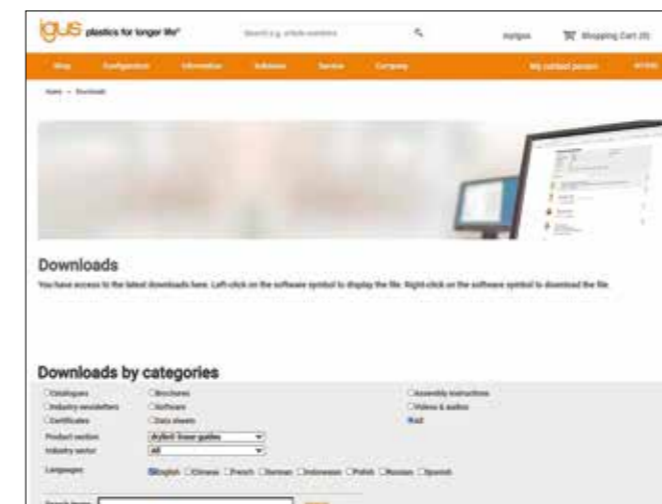


drylin® CAD configurator: Generate complete 3D models for drylin® linear technology according to your specifications

The igus® CAD online configurator gives you the ability to design and save your linear guide as a system, individual components directly as a 3D model in all commonly used formats, or to have these sent by e-mail - free of charge and without registration.



► www.igus.eu/drylin-CAD



More information about the products can be found in the igus® download area

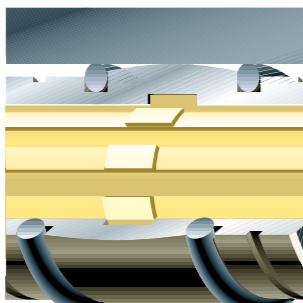
- Assembly instructions
- Assembly videos
- System design
- Catalogues



► www.igus.eu/downloads

drylin® R linear plain bearings

The drylin® standard round bearings consist of an interchangeable iglidur® J liner that is manufactured to be a mechanical fit into an anodised aluminium adapter. The locating spigot of the liner is carried out by a snap ring groove. drylin® R linear plain bearings, made from solid plastic, are dimensionally equivalent to standard ball bearings. They are made entirely out of wear-resistant iglidur® J material and can offer technical advantages in addition to the clear price advantage. Thus, applications in which machine parts are primarily stainless steel, e.g. food and filling equipment, are well suited for the use of solid plastic bearings. An additional weight-saving is also easily obtained. Both versions are designed for the installation in housing holes with the tolerance H7. The mounting is done like in ball bearings with circlips according to DIN 471/472. The narrow design of the O2 series linear plain bearings, is clipped into the H7 housing hole. Standard commercial 2-component adhesives can be used for this purpose.









Dirt, dust, fibres

An important feature of all the available linear bearings is their tolerance of dirt. For most systems the application of wipers or seals is recommended for even low dirt accumulation. No other system features such a high safety with dust, lint and coarse dirt as drylin®. The patented design of the bearing surface using individual slide pads connected by thin film sections, provides performance benefits for dirty environments. Dirt, even when it becomes wet on the shaft, is wiped away by the individual glide pads and is moved into the open areas. The running sections of the drylin® bearing then slide on the shaft that has been cleared of all contaminants.

Split linear bearings

Applications that are on the edge of technical feasibility or in extremely harsh environments often require frequent replacement of the bearings. In many cases, drylin® can give a multiple increase in the service life. However, in extreme applications, replacement of the bearings is necessary, even with drylin®. drylin® linear plain bearings can provide considerable cost reductions in such cases as only the polymer bearing liner has to be replaced. This often means a reduction of more than 90% in replacement part costs. In addition the dismantling of the shafts is avoided.



	 The All-rounder - iglidur® J	 The specialist - iglidur® J200	 The extreme - iglidur® X	 The endurance runner - iglidur® E7	 The FDA-compliant - iglidur® A180	 Blue Sky Thinking FDA/EU-compliant - iglidur® A160
Application temperature	-50 up to +90°C	-50 up to +90°C	-100°C up to +250°C	-50°C up to +70°C	-50 up to +90°C	-50 up to +90°C
Best coefficient of friction with	Steel shaft	Aluminium, hard-anodised	Hard-chromed steel	Steel/stainless steel shaft	Stainless steel shaft	Hardened stainless steel shafts
Volume resistance	> 10 ¹³ Ωcm	> 10 ⁸ Ωcm	< 10 ⁵ Ωcm	> 10 ⁹ Ωcm	> 10 ¹² Ωcm	> 10 ¹² Ωcm
Moisture absorption	1.3% weight	0.7% weight	0.5% weight	< 0.1wt.-%	0.2% weight	< 0.1wt.-%
Maximum service life with	Hard-anodised aluminium	Aluminium, hard-anodised	Hardened stainless steel	Steel/stainless steel shaft	Stainless steel shaft	Hardened stainless steel shafts
Potential counter partner	All shaft materials	Aluminium, hard-anodised	Hardened stainless steel	Steel/stainless steel shaft	All shaft materials	Stainless steel
Permissible stat. surface pressure	35MPa	23MPa	150MPa	18MPa	28MPa	15MPa
Part No.	JUM-...	J200UM-...	XUM-...	E7UM-...	A180UM-...	A160UM-...

The split bearings are easily pulled off the housing and opened. The slotted liner can be simply mounted on the shaft. With this product range of split drylin® bearings, installation times can be reduced to a minimum.

Series L1 - low-clearance press-fit bearings

The series L1 plain bearings are composed of the iglidur® L100 bearing material, an extremely wear-resistant plastic compound. They are sub-divided into a press-fit area and a gliding range. The gliding range is composed of individual crossbars which are linked to each other by thin film bridges. These film bridges compensate the elongation of the bearing through heating or moisture. This separation enables the almost clearance-free design of the bearings, as there is no clamping of the shaft. The cylinder-shaped press-fit area is also visually very distinct from the gliding range. The function of this area, which shows a distinct clearance compared to the shaft, is to fix the bushing firmly in the housing by means of a press fit.



- Material properties:**
 iglidur® J ▶ Page 163
 iglidur® J200 ▶ Page 265
 iglidur® X ▶ Page 291
 iglidur® E7 ▶ Page 271
 iglidur® A160 ▶ Page 443
 iglidur® A180 ▶ Page 425
 iglidur® L100 ▶ Page 1913



Compressive strength

igidur® plain bearings are homogeneously filled with solid lubricants. In this way, lubricants cannot be removed, even at high loads. The iglidur® L100 material allows an average static surface pressure of 70MPa. However, only half of the load-bearing surface can carry loads and this is taken into account in the calculation.

Surface speeds

The following table shows possible surface speeds of L1 bearings.

- Extremely wear-resistant
- Low coefficient of friction
- Vibration-dampening
- High static compressive strength
- Good chemical resistance
- Highly resistant to dirt
- Also suitable for soft and rough shafts

igidur® L100	Rotating	Oscillating	linear
Continuous [m/s]	1.5	1.5	3
Short-term [m/s]	3	3	10

Table 02: Maximum surface speed for iglidur® L100

Coefficient of friction

Plain bearings of the L1 series are designed for dry operation against steel. The best results are attained with surface finishes from 0.3 to 0.8Ra. The coefficient of sliding friction reduces with increasing load. Typical coefficient of friction in dry operation are 0.2 to 0.3. But the value can be higher with less suitable shafts.

Operating temperatures

Temperatures affect the compressive strength, the wear and the securing of the bearing in the housing. A firm fit could be determined in all the tests up to a temperature of +70°C. At higher temperatures, an additional securing of the bearing is recommended. With effective securing, L1 plain bearings could also be used at temperatures over +130°C.

igidur® L100	Application temperatures
Minimum	-30°C
Max. long-term	+100°C
Maximum, short-term	+190°C

Table 03: Temperature limits for iglidur® L100

Floating bearings for linear plain bearings

drylin® 03 series linear plain bearings offer great advantages in applications with parallel shafts. With their geometry, they are able to compensate for alignment and parallelism errors and should be used on the shaft located furthest from the drive mechanism. The design provides a spherical area on the outside diameter of the aluminium adapter for self-alignment. Reductions in load capacity are prevented, since the shaft always lies on the total projected surface. Due to the even load distribution over the entire bearing, edge pressure is not possible with the self-aligning drylin® linear bearings. In order to compensate parallelism errors between two shafts, the outer diameter is designed to be smaller than the housing hole diameter by 0.2 to 0.3mm (depending on the size). With the use of mounted O-rings, these bearings have an elastic bearing seat. The clearance between the bearing and housing allows for the maximum compensation of possible shaft miss-alignment.

The drylin® R self-aligning bearings are supplied hard-anodised. These surfaces guarantee the highest wear resistance if the aluminium bearing moves in the housing during compensation adjustments. Another option are the pillow blocks in the OJUM-06 LL and RJUM-06 LL design series. The mounting of the bearing allows a parallelism adjustment between the shafts by ±3mm. The particular suspension of the supporting housing on an axis running in the z-direction enables an angular error compensation of up to 3.5°.

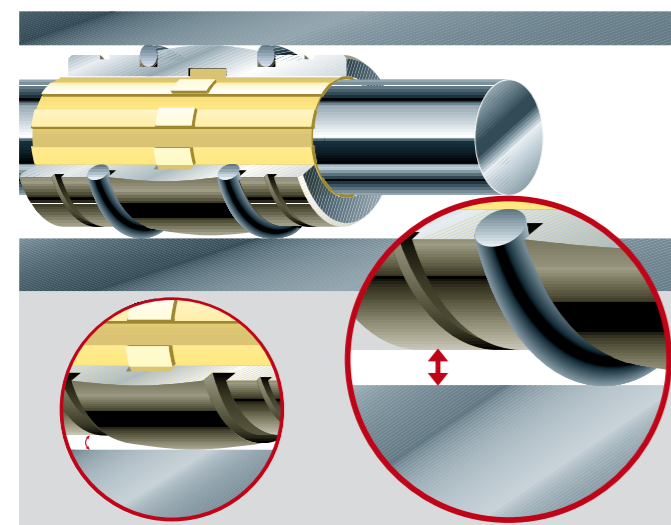


Diagram 02: By defined installation clearance and externally mounted O-rings, the self-aligning drylin® R bearings of the type series 03 can compensate parallelism errors. The spherical drylin® adapter can compensate for parallelism errors. A hard-anodisation protects the aluminium adapter from wear.

Eccentric forces

To ensure successful use of maintenance-free drylin® linear bearings, it is necessary to follow certain recommendations: if the distance between the driving force point and the fixed bearings is more than twice the bearing spacing (2:1 rule), a static friction value of 0.25 can theoretically result in jamming on the guides.

This principle applies regardless of the value of the load or drive force. The friction product is always related to the fixed bearings. The greater the distance between the drive and the guide bearing, the higher the wear and required drive force.

Failure to observe the 2:1 rule during a use of linear plain bearings can result in uneven motion or even system blockage. Such situations can often be remedied with relatively simple modifications. If you have any questions on design and/or assembly, please make use of our technical support.

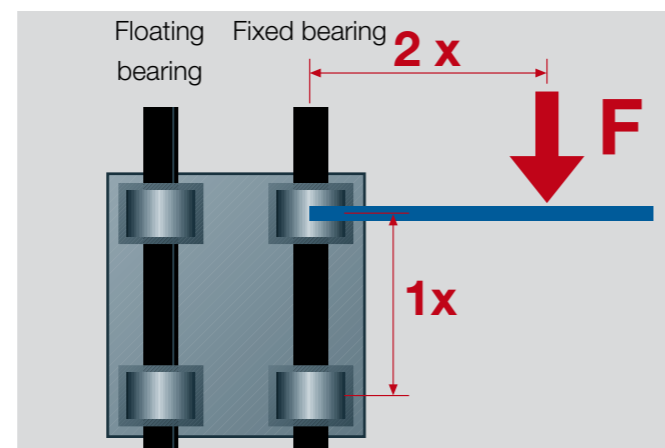


Figure 03: The 2:1 rule



RJUM-06-LL ▶ Page 1306
OJUM-06-LL ▶ Page 1307

RJUM-03/OJUM-03 series	±0.5°
RJUM-06-LL/OJUM-06-LL series	±3.5°

Table 04: Compensation of misalignment errors

RJUM-03/OJUM-03 series	±0.1mm
RJUM-06-LL/OJUM-06-LL series	±3.0mm

Table 05: Compensation of parallelism errors

drylin® R shaft guides are designed for completely lubrication-free operation. The dimensions of the respective linear adapter and housing meet the standard for recirculating ball bearings. During assembly, please note the following installation instructions:

Design tips for drylin® linear plain bearings:

The mentioned values for "F_{max}." relate to the performance of the iglidur® liners made from high-performance plastics and cannot be used as the only selection tool for the calculation of an application. The maximum carrying capacity of the entire bearing system depends on the geometry, housing shape, the housing material, the connection including the screws used and requires a separate inspection. For a detailed analysis, please use our online configurator at

▶ www.igus.eu/drylin-expert

Recommended tolerance for the shaft: h6-h10

Surface roughness [Ra]: 0.15-0.6
Guide shafts round/supported ▶ Shafts page 1333

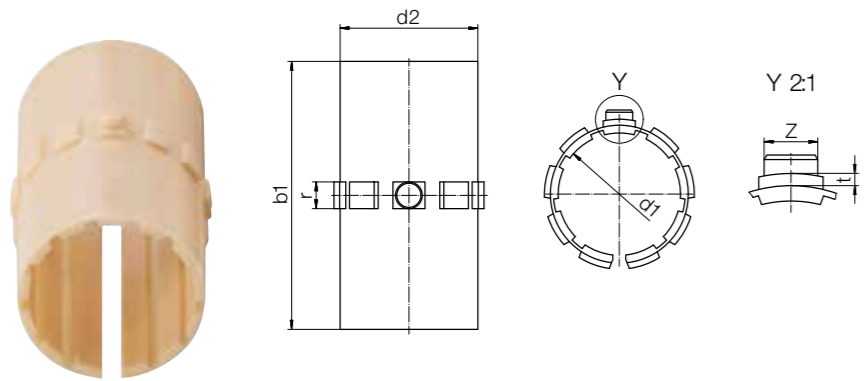
Recommended housing hole H7

Linear plain bearings RJUM-01/03, TJUM-01/03, RJM, RJMP, RJ260(U)M02, press-fit bearings WLM, WLFM

 <p>Liners: _UM-01, _UMO-01, _UM-11, _UMO-11, _UM-02 ● Interlocking with the housing bore ● Locating spigot is supported by a snap ring groove ● Anti-rotation feature through engagement of the pin in hole Ø z</p>	 <p>Press-fit bearings: WLM, WLFM ● Press-fit installation into the H7 housing hole ▶ Assembly instructions, page 57</p>	 <p>Linear plain bearings: RJUM-01, RJUM-11, RJUM-ES, TJUM-01, RJUM-03, TJUM-03, RJUI-01, RJUI-03, TJUI-01, TJUI-03 ● Secured by DIN 471 or 472 circlips, metric types (not included)</p>	 <p>Solid plastic bearings: RJM, RJ-01 ● Fastening with circlips according to DIN 471 or 472 (not included) ● The E9 inner tolerance applies only after the press-fit</p>
 <p>Solid plastic bearings: RJMP ● Easy assembly by soft press-fit ● Secured by DIN 471 or 472 circlips (not included)</p>	 <p>Linear plain bearings: RJUM-02 ● Secured by press-fit in steel housing hole H7 or aluminium housing hole K7 ● Alternatively, the adapter can be glued with commercially available 2-component adhesive into a housing</p>	 <p>Compact bearings: RJ260 (UM-02) ● Locating spigot and press-fit into housing bore H7 ● Alternatively, the adapter can be glued with commercially available 2-component adhesive into a housing</p>	 <p>Linear plain bearings: OJUM-01, OJUM-03, OJUI-01, OJUI-03 ● Adapter secured with set screws (not included)</p>
 <p>Quad blocks: RQA, RGA Tandem design: RTA ● The bearing in the housing is secured by DIN 472 circlips</p>	 <p>Linear housings: RGAS ● The bearing in the housing is secured by DIN 471 circlips</p>	 <p>Quad blocks: OQA, OGA, Linear housings: OGAS, Tandem design: OTA ● The bearings is secured by screws</p>	 <p>Pillow blocks: RJUM/E/T-05, RJUM-06-LL, OJUM/E-06-LL, Flange housings: FJUM/T-01/02, Quad blocks: RGA, OGA; Tandem designs: RTA, OTA; Linear bearings: RGAS, OGAS ● Mounting screws of the housing DIN 912-8.8 ● Circlips according to DIN 7980</p>

drylin® R liners | Product range

Long, closed design for shafts - made from iglidur® J (the all-rounder)



Order key

Type	Size
J U M -01-10	
igidur® J	
Liner	
Metric	
Standard	
Inner Ø d1	

The all-rounder for all shaft surfaces in indoor and outdoor applications

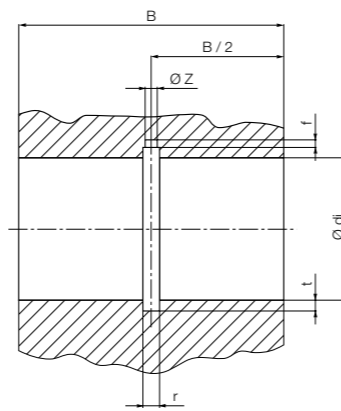
⁷⁸⁾ According to igus® testing method ▶ Page 1330
Please note: Installation instructions ▶ Page 1257
 Min. -50°C
Max. +90°C

Dimensions [mm]

d1	d1 tolerance ⁷⁸⁾	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.030 +0.070	12	28	3.0	0.8	2.5	1.10	JUM-01-10
12	+0.030 +0.070	14	31	3.0	0.8	3.0	1.50	JUM-01-12
16	+0.030 +0.070	18	35	3.5	0.8	3.5	2.20	JUM-01-16
20	+0.030 +0.070	23	44	5.0	0.8	3.5	4.90	JUM-01-20
25	+0.030 +0.070	28	57	5.0	0.8	4.0	8.23	JUM-01-25
30	+0.040 +0.085	34	67	5.0	0.8	4.0	14.95	JUM-01-30
35	+0.040 +0.085	39	69	5.0	0.8	4.0	18.20	JUM-01-35
40	+0.040 +0.085	44	79	6.0	1.3	5.0	23.16	JUM-01-40
50	+0.050 +0.150	55	99	7.0	1.3	6.0	45.35	JUM-01-50
60	+0.050 +0.150	65	124	8.0	2.0	6.5	70.00	JUM-01-60⁷⁹⁾

Housing hole for JUM-01 | Dimensions [mm]

Shaft Ø	d1 H7	B h10	r +0.05	t +0.1	f +0.5	Z +0.2	Part No.
10	12	29	3.0	1.0	1.0	2.6	JUM-01-10
12	14	32	3.0	1.0	1.5	3.1	JUM-01-12
16	18	36	3.5	1.0	1.7	3.6	JUM-01-16
20	23	45	5.0	1.0	2.0	3.6	JUM-01-20
25	28	58	5.0	1.0	2.0	4.1	JUM-01-25
30	34	68	5.0	1.0	2.0	4.1	JUM-01-30
35	39	70	5.0	1.0	2.0	4.1	JUM-01-35
40	44	80	6.0	1.5	2.5	5.1	JUM-01-40
50	55	100	7.0	1.5	2.5	6.1	JUM-01-50
60	65	125	8.0	2.5	3.0	6.5	JUM-01-60⁷⁹⁾



⁷⁹⁾ In two parts

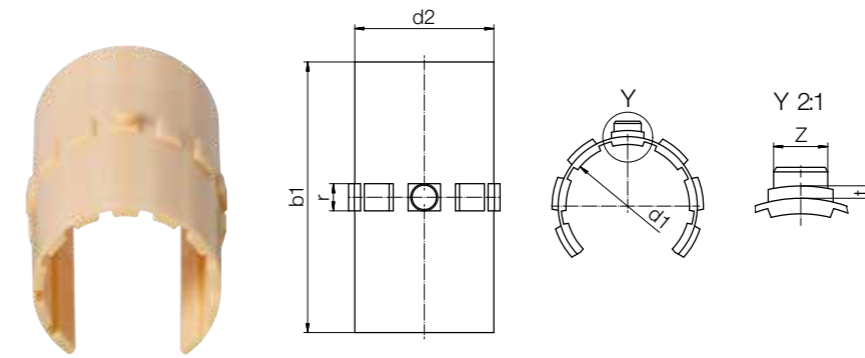
Can be combined with:



Imperial dimensions
▶ Page 1885

drylin® R liners | Product range

Long, open design for supported shafts - made from iglidur® J (the all-rounder)



Order key

Type	Size
J U M O -01-10	
igidur® J	
Liner	
Metric	
Open	
Standard	
Inner Ø d1	

The all-rounder for all shaft surfaces in indoor and outdoor applications

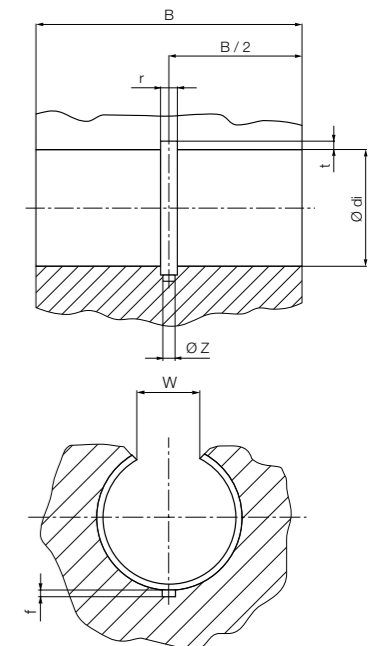
⁷⁸⁾ According to igus® testing method ▶ Page 1330
Please note: Installation instructions ▶ Page 1257
 Min. -50°C
Max. +90°C

Dimensions [mm]

d1	d1 tolerance ⁷⁸⁾	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.030 +0.070	12	28	3.0	0.8	2.5	0.90	JUMO-01-10
12	+0.030 +0.070	14	31	3.0	0.8	3.0	1.16	JUMO-01-12
16	+0.030 +0.070	18	35	3.5	0.8	3.5	1.71	JUMO-01-16
20	+0.030 +0.070	23	44	5.0	0.8	3.5	4.16	JUMO-01-20
25	+0.030 +0.070	28	57	5.0	0.8	4.0	6.97	JUMO-01-25
30	+0.040 +0.085	34	67	5.0	0.8	4.0	12.38	JUMO-01-30
40	+0.040 +0.085	44	79	6.0	1.3	5.0	20.18	JUMO-01-40
50	+0.050 +0.150	55	99	7.0	1.3	6.0	38.60	JUMO-01-50
60	+0.050 +0.150	65	124	8.0	2.0	6.5	60.10	JUMO-01-60⁷⁹⁾

Housing hole for JUMO-01 | Dimensions [mm]

Shaft Ø	d1 H7	B h10	W	r +0.5	t +0.05	f +0.1	Z +0.2	Part No.
10	12	29	7.3	3.0	1.0	1.0	2.6	JUMO-01-10
12	14	32	9.0	3.0	1.0	1.5	3.1	JUMO-01-12
16	18	36	11.6	3.5	1.0	1.7	3.6	JUMO-01-16
20	23	45	12.0	5.0	1.0	2.0	3.6	JUMO-01-20
25	28	58	14.5	5.0	1.0	2.0	4.1	JUMO-01-25
30	34	68	16.6	5.0	1.0	2.0	4.1	JUMO-01-30
40	44	80	21.0	6.0	1.5	2.5	5.1	JUMO-01-40
50	55	100	25.5	7.0	1.5	2.5	6.1	JUMO-01-50
60	65	125	27.2	8.0	2.5	3.0	6.5	JUMO-01-60⁷⁹⁾



⁷⁹⁾ In two parts

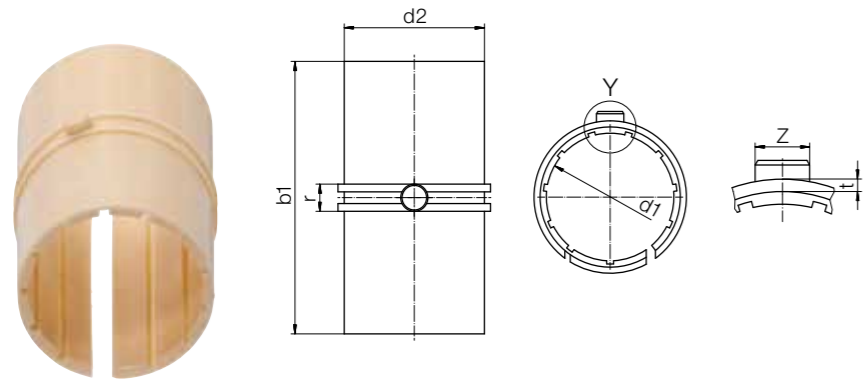
Can be combined with:



Imperial dimensions
▶ Page 1885

drylin® R liners | Product range

Long, closed design, precise for shafts -
made from iglidur® J (the all-rounder)



Order key

Type	Size
JUM-11-10	
igidur® J	
Liner	
Metric	
Precision	
Inner Ø d1	

- Max. bearing clearance reduced by 50%
- Increased contact surface: longer service life

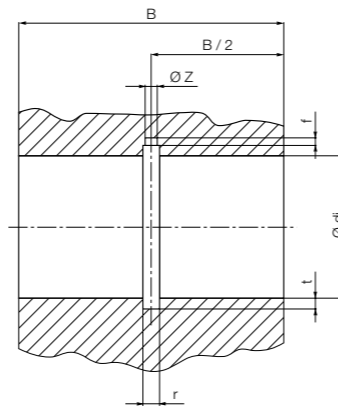
i ⁷⁸⁾ According to igus® testing method ▶ Page 1330
Please note: Installation instructions ▶ Page 1257
+ Min. -50°C
Max. +90°C

Dimensions [mm]

d1	d1 tolerance ⁷⁸⁾	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.000 +0.040	12	28	3.0	0.8	2.5	1.23	JUM-11-10
12	+0.000 +0.040	14	31	3.0	0.8	3.0	1.65	JUM-11-12
16	+0.000 +0.040	18	35	3.5	0.8	3.5	2.42	JUM-11-16
20	+0.000 +0.040	23	44	5.0	0.8	3.5	5.49	JUM-11-20
25	+0.000 +0.040	28	57	5.0	0.8	4.0	8.86	JUM-11-25
30	+0.000 +0.050	34	67	5.0	0.8	4.0	16.63	JUM-11-30
40	+0.000 +0.050	44	79	6.0	1.3	5.0	26.06	JUM-11-40
50	+0.000 +0.060	55	99	7.0	1.3	6.0	48.82	JUM-11-50

Housing hole for JUM-11 | Dimensions [mm]

Shaft Ø	d1 H7	B h10	r +0.05	t +0.1	f +0.5	Z +0.2	Part No.
10	12	29	3.0	1.0	1.0	2.6	JUM-11-10
12	14	32	3.0	1.0	1.5	3.1	JUM-11-12
16	18	36	3.5	1.0	1.7	3.6	JUM-11-16
20	23	45	5.0	1.0	2.0	3.6	JUM-11-20
25	28	58	5.0	1.0	2.0	4.1	JUM-11-25
30	34	68	5.0	1.0	2.0	4.1	JUM-11-30
40	44	80	6.0	1.5	2.5	5.1	JUM-11-40
50	55	100	7.0	1.5	2.5	6.1	JUM-11-50

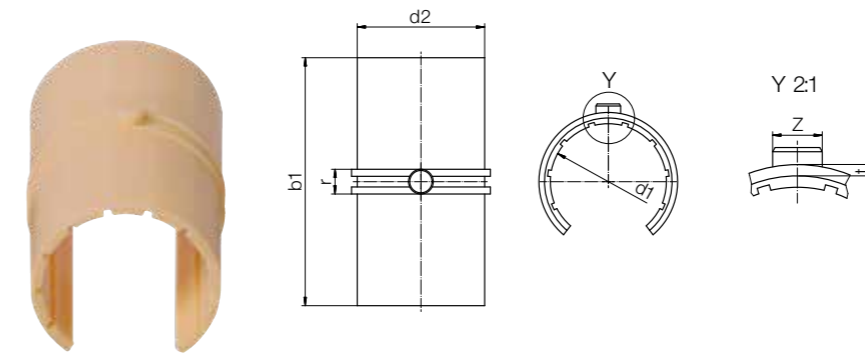


Can be combined with:



drylin® R liners | Product range

Long, open design, precise for supported shafts -
made from iglidur® J (the all-rounder)



Order key

Type	Size
JUMO-11-10	
igidur® J	
Liner	
Metric	
Open	
Precision	
Inner Ø d1	

- Max. bearing clearance reduced by 50%
- Increased contact surface: longer service life

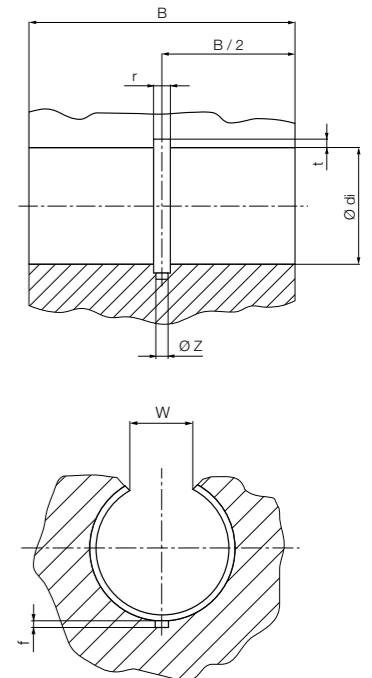
i ⁷⁸⁾ According to igus® testing method ▶ Page 1330
Please note: Installation instructions ▶ Page 1257
+ Min. -50°C
Max. +90°C

Dimensions [mm]

d1	d1 tolerance ⁷⁸⁾	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.000 +0.040	12	28	3.0	0.8	2.5	1.10	JUMO-11-10
12	+0.000 +0.040	14	31	3.0	0.8	3.0	1.50	JUMO-11-12
16	+0.000 +0.040	18	35	3.5	0.8	3.5	2.20	JUMO-11-16
20	+0.000 +0.040	23	44	5.0	0.8	3.5	4.90	JUMO-11-20
25	+0.000 +0.040	28	57	5.0	0.8	4.0	8.23	JUMO-11-25
30	+0.000 +0.050	34	67	5.0	0.8	4.0	14.95	JUMO-11-30
40	+0.000 +0.050	44	79	6.0	1.3	5.0	23.16	JUMO-11-40
50	+0.000 +0.060	55	99	7.0	1.3	6.0	45.35	JUMO-11-50

Housing hole for JUMO-11 | Dimensions [mm]

Shaft Ø	d1 H7	B h10	W +0.2	r +0.05	t +0.1	f +0.5	Z +0.2	Part No.
10	12	29	7.3	3.0	1.0	1.0	2.6	JUMO-11-10
12	14	32	9.0	3.0	1.0	1.5	3.1	JUMO-11-12
16	18	36	11.6	3.5	1.0	1.7	3.6	JUMO-11-16
20	23	45	12.0	5.0	1.0	2.0	3.6	JUMO-11-20
25	28	58	14.5	5.0	1.0	2.0	4.1	JUMO-11-25
30	34	68	16.6	5.0	1.0	2.0	4.1	JUMO-11-30
40	44	80	21.0	6.0	1.5	2.5	5.1	JUMO-11-40
50	55	100	25.5	7.0	1.5	2.5	6.1	JUMO-11-50

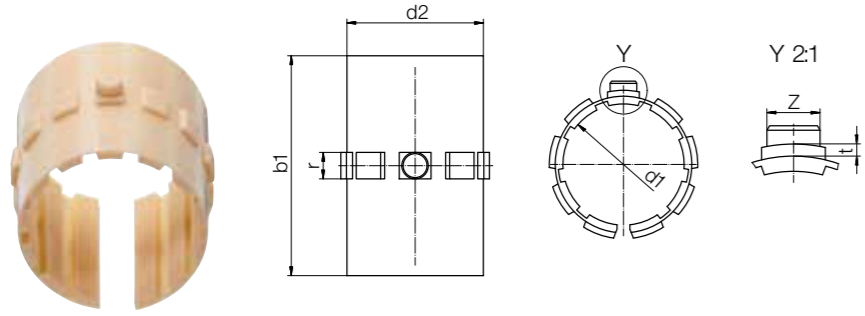


Can be combined with:



drylin® R liners | Product range

Short, closed design for shafts - made from iglidur® J (the all-rounder)



Order key

Type	Size
iglidur® J	J U M-02-10
Liner	
Metric	
Compact	
Inner Ø d1	

The all-rounder for all shaft surfaces in indoor and outdoor applications

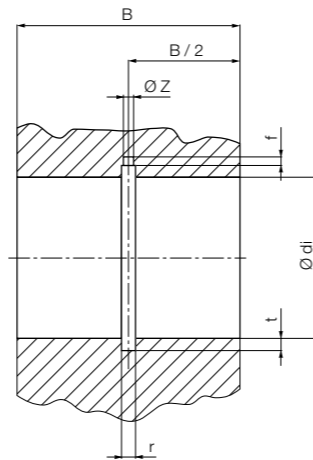
- ⁷⁸⁾ According to igus® testing method ▶ Page 1330
- Please note: Installation instructions ▶ Page 1257
- Min. -50°C
- Max. +90°C

Dimensions [mm]

d1	d1 tolerance ⁷⁸⁾	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.030 +0.070	12	25	3.0	0.8	2.5	1.02	JUM-02-10
12	+0.030 +0.070	14	27	3.0	0.8	3.0	1.27	JUM-02-12
16	+0.030 +0.070	18	29	3.5	0.8	3.5	1.82	JUM-02-16
20	+0.030 +0.070	23	29	5.0	0.8	3.5	3.27	JUM-02-20
25	+0.030 +0.070	28	39	5.0	0.8	4.0	5.75	JUM-02-25
30	+0.040 +0.085	34	49	5.0	0.8	4.0	11.28	JUM-02-30
40	+0.040 +0.085	44	59	6.0	1.3	5.0	17.94	JUM-02-40
45	+0.040 +0.085	50	59	7.0	1.3	6.0	27.00	JUM-02-45
50	+0.050 +0.150	55	69	7.0	1.3	6.0	32.56	JUM-02-50

Housing hole for JUM-02 | Dimensions [mm]

Shaft Ø	d1 H7	B h10	r +0.05	t +0.1	f +0.5	Z +0.2	Part No.
10	12	26	3.0	1.0	1.0	2.6	JUM-02-10
12	14	28	3.0	1.0	1.5	3.1	JUM-02-12
16	18	30	3.5	1.0	1.7	3.6	JUM-02-16
20	23	30	5.0	1.0	2.0	3.6	JUM-02-20
25	28	40	5.0	1.0	2.0	4.1	JUM-02-25
30	34	50	5.0	1.0	2.0	4.1	JUM-02-30
40	44	60	6.0	1.5	2.5	5.1	JUM-02-40
45	50	60	7.0	1.5	2.5	6.1	JUM-02-45
50	55	70	7.0	1.5	2.5	6.1	JUM-02-50



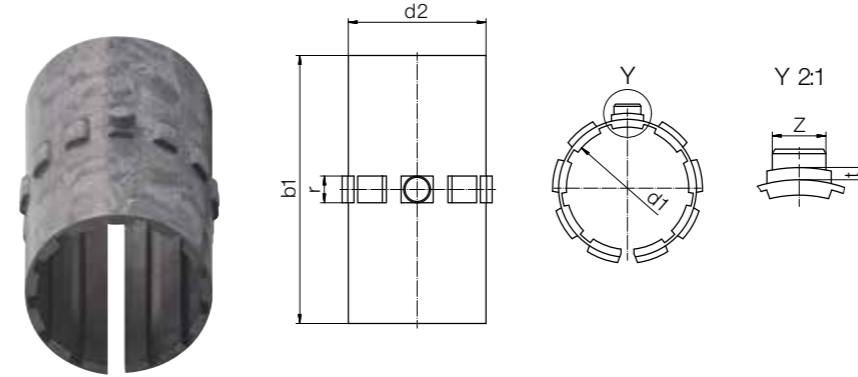
Can be combined with:



1262 Online tools and more information ▶ www.igus.eu/drylinR

drylin® R liners | Product range

Long, closed design for shafts - made from iglidur® J200 (the specialist)



Order key

Type	Size
iglidur® J200	J200 U M-01-10
Liner	
Metric	
Standard	
Inner Ø d1	

The "specialist" with the best running performance on aluminium

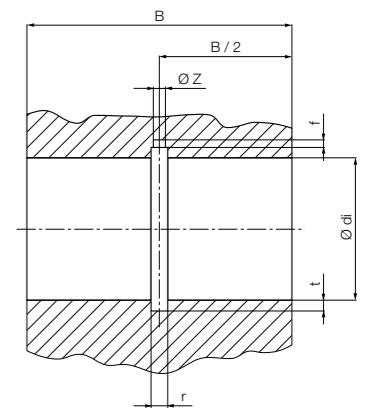
- ⁷⁸⁾ According to igus® testing method ▶ Page 1330
- Please note: Installation instructions ▶ Page 1257
- Min. -50°C
- Max. +90°C

Dimensions [mm]

d1	d1 tolerance ⁷⁸⁾	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.030 +0.070	12	28	3.0	0.8	2.5	1.10	J200UM-01-10
12	+0.030 +0.070	14	31	3.0	0.8	3.0	1.50	J200UM-01-12
16	+0.030 +0.070	18	35	3.5	0.8	3.5	2.54	J200UM-01-16
20	+0.030 +0.070	23	44	5.0	0.8	3.5	5.66	J200UM-01-20
25	+0.030 +0.070	28	57	5.0	0.8	4.0	9.51	J200UM-01-25
30	+0.040 +0.085	34	67	5.0	0.8	4.0	17.27	J200UM-01-30
40	+0.040 +0.085	44	79	6.0	1.3	5.0	26.75	J200UM-01-40
50	+0.050 +0.150	55	99	7.0	1.3	6.0	52.38	J200UM-01-50

Housing hole for J200UM-01 | Dimensions [mm]

Shaft Ø	d1 H7	B h10	r +0.05	t +0.1	f +0.5	Z +0.2	Part No.
10	12	29	3.0	1.0	1.0	2.6	J200UM-01-10
12	14	32	3.0	1.0	1.5	3.1	J200UM-01-12
16	18	36	3.5	1.0	1.7	3.6	J200UM-01-16
20	23	45	5.0	1.0	2.0	3.6	J200UM-01-20
25	28	58	5.0	1.0	2.0	4.1	J200UM-01-25
30	34	68	5.0	1.0	2.0	4.1	J200UM-01-30
40	44	80	6.0	1.5	2.5	5.1	J200UM-01-40
50	55	100	7.0	1.5	2.5	6.1	J200UM-01-50



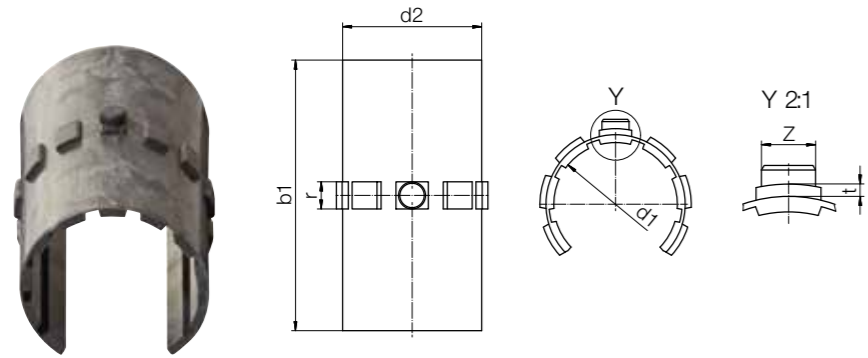
Can be combined with:



3D CAD files, prices and delivery time online ▶ www.igus.eu/drylinR 1263

drylin® R liners | Product range

Long, open design for supported shafts -
made from iglidur® J200 (the specialist)



Order key

Type	Size
J200 U M O-01-10	
iglidur® J200	
Liner	
Metric	
Open	
Standard	
Inner Ø d1	

The "specialist" with the best running performance on aluminium

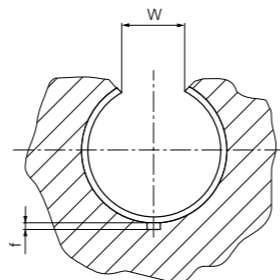
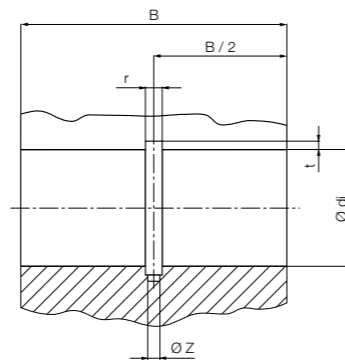
i ⁷⁸⁾ According to igus® testing method ▶ Page 1330
Please note: Installation instructions ▶ Page 1257
+ Min. -50°C
Max. +90°C

Dimensions [mm]

d1	d1 tolerance ⁷⁸⁾	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.030 +0.070	12	28	3.0	0.8	2.5	1.04	J200UMO-01-10
12	+0.030 +0.070	14	31	3.0	0.8	3.0	1.34	J200UMO-01-12
16	+0.030 +0.070	18	35	3.5	0.8	3.5	1.98	J200UMO-01-16
20	+0.030 +0.070	23	44	5.0	0.8	3.5	4.80	J200UMO-01-20
25	+0.030 +0.070	28	57	5.0	0.8	4.0	8.05	J200UMO-01-25
30	+0.040 +0.085	34	67	5.0	0.8	4.0	14.30	J200UMO-01-30
40	+0.040 +0.085	44	79	6.0	1.3	5.0	23.31	J200UMO-01-40

Housing hole for J200UMO-01 | Dimensions [mm]

Shaft Ø	d _i H7	B h10	W	r +0.5	t +0.05	f +0.1	Z +0.2	Part No.
10	12	29	7.3	3.0	1.0	1.0	2.6	J200UMO-01-10
12	14	32	9.0	3.0	1.0	1.5	3.1	J200UMO-01-12
16	18	36	11.6	3.5	1.0	1.7	3.6	J200UMO-01-16
20	23	45	12.0	5.0	1.0	2.0	3.6	J200UMO-01-20
25	28	58	14.5	5.0	1.0	2.0	4.1	J200UMO-01-25
30	34	68	16.6	5.0	1.0	2.0	4.1	J200UMO-01-30
40	44	80	21.0	6.0	1.5	2.5	5.1	J200UMO-01-40

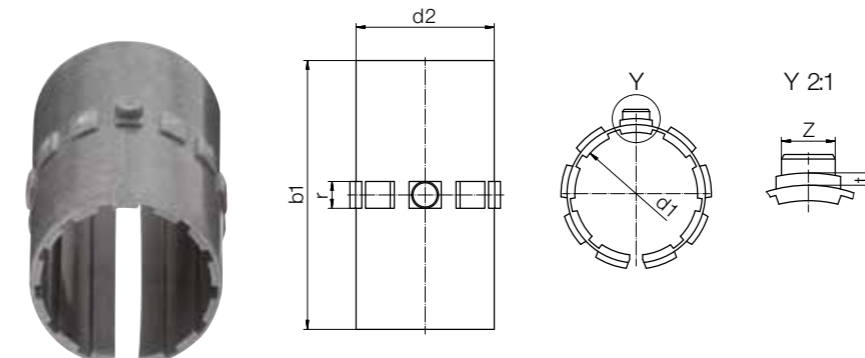


Can be combined with:



drylin® R liners | Product range

Long, closed design for shafts -
made from iglidur® E7 (the endurance runner)



Order key

Type	Size
E7 U M-01-10	
iglidur® E7	
Liner	
Metric	
Standard	
Inner Ø d1	

The "endurance runner" up to 8 times longer service life on steel shafts

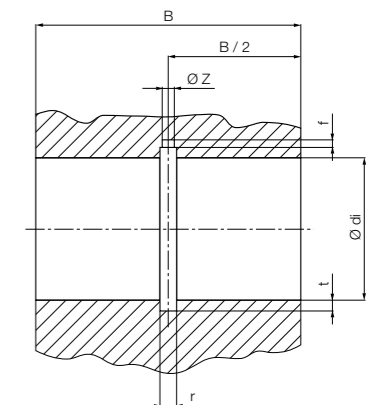
i ⁷⁸⁾ According to igus® testing method ▶ Page 1330
Please note: Installation instructions ▶ Page 1257
+ Min. -50°C
Max. +70°C

Dimensions [mm]

d1	d1 tolerance ⁷⁸⁾	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.030 +0.070	12	28	3.0	0.8	2.5	0.73	E7UM-01-10
12	+0.030 +0.070	14	31	3.0	0.8	3.0	1.01	E7UM-01-12
16	+0.030 +0.070	18	35	3.5	0.8	3.5	1.45	E7UM-01-16
20	+0.030 +0.070	23	44	5.0	0.8	3.5	3.25	E7UM-01-20
25	+0.030 +0.070	28	57	5.0	0.8	4.0	5.44	E7UM-01-25
30	+0.040 +0.085	34	67	5.0	0.8	4.0	9.88	E7UM-01-30
40	+0.040 +0.085	44	79	6.0	1.3	5.0	17.30	E7UM-01-40
50	+0.050 +0.150	55	99	7.0	1.3	6.0	36.30	E7UM-01-50⁷⁹⁾
60	+0.050 +0.150	65	124	8.0	2.5	6.5	54.80	E7UM-01-60⁷⁹⁾

Housing hole for E7UM-01 | Dimensions [mm]

Shaft Ø	d _i H7	B h10	r +0.5	t +0.05	f +0.1	Z +0.2	Part No.
10	12	29	3.0	1.0	1.0	2.6	E7UM-01-10
12	14	32	3.0	1.0	1.5	3.1	E7UM-01-12
16	18	36	3.5	1.0	1.7	3.6	E7UM-01-16
20	23	45	5.0	1.0	2.0	3.6	E7UM-01-20
25	28	58	5.0	1.0	2.0	4.1	E7UM-01-25
30	34	68	5.0	1.0	2.0	4.1	E7UM-01-30
40	44	80	6.0	1.5	2.5	5.1	E7UM-01-40
50	55	100	7.0	1.5	2.5	6.1	E7UM-01-50⁷⁹⁾
60	65	125	8.0	2.5	3.0	6.5	E7UM-01-60⁷⁹⁾



⁷⁹⁾ In two parts

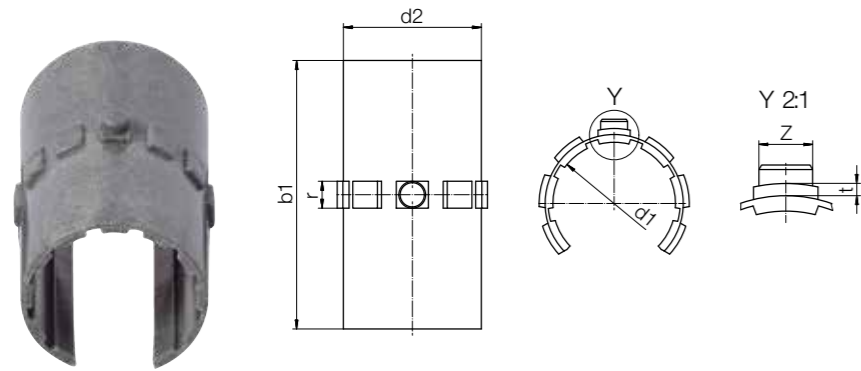
Can be combined with:



inch Imperial dimensions
▶ Page 1885

drylin® R liners | Product range

Long, open design for supported shafts -
made from iglidur® E7 (the endurance runner)



Order key

Type	Size
E7 U M O-01-10	
igidur® E7	
Liner	
Metric	
Open	
Standard	
Inner Ø d1	

The "endurance runner" up to 8 times longer service life on steel shafts

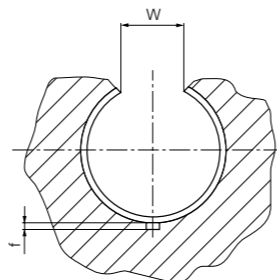
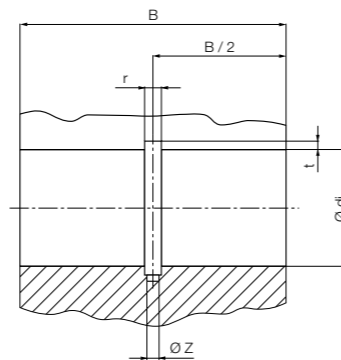
⁷⁸⁾ According to igus® testing method ▶ Page 1330
Please note: Installation instructions ▶ Page 1257
 Min. -50°C
Max. +70°C

Dimensions [mm]

d1	d1 tolerance ⁷⁸⁾	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.030 +0.070	12	28	3.0	0.8	2.5	0.73	E7UMO-01-10
12	+0.030 +0.070	14	31	3.0	0.8	3.0	1.01	E7UMO-01-12
16	+0.030 +0.070	18	35	3.5	0.8	3.5	1.45	E7UMO-01-16
20	+0.030 +0.070	23	44	5.0	0.8	3.5	3.25	E7UMO-01-20
25	+0.030 +0.070	28	57	5.0	0.8	4.0	5.44	E7UMO-01-25
30	+0.040 +0.085	34	67	5.0	0.8	4.0	9.88	E7UMO-01-30
40	+0.040 +0.085	44	79	6.0	1.3	5.0	17.30	E7UMO-01-40
50	+0.050 +0.150	55	99	7.0	1.3	6.0	36.40	E7UMO-01-50⁷⁹⁾
60	+0.050 +0.150	65	124	8.0	2.5	6.5	54.80	E7UMO-01-60⁷⁹⁾

Housing hole for E7UMO-01 | Dimensions [mm]

Shaft Ø	d _i H7	B h10	W	r +0.5	t +0.05	f +0.1	Z +0.2	Part No.
10	12	29	7.3	3.0	1.0	1.0	2.6	E7UMO-01-10
12	14	32	9.0	3.0	1.0	1.5	3.1	E7UMO-01-12
16	18	36	11.6	3.5	1.0	1.7	3.6	E7UMO-01-16
20	23	45	12.0	5.0	1.0	2.0	3.6	E7UMO-01-20
25	28	58	14.5	5.0	1.0	2.0	4.1	E7UMO-01-25
30	34	68	16.6	5.0	1.0	2.0	4.1	E7UMO-01-30
40	44	80	21.0	6.0	1.5	2.5	5.1	E7UMO-01-40
50	55	100	25.5	7.0	1.5	2.5	6.1	E7UMO-01-50⁷⁹⁾
60	65	125	27.2	8.0	2.5	3.0	6.5	E7UMO-01-60⁷⁹⁾



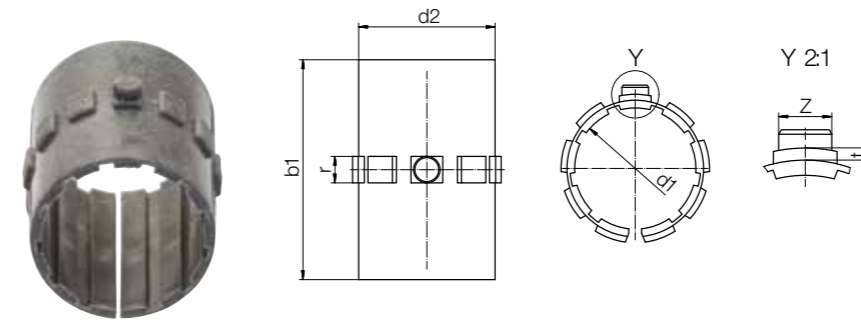
⁷⁹⁾ In two parts

Can be combined with:



drylin® R liners | Product range

Short, closed design for shafts -
made from iglidur® E7 (the endurance runner)



Order key

Type	Size
E7 U M-02-10	
igidur® E7	
Liner	
Metric	
Compact	
Inner Ø d1	

The "endurance runner" up to 8 times longer service life on steel shafts

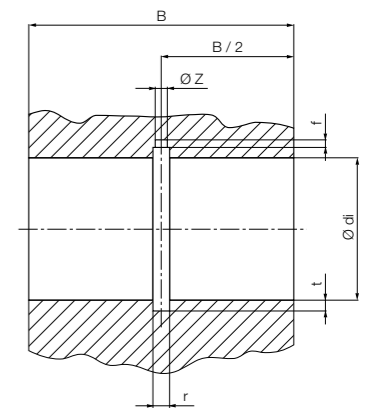
⁷⁸⁾ According to igus® testing method ▶ Page 1330
Please note: Installation instructions ▶ Page 1257
 Min. -50°C
Max. +70°C

Dimensions [mm]

d1	d1 tolerance ⁷⁸⁾	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.030 +0.070	12	25	3.0	0.8	2.5	0.73	E7UM-02-10
12	+0.030 +0.070	14	27	3.0	0.8	3.0	1.01	E7UM-02-12
16	+0.030 +0.070	18	29	3.5	0.8	3.5	1.45	E7UM-02-16
20	+0.030 +0.070	23	29	5.0	0.8	3.5	3.25	E7UM-02-20
25	+0.030 +0.070	28	39	5.0	0.8	4.0	5.44	E7UM-02-25
30	+0.040 +0.085	34	49	5.0	0.8	4.0	9.88	E7UM-02-30
40	+0.040 +0.085	44	59	6.0	1.3	5.0	17.30	E7UM-02-40

Housing hole for E7UM-02 | Dimensions [mm]

Shaft Ø	d _i H7	B h10	r +0.05	t +0.1	f +0.5	Z +0.2	Part No.
10	12	26	3.0	1.0	1.0	2.6	E7UM-02-10
12	14	28	3.0	1.0	1.5	3.1	E7UM-02-12
16	18	30	3.5	1.0	1.7	3.6	E7UM-02-16
20	23	30	5.0	1.0	2.0	3.6	E7UM-02-20
25	28	40	5.0	1.0	2.0	4.1	E7UM-02-25
30	34	50	5.0	1.0	2.0	4.1	E7UM-02-30
40	44	60	6.0	1.5	2.5	5.1	E7UM-02-40

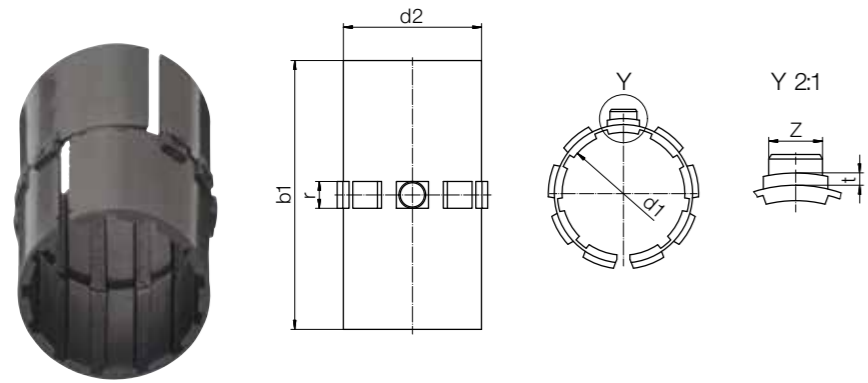


Can be combined with:



drylin® R liners | Product range

Long, closed design for shafts, two-piece -
made from iglidur® X (the extreme)



Order key

Type	Size
iglidur® X	
Liner	
Metric	
Standard	
Inner Ø d1	

The "extreme", resistant to temperature and
chemicals on stainless steel and chromed shafts

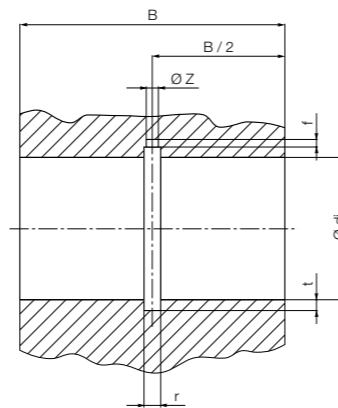
⁷⁸⁾ According to igus® testing method ▶ Page 1330
Please note: Installation instructions ▶ Page 1257
 Min. -100°C
Max. +250°C

Dimensions [mm]

d1	d1 tolerance ⁷⁸⁾	d2	b1	r	t	Z	Weight [g]	Part No.
12	+0.030 +0.070	14	31	3.0	0.8	3.0	1.50	XUM-01-12
14	+0.030 +0.070	18	35	3.5	0.8	3.5	2.13	XUM-01-14
16	+0.030 +0.070	18	35	3.5	0.8	3.5	2.20	XUM-01-16
20	+0.030 +0.070	23	44	5.0	0.8	3.5	4.90	XUM-01-20
25	+0.040 +0.085	28	57	5.0	0.8	4.0	8.23	XUM-01-25
30	+0.040 +0.085	34	67	5.0	0.8	4.0	14.95	XUM-01-30
40	+0.025 +0.125	44	79	6.0	1.3	5.0	23.16	XUM-01-40

Housing hole for XUM-01 | Dimensions [mm]

Shaft Ø	d1 H7	B h10	r +0,05	t +0,1	f +0,5	Z +0,2	Part No.
12	14	32	3.0	1.0	1.5	3.1	XUM-01-12
14	16	30	3.5	1.0	1.7	3.6	XUM-01-14
16	18	36	3.5	1.0	1.7	3.6	XUM-01-16
20	23	45	5.0	1.0	2.0	3.6	XUM-01-20
25	28	58	5.0	1.0	2.0	4.1	XUM-01-25
30	34	68	5.0	1.0	2.0	4.1	XUM-01-30
40	44	80	6.0	1.5	2.5	5.1	XUM-01-40



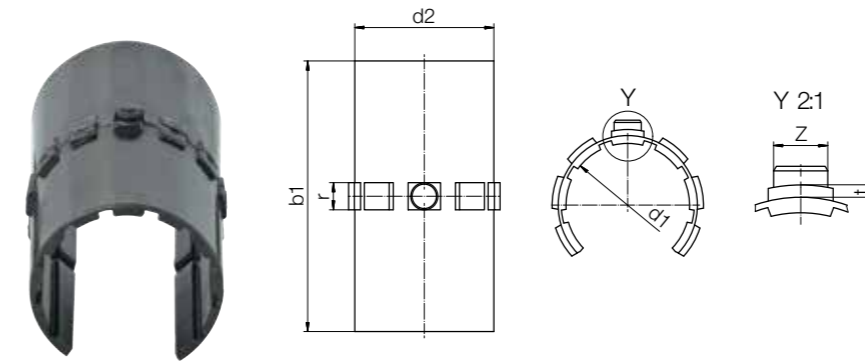
Can be combined with:



RJUM-01/-03 RJUM-06/-06-LL FJUM-01/-02
TJUM-01/-03

drylin® R liners | Product range

Long, open design for supported shafts, two-piece -
made from iglidur® X (the extreme)



Order key

Type	Size
iglidur® X	
Liner	
Metric	
Open	
Standard	
Inner Ø d1	

The "extreme", resistant to temperature and
chemicals on stainless steel and chromed shafts

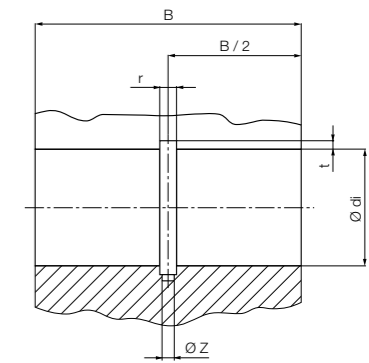
⁷⁸⁾ According to igus® testing method ▶ Page 1330
Please note: Installation instructions ▶ Page 1257
 Min. -100°C
Max. +250°C

Dimensions [mm]

d1	d1 tolerance ⁷⁸⁾	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.000 +0.020	12	28	3.0	0.8	2.5	1.00	XUMO-01-10 ¹¹⁰⁾
12	+0.030 +0.070	14	31	3.0	0.8	3.0	1.20	XUMO-01-12
16	+0.030 +0.070	18	35	3.5	0.8	3.5	2.30	XUMO-01-16
20	+0.030 +0.070	23	44	5.0	0.8	3.5	4.30	XUMO-01-20
25	+0.030 +0.070	28	57	5.0	0.8	4.0	6.80	XUMO-01-25
30	+0.040 +0.085	34	67	5.0	0.8	4.0	13.30	XUMO-01-30
40	+0.040 +0.085	44	79	6.0	1.3	5.0	22.60	XUMO-01-40

Housing hole for XUMO-01 | Dimensions [mm]

Shaft Ø	d1 H7	B h10	W +0,2	r +0,05	t +0,1	f +0,5	Z +0,2	Part No.
10	12	29	7.3	3.0	1.0	1.0	2.6	XUMO-01-10 ¹¹⁰⁾
12	14	32	9.0	3.0	1.0	1.5	3.1	XUMO-01-12
16	18	36	11.6	3.5	1.0	1.7	3.6	XUMO-01-16
20	23	45	12.0	5.0	1.0	2.0	3.6	XUMO-01-20
25	28	58	14.5	5.0	1.0	2.0	4.1	XUMO-01-25
30	34	68	16.6	5.0	1.0	2.0	4.1	XUMO-01-30
40	44	80	21.0	6.0	1.5	2.5	5.1	XUMO-01-40



¹¹⁰⁾ One-piece

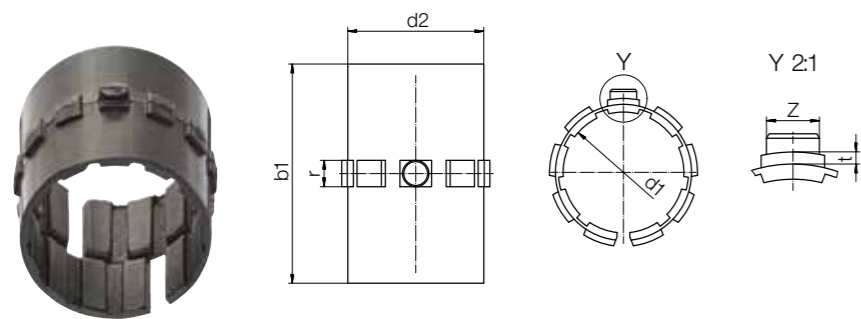
Can be combined with:



OJUM-01/-03 OJUM-06/-06-LL
TJUM-01/-03

drylin® R liners | Product range

Short, closed design for shafts, two-piece - made from iglidur® X (the extreme)



Order key

Type	Size
iglidur® X	
Liner	
Metric	
Compact	
Inner Ø d1	

The "extreme", resistant to temperature and chemicals on stainless steel and chromed shafts

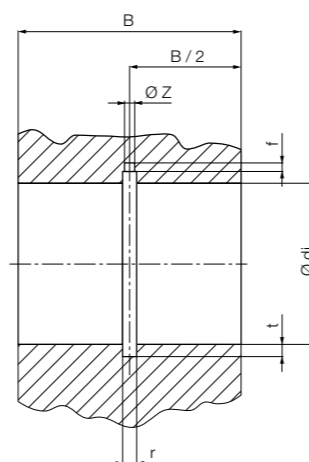
⁷⁸⁾ According to igus® testing method ▶ Page 1330
 Please note: Installation instructions ▶ Page 1257
 Min. -100°C
 Max. +250°C

Dimensions [mm]

d1	d1 tolerance ⁷⁸⁾	d2	b1	r	t	Z	Weight [g]	Part No.
12	+0.030 +0.070	14	27	3.0	0.8	3.0	1.3	XUM-02-12
16	+0.030 +0.070	18	29	3.5	0.8	3.5	2.5	XUM-02-16
20	+0.030 +0.070	23	29	5.0	0.8	3.5	3.4	XUM-02-20
25	+0.030 +0.070	28	39	5.0	0.8	4.0	5.6	XUM-02-25
30	+0.040 +0.085	34	49	5.0	0.8	4.0	12.0	XUM-02-30
40	+0.040 +0.085	44	59	6.0	1.3	5.0	20.0	XUM-02-40

Housing hole for XUM-02 | Dimensions [mm]

Shaft Ø	d1 H7	B h10	r +0.05	t +0.1	f +0.5	Z +0.2	Part No.
12	14	28	3.0	1.0	1.5	3.1	XUM-02-12
16	18	30	3.5	1.0	1.7	3.6	XUM-02-16
20	23	30	5.0	1.0	2.0	3.6	XUM-02-20
25	28	40	5.0	1.0	2.0	4.1	XUM-02-25
30	34	50	5.0	1.0	2.0	4.1	XUM-02-30
40	44	60	6.0	1.5	2.5	5.1	XUM-02-40



Can be combined with:



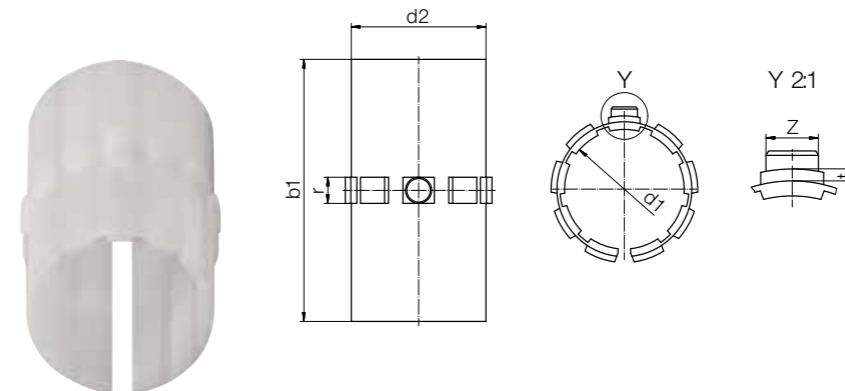
1270 Online tools and more information ▶ www.igus.eu/drylinR



EN 06/2023

drylin® R liners | Product range

Long, closed design for round shafts - made from iglidur® A180 (FDA-compliant)



Order key

Type	Size
iglidur® A180	
Liner	
Metric	
Standard	
Inner Ø d1	

The FDA-compliant for the food and pharmaceutical industry

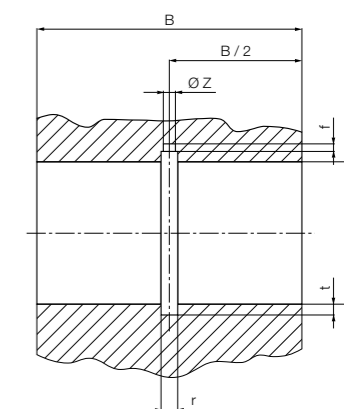
⁷⁸⁾ According to igus® testing method ▶ Page 1330
 Please note: Installation instructions ▶ Page 1257
 Min. -50°C
 Max. +90°C

Dimensions [mm]

d1	d1 tolerance ⁷⁸⁾	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.000 +0.020	12	28	3.0	0.8	2.5	1.08	A180UM-01-10
12	+0.030 +0.070	14	31	3.0	0.8	3.0	1.47	A180UM-01-12
16	+0.030 +0.070	18	35	3.5	0.8	3.5	2.16	A180UM-01-16
20	+0.030 +0.070	23	44	5.0	0.8	3.5	4.80	A180UM-01-20
25	+0.030 +0.070	28	57	5.0	0.8	4.0	8.07	A180UM-01-25
30	+0.040 +0.085	34	67	5.0	0.8	4.0	14.65	A180UM-01-30
40	+0.040 +0.085	44	79	6.0	1.3	5.0	22.70	A180UM-01-40
50	+0.050 +0.150	55	99	7.0	1.3	6.0	44.44	A180UM-01-50

Housing hole for A180UM-01 | Dimensions [mm]

Shaft Ø	d1 H7	B h10	r +0.05	t +0.1	f +0.5	Z +0.2	Part No.
10	12	29	3.0	1.0	1.0	2.6	A180UM-01-10
12	14	32	3.0	1.0	1.5	3.1	A180UM-01-12
16	18	36	3.5	1.0	1.7	3.6	A180UM-01-16
20	23	45	5.0	1.0	2.0	3.6	A180UM-01-20
25	28	58	5.0	1.0	2.0	4.1	A180UM-01-25
30	34	68	5.0	1.0	2.0	4.1	A180UM-01-30
40	44	80	6.0	1.5	2.5	5.1	A180UM-01-40
50	55	100	7.0	1.5	2.5	6.1	A180UM-01-50



Can be combined with:



1270 Online tools and more information ▶ www.igus.eu/drylinR

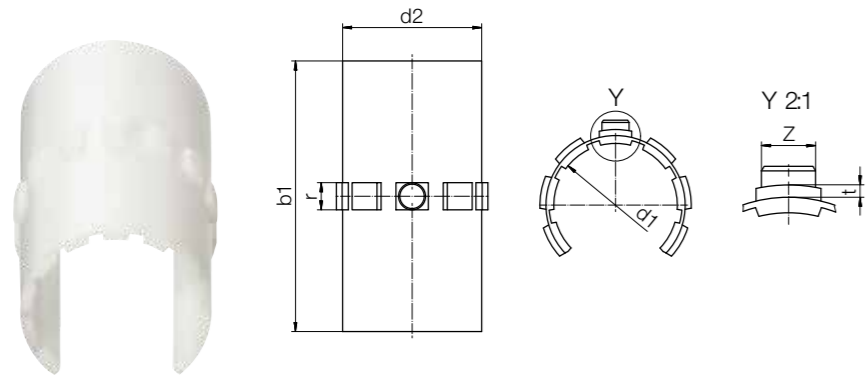
EN 06/2023



3D CAD files, prices and delivery time online ▶ www.igus.eu/drylinR 1271

drylin® R liners | Product range

Long, open design for supported shafts -
made from iglidur® A180 (FDA-compliant)



Order key

Type	Size
iglidur® A180	
Liner	
Metric	
Open	
Standard	
Inner Ø d1	

The FDA-compliant for the food
and pharmaceutical industry

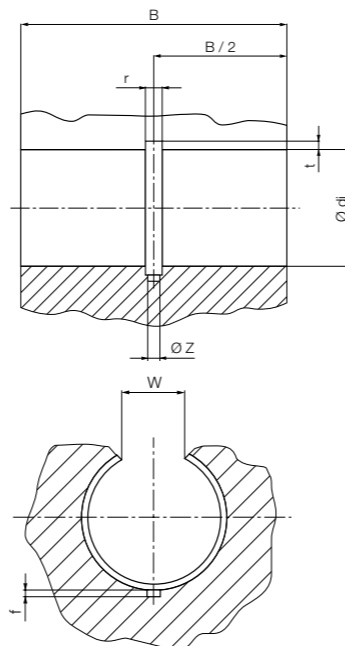
i ⁷⁸⁾ According to igus® testing method ▶ Page 1330
Please note: Installation instructions ▶ Page 1257
+ Min. -50°C
Max. +90°C

Dimensions [mm]

d1	d1 tolerance ⁷⁸⁾	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.000 +0.020	12	28	3.0	0.8	2.5	1.08	A180UMO-01-10
12	+0.030 +0.070	14	31	3.0	0.8	3.0	1.47	A180UMO-01-12
16	+0.030 +0.070	18	35	3.5	0.8	3.5	2.16	A180UMO-01-16
20	+0.030 +0.070	23	44	5.0	0.8	3.5	4.80	A180UMO-01-20
25	+0.030 +0.070	28	57	5.0	0.8	4.0	8.07	A180UMO-01-25
30	+0.040 +0.085	34	67	5.0	0.8	4.0	14.65	A180UMO-01-30
40	+0.040 +0.085	44	79	6.0	1.3	5.0	22.70	A180UMO-01-40

Housing hole for A180UMO-01 | Dimensions [mm]

Shaft Ø	d1 H7	B h10	W	r	t	f	Z	Part No.
				+0.5	+0.05	+0.1	+0.2	
10	12	29	7.3	3.0	1.0	1.0	2.6	A180UMO-01-10
12	14	32	9.0	3.0	1.0	1.5	3.1	A180UMO-01-12
16	18	36	11.6	3.5	1.0	1.7	3.6	A180UMO-01-16
20	23	45	12.0	5.0	1.0	2.0	3.6	A180UMO-01-20
25	28	58	14.5	5.0	1.0	2.0	4.1	A180UMO-01-25
30	34	68	16.6	5.0	1.0	2.0	4.1	A180UMO-01-30
40	44	80	21.0	6.0	1.5	2.5	5.1	A180UMO-01-40



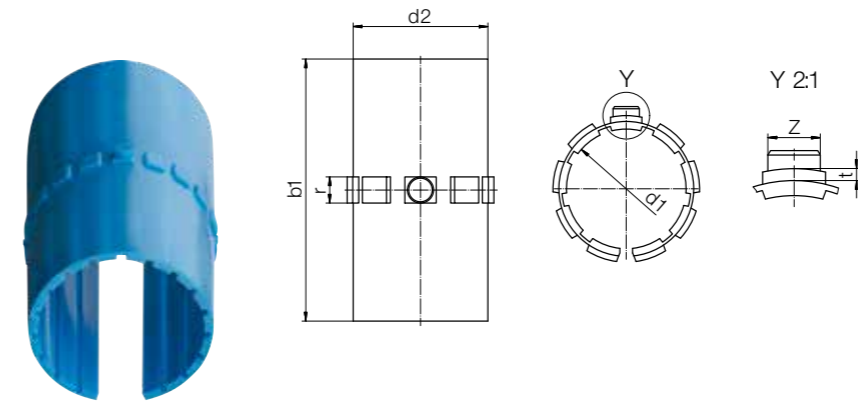
Can be combined with:



1272 Online tools and more information ▶ www.igus.eu/drylinR

drylin® R liners | Product range

Long, closed design for round shafts - made from iglidur® A160
(compliant with Regulation (EU) No. 10/2011 and FDA guidelines)



Order key

Type	Size
iglidur® A160	
Liner	
Metric	
Standard	
Inner Ø d1	

Compliant with Regulation (EU) No. 10/2011 and FDA
guidelines for longer service life on hardened stainless
steel shafts

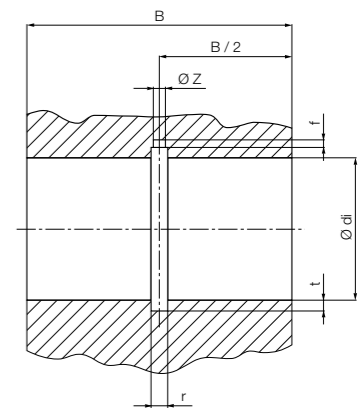
i ⁷⁸⁾ According to igus® testing method ▶ Page 1330
Please note: Installation instructions ▶ Page 1257
+ Min. -50°C
Max. +90°C

Dimensions [mm]

d1	d1 tolerance ⁷⁸⁾	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.03 +0.07	12	28	3.0	0.8	2.5	0.7	A160UM-01-10
12	+0.03 +0.07	14	31	3.0	0.8	3.0	1.0	A160UM-01-12
16	+0.03 +0.07	18	35	3.5	0.8	3.5	1.5	A160UM-01-16
20	+0.03 +0.07	23	44	5.0	0.8	3.5	3.3	A160UM-01-20
25	+0.03 +0.07	28	57	5.0	0.8	4.0	5.4	A160UM-01-25
30	+0.04 +0.09	34	67	5.0	0.8	4.0	9.9	A160UM-01-30
40	+0.04 +0.09	44	79	6.0	1.3	5.0	17.3	A160UM-01-40
50	+0.05 +0.15	55	99	7.0	1.3	6.0	36.3	A160UM-01-50

Housing hole for A160UM-01 | Dimensions [mm]

Shaft Ø	d1 H7	B h10	r	t	f	Z	Part No.
			+0.05	+0.1	+0.5	+0.2	
10	12	29	3.0	1.0	1.0	2.6	A160UM-01-10
12	14	32	3.0	1.0	1.5	3.1	A160UM-01-12
16	18	36	3.5	1.0	1.7	3.6	A160UM-01-16
20	23	45	5.0	1.0	2.0	3.6	A160UM-01-20
25	28	58	5.0	1.0	2.0	4.1	A160UM-01-25
30	34	68	5.0	1.0	2.0	4.1	A160UM-01-30
40	44	80	6.0	1.5	2.5	5.1	A160UM-01-40
50	55	100	7.0	1.5	2.5	6.1	A160UM-01-50



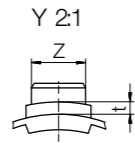
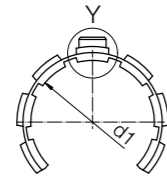
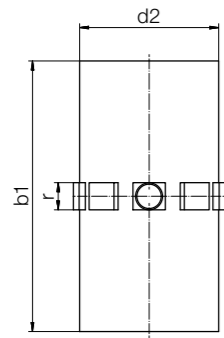
Can be combined with:



3D CAD files, prices and delivery time online ▶ www.igus.eu/drylinR 1273

drylin® R liners | Product range **New**

Long, open design for supported shafts - made from iglidur® A160
(compliant with Regulation (EU) No. 10/2011 and FDA guidelines)



Order key

Type	Size
iglidur® A160	
Liner	
Metric	
Open	
Standard	
Inner Ø d1	

Compliant with Regulation (EU) No. 10/2011 and FDA guidelines for longer service life on hardened stainless steel shafts

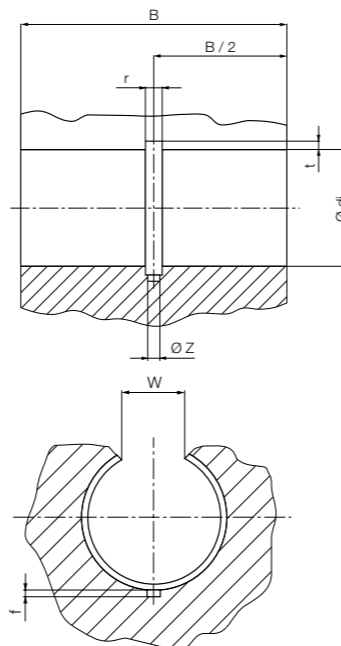
i ⁷⁸⁾ According to igus® testing method ▶ Page 1330
Please note: Installation instructions ▶ Page 1257
t Min. -50°C
Max. +90°C

Dimensions [mm]

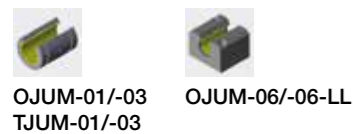
d1	d1 tolerance ⁷⁸⁾	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.000 +0.020	12	28	3.0	0.8	2.5	1.08	A160UMO-01-10 New
12	+0.030 +0.070	14	31	3.0	0.8	3.0	1.47	A160UMO-01-12 New
16	+0.030 +0.070	18	35	3.5	0.8	3.5	2.16	A160UMO-01-16 New
20	+0.030 +0.070	23	44	5.0	0.8	3.5	4.80	A160UMO-01-20 New
25	+0.030 +0.070	28	57	5.0	0.8	4.0	8.07	A160UMO-01-25 New
30	+0.040 +0.085	34	67	5.0	0.8	4.0	14.65	A160UMO-01-30 New
40	+0.040 +0.085	44	79	6.0	1.3	5.0	22.70	A160UMO-01-40 New

Housing hole for A160UM-01 | Dimensions [mm]

Shaft Ø	d1 H7	B h10	W	r +0.5	t +0.05	f +0.1	Z +0.2	Part No.
10	12	29	7.3	3.0	1.0	1.0	2.6	A160UMO-01-10 New
12	14	32	9.0	3.0	1.0	1.5	3.1	A160UMO-01-12 New
16	18	36	11.6	3.5	1.0	1.7	3.6	A160UMO-01-16 New
20	23	45	12.0	5.0	1.0	2.0	3.6	A160UMO-01-20 New
25	28	58	14.5	5.0	1.0	2.0	4.1	A160UMO-01-25 New
30	34	68	16.6	5.0	1.0	2.0	4.1	A160UMO-01-30 New
40	44	80	21.0	6.0	1.5	2.5	5.1	A160UMO-01-40 New



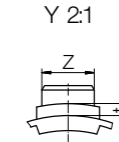
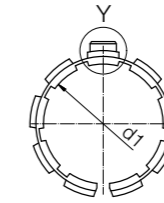
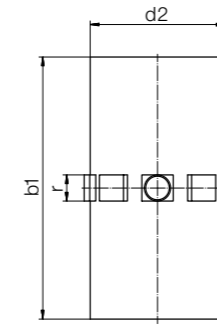
Can be combined with:



OJUM-01/-03 TJUM-01/-03 OJUM-06/-06-LL

drylin® R liners | Product range **New**

Short, closed design for round shafts - made from iglidur® A160
(compliant with Regulation (EU) No. 10/2011 and FDA guidelines)



Order key

Type	Size
iglidur® A160	
Liner	
Metric	
Compact	
Inner Ø d1	

Compliant with Regulation (EU) No. 10/2011 and FDA guidelines for longer service life on hardened stainless steel shafts

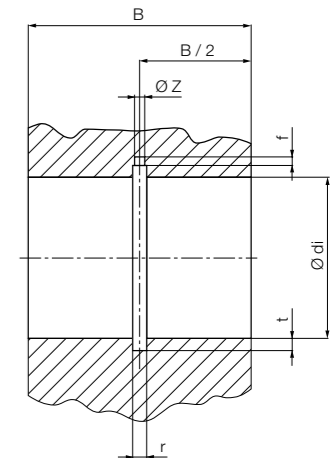
i ⁷⁸⁾ According to igus® testing method ▶ Page 1330
Please note: Installation instructions ▶ Page 1257
t Min. -50°C
Max. +90°C

Dimensions [mm]

d1	d1 tolerance ⁷⁸⁾	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.030 +0.070	12	25	3.0	0.8	2.5	1.02	A160UM-02-10 New
12	+0.030 +0.070	14	27	3.0	0.8	3.0	1.27	A160UM-02-12 New
16	+0.030 +0.070	18	29	3.5	0.8	3.5	1.82	A160UM-02-16 New
20	+0.030 +0.070	23	29	5.0	0.8	3.5	3.27	A160UM-02-20 New
25	+0.030 +0.070	28	39	5.0	0.8	4.0	5.75	A160UM-02-25 New
30	+0.040 +0.085	34	49	5.0	0.8	4.0	11.28	A160UM-02-30 New
40	+0.040 +0.085	44	59	6.0	1.3	5.0	17.94	A160UM-02-40 New
50	+0.050 +0.150	55	69	7.0	1.3	6.0	32.56	A160UM-02-50 New

Housing hole for A160UM-02 | Dimensions [mm]

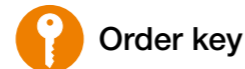
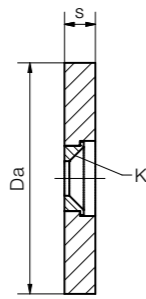
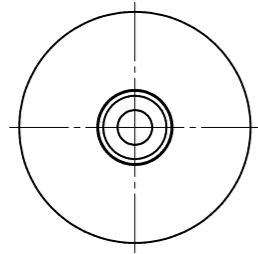
Shaft Ø	d1 H7	B h10	r +0.05	t +0.1	f +0.5	Z +0.2	Part No.
10	12	26	3.0	1.0	1.0	2.6	A160UM-02-10 New
12	14	28	3.0	1.0	1.5	3.1	A160UM-02-12 New
16	18	30	3.5	1.0	1.7	3.6	A160UM-02-16 New
20	23	30	5.0	1.0	2.0	3.6	A160UM-02-20 New
25	28	40	5.0	1.0	2.0	4.1	A160UM-02-25 New
30	34	50	5.0	1.0	2.0	4.1	A160UM-02-30 New
40	44	60	6.0	1.5	2.5	5.1	A160UM-02-40 New
50	55	70	7.0	1.5	2.5	6.1	A160UM-02-50 New



Can be combined with:



RJUM-02 RJUM-05/RJUME-05 TJUM-05/RJUMT-05 FJUMT-01/-02



Order key

Type Size

RSD J -40-06

Sliding plate	iglidur® J	Outer Ø	Width
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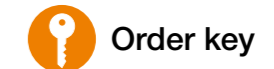
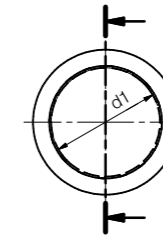
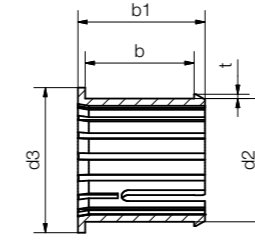
- Made from the high-performance plastic iglidur® J
- Low coefficient of friction
- Screw through the reinforced hole in the middle for a firm hold



Min. -50°C
Max. +90°C

Dimensions [mm]

OuterØ Da	Wear limit	Width Øs	K For countersunk screw	Max. static load capacity [N]	Part No.
40	1.5	6 ± 0.05	M6	28,500	RSDJ-40-06
60	2.5	8 ± 0.05	M8	66,000	RSDJ-60-08
80	2.5	8 ± 0.05	M8	120,000	RSDJ-80-08



Order key

Type Size

J U C M -1216-16

iglidur® J	Liner	Clip-on	Metric	Inner Ø d1	Outer Ø d2	Length b
------------	-------	---------	--------	------------	------------	----------

- Quick installation by hand for sheet thicknesses of 12 to 30mm
- No locating spigot required



⁷⁸⁾ According to igus® testing method ▶ Page 1330
⁸²⁾ Design tips ▶ Page 1256

Please note: Installation instructions ▶ Page 1257



Min. -50°C
Max. +90°C

Dimensions [mm]

d1	d2	d3	b +0.05 / +0.25	b1	t	Part No.
12	16	20	16	20.5	0.8	JUCM-1216-16
14	18	22	18	22.5	0.8	JUCM-1418-18
15	17	22	15	18.0	0.8	JUCM-1517-15
16	20	25	20	24.5	0.8	JUCM-1620-20
18	22	26	20	24.5	0.8	JUCM-1822-20
20	24	30	25	30.0	1.0	JUCM-2024-25
22	27	34	27	32.0	1.0	JUCM-2227-27
22	27	32	34	39.5	1.0	JUCM-2227-34
25	29	35	30	35.5	1.0	JUCM-2529-30
30	34	40	30	35.0	1.2	JUCM-3034-30

Technical data

Part No.	d1 tolerance ⁷⁸⁾ [mm]	Fmax. dynamic ⁸²⁾	Fmax. static ⁸²⁾	Weight [g]
		p = 5MPa [N]	p = 35MPa [N]	
JUCM-1216-16	+0.04 +0.10	320	1,600	2.5
JUCM-1418-18	+0.04 +0.10	440	2,200	2.9
JUCM-1517-15	+0.04 +0.10	380	1,900	1.4
JUCM-1620-20	+0.04 +0.10	560	2,800	3.9
JUCM-1822-20	+0.04 +0.10	630	3,150	4.2
JUCM-2024-25	+0.04 +0.12	880	4,400	5.8
JUCM-2227-27	+0.04 +0.12	1,000	5,000	9.4
JUCM-2227-34	+0.04 +0.12	1,300	6,500	10.3
JUCM-2529-30	+0.04 +0.12	1,300	6,500	8.6
JUCM-3034-30	+0.04 +0.12	1,500	7,500	10.0

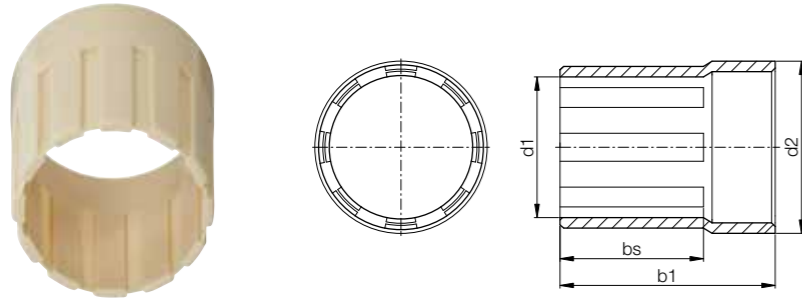


Order key

Type Size

W L M-0608-10

igidur® L100	L1 series	Metric	Inner Ø d1	Outer Ø d2	Length
--------------	-----------	--------	------------	------------	--------



- Extremely wear-resistant
- Low coefficient of friction



⁸⁰⁾ Measured with plug gauge

Please note: Installation instructions ► Page 1257

Material properties ► Page 1913



Min. -40°C

Max. +100°C

Dimensions [mm]

d1	d1 tolerance ⁸⁰⁾	d2	b1	bs	Part No.
6	+0.000 +0.040	8	10	6	WLM-0608-10
8	+0.000 +0.050	10	12	8	WLM-0810-12
10	+0.000 +0.050	12	14.5	10	WLM-1012-14
10	+0.000 +0.050	12	16	10	WLM-1012-16
12	+0.000 +0.050	14	16	10	WLM-1214-16
12	+0.000 +0.050	14	25	15	WLM-1214-25
16	+0.000 +0.050	18	18	10	WLM-1618-18
16	+0.000 +0.050	18	26	16	WLM-1618-26
20	+0.000 +0.060	23	22.5	12.5	WLM-2023-22
20	+0.000 +0.060	23	30	20	WLM-2023-30
22	+0.000 +0.060	25	30	20	WLM-2225-30
25	+0.000 +0.060	28	29	19	WLM-2528-29
25	+0.000 +0.060	28	35	25	WLM-2528-35
30	+0.000 +0.060	34	34	24	WLM-3034-34
30	+0.000 +0.060	34	40	30	WLM-3034-40
40	+0.000 +0.060	44	40	30	WLM-4044-40
40	+0.000 +0.060	44	50	40	WLM-4044-50
50	+0.000 +0.070	55	50	40	WLM-5055-50
50	+0.000 +0.070	55	60	50	WLM-5055-60

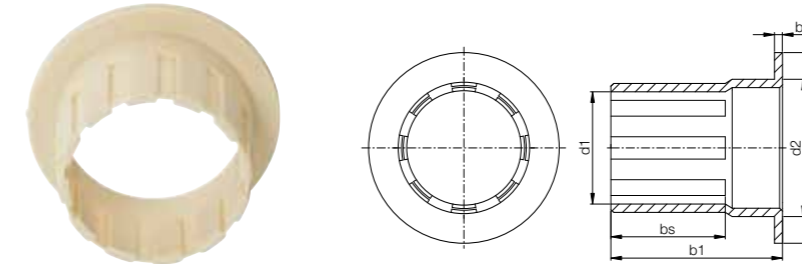


Order key

Type Size

W L F M-1214-15

igidur® L100	L1 series	With flange	Metric	Inner Ø d1	Outer Ø d2	Length
--------------	-----------	-------------	--------	------------	------------	--------



- Extremely wear-resistant
- Low coefficient of friction



⁸⁰⁾ Measured with plug gauge

Please note: Installation instructions ► Page 1257

Material properties ► Page 1913



Min. -40°C

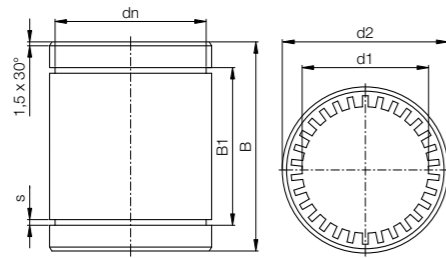
Max. +100°C

Dimensions [mm]

d1	d1 tolerance ⁸⁰⁾	d2	d3	b1	b2	bs	Part No.
12	+0.000 +0.050	14	20	15.0	1.0	9	WLFM-1214-15
16	+0.000 +0.050	18	24	16.0	1.0	10	WLFM-1618-16
20	+0.000 +0.060	23	30	16.5	1.5	10	WLFM-2023-16
25	+0.000 +0.060	28	35	21.5	1.5	11	WLFM-2528-21
30	+0.000 +0.060	34	42	27.0	2.0	15	WLFM-3034-27
40	+0.000 +0.060	44	52	32.0	2.0	20	WLFM-4044-32
50	+0.000 +0.070	55	63	37.5	2.5	25	WLFM-5055-37

drylin® R solid plastic bearings | Product range

Standard design made from iglidur® J (the all-rounder)



Order key

Type	Size
R J M-01-10	
Closed	
igidur® J	
Metric	
Standard	
Inner Ø d1	

- Assembly by press-fitting
- Secured by circlips

Min. -20°C
Max. +60°C

- i** ⁷⁸⁾ According to igus® testing method ▶ Page 1330
- ⁸²⁾ Design tips ▶ Page 1256
- ⁸³⁾ Applies by room temperature: press-fit decrease with time depending on the temperature
Please note: Installation instructions ▶ Page 1257
- inch** Imperial dimensions ▶ Page 1886

Dimensions [mm]

d1	d2	B	B1	Øs	dn	Part No.
8	16	25	16.2	1.10	15.2	RJM-01-08
10	19	29	21.6	1.30	17.5	RJM-01-10
12	22	32	22.6	1.30	20.5	RJM-01-12
16	26	36	24.6	1.30	24.2	RJM-01-16
20	32	45	31.2	1.60	29.6	RJM-01-20
25	40	58	43.7	1.85	36.5	RJM-01-25
30	47	68	51.7	1.85	43.5	RJM-01-30
40	62	80	60.3	2.15	57.8	RJM-01-40

Technical data

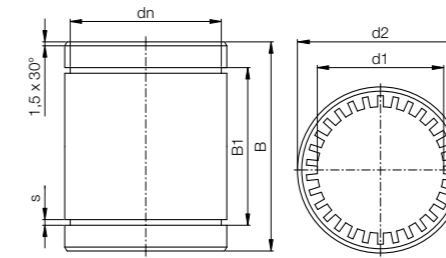
Part No.	d1 tolerance ⁷⁸⁾	Fmax. dynamic ⁸²⁾	Fmax. static ⁸²⁾	Weight	Press-fit force ⁸³⁾
	[mm]	p = 2.5MPa [N]	p = 17.5MPa [N]		
RJM-01-08	+0.025 +0.061	250	1,750	4	400
RJM-01-10	+0.025 +0.061	363	2,538	7	700
RJM-01-12	+0.032 +0.075	480	3,360	9	1,300
RJM-01-16	+0.032 +0.075	720	5,040	13	1,100
RJM-01-20	+0.040 +0.092	1,125	7,875	24	1,500
RJM-01-25	+0.040 +0.092	1,813	12,688	47	3,500
RJM-01-30	+0.040 +0.092	2,550	17,850	72	4,500
RJM-01-40	+0.050 +0.112	4,000	28,000	127	4,200

Can be combined with:



drylin® R solid plastic bearings | Product range

Standard design, precise, made from iglidur® J (the all-rounder)



Order key

Type	Size
R J M P-01-10	
Closed	
igidur® J	
Metric	
Precision	
Standard	
Inner Ø d1	

- Easy assembly by soft press-fit
- Reduced bearing clearance
- Secured by circlips

- i** ⁷⁸⁾ According to igus® testing method ▶ Page 1330
- ⁸²⁾ Design tips ▶ Page 1256
- Please note: Installation instructions ▶ Page 1257
- Min. -20°C
Max. +60°C
- inch** Imperial dimensions ▶ Page 1886

Dimensions [mm]

d1	d2	B	B1	Øs	dn	Part No.
6	12	19	13.5	1.10	11.5	RJMP-01-06
8	16	25	16.2	1.10	15.2	RJMP-01-08
10	19	29	21.6	1.30	17.5	RJMP-01-10
12	22	32	22.6	1.30	20.5	RJMP-01-12
16	26	36	24.6	1.30	24.2	RJMP-01-16
20	32	45	31.2	1.60	29.6	RJMP-01-20
25	40	58	43.7	1.85	36.5	RJMP-01-25
30	47	68	51.7	1.85	43.5	RJMP-01-30

Technical data

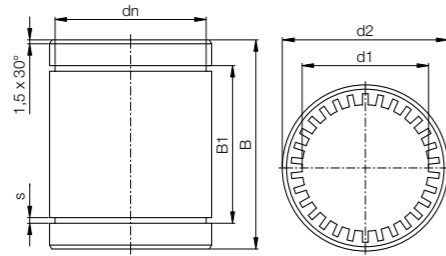
Part No.	d1 tolerance ⁷⁸⁾	Fmax. dynamic ⁸²⁾	Fmax. static ⁸²⁾	Weight
	[mm]	p = 2.5MPa [N]	p = 17.5MPa [N]	
RJMP-01-06	+0.000 +0.030	200	1,400	2
RJMP-01-08	+0.000 +0.040	250	1,750	4
RJMP-01-10	+0.000 +0.040	363	2,538	7
RJMP-01-12	+0.000 +0.040	480	3,360	9
RJMP-01-16	+0.000 +0.040	720	5,040	13
RJMP-01-20	+0.000 +0.040	1,125	7,875	24
RJMP-01-25	+0.000 +0.050	1,813	12,688	47
RJMP-01-30	+0.000 +0.050	2,550	17,850	72

Can be combined with:



drylin® R solid plastic bearings | Product range **New**

Standard design made from iglidur® A180 (for contact with food)



Order key

Type	Size
R A180 M-01-10	
Closed	iglidur® A180
	Metric
	Standard
	Inner Ø d1

● FDA-compliant igus® polymer for use in the food environment

Min. -20°C
Max. +60°C



⁷⁸⁾ According to igus® testing method ► Page 1330
⁸²⁾ Design tips ► Page 1256
⁸³⁾ Applies by room temperature: press-fit decrease with time depending on the temperature
Please note: Installation instructions ► Page 1257

Dimensions [mm]

d1	d2	B	B1	Øs	dn	Part No.
12	22	32	22.6	1.3	20.5	RA180M-01-12 New
16	26	36	24.6	1.3	24.2	RA180M-01-16 New
20	32	45	31.2	1.6	29.6	RA180M-01-20 New

Technical data

Part No.	d1 tolerance ⁷⁸⁾ [mm]	Fmax. dynamic ⁸²⁾	Fmax. static ⁸²⁾	Weight [g]	Press-fit force ⁸³⁾ [N]
		p = 2MPa [N]	p = 2MPa [N]		
RA180M-01-12 New	+0.03 +0.08	400	1,600	9	1,300
RA180M-01-16 New	+0.03 +0.07	700	2,800	13	1,100
RA180M-01-20 New	+0.04 +0.09	1,000	4,000	24	1,500

Can be combined with:



RQA-04



RTA-04



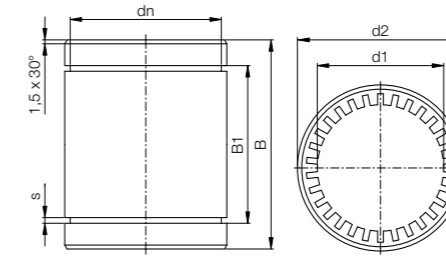
RGA-04



RGAS-04

drylin® R solid plastic bearings | Product range **New**

Standard design made from iglidur® A160 (for contact with food), visually detectable



Order key

Type	Size
R A160 M-01-10	
Closed	iglidur® A160
	Metric
	Standard
	Inner Ø d1

● FDA-compliant igus® polymer for use in the food environment

Min. -20°C
Max. +60°C



⁷⁸⁾ According to igus® testing method ► Page 1330
⁸²⁾ Design tips ► Page 1256
⁸³⁾ Applies by room temperature: press-fit decrease with time depending on the temperature
Please note: Installation instructions ► Page 1257

Dimensions [mm]

d1	d2	B	B1	Øs	dn	Part No.
12	22	32	22.6	1.3	20.5	RA160M-01-12 New
16	26	36	24.6	1.3	24.2	RA160M-01-16 New
20	32	45	31.2	1.6	29.6	RA160M-01-20 New

Technical data

Part No.	d1 tolerance ⁷⁸⁾ [mm]	Fmax. dynamic ⁸²⁾	Fmax. static ⁸²⁾	Weight [g]	Press-fit force ⁸³⁾ [N]
		p = 2MPa [N]	p = 2MPa [N]		
RA160M-01-12 New	+0.03 +0.08	400	1,600	9	1,300
RA160M-01-16 New	+0.03 +0.07	700	2,800	13	1,100
RA160M-01-20 New	+0.04 +0.09	1,000	4,000	24	1,500

Can be combined with:



RQA-04



RTA-04



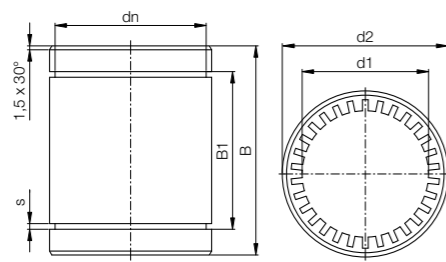
RGA-04



RGAS-04

drylin® R solid plastic bearings | Product range

Linear plain bearings with Japanese dimensions
made from iglidur® J4



Order key

Type	Size
R J4 J P -01-10	
Closed	
igidur® J4	
Japan standard	
Precision	
Standard	
Inner Ø d1	

- Alternative to ball bearings with Japanese dimension
- Quickly assembled
- Secured by circlips

i ⁷⁸⁾ According to igus® testing method ▶ Page 1330
⁸²⁾ Design tips ▶ Page 1256
Please note: Installation instructions ▶ Page 1257
Material properties ▶ Page 1910

+ Min. -20°C
Max. +60°C

Dimensions [mm]

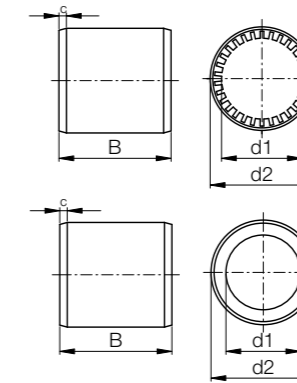
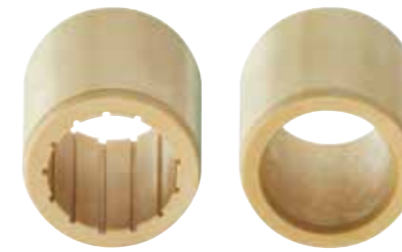
d1	d2	B	B1	Øs	dn	Part No.
8	15	24	17.5	1.1	14.3	RJ4JP-01-08
10	19	29	22.0	1.3	18.0	RJ4JP-01-10
12	21	30	23.0	1.3	20.0	RJ4JP-01-12
16	28	37	26.5	1.6	26.6	RJ4JP-01-16
20	32	42	30.5	1.6	30.3	RJ4JP-01-20
25	40	59	41.1	1.85	37.5	RJ4JP-01-25
30	45	64	44.6	1.85	42.5	RJ4JP-01-30

Technical data

Part No.	d1 tolerance ⁷⁸⁾ [mm]	Fmax. dynamic ⁸²⁾ p = 5MPa		Fmax. static ⁸²⁾ p = 35MPa		Weight [g]
		[N]	[N]	[N]	[N]	
RJ4JP-01-08	+0.000 +0.040	200	800			2
RJ4JP-01-10	+0.000 +0.040	300	1,200			6
RJ4JP-01-12	+0.000 +0.040	400	1,600			8
RJ4JP-01-16	+0.000 +0.040	700	2,800			16
RJ4JP-01-20	+0.000 +0.040	1,000	4,000			23
RJ4JP-01-25	+0.000 +0.050	1,550	6,500			47
RJ4JP-01-30	+0.000 +0.050	2,200	8,500			72

drylin® R solid plastic bearings | Product range

Low-cost linear plain bearings made from iglidur® J260



Order key

Type	Size
R J260 U M -02-12	
Closed	
igidur® J260	
Grooved	
Metric	
Compact	
Inner Ø d1	

- 2 variations: RJ260M (with plain design) and RJ260UM (grooved structure)

i ⁷⁸⁾ According to igus® testing method ▶ Page 1330
⁸²⁾ Design tips ▶ Page 1256
Please note: Installation instructions ▶ Page 1257

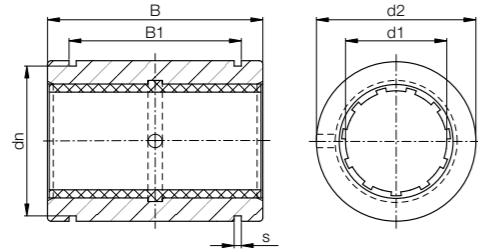
+ Min. -20°C
Max. +60°C

Dimensions [mm]

d1	d2	B	C	Part No.
12	19	28	1.5x15°	RJ260UM-02-12
16	24	30	1.5x15°	RJ260UM-02-16
20	28	30	2.0x15°	RJ260UM-02-20
25	35	40	2.0x15°	RJ260UM-02-25

Technical data

Part No.	d1 tolerance ⁷⁸⁾ [mm]	Fmax. dynamic ⁸²⁾ p = 2.5MPa		Fmax. static ⁸²⁾ p = 17.5MPa		Weight [g]
		[N]	[N]	[N]	[N]	
RJ260UM-02-12	+0.035 +0.080	420	2,940			6.2
RJ260UM-02-16	+0.035 +0.080	600	4,200			9.7
RJ260UM-02-20	+0.040 +0.095	750	5,250			11.7
RJ260UM-02-25	+0.040 +0.095	1,250	8,750			22.8



Order key

Type	Size
R J U M-01-10	
Closed	
iglidur® J	
Liner	
Metric	
Standard	
Inner Ø d1	

● Secured by circlips



Imperial dimensions
▶ Page 1888



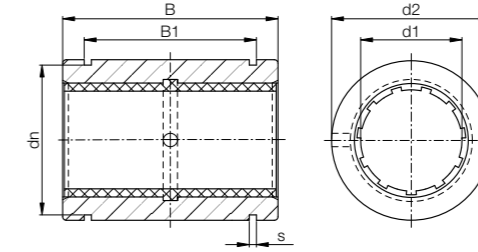
⁷⁸⁾ According to igus® testing method ▶ Page 1330
⁸¹⁾ Ø < 10mm use press-fitted sleeve plain bearings
⁸²⁾ Design tips ▶ Page 1256
Please note: Installation instructions ▶ Page 1257

Dimensions [mm]

d1	d2	B	B1	Øs	dn	Part No.
	h7	h10	H10	H10	h10	
5	12	22	14.2	1.10	11.5	RJZM-01-05 ⁸¹⁾
6	12	22	14.2	1.10	11.5	RJZM-01-06 ⁸¹⁾
8	16	25	16.2	1.10	15.2	RJZM-01-08 ⁸¹⁾
10	19	29	21.6	1.30	17.5	RJUM-01-10
12	22	32	22.6	1.30	20.5	RJUM-01-12
16	26	36	24.6	1.30	24.2	RJUM-01-16
20	32	45	31.2	1.60	29.6	RJUM-01-20
25	40	58	43.7	1.85	36.5	RJUM-01-25
30	47	68	51.7	1.85	43.5	RJUM-01-30
40	62	80	60.3	2.15	57.8	RJUM-01-40
50	75	100	77.3	2.65	70.5	RJUM-01-50
60	90	125	101.7	3.15	86.5	RJUM-01-60

Technical data

Part No.	d1 tolerance ⁷⁸⁾ [mm]	Fmax. dynamic ⁸²⁾ p = 5MPa		Fmax. static ⁸²⁾ p = 35MPa		Weight [g]
		[N]	[N]	[N]	[N]	
RJZM-01-05 ⁸¹⁾	+0.025 +0.060	525	3,675	3,675	5	
RJZM-01-06 ⁸¹⁾	+0.025 +0.060	525	3,675	3,675	5	
RJZM-01-08 ⁸¹⁾	+0.032 +0.070	960	6,720	6,720	9	
RJUM-01-10	+0.030 +0.088	725	5,075	5,075	14	
RJUM-01-12	+0.030 +0.088	960	6,720	6,720	21	
RJUM-01-16	+0.030 +0.088	1,440	10,080	10,080	28	
RJUM-01-20	+0.030 +0.091	2,250	15,750	15,750	49	
RJUM-01-25	+0.030 +0.091	3,625	25,375	25,375	108	
RJUM-01-30	+0.040 +0.110	5,100	35,700	35,700	162	
RJUM-01-40	+0.040 +0.115	8,000	56,000	56,000	334	
RJUM-01-50	+0.050 +0.130	9,000	87,500	87,500	579	
RJUM-01-60	+0.050 +0.140	12,000	120,000	120,000	1,070	



Order key

Type	Size
R J U M-11-10	
Closed	
iglidur® J	
Liner	
Metric	
Precision	
Inner Ø d1	

● Max. bearing clearance reduced by 50%

● Secured by circlips



⁷⁸⁾ According to igus® testing method ▶ Page 1330
⁸²⁾ Design tips ▶ Page 1256
Please note: Installation instructions ▶ Page 1257

Dimensions [mm]

d1	d2	B	B1	Øs	dn	Part No.
	h7	h10	H10	H10	h10	
10	19	29	21.6	1.30	17.5	RJUM-11-10
12	22	32	22.6	1.30	20.5	RJUM-11-12
16	26	36	24.6	1.30	24.2	RJUM-11-16
20	32	45	31.2	1.60	29.6	RJUM-11-20
25	40	58	43.7	1.85	36.5	RJUM-11-25
30	47	68	51.7	1.85	43.5	RJUM-11-30
40	62	80	60.3	2.15	57.8	RJUM-11-40
50	75	100	77.3	2.65	70.5	RJUM-11-50

Technical data

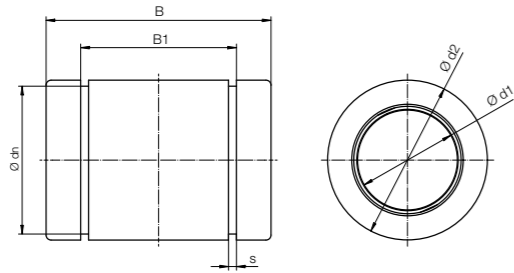
Part No.	d1 tolerance ⁷⁸⁾ [mm]	Fmax. dynamic ⁸²⁾ p = 5MPa		Fmax. static ⁸²⁾ p = 35MPa		Weight [g]
		[N]	[N]	[N]	[N]	
RJUM-11-10	+0.000 +0.058	725	5,075	5,075	14	
RJUM-11-12	+0.000 +0.058	960	6,720	6,720	21	
RJUM-11-16	+0.000 +0.058	1,440	10,080	10,080	28	
RJUM-11-20	+0.000 +0.061	2,250	15,750	15,750	49	
RJUM-11-25	+0.000 +0.061	3,625	25,375	25,375	108	
RJUM-11-30	+0.000 +0.075	5,100	35,700	35,700	162	
RJUM-11-40	+0.000 +0.080	8,000	56,000	56,000	334	
RJUM-11-50	+0.000 +0.090	12,500	87,500	87,500	579	

Can be combined with:



Available with drylin® liners (optional: J200/A180):





Order key

Type Size

RW360C M-01-12

Closed	igidur® W360	Clip-in liner	Metric	Standard	Inner Ø d1
--------	--------------	---------------	--------	----------	------------

- Easy-running lubrication-free clip-on films with reduced elasticity
- Up to 50% lower clearance in operation



⁷⁸⁾ According to igus® testing method ▶ Page 1330

⁸²⁾ Design tips ▶ Page 1256

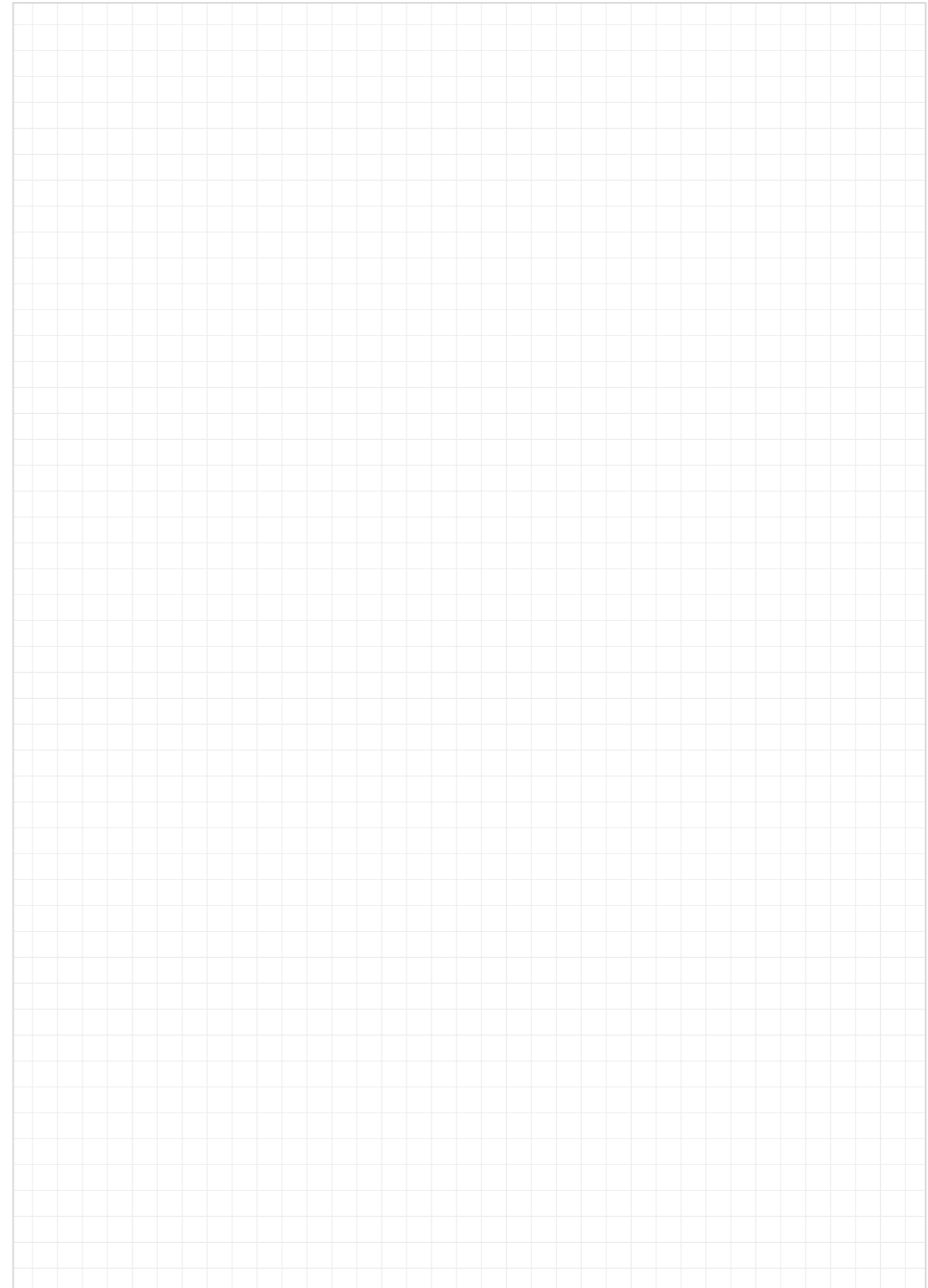
Please note: Installation instructions ▶ Page 1257

Dimensions [mm]

d1	d2 h6	B +0.1	B1 -0.1	Øs H10	dn h10	Part No.
12	22	32	22.6	1.30	20.5	RW360CM-01-12 New
16	26	36	24.6	1.30	24.2	RW360CM-01-16 New
20	32	45	31.2	1.60	29.6	RW360CM-01-20 New

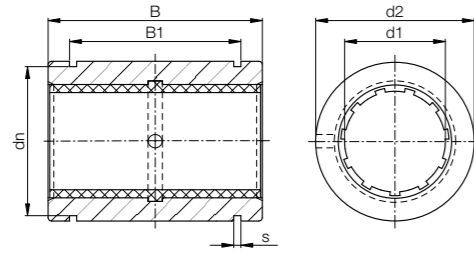
Technical data

Part No.	d1 tolerance ⁷⁸⁾ [mm]	Fmax. dynamic ⁸²⁾ [N]	Fmax. static ⁸²⁾ [N]	Weight [g]
RW360CM-01-12 New	+0.01 +0.05	960	1,920	21
RW360CM-01-16 New	+0.01 +0.05	1,140	2,280	28
RW360CM-01-20 New	+0.01 +0.05	2,250	4,500	55



drylin® R linear plain bearings | Product range

Closed stainless steel adapters made of stainless steel 303



Order key

Type	Size	Material
R J U M-01- 12 -ES		
Closed	iglidur® J	Stainless steel
	Liner	
	Metric	
	Standard	
	Inner Ø d1	

● Secured by circlips

i ⁷⁸⁾ According to igus® testing method ▶ Page 1330
⁸²⁾ Design tips ▶ Page 1256
 Please note: Installation instructions ▶ Page 1257

Dimensions [mm]

d1	d2	B	B1	Øs	dn	Part No.
	h7	h10	H10	H10	h10	
12	22	32	22.6	1.30	20.5	RJUM-01-12-ES
16	26	36	24.6	1.30	24.2	RJUM-01-16-ES
20	32	45	31.2	1.60	29.6	RJUM-01-20-ES
25	40	58	43.7	1.85	36.5	RJUM-01-25-ES
30	47	68	51.7	1.85	43.5	RJUM-01-30-ES

Technical data

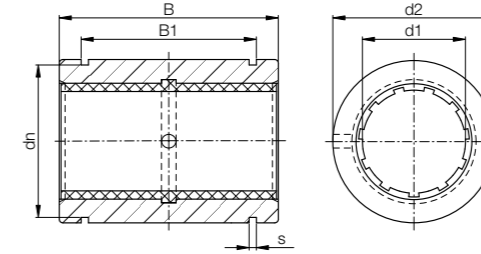
Part No.	d1 tolerance ⁷⁸⁾ [mm]	Fmax. dynamic ⁸²⁾	Fmax. static ⁸²⁾	Weight [g]
		p = 5MPa [N]	p = 35MPa [N]	
RJUM-01-12-ES	+0.030 +0.088	960	6,720	60
RJUM-01-16-ES	+0.030 +0.088	1,440	10,080	84
RJUM-01-20-ES	+0.030 +0.091	2,250	15,750	147
RJUM-01-25-ES	+0.030 +0.091	3,625	25,375	324
RJUM-01-30-ES	+0.040 +0.110	5,100	35,700	486

Available with drylin® liners (optional: J200/A180):



drylin® R linear plain bearings | Product range

Closed, anodised aluminium adapters with iglidur® E7 liner



Order key

Type	Size
RE7U M-01-10	
Closed	iglidur® E7
	Liner
	Metric
	Standard
	Inner Ø d1

● Secured by circlips

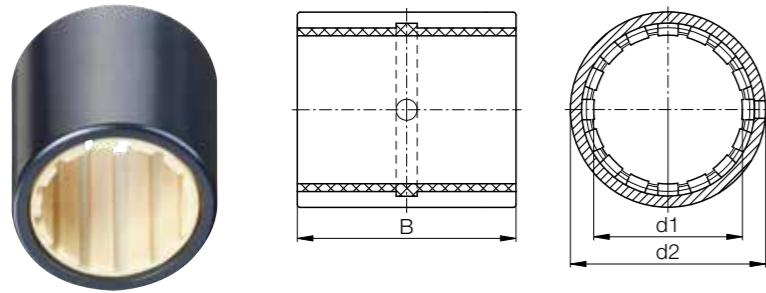
i ⁷⁸⁾ According to igus® testing method ▶ Page 1330
⁸²⁾ Design tips ▶ Page 1256
 Please note: Installation instructions ▶ Page 1257

Dimensions [mm]

d1	d2	B	B1	Øs	dn	Part No.
	h7	h10	H10	H10	h10	
10	19	29	21.6	1.30	17.5	RE7UM-01-10
12	22	32	22.6	1.30	20.5	RE7UM-01-12
16	26	36	24.6	1.30	24.2	RE7UM-01-16
20	32	45	31.2	1.60	29.6	RE7UM-01-20
25	40	58	43.7	1.85	36.5	RE7UM-01-25
30	47	68	51.7	1.85	43.5	RE7UM-01-30
40	62	80	60.3	2.15	57.8	RE7UM-01-40
50	75	100	77.3	2.65	70.5	RE7UM-01-50
60	90	125	101.7	3.15	86.5	RE7UM-01-60

Technical data

Part No.	d1 tolerance ⁷⁸⁾ [mm]	Fmax. dynamic ⁸²⁾	Fmax. static ⁸²⁾	Weight [g]
		p = 2.5MPa [N]	p = 18MPa [N]	
RE7UM-01-10	+0.030 +0.088	360	2,610	14
RE7UM-01-12	+0.030 +0.088	480	3,450	21
RE7UM-01-16	+0.030 +0.088	720	5,180	28
RE7UM-01-20	+0.030 +0.091	1,120	8,100	49
RE7UM-01-25	+0.030 +0.091	1,810	13,050	108
RE7UM-01-30	+0.040 +0.110	2,550	18,360	162
RE7UM-01-40	+0.040 +0.115	4,000	28,800	334
RE7UM-01-50	+0.050 +0.180	4,500	45,000	579
RE7UM-01-60	+0.050 +0.190	6,000	61,700	1,070



Order key

Type	Size
R J U M-02-10	
Closed	Inner Ø d1
iglidur® J	
Liner	
Metric	
Compact	

● Also available as a reduced clearance version
RJUM-12 (Ø 10-50mm)



⁷⁸⁾ According to igus® testing method ► Page 1330

⁸¹⁾ Ø < 10mm use press-fitted sleeve bearings

⁸²⁾ Design tips ► Page 1256

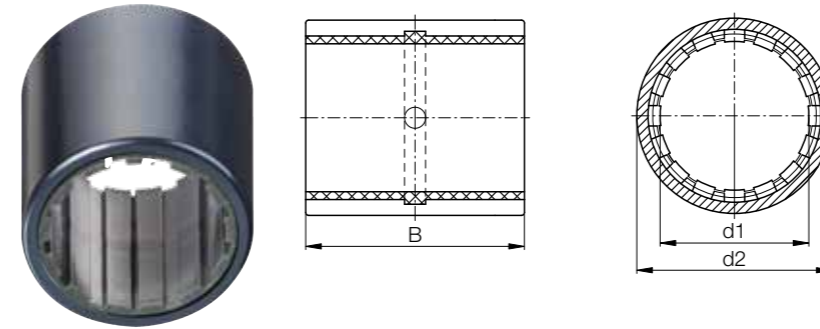
Please note: Installation instructions ► Page 1257

Dimensions [mm]

d1	d2	B	Part No.
	k7	h10	
6	12	22	RJZM-02-06 ⁸¹⁾
8	15	24	RJZM-02-08 ⁸¹⁾
10	17	26	RJUM-02-10
12	19	28	RJUM-02-12
16	24	30	RJUM-02-16
20	28	30	RJUM-02-20
25	35	40	RJUM-02-25
30	40	50	RJUM-02-30
40	52	60	RJUM-02-40
50	62	70	RJUM-02-50

Technical data

Part No.	Housing hole	d1 tolerance ⁷⁸⁾	Fmax. dynamic ⁸²⁾	Fmax. static ⁸²⁾	Weight
	Ø H7		p = 5MPa	p = 35MPa	
	[mm]	[mm]	[N]	[N]	
RJZM-02-06 ⁸¹⁾	12	+0.032 +0.070	600	4,200	4
RJZM-02-08 ⁸¹⁾	15	+0.032 +0.070	650	4,550	6
RJUM-02-10	17	+0.030 +0.088	650	4,550	8
RJUM-02-12	19	+0.030 +0.088	840	5,880	10
RJUM-02-16	24	+0.030 +0.088	1,200	8,400	17
RJUM-02-20	28	+0.030 +0.091	1,500	10,500	18
RJUM-02-25	35	+0.030 +0.091	2,500	17,500	42
RJUM-02-30	40	+0.040 +0.110	3,750	26,250	56
RJUM-02-40	52	+0.040 +0.115	6,000	42,000	113
RJUM-02-50	62	+0.050 +0.130	8,750	61,250	147



Order key

Type	Size
RE7U M-02-10	
Closed	Inner Ø d1
iglidur® E7	
Liner	
Metric	
Compact	



⁷⁸⁾ According to igus® testing method ► Page 1330

⁸²⁾ Design tips ► Page 1256

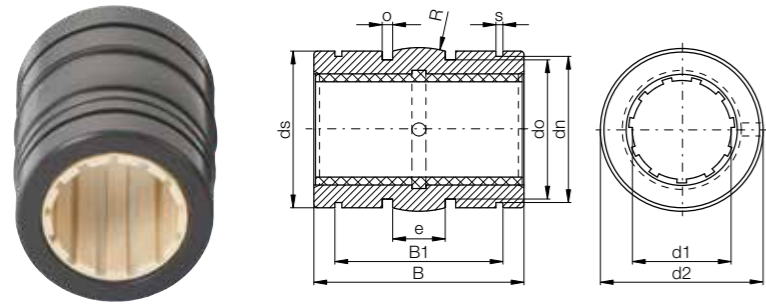
Please note: Installation instructions ► Page 1257

Dimensions [mm]

d1	d2	B	Part No.
	k7	h10	
10	17	26	RE7UM-02-10
12	19	28	RE7UM-02-12
16	24	30	RE7UM-02-16
20	28	30	RE7UM-02-20
25	35	40	RE7UM-02-25
30	40	50	RE7UM-02-30
40	52	60	RE7UM-02-40
50	62	70	RE7UM-02-50

Technical data

Part No.	Housing hole	d1 tolerance ⁷⁸⁾	Fmax. dynamic ⁸²⁾	Fmax. static ⁸²⁾	Weight
	Ø H7		p = 2.5MPa	p = 18MPa	
	[mm]	[mm]	[N]	[N]	
RE7UM-02-10	17	+0.030 +0.088	325	2,340	8
RE7UM-02-12	19	+0.030 +0.088	420	3,020	10
RE7UM-02-16	24	+0.030 +0.088	600	4,320	17
RE7UM-02-20	28	+0.030 +0.091	750	5,400	18
RE7UM-02-25	35	+0.030 +0.091	1,250	9,000	42
RE7UM-02-30	40	+0.040 +0.110	1,875	13,500	56
RE7UM-02-40	52	+0.040 +0.115	3,000	21,600	113
RE7UM-02-50	62	+0.050 +0.180	4,375	31,500	147



Order key

Type	Size
R J U M-03-10	
Closed	
iglidur® J	
Liner	
Metric	
Self-aligning	
Inner Ø d1	

● With reduced outer diameter, spherical middle area, O-rings for elastic fit and hard-anodised surface

- ⁷⁸⁾ According to igus® testing method ▶ Page 1330
- ⁸¹⁾ Ø < 10mm use press-fitted sleeve plain bearings
- ⁸²⁾ Design tips ▶ Page 1256
- Please note: Installation instructions ▶ Page 1257
- Floating bearing ▶ Page 1256
- Imperial dimensions ▶ Page 1888

Dimensions [mm]

d1	d2	B	B1	Øs	dn	ds	do	o	e	R	Part No.
	h8	h10	H10	H10	h10	h10		+0.1			
8	15.8	24.9	16.4	1.10	15.0	15.5	13.2	1.86	5.0	20.0	RJZM-03-08 ⁸¹⁾
10	18.8	28.9	21.8	1.30	17.5	18.5	15.4	1.86	5.0	13.0	RJUM-03-10
12	21.8	31.9	22.8	1.30	20.5	21.5	18.4	1.86	6.0	18.0	RJUM-03-12
16	25.8	35.9	24.9	1.30	24.2	25.5	20.4	2.86	8.0	32.0	RJUM-03-16
20	31.8	44.8	31.5	1.60	29.6	31.5	26.4	2.86	10.0	50.0	RJUM-03-20
25	39.8	57.8	44.1	1.85	36.5	39.0	34.4	2.86	12.5	39.0	RJUM-03-25
30	46.7	67.8	52.1	1.85	43.5	46.0	41.4	2.86	15.0	57.0	RJUM-03-30
40	61.7	79.8	60.9	2.15	57.8	61.0	56.4	2.86	20.0	100.0	RJUM-03-40
50	74.7	99.8	78.0	2.65	70.5	74.0	69.4	2.86	25.0	157.0	RJUM-03-50

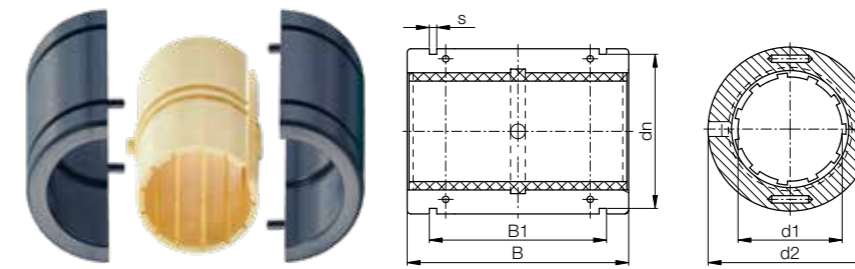
Technical data

Part No.	Housing hole Ø H7 [mm]	d1 tolerance ⁷⁸⁾ [mm]	Fmax. dynamic ⁸²⁾	Fmax. static ⁸²⁾	Weight [g]
			p = 5MPa [N]	p = 35MPa [N]	
RJZM-03-08 ⁸¹⁾	16	+0.032 +0.070	960	6,720	8
RJUM-03-10	19	+0.030 +0.088	725	5,075	11
RJUM-03-12	22	+0.030 +0.088	960	6,720	17
RJUM-03-16	26	+0.030 +0.088	1,440	10,080	23
RJUM-03-20	32	+0.030 +0.091	2,250	15,750	44
RJUM-03-25	40	+0.030 +0.091	3,625	25,375	92
RJUM-03-30	47	+0.040 +0.110	5,100	35,700	145
RJUM-03-40	62	+0.040 +0.115	8,000	56,000	311
RJUM-03-50	75	+0.050 +0.150	12,500	87,500	542

Can be combined with:



Available with drylin® liners (optional: J200/A180):



Order key

Type	Size
T J U M-01-10	
Spittable	
iglidur® J	
Liner	
Metric	
Standard	
Inner Ø d1	

● Quick replacement of the liner without removing the shaft

- ⁷⁸⁾ According to igus® testing method ▶ Page 1330
- ⁸²⁾ Design tips ▶ Page 1256
- Please note: Installation instructions ▶ Page 1257
- Imperial dimensions ▶ page 1889

Dimensions [mm]

d1	d2	B	B1	Øs	dn	Part No.
		h10	H10	H10	h10	
10	19 -0.020 -0.040	29	21.6	1.30	17.5	TJUM-01-10
12	22 -0.020 -0.040	32	22.6	1.30	20.5	TJUM-01-12
16	26 -0.020 -0.040	36	24.6	1.30	24.2	TJUM-01-16
20	32 -0.020 -0.045	45	31.2	1.60	29.6	TJUM-01-20
25	40 -0.030 -0.055	58	43.7	1.85	36.5	TJUM-01-25
30	47 -0.030 -0.055	68	51.7	1.85	43.5	TJUM-01-30
40	62 -0.030 -0.060	80	60.3	2.15	57.8	TJUM-01-40
50	75 -0.030 -0.060	100	77.3	2.65	70.5	TJUM-01-50

Technical data

Part No.	d1 tolerance ⁷⁸⁾ [mm]	Fmax. dynamic ⁸²⁾	Fmax. static ⁸²⁾	Weight [g]
		p = 5MPa [N]	p = 35MPa [N]	
TJUM-01-10	+0.030 +0.092	725	5,075	14
TJUM-01-12	+0.030 +0.097	960	6,720	19
TJUM-01-16	+0.030 +0.097	1,440	10,080	27
TJUM-01-20	+0.030 +0.103	2,250	15,750	49
TJUM-01-25	+0.030 +0.103	3,625	25,375	106
TJUM-01-30	+0.040 +0.124	5,100	35,700	166
TJUM-01-40	+0.040 +0.124	8,000	56,000	347
TJUM-01-50	+0.050 +0.196	12,500	87,500	577

Can be combined with:

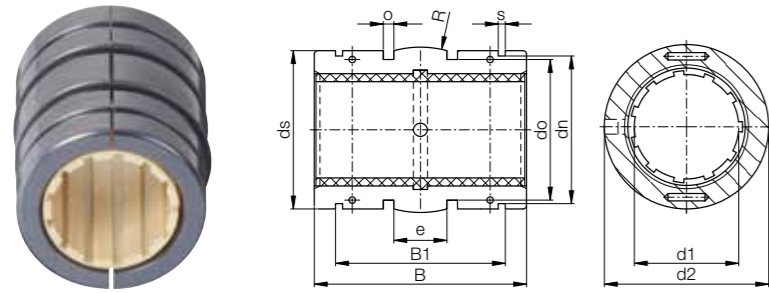


Available with drylin® liners (optional: J200/A180):



drylin® R linear plain bearings | Product range

Split aluminium adapters (floating bearing)



Order key

Type	Size
T J U M-03-10	
Splittable	
iglidur® J	
Liner	
Metric	
Self-aligning	
Inner Ø d1	

- Split aluminium adapter with spherical middle area for automatic compensation of misalignments and O-rings for elastic seating

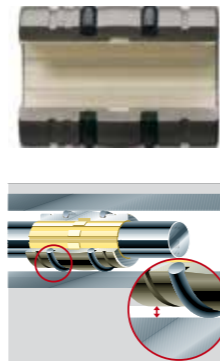
- i** ⁷⁸⁾ According to igus® testing method ▶ Page 1330
- ⁸²⁾ Design tips ▶ Page 1256
- Please note: Installation instructions ▶ Page 1257
- Floating bearing ▶ Page 1256
- inch** Imperial dimensions ▶ page 1889

Dimensions [mm]

d1	d2	B	B1	Øs	dn	ds	do	o	e	R	Part No.	
		h10	H10	H10	h10	h10		+0.1				
10	19	-0.020 -0.040	28.9	21.8	1.30	17.5	18.5	15.4	1.86	5.0	13.0	TJUM-03-10
12	22	-0.020 -0.040	31.9	22.8	1.30	20.5	21.5	18.4	1.86	6.0	18.0	TJUM-03-12
16	26	-0.020 -0.040	35.9	24.9	1.30	24.2	25.5	20.4	2.86	8.0	32.0	TJUM-03-16
20	32	-0.020 -0.045	44.8	31.5	1.60	29.6	31.5	26.4	2.86	10.0	50.0	TJUM-03-20
25	40	-0.030 -0.055	57.8	44.1	1.85	36.5	39.0	34.4	2.86	12.5	39.0	TJUM-03-25
30	47	-0.030 -0.055	67.8	52.1	1.85	43.5	46.0	41.4	2.86	15.0	57.0	TJUM-03-30
40	62	-0.030 -0.060	79.8	60.9	2.15	57.8	61.0	56.4	2.86	20.0	100.0	TJUM-03-40
50	75	-0.030 -0.060	99.8	78.0	2.65	70.5	74.0	69.4	2.86	25.0	157.0	TJUM-03-50

Technical data

Part No.	d1 tolerance ⁷⁸⁾ [mm]	Fmax. dynamic ⁸²⁾ p = 5MPa		Fmax. static ⁸²⁾ p = 35MPa		Weight [g]
		[N]	[N]	[N]	[N]	
TJUM-03-10	+0.030 +0.092	725	5,075	5,075	11	
TJUM-03-12	+0.030 +0.097	960	6,720	6,720	17	
TJUM-03-16	+0.030 +0.097	1,440	10,080	10,080	23	
TJUM-03-20	+0.030 +0.103	2,250	15,750	15,750	44	
TJUM-03-25	+0.030 +0.103	3,625	25,375	25,375	92	
TJUM-03-30	+0.040 +0.124	5,100	35,700	35,700	145	
TJUM-03-40	+0.040 +0.124	8,000	56,000	56,000	311	
TJUM-03-50	+0.050 +0.196	12,500	87,500	87,500	542	



Can be combined with:

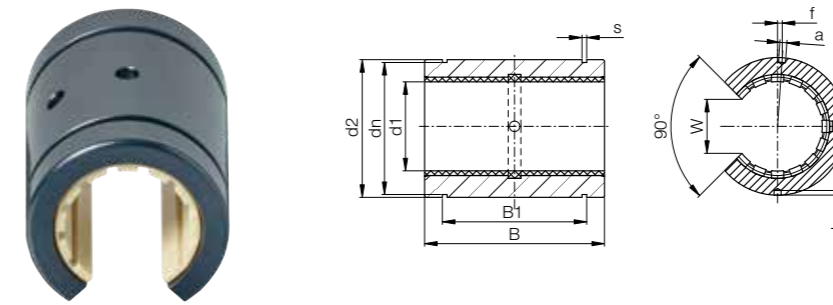


Available with drylin® liners (optional: J200/A180):



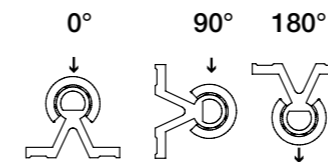
drylin® R linear plain bearings | Product range

Open, anodised aluminium adapters - for supported shafts



Order key

Type	Size
O J U M-01-10	
Open	
iglidur® J	
Liner	
Metric	
Standard	
Inner Ø d1	



- i** ⁷⁸⁾ According to igus® testing method ▶ Page 1330
- ⁸²⁾ Design tips ▶ Page 1256
- Please note: Installation instructions ▶ Page 1257
- inch** Imperial dimensions ▶ Page 1887

Dimensions [mm]

d1	d2	B	W	a	dn	B1	Øs	f	h	Part No.
		h10	-1	+0.1	h10	H10	H10	±0.2	-0.5	
10	19	29	7.3	0.0	17.5	21.6	1.30	0	1.2	OJUM-01-10
12	22	32	9.0	3.0	20.5	22.6	1.30	1.33 (7°)	1.2	OJUM-01-12
16	26	36	11.6	2.2	24.2	24.6	1.30	0	1.2	OJUM-01-16
20	32	45	12.0	2.2	29.6	31.2	1.60	0	1.2	OJUM-01-20
25	40	58	14.5	3.0	36.5	43.7	1.85	-1.5 (-4.3°)	1.5	OJUM-01-25
30	47	68	16.6	3.0	43.5	51.7	1.85	2 (4.9°)	2.0	OJUM-01-30
40	62	80	21.0	3.0	57.8	60.3	2.15	1.5 (2.8°)	2.0	OJUM-01-40
50	75	100	25.5	5.0	70.5	77.3	2.65	2.5 (3.8°)	2.0	OJUM-01-50

Technical data

Part No.	d1 tolerance ⁷⁸⁾	Fmax. dynamic ⁸²⁾ p = 5MPa			Fmax. static ⁸²⁾ p = 35MPa			Weight [g]
		0°	90°	180°	0°	90°	180°	
		OJUM-01-10	+0.030 +0.088	725	500	196	5,075	
OJUM-01-12	+0.030 +0.088	960	635	240	6,720	4,445	1,680	15
OJUM-01-16	+0.030 +0.088	1,440	990	396	10,080	6,943	2,772	21
OJUM-01-20	+0.030 +0.091	2,250	1,800	900	15,750	12,600	6,300	42
OJUM-01-25	+0.030 +0.091	3,625	2,953	1,523	25,375	20,670	10,658	70
OJUM-01-30	+0.040 +0.110	5,100	4,250	2,278	35,700	29,735	15,946	132
OJUM-01-40	+0.040 +0.115	8,000	6,810	3,800	56,000	47,660	26,660	278
OJUM-01-50	+0.050 +0.150	12,500	10,750	6,125	87,500	75,265	42,875	479

Can be combined with:

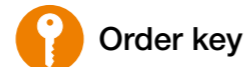
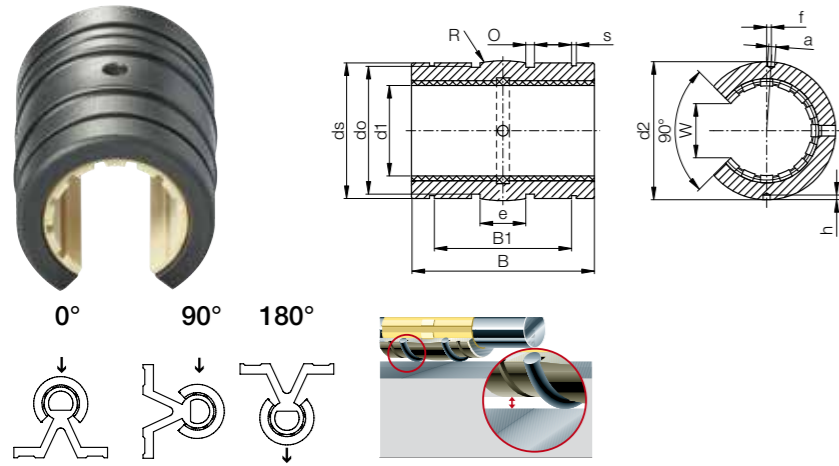


Available with drylin® liners (optional: J200/A180):



drylin® R linear plain bearings | Product range

Open, anodised aluminium adapters, floating bearing



Order key

Type Size

O J U M-03-10

- Open
- iglidur® J
- Liner
- Metric
- Self-aligning
- Inner Ø d1

- With reduced outer diameter, spherical middle area, O-rings for elastic fit and hard-anodised surface

- ⁷⁸⁾ According to igus® testing method ▶ Page 1330
- ⁸²⁾ Design tips ▶ Page 1256
- Please note: Installation instructions ▶ Page 1257
- Imperial dimensions ▶ Page 1887

Dimensions [mm]

d1	d2	ds	e	o	do	B1	Øs	B	R	W	a	f	h	Part No.
	h8	h10		+0.1		H10	H10	h10		-1	+0.1	±0.2	-0.5	
10	18.8	18.5	5.0	1.86	15.4	21.8	1.30	28.9	13.0	7.3	0.0	0	1.2	OJUM-03-10
12	21.8	21.5	6.0	1.86	18.4	22.8	1.30	31.9	18.0	9.0	3.0	1.33 (7°)	1.2	OJUM-03-12
16	25.8	25.5	8.0	2.86	20.4	24.9	1.30	35.9	32.0	11.6	2.2	0	1.2	OJUM-03-16
20	31.8	31.5	10.0	2.86	26.4	31.5	1.60	44.8	50.0	12.0	2.2	0	1.2	OJUM-03-20
25	39.8	39.0	12.5	2.86	34.4	44.1	1.85	57.8	39.0	14.5	3.0	-1.5 (-4.3°)	1.5	OJUM-03-25
30	46.7	46.0	15.0	2.86	41.4	52.1	1.85	67.8	57.0	16.6	3.0	2 (4.9°)	2	OJUM-03-30
40	61.7	61.0	20.0	2.86	56.4	60.9	2.15	79.8	100.0	21.0	3.0	1.5 (2.8°)	2	OJUM-03-40
50	74.7	74.0	25.0	2.86	69.4	78.0	2.65	99.8	157.0	25.5	5.0	2.5 (3.8°)	2	OJUM-03-50

Technical data

Part No.	Housing hole Ø H7 [mm]	d1 tolerance ⁷⁸⁾			Fmax. dynamic ⁸²⁾ p = 5MPa			Fmax. static ⁸²⁾ p = 35MPa			Weight [g]
		0°	90°	180°	0°	90°	180°	0°	90°	180°	
OJUM-03-10	19	+0.030	+0.088	725	500	196	5,075	3,500	1,370	10	
OJUM-03-12	22	+0.030	+0.088	960	635	240	6,720	4,445	1,680	13	
OJUM-03-16	26	+0.030	+0.088	1,440	990	396	10,080	6,943	2,772	19	
OJUM-03-20	32	+0.030	+0.091	2,250	1,800	900	15,750	12,600	6,300	38	
OJUM-03-25	40	+0.030	+0.091	3,625	2,953	1,523	25,375	20,670	10,658	63	
OJUM-03-30	47	+0.040	+0.110	5,100	4,250	2,278	35,700	29,735	15,946	119	
OJUM-03-40	62	+0.040	+0.115	8,000	6,810	3,800	56,000	47,660	26,600	250	
OJUM-03-50	75	+0.050	+0.150	12,500	10,750	6,125	87,500	75,265	42,875	431	

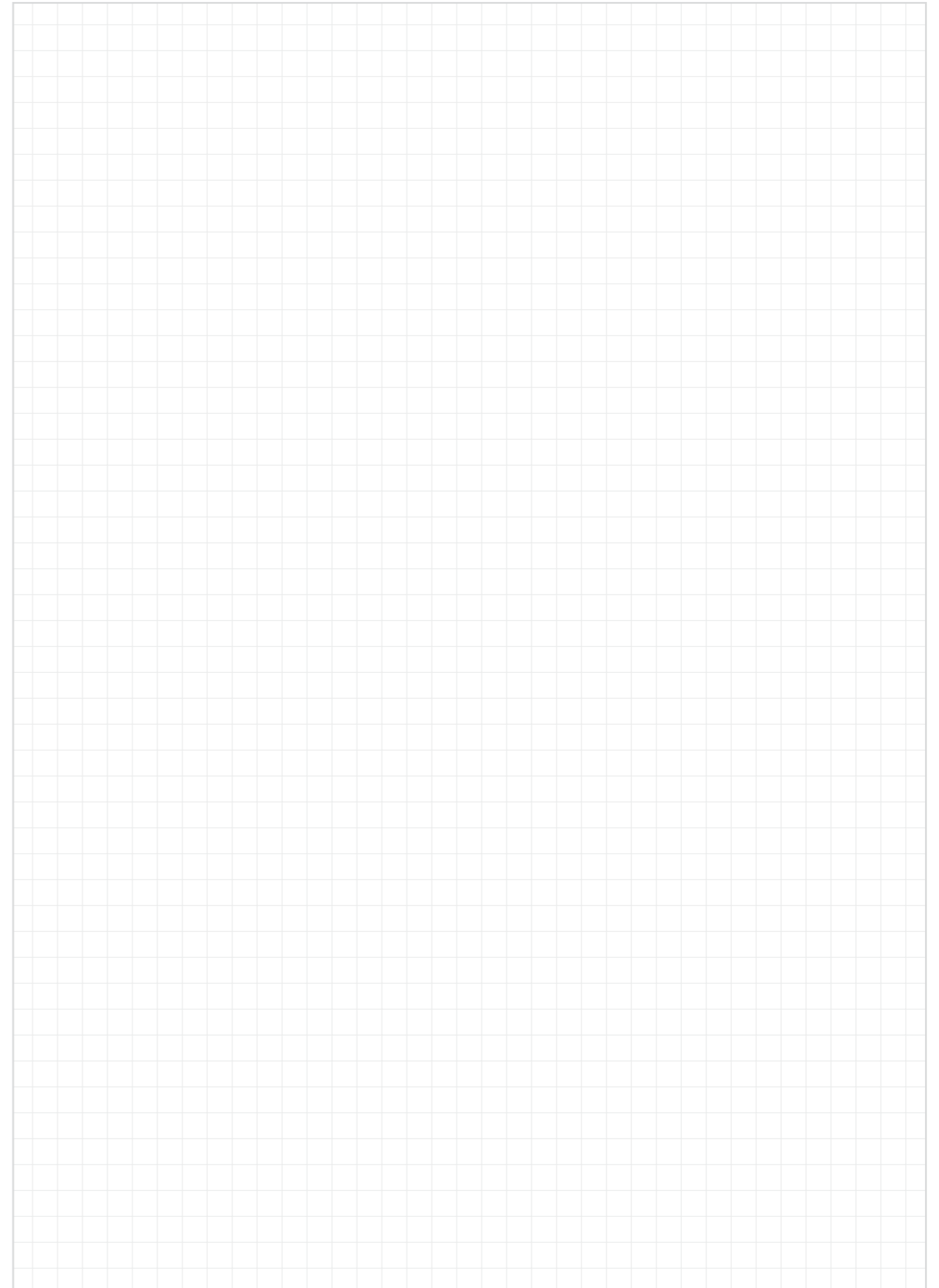
Can be combined with:



Available with drylin® liners (optional: J200/A180):

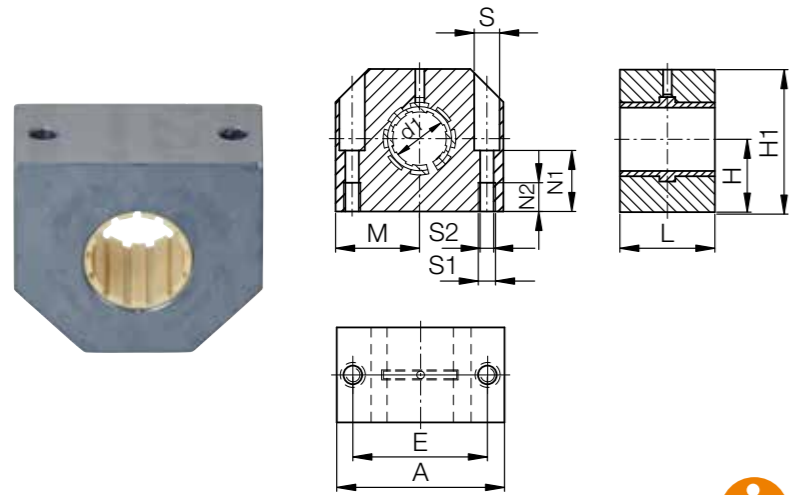


Notes



drylin® R pillow blocks | Product range

Closed, anodised aluminium housing, short design



Order key

Type	Size
R J U M-05-10	
Closed	
iglidur® J	
Liner	
Metric	
Compact	
Inner Ø d1	

i ⁷⁸⁾ According to igus® testing method ▶ Page 1330
⁸¹⁾ Ø < 10mm use press-fitted sleeve bearings
⁸²⁾ Design tips ▶ Page 1256
 Please note: Installation instructions ▶ Page 1257

Dimensions [mm]

d1	H	H1	A	M	E	S	S1	S2	N1	N2	L	Part No.
+0.01 -0.014					±0.15							
8	14	27	32	16.0	23	6.0	M4	3.4	13	9	24	RJZM-05-08 ⁸¹⁾
10	16	33	40	20.0	29	8.0	M5	4.3	16	11	26	RJUM-05-10
12	17	33	40	20.0	29	8.0	M5	4.3	16	11	28	RJUM-05-12
16	19	38	45	22.5	34	8.0	M5	4.3	18	11	30	RJUM-05-16
20	23	45	53	26.5	40	9.5	M6	5.3	22	13	30	RJUM-05-20
25	27	54	62	31.0	48	11.0	M8	6.6	26	18	40	RJUM-05-25
30	30	60	67	33.5	53	11.0	M8	6.6	29	18	50	RJUM-05-30
40	39	76	87	43.5	69	15.0	M10	8.4	38	22	60	RJUM-05-40
50	47	92	103	51.5	82	18.0	M12	10.5	46	26	70	RJUM-05-50

Technical data

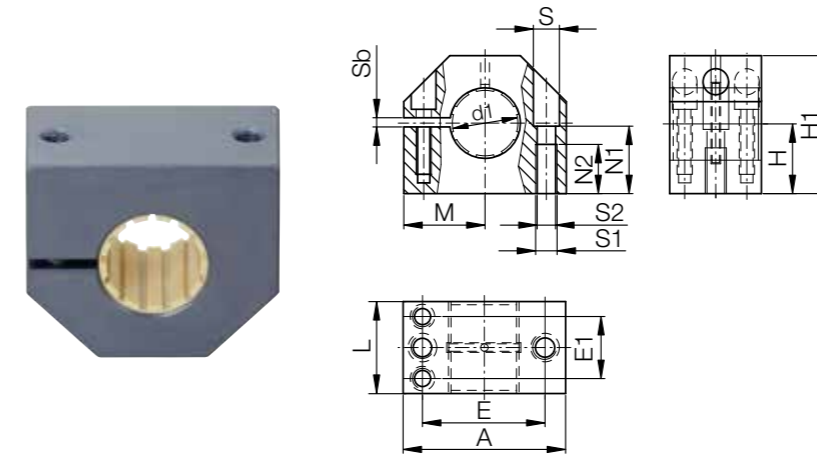
Part No.	d1 tolerance ⁷⁸⁾		Fmax. dynamic ⁸²⁾		Fmax. static ⁸²⁾		Weight
	[mm]		p = 5MPa		p = 35MPa		
	[mm]	[mm]	[N]	[N]	[N]	[N]	
RJZM-05-08 ⁸¹⁾	+0.032	+0.070	960	6,720	46		
RJUM-05-10	+0.030	+0.088	650	4,550	71		
RJUM-05-12	+0.030	+0.088	840	5,880	78		
RJUM-05-16	+0.030	+0.088	1,200	8,400	106		
RJUM-05-20	+0.030	+0.091	1,500	10,500	132		
RJUM-05-25	+0.030	+0.091	2,500	17,500	253		
RJUM-05-30	+0.040	+0.110	3,750	26,250	374		
RJUM-05-40	+0.040	+0.115	6,000	42,000	713		
RJUM-05-50	+0.050	+0.150	8,750	61,250	1,168		

Available with drylin® liners (optional: J200/A180):



drylin® R pillow blocks | Product range

Adjustable anodised aluminium housing, short design



Order key

Type	Size
R J U M E-05-12	
Closed	
iglidur® J	
Liner	
Metric	
Adjustable	
Compact	
Inner Ø d1	

● With adjustable clearance

i ⁷⁸⁾ According to igus® testing method ▶ Page 1330
⁸²⁾ Design tips ▶ Page 1256
 Please note: Installation instructions ▶ Page 1257

Dimensions [mm]

d1	H	H1	A	M	E	E1	S	S1	S2	Sb	N1	N2	L	Part No.
+0.01 -0.014					±0.15	±0.15								
12	17	33	40	20.0	29	18.0	8.0	4.3	M5	2	16	11	28	RJUME-05-12
16	19	38	45	22.5	34	19.0	8.0	4.3	M5	2	18	11	30	RJUME-05-16
20	23	45	53	26.5	40	20.0	9.5	5.3	M6	2	22	13	30	RJUME-05-20
25	27	54	62	31.0	48	25.5	11.0	6.6	M8	2	26	18	40	RJUME-05-25
30	30	60	67	33.5	53	30.5	11.0	6.6	M8	2	29	18	50	RJUME-05-30
40	39	76	87	43.5	69	36.0	15.0	8.4	M10	2	38	22	60	RJUME-05-40
50	47	92	103	51.5	82	44.0	18.0	10.5	M12	2	46	26	70	RJUME-05-50

Technical data

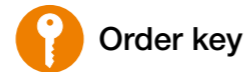
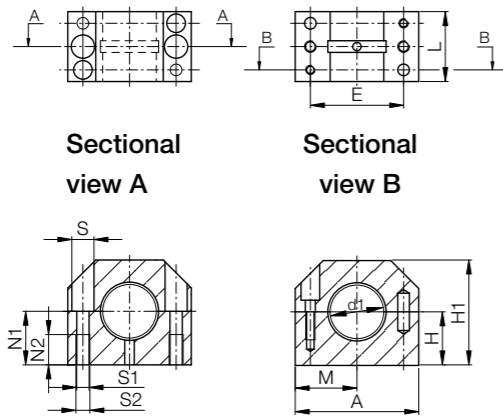
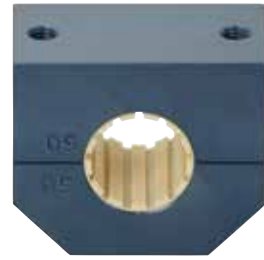
Part No.	d1 tolerance ⁷⁸⁾		Fmax. dynamic ⁸²⁾		Fmax. static ⁸²⁾		Weight
	[mm]		p = 5MPa		p = 35MPa		
	[mm]	[mm]	[N]	[N]	[N]	[N]	
RJUME-05-12	adjustable		840	5,880	78		
RJUME-05-16	adjustable		1,200	8,400	106		
RJUME-05-20	adjustable		1,500	10,500	132		
RJUME-05-25	adjustable		2,500	17,500	253		
RJUME-05-30	adjustable		3,750	26,250	374		
RJUME-05-40	adjustable		6,000	42,000	713		
RJUME-05-50	adjustable		8,750	61,250	1,168		

Available with drylin® liners (optional: J200/A180):



drylin® R pillow blocks | Product range

Split anodised aluminium housing, screwed, short design



Type	Size
T J U M-05-16	
Spittable	
iglidur® J	
Liner	
Metric	
Compact	
Inner Ø d1	

● Replacement of the liner without removing the shaft

i ⁷⁸⁾ According to igus® testing method ▶ Page 1330
⁸²⁾ Design tips ▶ Page 1256
 Please note: Installation instructions ▶ Page 1257

Dimensions [mm]

d1	H	H1	A	M	E	S	S1	S2	N1	N2	L	Part No.
	±0.02				±0.15							
16	19	38	45	22.5	34	8.0	M5	4.3	18	11	30	TJUM-05-16
20	23	45	53	26.5	40	9.5	M6	5.3	22	13	30	TJUM-05-20
25	27	54	62	31.0	48	11.0	M8	6.6	26	18	40	TJUM-05-25
30	30	60	67	33.5	53	11.0	M8	6.6	29	18	50	TJUM-05-30
40	39	76	87	43.5	69	15.0	M10	8.4	38	22	60	TJUM-05-40

Technical data

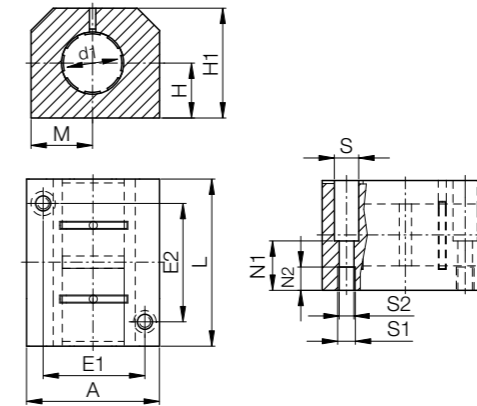
Part No.	d1 tolerance ⁷⁸⁾ [mm]	Fmax. dynamic ⁸²⁾ p = 5MPa		Fmax. static ⁸²⁾ p = 35MPa	Weight [g]
		[N]	[N]	[N]	
TJUM-05-16	+0.030 +0.120	1,200	8,400	105	
TJUM-05-20	+0.030 +0.120	1,500	10,500	137	
TJUM-05-25	+0.030 +0.120	2,500	17,500	253	
TJUM-05-30	+0.040 +0.135	3,750	26,250	377	
TJUM-05-40	+0.040 +0.135	6,000	42,000	720	

Available with drylin® liners (optional: J200/A180):



drylin® R pillow blocks | Product range

Closed, anodised aluminium housing, tandem design



Type	Size
R J U M T-05-12	
Closed	
iglidur® J	
Liner	
Metric	
Tandem	
Compact	
Inner Ø d1	

● Tandem design
 ● Equipped with two liners to increase the guide length

i ⁷⁸⁾ According to igus® testing method ▶ Page 1330
⁸²⁾ Design tips ▶ Page 1256
 Please note: Installation instructions ▶ Page 1257

Dimensions [mm]

d1	H	H1	A	M	E1	E2	S	S1	S2	N1	N2	L	Part No.
	+0.01 -0.014				±0.15	±0.15							
12	17	33	40	20	29	35	8.0	M5	4.3	16.0	11	60	RJUMT-05-12
16	19	38	45	22.5	34	40	8.0	M5	4.3	18.0	11	65	RJUMT-05-16
20	23	45	53	26.5	40	45	9.5	M6	5.3	22.0	13	65	RJUMT-05-20
25	27	54	62	31	48	55	11.0	M8	6.6	26.0	18	85	RJUMT-05-25
30	30	60	67	33.5	53	70	11.0	M8	6.6	29.0	18	105	RJUMT-05-30
40	39	76	87	43.5	69	85	15.0	M10	8.4	38.0	22	125	RJUMT-05-40
50	47	92	103	51.5	82	100	18.0	M12	10.5	46.0	26	145	RJUMT-05-50

Technical data

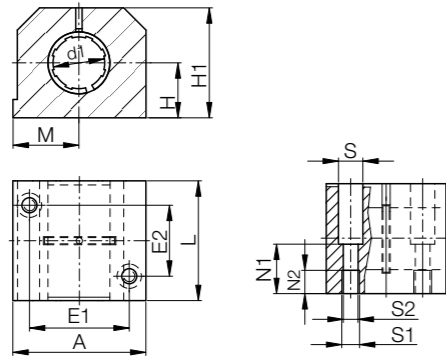
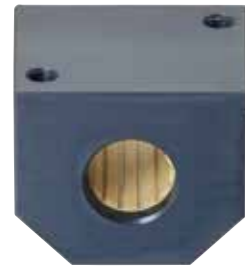
Part No.	d1 tolerance ⁷⁸⁾ [mm]	Fmax. dynamic ⁸²⁾ p = 5MPa		Fmax. static ⁸²⁾ p = 35MPa	Weight [g]
		[N]	[N]	[N]	
RJUMT-05-12	+0.030 +0.088	840	5,880	170	
RJUMT-05-16	+0.030 +0.088	1,200	8,400	250	
RJUMT-05-20	+0.030 +0.091	1,500	10,500	300	
RJUMT-05-25	+0.030 +0.091	2,500	17,500	550	
RJUMT-05-30	+0.040 +0.110	3,750	26,250	750	
RJUMT-05-40	+0.040 +0.115	6,000	42,000	1,500	
RJUMT-05-50	+0.050 +0.150	8,750	61,250	2,400	

Available with drylin® liners (optional: J200/A180):



drylin® R pillow blocks | Product range

Closed, anodised aluminium housing, long design



Order key

Type	Size
R J U M-06-12	
Closed	
iglidur® J	
Liner	
Metric	
Long design	
Inner Ø d1	

⁷⁸⁾ According to igus® testing method ▶ Page 1330
⁸²⁾ Design tips ▶ Page 1256
 Please note: Installation instructions ▶ Page 1257

Dimensions [mm]

d1	H	H1	A	M	E1	E2	S	S1	S2	N1	N2	L	Part No.
	+0.01 -0.014			±0.02	±0.15	±0.15							
12	18	35	43	21.5	32	23	8.0	M5	4.3	16.5	11	39	RJUM-06-12
16	22	42	53	26.5	40	26	10.0	M6	5.3	21.0	13	43	RJUM-06-16
20	25	50	60	30.0	45	32	11.0	M8	6.6	24.0	18	54	RJUM-06-20
25	30	60	78	39.0	60	40	15.0	M10	8.4	29.0	22	67	RJUM-06-25
30	35	70	87	43.5	68	45	15.0	M10	8.4	34.0	22	79	RJUM-06-30
40	45	90	108	54.0	86	58	18.0	M12	10.5	44.0	26	91	RJUM-06-40
50	50	105	132	66.0	108	50	20.0	M16	13.5	49.0	34	113	RJUM-06-50

Technical data

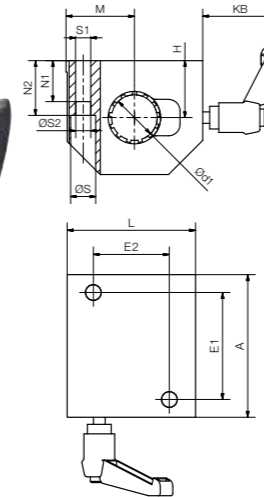
Part No.	d1 tolerance ⁷⁸⁾ [mm]	Fmax. dynamic ⁸²⁾ p = 5MPa		Fmax. static ⁸²⁾ p = 35MPa		Weight [g]
		[N]		[N]		
RJUM-06-12	+0.030 +0.088	960	6,720	121		
RJUM-06-16	+0.030 +0.088	1,440	10,080	211		
RJUM-06-20	+0.030 +0.091	2,250	15,750	323		
RJUM-06-25	+0.030 +0.091	3,625	25,375	651		
RJUM-06-30	+0.040 +0.110	5,100	35,700	1,050		
RJUM-06-40	+0.040 +0.115	8,000	56,000	1,820		
RJUM-06-50	+0.050 +0.150	12,500	87,500	3,250		

Available with drylin® liners (optional: J200/A180):



drylin® R pillow blocks | Product range

Closed, anodised aluminium housing, long design
with manual clamp



Order key

Type	Size	Version
R J U M-06-12 -HK		
Closed		
iglidur® J		
Liner		
Metric		
Long design		
Inner Ø d1		
Manual clamp		

⁷⁸⁾ According to igus® testing method ▶ Page 1330
⁸²⁾ Design tips ▶ Page 1256
 Please note: Installation instructions ▶ Page 1257

Dimensions [mm]

d1	H	H1	A	M	E1	E2	S	S1	S2	N1	N2	W	L	KL	KB	Part No.
	+0.01; -0.014			±0.02	±0.15	±0.15										
12	18	35	43	21.5	32	23	8	M5	4.3	16.5	11	10.2	39	40	33	RJUM-06-12-HK
16	22	42	53	26.5	40	26	10	M6	5.3	21	13	11.6	43	40	33	RJUM-06-16-HK
20	25	50	60	30	45	32	11	M8	6.6	24	18	12	54	40	33	RJUM-06-20-HK
25	30	60	78	39	60	40	15	M10	8.4	29	22	14.5	67	65	46	RJUM-06-25-HK
30	35	70	87	43.5	68	45	15	M10	8.4	34	22	16.6	79	65	46	RJUM-06-30-HK
40	45	90	108	54	86	58	18	M12	10.5	44	26	21	91	65	46	RJUM-06-40-HK
50	50	105	132	66	108	50	20	M16	13.5	49	34	25.5	113	65	46	RJUM-06-50-HK

Technical data

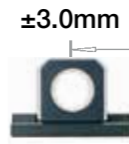
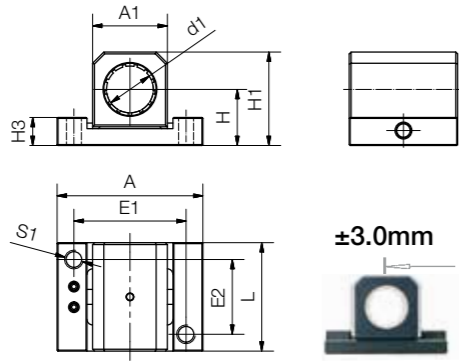
Part No.	d1 tolerance ⁷⁸⁾ [mm]	Fmax. dynamic ⁸²⁾ p = 5MPa		Fmax. static ⁸²⁾ p = 35MPa		Clamp force axial [N]	Weight [g]
		0°		0°			
RJUM-06-12-HK	+0.030 +0.088	960	6720	400	0.098		
RJUM-06-16-HK	+0.030 +0.088	1440	10080	400	0.164		
RJUM-06-20-HK	+0.030 +0.091	2250	15750	400	0.275		
RJUM-06-25-HK	+0.030 +0.091	3625	25375	1,000	0.544		
RJUM-06-30-HK	+0.040 +0.110	5100	35700	1,000	0.832		
RJUM-06-40-HK	+0.040 +0.115	8000	56000	1,000	1.513		
RJUM-06-50-HK	+0.050 +0.150	12500	87500	1,000	2.568		

Available with drylin® liners (optional: J200/A180):



drylin® R pillow blocks | Product range

Closed, anodised aluminium, floating pillow blocks



Order key

Type	Size	Version
R J U M-06- 12 -LL		
Closed	iglidur® J	Liner
	Metric	Long design
	Inner Ø d1	Floating bearing

- Compensation of parallelism errors up to 6mm
- Quick assembly even on raw profiles



⁷⁸⁾ According to igus® testing method ▶ Page 1330

⁸²⁾ Design tips ▶ Page 1256

Please note: Installation instructions ▶ Page 1257

Floating bearing ▶ Page 1256

Dimensions [mm]

d1	H	H1	A	E1	E2	S1	L	A1	H3	Part No.
	±0.01			±0.15	±0.15					
12	18	28	43	32	23	M5	32	20	11	RJUM-06-12-LL
16	22	35	53	40	26	M6	36	26	11	RJUM-06-16-LL
20	25	41	60	45	32	M8	45	32	12.5	RJUM-06-20-LL
25	30	50	78	60	40	M10	58	40	15	RJUM-06-25-LL
30	35	59	87	68	45	M10	68	48	15	RJUM-06-30-LL
40	45	76	108	86	58	M12	80	62	20	RJUM-06-40-LL
50	50	89	132	108	50	M16	100	78	24	RJUM-06-50-LL

Technical data

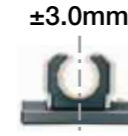
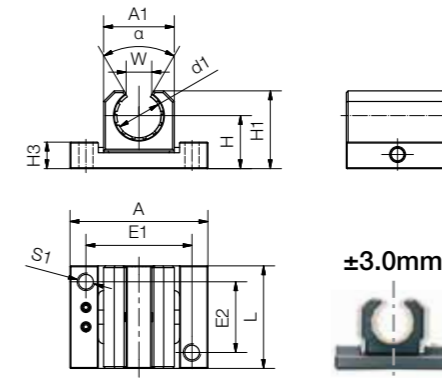
Part No.	d1 tolerance ⁷⁸⁾	Fmax. static or dynamic ⁸²⁾	Weight
	[mm]	[N]	[g]
RJUM-06-12-LL	+0.030 +0.088	560	50
RJUM-06-16-LL	+0.030 +0.088	920	80
RJUM-06-20-LL	+0.030 +0.091	2,100	130
RJUM-06-25-LL	+0.030 +0.091	3,550	280
RJUM-06-30-LL	+0.040 +0.110	5,300	430
RJUM-06-40-LL	+0.040 +0.115	8,000	850
RJUM-06-50-LL	+0.050 +0.150	12,500	1,550

Available with drylin® liners (optional: J200/A180):



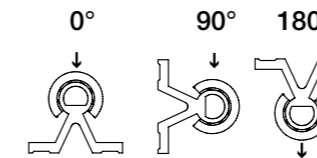
drylin® R pillow blocks | Product range

Open, anodised aluminium, floating pillow blocks



Order key

Type	Size	Version
O J U M-06- 12 -LL		
Open	iglidur® J	Liner
	Metric	Long design
	Inner Ø d1	Floating bearing



- Compensation of parallelism errors up to 6mm



⁷⁸⁾ According to igus® testing method ▶ Page 1330

⁸²⁾ Design tips ▶ Page 1256

Please note: Installation instructions ▶ Page 1257

Floating bearing ▶ Page 1256

Dimensions [mm]

d1	H	H1	A	E1	E2	S1	L	A1	H3	W	α	Part No.
	±0.01			±0.15	±0.15					-1	[°]	
12	18	24.5	43	32	23	M5	32	20	11	10.2	90	OJUM-06-12-LL
16	22	30.5	53	40	26	M6	36	26	11	11.6	90	OJUM-06-16-LL
20	25	37.0	60	45	32	M8	45	32	12.5	12.0	60	OJUM-06-20-LL
25	30	44.0	78	60	40	M10	58	40	15	14.5	60	OJUM-06-25-LL
30	35	52.5	87	68	45	M10	68	48	15	16.8	60	OJUM-06-30-LL
40	45	69.0	108	86	58	M12	80	62	20	21.0	60	OJUM-06-40-LL
50	50	80.0	132	108	50	M16	100	78	24	25.5	60	OJUM-06-50-LL

Technical data

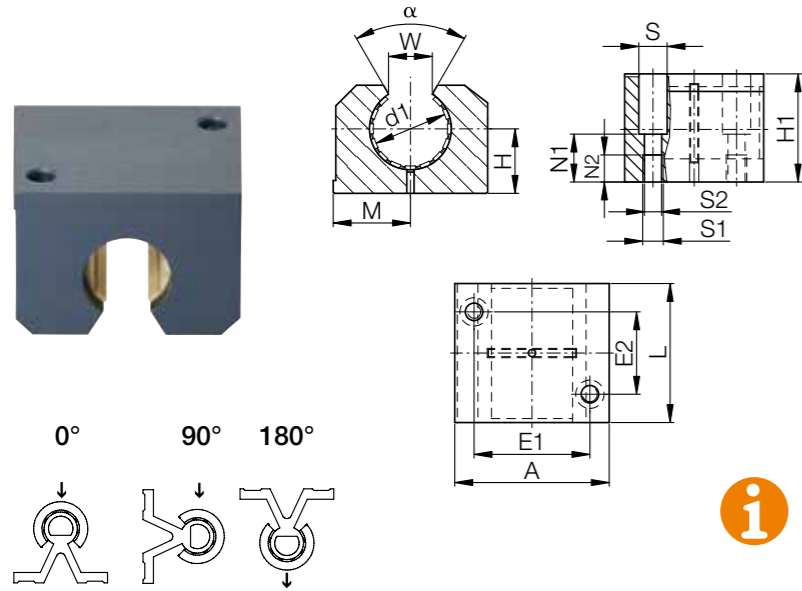
Part No.	d1 tolerance ⁷⁸⁾	Fmax. static or dynamic ⁸²⁾	Fmax. static ⁸²⁾ with load at 180°	Weight
	[mm]	[N]	[N]	[g]
OJUM-06-12-LL	+0.030 +0.088	560	240	40
OJUM-06-16-LL	+0.030 +0.088	920	400	70
OJUM-06-20-LL	+0.030 +0.091	2,100	900	115
OJUM-06-25-LL	+0.030 +0.091	3,550	1,520	240
OJUM-06-30-LL	+0.040 +0.110	5,100	2,280	370
OJUM-06-40-LL	+0.040 +0.115	8,000	3,800	750
OJUM-06-50-LL	+0.050 +0.150	12,500	6,100	1,400

Available with drylin® liners (optional: J200/A180):



drylin® R pillow blocks | Product range

Open, anodised aluminium housing, long design



Type Size

O J U M-06-12

Open	iglidur® J	Liner	Metric	Long design	Inner Ø d1
------	------------	-------	--------	-------------	------------

i ⁷⁸⁾ According to igus® testing method ▶ Page 1330
⁸²⁾ Design tips ▶ Page 1256
 Please note: Installation instructions ▶ Page 1257

Dimensions [mm]

d1	H	H1	A	M	E1	E2	S	S1	S2	N1	N2	W	α	L	Part No.
	+0.01; -0.014			±0.02	±0.15	±0.15						-1	[°]		
12	18	28	43	21.5	32	23	8.0	M5	4.3	16.5	11	10.2	78	39	OJUM-06-12
16	22	35	53	26.5	40	26	10.0	M6	5.3	21.0	13	11.6	78	43	OJUM-06-16
20	25	42	60	30.0	45	32	11.0	M8	6.6	24.0	18	12.0	60	54	OJUM-06-20
25	30	51	78	39.0	60	40	15.0	M10	8.4	29.0	22	14.5	60	67	OJUM-06-25
30	35	60	87	43.5	68	45	15.0	M10	8.4	34.0	22	16.6	57	79	OJUM-06-30
40	45	77	108	54.0	86	58	18.0	M12	10.5	44.0	26	21.0	56	91	OJUM-06-40
50	50	88	132	66.0	108	50	20.0	M16	13.5	49.0	34	25.5	54	113	OJUM-06-50

Technical data

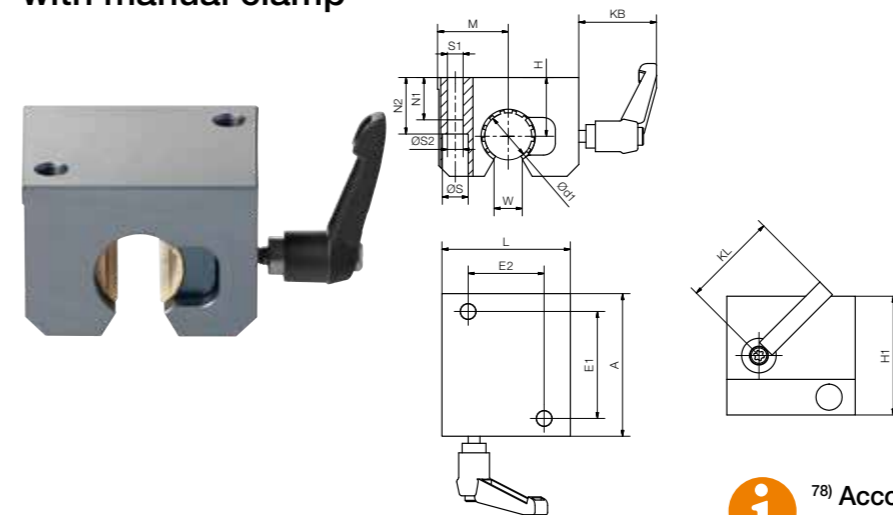
Part No.	d1 tolerance ⁷⁸⁾	Fmax. dynamic ⁸²⁾			Fmax. static ⁸²⁾			Weight
		p = 5MPa			p = 35MPa			
		0°	90°	180°	0°	90°	180°	
OJUM-06-12	+0.030 +0.088	960	635	240	6,720	4,445	1,680	95
OJUM-06-16	+0.030 +0.088	1440	990	396	10,080	6,943	2,772	158
OJUM-06-20	+0.030 +0.091	2250	1,800	900	15,750	12,600	6,300	266
OJUM-06-25	+0.030 +0.091	3625	2,953	1,523	25,375	20,670	10,658	530
OJUM-06-30	+0.040 +0.110	5100	4,250	2,278	35,700	29,735	15,946	818
OJUM-06-40	+0.040 +0.115	8000	6,810	3,800	56,000	47,660	26,600	1,485
OJUM-06-50	+0.050 +0.150	12,500	10,750	6,125	87,500	75,265	42,875	2,750

Available with drylin® liners (optional: J200/A180):



drylin® R pillow blocks | Product range

Open, anodised aluminium housing, long design with manual clamp



Type Size Version

O J U M-06- 12 -HK

Open	iglidur® J	Liner	Metric	Long design	Inner Ø d1	Manual clamp
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i ⁷⁸⁾ According to igus® testing method ▶ Page 1330
⁸²⁾ Design tips ▶ Page 1256
 Please note: Installation instructions ▶ Page 1257

Dimensions [mm]

d1	H	H1	A	M	E1	E2	S	S1	S2	N1	N2	W	L	KL	KB	Part No.
	+0.01; -0.014			±0.02	±0.15	±0.15						-1				
12	18	28	43	21.5	32	23	8	M5	4.3	16.5	11	10.2	39	40	33	OJUM-06-12-HK
16	22	35	53	26.5	40	26	10	M6	5.3	21	13	11.6	43	40	33	OJUM-06-16-HK
20	25	42	60	30.0	45	32	11	M8	6.6	24	18	12.0	54	40	33	OJUM-06-20-HK
25	30	51	78	39.0	60	40	15	M10	8.4	29	22	14.5	67	65	46	OJUM-06-25-HK
30	35	60	87	43.5	68	45	15	M10	8.4	34	22	16.6	79	65	46	OJUM-06-30-HK
40	45	77	108	54.0	86	58	18	M12	10.5	44	26	21.0	91	65	46	OJUM-06-40-HK
50	50	88	132	66.0	108	50	20	M16	13.5	49	34	25.5	113	65	46	OJUM-06-50-HK

Technical data

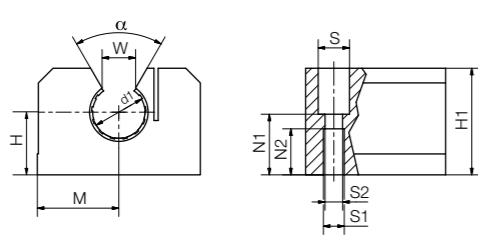
Part No.	d1 tolerance ⁷⁸⁾	Fmax. dynamic ⁸²⁾			Fmax. static ⁸²⁾			Clamp force axial	Weight
		p = 5MPa			p = 35MPa				
		0°	90°	180°	0°	90°	180°		
OJUM-06-12-HK	+0.030 +0.088	960	635	240	6720	4445	1680	400	0.098
OJUM-06-16-HK	+0.030 +0.088	1440	990	396	10080	6943	2772	400	0.164
OJUM-06-20-HK	+0.030 +0.091	2250	1800	900	15750	12600	6300	400	0.275
OJUM-06-25-HK	+0.030 +0.091	3625	2953	1523	25375	20670	10658	1,000	0.544
OJUM-06-30-HK	+0.040 +0.110	5100	4250	2278	35700	29735	15946	1,000	0.832
OJUM-06-40-HK	+0.040 +0.115	8000	6810	3800	56000	47660	26600	1,000	1.513
OJUM-06-50-HK	+0.050 +0.150	12500	10750	6125	87500	75265	42875	1,000	2.568

Available with drylin® liners (optional: J200/A180):



drylin® R pillow blocks | Product range

Open, anodised aluminium housing, long design, adjustable

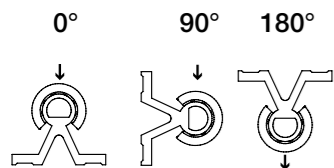


Order key

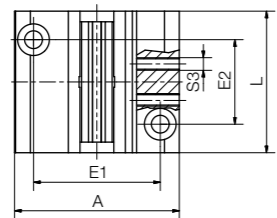
Type Size

O J U M E -06-12

Open	iglidur® J	Liner	Metric	Adjustable	Long design	Inner Ø d1
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● With two set screws (DIN 913), clearance adjustment possible



⁷⁸⁾ According to igus® testing method ▶ Page 1330

⁸²⁾ Design tips ▶ Page 1256

Please note: Installation instructions ▶ Page 1257

Dimensions [mm]

d1	H	H1	A	M	E1	E2	S	S1	S2	S3	N1	N2	W	α	L	Part No.
	+0.01; -0.014			±0.02	±0.15	±0.15							-1	[°]		
12	18	28	43	21.5	32	23	8.0	M5	4.3	M4	16.5	11	10.2	78	39	OJUME-06-12
16	22	35	53	26.5	40	26	10.0	M6	5.3	M4	21.0	13	11.6	78	43	OJUME-06-16
20	25	42	60	30.0	45	32	11.0	M8	6.6	M5	24.0	18	12.0	60	54	OJUME-06-20
25	30	51	78	39.0	60	40	15.0	M10	8.4	M6	29.0	22	14.5	60	67	OJUME-06-25
30	35	60	87	43.5	68	45	15.0	M10	8.4	M6	34.0	22	16.6	57	79	OJUME-06-30
40	45	77	108	54.0	86	58	18.0	M12	10.5	M8	44.0	26	21.0	56	91	OJUME-06-40
50	50	88	132	66.0	108	50	20.0	M16	13.5	M8	49.0	34	25.5	54	113	OJUME-06-50

Technical data

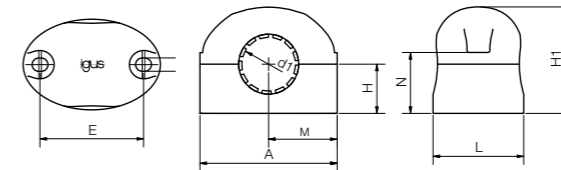
Part No.	d1 tolerance ⁷⁸⁾	Fmax. dynamic ⁸²⁾			Fmax. static ⁸²⁾			Weight
		p = 5MPa			p = 35MPa			
		0°	90°	180°	0°	90°	180°	
OJUME-06-12	adjustable	960	635	240	6,720	4,445	1,680	100
OJUME-06-16	adjustable	1,440	990	396	10,080	6,943	2,772	160
OJUME-06-20	adjustable	2,250	1,800	900	15,750	12,600	6,300	270
OJUME-06-25	adjustable	3,625	2,953	1,523	25,375	20,670	10,658	530
OJUME-06-30	adjustable	5,100	4,250	2,278	35,700	29,735	15,946	820
OJUME-06-40	adjustable	8,000	6,810	3,800	56,000	47,660	26,600	1,490
OJUME-06-50	adjustable	12,500	10,750	6,125	87,500	75,265	42,875	2,750

Available with drylin® liners (optional: J200/A180):



drylin® R pillow blocks | Product range **New**

Split linear housings made of solid plastic, econ



Order key

Type Size

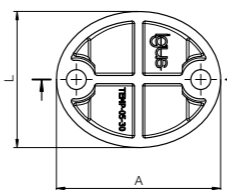
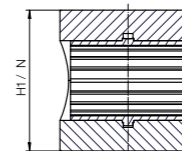
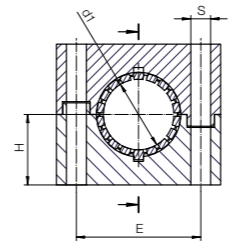
R J U M P -05-12

Closed	iglidur® J	Liner	Metric	Polymer	Compact	Inner Ø d1
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Installation size
12-20



Installation size
25/30



⁷⁸⁾ According to igus® testing method ▶ Page 1330

⁸²⁾ Design tips ▶ Page 1256

Please note: Installation instructions ▶ Page 1257

- Linear housings made of robust lightweight igus® polymers
- Suitable for all type O2 liners (compact bearing)

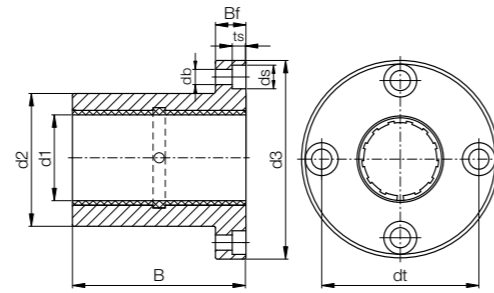
Dimensions [mm]

d1	H	H1	A	M	E	S	N	L	Screws	Part No.
			min.	max.	min.	max.				
12	15	33	40	20.0	29	4.2	18.5	32	M4	RJUMP-05-12 New
16	17	36	45	22.5	34	4.2	20.5	35	M4	RJUMP-05-16 New
20	19	41	53	26.5	40	5.2	23.5	35	M5	RJUMP-05-20 New
25	27	54	65	-	48	8.5-0.1	54.0	45	M8	RJUMP-05-25 New
30	30	60	70	-	53	8.5-0.1	60.0	58	M8	RJUMP-05-30 New

Technical data

Part No.	d1 tolerance ⁷⁸⁾	Permissible loads	Max. T. ¹⁷⁹⁾	Weight
RJUMP-05-12 New	+0.0 / +0.1	160	0.5	78
RJUMP-05-16 New	+0.0 / +0.1	240	1.0	106
RJUMP-05-20 New	+0.1 / +0.2	300	2.0	132
RJUMP-05-25 New	+0.1 / +0.2	400	10.0	90
RJUMP-05-30 New	+0.1 / +0.2	500	10.0	121

¹⁷⁹⁾ Recommended fastening screw tightening torque; screw lock recommended



i ⁷⁸⁾ According to igus® testing method ► Page 1330
⁸²⁾ Design tips ► Page 1256
 Please note: Installation instructions ► Page 1257

Dimensions [mm]

d1	d2 h7	d3	dt	B	Bf	ts	db	ds
8.0	16	32	24	25	8	3.1	3.5	6.0
10.0	19	39	29	29	9	4.1	4.5	7.5
10.4	19	39	29	29	9	4.1	4.5	7.5
12.0	22	42	32	32	9	4.1	4.5	7.5
12.4	22	42	32	32	9	4.1	4.5	7.5
16.0	26	46	36	36	9	4.1	4.5	7.5
16.4	26	46	36	36	9	4.1	4.5	7.5
20.0	32	54	43	45	11	5.1	5.5	9.0
20.5	32	54	43	45	11	5.1	5.5	9.0
25.0	40	62	51	58	11	5.1	5.5	9.0
25.5	40	62	51	58	11	5.1	5.5	9.0
30.0	47	76	62	68	14	6.1	6.6	11.0
30.6	47	76	62	68	14	6.1	6.6	11.0
40.0	62	98	80	80	18	8.1	9.0	14.0
50.0	75	112	94	100	18	8.1	9.0	14.0

Available with drylin® liners (optional: J200/A180):



Order key

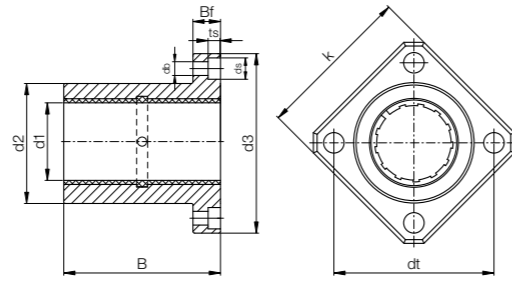
Type: **F J U M-01-10-LL** Size: **LL**

With flange
 iglidur® J
 Liner
 Metric
 Round design
 Inner Ø d1

Option:
 LL: Floating bearing

Technical data

d1 tolerance ⁷⁸⁾	Fmax. dynamic ⁸²⁾ p = 5MPa	Fmax. static ⁸²⁾ p = 35MPa	Weight	Part No.
[mm]	[N]	[N]	[g]	
+0.032 +0.070	960	6,720	20	FJZM-01-08
+0.030 +0.088	725	5,075	32	FJUM-01-10
+0.030 +0.088	725	5,075	32	FJUM-01-10-LL
+0.030 +0.088	960	6,720	42	FJUM-01-12
+0.030 +0.088	960	6,720	42	FJUM-01-12-LL
+0.030 +0.088	1,440	10,080	51	FJUM-01-16
+0.030 +0.088	1,440	10,080	51	FJUM-01-16-LL
+0.030 +0.091	2,250	15,750	88	FJUM-01-20
+0.030 +0.091	2,250	15,750	88	FJUM-01-20-LL
+0.030 +0.091	3,625	25,375	152	FJUM-01-25
+0.030 +0.091	3,625	25,375	152	FJUM-01-25-LL
+0.040 +0.110	5,100	35,700	266	FJUM-01-30
+0.040 +0.110	5,100	35,700	266	FJUM-01-30-LL
+0.040 +0.115	8,000	56,000	552	FJUM-01-40
+0.050 +0.150	12,500	87,500	853	FJUM-01-50



i ⁷⁸⁾ According to igus® testing method ► Page 1330
⁸²⁾ Design tips ► Page 1256
Please note: Installation instructions ► Page 1257

Dimensions [mm]

d1	d2 h7	d3	dt ±0.15	k ±0.15	B	Bf	ts	db	ds
8.0	16	32	24	25	25	8	3.1	3.5	6.0
10.0	19	39	29	30	29	9	4.1	4.5	7.5
10.4	19	39	29	30	29	9	4.1	4.5	7.5
12.0	22	42	32	32	32	9	4.1	4.5	7.5
12.4	22	42	32	32	32	9	4.1	4.5	7.5
16.0	26	46	36	35	36	9	4.1	4.5	7.5
16.4	26	46	36	35	36	9	4.1	4.5	7.5
20.0	32	54	43	42	45	11	5.1	5.5	9.0
20.5	32	54	43	42	45	11	5.1	5.5	9.0
25.0	40	62	51	50	58	11	5.1	5.5	9.0
25.5	40	62	51	50	58	11	5.1	5.5	9.0
30.0	47	76	62	60	68	14	6.1	6.6	11.0
30.6	47	76	62	60	68	14	6.1	6.6	11.0
40.0	62	98	80	75	80	18	8.1	9.0	14.0
50.0	75	112	94	88	100	18	8.1	9.0	14.0

Available with drylin® liners (optional: J200/A180):



Order key

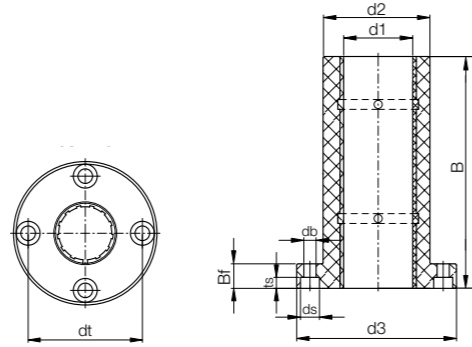
Type: **F J U M-02-10-LL** Size: **LL**

Option:
LL: Floating bearing

- With flange
- iglidur® J
- Liner
- Metric
- Square design
- Inner Ø d1

Technical data

d1 tolerance ⁷⁸⁾ [mm]	Fmax. static or dynamic ⁸²⁾ [N]	Fmax. static ⁸²⁾ with load at 180° [N]	Weight [g]	Part No.
+0.032 +0.070	960	6,720	17	FJZM-02-08 ⁸²⁾
+0.030 +0.088	725	5,075	25	FJUM-02-10
+0.030 +0.088	725	5,075	25	FJUM-02-10-LL
+0.030 +0.088	960	6,720	32	FJUM-02-12
+0.030 +0.088	960	6,720	32	FJUM-02-12-LL
+0.030 +0.088	1,440	10,080	41	FJUM-02-16
+0.030 +0.088	1,440	10,080	41	FJUM-02-16-LL
+0.030 +0.091	2,250	15,750	73	FJUM-02-20
+0.030 +0.091	2,250	15,750	73	FJUM-02-20-LL
+0.030 +0.091	3,625	25,375	135	FJUM-02-25
+0.030 +0.091	3,625	25,375	135	FJUM-02-25-LL
+0.040 +0.110	5,100	35,700	228	FJUM-02-30
+0.040 +0.110	5,100	35,700	228	FJUM-02-30-LL
+0.040 +0.115	8,000	56,000	454	FJUM-02-40
+0.050 +0.150	12,500	87,500	735	FJUM-02-50



● Equipped with two liners to increase the guide length

i ⁷⁸⁾ According to igus® testing method ► Page 1330
⁸⁵⁾ Fitted with two pieces of JSM-0810-16
Please note: Installation instructions ► Page 1257

Dimensions [mm]

d1	d2 h7	d3	dt	B	Bf	ts	db	ds
8.0	16	32	24	45	8	3.1	3.5	6.0
10.0	19	39	29	52	9	4.1	4.5	7.5
10.4	19	39	29	52	9	4.1	4.5	7.5
12.0	22	42	32	57	9	4.1	4.5	7.5
12.4	22	42	32	57	9	4.1	4.5	7.5
16.0	26	46	36	70	9	4.1	4.5	7.5
16.4	26	46	36	70	9	4.1	4.5	7.5
20.0	32	54	43	80	11	5.1	5.5	9.0
20.5	32	54	43	80	11	5.1	5.5	9.0
25.0	40	62	51	112	11	5.1	5.5	9.0
25.5	40	62	51	112	11	5.1	5.5	9.0
30.0	47	76	62	123	14	6.1	6.6	11.0
30.6	47	76	62	123	14	6.1	6.6	11.0
40.0	62	98	80	151	18	8.1	9.0	14.0
50.0	75	112	94	192	18	8.1	9.0	14.0

Available with drylin® liners (optional: J200/A180):



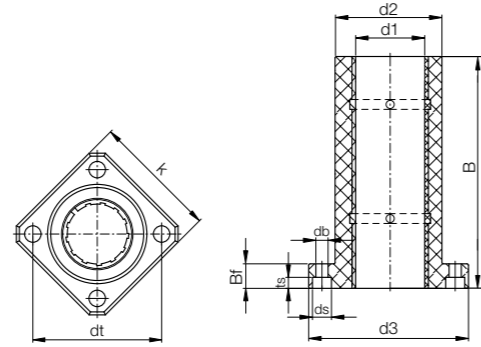
Order key

Type	Size
F J U M T -01-10-LL	
With flange	
iglidur® J	
Liner	
Metric	
Tandem	
Round design	
Inner Ø d1	

Option:
LL: Floating bearing

Technical data

Dimension nominal diameter [mm]	d1 tolerance ⁷⁸⁾ [mm]	Guide length [mm]	Projected bearing surface [mm²]	Weight [g]	Part No.
8	+0.032 +0.070	45	256	27.13	FJZMT-01-08 ⁸⁵⁾
10	+0.030 +0.088	52	250	43.75	FJUMT-01-10
10	+0.030 +0.088	52	250	43.75	FJUMT-01-10-LL
12	+0.030 +0.088	57	324	57.00	FJUMT-01-12
12	+0.030 +0.088	57	324	57.00	FJUMT-01-12-LL
16	+0.030 +0.088	70	464	78.28	FJUMT-01-16
16	+0.030 +0.088	70	464	78.28	FJUMT-01-16-LL
20	+0.030 +0.091	80	580	126.42	FJUMT-01-20
20	+0.030 +0.091	80	580	126.42	FJUMT-01-20-LL
25	+0.030 +0.091	112	975	248.85	FJUMT-01-25
25	+0.030 +0.091	112	975	248.85	FJUMT-01-25-LL
30	+0.040 +0.110	123	1,470	388.37	FJUMT-01-30
30	+0.040 +0.110	123	1,470	388.37	FJUMT-01-30-LL
40	+0.040 +0.115	151	2,360	835.00	FJUMT-01-40
50	+0.050 +0.150	192	3,450	1,352.30	FJUMT-01-50



● Equipped with two liners to increase the guide length

i ⁷⁸⁾ According to igus® testing method ▶ Page 1330
⁸⁵⁾ Fitted with two pieces of JSM-0810-16
Please note: Installation instructions ▶ Page 1257

Dimensions [mm]

d1	d2 h7	d3	dt	k	B	Bf	ts	db	ds
8.0	16	32	24	25	45	8	3.1	3.5	6.0
10.0	19	39	29	30	52	9	4.1	4.5	7.5
10.4	19	39	29	30	52	9	4.1	4.5	7.5
12.0	22	42	32	32	57	9	4.1	4.5	7.5
12.4	22	42	32	32	57	9	4.1	4.5	7.5
16.0	26	46	36	35	70	9	4.1	4.5	7.5
16.4	26	46	36	35	70	9	4.1	4.5	7.5
20.0	32	54	43	42	80	11	5.1	5.5	9.0
20.5	32	54	43	42	80	11	5.1	5.5	9.0
25.0	40	62	51	50	112	11	5.1	5.5	9.0
25.5	40	62	51	50	112	11	5.1	5.5	9.0
30.0	47	76	62	60	123	14	6.1	6.6	11.0
30.6	47	76	62	60	123	14	6.1	6.6	11.0
40.0	62	98	80	75	151	18	8.1	9.0	14.0
50.0	75	112	94	88	192	18	8.1	9.0	14.0

Available with drylin® liners (optional: J200/A180):



Order key

Type	Size
F J U M T -02-10-LL	
With flange	
iglidur® J	
Liner	
Metric	
Tandem	
Square design	
Inner Ø d1	

Option:
LL: Floating bearing

Technical data

Dimension nominal diameter [mm]	d1 tolerance ⁷⁸⁾ [mm]	Guide length [mm]	Projected bearing surface [mm²]	Weight [g]	Part No.
8	+0.032 +0.070	45	256	23.00	FJZMT-02-08 ⁸⁵⁾
10	+0.030 +0.088	52	250	36.58	FJUMT-02-10
10	+0.030 +0.088	52	250	36.58	FJUMT-02-10-LL
12	+0.030 +0.088	57	324	48.19	FJUMT-02-12
12	+0.030 +0.088	57	324	48.19	FJUMT-02-12-LL
16	+0.030 +0.088	70	464	67.79	FJUMT-02-16
16	+0.030 +0.088	70	464	67.79	FJUMT-02-16-LL
20	+0.030 +0.091	80	580	110.06	FJUMT-02-20
20	+0.030 +0.091	80	580	110.06	FJUMT-02-20-LL
25	+0.030 +0.091	112	975	230.06	FJUMT-02-25
25	+0.030 +0.091	112	975	230.06	FJUMT-02-25-LL
30	+0.040 +0.110	123	1,470	350.74	FJUMT-02-30
30	+0.040 +0.110	123	1,470	350.74	FJUMT-02-30-LL
40	+0.040 +0.115	151	2,360	739.30	FJUMT-02-40
50	+0.050 +0.150	192	3,450	1,249.30	FJUMT-02-50

drylin® R flanged linear plain bearings | Product range **New**

Adapter with clip-in liners made from iglidur® W360 (precision), round flange



Order key

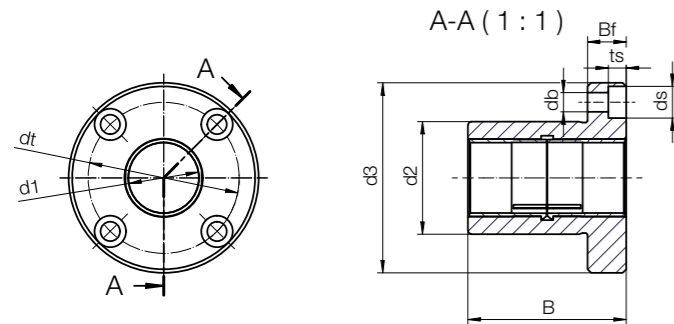
Type F R W360 C M T -01-12 Size

F R W360 C M T -01-12

With flange	drylin® R	igidur® W360	Clip-in liner	Metric	Tandem	Square design	Inner Ø d1
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Option:
T: Tandem

- Up to 50% lower clearance in operation



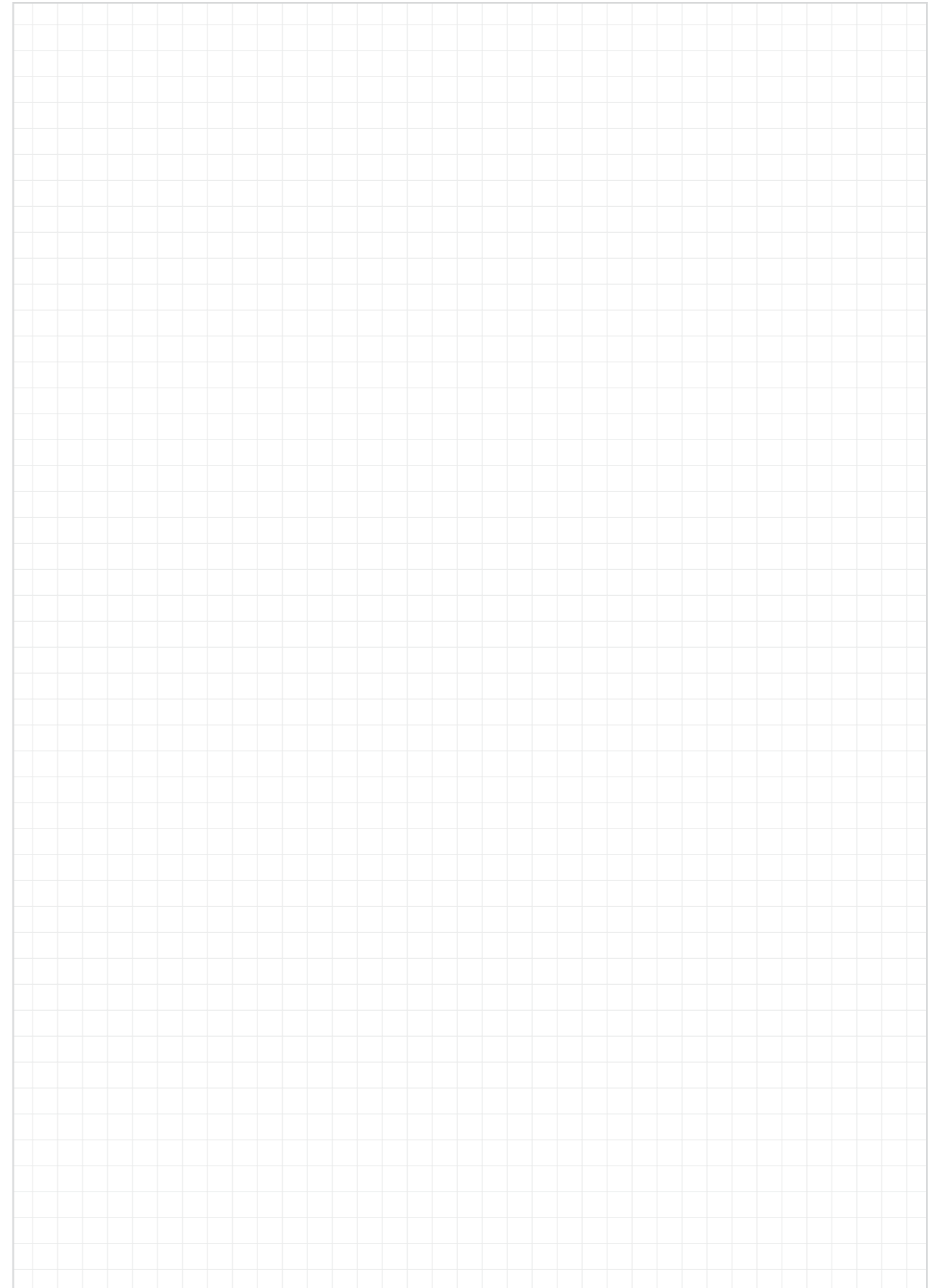
Dimensions [mm] - flanged linear plain bearing

d1	d2	d3	dt	B	Bf	ts	db	ds	Part No.
+0.01 +0.05	H7								
12	22	42	32	32	9	4.1	4.5	7.5	FRW360CM-01-12 New
16	26	46	36	36	9	4.1	4.5	7.5	FRW360CM-01-12 New
20	32	54	43	45	11	5.1	5.5	9.0	FRW360CM-01-12 New

Dimensions [mm] - flanged linear plain bearing, tandem design

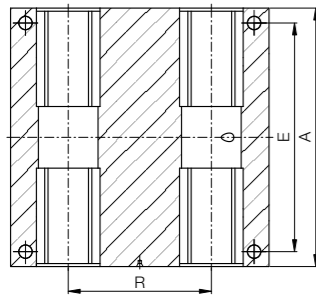
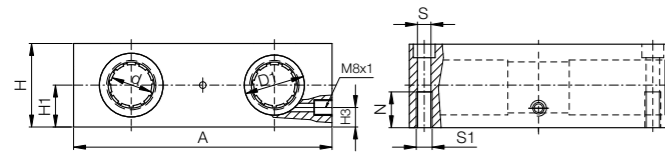
d1	d2	d3	dt	B	Bf	ts	db	ds	Part No.
+0.04 +0.01	H7								
12	22	42	32	57	9	4.1	4.5	7.5	FRW360CMT-01-12 New
16	26	46	36	70	9	4.1	4.5	7.5	FRW360CMT-01-12 New
20	32	54	43	80	11	5.1	5.5	9.0	FRW360CMT-01-12 New

Notes





● Housing: Aluminium, equipped with four drylin® R linear plain bearings



Dimensions [mm]

d	D1	A	H	H1	H3	R	N	E	S	S1	Part No. Standard with RJUM-01	Self-aligning with RJUM-03	Solid plastic bearings with RJM-01
8	16	65	23	11.5	8	32	11	55	4.3	M5	RQA-01-08	-	RQA-04-08
10	19	70	25	12.5	10	34	13	60	4.3	M5	RQA-01-10	RQA-03-10	RQA-04-10
12	22	85	32	16	13	42	13	73	5.3	M6	RQA-01-12	RQA-03-12	RQA-04-12
16	26	100	36	18	15	54	13	88	5.3	M6	RQA-01-16	RQA-03-16	RQA-04-16
20	32	130	46	23	19	72	18	115	6.6	M8	RQA-01-20	RQA-03-20	RQA-04-20
25	40	160	56	28	24	88	22	140	8.4	M10	RQA-01-25	RQA-03-25	RQA-04-25
30	47	180	64	32	27	96	26	158	10.5	M12	RQA-01-30	RQA-03-30	RQA-04-30
40	62	230	80	40	35	122	34	202	13.5	M16	RQA-01-40	RQA-03-40	RQA-04-40

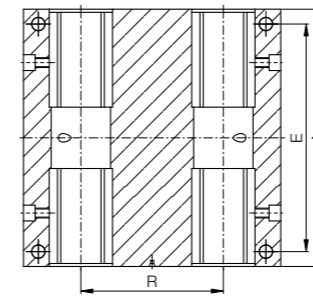
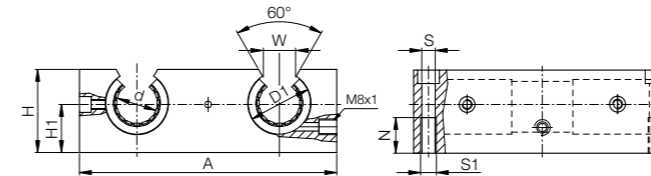
Are equipped with:



Available with drylin® liners (optional: J200/A180):



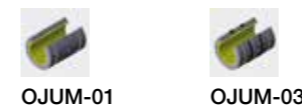
● Housing: Aluminium, equipped with four drylin® R linear plain bearings



Dimensions [mm]

d	D1	A	H	H1	W	R	N	E	S	S1	Part No. Standard with OJUM-01	Self-aligning with OJUM-03
12	22	85	30	18	14	42	13	73	5.3	M6	OQA-01-12	OQA-03-12
16	26	100	35	22	17	54	13	88	5.3	M6	OQA-01-16	OQA-03-16
20	32	130	42	25	17	72	18	115	6.8	M8	OQA-01-20	OQA-03-20
25	40	160	51	30	21	88	22	140	9.0	M10	OQA-01-25	OQA-03-25
30	47	180	60	35	21	96	26	158	10.5	M12	OQA-01-30	OQA-03-30
40	62	230	77	45	27	122	34	202	13.5	M16	OQA-01-40	OQA-03-40

Are equipped with:



Available with drylin® liners (optional: J200/A180):



Order key

Type	Option	Size
------	--------	------

RQ A- 01 -10

Quad block with RJUM bearings	Aluminium housing	Standard with RJUM-01	Inner Ø d1
-------------------------------	-------------------	-----------------------	------------

Options:

01: Standard with RJUM-01

03: with RJUM-03

04: with RJM-01



Please note:
Installation instructions
► Page 1257



Order key

Type	Option	Size
------	--------	------

OQ A- 01 -12

Quad block with OJUM bearings	Aluminium housing	Standard with OJUM-01	Inner Ø d1
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Options:

01: Standard with OJUM-01

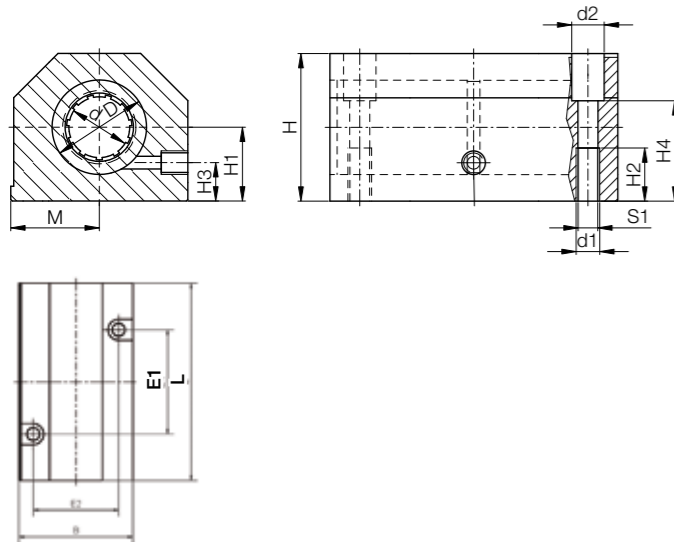
03: with OJUM-03



Please note:
Installation instructions
► Page 1257



● Housing: Aluminium, equipped with two drylin® R linear plain bearings to increase the guide length



Dimensions [mm]

d	D	H	H1	H2	H3	H4	S1	B	L	M	E1	E2	d1	d2	Part No.	Self-aligning	Solid plastic bearings
	H6		+0.01						+0.3	±0.02	±0.15	±0.15			Standard with RJUM-01	with RJUM-03	with RJM-01
			-0.02														
8	16	28	13	13	8	23	M5	35	62	17.5	35	25	4.20	8	RTA-01-08	-	RTA-04-08
12	22	35	18	13	10	25	M6	43	76	21.5	40	30	5.20	10	RTA-01-12	RTA-03-12	RTA-04-12
16	26	42	22	13	12	30	M6	53	84	26.5	45	36	5.20	10	RTA-01-16	RTA-03-16	RTA-04-16
20	32	50	25	18	13	34	M8	60	104	30.0	55	45	6.80	11	RTA-01-20	RTA-03-20	RTA-04-20
25	40	60	30	22	15	40	M10	78	130	39.0	70	54	8.60	15	RTA-01-25	RTA-03-25	RTA-04-25
30	47	70	35	26	16	48	M12	87	152	43.5	85	62	10.30	18	RTA-01-30	RTA-03-30	RTA-04-30
40	62	90	45	34	20	60	M16	108	176	54.0	100	80	14.25	20	RTA-01-40	RTA-03-40	RTA-04-40

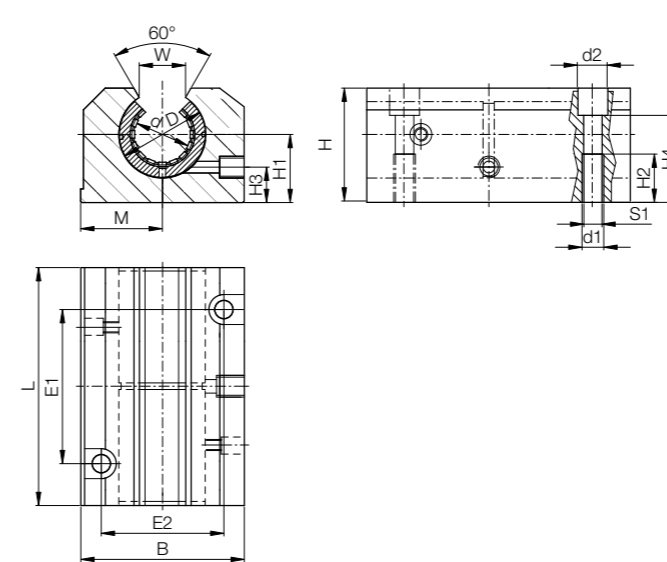
Are equipped with:



Available with drylin® liners (optional: J200/A180):



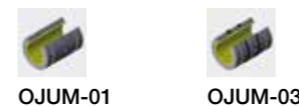
● Housing: Aluminium, equipped with two drylin® R linear plain bearings to increase the guide length



Dimensions [mm]

d	D	H	H1	H2	H3	H4	S1	B	L	M	E1	E2	d1	d2	W	Part No.	Self-aligning
	H6		+0.01						+0.3	±0.02	±0.15	±0.15				Standard with OJUM-01	with OJUM-03
			-0.02														
12	22	30	18	13	10	25	M6	43	76	21.5	40	30	5.20	10	14	OTA-01-12	OTA-03-12
16	26	35	22	13	12	30	M6	53	84	26.5	45	36	5.20	10	17	OTA-01-16	OTA-03-16
20	32	42	25	18	13	34	M8	60	104	30.0	55	45	6.80	11	17	OTA-01-20	OTA-03-20
25	40	51	30	22	15	40	M10	78	130	39.0	70	54	8.60	15	21	OTA-01-25	OTA-03-25
30	47	60	35	26	16	48	M12	87	152	43.5	85	62	10.30	18	21	OTA-01-30	OTA-03-30
40	62	77	45	34	20	60	M16	108	176	54.0	100	80	14.25	20	27	OTA-01-40	OTA-03-40

Are equipped with:



Available with drylin® liners (optional: J200/A180):



Order key

Type	Option	Size
RT A-	01	-08
Tandem housing with RJUM bearing	Aluminium housing	Standard with RJUM-01
		Inner Ø

Options:

- 01: Standard with RJUM-01
- 03: with RJUM-03
- 04: with RJM-01

i Please note:
Installation instructions
► Page 1257

Order key

Type	Option	Size
OT A-	01	-12
Tandem housing with OJUM bearings	Aluminium housing	Standard with OJUM-01
		Inner Ø

Options:

- 01: Standard with OJUM-01
- 03: with OJUM-03

i Please note:
Installation instructions
► Page 1257

drylin® R quad blocks | Product range

Closed, long design

Order key

Type	Option	Size
------	--------	------

RG A- 01 -12

Linear housing with RJUM bearings	Aluminium housing	Standard with RJUM-01	Inner Ø
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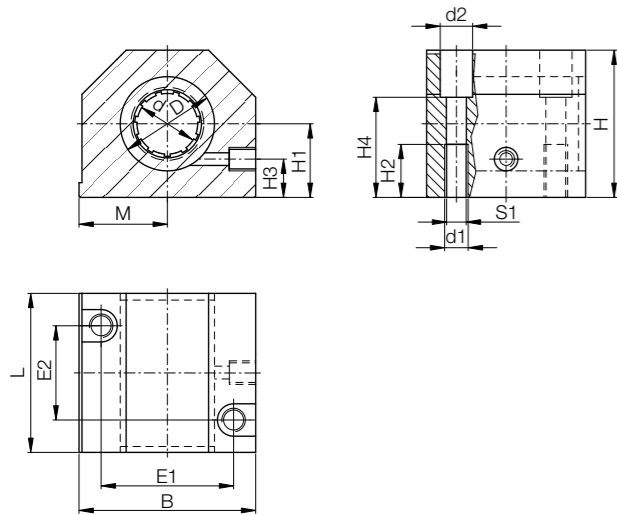
Options:

- 01: Standard with RJUM-01
- 03: with RJUM-03
- 04: with RJM-01

Please note:
Installation instructions
▶ Page 1257



● Housing: Aluminium, equipped with drylin® R linear plain bearings



Dimensions [mm]

d	D	H	H1	H2	H3	H4	S1	B	L	M	E1	E2	d1	d2	Part No.	Self-aligning	Solid plastic bearings
	H6		+0.01						±0.3	±0.02	±0.15	±0.15			Standard with RJUM-01	with RJUM-03	with RJM-01
			-0.02														
8	16	28	13	10	8	14	M4	35	32	17.5	25	20	3.2	6	RGA-01-08	-	RGA-04-08
12	22	35	18	11	10	25	M5	43	39	21.5	32	23	4.2	6	RGA-01-12	RGA-03-12	RGA-04-12
16	26	42	22	13	12	30	M6	53	43	26.5	40	26	5.2	10	RGA-01-16	RGA-03-16	RGA-04-16
20	32	50	25	18	13	34	M8	60	54	30.0	45	32	6.8	11	RGA-01-20	RGA-03-20	RGA-04-20
25	40	60	30	22	15	40	M10	78	67	39.0	60	40	8.6	15	RGA-01-25	RGA-03-25	RGA-04-25
30	47	70	35	22	16	48	M10	87	79	43.5	68	45	8.6	15	RGA-01-30	RGA-03-30	RGA-04-30
40	62	90	45	26	20	60	M12	108	91	54.0	86	58	10.3	18	RGA-01-40	RGA-03-40	RGA-04-40

Are equipped with:



Available with drylin® liners (optional: J200/A180):



drylin® R quad blocks | Product range

Open, long design

Order key

Type	Option	Size
------	--------	------

OG A- 01 -12

Linear housing with OJUM bearings	Aluminium housing	Standard with OJUM-01	Inner Ø
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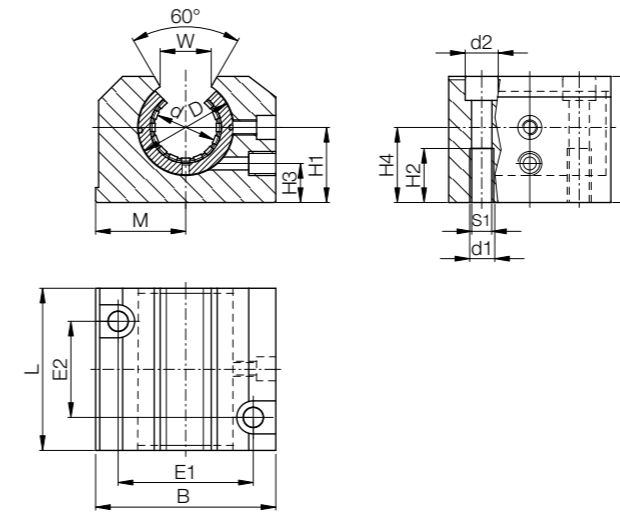
Options:

- 01: Standard with OJUM-01
- 03: with OJUM-03

Please note:
Installation instructions
▶ Page 1257



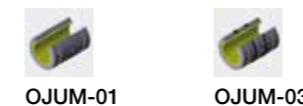
● Housing: Aluminium, equipped with drylin® R linear plain bearings



Dimensions [mm]

d	D	H	H1	H2	H3	H4	S1	B	L	M	E1	E2	d1	d2	W	Part No.	Self-aligning
	H6		+0.01						±0.3	±0.02	±0.15	±0.15			+0.6	Standard with OJUM-01	with OJUM-03
			-0.02														
12	22	28	18	11	8	25	M5	43	39	21.5	32	23	4.2	8	14	OGA-01-12	OGA-03-12
16	26	35	22	13	12	30	M6	53	43	26.5	40	26	5.2	10	17	OGA-01-16	OGA-03-16
20	32	42	25	18	13	34	M8	60	54	30.0	45	32	6.8	11	17	OGA-01-20	OGA-03-20
25	40	51	30	22	15	40	M10	78	67	39.0	60	40	8.6	15	21	OGA-01-25	OGA-03-25
30	47	60	35	22	16	48	M10	87	79	43.5	68	45	8.6	15	21	OGA-01-30	OGA-03-30
40	62	77	45	26	20	60	M12	108	91	54.0	86	58	10.3	18	27	OGA-01-40	OGA-03-40

Are equipped with:

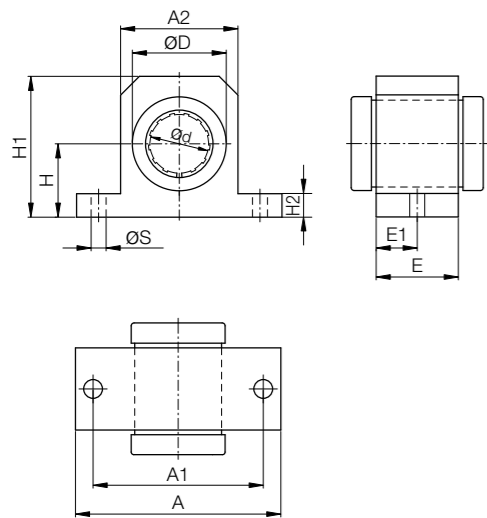


Available with drylin® liners (optional: J200/A180):





- Housing: Aluminium, equipped with drylin® R linear plain bearings
- Variations:
 - Standard: RGAS-01-Ø
 - Self-aligning: RGAS-03-Ø
 - Solid plastic bearing (cost-effective, lightweight): RGAS-04-Ø



Dimensions [mm]

d	D	H	H1	H2	A	A1	A2	E	E1	S	Part No. Standard with RJUM-01	Self-aligning with RJUM-03	Solid plastic bearings with RJM-01
12	22	18	35.0	6	52	42	30	20	10	5.3	RGAS-01-12	RGAS-03-12	RGAS-04-12
16	26	22	40.5	7	56	46	34	22	11	5.3	RGAS-01-16	RGAS-03-16	RGAS-04-16
20	32	25	48.0	8	70	58	40	28	14	6.4	RGAS-01-20	RGAS-03-20	RGAS-04-20
25	40	30	58.0	10	80	68	50	40	20	6.4	RGAS-01-25	RGAS-03-25	RGAS-04-25
30	47	35	67.0	10	88	76	58	48	24	6.4	RGAS-01-30	RGAS-03-30	RGAS-04-30
40	62	45	85.0	12	108	94	74	56	28	8.4	RGAS-01-40	RGAS-03-40	RGAS-04-40

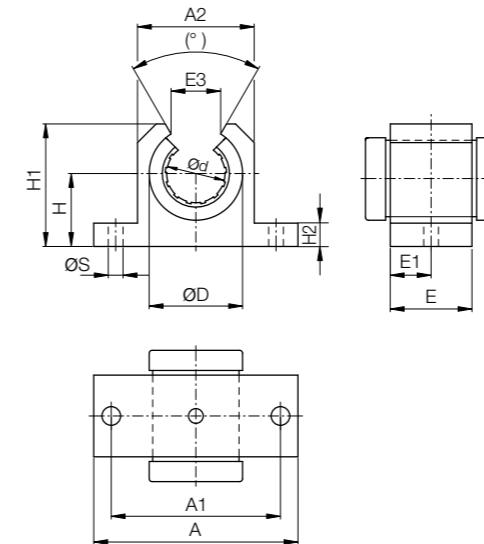
Are equipped with:



Available with drylin® liners (optional: J200/A180):



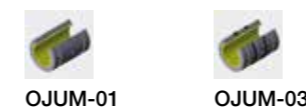
- Housing: Aluminium, equipped with drylin® R linear plain bearings
- Variations:
 - Standard: OGAS-01-Ø
 - Self-aligning: OGAS-03-Ø



Dimensions [mm]

d	D	H	H1	H2	A	A1	A2	E	E1	E3	(°)	S	Part No. Standard with OJUM-01	Self-aligning with OJUM-03
12	22	18	28	6	52	42	30	20	10	14	78	5.3	OGAS-01-12	OGAS-03-12
16	26	22	33.5	7	56	46	34	22	11	17	78	5.3	OGAS-01-16	OGAS-03-16
20	32	25	42	8	70	58	40	28	14	17	60	6.4	OGAS-01-20	OGAS-03-20
25	40	30	51	10	80	68	50	40	20	21	60	6.4	OGAS-01-25	OGAS-03-25
30	47	35	60	10	88	76	58	48	24	21	54	6.4	OGAS-01-30	OGAS-03-30
40	62	45	77	12	108	94	74	56	28	27	54	8.4	OGAS-01-40	OGAS-03-40

Are equipped with:



Available with drylin® liners (optional: J200/A180):



Order key

Type	Option	Size
Linear housing with RJUM bearings	Aluminium housing	Small
Standard with RJUM-01	Inner Ø	

- Options:
- 01: Standard with RJUM-01
 - 03: with RJUM-03
 - 04: with RJM-01

i Please note:
Installation instructions
► Page 1257

Order key

Type	Option	Size
Linear housing with OJUM bearings	Aluminium housing	Small
Standard with OJUM-01	Inner Ø	

- Options:
- 01: Standard with OJUM-01
 - 03: with OJUM-03

i Please note:
Installation instructions
► Page 1257

igus® testing method for measuring the tolerance of drylin® linear plain bearings

To ensure the correct function of a drylin® R linear plain bearing, it is necessary to use the bearing with a defined minimum oversize (bearing clearance). The quality control of this part is carried out with a plug gauge test. For this purpose, specific force is defined with which the plug gauge is loaded when the plain bearing is tested.

Part No.	Test force	Øi test housing	Min. bearing Øi (plug gauge falls)	Max. bearing Øi (plug gauge sticks)
	[N]	[mm]	[mm]	[mm]
J / J200 / E7 / A180 / A160UM-01/02-10	0.981	12.000	10.030	10.070
J / J200 / E7 / A180 / A160UM-01/02-12	1.373	14.000	12.030	12.070
J / J200 / E7 / A180 / A160UM-01/02-16	1.864	18.000	16.030	16.070
J / J200 / E7 / A180 / A160UM-01/02-20	2.649	23.000	20.030	20.070
J / J200 / E7 / A180 / A160UM-01/02-25	3.729	28.000	25.030	25.070
J / J200 / E7 / A180 / A160UM-01/02-30	4.807	34.000	30.040	30.090
J / J200 / E7 / A180 / A160UM-01/02-40	7.063	44.000	40.040	40.090
J / J200 / E7 / A180 / A160UM-01/02-50	9.810	55.000	50.050	50.150
J / J200 / E7UM-01/02-60	13.047	65.000	60.050	60.150
	[N]	[Imperial dimension]	[Imperial dimension]	[Imperial dimension]
JUI-01-06	0.981	0.4684	0.3768	0.3776
JUI-01-08	1.373	0.5934	0.5016	0.5024
JUI-01-10	1.864	0.7184	0.6268	0.6276
JUI-01-12	2.649	0.8747	0.7516	0.7524
JUI-01-16	3.729	1.1247	1.0016	1.0024
JUI-01-20	4.807	1.4058	1.2520	1.2531
JUI-01-24	7.063	1.6558	1.5020	1.5031
JUI-01-32	9.810	2.1870	2.0024	2.0039
	[N]	[mm]	[mm]	[mm]
RJM / RJMP / RJ4JP-01-08	–	16.000	8.025	8.061
RJM / RJMP / RJ4JP-01-10	–	19.000	10.025	10.061
RJM / RJMP / RJ4JP-01-12	–	22.000	12.032	12.075
RJM / RJMP / RJ4JP-01-16	–	26.000	16.032	16.075
RJM / RJMP / RJ4JP-01-20	–	32.000	20.040	20.092
RJM / RJMP / RJ4JP-01-25	–	40.000	25.040	25.092
RJM / RJMP / RJ4JP-01-30	–	47.000	30.040	30.092
RJM / RJMP-01-40	–	62.000	40.050	40.112
	[N]	[Imperial dimension]	[Imperial dimension]	[Imperial dimension]
RJI-01-06	0.981	0.6250	0.3762	0.3776
RJI-01-08	1.373	0.8750	0.5013	0.5030
RJI-01-10	1.864	1.1250	0.6265	0.6282
RJI-01-12	2.649	1.2500	0.7516	0.7536
RJI-01-16	3.729	1.5625	1.0035	1.0056
RJI-01-20	4.807	2.0000	1.2520	1.2544
RJI-01-24	7.063	2.3750	1.5020	1.5044
RJI-01-32	9.810	3.0000	2.0024	2.0053
	[N]	[mm]	[mm]	[mm]
RJ260(U)M-02-12	–	19.000	12.032	12.084
RJ260(U)M-02-16	–	24.000	16.032	16.084
RJ260(U)M-02-20	–	28.000	20.040	20.100
RJ260(U)M-02-25	–	35.000	25.040	25.100

Part No.	Test force	Øi test housing	Min. bearing Øi (plug gauge falls)	Max. bearing Øi (plug gauge sticks)
	[N]	[mm]	[mm]	[mm]
XUMO-01-10	0.981	12.000	9.98	10.02
XUM-01/02-12	1.373	14.000	12.02	12.06
XUM-01-14	1.500	16.000	14.02	14.06
XUM-01/02-16	1.864	18.000	16.02	16.06
XUM-01/02-20	2.649	23.000	20.03	20.07
XUM-01/02-25	3.729	28.000	24.97	25.01
XUM-01/02-30	4.807	34.000	29.96	30.01
XUM-01/02-40	7.063	44.000	40.00	40.05

Explanation:

The iglidur® X material has a higher stiffness than iglidur® J. This causes shifts - depending on the diameter - compared to the ratio of test force to LD diameter. The parts are designed in such a way that under load the clearance between the iglidur® X and iglidur® J plain bearings is as identical as possible. Thereby in the use of iglidur® X liners, increased shifting forces can occur in the unloaded new condition on an h-toleranced shaft.

When using a plain bearing (e.g. JUM/RJM) in connection with an adapter/ housing (e.g. RJUM, OJUM, RGA) the factory tolerance of the housing hole (standard case: H7) is also added to the minimum clearance stated above. The total from these two values then produces the maximum possible bearing tolerance.

The effective bearing clearance is also influenced by the shaft tolerance. The maximum shaft undersize value should be added to give the maximum possible clearance.


F_{max} dynamic:

The maximum values are the result of the projected surface and 5MPa surface pressure.

F_{max} static:

The maximum values are the result of the projected surface and 35MPa surface pressure.

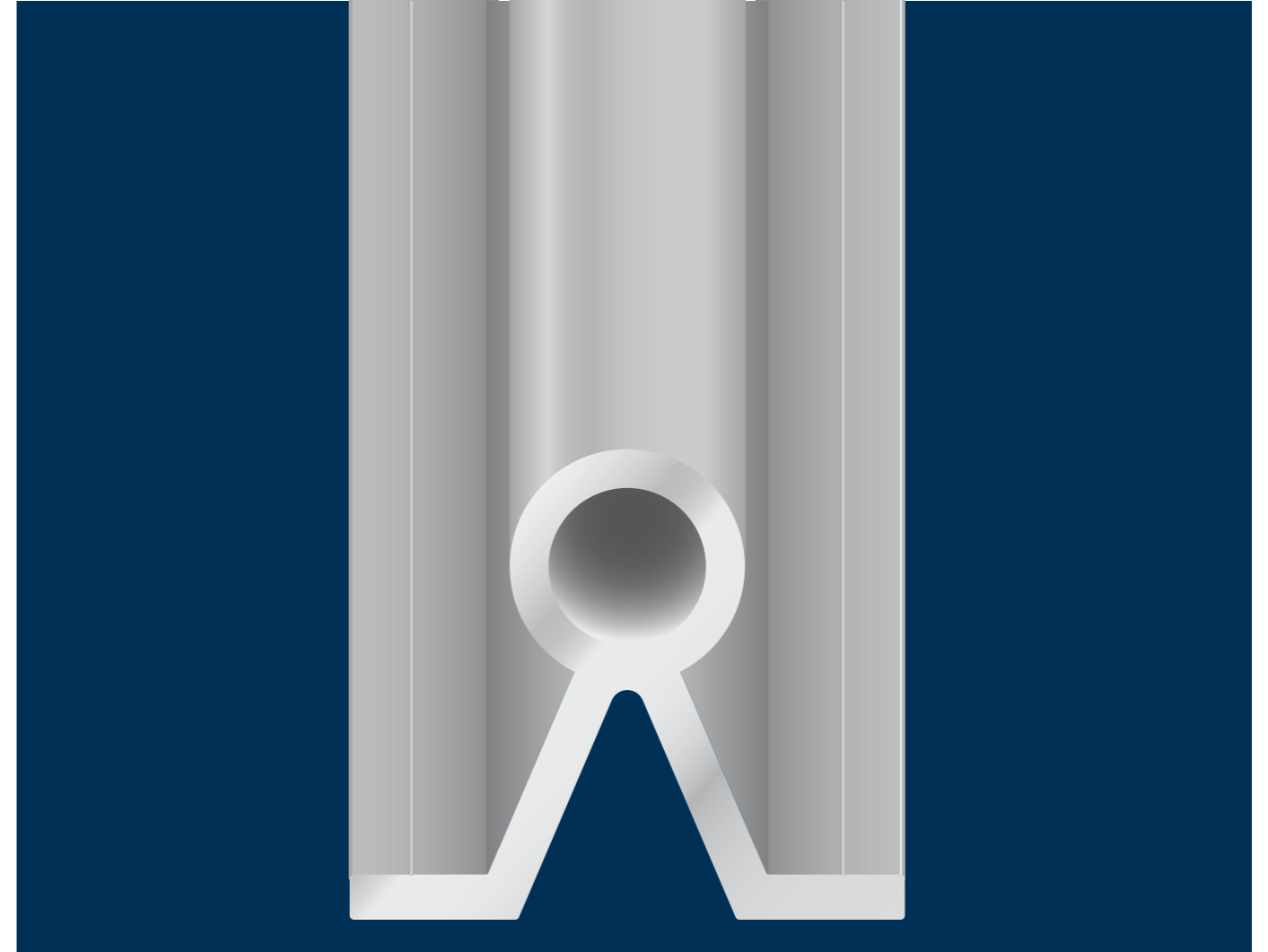
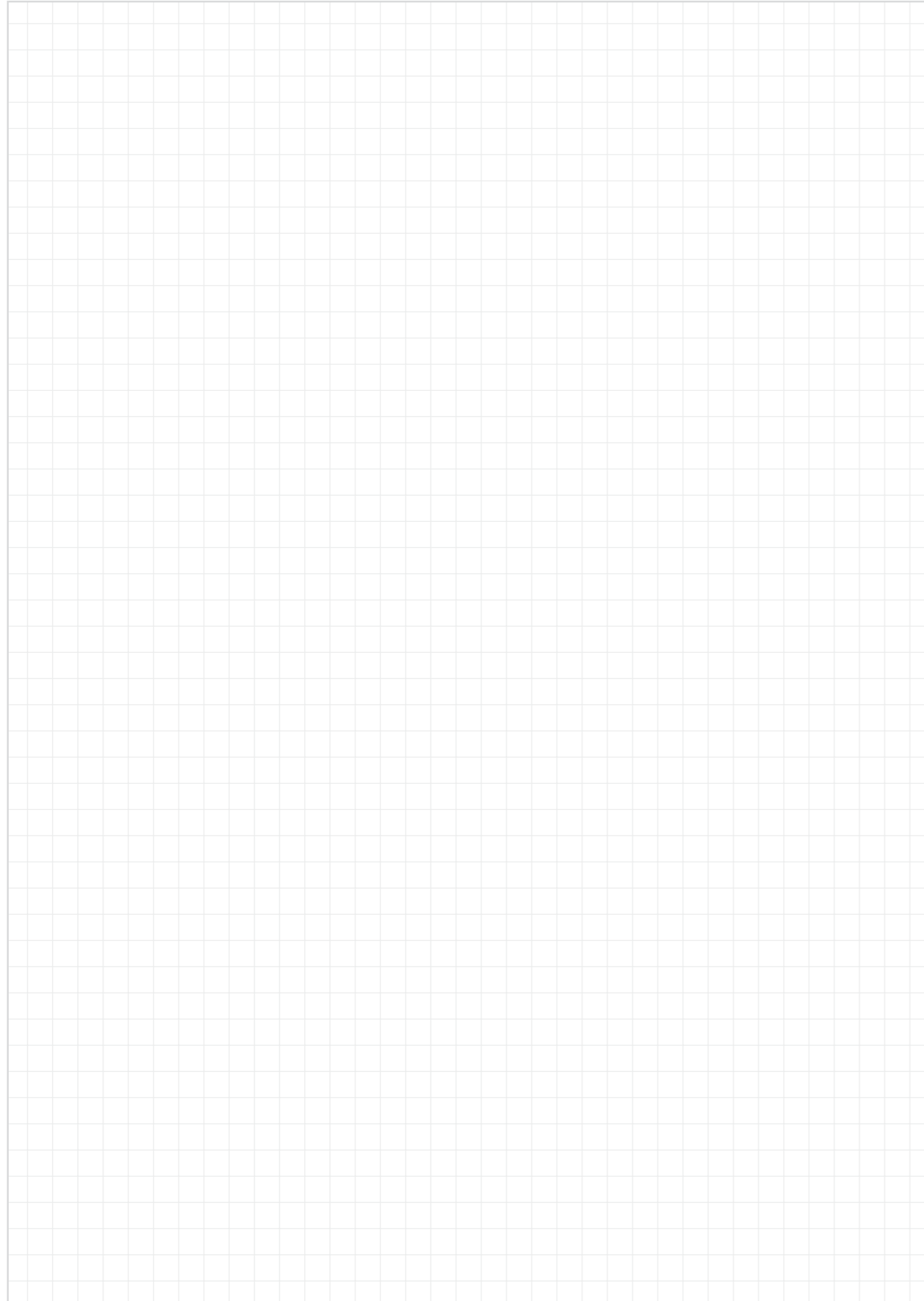
Due to the manufacturing process, the anti-rotation feature of the JUM-01/JUM-02-/JUM-11 liners can be either round or square. Both shapes have no effect on the technical function in all igus® bearing housings and defined housing bores.

 [Installation instructions ► Page 1257](#)

Tightening torque for drylin® metallic screws

Metric thread (Da)	tightening torque [Nm]	Recommended tightening torque [Nm]
M3	0.5 - 1.1	0.7
M4	1.0 - 2.8	1.5
M5	2.0 - 5.5	3.0
M6	4.0 - 10.0	6.0
M8	8.0 - 23.0	15.0
M10	22.0 - 46.0	30.0

Please be aware of the minimal screw-in depth for aluminium and zinc die-casting parts: 1.5xDa



drylin[®] linear technology - drylin[®] shafts

**Hard-anodised aluminium shafts for optimum
running performance**

Stainless steel for high corrosion resistance

Hardened steel and stainless steel shafts

Carbon fibre shafts

Round shafts with or without support



Suitable liner materials:

	The All-rounder - iglidur® J	The specialist - iglidur® J200	The extreme - iglidur® X	The endurance runner - iglidur® E7	The FDA-compliant - iglidur® A180	Blue Sky Thinking FDA/EU-compliant - iglidur® A160
Potential counter partner	All shaft materials	Aluminium, hard-anodised	Hardened stainless steel	Steel/stainless steel shaft	All shaft materials	Stainless steel
Application temperature	-50 up to +90°C	-50 up to +90°C	-100°C up to +250°C	-50°C up to +70°C	-50 up to +90°C	-50 up to +90°C
Best coefficient of friction with	Steel shaft	Aluminium, hard-anodised	Hard-chromed steel	Steel/stainless steel shaft	Stainless steel shaft	Hardened stainless steel shafts
Maximum service life with	Hard-anodised aluminium	Aluminium, hard-anodised	Hardened stainless steel	Steel/stainless steel shaft	Stainless steel shaft	Hardened stainless steel shafts
Permissible stat. surface pressure	35MPa	23MPa	150MPa	18MPa	28MPa	15MPa
Moisture absorption	1.3% weight	0.7% weight	0.5% weight	< 0.1wt.-%	0.2% weight	< 0.1wt.-%
Volume resistance	> 10 ¹³ Ωcm	> 10 ⁸ Ωcm	< 10 ⁵ Ωcm	> 10 ⁸ Ωcm	> 10 ¹² Ωcm	> 10 ¹² Ωcm
More information	▶ Page 163	▶ Page 265	▶ Page 291	▶ Page 271	▶ Page 425	▶ Page 443

Available shaft materials:

Aluminium

- Ideal in combination with liners made from iglidur® J/J200
- Lightweight
- Low wear of plain bearings
- Corrosion-resistant
- Available from stock

Steel

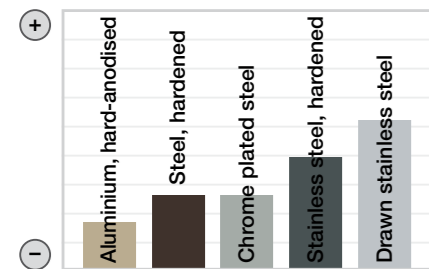
- E7 liners for up to 8 times longer service life
- Cost-effective standard
- High load capacity
- Dry area applications
- Hard chrome plated also available
- Lower coefficient of friction against polymer bearings

Stainless steel

- A180 liners for food and pharmaceutical applications
- Corrosion-resistant
- Chemical-resistant
- Ideal solution for wet applications
- 316 stainless steel for extremely chemical intensive applications

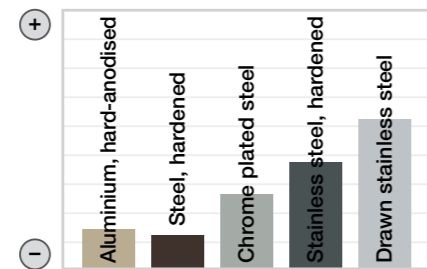
i Please remember that this is a technical surface. Small colour variations are possible due to variable coating depths.

Wear



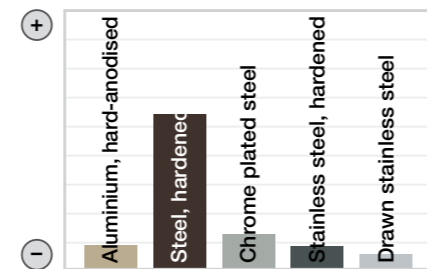
igidur® J against particular shaft materials

Coefficient of friction



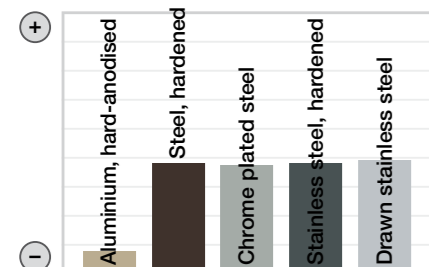
igidur® J against particular shaft materials

Corrosion



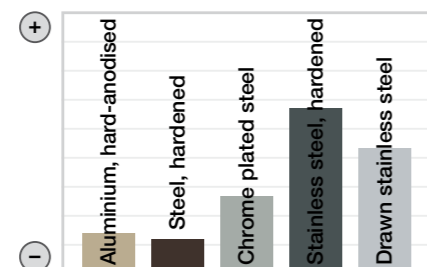
igidur® J against particular shaft materials

Weight



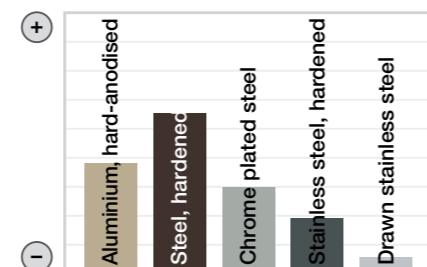
igidur® J against particular shaft materials

Costs



igidur® J against particular shaft materials

Chemical charge

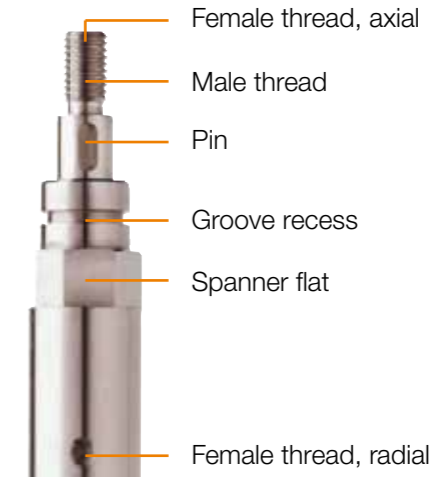


igidur® J against particular shaft materials



Enquiries can be put online as well:

▶ www.igus.eu/shaftenquiry



Special machining

All shafts can be individually machined. Please send us your drawing. We can then provide a quick quotation.

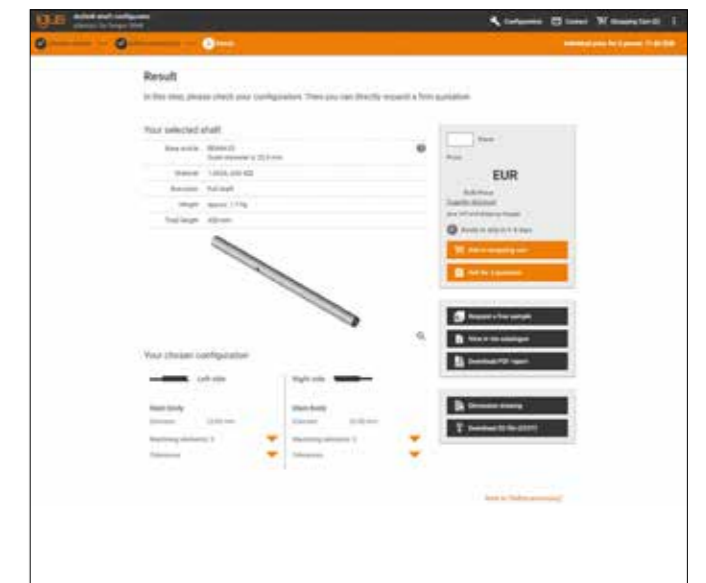
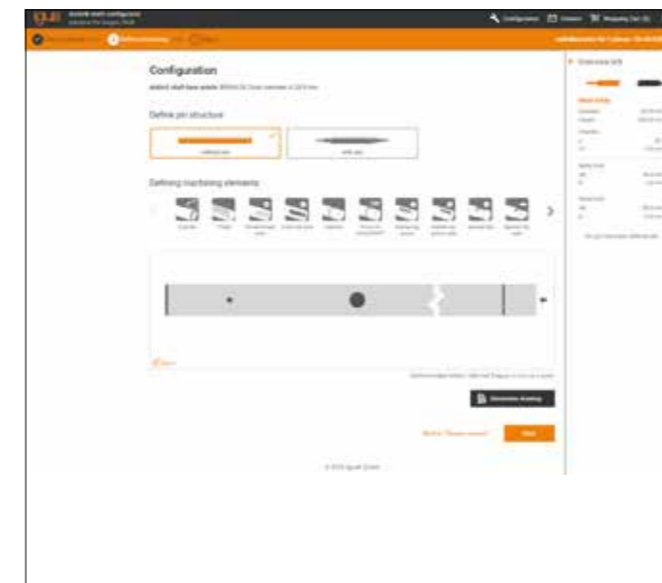


Configurator for guide shafts: guide shafts with machining - anyone can configure online

With this online tool, guide shafts with and without machining can be individually configured and directly ordered. Fast and easy with no previous CAD experience. All in all, the tool allows ordering seven shaft materials, Ø 6 to 50mm. Orders made directly online and delivered quickly.

- Add chamfers with just one click
- Offset machined end possible
- Radial and axial holes, with or without female thread
- With plausibility check
- Live price display

▶ www.igus.eu/shaft-configurator



Material	Aluminium			Steel			
Designation	AWMP AWMPV	AWMU	AWMR	SWM	SWUM SWUMN	SWMH	SWUMH SWUMHN
Material	EN AW 6061/6060			AISI 1055		1.1213 HV	
Availability							
Ø 6	●			▲		▲	
Ø 8	●			▲		▲	
Ø 10	●	●		▲		▲	
Ø 12	●	●	●	▲	▲	▲	▲
Ø 16	●	●	●	▲	▲	▲	▲
Ø 20	●	●	●	▲	▲	▲	▲
Ø 25	●	●	●	▲	▲	▲	▲
Ø 30	● ¹⁶⁴⁾ ●	●		▲	▲	▲	▲
Ø 40	● ¹⁶⁴⁾ ●	●		▲	▲	▲	▲
Ø 50	● ¹⁶⁴⁾			▲	▲	▲	▲
Ø 60	● ¹⁶⁴⁾						
Ø Tolerance	h8	-0.1mm	h9	h6	h6	h7	h7
Max. supply length Ø 8-10mm	3,000	-	-	3,000	-	-	3,000
Max. supply length Ø 12-50mm	3,000	4,000	3,000	6,000	6,000	6,000	6,000
Surface	hard-anodised			hardened/ground		hard-chromed	
Surface roughness Ra	< 0.6			0.15-0.3			
Hardness	up to 550 HV			60+4 HRC			
Roundness	≤ 1/2 ø Tolerance			≤ 1/2 ø Tolerance			

Delivery time: ● From stock ▲ simply cut shafts 3-8 days; machined shafts 12 days

¹⁶⁴⁾ Hollow profile 30 · 7.5; 40 · 10; 50 · 11

Material	Stainless steel, hardened			Drawn stainless steel			Carbon
Designation	EWM	EWUM EWUMN	EEWM	EEWUM EEWUMN	EWMR	EWMS	EWUMS
Material	AISI 440B		1.4034 (AISI 420)		1.4301 (AISI 304)	1.4571 (AISI 316Ti)	
Availability							
	▲		▲		▲	▲	
	▲		▲		▲	▲	
	▲		▲		▲	▲	
	▲	▲	▲	▲	▲	▲	▲
	▲	▲	▲	▲	▲	▲	▲
	▲	▲	▲	▲	▲	▲	▲
	▲	▲	▲	▲	▲	▲	▲
	▲	▲	▲	▲	▲	▲	▲
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	▲	▲	▲	▲	▲	▲	▲
	▲	▲	▲	▲	▲	▲	▲
Ø Tolerance	h6	h6	h6	h6	h9	h9	h9
Max. supply length	-	-	3,000	-	-	-	-
	6,000	6,000	6,000	6,000	3,000	3,000	3,000
Surface	hardened/ground				drawn, polished		
Surface roughness Ra	0.15-0.3				0.3-0.6		
Hardness	52+8 HRC				unhardened		
Roundness	≤ 1/2 ø Tolerance				≤ 1/2 ø Tolerance		
					UCU unidirectional/ cross winding/ unidirectional		
					< 0.6µm		
					-		
					± 0.05 mm		



AWMR

AWMP



Order key

Type	Size	Options
------	------	---------

AW M P - 06 - 2000

Aluminium shaft	Metric	Precision	Outer Ø	Shaft length [mm]
-----------------	--------	-----------	---------	-------------------

AWMP:
Solid shaft up to
Ø25mm
Hollow shaft from
Ø30mm
AWMR:
Tube

igus® recommendation: linear plain bearings equipped with iglidur® J200 liners for the longest service life

- Material: EN AW 6061/6060
- Straightness: EN 754-3
- Hardness: 75 HB
- Surface: hard anodised
- Hardness: up to 550 HV
- Imperial shafts available upon request



Hard anodised surfaces

▶ Page 1113

Minimum saw lengths

▶ Page 1117



Please contact us!

drylin® shafts can be individually machined. Please send us your drawing or make the configuration online. We can then provide a quick quotation.

▶ www.igus.eu/shaft-configurator

Dimensions [mm]

Part No.	Design	Outer Ø	Tolerance	Wall thickness	Inner Ø	Max. length	Weight [kg/m]
AWMP-06	Solid shaft	6	h8	–	–	3,000	0.08
AWMP-08	Solid shaft	8	h8	–	–	3,000	0.14
AWMP-10	Solid shaft	10	h8	–	–	3,000	0.22
AWMP-12	Solid shaft	12	h8	–	–	3,000	0.32
AWMR-12	Tube	12	h8	2	8	3,000	0.17
AWMP-16	Solid shaft	16	h8	–	–	3,000	0.56
AWMR-16	Tube	16	h8	2	12	3,000	0.25
AWMP-20	Solid shaft	20	h8	–	–	3,000	0.88
AWMR-20	Tube	20	h9	2	16	3,000	0.32
AWMP-25	Solid shaft	25	h8	–	–	3,000	1.37
AWMR-25	Tube	25	h9	3	19	3,000	0.59
AWMP-30	Hollow shaft	30	h8	7.5	15	3,000	1.48
AWMPV-30	Solid shaft	30	h8	–	–	3,000	1.9
AWMP-40	Hollow shaft	40	h8	10	20	3,000	2.63
AWMPV-40	Solid shaft	40	h8	–	–	3,000	3.4
AWMP-50	Hollow shaft	50	h8	11	28	3,000	3.75
AWMP-60	Hollow shaft	60	h8	11	38	3,000	4.7



Order example:

AWMP-12-500: precision aluminium shaft, 12mm Ø, 500mm length

1338 Online tools and more information ▶ www.igus.eu/shafts

AWMU



Order key

Type	Size	Options
------	------	---------

AW M U - 12 - 2000

Aluminium shaft	Metric	Supported	Outer Ø	Shaft length [mm]
-----------------	--------	-----------	---------	-------------------

- Material: EN AW 6061/6060
- Straightness: DIN 12020
- Hardness: 75 HB
- Surface: hard anodised
- Hardness: up to 550 HV
- Symmetrical standard hole pattern C5 = C6

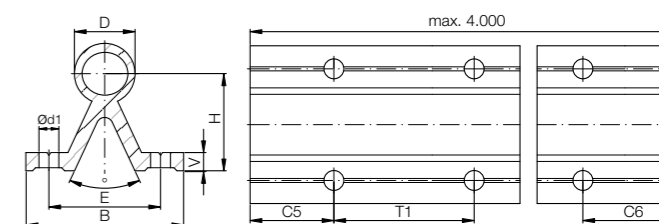


Hard anodised surfaces

▶ Page 1113

Minimum saw lengths

▶ Page 1117



Dimensions [mm]

Part No.	D	B	H	V	d1	(°)	E	T1	C5/C6	Max. length	Weight [kg/m]	Iy [mm ⁴]	Iz [mm ⁴]	Wby [mm ²]	Wbz [mm ²]
AWMU-12	12	40	22	5	4.5	50	29	75	20 57	4,000	0.75	26,600	19,700	1,330	1,091
AWMU-16	16	45	26	5	5.5	50	33	100	20 69	4,000	1.00	40,000	39,200	1,778	1,844
AWMU-20	20	52	32	6	6.6	50	37	100	20 69	4,000	1.42	76,600	86,200	2,946	3,336
AWMU-25	25	57	36	6	6.6	50	42	120	20 79	4,000	1.81	109,800	146,700	3,853	5,103
AWMU-30	30	69	42	7	9.0	50	51	150	20 94	4,000	2.69	226,900	328,700	6,577	10,049
AWMU-40 ⁸⁶⁾	40	73	50	8	9.0	50	55	200	20 119	4,000	4.06	382,100	734,800	10,468	19,160

⁸⁶⁾ The tolerance for the shaft diameter D amounts -0.15

Order example:

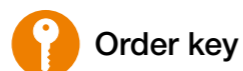
AWMU-16-500: supported aluminium shaft, 16mm Ø, 500mm length

3D CAD files, prices and delivery time online ▶ www.igus.eu/shafts 1339



SWM SWUMN SWUM

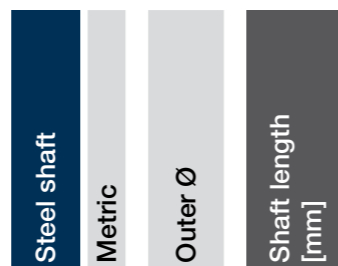
- Completely supported and mounted with standard aluminium support
- Available shaft materials:
 - ▶ Cf53 steel (AISI 1055), hardened/ground
 - ▶ Cf53 steel (AISI 1055), hard chrome
- For supported shafts:
 - ▶ Partial shaft support supplied in lengths of 600mm max.
 - ▶ Standard pitch T2, T1 also possible upon request
 - ▶ Symmetrical hole pitches C5 = C6



Order key

Type Size Options

SW M- 06 - 2000



! igus® recommendation: linear plain bearings equipped with iglidur® E7 liners for 8 times longer service life

Dimensions [mm] - steel shafts 1.1213

Part No.	Outer Ø	Weight [kg/m]	Max. length	Effective hardness depth (at 1.1213)
SWM-06	6	0.222	3,000	0.8
SWM-08	8	0.359	4,000	0.9
SWM-10	10	0.617	4,000	0.9
SWM-12	12	0.888	6,000	1.0
SWM-16	16	1.578	6,000	1.2
SWM-20	20	2.466	6,000	1.6
SWM-25	25	3.853	6,000	1.8
SWM-30	30	5.549	6,000	2.0
SWM-40	40	9.865	6,000	2.2
SWM-50	50	15.413	6,000	2.4

Dimensions [mm] - hard chrome steel shafts 1.1213

Part No.	Outer Ø	Weight [kg/m]	Max. length	Effective hardness depth (at 1.1213)
SWMH-06	6	0.222	3,000	0.8
SWMH-08	8	0.359	4,000	0.9
SWMH-10	10	0.617	4,000	0.9
SWMH-12	12	0.888	6,000	1.0
SWMH-16	16	1.578	6,000	1.2
SWMH-20	20	2.466	6,000	1.6
SWMH-25	25	3.853	6,000	1.8
SWMH-30	30	5.549	6,000	2.0
SWMH-40	40	9.865	6,000	2.2
SWMH-50	50	15.413	6,000	2.4



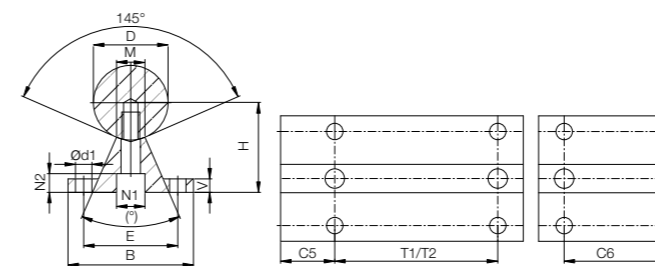
Order example:

SWM-16-500: steel shaft 16mm Ø 1.1213, 500mm length

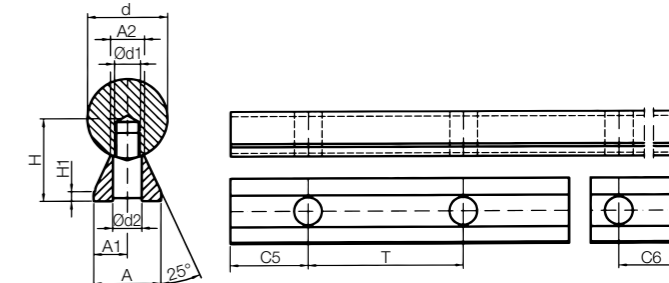
1340 Online tools and more information ▶ www.igus.eu/shafts

EN 06/2023

SWUM



SWUMN



Contact us!

drylin® shafts can be individually machined. Please send us your drawing or make the configuration online. We can then provide a quick quotation.

▶ www.igus.eu/shaft-configurator

Dimensions [mm] - supported steel shafts 1.1213

Part No.	D	B	H	V	N1	N2	d1	M	(°)	E	T1	C5/C6	T2	C5/C6	Weight		
			±0.02								±0.15	min. max.	Standard	min. max.	[kg/m]		
												for T1	Standard	for T2			
SWUM-12	12	40	22	5	8.0	5.0	4.5	5.8	50	29	75	20	57	120	20	79	1.75
SWUM-16	16	45	26	5	9.5	6.0	5.5	7.0	50	33	100	20	69	150	20	94	2.64
SWUM-20	20	52	32	6	11.0	6.5	6.6	8.3	50	37	100	20	69	150	20	94	3.97
SWUM-25	25	57	36	6	14.0	8.5	6.6	10.8	50	42	120	20	79	200	20	119	5.65
SWUM-30	30	69	42	7	17.0	10.5	9.0	11.0	50	51	150	20	94	200	20	119	7.93
SWUM-40	40	73	50	8	17.0	10.5	9.0	15.0	50	55	200	20	119	300	20	169	12.88
SWUM-50	50	84	60	9	19.0	12.5	11.0	19.0	46	63	200	20	119	300	20	169	19.60

Dimensions [mm] - low-level supported steel shafts 1.1213

Part No.	d	H	H1	A	A1	A2	d1	d2	T	C5/C6	Weight	
		±0.02				±0.02				min. max.	[kg/m]	
SWUMN-12	12	14.5	3	11	5.5	5.4	M4	4.5	75	20	57	1.62
SWUMN-16	16	18	3	14	7.0	7.0	M5	5.5	75	20	57	2.54
SWUMN-20	20	22	3	17	8.5	8.1	M6	6.6	75	20	57	3.81
SWUMN-25	25	26	3	21	10.5	10.3	M8	9.0	75	20	57	5.62
SWUMN-30	30	30	3	23	11.5	11.0	M10	11.0	100	20	69.5	7.63
SWUMN-40	40	39	4	30	15.0	15.0	M12	13.5	100	20	69.5	13.47
SWUMN-50	50	46	5	35	17.5	19.0	M14	15.5	100	20	69.5	20.31

Low-level supported shafts are delivered unassembled.



Order example:

SWUM-16-500: supported steel shaft 16mm ø made from 1.1213, 500mm length



EN 06/2023

3D CAD files, prices and delivery time online ▶ www.igus.eu/shafts 1341



EWM

EEWM

EWMR



igus® recommendation: linear plain bearings equipped with iglidur® E7 liners for 8 times longer service life

**Contact us!**

drylin® shafts can be individually machined. Please send us your drawing or make the configuration online. We can then provide a quick quotation.

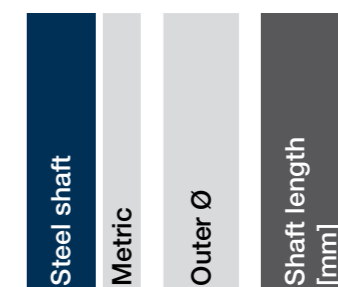
► www.igus.eu/shaft-configurator

Dimensions [mm] - hardened stainless steel AISI 440B

Part No.	Outer Ø	Weight [kg/m]	Max. length	Effective hardness depth
EWM-06	6	0.222	3,000	0.8
EWM-08	8	0.359	4,000	0.9
EWM-10	10	0.617	4,000	0.9
EWM-12	12	0.888	6,000	1.0
EWM-16	16	1.578	6,000	1.2
EWM-20	20	2.466	6,000	1.6
EWM-25	25	3.853	6,000	1.8
EWM-30	30	5.549	6,000	2.0
EWM-40	40	9.865	6,000	2.2
EWM-50	50	15.413	6,000	2.4

**Order key**

Type Size Options

EW M- 06 -2000**Available shaft materials:**

AISI 440B, hardened/ground ► EWM
 AISI 420C, hardened/ground ► EEWM
 AISI 304, drawn ► EWMR
 AISI 316Ti, drawn ► EWMS

Dimensions [mm] - hardened stainless steel AISI 420C

Part No.	Outer Ø	Weight [kg/m]	Max. length	Effective hardness depth
EEWM-06	6	0.222	3,000	0.8
EEWM-08	8	0.359	4,000	0.9
EEWM-10	10	0.617	4,000	0.9
EEWM-12	12	0.888	6,000	1.0
EEWM-16	16	1.578	6,000	1.2
EEWM-20	20	2.466	6,000	1.6
EEWM-25	25	3.853	6,000	1.8
EEWM-30	30	5.549	6,000	2.0
EEWM-40	40	9.865	6,000	2.2
EEWM-50	50	15.413	6,000	2.4

Dimensions [mm] - stainless steel AISI 304 (EWMR) or AISI 316Ti soft stainless steel (EWMS)

Part No.	Outer Ø	Weight [kg/m]	Max. length
EWMR-06 EWMS-06	6	0.222	3,000
EWMR-08 EWMS-08	8	0.359	3,000
EWMR-10 EWMS-10	10	0.617	3,000
EWMR-12 EWMS-12	12	0.888	3,000
EWMR-16 EWMS-16	16	1.578	3,000
EWMR-20 EWMS-20	20	2.466	3,000
EWMR-25 EWMS-25	25	3.853	3,000
EWMR-30 EWMS-30	30	5.549	3,000
EWMR-40 EWMS-40	30	5.549	3,000
EWMR-50	30	5.549	3,000

**Order example:**

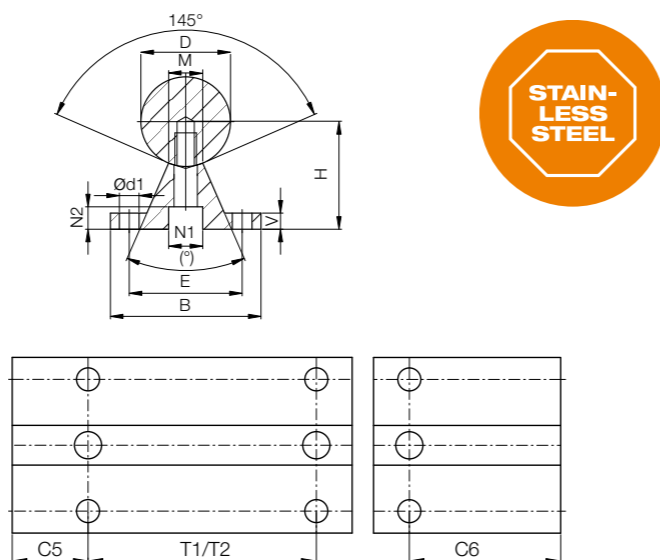
EWM-16-500: Stainless steel shaft (AISI 440B) with 16mm Ø, 500mm length



EWUM. EEWUM

! igus® recommendation: linear plain bearings equipped with iglidur® E7 liners for 8 times longer service life

- Completely supported and mounted with standard aluminium support
- For supported shafts:
 - ▶ Partial shaft support supplied in lengths of 600mm max.
 - ▶ Standard pitch T2, T1 also possible upon request
 - ▶ Symmetrical hole pitches C5 = C6



Dimensions [mm] -

supported stainless steel shafts EWM (AISI 440B) / EEWUM (AISI 420)

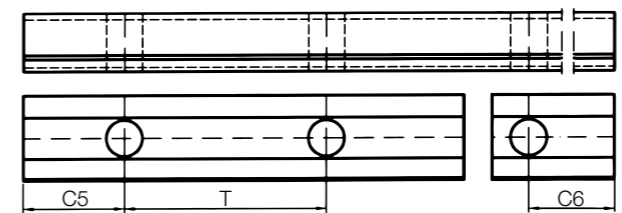
Part No.	D	B	H	V	N1	N2	d1	M	(°)	E	T1	C5/C6		T2	C5/C6		Weight
												min.	max.		min.	max.	
			±0.02								±0.15	for T1	Standard		Standard		
□WUM-12	12	40	22	5	8.0	5.0	4.5	5.8	50	29	75	20	57	120	20	79	1.75
□WUM-16	16	45	26	5	9.5	6.0	5.5	7.0	50	33	100	20	69	150	20	94	2.64
□WUM-20	20	52	32	6	11.0	6.5	6.6	8.3	50	37	100	20	69	150	20	94	3.97
□WUM-25	25	57	36	6	14.0	8.5	6.6	10.8	50	42	120	20	79	200	20	119	5.65
□WUM-30	30	69	42	7	17.0	10.5	9.0	11.0	50	51	150	20	94	200	20	119	7.93
□WUM-40	40	73	50	8	17.0	10.5	9.0	15.0	50	55	200	20	119	300	20	169	12.88
□WUM-50	50	84	60	9	19.0	12.5	11.0	19.0	46	63	200	20	119	300	20	169	19.60

Order example:

EWUM-16-500-T1: Supported stainless steel shaft EWM (AISI 440B), with 16mm outer Ø, 500mm length, T1 pitch
EEWUM-16-500-T1: Supported stainless steel shaft (AISI 420C) with 16mm outer Ø, 500mm length, T1 pitch



EWUMN. EEWUMN



Dimensions [mm] -

low-level supported steel shafts EWM (AISI 440B) / EEWUM (AISI 420)

Part No.	Outer Ø	H	H1	A	A1	A2	d1	d2	T	C5/C6		Weight
										min.	max.	
□WUMN-12	12	14.5	3	11	5.5	5.4	M4	4.5	75	20	57.0	1.62
□WUMN-16	16	18.0	3	14	7.0	7.0	M5	5.5	75	20	57.0	2.54
□WUMN-20	20	22.0	3	17	8.5	8.1	M6	6.6	75	20	57.0	3.81
□WUMN-25	25	26.0	3	21	10.5	10.3	M8	9.0	75	20	57.0	5.62
□WUMN-30	30	30.0	3	23	11.5	11.0	M10	11.0	100	20	69.5	7.63
□WUMN-40	40	39.0	4	30	15.0	15.0	M12	13.5	100	20	69.5	13.47
□WUMN-50	50	46.0	5	35	17.5	19.0	M14	15.5	100	20	69.5	20.31

Low-level supported shafts are delivered unassembled.

Order example:

EWUMN-16-500: Low level supported stainless steel shaft EWM (AISI 440B), with 16mm outer Ø, 500mm length, T pitch
EEWUM-16-500: Low-level supported stainless steel shaft EEWUM (AISI 420C), 16mm outer Ø, 500mm length, T pitch

Order key

Type	Size	Options
EWUMN- 20 -2000-T1		
Low-level supported stainless steel shaft, metric	Outer Ø	Shaft length [mm]
		Hole pattern

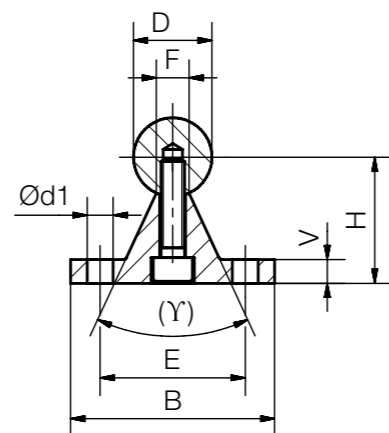
EWUM, EEWUM: Supported stainless steel shaft
 EWUMN,EEWUMN: Low-level supported stainless steel shafts

Further available materials:

AISI 440B, hardened/ground: EWM
 AISI 420C, hardened/ground: EEWUM

Hole pattern:

T2: T2 pitch (standard)
 T1: T1 pitch (upon request)

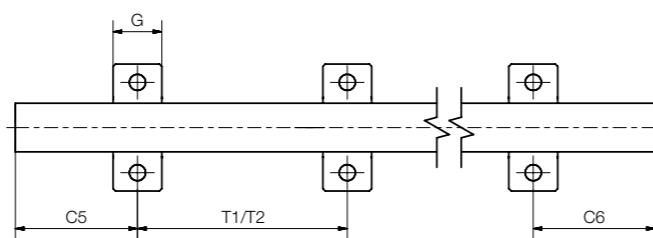
EWUM-ES/
EWUMS-ES

! igus® recommendation: linear plain bearings equipped with iglidur® E7 liners for 8 times longer service life

Standard shaft support blocks made of stainless steel

● Connection sizes are identical to aluminium supports

► Page 1344



Dimensions [mm] - partially supported stainless steel shafts AISI 440B

Part No.	D h6	B	H ±0.02	V	d1	E	γ	F	G	T1	C5/C6 for T1		T2 Standard	C5/C6 for T2	
											min.	max.		min.	max.
EWUM-ES-12	12	40	22	5	4.5	29	-	5.8	14	75	20	57	120	20	79
EWUM-ES-16	16	45	26	5	5.5	33	-	7.0	16	100	20	69	150	20	94
EWUM-ES-20	20	52	32	6	6.6	37	50°	8.3	20	100	20	69	150	20	94
EWUM-ES-25	25	57	36	6	6.6	42	-	10.8	25	150	20	79	200	20	119
EWUM-ES-30	30	69	42	7	9.0	51	-	11.0	25	150	20	94	200	20	119
EWUM-ES-40	40	73	50	8	9.0	55	-	15.0	25	200	20	119	300	20	169

Order example:

EWUM-ES-20-500, partially supported stainless steel shaft (shaft and support made of stainless steel), AISI 440B material, T2 pitch, outer Ø 20mm, L = 500mm



Order key

Type Size Options

EWUMS-ES- 20 -500-T2

Partially supported stainless steel shaft, metric	Material	Outer Ø	Shaft length [mm]	Hole pattern
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Available materials and lengths:

AISI 440B, max 6,000mm

► EWUM

AISI 316Ti, max 3,000mm

► EWUMS

Options:

Blank: AISI 440B material

S: AISI 316Ti

Hole pattern:

T2: T2 pitch (standard)

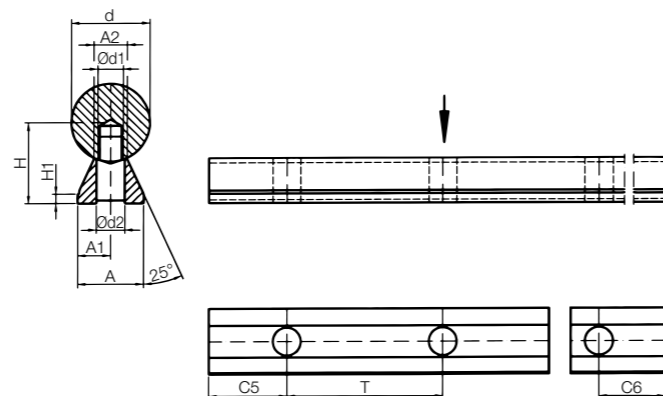
T1: T1 pitch

Dimensions [mm] - partially supported stainless steel shafts AISI 316Ti

Part No.	D h6	B	H ±0.02	V	d1	E	γ	F	G	T1	C5/C6 for T1		T2 Standard	C5/C6 for T2	
											min.	max.		min.	max.
EWUMS-ES-12	12	40	22	5	4.5	29	-	5.8	14	75	20	57	120	20	79
EWUMS-ES-16	16	45	26	5	5.5	33	-	7.0	16	100	20	69	150	20	94
EWUMS-ES-20	20	52	32	6	6.6	37	50°	8.3	20	100	20	69	150	20	94
EWUMS-ES-25	25	57	36	6	6.6	42	-	10.8	25	150	20	79	200	20	119
EWUMS-ES-30	30	69	42	7	9.0	51	-	11.0	25	150	20	94	200	20	119
EWUMS-ES-40	40	73	50	8	9.0	55	-	15.0	25	200	20	119	300	20	169

Order example:

EWUMS-ES-20-500, partially supported stainless steel shaft (shaft and support made of stainless steel), AISI 316Ti material, T1 pitch, outer Ø 20mm, L = 500mm

EWUMN-ES/
EWUMSN-ES

! igus® recommendation: linear plain bearings equipped with iglidur® E7 liners for 8 times longer service life

Low level shaft support blocks made of stainless steel

- Connection sizes are identical to low-level aluminium supports ► [Page 1345](#)

Dimensions [mm] - low-level partially supported stainless steel shafts AISI 440B

Part No.	d	H ±0.02	H1	A	A1	A2	d1	d2	T	C5/C6		Weight [kg/m]
										min.	max.	
EWUMN-ES-12	12	14.5	3	11	5.5	5.4	M4	4.2	75	20	57.0	1.00
EWUMN-ES-16	16	18.0	3	14	7.0	7.0	M5	5.2	75	20	57.0	1.76
EWUMN-ES-20	20	22.0	3	17	8.5	8.1	M6	6.2	75	20	57.0	2.77
EWUMN-ES-25	25	26.0	3	21	10.5	10.3	M8	8.2	75	20	57.0	4.35
EWUMN-ES-30	30	30.0	3	23	11.5	11.0	M10	10.2	100	20	69.5	6.01
EWUMN-ES-40	40	39.0	4	30	15.0	15.0	M12	12.5	100	20	69.5	10.80

Low-level partially supported stainless steel shafts are supplied unassembled

🛒 Order example:

EWUMN-ES-20-500: Low-level partially supported stainless steel shaft. AISI 440B material, T2 pitch (standard), with 20mm outer Ø, 500mm length



🔑 Order key

Type	Size	Options
EWUMSN-ES- 20 -500-T2		
Partially supported stainless steel shaft, metric	Material	Outer Ø
		Shaft length [mm]
		Hole pattern

Available materials and lengths:

AISI 440B, max 6,000mm

► EWUMN

AISI 316Ti, max 3,000mm

► EWUMSN

Dimensions [mm] - low-level partially supported stainless steel shafts AISI 316Ti

Part No.	d	H ±0.02	H1	A	A1	A2	d1	d2	T	C5/C6		Weight [kg/m]
										min.	max.	
EWUMSN-ES-12	12	14.5	3	11	5.5	5.4	M4	4.2	75	20	57.0	1.00
EWUMSN-ES-16	16	18.0	3	14	7.0	7.0	M5	5.2	75	20	57.0	1.76
EWUMSN-ES-20	20	22.0	3	17	8.5	8.1	M6	6.2	75	20	57.0	2.77
EWUMSN-ES-25	25	26.0	3	21	10.5	10.3	M8	8.2	75	20	57.0	4.35
EWUMSN-ES-30	30	30.0	3	23	11.5	11.0	M10	10.2	100	20	69.5	6.01
EWUMSN-ES-40	40	39.0	4	30	15.0	15.0	M12	12.5	100	20	69.5	10.80

Low-level partially supported stainless steel shafts are supplied unassembled

🛒 Order example:

EWUMSN-ES-20-500-T2: Low-level partially supported stainless steel shaft. AISI 316Ti material, T2 pitch, with 20mm outer Ø, 500mm length



CWM

- Material: CFK composite
- Roundness tolerance: $\pm 0.05\text{mm}$
- Diameter tolerance: -0.1mm
- Application temperature: Max. $+80^\circ\text{C}$
- Colour: black

Order key

Type	Size	Options
CWM- 12 -1000		
Carbon fibre shaft	Metric	Outer Ø
		Shaft length [mm]

Dimensions [mm]

Part No.	Design	Outer Ø -0.1	Inner Ø -0.1	Max. length	Weight [g/m]
CWM-12	Hollow shaft	12	9.0	2,000	70
CWM-16	Hollow shaft	16	12.5	2,000	120
CWM-20	Hollow shaft	20	16.0	2,000	170
CWM-30	Hollow shaft	30	26.0	2,000	270

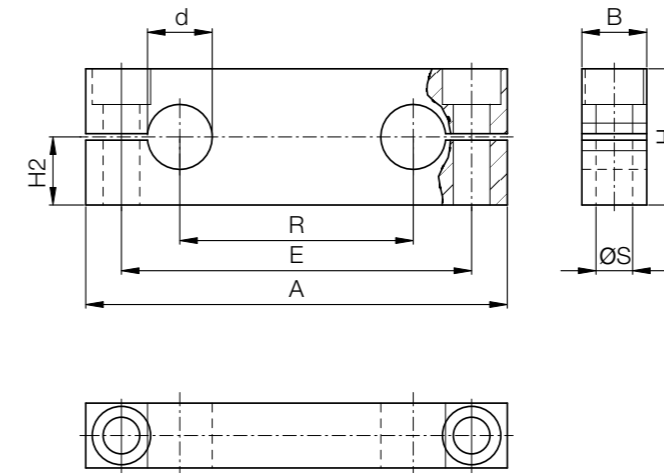


Order example:

CWM-16-500: carbon fibre shaft, 16mm outer Ø, 500mm length

Order key

Type	Size
TA -08	
Shaft end supports, floating	Inner Ø



Material: aluminium
Threaded fixing hole

Dimensions [mm]

Part No.	d	A	B	H	H2 ± 0.015	Ø S	E	R	Weight [g]
TA-08	8	65	12	22	11	M5	52	32	40
TA-10	10	70	12	21	10.5	M5	55	34	37
TA-12	12	85	14	28	14	M6	70	42	70
TA-16	16	100	18	32	16	M8	82	54	130
TA-20	20	130	20	42	21	M10	108	72	220
TA-25	25	160	25	52	26	M12	132	88	440
TA-30	30	180	25	58	29	M12	150	96	560
TA-40	40	230	30	72	36	M16	190	122	1,000



Order example:

TA-10: floating shaft end support with inner Ø 10mm



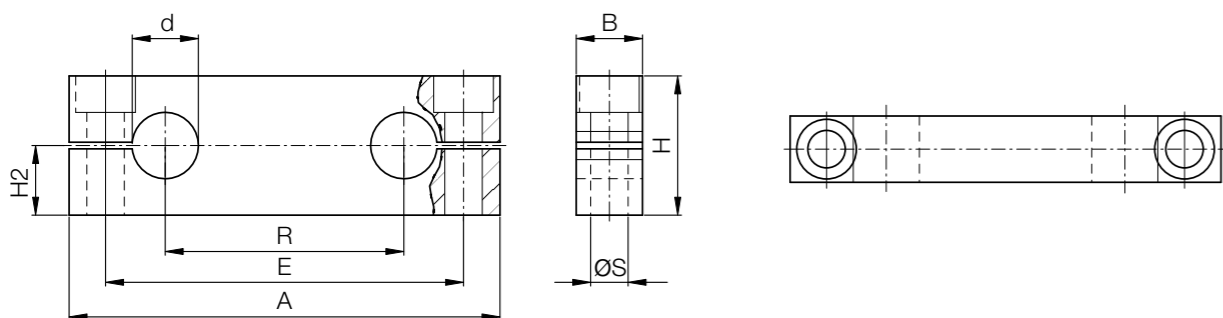
Order key

Type	Size
------	------

TA F - 08

Shaft end support	Fixed	Inner Ø
-------------------	-------	---------

Material: aluminium
Through fixing hole



Dimensions [mm]

Part No.	d	A	B	H	H2	Ø S	E	R	Weight [g]
TAF-08	8	65	12	23	±0.015 12.5	5.5	52	32	40
TAF-10	10	70	12	25	14.0	5.5	55	34	45
TAF-12	12	85	14	32	18.0	6.6	70	42	90
TAF-16	16	100	18	36	20.0	9.0	82	54	140
TAF-20	20	130	20	46	25.0	11.0	108	72	250
TAF-25	25	160	25	56	30.0	13.5	132	88	470
TAF-30	30	180	25	64	35.0	13.5	150	96	620
TAF-40	40	230	30	80	44.0	17.5	190	122	1,150

Order example:
TAF-12: fixed shaft end support with 12mm inner Ø



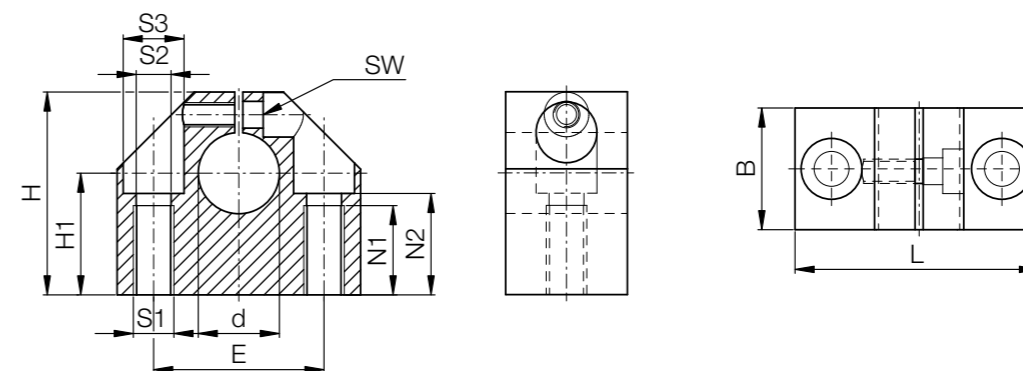
Order key

Type	Size
------	------

WA - 08

Shaft end block	Standard design	Inner Ø
-----------------	-----------------	---------

Material: aluminium



Dimensions [mm]

Part No.	d	B	H	H1	L	S1	S2	S3	E	N1	N2	SW	l	a	c	Weight [g]
WA-08	H8 8	18	28	±0.02 15	32	M4	3.3	6	±0.1 22	9	13.0	2.5	±0.02 16.0	5	0.5	40
WA-12	12	20	35	20	43	M6	5.2	10	30	13	16.5	3.0	21.5	6	0.5	100
WA-16	16	24	42	25	53	M8	6.8	11	38	18	21.0	4.0	26.5	7	0.5	150
WA-20	20	30	50	30	60	M10	8.6	15	42	22	25.0	5.0	30.0	7	0.5	230
WA-25	25	38	60	35	78	M12	10.3	18	56	26	30.0	6.0	39.0	7	0.5	410
WA-30	30	40	70	40	87	M12	10.3	18	64	26	34.0	6.0	43.5	7	0.5	530
WA-40	40	48	90	50	108	M16	14.25	20	82	34	44.0	8.0	54.0	7	0.5	990
WA-50	50	58	105	60	132	M20	17.5	26	100	43	49.0	10.0	66.0	7	0.5	1,250
WA-60	60	74	130	75	164	M27	22.0	33	124	43	59.0	10.0	82.0	13	1.0	2,950


Order example:
WA-08: shaft end block, standard design with inner Ø 8mm

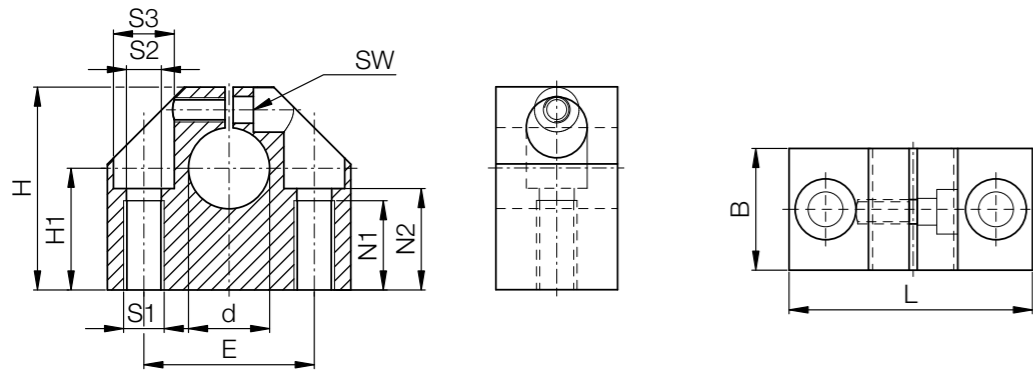
 Order key

Type	Size
------	------

WA C-06

Shaft end block	Compact design	Inner Ø
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 Material: aluminium




Dimensions [mm]

Part No.	d	B	H	H1 from +0.01 to +0.02	L	S1	S2	S3	E ±0.1	N1	N2	SW	Weight [g]
WAC-06	6	16	27	15	32	M5	4.2	8	22	11	13	2.5	30
WAC-08	8	16	27	16	32	M5	4.2	8	22	11	13	2.5	30
WAC-10	10	18	33	18	40	M6	5.2	10	27	13	16	3.0	50
WAC-12	12	18	33	19	40	M6	5.2	10	27	13	16	3.0	50
WAC-14	14	20	38	20	45	M6	5.2	10	32	13	18	3.0	70
WAC-16	16	20	38	22	45	M6	5.2	10	32	13	18	3.0	70
WAC-20	20	24	45	25	53	M8	6.8	11	39	18	22	4.0	120
WAC-25	25	28	54	31	62	M10	8.6	15	44	22	26	5.0	170
WAC-30	30	30	60	34	67	M10	8.6	15	49	22	29	5.0	220
WAC-40	40	40	76	42	87	M12	10.3	18	66	26	38	6.0	480
WAC-50	50	50	92	50	103	M16	14.25	20	80	34	46	8.0	820

 Order example:


WAC-12: shaft end block, compact design with inner Ø 12mm

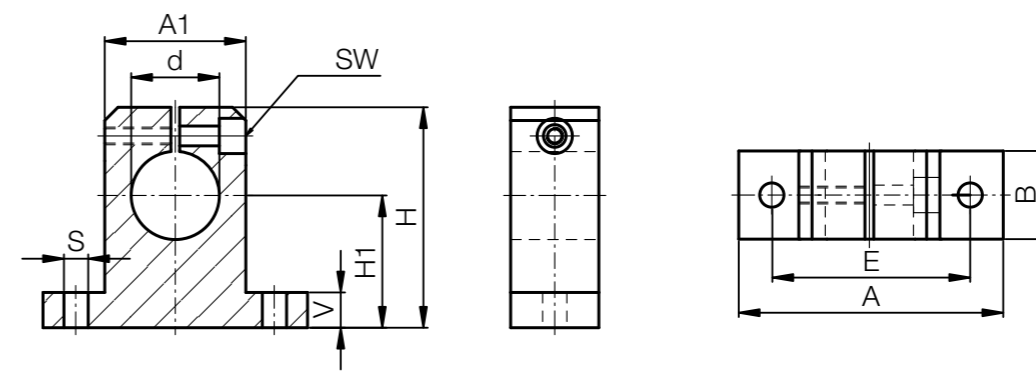
 Order key

Type	Size
------	------

WA S-08

Shaft end block	Narrow design	Inner Ø
-----------------	---------------	---------

 Material: aluminium



Dimensions [mm]

Part No.	d	H	H1 ±0.02	A	A1	B	E	S	V	SW	Weight [g]
WAS-08	8	27	15	32	16	10	25	4.5	5.0	2.5	12
WAS-12	12	35	20	42	20	12	32	5.5	5.5	3.0	23
WAS-16	16	42	25	50	26	16	40	5.5	6.5	3.0	35
WAS-20	20	50	30	60	32	20	45	5.5	8.0	4.0	67
WAS-25	25	58	35	74	38	25	60	6.6	9.0	4.0	140
WAS-30	30	68	40	84	45	28	68	9.0	10.0	5.0	200
WAS-40	40	86	50	108	56	32	86	11.0	12.0	6.0	480

 Order example:

WAS-12: shaft end block, narrow design with inner Ø 12mm

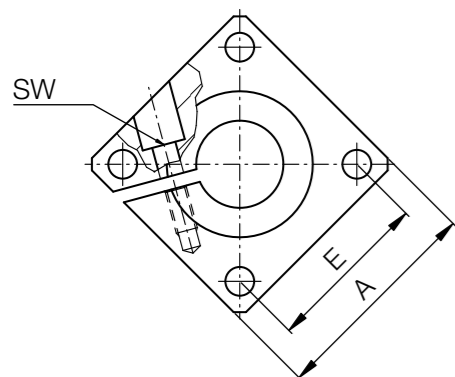
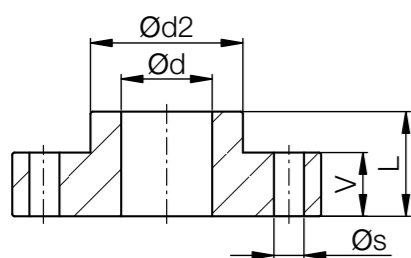
Order key

Type Size

WA F -12

- Shaft end block
- With flange
- Inner Ø

Material: aluminium



Dimensions [mm]

Part No.	Ø d	A	L	Ø d2	E	Ø s	V	SW	Weight [g]
WAF-12	12	40	20	23.5	30 ± 0.12	5.5	12	3	60
WAF-16	16	50	20	27.5	35 ± 0.12	5.5	12	3	80
WAF-20	20	50	23	33.5	38 ± 0.15	6.6	14	4	100
WAF-25	25	60	25	42.0	42 ± 0.15	6.6	16	5	150
WAF-30	30	70	30	49.5	54 ± 0.15	9.0	19	6	300
WAF-40	40	100	40	65.0	68 ± 0.25	11.0	26	8	700
WAF-50	50	100	50	75.0	75 ± 0.25	11.0	36	8	1,200

Order example:
WAF-16: flanged shaft end block with inner Ø 16mm



Expert for linear guides: System selection and service life calculation with CAD
Configure and calculate the service life of linear bearings - constantly expanded by new sizes and products

Easily calculate the service life of your required linear guide and configure with a few clicks. Select a drylin® system and add the relevant environmental parameters. Select the bearing size, carriage, number and position. Then enter the distance between the rails and the mounting. Define more relevant parameter of the guidance and select a rail length. The results are displayed.



► www.igus.eu/drylin-expert



Download the online tool app now



Aluminium shafts in combination with iglidur® J enable high speeds due to the lightweight.



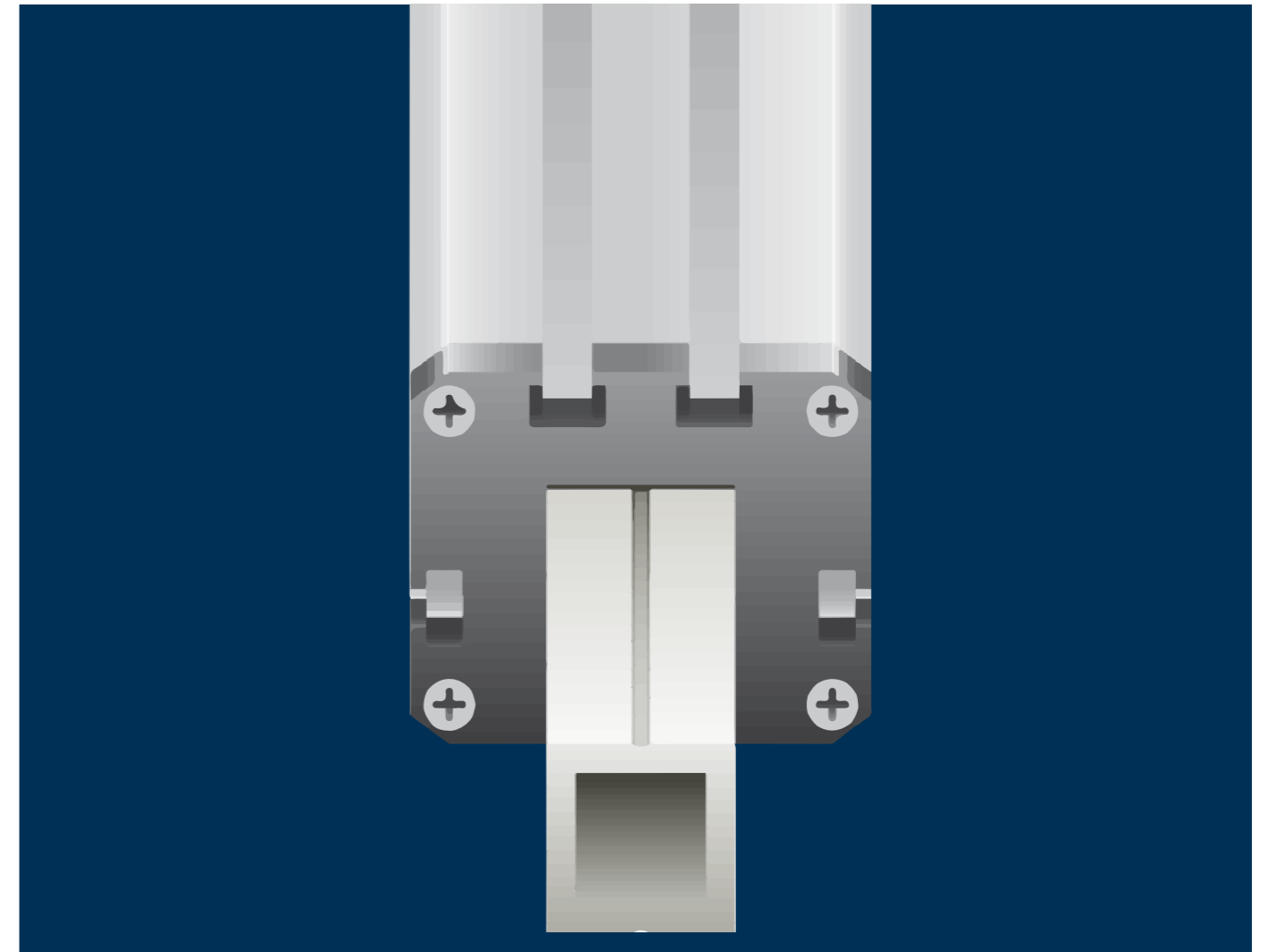
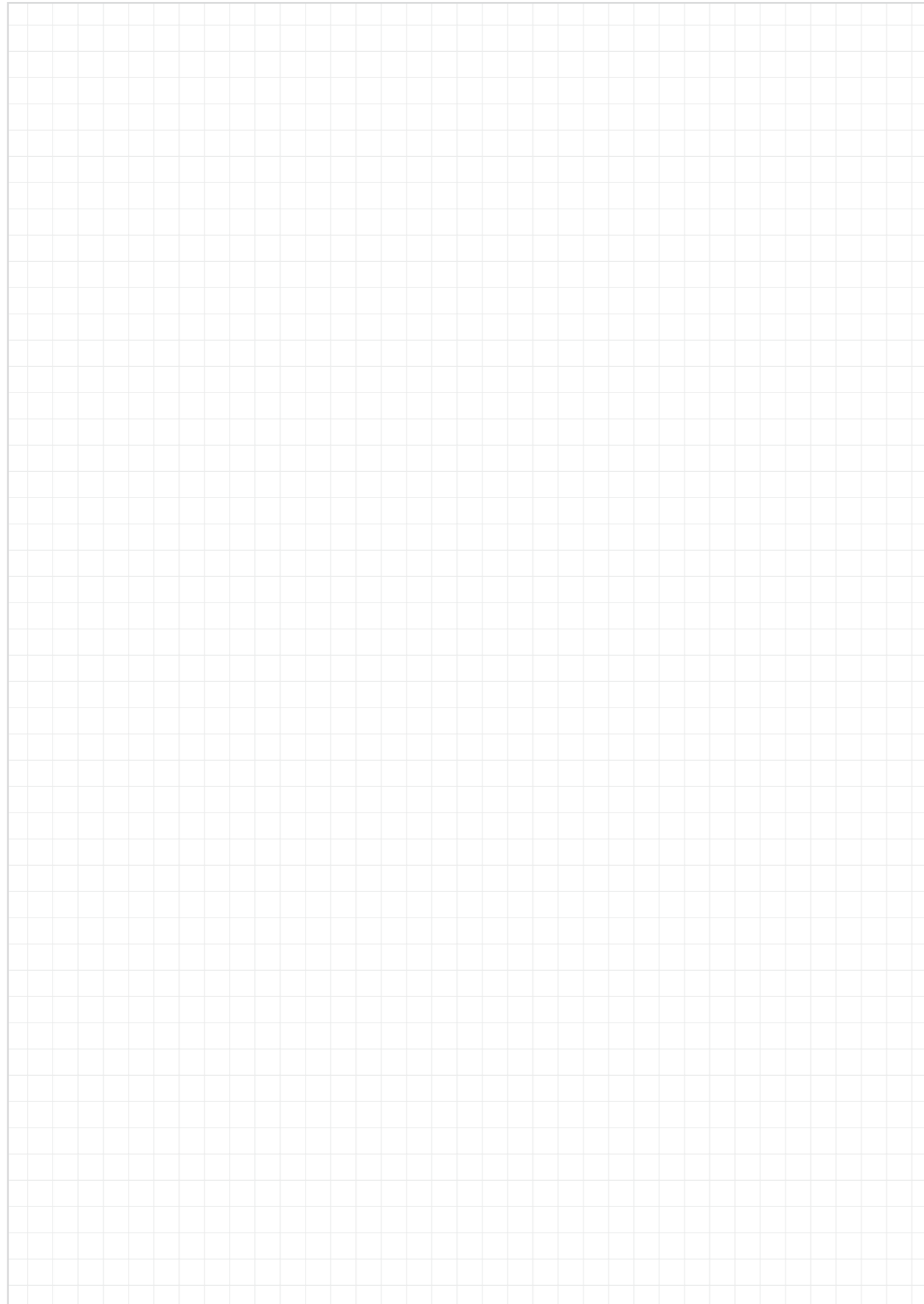
Stainless steel shafts combined with iglidur® X, offer maximum resistance at +120 °C. Cleaning in filling machine.



Stainless steel combined with iglidur® J in cut-off grinding machine. Grinding particles and coolants, extreme conditions.



Cost-effective guide for work piece carriage in a machine tool with supported aluminium shaft.



drylin[®] linear technology - drylin[®] Q square linear guides

Torque-resistant linear guides

Square section linear rail made from hard-anodised aluminium

Apply moments up to 10 Nm

Adjustable linear carriage with or without manual clamp

Lubrication-free and lightweight




Lubrication-free square linear guides - drylin® Q


Linear movement with torque resistance, completely lubrication-free. The drylin® Q linear system offers the user maximum flexibility in the design. Individual housing options such as solid plastic bearings or adjustable housings with or without manual clamp are available. Due to the hollow design, the robust hard-anodised aluminium profile is very light and is suitable for the installation of supply cables. Options for mounting are extensive, among others, using slot nuts; installation size 20 can also be combined with all 20/20 aluminium profiles.


- 100 % lubrication-free
- Torque-resistant
- Adjustable bearing clearance
- Absorption of force from all directions
- High resistance to dirt
- Low vibration and quiet
- Numerous mounting options


Typical application areas

- Mechanical engineering
- Woodworking industry
- Machine tools
- Handling

 **Available from stock**
Detailed information about delivery time online.

 **Price breaks online**
No minimum order value. No minimum order quantity

 **Max. +90°C**
Min. -40°C

 **3 installation sizes (10/12/20)**
Rail length: 1,500/3,000mm

Hollow rail for supply lines and magnetic tape

Profile made from hard-anodised aluminium


Torque-resistant square geometry

End cap made from solid plastic

Main body of the carriage made from clear anodised aluminium

Sliding elements made from high-performance polymer iglidur® J

Adjustable bearing clearance

 **Technical details on floating bearings, 2:1 Rule, tightening torque for drylin® metallic screws** ▶ Page 1120



Square section linear rails

- Material: aluminium, hard-anodised
 - Lightweight and corrosion-resistant
 - Hollow rail design for cables to feed-through
- ▶ Page 1362



Linear carriage

- Unsupported carriage version with/without manual clamp
 - Numerous fastening options on all sides via slot nuts
 - Bearing clearance adjustable
- ▶ Page 1363



Bearing housing

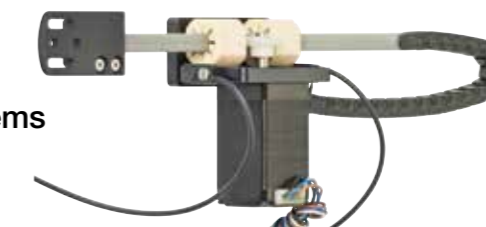
- Enclosed anodised aluminium housing
 - Apply moments up to 3Nm (size 10), 10Nm (size 20)
 - Torque-resistant sliding elements made from iglidur® J
- ▶ Page 1365

Sliding plates for clearance adjustment

- Tolerance compensation for profiles, including columns
 - Adjustment mechanism included
 - Easy assembly
- ▶ Page 1369



Measuring systems
drylin® QKM
▶ Page 1371



Cantilever axis
drylin® GRQ miniature linear module
▶ Page 1667

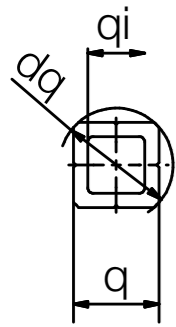
Order key

Type	Size	Option
------	------	--------

AWM Q- 10 -1000

Aluminium shaft	Metric	Square design	Installation size	Length [mm]
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Minimum saw lengths
▶ Page 1117



Dimensions [mm]

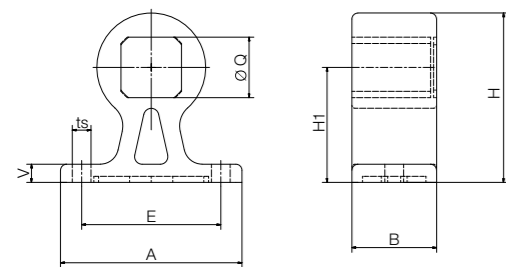
Part No.	Weight [kg/m]	q	dq	qi	Max. length
AWMQ-10	0.082	7.5	10	5	1,500
AWMQ-12	0.193	12	16	8.5	1,500
AWMQ-20	0.46	20	25	15	3,000

Accessories

Shaft end supports made from plastic



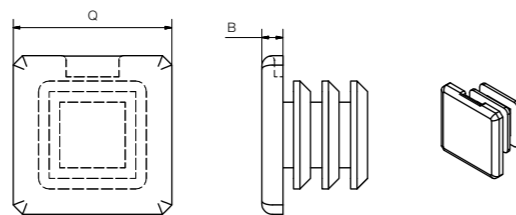
- Cost-effective mounting option
- Can also be used as floating bearing



Dimensions [mm]

Part No.	A	H	B	Q	H1	E	ts	V
STZ-Q10-01-FL	30	21	14	7.5	14	20	3.3	3
STZ-Q20-01-FL	60	56	28	20	38	46	6.2	6

End caps for square section linear rail



Dimensions [mm]

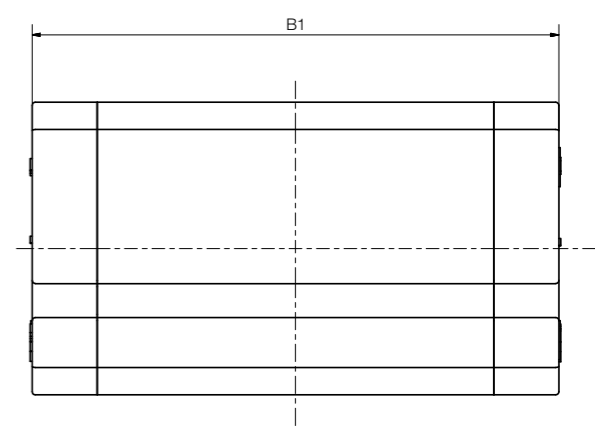
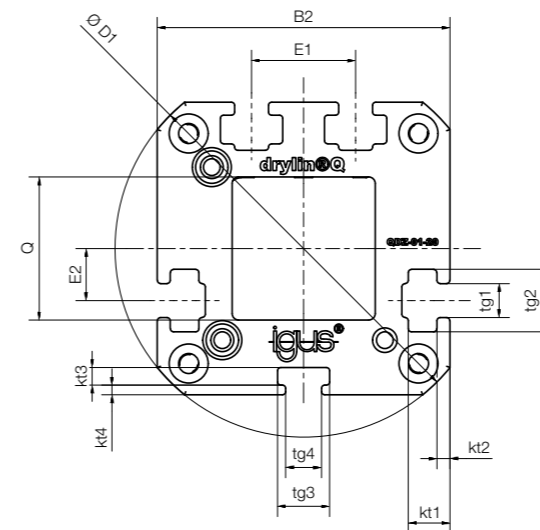
Part No.	Q	B
STZ-Q10-01-C	7.5	1
STZ-Q20-01-C	20	5

Order key

Type	Size
------	------

QWE - 01-20

Square	Linear carriage	Adjustable	Standard design	Installation size
--------	-----------------	------------	-----------------	-------------------



Dimensions [mm]

Part No.	Weight [g]	M max. [Nm]	B1	B2	D1	Q	E1	E2	tg1	tg2	tg3	tg4	kt1	kt2	kt3	kt4
QWE-01-12	110	5	80	34	44	12	12	6	5.5	8	8	-	-	-	3	1.25
QWE-01-20	210	10	81	45	58	20	16	8	5.5	9.6	8	5.5	6.4	2	2.7	1.5

Accessories: Slot nuts



Slot nuts offers attachment options (for example sensors) on four sides of the housing. 8 pieces are included in the delivery of a QWE carriage.

Part No.: **NOR-20615** for QWE-01-12

Part No.: **NOR-20602** for QWE-01-20

Can be combined with:



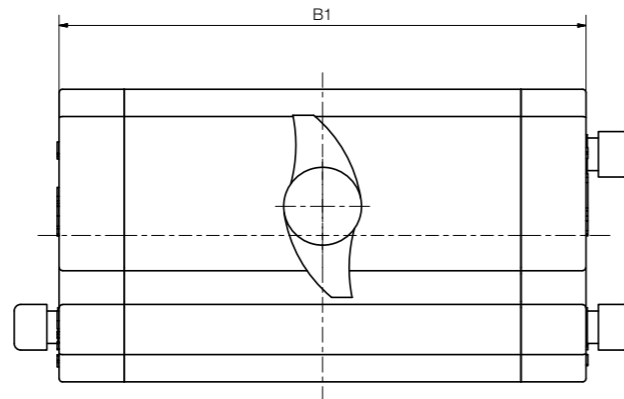
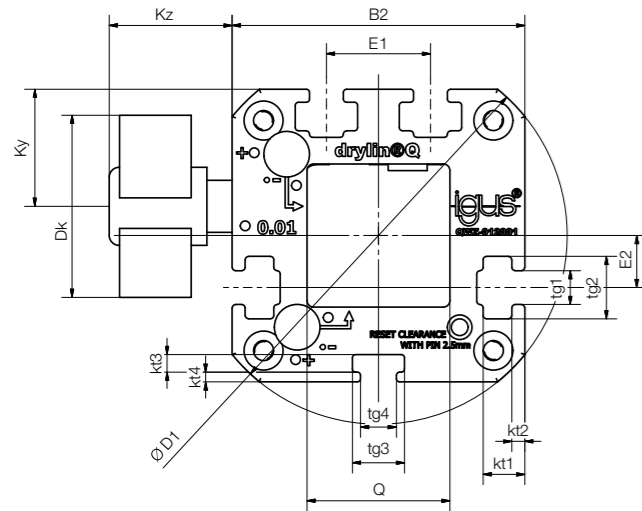


Order key

Type	Size	Options
------	------	---------

Q W E - 01 - 20 - HKA

Square	Linear carriage	Adjustable	Standard design	Installation size	Manual clamp
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Dimensions [mm]

Part No.	Weight [g]	M max. [Nm]	B1	B2 h7	D1	Q	E1	E2	tg1	tg2	tg3	tg4
QWE-01-12-HKA	-	-	80	34	44	12	12	6	5.5	8	8	-
QWE-01-20-HKA	215	10	81	45	58	20	16	8	5.2	9.6	8	5.5

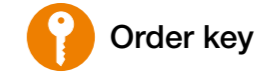
Part No.	kt1	kt2	kt3	kt4	Dk	Ky	Kz
QWE-01-12-HKA	-	-	3	1.25	18	14	19
QWE-01-20-HKA	6.4	2	2.7	1.5	28	18	19

i The manual clamp was developed for simple tasks. The creep behaviour of the clamped plastic causes a reduction in clamping force over time (up to 70%). so no safety-relevant parts should be clamped. Please contact our technical consultant, if you require other options for the clamping.

Can be combined with:



AWMQ-20



Order key

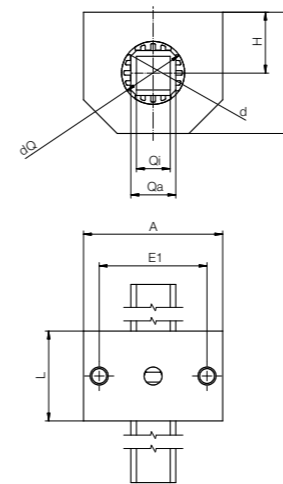
Type	Size
------	------

Q J R M T - 05 - 20

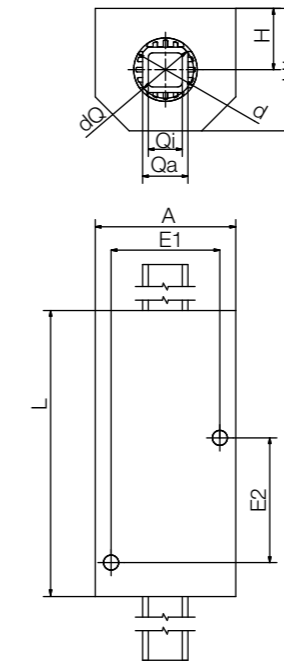
Square	iglidur® J	Closed design	Metric	Tandem (optional)	Compact design	Installation size
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QJRM-05-20



QJRM-05-20



Technical data [mm]

Part No.	Weight [kg]	Mx [Nm]	Surface pressure	
			dynamic [N]	static [N]
QJRM-05-20	0.25	5	1,500	10,500
QJRM-05-20	0.55	10	1,500	10,500

Dimensions [mm]

Part No.	A	H ±0.02	H1	dQ	Qa	Qi	E1 ±0.15	E2 ±0.15	d	L
							QJRM-05-20	62		
QJRM-05-20	62	27	54	25	20	15	48	55	28	85

Can be combined with:



AWMQ-20

With flange



QJFM-02-...



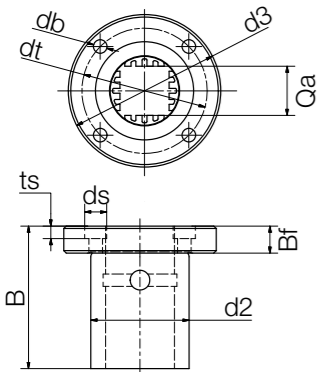
QJFMT-01-...



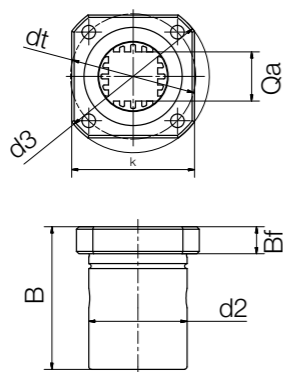
Order key

Type	Option	Size
Q J F M T - 02 - 10		
Square	iglidur® J	With flange
		Metric
		Tandem (optional)
Type		Installation size
		Options: 01 = Round flange 02 = Square flange

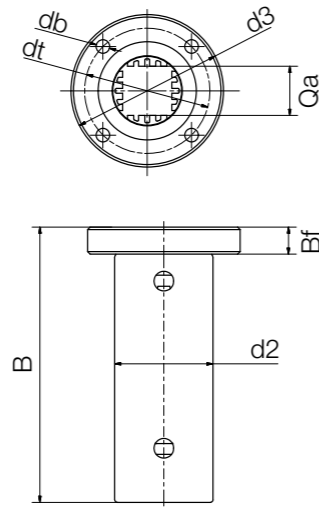
QJFM-01



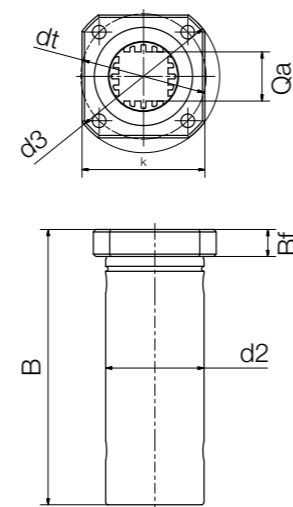
QJFM-02



QJFMT-01



QJFMT-02



Technical data and dimensions [mm]

Part No.	Weight [kg]	Surface pressure		Mx [Nm]
		dynamic [N]	static [N]	
QJFM-01-20	0.14	1,500	10,500	5
QJFM-02-20	0.14	1,500	10,500	5
QJFMT-02-10	0.038	-	-	3
QJFMT-01-20	0.24	1,500	10,500	10
QJFMT-02-20	0.24	1,500	10,500	10

Part No.	k	d2 h7	Bf	Qa	d3 ±0.15	dt ±0.15	B	db	ds	ts
QJFM-01-20	-	40	11	20	62	51	58	5.5	9.0	5.1
QJFM-02-20	50	40	11	20	62	51	58	5.5	9.0	5.1
QJFMT-02-10	30	19	9	7.5	39	29	52	4.5	7.5	4.1
QJFMT-01-20	-	40	11	20	62	51	112	5.5	9.0	5.1
QJFMT-02-20	50	40	11	20	62	51	112	5.5	9.0	5.1

Can be combined with:



AWMQ-10



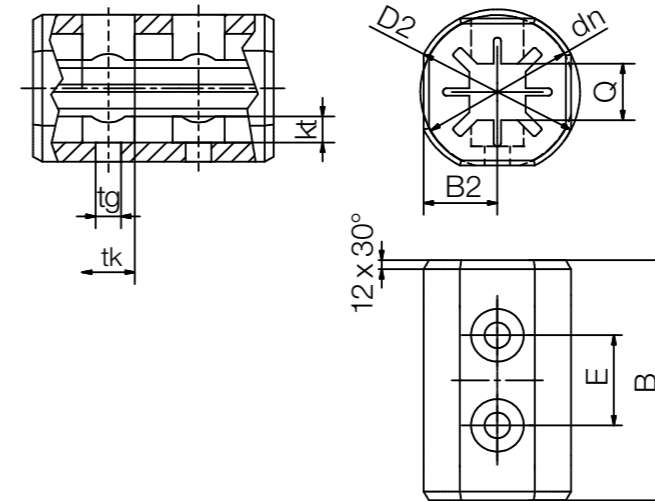
AWMQ-20

Q10 pillow block



Order key

Type	Size
Q J R M P - 01 - 10	
Square	iglidur® J
	Closed design
	Metric
	Solid plastic
	Standard design
	Installation size



Manual clamp available.
Suffix "-HKA"

Dimensions [mm]

Part No.	Weight [g]	M max. [Nm]	B	B2	D2	dn	E	Q	tk	tg	kt
QJRMP-01-10	11.3	3	32	9.8	22	22	12	7.5	6	3.4	3.5



Pipette unit equipped with drylin® Q square linear guide combined with drylin® GRW cantilever axis and NEMA stepper motor

Can be combined with:



AWMQ-10



- Hollow rail for supply lines (compressed air, cable)
- Small space requirement
- A host of possible applications

Single components



Adapter for flange shaft block

Part No.
STZ-Q10-AR-1012-16



Adapter kit e.g. for grippers/sensors

Part No.
STZ-Q10-01-AM



Shaft end supports made from plastic

Part No.
STZ-Q10-01-FL
STZ-Q10-01-LL



Chain connection for e-chain® E2 micro

Part No.
STZ-Q10-01-AC-E2

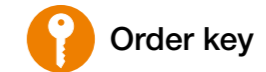


End caps for square-section linear rail

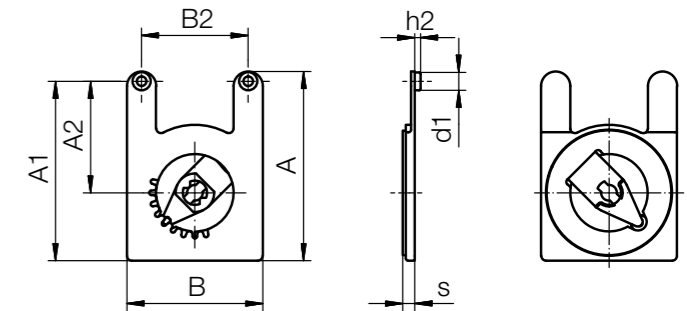
Part No.
STZ-Q10-01-C
STZ-Q20-01-C



- Clearance-reduced guidance of the lifting columns by adjustment mechanism
- Low-cost due to injection moulding
- Lightweight solid polymer solution
- Lubrication-free, wear-resistant, maintenance-free due to dry-tech® polymer iglidur® J
- Corrosion-resistant



Type	Option	Size
ASD J	- 28	- 025
Type	iglidur® J	Width B
		Installation size

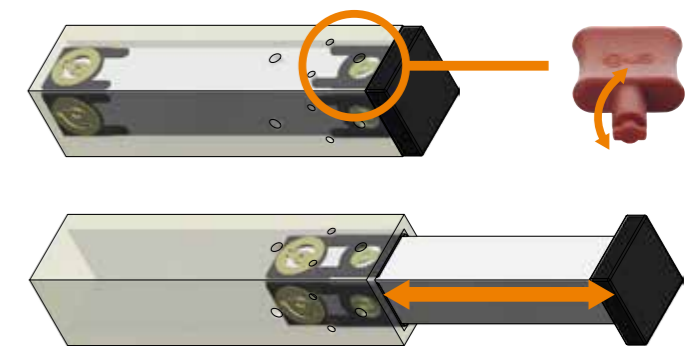


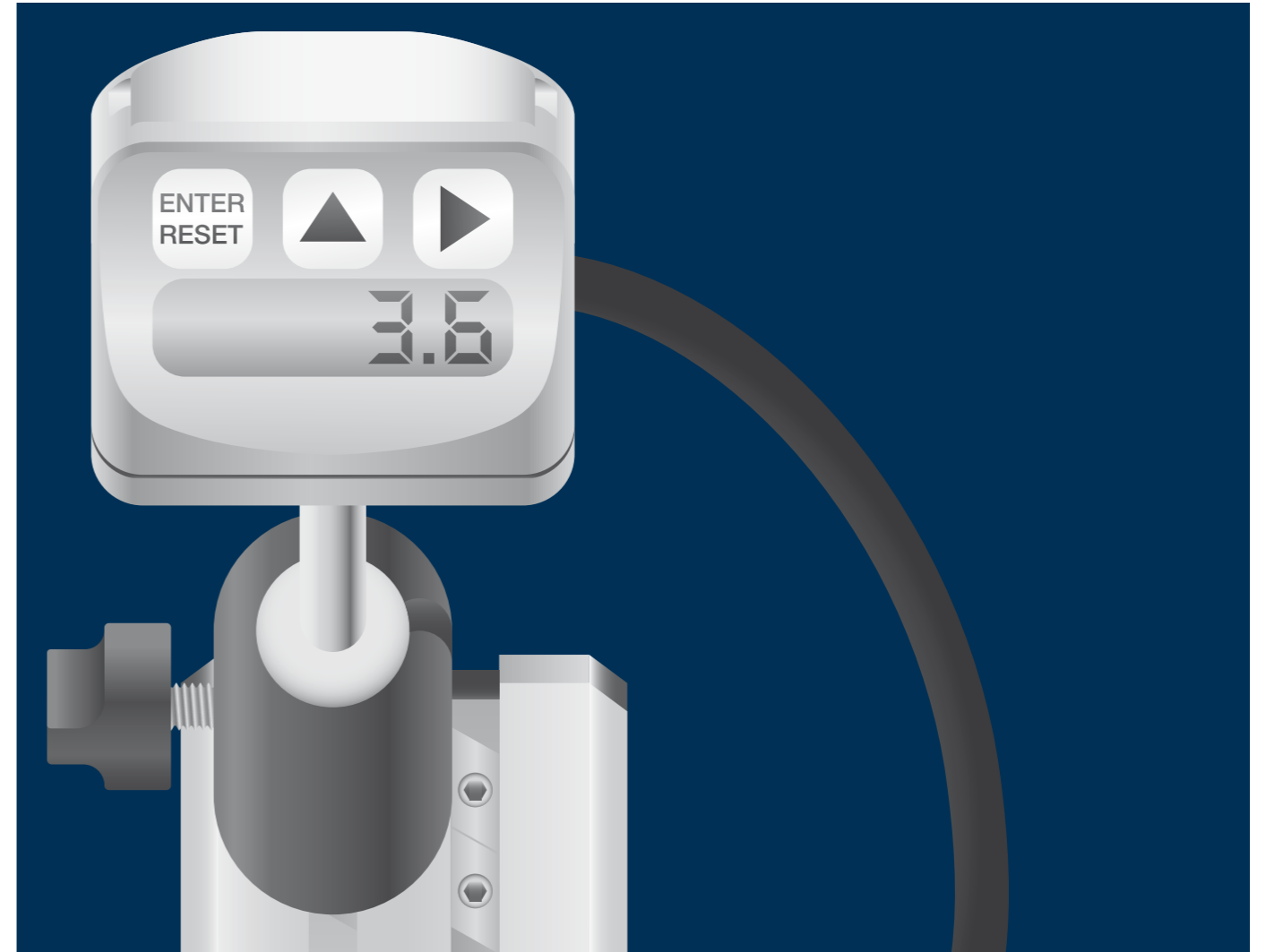
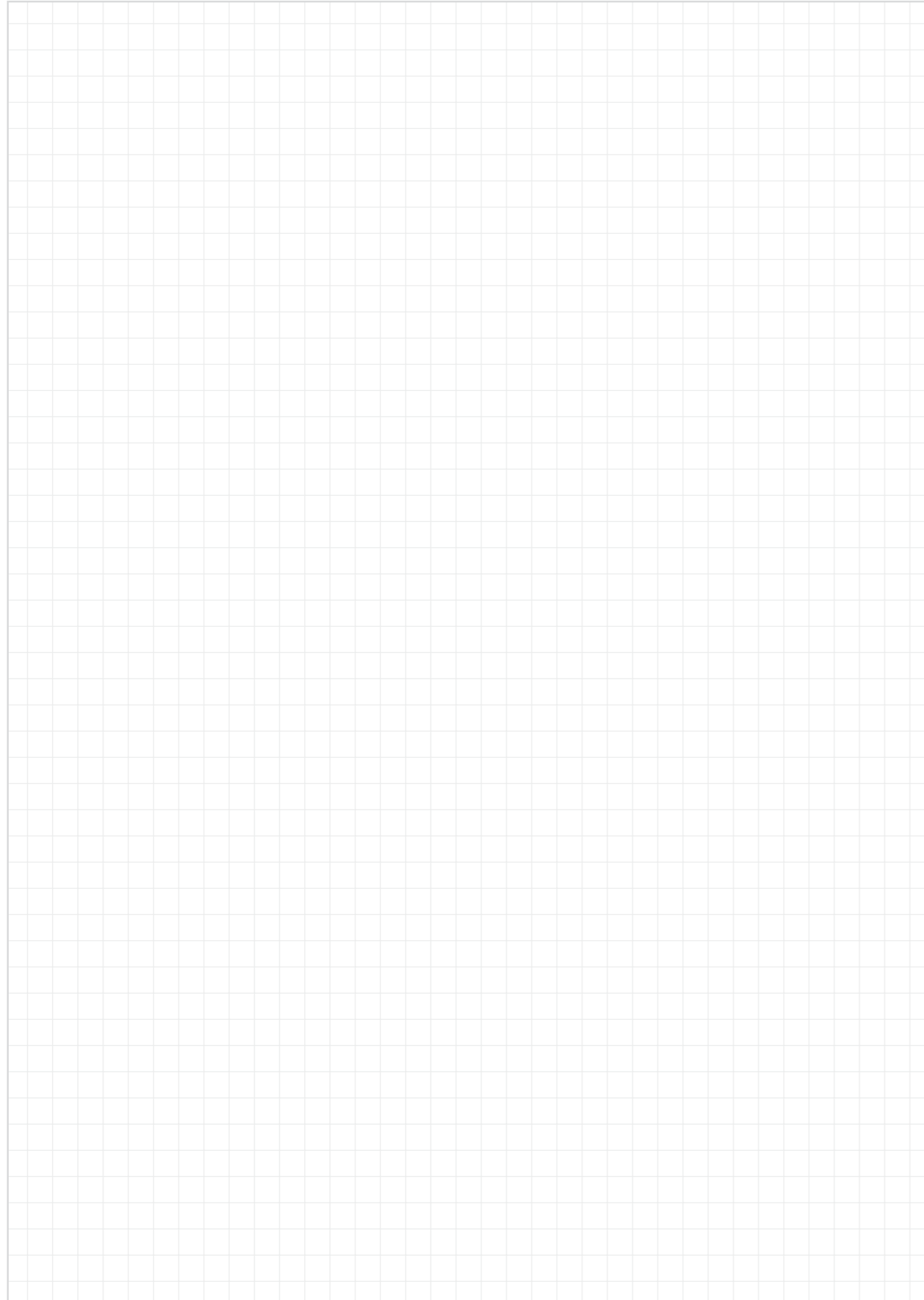
Dimensions [mm]

Part No.	Weight [g]	Øs		A	B	A1	A2	B2	d1	h2
		min.	max.							
ASDJ-28-025	1.9	2.2	2.8	39	28	37	23	±0.15	-0.1	±0.1



Adjustment key Part No.
ASDZ-012817





drylin[®] linear technology - digital measuring systems

Ready-to-install complete systems

**Sensor, measuring display, magnetic tape
included**

Battery operation

Ideal for positional stops

Operation without mains supply




Digital drylin® measuring systems


The drylin® measuring systems use magnetic tape with incremental measuring systems. The integrated battery ensures a service life of many years and enables almost absolute measurement. The sensor, measuring display and magnetic tape are integrated in lubrication-free drylin® W and Q linear guides. With customer-specific rail lengths, systems are supplied as ready-to-install linear modules. Typical application areas are format adjustments and mechanical stop adjustments.


- Simple installation
- Easy to adjust
- Lubrication and maintenance-free
- Battery powered
- Unsupported use
- Optional:
 - Mounted rail -> measuring carriage moves
 - Mounted measuring rail -> rail moves


Typical application areas

- Format adjustments
- Bending machines
- Band saws
- Stop-dog positioning for profiles, frames, plates, tubes, wood and bar stock

 **Available from stock**
Detailed information about delivery time online.

 **Price breaks online**
No minimum order value. No minimum order quantity

 **Max. +70°C**
Min. -10°C

 **Carriage widths: 45 - 134mm**
Rail length: up to 4,000mm

Hard-anodised drylin® aluminium profiles

Suitable for aluminium design profiles

Delivered ready to install

LCD display with battery

Carriages with internal or external display

Lubrication-free drylin® linear guides with or without a drive

Rails fixed or mobile

Freely selectable rails lengths

A magnetic tape is used for reference



drylin® Q for unsupported structures

- Carriage with integrated measuring sensor
- With fixed or flexible adjustable display
- Protected magnetic tape

► Page 1376



drylin® W with digital measuring display

- Max. rail length up to 4,000mm
- Measuring display attached to the side of the carriage
- Lubrication-free adjusting of the carriage

► Page 1378



drylin® W with external measuring display

- Carriage with integrated sensor
- Flexible positioning of the measuring sensor
- Including manual clamp

► Page 1379



drylin® SLW with integrated measuring sensor

- Driven by trapezoidal thread
- Programmable display
- Positioning can be freely adjusted and locked

► Page 1377



drylin® W with fixed measuring display

- Max. rail length: up to 2,000mm
- Measuring display fixed in place
- Moving rail with stationary carriage

► Page 1378



drylin® W for external data output

- Variable sensor type, output power and cable length
- Cable guide and protection through igus® e-chain®
- 1 and 4 edge triggering

► Page 1380

Stop motion measuring system with rail scale

- econ measuring system based on drylin® pre-load prism slide
- Carriages with individually adjustable pre-load in 4 different strengths
- Including scaling on the rail

► Page 1381

Digital drylin® measuring systems | Technical data

Measuring display for series SLWM/QKM



Properties	
Measuring principle	Incremental, with zero function
Display	LCD display 7.5mm high digits
Display accuracy	Max. 0.1mm
Display/display area	-99999 ... +99999
Function	Digit direction, decimal point, unit of measurement (mm, imperial), preset activation
Power supply	Battery 1/2 AA, 3.6V integrated, service life of up to 4 years
Magnetic sensor	Securely connected (external)
Type	Installation housing
Housing	Polymer
Protection class	IP54 display IP67 sensor
Working temperature	0...+50°C
Humidity	35-85%
Speed	Max. 2.5m/s
Display keyboard	3 function buttons

Measuring displays for series WKM2/WKMEDR



Properties	
Measuring principle	Incremental, with absolute value function
Display	Low power LCD with integrated sensor, quasi absolute, battery operated
Display accuracy	Max. 0.1mm
Repeatability	± 1 digit
Display/display area	-99999 ... +99999
Function	Freely programmable, e.g. parameter, resolution or offset
Resolution	0.01 0.05 0.1 1mm 0.001, 0.01 inch Freely programmable angled display
Keys	3 keys, membrane keypad
Power supply	Battery integrated, service life of up to 10 years
Magnetic sensor	Securely connected
Reading distance	≤ 1.5mm integrated sensor ≤ 2mm external Sensor
Type	Installation housing
Housing	Zinc die-casting
Protection class	IP20 overall device IP60 display page
Working temperature	0...+60°C
Humidity	≤ 95% rel. humidity, condensation not permissible
Speed	≤ 10m/s
EMC	EN61000-6-2 interference immunity / immission EN 61326-1 emitted interference / emission (class B)

Digital drylin® measuring systems | Technical data

Length measuring system WKMEX

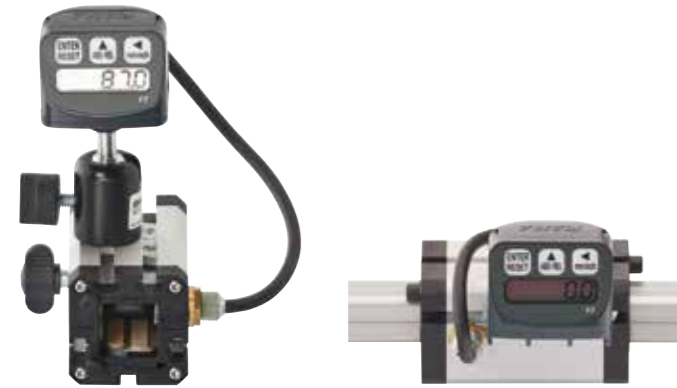


Properties	
Measuring principle	Incremental
Repeatability	± 0.025mm
Measuring principle	Linear
Pole division	5mm
Sensor housing	Zinc die-casting
Protection class	IP67
Application temperature	-10 ... +70°C
Bearing temperature	-25 ... +85°C
Max. humidity	95%, non-condensing
Max. travel speed	4.0m/s
VDC power supply	5 VDC or 10... 30 VDC
Current draw	5 VDC: Max. 200mA 30 VDC: Max. 150mA
Evaluation electronics	Sensor with integrated evaluation electronics and index impulse
Output power	5 V-TTL line driver or 10.. 30 V_HTL
Source tracks	A, A', B, B', Z, Z'
Max. cable length	Max. cable length 5V/5V-TTL: 10m 10-30V/10-30V: 30m 10-30V/5V-TTL: 50m
Max. permissible distance from magnetic tape	2.0mm
Connection method	Open cable ends

Magnetic tape for measuring display WKM



Properties	
Encoding	Incremental, single-track system
Basic pole division	5mm pole division
Band width	10mm
Operating temperature, processed	0° ... +60°C
Tape structure	Magnetic tape stuck on with adhesive tape
External magnetic influence	External magnetic fields on the magnetic tape surface must not exceed 64mT (6400e; 52KA/m) as this can damage or destroy the magnetic tape encoding
Protection class	Carrier tape, stainless steel (optional)



Order key

Type	Option	Size
------	--------	------

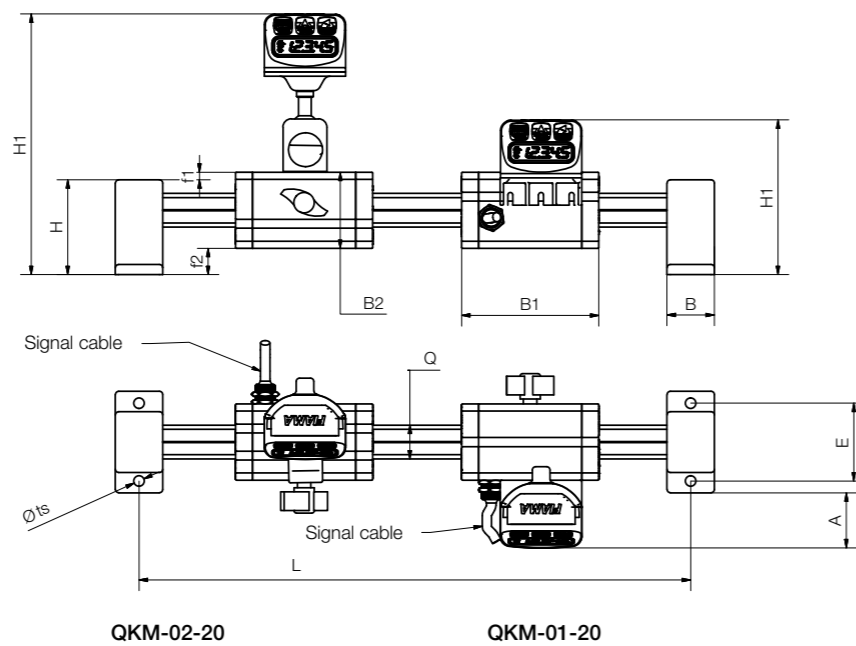
Q K M- 01 -20

Square	Measuring system	Metric	Carriage type	Installation size
--------	------------------	--------	---------------	-------------------

Options:

- 01: Display flexible with angle joint
- 02: Display fixed in place

- Protected magnetic tape
- Attachment options using slot nuts
- Manual clamp on carriage
- Unsupported attachment
- Profile AWMQ-20 max. Length 1,500mm
- Sensor integrated in the carriage, saving space
- Technical data ► Page 1374



Dimensions [mm]

Part No.	M max. [Nm]	L Shaft end support + carriage + stroke	B h7	B1	B2	H	H1	E	Q	ts	f1	f2	A
QKM-01-20	10	28 + 94 + stroke	28	94	45	58	155	46	20	6.2	4.5	15.5	33
QKM-02-20	10	28 + 94 + stroke	28	94	45	58	92	46	20	6.2	4.5	15.5	33



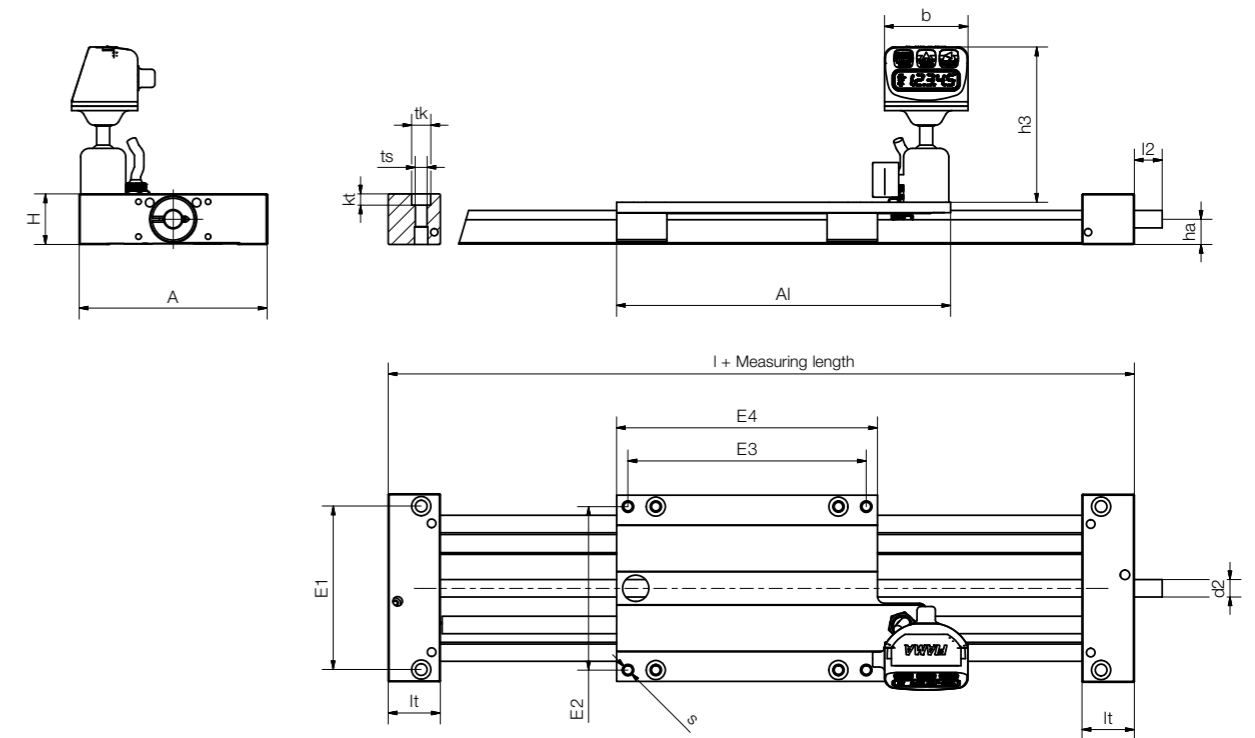
Order key

Type	Size
------	------

SLW M-1080

drylin® SLW linear module	Measuring system	Installation size SLW linear module
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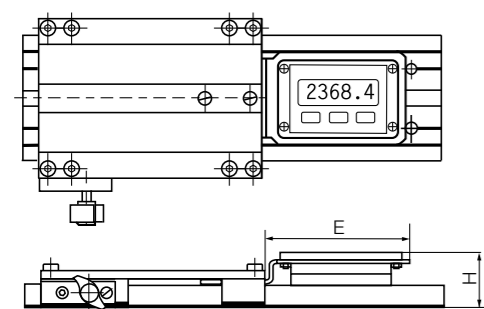
- Space-saving sensor integrated in the carriage
- Operation without mains supply
- Integrated magnetic tape
- Extensive accessories available
- Technical data ► Page 1374
- Technical data drylin® linear module SLW
► Page 1608



Dimensions [mm]

Part No.	A	A1	H	E1	E2	E3	E4	I	I2	It	tk	kt	ts	Øs	ha	d2	h3	b
SLWM-1080	108	192	29	94	94	137	150	236	17	22	11	6.4	6.8	6.6	14.5	Tr10x2	90	50

WKM2, series 10 and 20



Order key

Type	Design
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WKM2-10-80-15-01-R

drylin® W measuring system	Installation size	Rail width	Carriage length	Number of carriages	Display right-mounted
----------------------------	-------------------	------------	-----------------	---------------------	-----------------------

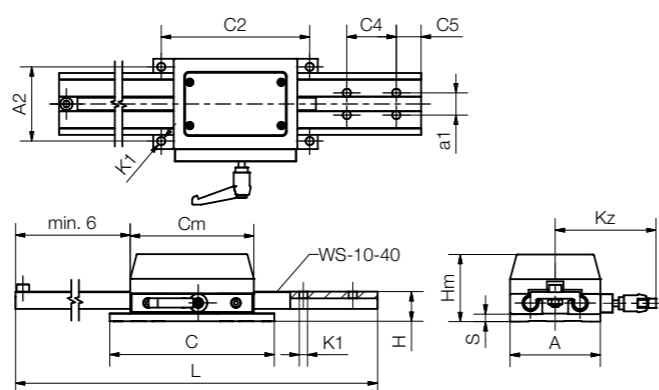
- Lockable carriage
- Display optionally to the right (R) or left (L) of the guide carriage
- Max. rail length 4,000mm (effective measuring length max. 3,757mm)
- Technical data ► Page 1375

Dimensions [mm]

Part No.	drylin® rail profile ⁸⁹⁾	H	E
WKM2-10-80-15-01-L	WS-10-80	36	93
WKM2-10-80-15-01-R	WS-10-80	36	93
WKM2-20-80-15-01-L	WS-20-80	40	93
WKM2-20-80-15-01-R	WS-20-80	40	93

⁸⁹⁾ Profile dimensions ► Page 1116

WKM2, series 11



Dimensions [mm]

Part No.	L	C4	C5	a1	C2	A2	K1	C	A	H	S	Cm	Hm	kz
WKM2-11-40	max. 2,000	40	20	18	120	60	6.6	133	73	24	6	100	54	82

Order key

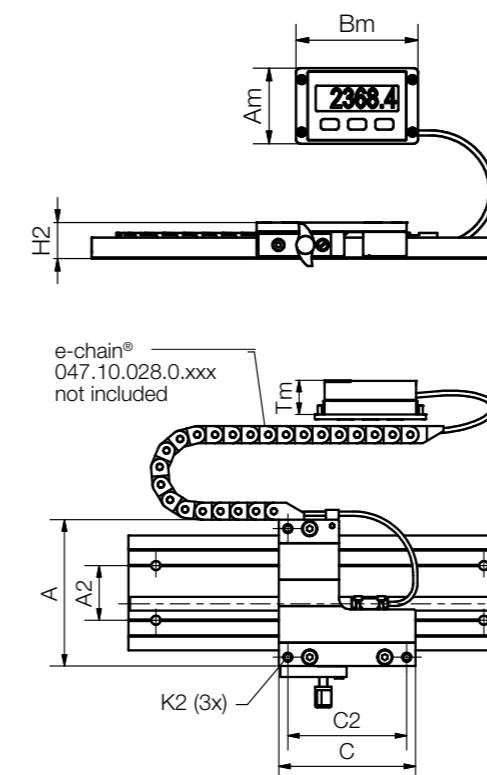
Type	Size
------	------

WKMED R -10-80-10-0.3-01-2400

drylin® W measuring system	External Display	Assembly right	Installation size	Rail width	Carriage length	Cable length ¹⁶⁵⁾	One measuring carriage per rail	Rail length [mm]
----------------------------	------------------	----------------	-------------------	------------	-----------------	------------------------------	---------------------------------	------------------



- Technical data ► Page 1374



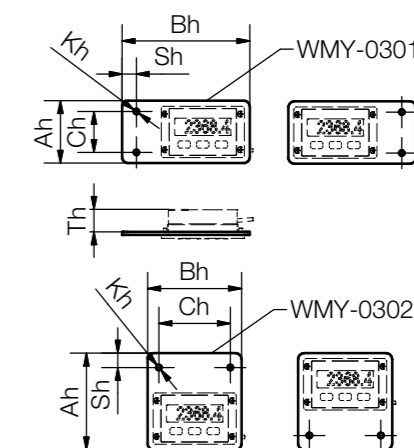
Options:

R: Assembly to the right of the guide carriage

L: Assembly to the left of the guide carriage

¹⁶⁵⁾ Cable length:

Cable length between sensor and display [m]
(0.1/0.2/0.3 up to max. 2.0)



Assembly options of the external display

Dimensions [mm]

Part No.	A	C	A2	C2	K2	H2	Am	Bm	Tm
WKMED-□ ⁹⁰⁾ -10-80-10	107	100	94	87	M6	±0.17 24	82	51	25
WKMED-□ ²⁹⁰⁾ -10-80-10	107	100	94	87	M6	24	82	51	25

⁹⁰⁾ Suitable for assembly on the right (R) or left (L)

Bracket dimensions [mm]

Part No.	Ah	Bh	Ch	Sh	Kh	Th
WMY-0301	61	125	40	14	ø5.4	22
WMY-0302	94.5	92	70	14	ø5.4	22

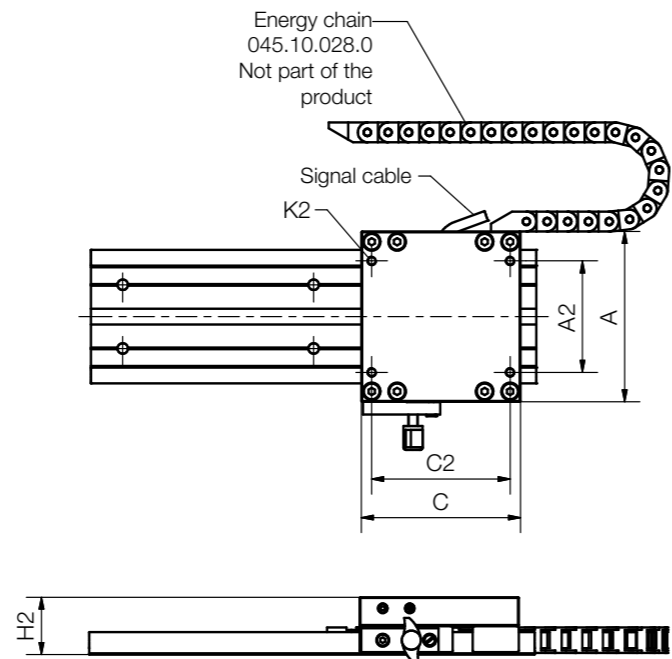
Order key

Type Size/Design
WKMEX-10-80-10-2.5-00-01-1000

drylin® W measuring system	External data output	Installation size (shaft Ø)	Rail width	Rail length 100mm	Cable length [m]	Sensor version	Number of carriages	Rail length [mm]
----------------------------	----------------------	-----------------------------	------------	-------------------	------------------	----------------	---------------------	------------------



- At 4 edge triggering (setting parameters of the display or control system, for example IW4) and +20°C ambient temperature:
resolution: $\pm(0.025 + 0.02 \cdot L)$ L = measurement length in metres; repeatability: $\pm 0.025\text{mm}$
- At 1 edge triggering (setting parameters of the display or control system, for example IW1) and +20°C ambient temperature:
resolution: $\pm(0.1 + 0.02 \cdot L)$ L = measurement length in metres; repeatability: $\pm 0.025\text{mm}$
- Small sensor with integrated evaluation electronics
- Output signals: push-pull continuous short-circuit proof with inverted signals (A, A/, B, B/, Z, Z/)
- Technical data ► [Page 1375](#)



Dimensions [mm]

Part No.	H2	C	C2	A	A2	K2	Resolution
WKMEX-10-80	36	100	87	107	70	M6	0.1

Versions

Sensor version	Nominal voltage	Output power	Max. length of signal cable
00	10-30V	HTL 10-30V	30m
01	10-30V	TTL Line Driver	50m
11	5V	TTL Line Driver	10m

To place an order, please add the sensor type to the part number.

Order example: WKMEX-10-80-10-2.5-00

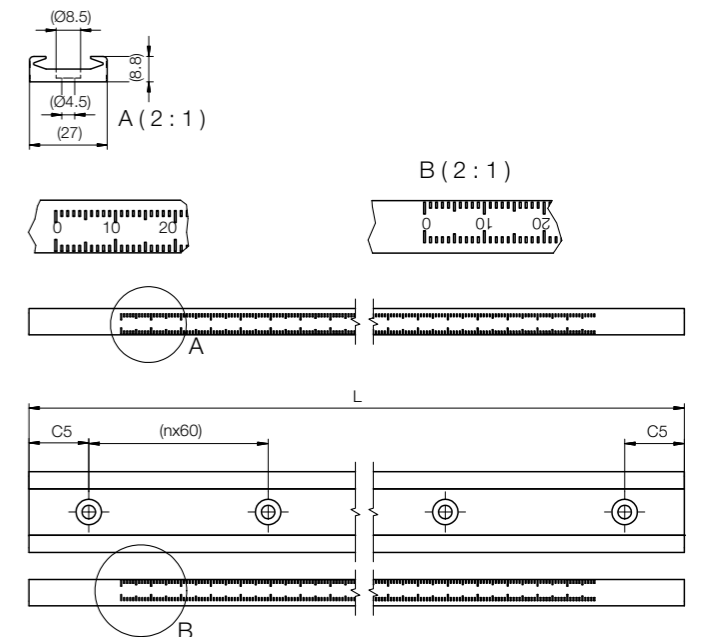
Order key

Type Size
NKV-27-MES-1000

drylin® pre-load prism slides	Installation size	Measuring system	Measuring length
-------------------------------	-------------------	------------------	------------------



- econ measuring system based on drylin® pre-load prism slide
- Carriages with individually adjustable pre-load in 4 different strengths
- Including scaling on the rail
- Cost-effective, durable, practical
- Guaranteed holding forces from 1.3N to 11.7N
- Due to stop motion pre-loading, the measuring system is suitable for vertical installation without any further clamping

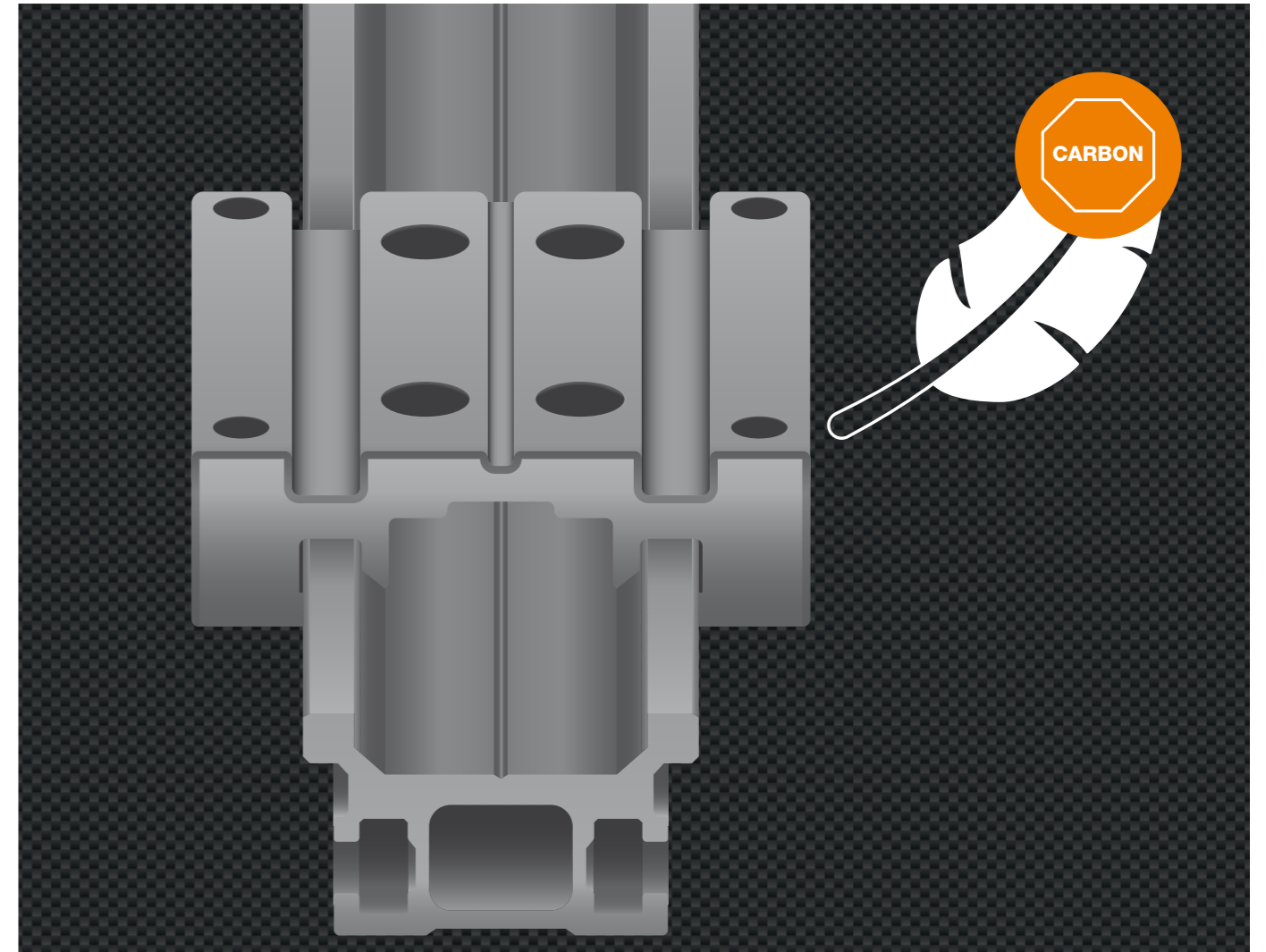
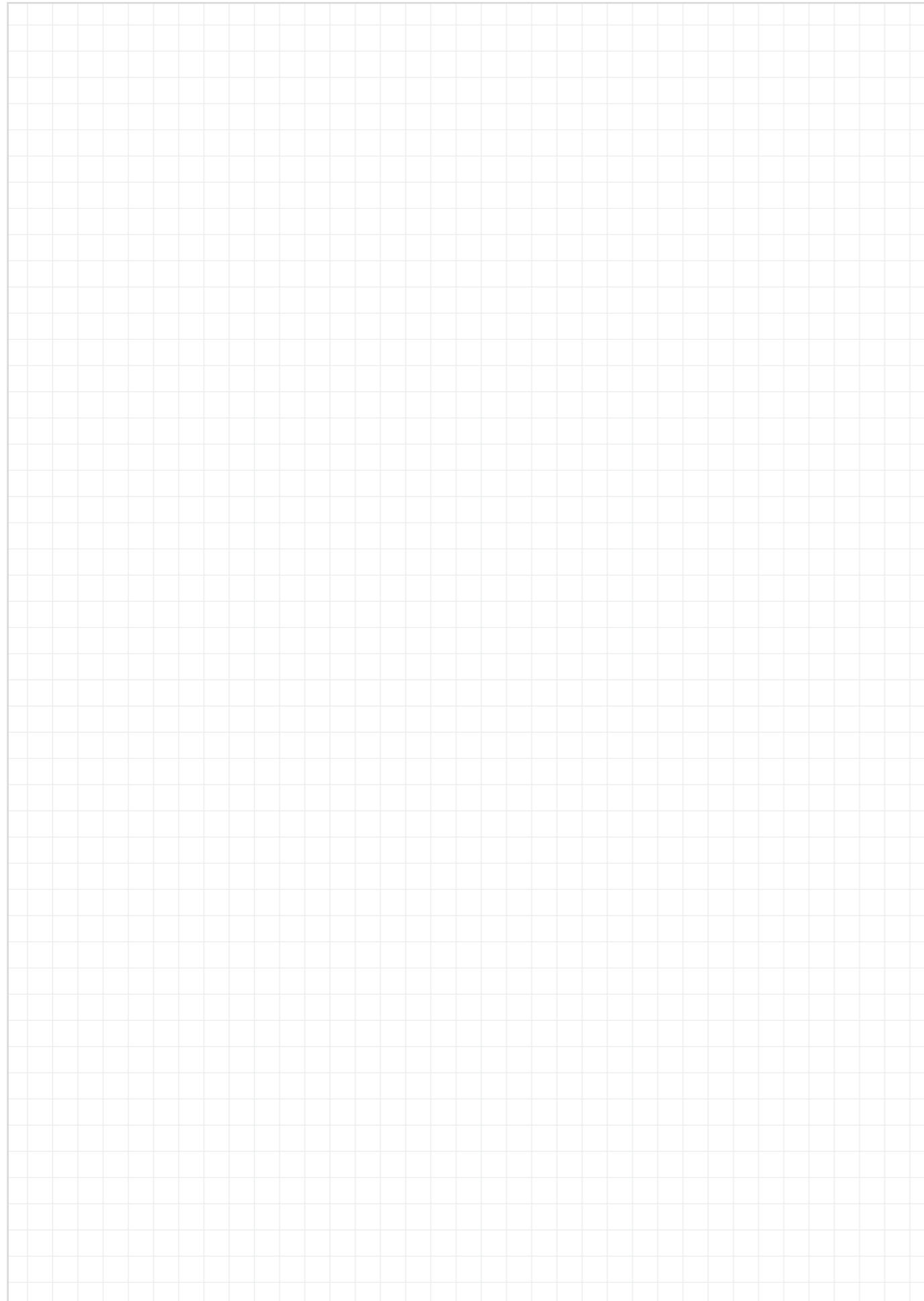


Dimensions [mm]

Part No.	A	AI	H	E1	E2	E3	L ¹⁴⁹⁾
	± 0.2	-0.1	± 0.2	± 0.15	± 0.15	± 0.15	
NKV-27-MES-1000	27	35/60	22	15	18	30	35/53/60/78
NKV-27-MES-2000	27	35/60	22	15	18	30	35/53/60/78

Part No.	hw	lt	lb	ts	tg	Average displacement force [N]	K1
	± 0.25	± 0.2					
NKV-27-MES-1000	22.5	20.5	5.5	3.5	M3	2 - 15	4.5
NKV-27-MES-2000	22.5	20.5	5.5	3.5	M3	2 - 15	4.5

¹⁴⁹⁾ Depends on selected variant



drylin[®] linear technology - carbon fibre

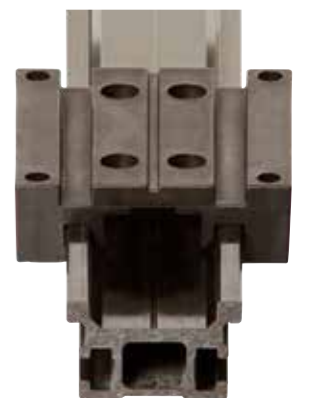
Lightweight and robust

Non-metallic

Non-magnetic

X-ray transparent

Lubrication and maintenance-free



Extremely light and 100% lubrication-free


Extremely lightweight: drylin® carbon fibre


Extremely lightweight and yet extremely strong - tribologically optimised drylin® linear systems made from plastic and carbon fibre combine these properties. Whether as guide or linear axis: All systems are 100% lubrication and maintenance-free.


- Extremely lightweight
- Wear-resistant
- Tough and reliable
- Non-metallic
- Non-magnetic
- X-ray transparent

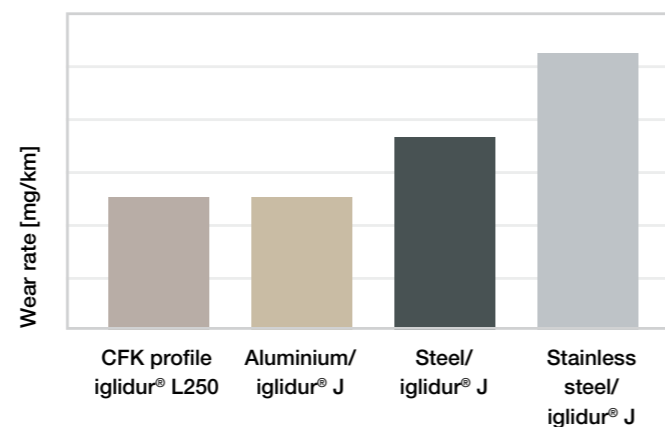
Typical application areas

- Aircraft interior
- Laboratory and medical technology
- Measuring technology

 **Available in 3-8 days**
Detailed information about delivery time online.

 **Price breaks online**
No minimum order value. No minimum order quantity

 **Max. +60°C**
Min. 0°C



High strength carbon made in pultrusion process

Tribologically optimised drylin® W rails made from carbon fibre

Solid plastic carriage made from lubrication-free iglidur® L250

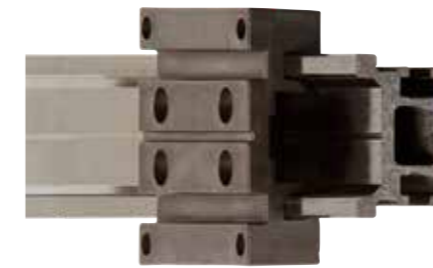
Extreme weight saving
25% lighter than aluminium
75% lighter than steel

Available as linear guide or with drive (lead screw/toothed belt)

High strength and resistant

End block drive shaft supported with dry operating xiros® ball bearings with balls made of glass or plastic

Linear guides and modules made of solid plastic and carbon fibre



drylin® W linear guide made of carbon/solid plastic

- Extremely lightweight and strong carbon profile
 - Tribologically optimised
 - Solid plastic carriage made from iglidur® L250
- Page 1386



drylin® ZLW toothed belt axis with carbon profile

- Absolutely non-metallic
 - Neoprene toothed belt drive with glass fibre reinforcement
 - Max. stroke length 1,000mm
- Page 1387



drylin® SAW linear module made from carbon fibre

- drylin® W profile made of carbon fibre
 - Drive: Trapezoidal or high-helix lead screw
 - Lightest version with carbon, solid plastic, aluminium lead screw
- Page 1388



drylin® SHTP linear module with round carbon fibre shafts

- Very lightweight due to carbon fibre hollow shafts and solid plastic
 - Ideal for multi-carriage solutions, also opposite
 - Configurable with accessories for manual and electric adjustment
- Page 1389



drylin® CWM round shaft made from carbon fibre

- Very lightweight due to hollow shaft geometry
 - Hollow rail for supply lines
 - Surface UCU (unidirectional/cross-winding/ unidirectional)
- Page 1390

drylin® W carbon fibre | Product range

Linear guide system - extremely lightweight and strong

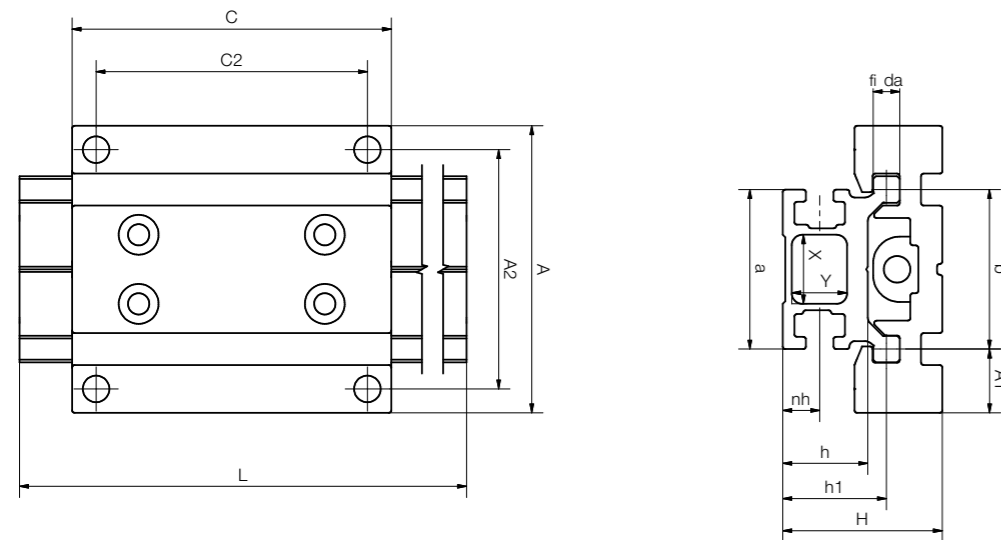


Order key
Complete system

Type Dimensions [mm]/Type

W K P C-06-30-06

drylin® W	Complete system	Polymer	Carbon	Shaft Ø	Rail width	Carriage length
-----------	-----------------	---------	--------	---------	------------	-----------------



Technical data - guide rail made from carbon

Part No.	Fmax. radial		Weight	ly	lz
	stat. [N]	dyn. [N]			
WSPC-06-30	300	60	410	30,391	11,674

Dimensions [mm] - guide profile made from carbon

Part No.	a	b	da	h	h1	nh	X	Y	L
WSPC-06-30	30	30	-0.1	16	19.5	7	13	10	3,000

Dimensions [mm] solid plastic guide carriage made from iglidur® polymer

Part No.	H	A1	A	A2	C	C2
WWPL-06-30-06	30	12	54	45	60	51

EN 06/2023



drylin® ZLW carbon fibre | Product range

Toothed belt axis - non-metallic



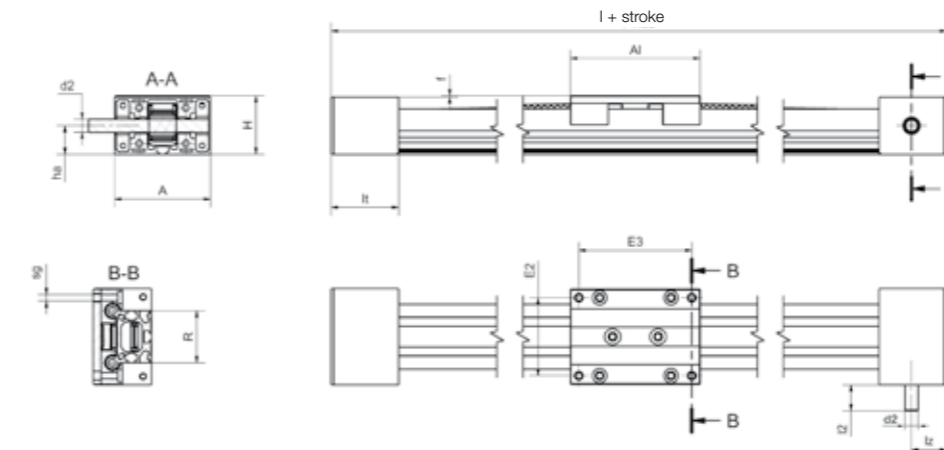
Order key

Type Dimensions [mm]/Type

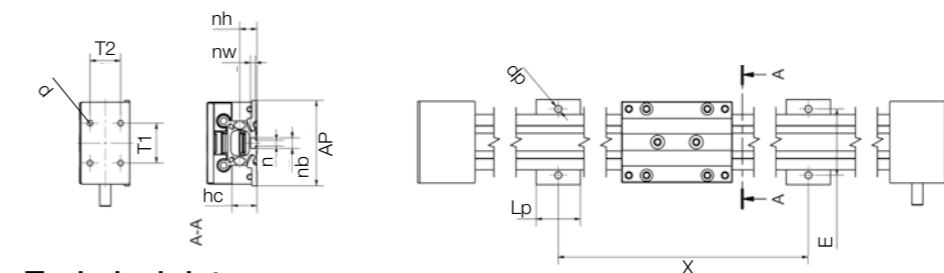
ZLW-06 30- P - 1000

Toothed belt axis	Shaft Ø	Rail width	Polymer	Stroke length
-------------------	---------	------------	---------	---------------

- Guide profile made from carbon
- Linear carriage made from iglidur® polymer



Connecting dimensions



Technical data

Part No.	Weight without stroke [kg]	Weight 100mm stroke [kg]	Max. stroke length [mm]	Transmission [mm/rev]	Tooth profile	Material	Drive belt	
							width [mm]	Tension [N]
Basic 02 P	0.3	0.08	1,000	54	HTD 3M	Neoprene with GF	9	25

Dimensions [mm]

Part No.	A	Al	H	E2	E3	I	R	f	lt	ha	lz	l2	d2
ZLW-0630-P	-0.3		31	±0.15	±0.15	144	±0.15	3	-0.3	14	20	20	h9

Connecting dimensions

Part No.	X	E	AP	Lp	dp	d	T1	T2
ZLW-0630-P	variable	±0.2	-1.0	15	5.5	3	±0.25	-0.3

EN 06/2023



drylin® SAW carbon fibre | Product range

Linear module with high profile carbon fibre - lightweight and robust



- Guide profile made from carbon
- Linear carriage made from iglidur® polymer

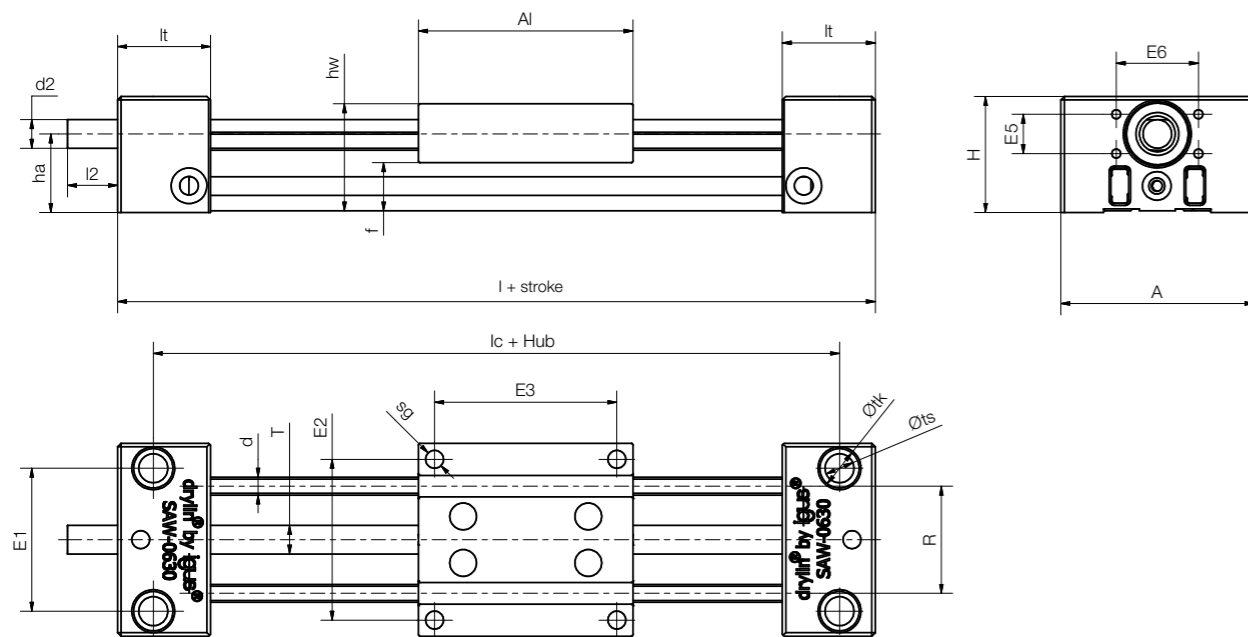


Order key
Complete system

Type	Dimensions [mm]/Type
------	----------------------

SAW-0630-P-1000

drylin® linear module	Shaft Ø	Rail width	Polymer	Stroke length
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Technical data

Part No.	Stroke length [mm]	Weight		Max. rotational speed [1/min]	Max. static load capacity	
		Standard [kg]	Additional per 100mm [kg]		axial [N]	radial [N]
SAW-0630-P-...	300	0.25	0.07	1,000	50	50

Dimensions [mm]

Part No.	A	Al	H	E1	E2	E3	E5	E6	I	lc	hw	f	It
	-0.3			±0.15	±0.15	±0.15							±0.1
SAW-0630-P-...	54	60	32.5	40	45	51	11	23	112	92	80	13.5	26

Part No.	tk	ts	sg	d	T	l2	d2	ha
SAW-0630-P-...	11	6.6	5	□ 5	8	15	Tr8x1.5	22

drylin® SHTP carbon fibre | Product range

Linear module with carbon fibre hollow shafts - ideal for multi-carriage solutions



- Lead screws made from carbon
- Linear carriage made from iglidur® polymer

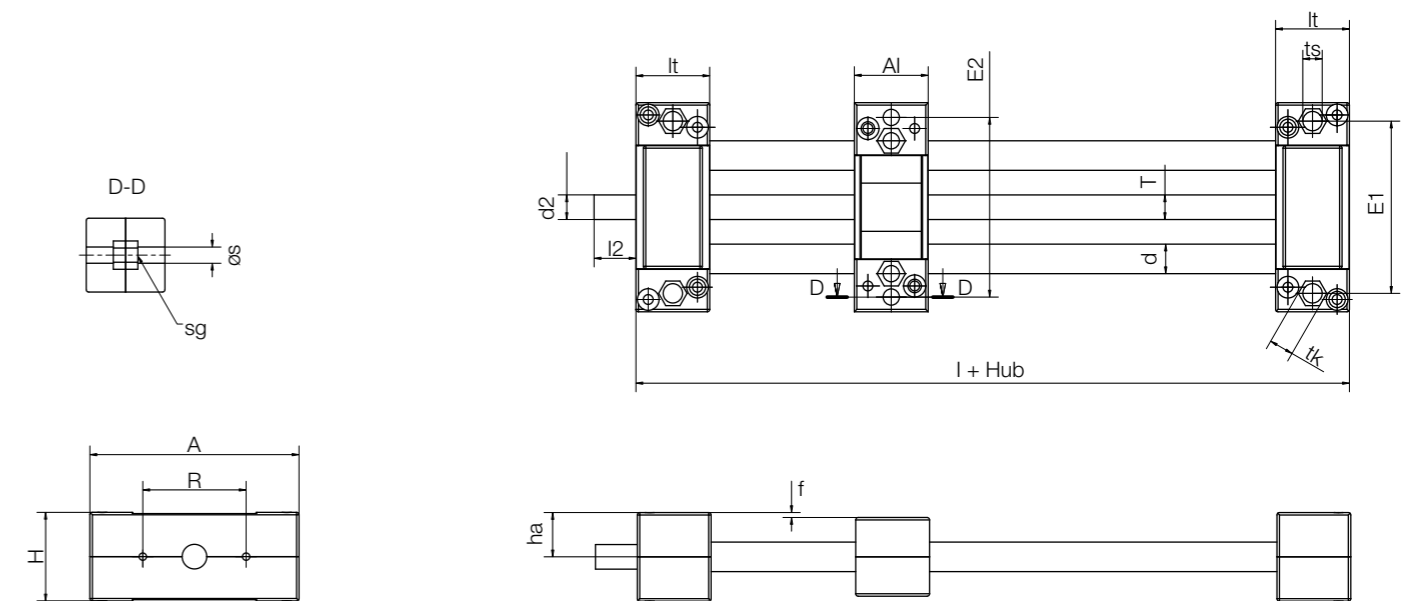


Order key
Complete system

Type	Dimensions [mm]/Type
------	----------------------

SHT P-01-12-CWM

Linear module	Polymer	Design	Dimension	Carbon fibre shaft
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Technical data

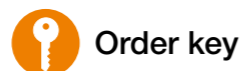
Part No.	Max. stroke length [mm]	Carbon fibre shaft		More information
		Weight [kg]	additional [kg] (per 100mm)	
SHTP-01-12-CWM	500	0.3	0.06	Drive nut and linear bearings made from iglidur® J
SHTP-02-12-CWM	500	0.3	0.06	Bearing and nut integrated into the carriage

Dimensions [mm]

Part No.	A	Al	H	E1	E2	I	R	f	It	tk	ts
									±0.1		+0.15
SHTP-01-12-CWM	85	30	36	70	73	90	42	2	30	10	6.0
SHTP-02-12-CWM	85	30	36	70	73	90	42	2	30	10	6.0

Part No.	Øs	sg	d	T	l2	d2 ⁹⁹⁾	ha	Max. static load capacity	
								axial [N]	radial [N]
SHTP-01-12-CWM	6.3	M6	12	Tr10x2	17	Tr10x2	18	100	100
SHTP-02-12-CWM	6.3	M6	12	Tr10x2	17	Tr10x2	18	100	100

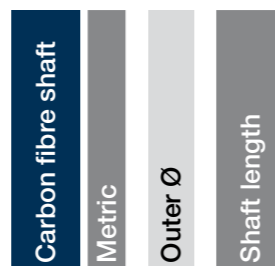
⁹⁹⁾ Lead screw end unmachined (standard)



Order key

Type Dimensions [mm]

CW M-12-300



- Material: CFK composite
- Roundness tolerance: $\pm 0.05\text{mm}$
- Diameter tolerance: -0.1mm
- Application temperature: Max. $+80^\circ\text{C}$

Dimensions [mm]

Part No.	Design	Diameter -0.1	Max. length	Weight [g]
CWM-12	Hollow shaft	12/9	2,000	70
CWM-16	Hollow shaft	16/12.5	2,000	120
CWM-20	Hollow shaft	20/16	2,000	170
CWM-30	Hollow shaft	30/26	2,000	270



drylin® linear technology - stainless steel

Temperature-resistant up to $+250^\circ\text{C}$

Corrosion-resistant

Chemical resistance

Ready-to-install linear guides and modules

Lubrication and maintenance-free



Machine parts made of stainless steel are designed to survive in the worst environments. Heat, pressure, seawater, liquid and gaseous media like detergents and other chemicals. If these machine parts also have to work as a bearing, the combination with iglidur® high-performance polymers is ideal. All bearings are lubrication-free and the plastic parts are secured axially and radially in the housings with positive fit.



The suitable iglidur® material can be selected according to the application and used for linear and/or rotary movements.

- Lubrication-free
- Temperature-resistant up to +250°C
- Corrosion-resistant
- Chemical resistance
- Cost-effective

The use of **AISI 316Ti** and **AISI 304** makes of the guides resistant to seawater and chemical contact corrosion, and the guide shafts are also made from AISI 316Ti. Despite the lack of surface hardness, required for instance by recirculating ball bearings, they are suitable for use with plain bearings. The large contact surface of a plain bearing diminishes the surface pressure to a mostly safe value.

Typical application areas

- Food and bottling industry
- meat processing
- Harbour and crane facilities
- Yacht building
- Chemical industry
- Electroplating industry
- Medical and rehabilitation technologies
- Packaging industry



Lubrication freedom with drylin® for a baking and conveyor unit

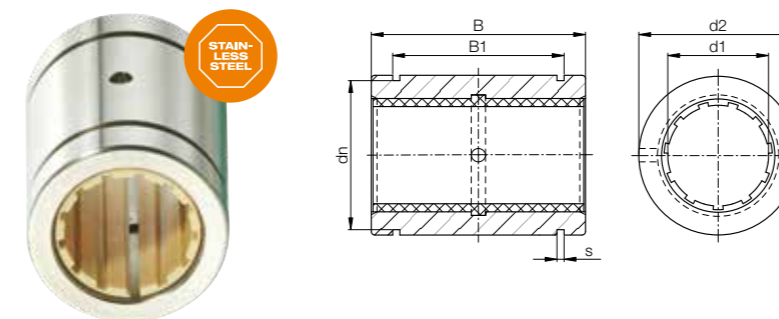


drylin® W guide rails are accredited to cleanroom-standards and therefore used in this blister machine

Closed stainless steel adapters made of stainless steel 303

Order key

Type	Size	Material
R J U M-01-12-ES		
Closed	igidur® J	Liner
	Metric	Standard
	Inner Ø d1	Stainless steel



- Secured by circlips

i ⁷⁸⁾ According to igus® testing method ► Page 1330
⁸²⁾ Design tips ► Page 1256
 Please note: Installation instructions ► Page 1257

Dimensions [mm]

d1	d2	B	B1	Øs	dn	Part No.
	H7	h10	H10	H10	h10	
12	22	32	22.6	1.30	20.5	RJUM-01-12-ES
16	26	36	24.6	1.30	24.2	RJUM-01-16-ES
20	32	45	31.2	1.60	29.6	RJUM-01-20-ES
25	40	58	43.7	1.85	36.5	RJUM-01-25-ES
30	47	68	51.7	1.85	43.5	RJUM-01-30-ES

Technical data

Part No.	d1 tolerance ⁷⁸⁾ [mm]	Fmax. dynamic ⁸²⁾	Fmax. static ⁸²⁾	Weight [g]
		p = 5MPa [N]	p = 35MPa [N]	
RJUM-01-12-ES	+0.030 +0.088	960	6,720	60
RJUM-01-16-ES	+0.030 +0.088	1,440	10,080	84
RJUM-01-20-ES	+0.030 +0.091	2,250	15,750	147
RJUM-01-25-ES	+0.030 +0.091	3,625	25,375	324
RJUM-01-30-ES	+0.040 +0.110	5,100	35,700	486

Available with drylin® liners (optional: J200/A180):



Single rails round, made of 316 stainless steel



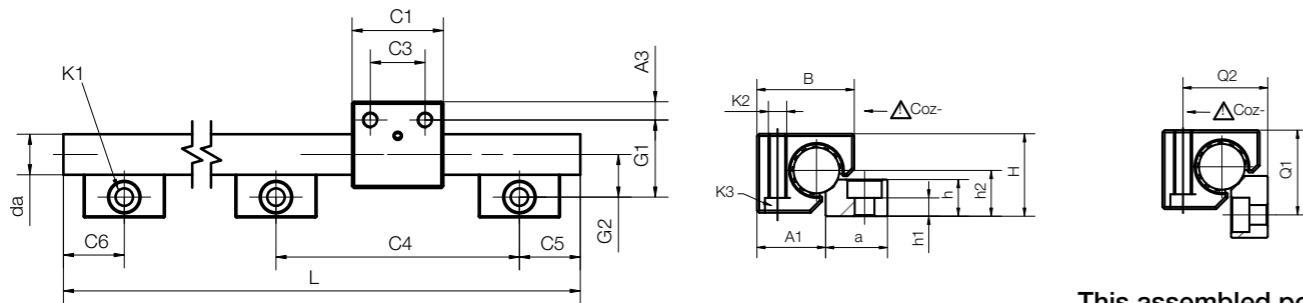
Order key - single rail

Type	Material
------	----------

WS-10-ES-FG

Guide rail	Shafts Ø	Stainless steel	Precision casting
------------	----------	-----------------	-------------------

i Housing and shaft support material
AISI 316
Shafts material
(AISI 316Ti)



This assembled position is not possible for WS-10

Technical data and dimensions [mm]

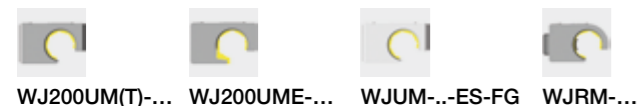
Part No.	Weight [kg/m]	H ⁵⁷⁾	da	L	a	h	h1	h2	G1	G2	A1	Q1	Q2
		±0.25	-0.1	max.	-0.3								
WS-10-ES-FG	0.87	18	10	3,000	27	5.5	5.5 ⁵⁸⁾	9	27.0	17.0	16.5	-	-
WS-16-ES-FG	2.22	27	16	3,000	27	12.0	4.5	14	33.0	19.0	25.0	32.0	28
WS-20-ES-FG	3.37	36	20	3,000	27	16.0	8.0	20	38.0	21.0	30.0	37.0	37
WS-25-ES-FG	5.21	45	25	3,000	32	20.0	9.0	25	46.5	25.5	37.5	45.5	46

Part No.	C1	C3	C4	C5		C6		A3	K1 for screw	Geometrical moment of inertia		Moment of resistance	
				min.	max.	min.	max.			I _y	I _z	W _{by}	W _{bz}
									DIN 912	[mm ⁴]	[mm ⁴]	[mm ³]	[mm ³]
WS-10-ES-FG	29	16	120	20	79.5	20	79.5	6.5	M6 ⁵⁸⁾	491	491	98	98
WS-16-ES-FG	36	18	120	20	79.5	20	79.5	9.0	M8	3,217	3,217	402	402
WS-20-ES-FG	45	27	120	20	79.5	20	79.5	9.0	M8	7,854	7,854	785	785
WS-25-ES-FG	58	36	150	25	99.5	25	99.5	11.0	M10	19,175	19,175	1,534	1,534

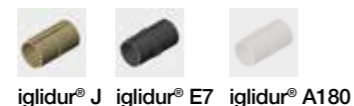
⁵⁷⁾ Height dimension minus the bearing clearance tolerance

⁵⁸⁾ Plain holes

Can be combined with:



Suitable liner material:



Pillow blocks, made from 316 stainless steel

Order key

Type	Design
------	--------

W J UM-01-10-ES-FG

drylin® W	igidur® J liner	Pillow block, round	Standard	Size 10	Stainless steel	Precision casting
-----------	-----------------	---------------------	----------	---------	-----------------	-------------------

Material

ES-FG: Stainless steel precision casting AISI 316

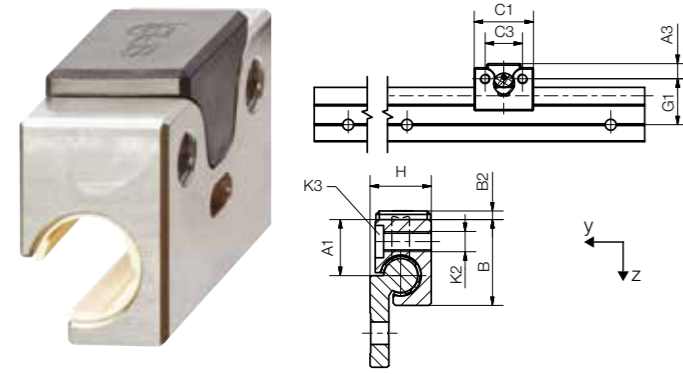


Technical data and dimensions [mm]

Part No.	Weight [g]	B	C1	C3	A3	K2	K3	Stat. load capacity		
								Countersunk head screw	C _{oy} [N]	C _{oz+} [N]
WJUM-01-10-ES-FG ⁵⁹⁾	57	26.0	29	16	6.5	M6	M5	3,800	3,800	950
WJUM-01-16-ES-FG ⁵⁹⁾	134	34.5	36	18	9.0	M8	M6	6,900	6,900	1,450
WJUM-01-20-ES-FG ⁵⁹⁾	280	42.5	45	27	9.0	M8	M6	11,000	11,000	1,900
WJUM-01-25-ES-FG ⁵⁹⁾	564	52.5	58	36	11.0	M10	M8	16,000	16,000	3,600

⁵⁹⁾ Alternative with XUMO-01-... liners for high temperatures available. Part No.: WXUM-01-...

WJRM-01 with single roller



Order key

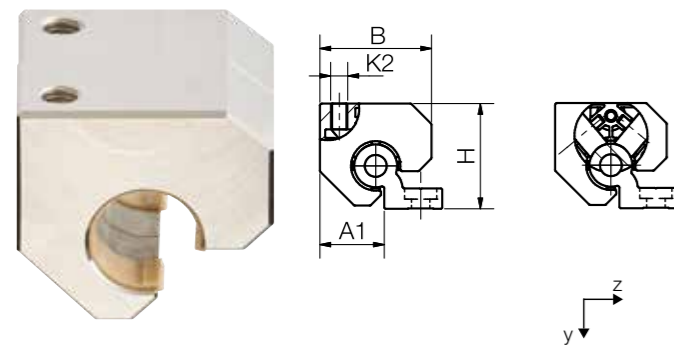
Type	Size	Material
Hybrid roller bearings	With single roller	Size 10
Material		
ES: Stainless steel 1.4571 (AISI 316Ti)		
ES-FG: Stainless steel precision casting AISI 316		

Technical data and dimensions [mm]

Part No.	Stat. load capacity		Dyn. load capacity Cz+ at total running distance [km]				F · v
	Co	10	100	200	max.		
	[N]	[N]	[N]	[N]	[N · m/s]		
WJRM-01-10-ES-FG	250	250	90	50	50		

Part No.	Coefficient of friction in z-direction		Weight [g]	A1	A3	B	B2	C1	C3	G1	H	K2	K3 for screw
	[μ]	[μ]											
WJRM-01-10-ES-FG	< 0.1	-	57	16.5	6.5	26	2.5	35	22	22	18	M6	M5

WJRM-21 with double roller



Order key

Type	Size	Material
Hybrid roller bearings	Double roller bearing	Size 20
Material		
ES: Stainless steel 1.4571 (AISI 316Ti)		
ES-FG: Stainless steel precision casting AISI 316		

Technical data and dimensions [mm]

Part No.	Stat. load capacity		Dyn. load capacity Cy+ at total running distance [km]				F · v
	Co	10	100	200	max.		
	[N]	[N]	[N]	[N]	[N · m/s]		
WJRM-21-20-ES-FG	840	840	300	150	80		

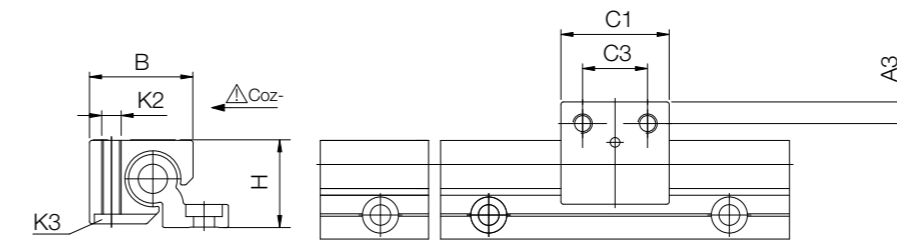
Part No.	Coefficient of friction in z-direction		Weight [g]	A1	A3	B	B2	C1	C3	G1	H	K2	K3 for screw
	[μ]	[μ]											
WJRM-21-20-ES-FG	-	< 0.1	504	30	9	52	-	52	34	38	49	M8	M5



Order key

Type	Size
drylin® W	iglidur® material
iglidur® material	Pillow block, round
Pillow block, round	Replaceable
Replaceable	Standard
Standard	Size
Size	Stainless steel

iglidur® material
X: iglidur® X
A180: iglidur® A180
A160: iglidur® A160
E7: iglidur® E7



Technical data and dimensions [mm]

Part No.	Weight [g]	B	C1	C3	A3	K2	H ±0.25	K3 for countersunk head screw	Static load capacity		
									Co _y [N]	Co _z + [N]	Co _z - [N]
W□UMA-01-10-ES New	57	26.0	29	16	6.5	M6	18	M5	1,200	1,200	250
W□UMA-01-16-ES New	138	34.5	36	18	9.0	M8	27	M6	2,100	2,100	400
W□UMA-01-20-ES New	283	42.5	45	27	9.0	M8	36	M6	3,200	3,200	500
W□UMA-01-25-ES New	575	52.5	58	36	11.0	M10	45	M8	4,800	4,800	950



Installation guide online
► www.igus.eu/WXUMA

Round double rail, made of stainless steel



Order key

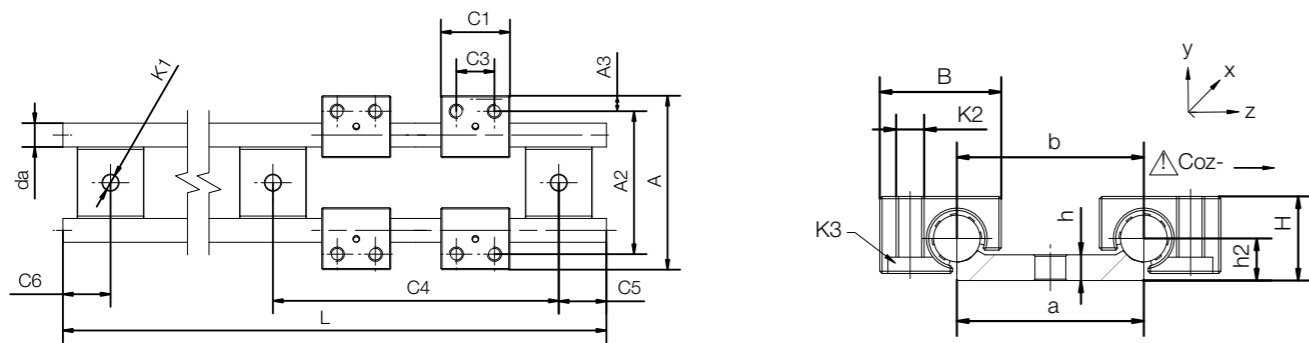
Type

WS-10-40-ES-FG

- Profile rail, round
- Shaft Ø
- Rail width [mm]
- Stainless steel
- Precision casting

Installation size 10-20
Housing and shaft support material
AISI 316
Shaft material AISI 316Ti

Installation size 25
Shaft, shaft support
and housing material AISI 316Ti



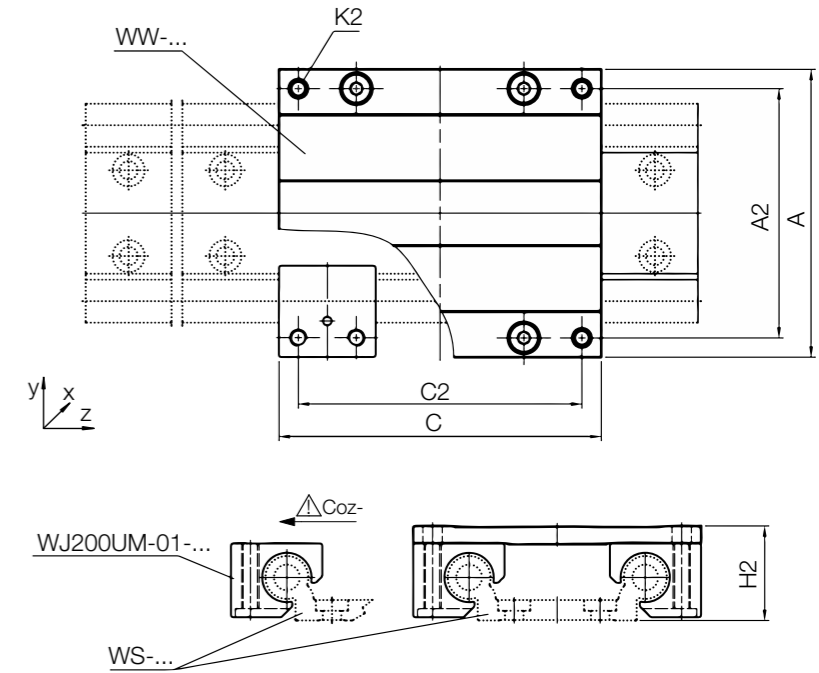
Technical data and dimensions [mm]

Part No.	Weight [kg/m]	H ⁵⁷⁾ ±0.25	da h9	L max.	a -0.3	b	h	h2	A	A2
WS-10-30-ES New	1.53	24	10	3,000	30	30	5.5	9	47	38
WS-10-40-ES-FG	1.58	18	10	3,000	40	40	5.5	9	73	60

Part No.	C4	C5 min.	C5 max.	C6 min.	C6 max.	K1 for screw DIN 912
WS-10-30-ES	120	30	30.0	30	30.0	M6
WS-10-40-ES-FG	120	20	79.5	20	79.5	M6

⁵⁷⁾ Height dimension minus the bearing clearance tolerance

Assembled stainless steel guide carriages, round



Technical data and dimensions [mm]

Part No. ⁶⁴⁾	Weight [kg]	Width Length		A2	C2	K2	H2 ⁵⁷⁾ ±0.25	Static load capacity				
		Coy	Coz					Mox	Moy	Moz		
WW-10-40-10-J200-GESG-PES	0.29	73	100	60	87	M6	24	4,800	2,400	96	170	170
WW-10-40-15-J200-GESG-PES	0.34	73	150	60	137	M6	24	4,800	2,400	96	290	290
WW-10-40-20-J200-GESG-PES	0.40	73	200	60	187	M6	24	4,800	2,400	96	410	410

⁵⁷⁾ Height dimension minus the bearing clearance tolerance ⁶⁴⁾ Optional with manual clamp, suffix "-HKA"

Linear sliding carriage directly replace ball bearing guide - made of stainless steel



Order key

Type

WW-10-30-T15-ES2-□

- Guide carriage
- Shaft Ø
- Rail width [mm]
- Installation size
- Stainless steel
- iglidur® material
material
A160:
iglidur® A160
E7:
iglidur® E7

Technical data and dimensions [mm]

Part No.	H	A	C	A1	A2	C2	K2	st	H1	Weight [kg]
WW-10-30-T15-ES2-□ New	24	47	59	8.5	38	30	M5	6	1.5	0.25
WW-10-40-T20-ES2-□ New	30	63	79	11.5	53	40	M6	10	1.5	0.60

drylin® W modular system based on hygienic design



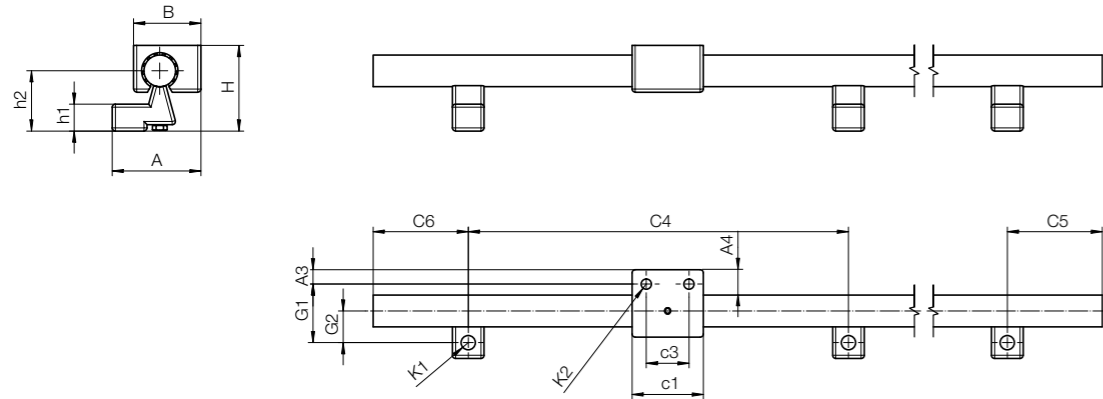
Type

WS-20-ES2-HYD

Profile rail, round	Shaft Ø	Stainless steel	Hygienic design
---------------------	---------	-----------------	-----------------



- Flexible, supported single rails
- Robust double shaft rails
- Smooth round design without corners
- Liner made of iglidur® A160 (compliant with FDA and EU guideline 10/2011 EC)



Technical data and dimensions [mm]

Part No.	H	A	da	B	h1	h2	a1	G1	A3	c1	c3	c4	K1	K2	G2
WS-20-ES2-HYD New	54	56	20	42.5	17	38	80	37	9	45	27	240	9	6.5	20

Part No.	H	B	A3	A4	c1	c3	K2	Weight [g]
WA160UM-01-20-ES2-HYD New	54	42.5	9	16	45	27	6.5	268

drylin® W modular system based on hygienic design



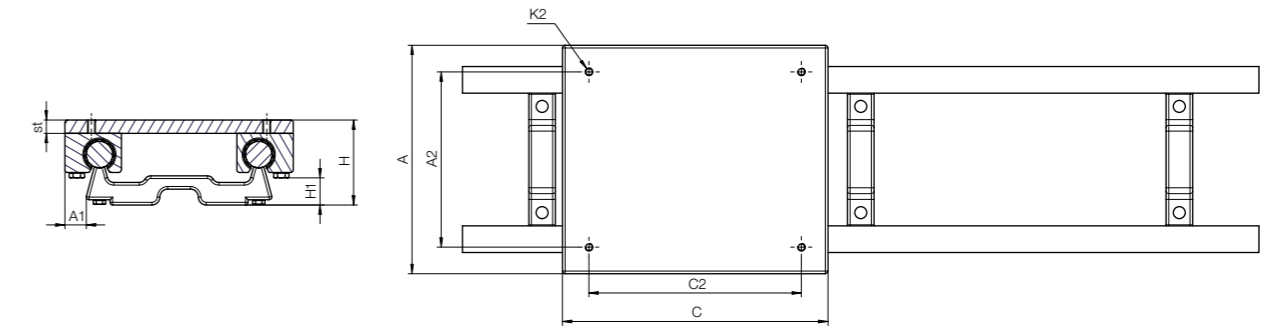
Type

WS-20-120-ES2-HYD

Profile rail, round	Shaft Ø	Shaft Ø	Stainless steel	Hygienic design
---------------------	---------	---------	-----------------	-----------------



- Linear guide according to hygienic design guidelines
- Resistant due to VA stainless steels
- Liners meet conformities for FDA and EU10/2011



Technical data and dimensions [mm]

Part No.	H	A	da	B	a	b	a1	K1	c1	c2	c3	c4	K2	Weight [kg/100mm]
WS-20-120-ES2-xxx-HYD New	54	172	20	42.5	104	120	80	9	45	154	27	240	6.5	0.721

Part No.	H	A	A2	C2	K2	st	A1	H1	Weight [kg]
WW-20-120-20-ES2-HYD New	64	172	132	160	M6	10	16.1	20.5	3.85



EWM

EEWM

EWMR



! igus® recommendation: linear plain bearings equipped with iglidur® E7 liners for 8 times longer service life

🖱️ Contact us!
drylin® shafts can be individually machined. Please send us your drawing or make the configuration online. We can then provide a quick quotation.
▶ www.igus.eu/shaft-configurator

- Completely supported and mounted with standard aluminium support
- For supported shafts:
 - ▶ Partial shaft support supplied in lengths of 600mm max.
 - ▶ Standard pitch T2, T1 also possible upon request
 - ▶ Symmetrical hole pitches C5 = C6

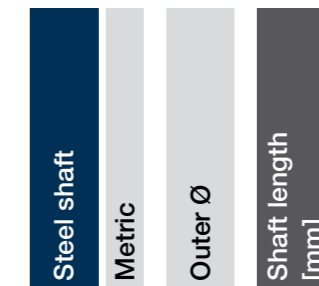
Dimensions [mm] - hardened stainless steel AISI 440B

Part No.	d	Weight [kg/m]	Max. length	Effective hardness depth
EWM-06	06	0.222	3,000	0.8
EWM-08	08	0.359	4,000	0.9
EWM-10	10	0.617	4,000	0.9
EWM-12	12	0.888	6,000	1.0
EWM-16	16	1.578	6,000	1.2
EWM-20	20	2.466	6,000	1.6
EWM-25	25	3.853	6,000	1.8
EWM-30	30	5.549	6,000	2.0
EWM-40	40	9.865	6,000	2.2
EWM-50	50	15.413	6,000	2.4



Type Size Options

EW M- 06 -



Available shaft materials:

AISI 440B, hardened/ground ▶ EWM
AISI 420C, hardened/ground ▶ EEWM
AISI 304, drawn ▶ EWMR
AISI 316Ti, drawn ▶ EWMS

Dimensions [mm] - hardened stainless steel AISI 420C

Part No.	d	Weight [kg/m]	Max. length	Effective hardness depth
EEWM-06	06	0.222	3,000	0.8
EEWM-08	08	0.359	4,000	0.9
EEWM-10	10	0.617	4,000	0.9
EEWM-12	12	0.888	6,000	1.0
EEWM-16	16	1.578	6,000	1.2
EEWM-20	20	2.466	6,000	1.6
EEWM-25	25	3.853	6,000	1.8
EEWM-30	30	5.549	6,000	2.0
EEWM-40	40	9.865	6,000	2.2
EEWM-50	50	15.413	6,000	2.4

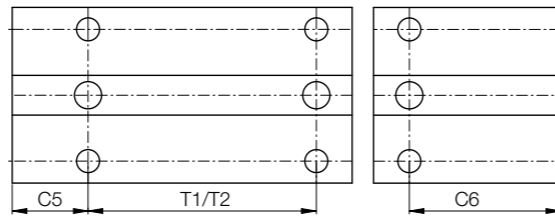
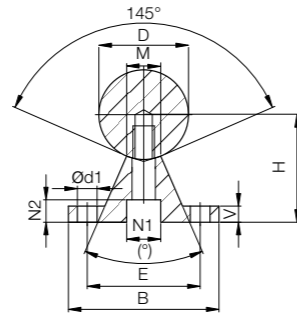
Dimensions [mm] - stainless steel AISI 304 (EWMR) or AISI 316Ti soft stainless steel (EWMS)

Part No.	d	Weight [kg/m]	Max. length
EWMR-10	10	0.617	4,000
EWMS-10	10	0.617	3,000
EWMR-12	12	0.888	6,000
EWMR-16	16	1.578	6,000
EWMR-20	20	2.466	3,000
EWMS-20	20	2.466	3,000
EWMR-25	25	3.853	6,000
EWMR-30	30	5.549	6,000

🛒 Order example:
EWM-16-500: Stainless steel shaft (AISI 440B), with 16mm Ø, 500mm length



EWUM. EEWUM



! igus® recommendation: linear plain bearings equipped with iglidur® E7 liners for 8 times longer service life

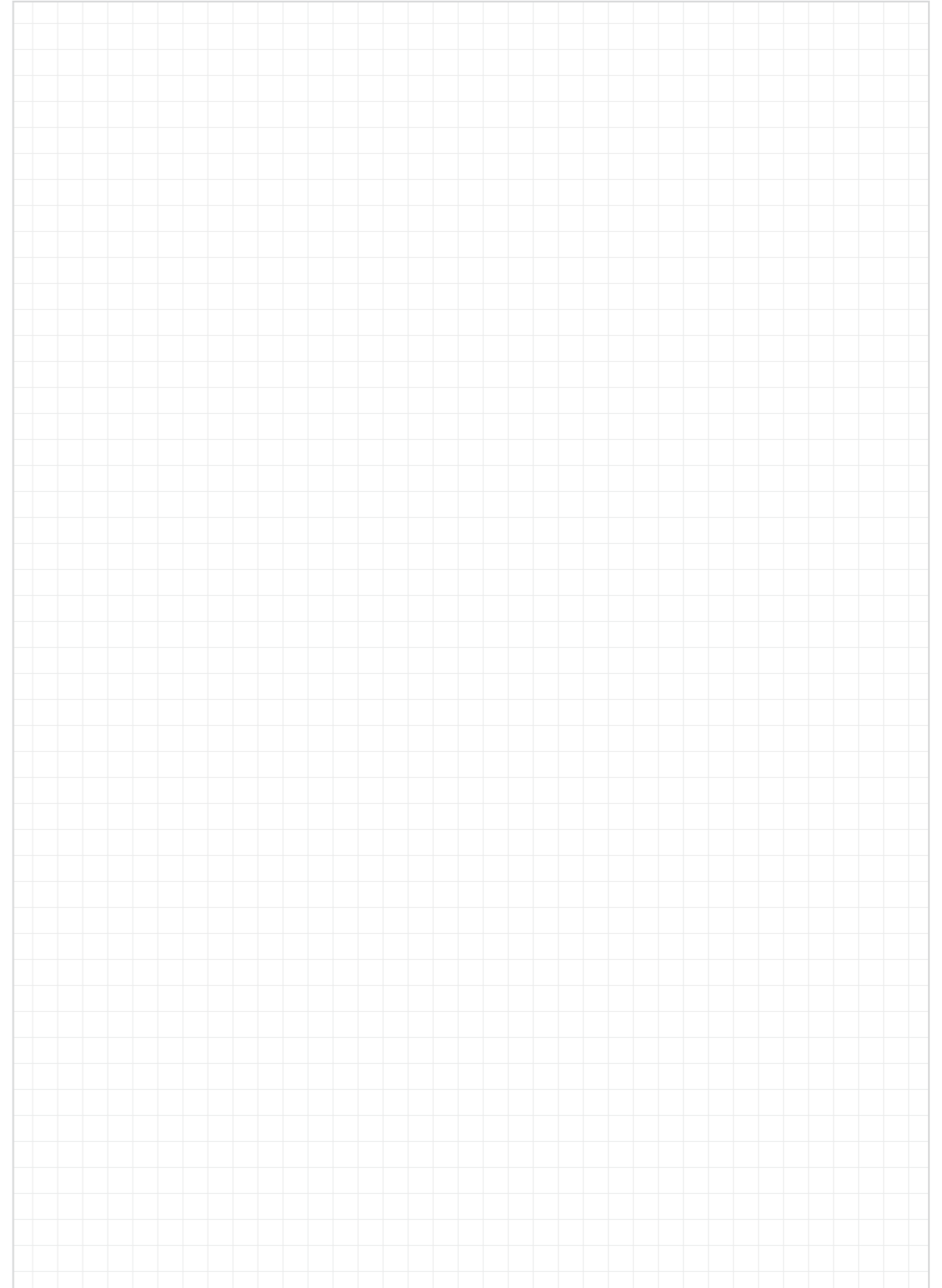
- Completely supported and mounted with standard aluminium support
- For supported shafts:
 - ▶ Partial shaft support supplied in lengths of 600mm max.
 - ▶ Standard pitch T2, T1 also possible upon request
 - ▶ Symmetrical hole pitches C5 = C6

Dimensions [mm] - supported stainless steel shafts EWM (AISI 440B) / EEWUM (AISI 420)

Part No.	D	B	H	V	N1	N2	d1	M	(°)	E	T1	C5/C6		T2	C5/C6		Weight
												min.	max.		min.	max.	
			±0.02								±0.15	for T1	Standard	for T2	Standard	[kg/m]	
□WUM-12	12	40	22	5	8.0	5.0	4.5	5.8	50	29	75	20	57	120	20	79	1.75
□WUM-16	16	45	26	5	9.5	6.0	5.5	7.0	50	33	100	20	69	150	20	94	2.64
□WUM-20	20	52	32	6	11.0	6.5	6.6	8.3	50	37	100	20	69	150	20	94	3.97
□WUM-25	25	57	36	6	14.0	8.5	6.6	10.8	50	42	120	20	79	200	20	119	5.65
□WUM-30	30	69	42	7	17.0	10.5	9.0	11.0	50	51	150	20	94	200	20	119	7.93
□WUM-40	40	73	50	8	17.0	10.5	9.0	15.0	50	55	200	20	119	300	20	169	12.88
□WUM-50	50	84	60	9	19.0	12.5	11.0	19.0	46	63	200	20	119	300	20	169	19.60

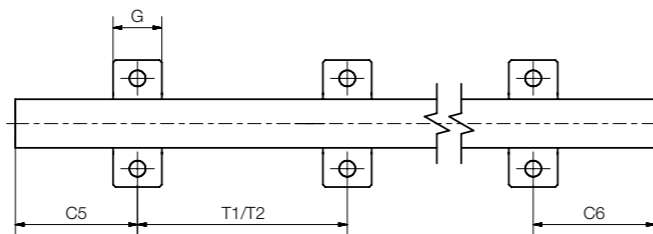
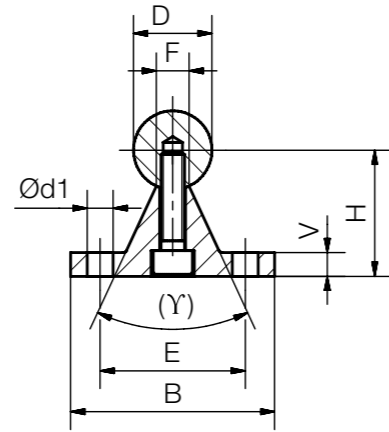
Order example:
EWUM-16-500-T1: Supported stainless steel shaft EWM (AISI 440B) with 16mm outer Ø, 500mm length, T1 pitch
EEWUM-16-500-T1: Supported stainless steel shaft EEWUM (AISI 420C) with 16mm outer Ø, 500mm length, T1 pitch

Notes





EWUM-ES/
EWUMS-ES



! igus® recommendation: linear plain bearings equipped with iglidur® E7 liners for 8 times longer service life

Shaft support blocks for Ø 20mm made of stainless steel VA
 ● Connecting sizes as standard supports made from aluminium

Dimensions [mm] - partially supported stainless steel shafts AISI 440B

Part No.	D h6	B	H ±0.02	V	d1	E	γ	F	G	T1	C5/C6 for T1		T2 Standard	C5/C6 for T2	
											min.	max.		min.	max.
											EWUM-ES-12	12		40	22
EWUM-ES-16	16	45	26	5	5.5	33	-	7.0	16	100	20	69	150	20	94
EWUM-ES-20	20	52	32	6	6.6	37	50°	8.3	20	100	20	69	150	20	94
EWUM-ES-25	25	57	36	6	6.6	42	-	10.8	25	150	20	79	200	20	119
EWUM-ES-30	30	69	42	7	9.0	51	-	11.0	25	150	20	94	200	20	119
EWUM-ES-40	40	73	50	8	9.0	55	-	15.0	25	200	20	119	300	20	169

T2 pitch as standard, T1 upon request



Order example:

EWUM-ES-20-500: Partially supported stainless steel shaft. AISI 440B material, T2 pitch (standard), with 20mm outer Ø, 500mm length



Order key

Type	Size	Options
------	------	---------

EWUMS-ES-20--T1

Partially supported stainless steel shaft, metric	Material	Outer Ø	Shaft length [mm]	Hole pattern
---	----------	---------	-------------------	--------------

Available materials and lengths:

AISI 440B, max 6,000mm

► EWUM

AISI 316Ti, max 3,000mm

► EWUMS

Options

Blank: AISI 440B material

S: AISI 316Ti

Hole pattern

T2: T2 pitch (standard)

T1: T1 pitch

Dimensions [mm] - partially supported stainless steel shafts AISI 316Ti

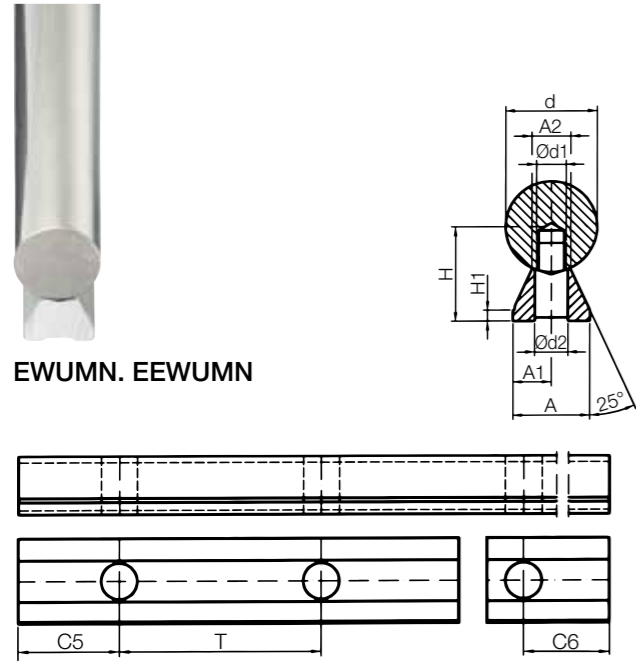
Part No.	D h6	B	H ±0.02	V	d1	E	γ	F	G	T1	C5/C6 for T1		T2 Standard	C5/C6 for T2	
											min.	max.		min.	max.
											EWUMS-ES-12	12		40	22
EWUMS-ES-16	16	45	26	5	5.5	33	-	7.0	16	100	20	69	150	20	94
EWUMS-ES-20	20	52	32	6	6.6	37	50°	8.3	20	100	20	69	150	20	94
EWUMS-ES-25	25	57	36	6	6.6	42	-	10.8	25	150	20	79	200	20	119
EWUMS-ES-30	30	69	42	7	9.0	51	-	11.0	25	150	20	94	200	20	119
EWUMS-ES-40	40	73	50	8	9.0	55	-	15.0	25	200	20	119	300	20	169

T2 pitch as standard, T1 upon request



Order example:

EWUMS-ES-20-500-T1: Partially supported stainless steel shaft. AISI 316Ti material, T1 pitch, with 20mm outer Ø, 500mm length



Order key

Type Size Options

EWUMN- 20 -2000 -T1

Low-level supported stainless steel shaft, metric	Outer Ø	Shaft length [mm]	Hole pattern
---	---------	-------------------	--------------

EWUM, EEWUM: Supported stainless steel shaft
EWUMN, EEWUMN: Low-level supported stainless steel shafts

Available materials and lengths:

AISI 440B, hardened/ground: EWM

AISI 420C, hardened/ground: EEWUM

Hole pattern:

T2: T2 pitch (standard)

T1: T1 pitch (upon request)

Dimensions [mm] -

low-level supported steel shafts EWM (AISI 440B) / EEWUM (AISI 420)

Part No.	Outer Ø	H	H1	A	A1	A2	d1	d2	T	C5/C6		Weight [kg/m]
	d	±0.02				±0.02				min.	max.	
□WUMN-12	12	14.5	3	11	5.5	5.4	M4	4.5	75	20	57.0	1.62
□WUMN-16	16	18.0	3	14	7.0	7.0	M5	5.5	75	20	57.0	2.54
□WUMN-20	20	22.0	3	17	8.5	8.1	M6	6.6	75	20	57.0	3.81
□WUMN-25	25	26.0	3	21	10.5	10.3	M8	9.0	75	20	57.0	5.62
□WUMN-30	30	30.0	3	23	11.5	11.0	M10	11.0	100	20	69.5	7.63
□WUMN-40	40	39.0	4	30	15.0	15.0	M12	13.5	100	20	69.5	13.47
□WUMN-50	50	46.0	5	35	17.5	19.0	M14	15.5	100	20	69.5	20.31

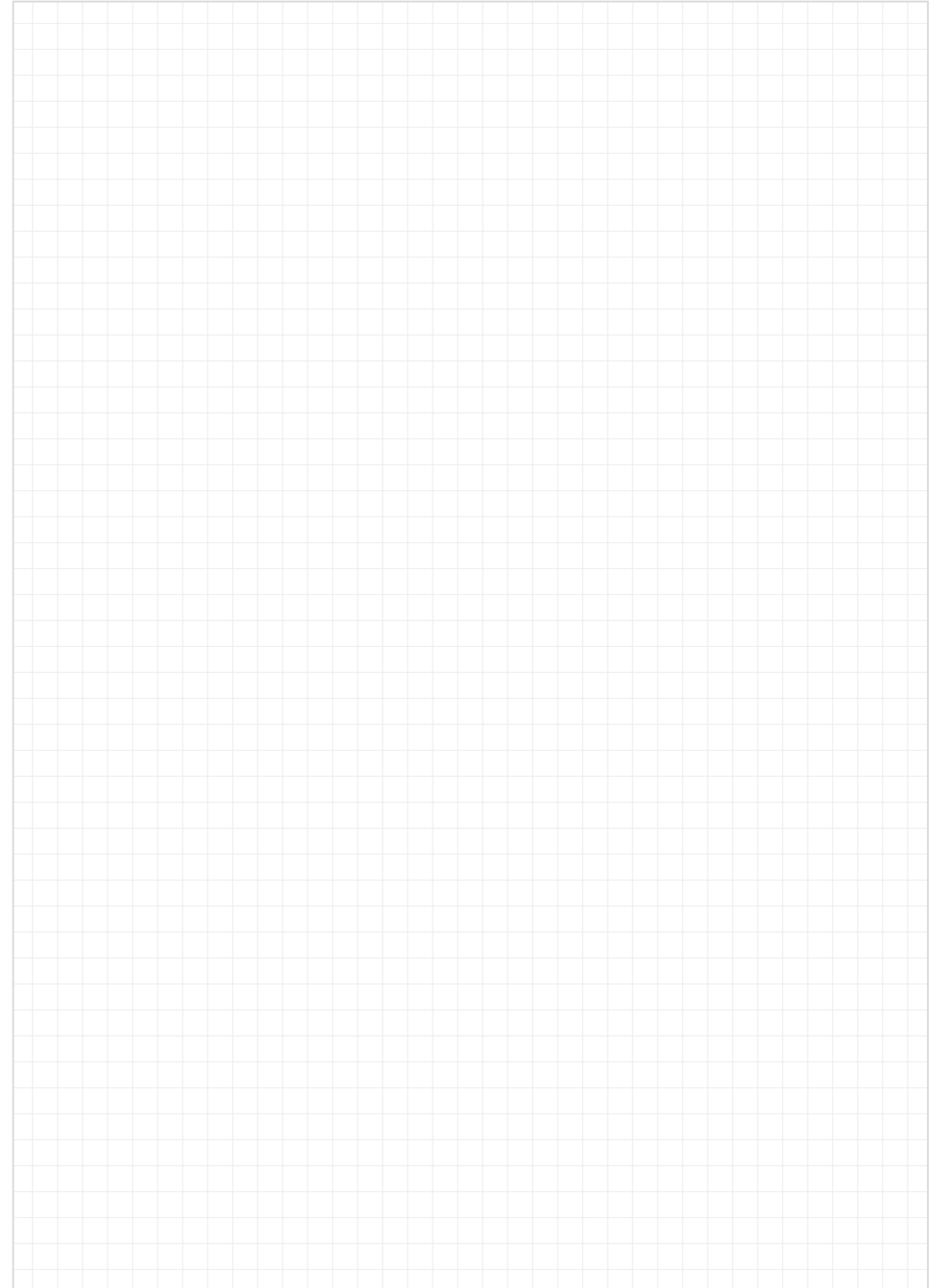
Low-level supported shafts are delivered unassembled.

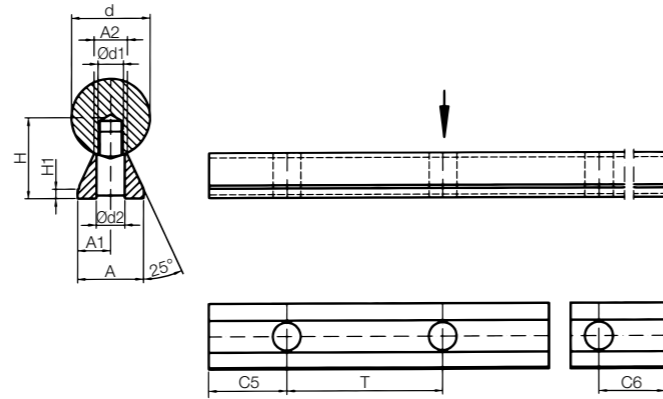


Order example:

EWUMN-16-500: Low level supported stainless steel shaft EWM (AISI 440B), with 16mm outer Ø, 500mm length, T pitch

EEWUMN-16-500: Low level supported stainless steel shaft EEWUM (AISI 420C), 16mm outer Ø, 500mm length, T pitch





EWUMN-ES/
EWUMSN-ES

! igus® recommendation: linear plain bearings equipped with iglidur® E7 liners for 8 times longer service life

Low level shaft support blocks made of stainless steel

● Connection sizes are identical to low-level aluminium supports ▶ Page 1345

Dimensions [mm] - low-level partially supported stainless steel shafts AISI 440B

Part No.	d	H ±0.02	H1	A	A1	A2	d1	d2	T	C5/C6		Weight [kg/m]
										min.	max.	
EWUMN-ES-12	12	14.5	3	11	5.5	5.4	M4	4.2	75	20	57.0	1.00
EWUMN-ES-16	16	18.0	3	14	7.0	7.0	M5	5.2	75	20	57.0	1.76
EWUMN-ES-20	20	22.0	3	17	8.5	8.1	M6	6.2	75	20	57.0	2.77
EWUMN-ES-25	25	26.0	3	21	10.5	10.3	M8	8.2	75	20	57.0	4.35
EWUMN-ES-30	30	30.0	3	23	11.5	11.0	M10	10.2	100	20	69.5	6.01
EWUMN-ES-40	40	39.0	4	30	15.0	15.0	M12	12.5	100	20	69.5	10.80

Low-level partially supported stainless steel shafts are supplied unassembled



Order example:

EWUMN-ES-20-500: Partially supported stainless steel shaft. AISI 440B material, T2 pitch (standard), with 20mm outer Ø, 500mm length



Order key

Type	Size	Options
------	------	---------

EWUMSN- ES - 20 - - T1

Stainless steel shaft with low level support, metric	Stainless steel partial support	Outer Ø	Shaft length [mm]	Hole pattern
--	---------------------------------	---------	-------------------	--------------

Available materials and lengths:

AISI 440B, max 6,000mm

▶ EWUMN

AISI 316Ti, max 3,000mm

▶ EWUMSN

Dimensions [mm] - low-level partially supported stainless steel shafts AISI 316Ti

Part No.	d	H ±0.02	H1	A	A1	A2	d1	d2	T	C5/C6		Weight [kg/m]
										min.	max.	
EWUMSN-ES-12	12	14.5	3	11	5.5	5.4	M4	4.2	75	20	57.0	1.00
EWUMSN-ES-16	16	18.0	3	14	7.0	7.0	M5	5.2	75	20	57.0	1.76
EWUMSN-ES-20	20	22.0	3	17	8.5	8.1	M6	6.2	75	20	57.0	2.77
EWUMSN-ES-25	25	26.0	3	21	10.5	10.3	M8	8.2	75	20	57.0	4.35
EWUMSN-ES-30	30	30.0	3	23	11.5	11.0	M10	10.2	100	20	69.5	6.01
EWUMSN-ES-40	40	39.0	4	30	15.0	15.0	M12	12.5	100	20	69.5	10.80

Low-level partially supported stainless steel shafts are supplied unassembled



Order example:

EWUMSN-ES-20-500-T1: Partially supported stainless steel shaft. AISI 316Ti material, T1 pitch, with 20mm outer Ø, 500mm length



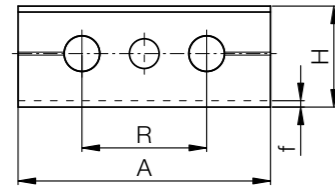
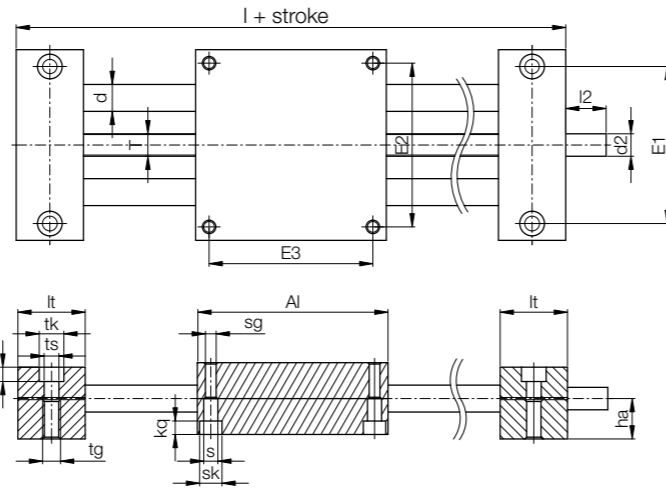
- Corrosion-resistant carriages and shaft end supports made of stainless steel
- High grade stainless steel shafts (AISI 440B)
- Stainless steel lead screw
- Temperature-resistant
- Up to +180°C with iglidur® X
- Food-compliant with iglidur® A180
- Can be configured online as SHTC compact version

Order key

Type Size Options

SHT-ES J -08

Standard
Stainless steel
Bearing material
Shaft material



reddot design award
winner 2006

Technical data

Part No.	Max. stroke length [mm]	Aluminium shaft		Steel shaft		Max. static load capacity	
		Weight [kg]	addit. (per 100mm) [kg]	Weight [kg]	addit. (per 100mm) [kg]	axial [N]	radial [N]
SHT-ESJ-08	300	0.24	0.05	0.27	0.1	100	360
SHT-ESJ-12	750	1.1	0.1	1.3	0.2	700	2,800
SHT-ESJ-20	1,000	3.2	0.3	3.9	0.6	1,600	6,400
SHT-ESJ-30	1,250	8.6	0.6	10.9	1.4	2,500	10,000

Dimensions [mm]

Part No.	A	Al	H	E1	E2	E3	I	R	f	lt	tk	ts
	-0.3	-0.3		±0.15	±0.15	±0.15						
SHT-ESJ-08	65	65	23	52	55	55	96	32	1.5	15.5	10	5.5
SHT-ESJ-12	85	85	34	70	73	73	145	42	2.0	30.0	11	6.6
SHT-ESJ-20	130	130	48	108	115	115	202	72	2.0	36.0	15	9.0
SHT-ESJ-30	180	180	68	150	158	158	280	96	4.0	50.0	20	13.5

Part No.	tg	kt ±0.1	Øs	sk	sg	kq	d	T	I2	d2 Standard	ha
SHT-ESJ-08	M6x8	7.0	4.2	8	M5	4.6	8	Tr6x2	17	Tr6x2	13
SHT-ESJ-12	M8x18	6.4	6.3	10	M6	6.0	12	Tr10x2	17	Tr10x2 ⁹²⁾	18
SHT-ESJ-20	M10x23	8.6	6.4	11	M8	7.0	20	Tr18x4	26	12h9	23
SHT-ESJ-30	M16x40	12.6	11.0	18	M12	10.6	30	Tr24x5	38	14h9	36

⁹²⁾ Lead screw end unmachined



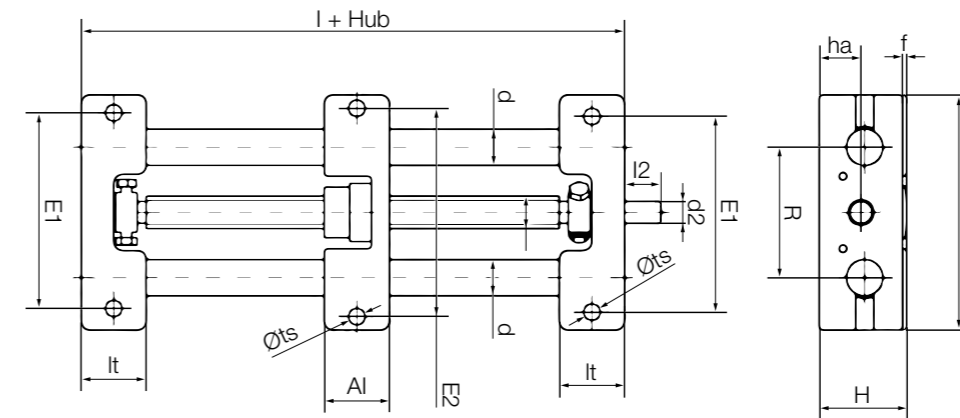
Order key

Type Size Shaft Option

SHTC- 20 -EWM-HYD

Flexible
Installation size
Shaft material
Hygienic design

- Easily cleaned solution
- Wide gaps
- Materials: plastic and stainless steel
- Lead screw nuts made of FDA-compliant iglidur® A180
- Accessories available ► **Page 1503**



The lead screw linear unit can be delivered with complete FDA-compliant materials.

Dimensions [mm]

Part No.	A	Al	H	E1	E2	I	R	f	lt	ts	d	T	I2	d2	ha
	-0.3	-0.3		±0.15	±0.15										
SHTC-20-EWM-HYD	130	36	48	108	115	108	72	2	36	9.0	20	Tr18x4	26	12 h9	23

Made of stainless steel

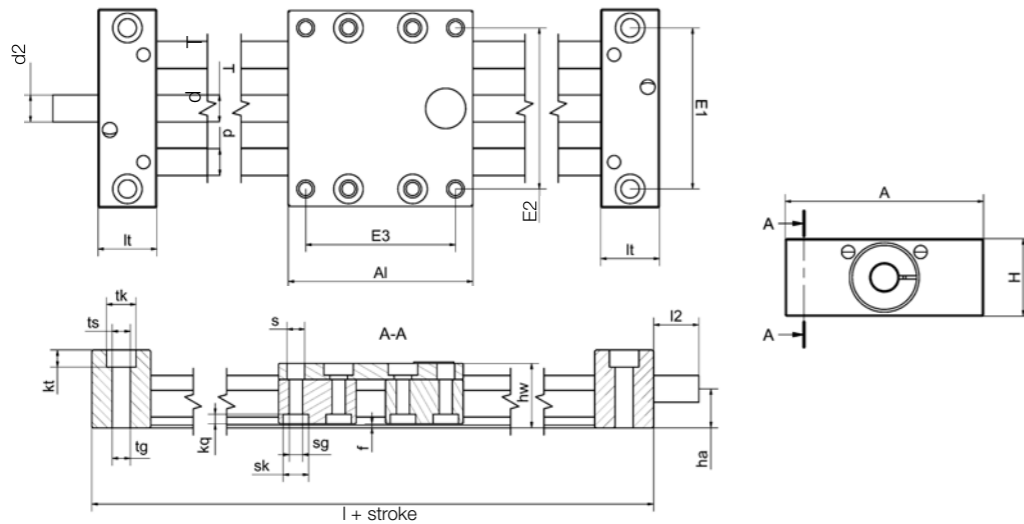
Order key

Type	Size
------	------

SLW-ES J -1040

Compact	Stainless steel	iglidur® J bearing	Installation size
---------	-----------------	--------------------	-------------------

- Stainless steel version with corrosion-resistant steel components (AISI 303, AISI 316 and (AISI 316Ti))
- Choice of bearing material:
iglidur® J = Standard
iglidur® A180 = FDA-compliant
iglidur® X = High temperature up to +150°C¹¹⁷⁾
- Accessories available
▶ Page 1683



Technical data

Part No.	Shaft Ø [mm]	Max. stroke length [mm]	Weight [kg]	additional (per 100mm) [kg]	Max. stat. load capacity	
					axial [N]	radial [N]
SLW-ESJ-1040	10	750	1.4	0.2	700	2,800
SLW-ESX-1040	10	750	1.4	0.2	700	2,800
SLW-ESA180-1040	10	750	1.4	0.2	700	2,800
SLW-ESJ-2080	20	1,000	5.7	0.64	1,600	6,400
SLW-ESA180-2080	20	1,000	5.7	0.64	1,600	6,400

Dimensions [mm]

Part No.	A	Al	H	E1	E2	E3	l	hw	f	lt	tk	ts	tg
	-0.3	-0.3		±0.15	±0.15	±0.15							
SLW-ES-1040	74	100	29	60	60	87	144	24	1.5	22	11	6.8	M8x10
SLW-ES-2080	134	150	46	116	116	132	206	44	1.5	28	15	8.6	M10x15

Part No.	kt	Øs	sk	sg	kq	d	T	l2	d2	ha
	±0.1								Standard	
SLW-ES-1040	6.4	6.6	9.5	M6	4.4	10	Tr10x2	17	Tr10x2 ⁹²⁾	14.5
SLW-ES-2080	8.6	9.0	14	M8	5.5	20	Tr18x4	26	12h9	23.0

⁹²⁾ Lead screw end unmachined

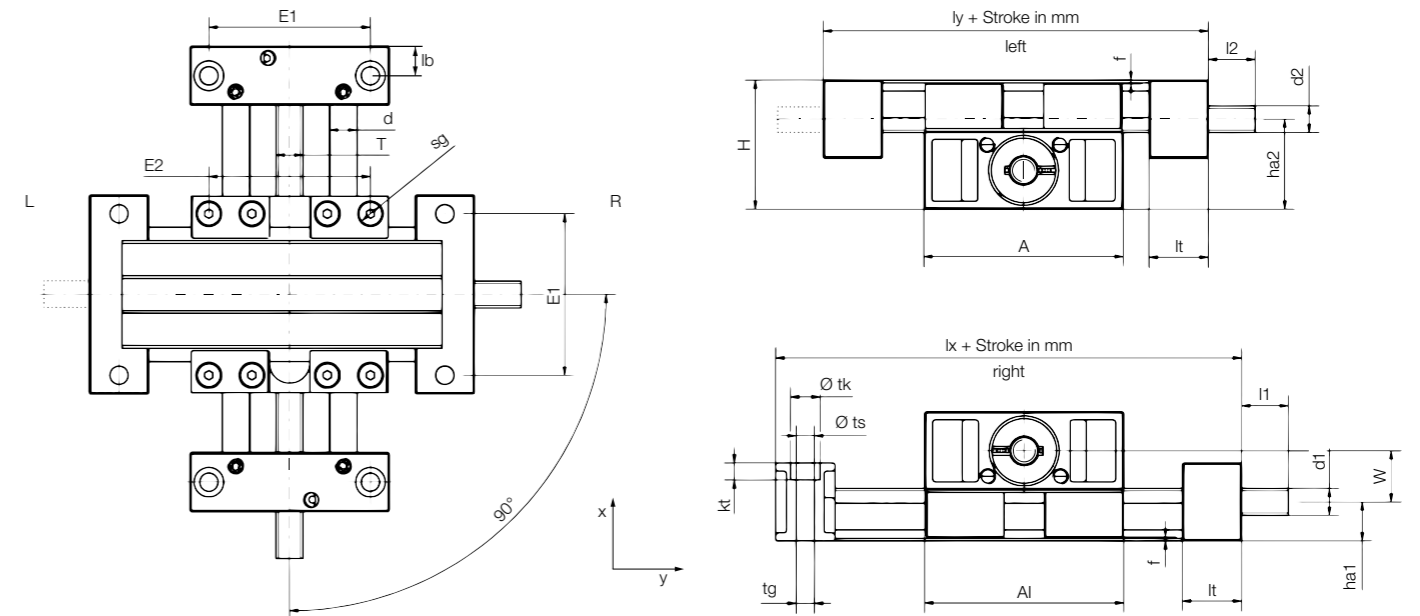
¹¹⁷⁾ In the event of severe temperature fluctuations during transport, storage and use, thermal expansion effects cannot be ruled out

XY tables - stainless steel version

Order key

▶ Page 1318

- For manual adjustments
- High torsional stability
- Structure entirely made from 316 stainless steel materials
- Chemical and corrosion-resistant
- Accessories available ▶ Page 1683



Dimensions [mm]

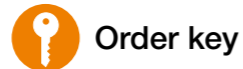
Part No.	Max. stroke length [mm]	A	Al	H	E1	E2	Base length lx	Base length ly	f	lt	tk	ts	tg	kt
		-0.3			±0.15	±0.15					±0.1			
SLW-XY-ESJ-1040	300	74	73	48	60	60	117	117	1.5	22	11	6.8	M8x10	6.4

Part No.	sg	d	T	l1	d1	d1	l2	d2	d2	ha1	ha2	W
					Standard	Alternative		Standard	Alternative			ha2-ha1
SLW-XY-ESJ-1040	M6	10	Tr10x2	17	Tr10x2	6 h9	17	Tr10x2	6 h9	14.5	33.5	19

The hand wheel can be ordered left or right-mounted in the y-direction.

Left: SLW-XY-ESJ-1040-L-200-300 for 200mm stroke length on the x-axis and 300mm on the y-axis

Right: SLW-XY-ESJ-1040-R-200-300 for 200mm stroke length on the x-axis and 300mm on the y-axis

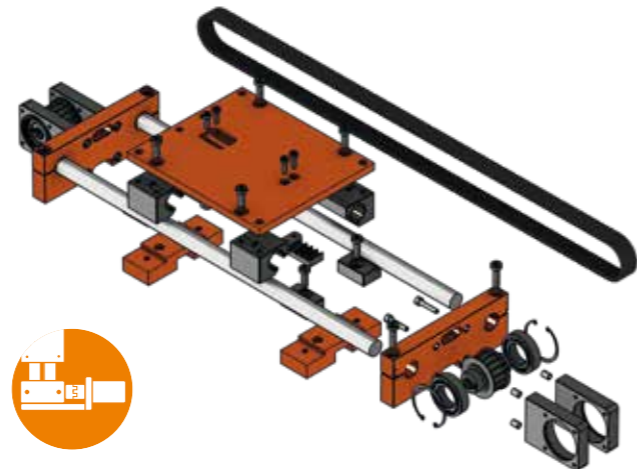
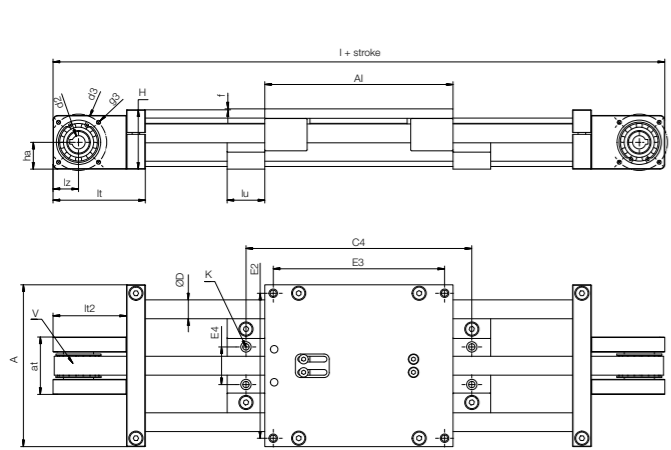


Order key
Type Size Options
ZLW-20120-ES-02-S-200-H-2000

Toothed belt axis	Installation size	Axis distance	Design	Version	Carriage length	Drive shaft	Stroke length
-------------------	-------------------	---------------	--------	---------	-----------------	-------------	---------------



- High speed with ball bearing supported drive shaft
- Robust wide round belt
- Central belt adjustment on the carriage
- Based on lubrication-free drylin® W linear guide
- Variable motor connection due to solid and hollow shafts



Technical data

Part No.	Max. stroke length [mm]	Transmission [mm/rev]	Tooth profile	Drive belt	
				Material	Tension [N]
ZLW-20120-ES	2,500	144	8M	PU with steel cable	750
ZLW-20160-ES	2,500	144	8M	PU with steel cable	750
ZLW-20200-ES	2,500	144	8M	PU with steel cable	750

Dimensions [mm]

Part No.	A	Al	H	E2	E3	E4	C4	f	lt	ha	lz	l	d2 h7	d3	g3	D	K For DIN912 - M6	at	lt2	lu	V [mm/ rev]
ZLW-20120-ES	172	200	63	154	182	40	240	-	98	28.5	27	396	14	60	M5	20	M8	61	78	40	144
ZLW-20160-ES	212	200	63	194	182	80	240	-	98	28.5	27	396	14	60	M5	20	M8	61	78	40	144
ZLW-20200-ES	252	200	63	234	182	120	240	-	98	28.5	27	396	14	60	M5	20	M8	61	78	40	144

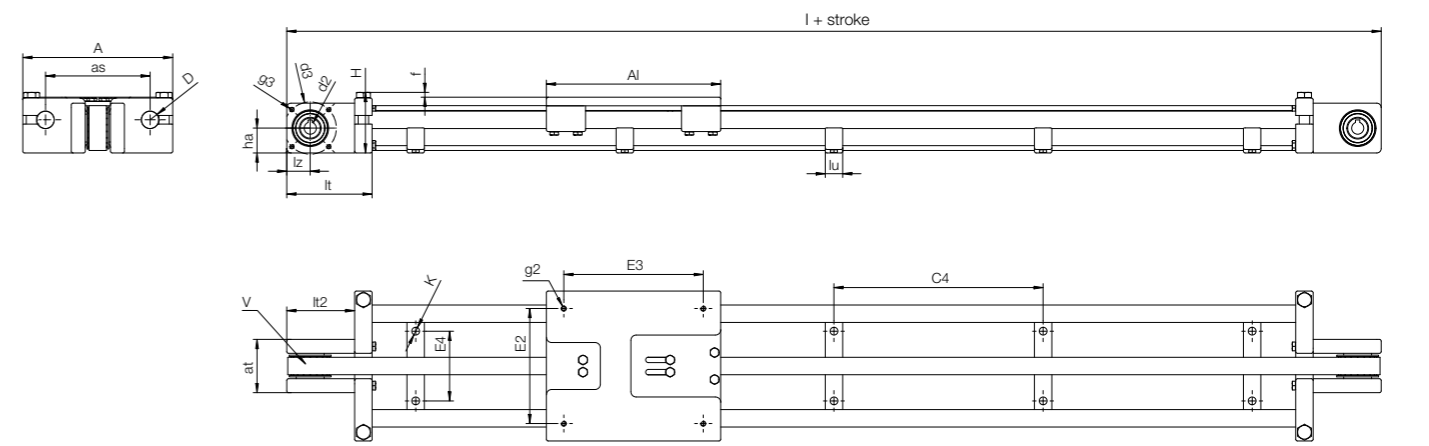


Order key
Type Size Options
ZLW-20120-HYD-02-S-200-H-2000

Toothed belt axis	Installation size	Axis distance	Design	Version	Carriage length	Drive shaft	Stroke length
-------------------	-------------------	---------------	--------	---------	-----------------	-------------	---------------



- Linear axis compliant with hygienic design
- Bearing points FDA-compliant through iglidur® A160
- Corrosion-resistant



Technical data

Part No.	Max. stroke length [mm]	Weight additional (per 100mm) [kg]	Transmission [mm/rev]	Tooth profile	Toothed belt material	Toothed belt tension	
							ZLW-20120-HYD New

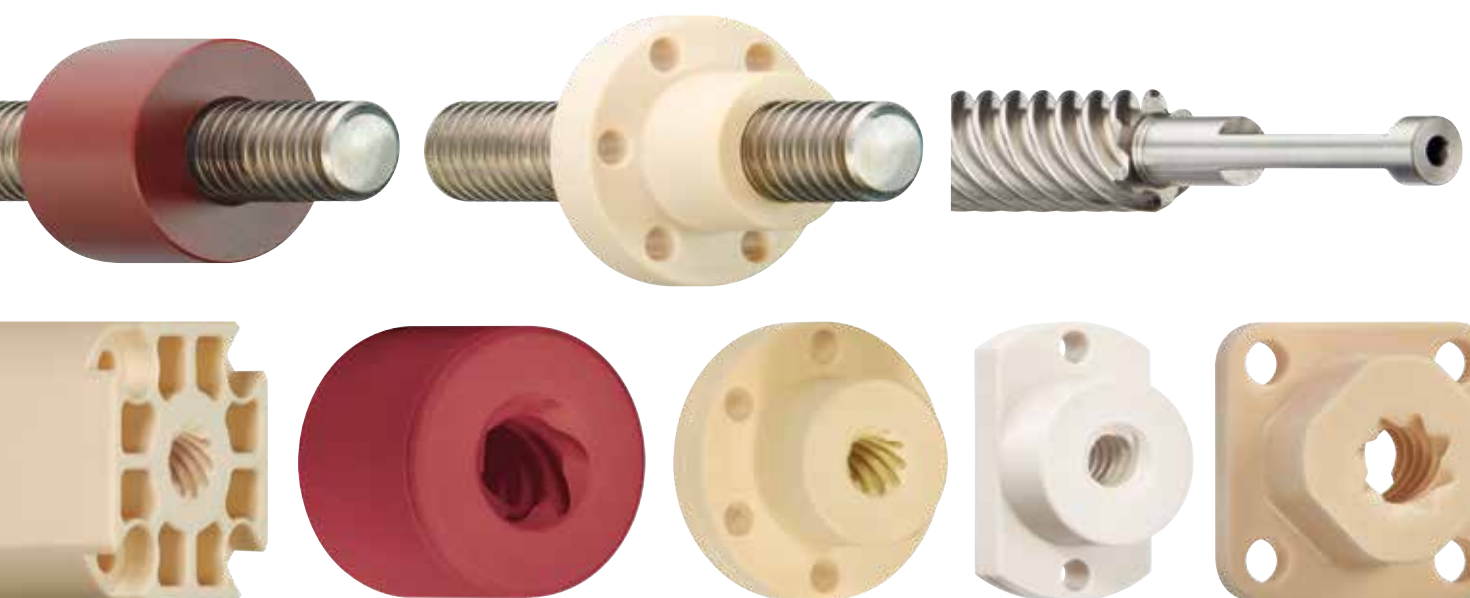
Dimensions [mm]

Part No.	A	Al	H	E2	E3	E4	C4	f	lt	ha
ZLW-20120-HYD New	172	200	69.4	132	Al-40	80	240	5.4	98	28.5

Part No.	lz	l	d2 H7	d3	g3	D	K	at	lt2	lu
ZLW-20120-HYD New	27	396	14	60	M5	20	9	61	78	20

dryspin[®]

Lead screw technology



...plastics



CNC equipment

The dryspin® lead screw drives are subjected to high loads in this application, as Peter Urban explains: "When the tool mills a circle into the material, high and overlapping forces act on the axes". Because the machine processes a wide variety of materials, and at very different feed speeds, it is not possible to completely rule out the possibility of vibration from a design point of view. In this case, according to the experience of the Stepcraft designers, a drop of oil helps as a damper: "Then there is an even better running behaviour."

► www.igus.eu/milling



Aircraft simulator

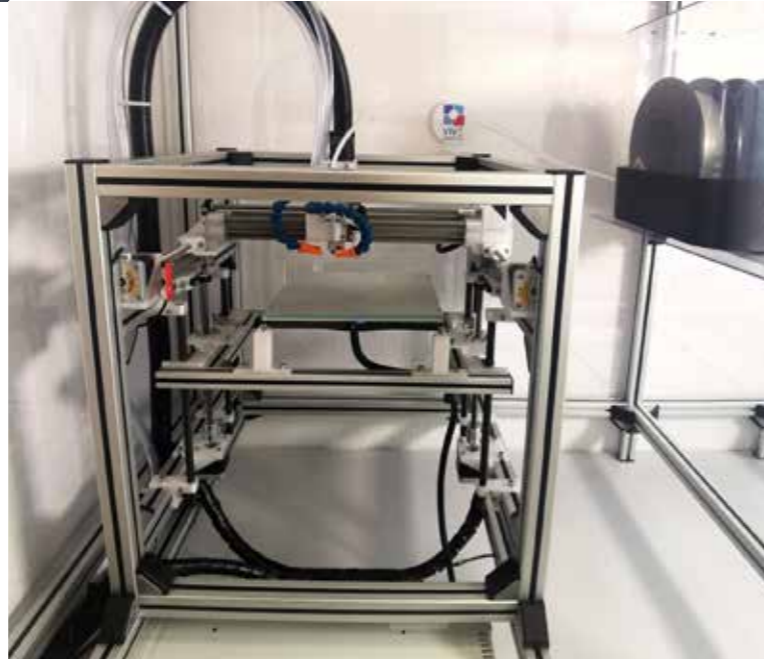
The lead screw drives were used to control the two throttle levers. The system worked so well that a similar system was used to drive the speed brake lever (to control the simulated air brakes) mounted in the same throttle module. The products were the perfect blend of low cost, high reliability, and very simple reverse control. The low costs made it possible to meet the target price for the simulated throttle valves.

► www.igus.eu/aircraft-throttle

Cleanroom 3D printer

In this application, a precise, reliable cleanroom 3D printer is used for processing thermoplastics. High helix and trapezoidal lead screws with high efficiency for all drive axes were the ultimate solution to the problem of VIVECube - Clean Precision cleanroom capability. It was the only suitable solution for low-abrasion linear drives that was also cost-effective.

► www.igus.eu/cleanroom-printer



Compact automation solution

An easy-to-use, high-quality automation solution was required. Further requirements were high precision and flexibility, reliable and high-performance components, as well as the highest hygiene standards. Without the use of oils or fats as lubricants, we can meet the highest hygiene requirements with our lead screw technology. In addition, use in dry operation saves a large amount of cleaning and maintenance costs and wear is also significantly reduced.

► www.igus.eu/dryspin-automation



Actuator

Precise movement and positioning of the actuators without regular maintenance and with the highest accuracy, even under adverse environmental conditions, was required. The freedom from lubrication and maintenance does not allow dirt and dust to adhere. ARIS uses dryspin® drives from the igus® standard product range, and only the outer geometry of the nut has been individually adjusted. In the lead screw support block, two axial plain bearings made of the igus® high-performance polymer iglidur® Q ensure the absorption of high loads; at the same time, the clearance of the unit can be adjusted via the thrust bearing.

► www.igus.eu/actuators



All of the main components of the mechanical movements, such as the linear axis, plain bearings, guide systems, etc. use igus® products. Further applications from a wide range of industries can be found at

► www.igus.eu/dryspin-applications

Lead screws - dryspin® thread and dryspin® high helix thread



dryspin® high helix lead screws

► Page 1444



dryspin® lead screws with standard pitches

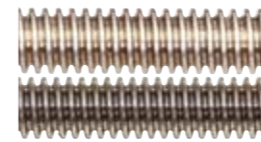
► Page 1448



High helix lead screws with right/left opposite drive

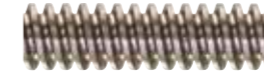
► Page 1450

Lead screws - trapezoidal thread according to DIN 103



Trapezoidal lead screws

► Page 1452



Multi start trapezoidal lead screw

► Page 1454



LH/RH trapezoidal lead screws

► Page 1456

Lead screws - metric and ACME threads



Metric lead screws

► Page 1458



USA - standard "ACME"

► Page 1460

Lead screws - motor spindles - ready-to-install



Lead screws with precision machining

► Page 1461



Lead screws with splines

► Page 1462

Lead screw nuts - with dryspin® thread geometry



Cylindrical lead screw nuts

► Page 1468



Cylindrical lead screw nuts with spanner flat

► Page 1472



Lead screw nuts with flange

► Page 1476



Lead screw nuts with spanner flat and flange

► Page 1480



Injection-moulded lead screw nuts with machined thread

► Page 1484



dryspin® heavy duty lead screw nuts

► Page 1492

New

Lead screw nuts - trapezoidal thread



Cylindrical lead screw nuts

► Page 1498



Cylindrical lead screw nuts with spanner flat

► Page 1504



Lead screw nuts with flange

► Page 1506



Lead screw nuts with spanner flat and flange

► Page 1510



Injection-moulded lead screw nuts with machined thread

► Page 1512



Injection-moulded lead screw nuts

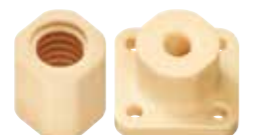
► Page 1514

Metric thread



Cylindrical lead screw nuts, Injection-moulded lead screw nuts with flange

► Page 1518



Injection-moulded lead screw nuts with metric machined thread

► Page 1520

Lead screw nuts - ACME threads



Cylindrical lead screw nuts

► Page 1522



Lead screw nuts with flange

► Page 1523



Injection-moulded lead screw nuts with machined thread

► Page 1524

Low-clearance lead screw nuts - dryspin® thread



Zero-backlash lead screw nuts (ZB)
▶ Page 1527



Flange lead screw nuts with pre-load (PL)
▶ Page 1528

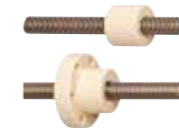


Low-clearance lead screw nuts (LC)
▶ Page 1530

Low-clearance lead screw nuts - trapezoidal thread



Low-clearance lead screw nuts (LC)
▶ Page 1534



Anti-backlash lead screw nuts (AB)
▶ Page 1536

Lead screw nuts for linear modules



For SHT-1210
▶ Page 1540



For SHT-2018
▶ Page 1541



For SLW-0630
▶ Page 1542



For SLW-25120
▶ Page 1543



For SLW-1040
▶ Page 1544



For SLW-1660
▶ Page 1544



For SLW-2080
▶ Page 1545

Special designs



Split lead screw nuts with injection-moulded thread
▶ Page 1546



Pillow block with split lead screw nut
▶ Page 1547



Spherical lead screw nuts in flanged bearing housing
▶ Page 1548



Spherical lead screw nuts in pillow block bearing housing
▶ Page 1549



Lead screw nuts with quick-release
▶ Page 1550



Lead screw nut lock disk
▶ Page 1551

Accessories - lead screw nut housings



Complete lead screw nut housing, including lead screw nut (standard)
▶ Page 1552

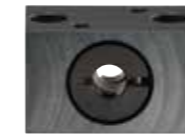


Complete lead screw nut housing, including lead screw nut (zero-backlash)
▶ Page 1552



Complete lead screw nut housing, including lead screw nut (linear module)
▶ Page 1552

Accessories - lead screw support blocks



Lead screw support block with fixed bearing
▶ Page 1554



Lead screw support block with floating bearing
▶ Page 1554



Lead screw support blocks with ball bearings
▶ Page 1559



Clamping rings
▶ Page 1560

dryspin® lead screw technology - special designs



The benefits of the dryspin® design
▶ Page 1426



Interesting facts about lead screw technology
▶ Page 1430



Material overview
▶ Page 1434



Industry examples
▶ www.igus.eu/dryspin-applications



The biggest lead screw shop online
▶ www.igus.eu/leadscrewshop



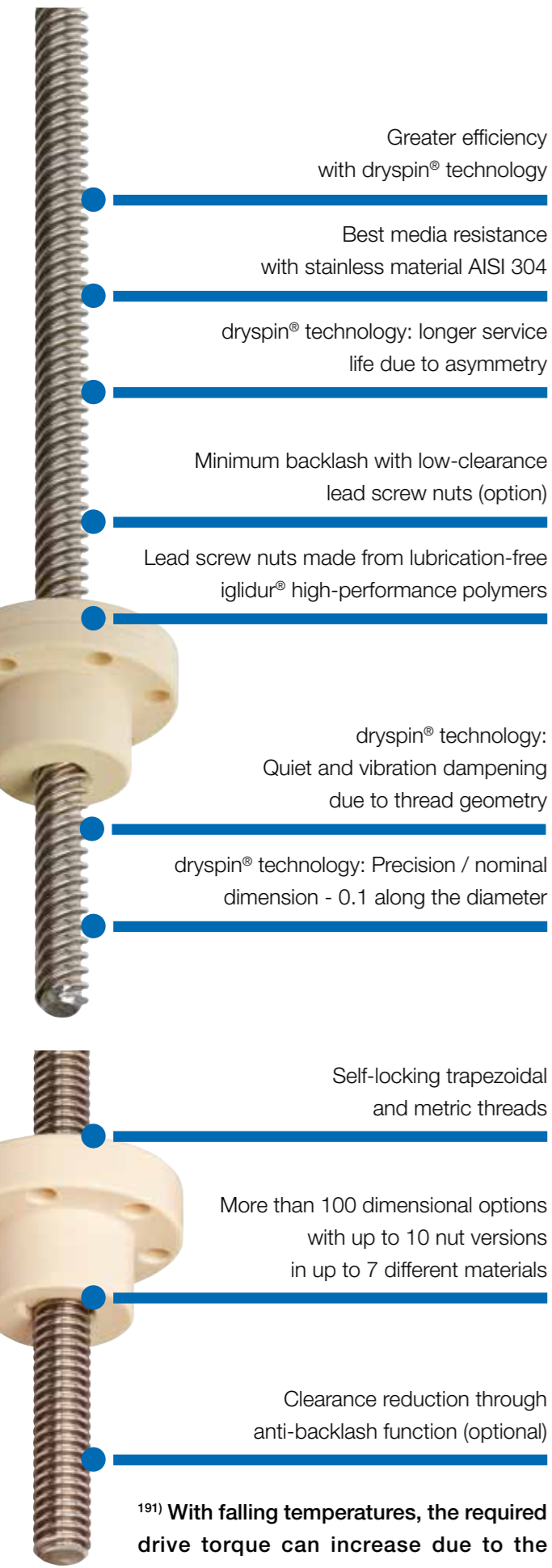
Lead screw configurator
▶ www.igus.eu/lead-screw-configurator



Service life calculator
▶ www.igus.eu/drylin-expert

dryspin® lead screw technology | Advantages

Maintenance-free, quiet operation, dirt-resistant and corrosion-resistant



Greater efficiency with dryspin® technology

Best media resistance with stainless material AISI 304

dryspin® technology: longer service life due to asymmetry

Minimum backlash with low-clearance lead screw nuts (option)

Lead screw nuts made from lubrication-free iglidur® high-performance polymers

dryspin® technology: Quiet and vibration dampening due to thread geometry

dryspin® technology: Precision / nominal dimension - 0.1 along the diameter

Self-locking trapezoidal and metric threads

More than 100 dimensional options with up to 10 nut versions in up to 7 different materials

Clearance reduction through anti-backlash function (optional)

¹⁹¹⁾ With falling temperatures, the required drive torque can increase due to the material.

Lubrication-free dryspin® lead screw technology

Lead screw drives are machine elements that convert rotary movement into linear motion. dryspin® lead screw drives are always based on self-lubricating plastic nuts, enabling long-lasting operation without external lubrication. The dryspin® technology offers a longer service life and greater efficiency for high helix threads thanks to the properties and geometries being tailored to the plastic nut and the lead screw.

- Efficient and durable dryspin® threads and high helix threads
- Self-locking trapezoidal and metric threads
- Maintenance-free dry operation
- Quiet
- Corrosion-free
- Resistant to dirt

Typical application areas

- Format adjustments
- Drive technology
- Optical equipment
- Furniture industry
- Automotive industry

Available from stock
Detailed information about delivery time online.

Price breaks online
No minimum order value. No minimum order quantity

max. +150°C
Min. -20°C¹⁹¹⁾

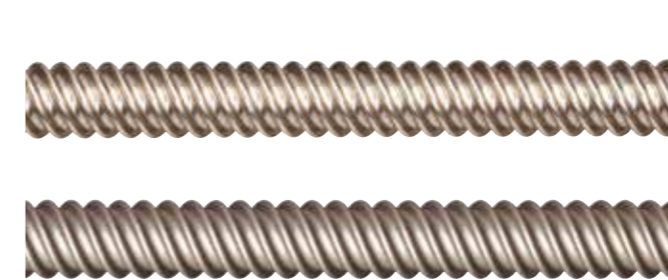
Service life calculation
▶ www.igus.eu/drylin-expert

Imperial dimensions and ACME thread (USA standard) ▶ Page 1460

In accordance with EC Directive 2011/65/ EU (RoHS 2) Restriction (of the use of certain) hazardous substances

dryspin® lead screw technology | Product overview

Threads and high helix threads with dryspin® technology



Threads and high helix threads

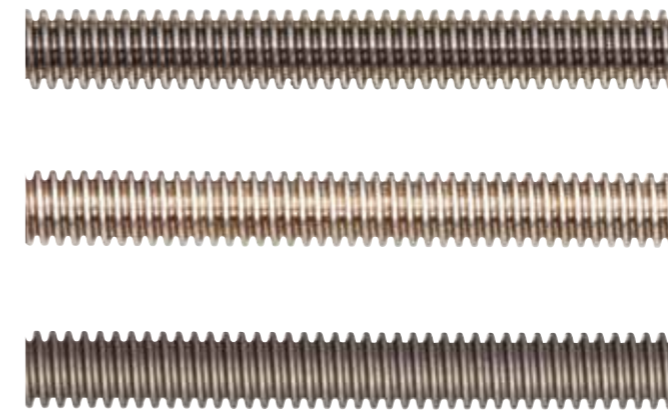
- Material: stainless steel or anodised aluminium
 - Better efficiency due to optimised flank angle
 - Quiet due to thread geometry
 - Long service life due to asymmetric geometry
- ▶ From page 1444



Suitable lead screw nuts

- Lubrication-free lead screw nuts made from 6 materials
 - Types: cylindrical, with flange or spanner flat
 - Reduced clearance through zero-backlash
- ▶ From page 1468

Self-locking trapezoidal and metric threads



Trapezoidal and metric lead screws

- Material: steel, stainless steel or anodised aluminium
 - Product range from M3 to Tr50x8
 - Multi start lead screws and right/left opposite drive available
- ▶ From page 1452

Trapezoidal and metric lead screw nuts

- Lubrication-free lead screw nuts made from 7 different materials
 - Types: cylindrical, with flange or spanner flat
 - Clearance reduction via anti-backlash feature
- ▶ From page 1498



Special designs

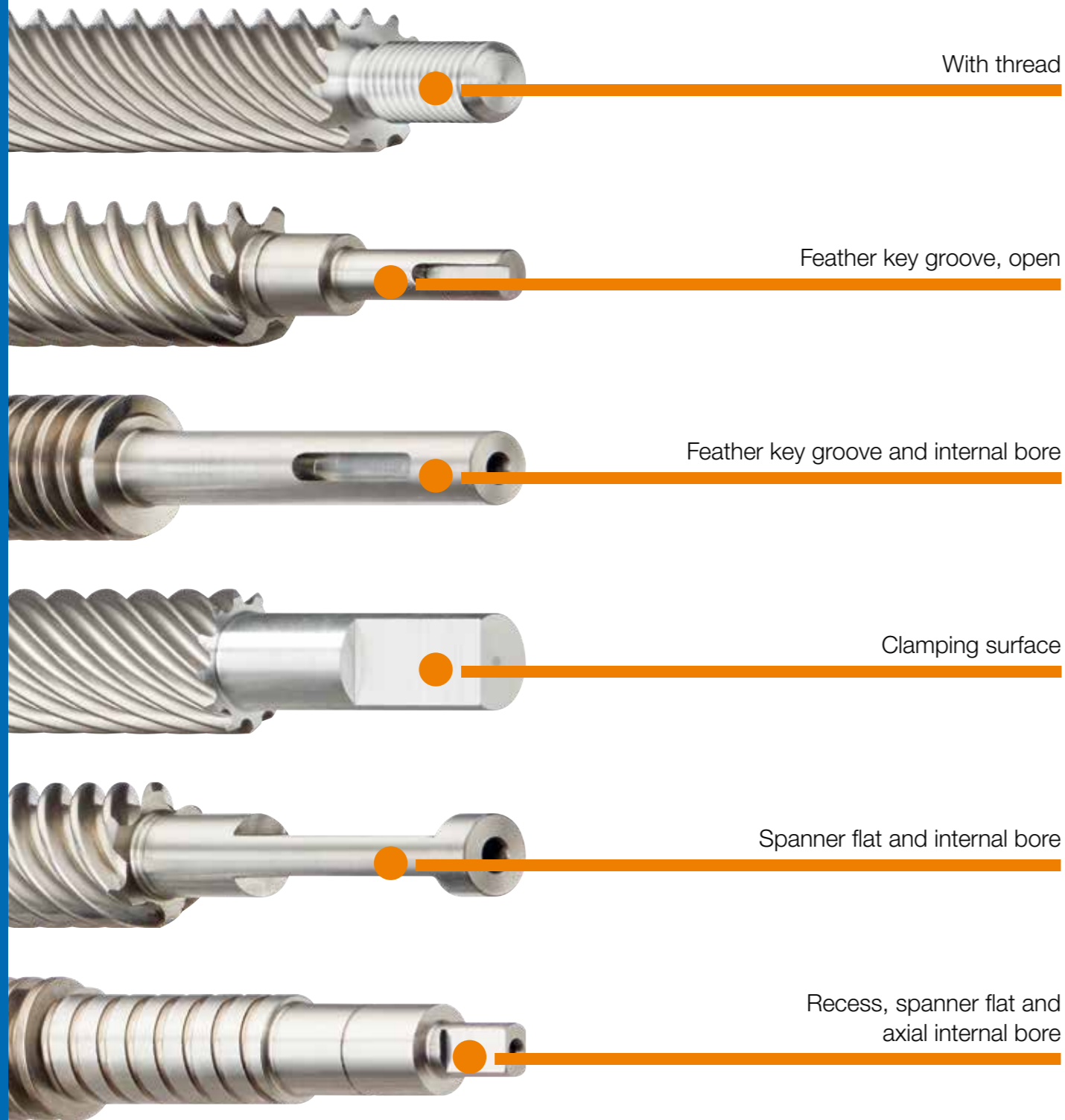
- Heavy-duty lead screw nuts with the same dimensions as ball threads
 - Linear module lead screw nut
 - Split and spherical lead screw nuts with housing
- ▶ From page 1539



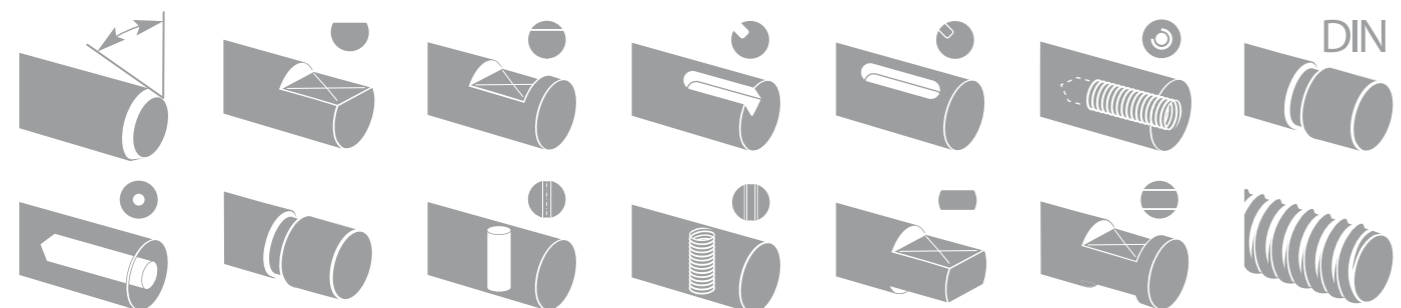
Lead screw technology accessories

- Nut housing for dryspin® lead screw nuts
 - Anodised lead screw support blocks, on plain or ball bearings
 - Clamping ring for securing lead screw
- ▶ From page 1554

Lead screw end machining options



A host of machining elements:



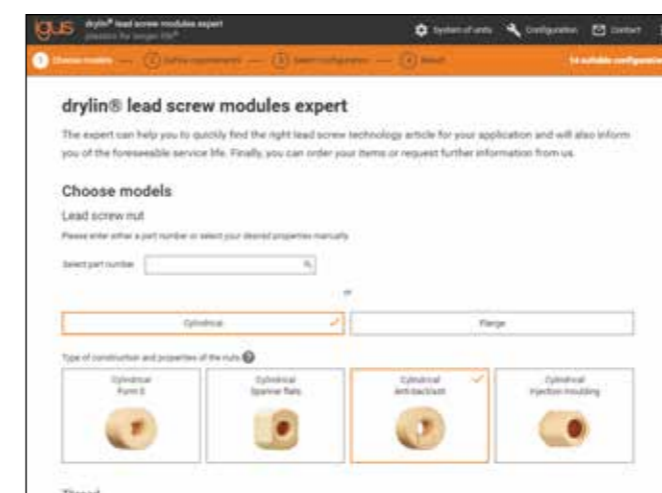
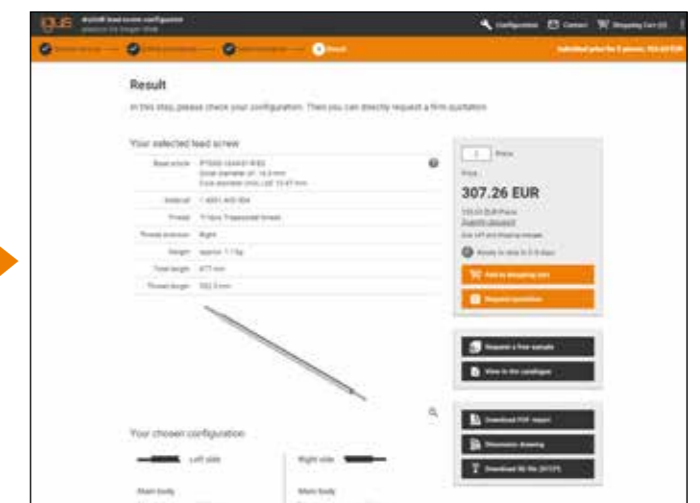
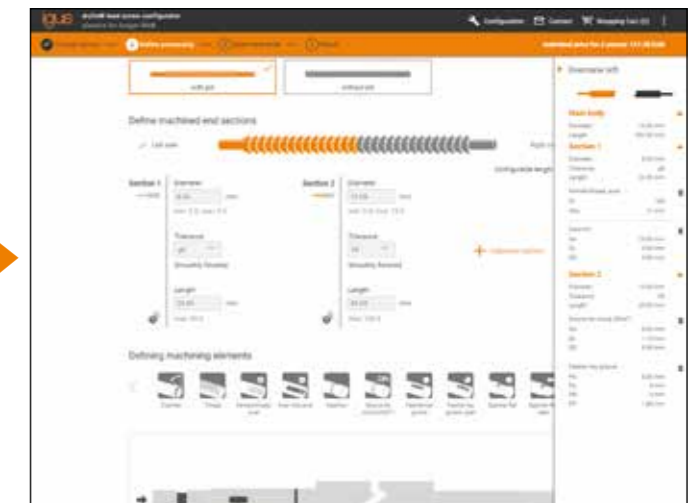
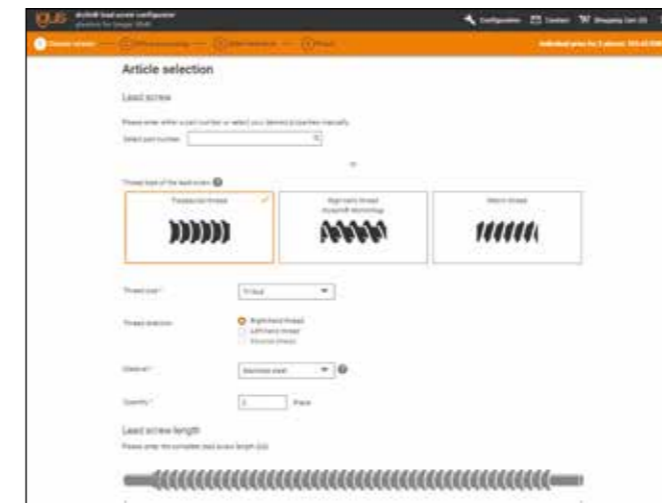
dryspin® configurators

Lead screw configurator

Individually configured lead screws and machined ends can now be generated with just a few clicks. In addition to selection of the lead screw geometry and the materials, there are up to 7 options for machined ends.

- Individual pin machining without CAD software
- 2D dimensioned drawing and 3D step file, generated directly online
- Immediate price calculation with online ordering

► www.igus.eu/lead-screw-configurator



Expert for lead screw drives: find and calculate suitable lead screw drives

Our drylin® expert systems for lead screw drives help you to find the right product quickly whilst giving the predicted service life. You have the option to configure and request your required dimension for lead screw nuts and lead screws.

► www.igus.eu/leadscrew-expert

dryspin® lead screw technology

The dryspin® lead screw technology includes a wide product range of shapes and dimensions for lubrication-free and maintenance-free lead screw drives, with pitches between 0.5 and 100mm.

These include:

- dryspin® threads and high helix threads with optimised thread profile
- Metric thread according to DIN 976
- Trapezoidal thread according to DIN 103
- American ACME threads according to ANSI/SME B1.5

In addition to the freedom from maintenance and lubrication, the main focus is always the insensitivity to external influences such as dirt, water, chemicals or impact loads. A dryspin® lead screw drive consists of a metallic lead screw made of steel, stainless steel or aluminium and a lead screw nut made of tribologically optimised iglidur® high-performance polymers. There are seven different standard materials available for different purposes: iglidur® J, iglidur® J350, iglidur® A180, iglidur® E7, iglidur® R, iglidur® J200 and iglidur® W300. The

use of different tribologically optimised materials enables lead screw technology to meet many required specifications, e.g. withstanding high loads, temperature resistance or FDA conformity. In addition to a large selection of standard materials for the lead screw technology, igus® also offers a large number of variants in the lead screw nut geometry itself. Moreover, lead screw nuts made by injection moulding or machined from iglidur® bar stock have already been able to improve many applications.



General definition of a lead screw drive

Outer diameter:

The distance between the outermost edges of the opposite lead screw flanks is called the lead screw outer diameter, i.e. it is the largest possible diameter on the lead screw. The outer diameter is also known as the nominal diameter.

Core diameter:

The distance between the base of the lead screw, i.e. the lowest point, and the opposite base of the lead screw gives the core diameter. This means it is the smallest diameter on the lead screw.

Pitch diameter:

The distance perpendicular to the axis between two opposite flanks, or the space between the profile centre lines, is called pitch diameter.

Thread flank:

The flank results from the extension of the line from the lead screw base to the tooth flanks or to the end of the profile centre line.

Flank angle:

The flank angle is present on all lead screws. It describes the angle from one flank of the lead screw to the other.

Pitch:

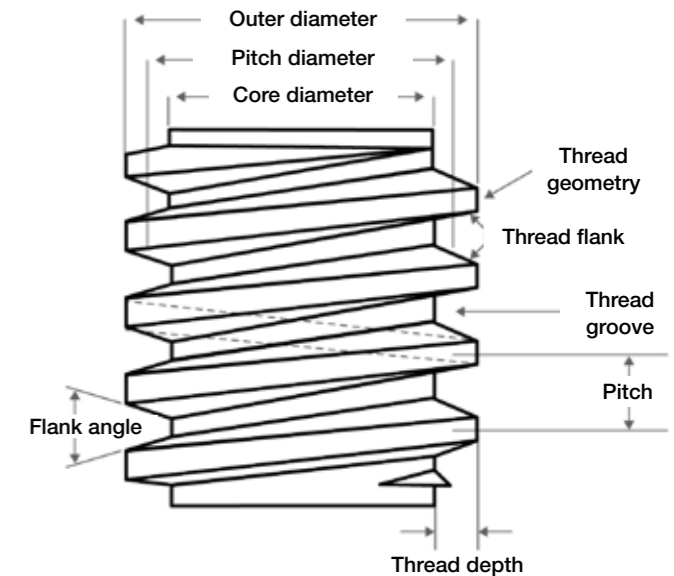
The pitch describes the distance, measured parallel to the axis, between two adjacent and parallel flanks of the same lead screw. It thus indicates in mm the linear travel per revolution of the lead screw. In contrast to a metric or a trapezoidal lead screw, the high helix lead screw has a high pitch. The high helix lead screw can convert a small radial movement into a relatively large axial movement with one revolution.

Thread pitch:

The full circumference of the helical curve of a lead screw.

Manufacturing tolerances:

Trapezoidal threads are manufactured according to DIN 103, metric lead screws according to DIN 976 and the dryspin® high helix and plain lead screws with an outer diameter tolerance of -0.1mm .



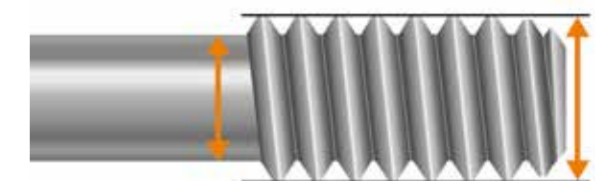
Manufacturing processes:

The thread rolling is a non-cutting manufacturing process that, according to DIN 8580, belongs to the forming manufacturing process. The thread is rolled into the surface of the raw material by cold forming. The forming is generated by compressive stress of the tool on the workpiece. Cold forming achieves a high surface quality and high strength. For large quantities of rolled sold by the metre products, the production process is faster and more cost-effective than the "thread whirling" production process.

Benefits:

- Rounded thread flank tips
- High surface quality, high strength
- Producibility of multi start threads with high pitches

Rolled thread



Diameter of the raw material


Large thread diameter

The right lead screw nut material for every technical requirement

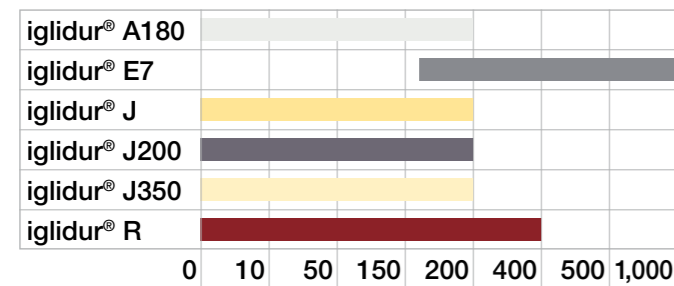
dryspin® lead screw nuts are available in the standard range for every technical requirement. The range includes lead screw nuts made from seven lubrication-free iglidur® high-performance polymers, in cylindrical type or flange variants. The iglidur® plastics enable the cost-effective production of components for moving applications and are ideally suited for the production of prototypes and high volume requirements. Due to its specifications, each material becomes a specialist for a specific area of application. The right iglidur® materials are available for almost every application from high temperatures to seawater, from food to automotive. All materials have been specially developed for dynamic applications and have low friction and wear

- Lubrication and maintenance-free
- Calculate service life online
- No minimum order value
- No minimum order quantity

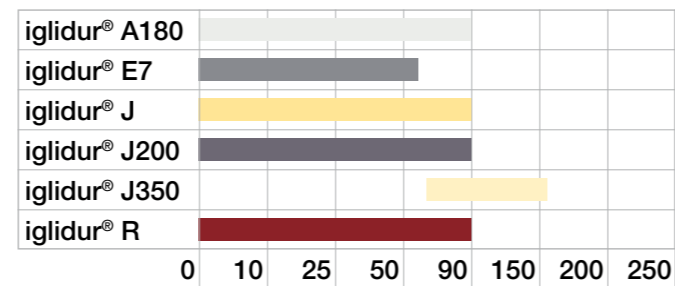
coefficients. These are made up of various components: base polymer for greater wear resistance, fibres and fillers reinforce the components to absorb high forces. Solid lubricants in our materials mean that the components made from them are self-lubricating and thus reduce the friction of the system and reduce wear. With the use of iglidur® materials you increase the service life of your components and reduce costs and maintenance. It doesn't matter whether it's a standard solution from the catalogue product range or your lead screw nut in the desired shape, desired quantity and desired material, manufactured by us according to your drawing.

 **Find and calculate suitable lead screw drives**
 ► www.igus.eu/leadscrewdrives-finder

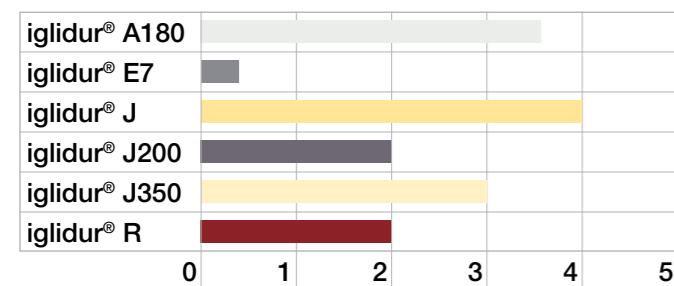
Correct choice of material



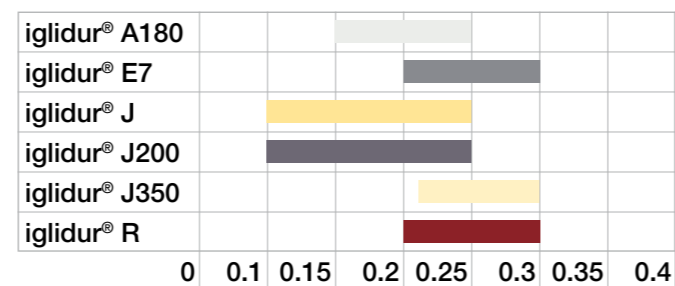
Speed [rpm]



Temperature [°C]



Surface pressure in the thread [MPa]



Coefficient of friction [µ]

igidur® J200 most suitable in combination with hard anodised aluminium

General properties	Unit	igidur® J	igidur® J350	igidur® R	igidur® A180	igidur® E7	igidur® W300	igidur® J200
Density	[g/cm³]	1.49	1.44	1.39	1.46	1.05	1.24	1.72
Colour		yellow	yellow	red	white	dark grey	yellow	matt grey
Max. moisture absorption at +23°C and 50% relative humidity	[% weight]	0.3	0.3	0.2	0.2	0.1	1.3	0.2
Max. waterabsorption	[% weight]	1.3	1.6	1.1	1.3	0.1	6.5	0.7
pv value, max. (dry)	[MPa · m/s]	0.34	0.45	0.27	0.31	0.08	0.23	0.30
Mechanical properties								
Max. permissible surface pressure on the thread (DS(TR) at +20°C	[MPa]	2.5 / 4.0	2.5 / 3.0	2.0 / 2.0	2.5 / 3.5	0.5 / 0.5	- / 5.0	2.0 / 2.0
Shore D hardness		74	80	77	76	61	77	70
Physical and thermal properties								
Max. continuous operating-temperature	[°C]	+90	+150	+90	+90	+70	+90	+90
Max. short-term operating temperature	[°C]	+120	+150	+90	+90	+70	+180	+90
Min. application temperature ¹⁹¹⁾	[°C]	-20	-20	-20	-20	-20	-20	-20
Thermal conductivity	[W/m · K]	0.25	0.24	0.25	0.25	0.25	0.24	0.24
Coefficient of thermal expansion at +23°C	[K ⁻¹ · 10 ⁻⁵]	10	7	11	11	11	9	8
Electrical properties								
Specific contact resistance	[Ωcm]	> 10 ¹³	> 10 ¹³	> 10 ¹²	> 10 ¹²	> 10 ⁹	> 10 ¹³	> 10 ⁸
Surface resistance	[Ω]	> 10 ¹²	> 10 ¹⁰	> 10 ¹²	> 10 ¹¹	> 10 ⁹	> 10 ¹²	> 10 ⁸
Chemical resistance								
Alcohols		+	+	+	+	x	+ to 0	+
Hydrocarbons		+	+ to 0	+	+	x	+	+
Greases, oils without additives		+	+	+	+	x	+	+
Diluted acids		0 to -	+	0 to -	0 to -	x	0 to -	0 to -
Diluted alkalines		+	+	+	+	x	+	+
Lubricants, mineral		+	x	+	+	x	+	+
Lubricants, synthetic		0	x	0	0	x	0	0
More material properties	Page	163	203	251	425	271	175	265

Resistance classification: + resistant; 0 conditionally resistant; - not resistant; x no data available
 The lead screw nuts are not chemically attacked by these substances. However, there may be a dimensional change due to total moisture absorption.

¹⁹¹⁾ With falling temperatures, the required drive torque can increase due to the material

dryspin® lead screw nuts | Material overview

All our lead screw nuts are made from the wear-resistant iglidur® high-performance polymers.

There are seven different standard materials available for different applications: iglidur® J - high efficiency at all speeds, iglidur® J350 - for temperatures up to +150°C, iglidur® A180 - FDA-compliant for the food and pharmaceutical industry, iglidur® E7 - for high speeds with low loads, iglidur® R - anti-oscillation and anti-vibration, iglidur® J200 - the best reverse partner for aluminium and iglidur® W300 - for high-load applications.



Lead screw nuts made from iglidur® J - high efficiency at all speeds

Our all-rounder is the lead screw nut made of the high performance polymer iglidur® J. The material can be used at almost all speeds and is characterised by a high degree of efficiency.

Other benefits:

- Low coefficient of friction - low wear rates
- Up to +90°C max. long-term application temperature
- Permitted continuous surface pressure in the threads from 0MPa to 4.0MPa



Lead screw nuts made from iglidur® R - for medium to high speeds - vibration dampening

Our lead screw nut made of the high-performance polymer iglidur® R enables a reduction of the vibrations between the lead screw and the lead screw nuts through its dampening properties and ensures a low-vibration and quiet running behaviour.

Other benefits:

- High wear resistance at low loads
- Soft material - vibration-dampening
- Up to +90°C max. long-term application temperature
- Permitted continuous surface pressure in the threads from 0MPa to 2.0MPa



Lead screw nuts made from iglidur® J350 - high-temperature material up to +150°C

Our threaded nuts made of the high-performance polymer iglidur® J350 enable use in medium to high ambient temperatures. The long-term application temperature ideally should be between +60 and +150°C in order to obtain the maximum performance out of the material.

Other benefits:

- Dimensionally stable at high temperatures
- Can be certified according to EN 45545 HL3, R24
- Good coefficient of friction with medium loads
- Up to +150°C max. long-term application temperature
- Permitted continuous surface pressure in the threads from 0MPa to 3.0MPa



Lead screw nuts made from iglidur® A180 - FDA-compliant for the food and pharmaceutical industries

Our lead screw nut made of the high-performance polymer iglidur® A180 is FDA-compliant and suitable for applications with low to medium loads in the direct environment or contact with food or drugs as well as moisture.

Other benefits:

- FDA-compliant - for contact with food
- Compliant with Regulation (EU) No. 10/2011
- Up to +90°C max. long-term application temperature
- Permitted continuous surface pressure in the threads from 0MPa to 3.5MPa

The base material is also reinforced by technical fibres or filling materials. The solid lubricants are microscopic particles, embedded in millions of tiny chambers of the material. This is adequate to sufficiently lubricate the



Lead screw nuts made from iglidur® J200 - best mating partner for hard anodised aluminium

Our lead screw nut made of the high-performance polymer iglidur® J200 is characterised by a low coefficient of friction and minimal wear, especially on hard anodised aluminium lead screws.

Other benefits:

- Best combination with aluminium lead screws
- Low wear rates - long service life
- For low and medium loads
- Up to +90°C max. long-term application temperature
- Permitted continuous surface pressure in the threads from 0MPa to 2.0MPa



Lead screw nuts made from iglidur® W300 - for heavy duty applications up to 5MPa

Our lead screw nut made of the high-performance polymer iglidur® W300 gives excellent wear resistance, even in harsh environments. Of all iglidur® materials, iglidur® W300 is the most resistant to these conditions. It should only be noted that for lower loads or high dynamic applications, iglidur® J (all-rounder) is probably a better alternative, as the material tends to vibrate at low loads due to its high strength. We will be happy to help you with the right material selection.

Other benefits:

- Wear-resistant at high loads - high static strength
- For low speeds
- Up to +90°C max. long-term application temperature
- recommended continuous surface pressure in the threads from 4.0MPa to 5.0MPa

immediate surrounding area and to reduce the friction of the system. These additives stabilise our lead screw nuts decisively for wear resistance.

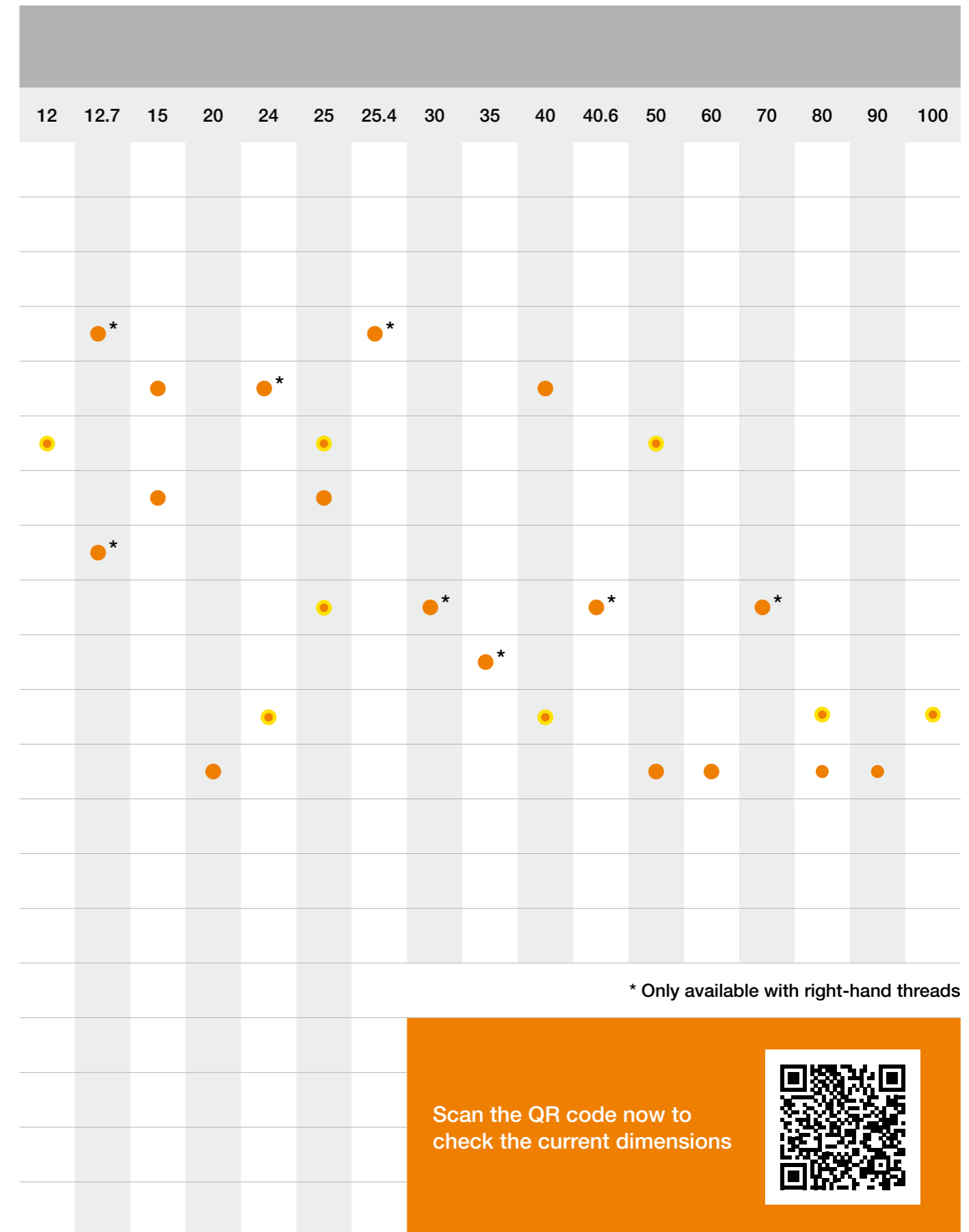
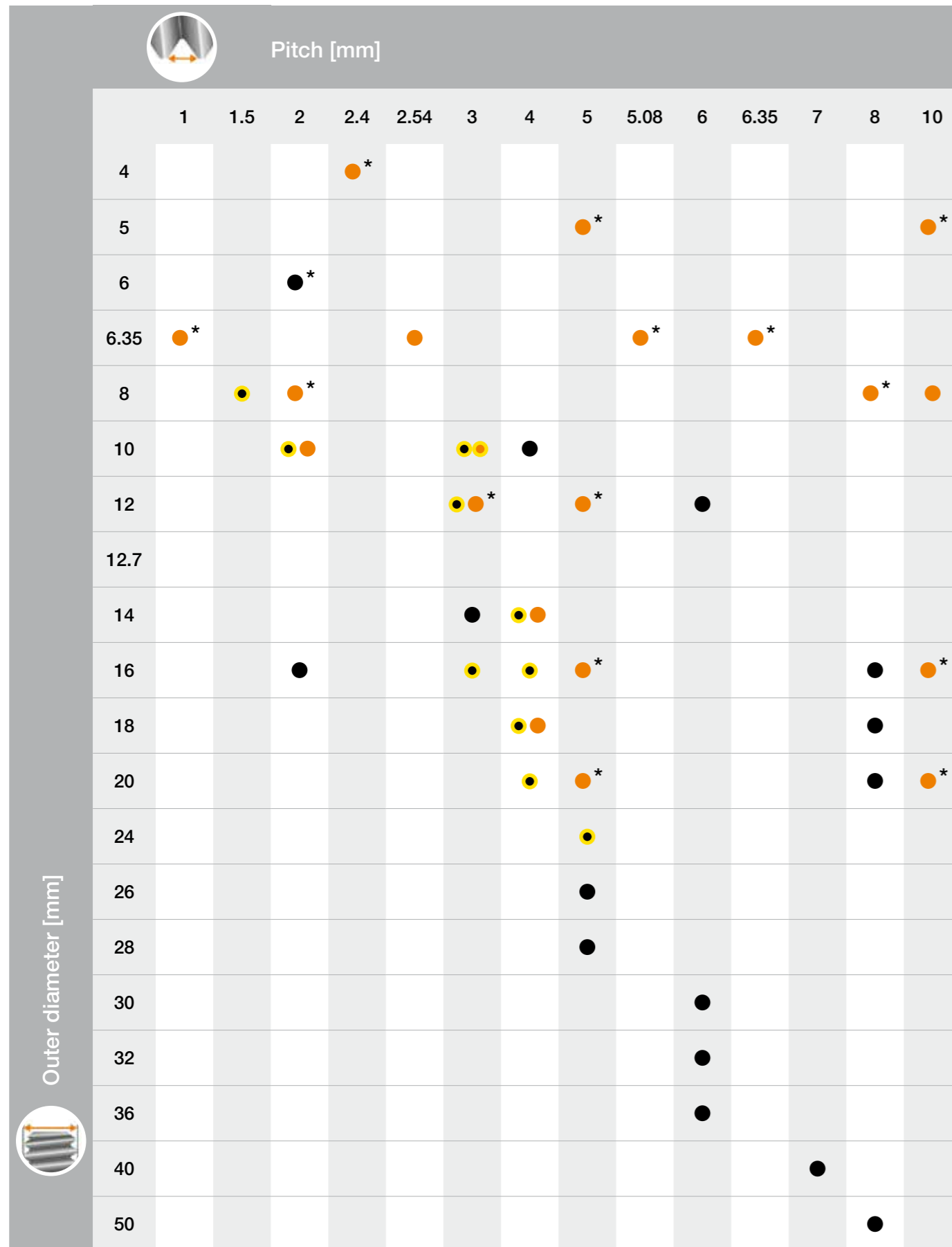


Lead screw nuts made from iglidur® E7 - for high speeds at low loads

Our lead screw nut made from the high-performance polymer iglidur® E7 offers good vibration-dampening specifications and good coefficients of friction at low loads. Thanks to its vibration-dampening properties, speeds of up to 1,200rpm are possible.

Other benefits:

- High speeds up to 1,200rpm at low loads up to 200N
- Noise-dampening
- Up to +60°C max. long-term application temperature
- Permitted continuous surface pressure in the threads from 0MPa to 0.5MPa



* Only available with right-hand threads

Scan the QR code now to check the current dimensions



- = dryspin® high helix thread
- = Trapezoidal thread
- = Available with a reverse thread

Radial loads

dryspin® lead screw nuts are designed to absorb axial forces. By using tribologically optimised iglidur® sliding materials, dryspin® lead screw drives can also absorb slight radial forces in contrast to ball screws. However, uncontrolled radial forces lead to uneven wear and thus to a reduced service life. Any radial forces occurring in the application should be absorbed by additional linear guides.

Temperature

dryspin® lead screw nuts, made from the maintenance-free iglidur® materials, are generally suitable for use in the temperature range from -20°C to +90°C (+150°C, depending on the material). It should be noted, however, that in addition to a change in the clearance due to temperature expansion, there is also a change in the maximum permissible load. From a temperature of <0 °C, due to the different temperature expansion coefficients between metal and plastic, there can be an increase in the required drive torque, which results in sluggishness. In this case, the lead screw nuts should be manufactured with a slight allowance or recut.

When the application is exposed to temperature and load extremes, we recommend testing the suitability of the lead screw nuts in this specific case by a practical test. In order to provide for the use in all temperature ranges, we have lead screw nuts available in various clearance classes.

Wet environments

Trapezoidal lead screw nuts made from iglidur® J or iglidur® A180 must be used for applications in humid environments, especially for wet applications. These material are characterised by very low moisture absorption.

Dirt

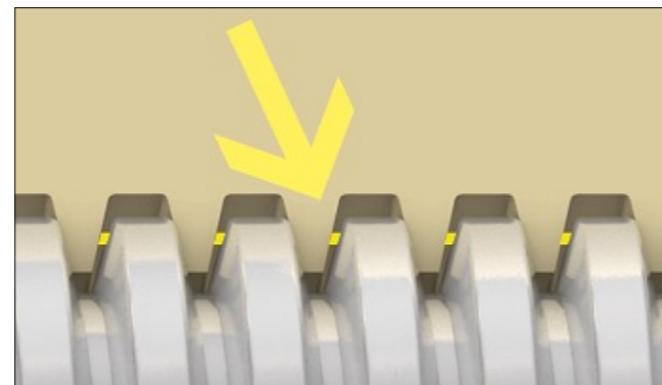
With the use of the maintenance-free iglidur® materials for lead screw nut production, dryspin® lead screw drives feature completely dry operation. Due to the deliberate avoidance of lubricants, the adhesion of soft particles such as dust and fibres is reduced. When compared to conventional, lubricated materials, it is common to see significant improvements in the service life in contaminated environments. However, in environments with significant contamination and hard particles, such as metal swarf or granite dust, the lead screw should be covered.

Lead screw drive inspection

dryspin® trapezoidal lead screw drives are manufactured in accordance with DIN 103. Inspection is performed with standard thread plug gauges after production. The DIN 103 standard is converted to the corresponding size for any thread sizes that are not shown in the standard table. The hygroscopic and thermal properties of the material must be taken into account during selection. Dimensional changes can occur as a result of moisture and/or thermal exposure at the point of use. For these reasons, general DIN compatibility cannot be guaranteed.

Noise

Noises can generally occur with lead screw drives. This applies in particular to long lead screws or long travels or to lead screws that are only supported on one side. Such thread systems can lead to self-generated vibrations. Lead screw nuts made from the tribologically optimised iglidur® materials tend to be significantly quieter than conventional plastics or metallic materials such as bronze or brass due to their good sliding properties when operating dry. In general, one can say that tougher materials such as iglidur® R or E7 produce the least amount of noise and are therefore particularly suitable for highly dynamic applications. Another option for noise reduction are pre-loaded lead screw nut types. If there is noise in your lead screw drive, please speak to our experts and we will find a suitable material pairing for you.



Yellow markings show the axial clearance of a standard lead screw nut

Clearance

Axial clearance can be used to describe the lost motion, the "dead travel", on the lead screw as a result of the gap between the lead screw and the lead screw nut. The term clearance is also often associated with it, but the correct technical term is axial clearance. It is thus the movement of

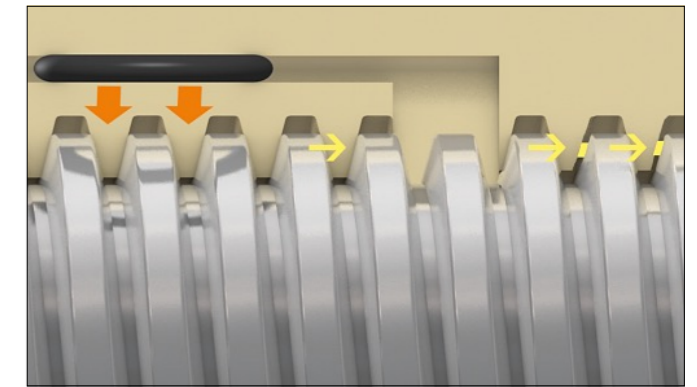
the lead screw nut in the axial direction without movement of the lead screw. Lead screw units require a minimum clearance to maintain their function. If the axial clearance is too small, the torque required to move the lead screw nut will also increase. Application-specific parameters must be observed in addition to the lead screw drive clearance caused by manufacturing tolerances. In addition to thermal and hygroscopic environmental influences, the minimum clearance to be considered in the application must also take into account the friction heat generated by the application. This plays a decisive role in connection with the expansion behaviour of the polymer material used. As the axial clearance in the system can change with temperature fluctuations. For lubrication-free lead screw drives, the basic clearance is approx. from 30µ to 50µ. An effective measure for reducing unwanted clearance, in addition to the correct material choice, is a pretensioning mechanism. The use of lead screw drives is therefore not recommended for precision drives without conducting practical tests. In addition to the solutions from our standard product range, our technical support team will be pleased to discuss other options.

Levels of efficiency

Efficiency is the ratio between the output and input power rating. In the calculation, the efficiency is abbreviated with a small eta (η). dryspin® lead screw nuts are characterised by a low coefficient of friction, resulting in high efficiencies. Single start trapezoidal lead screw nuts achieve efficiencies between 14 and 48% in dry operation. High helix lead screw nuts achieve efficiencies up to 82% in dry operation. Even though dryspin® lead screw nuts were developed for completely dry operation, lubrication can help to additionally increase efficiency.

Self-locking

Single start trapezoidal screw drives are self-locking in most cases. This means that the flank angle and the sliding friction prevent movement of the nut or the lead screw without the application of outside forces. As soon as the static friction is exceeded, the components are no longer self-locking. Multi start trapezoidal screw systems have a "residual self-locking" feature; high helix screw drives have no self-locking feature. Since the self-locking depends both on the pitch angle and on the coefficient of friction of the sliding pair, a loss of self-locking can occur with very low coefficients of friction even with single start trapezoidal threads.

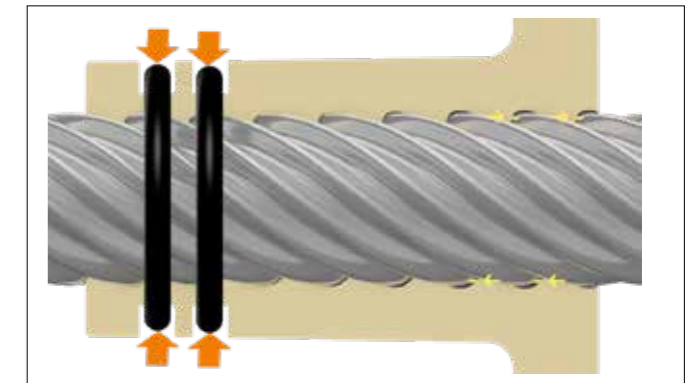


8 anti-backlash lead screw nuts (AB) - yellow = axial clearance, orange = pre-load

Anti-backlash lead screw nuts (AB)

Backlash is created on the lead screw drive by the axial clearance. By adding a small radial pre-load, vibrations are significantly reduced. Though a significant backlash reduction cannot be achieved.

► Page 1536

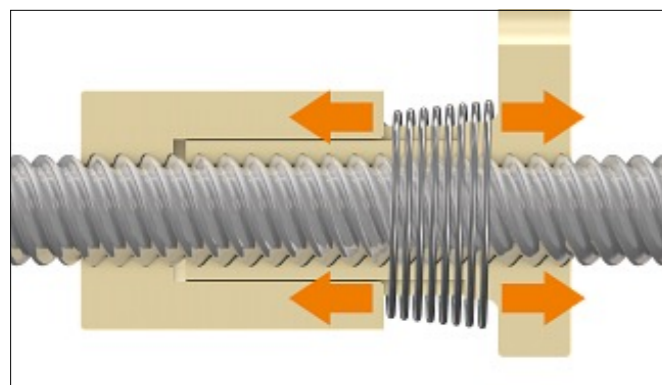


9 lead screw nuts with radial pre-load (low clearance, LC) - yellow = axial clearance, orange = pre-load

Lead screw nuts with radial pre-load (low clearance, LC)

LC lead screw nuts reduce backlash caused by axial clearance in a lead screw drive. The rear part of a slotted lead screw nut is radially pre-loaded around the lead screw by means of a strong, radial pretension using two elastomer rings (O-rings). The tooth flanks of the nuts are pressed far into the lead screw profile so that there is a pretension and thus a reduction in the axial clearance.

► Page 1530

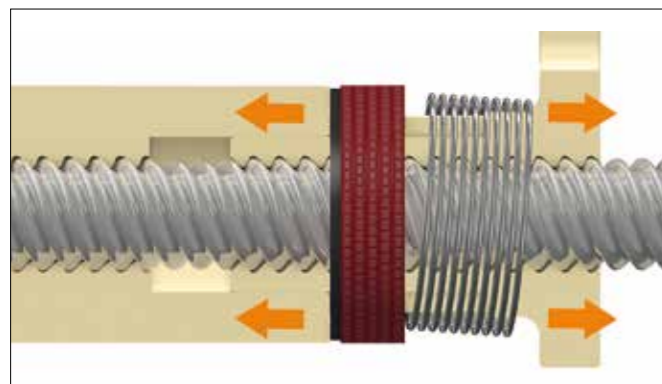


10 pre-load lead screw nuts (PL) - orange = pre-load direction

Pre-load lead screw nuts (PL)

PL lead screw nuts reduce the axial clearance in a lead screw drive by preloading two lead screw nut parts with a compression spring. The spring pushes the two halves of the lead screw nuts apart axially in the direction of the spindle flanks. As long as the axial load in the lead screw drive is lower than the spring pretension, the entire lead screw drive has a minimised backlash. This also permanently reduces clearance caused by wear.

► Page 1528



Self-adjusting zero-backlash principle, orange = pre-load direction

Zero-backlash lead screw nuts (ZB)

One of the most precise solutions is the ZB lead screw nut. It consists of several components and is self-adjusting. It is particularly suitable for lead screw drives with high helix threads for quick adjustment of small loads and ensures minimal clearance over the entire service life. Ideal for precise positioning and feed movements in medical, laboratory and printing technology as well as in the wide range of life sciences. The lead screw nut consists of a support nut, a fixing collar with a torsion spring, a friction disc and the axial element. As with the PL nut, it works

by means of axial spring pretension. In contrast to the PL nut, a torsion spring is used with the ZB lead screw nut. In conjunction with a friction disc and a fixing collar, it ensures that ZB lead screw nuts are load-independent and therefore also work with high axial loads and large thread pitches.

► Page 1527

Installation of lead screw nuts

dryspin® lead screw nuts must be secured against twisting and axial migration. However, the lead screw nuts are not designed for a press fit, since the oversize would have a negative effect on the thread clearance.

Lead screw nuts with flange

The maximum tightening torque for the flanged lead screw nut fastening screws is 2.5Nm. We recommend that assembly screws are secured with a semi-permanent thread locking glue. Metallic ferrules should be used for even higher tightening torques.

Cylindrical lead screw nuts

The outer diameter of cylindrical lead screw nuts is not designed for a press fit. We therefore recommend the use of spanner flats. In practice, a screw mount has proven to be effective with low forces. Gluing lead screw nuts is not recommended. If however, the securing of the lead screw nuts by adhesives is planned, individual tests and iglidur® material compatibility are necessary in each case.

Lead screw selection

The suitability and the operating behaviour of the system largely depend on the lead screws used with the nut. We recommend purchasing the nut and lead screw as a system from one source. Lead screws are inspected with DIN 103-compliant gauges. In principle, dryspin® lead screw drives can be used with lead screws made from steel, stainless steel or hard-anodised aluminium. Split and LH/RH lead screws (right and left-handed threads on one lead screw) are available in addition to right-hand and left-hand versions.

Custom lead screws

Take advantage of our machining service - we manufacture ready-to-fit lead screws based on your requirements. In addition to the standard sold by the metre option, we also offer the possibility to machine the lead screw directly, according to the specifications of the application, simply configured online with our free lead screw configurator. A CAD software or knowledge in handling CAD programmes is

not required. Thanks to the integrated design tool, all entries are automatically checked for plausibility. 2D dimensioned drawing and 3D step file, generated directly online. The live pricing also gives a good impression of the costs involved in the individual processing steps. If a desired configuration cannot be displayed via the online configurator, we would be pleased to receive your enquiry. We will check the manufacturability and issue you with a quotation.

Custom nuts

Take advantage of our machining service even for custom lead screw nuts - we manufacture ready-to-fit lead screw nuts based on your requirements. Please send us your drawing. We can then provide a quick quotation and recommend the right material.

Service life

dryspin® lead screw nuts are made from tribologically optimised materials. Already during the development phase, the focus is on optimising the friction properties of the dryspin® lead screw drives, with the objective of attaining the lowest possible coefficient of wear and friction. In order to make the most precise statements about service life and wear resistance, several hundred tests are conducted each year on the test equipment at the igus® test laboratory in Cologne. Our experts will gladly test your application as well. The results of these tests form the basis of our service life calculation tools, such as our lead screw drive expert.

Lubrication

Many people think that greasing some products is essential to ensure that they do not seize up and can continue a smooth movement. However, it is easy to forget that lubrication is not a prerequisite for all products. Our lead screw systems are developed for maintenance-free dry operation. Basically, you should not compare a lubricated lead screw system one-to-one with a dry-operating system. Due to the external lubrication, the coefficient of friction is lower compared to a dry-operating lead screw system. However, the lubricant also causes a high maintenance effort and additional costs that are often not accounted for. In an abrasive environment, lubricants can become an "emery paste" that damages the system. In justified cases, however, external lubrication of iglidur® lead screw nuts can be considered to reduce the coefficient of friction or to increase the speeds without noise generation. Please consult one of our experts to find out whether this really makes sense for your application.

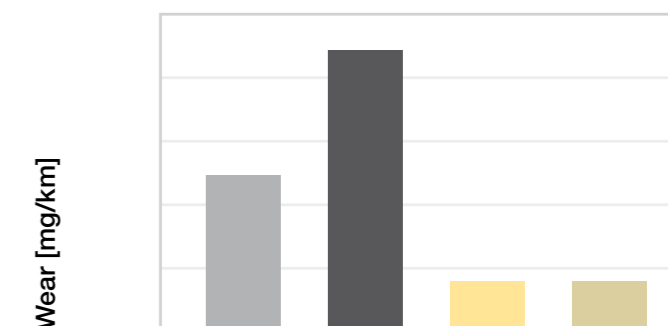


Diagram 01: Wear test on a rolled trapezoidal lead screw

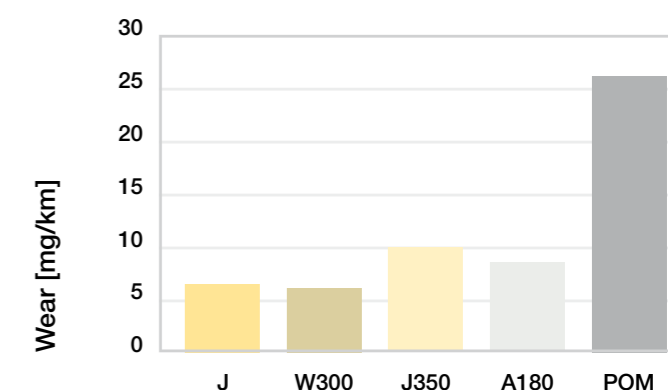


Diagram 02: Wear test on a C15 lead screw
Stroke 140mm, 50N, lead screw C15 rolled, 450rpm

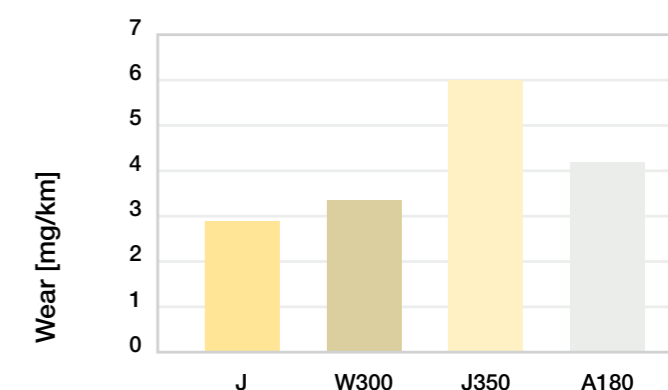


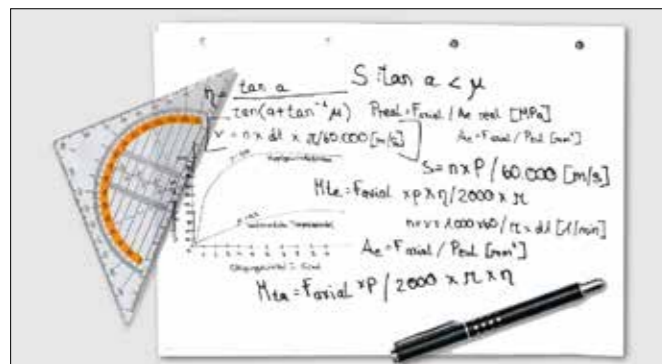
Diagram 03: Wear test on a VA lead screw
Stroke 140mm, 50N, lead screw VA rolled, 450rpm

The dryspin® lead screw technology patented in 2016 by the development team. Particular emphasis was placed on increasing service life and improving efficiency. The dryspin® product portfolio includes lead screws and high-helix lead screws with 0.1 mm outer diameter tolerance and are available in pitches from 1 mm to 100 mm.

dryspin® offers better efficiency thanks to the specifications and geometries tailored to the plastic nut and lead screw. Efficiencies of up to 82% and a longer service life are achieved compared to metal lead screw drives. In combination with an igus® lead screw nut, clean and dry operation is possible, without dust and dirt getting stuck. The dryspin® high helix threads are not self-locking. The lead screw nut and lead screw can be moved even without applying external force. This means that the lead screw nut and lead screw can be moved even without external drive or lead screw.

Higher efficiency due to optimised flank angle

Due to a flatter thread angle in dryspin® high helix lead screws (similar to a trapezoidal thread), the applied force is efficiently converted into a linear motion. Compared with a steeper thread angle, this means a lower power loss.



You can find more information on our efficiency rates in the material overview or in our online blog on this topic.

Silent and vibration-dampening due to rounded tooth geometry

Due to the rounded tooth geometry, the contact surface between the lead screw nut and the lead screw is reduced. Thereby the dryspin® lead screw nuts move without vibration, virtually silent. This is due to the fact that the greater the contact of two surfaces moving against one another, the more vibrations are transmitted, which can be perceived as a rattle or squeak. The round teeth minimise this effect and the thread moves without lubrication or noise.



Reduction of the radial contact surfaces through rounded tooth geometry

Longer service life thanks to asymmetry

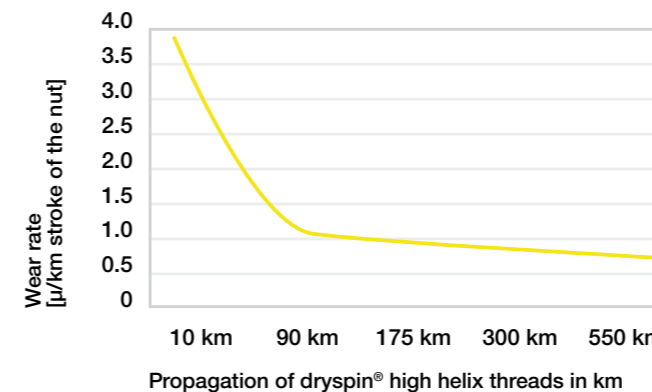
Due to larger distances between the individual dryspin® thread pitches, the thread ideally adapts to the specifications of the lubrication-free igus® high-performance polymers. The proportion of the tribologically optimised polymer content in the thread pitches can be increased by a factor of 1.3 for all sizes. More wear-resistant material and higher efficiency are decisive for a service life that is up to five times longer than standard geometries. The larger the lead screw diameter, the stronger is this effect. Backlash can be minimised for life by using dryspin® zero backlash lead screw nuts with integrated spring pre-load.



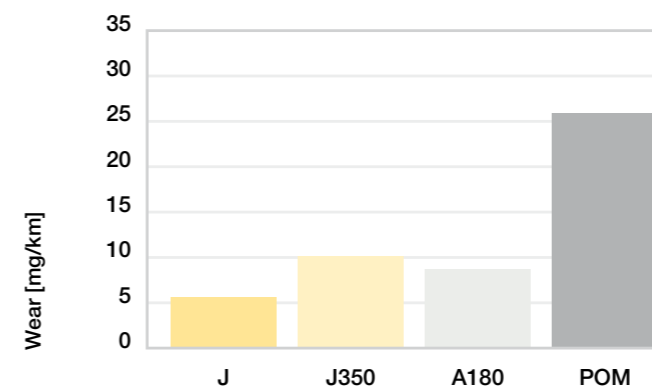
Asymmetry - increasing the proportion of wear material in the thread pitch

Lead screw length [mm]	Standard	Aligned
<300	0.3	0.1
<600	0.6	0.2
<900	0.9	0.3
<1,200	1.2	0.4
<1,500	1.5	0.5
<1,800	1.8	0.6
<2,100	2.1	0.7

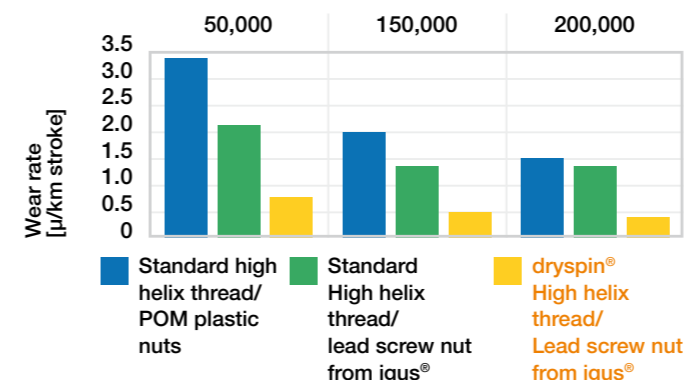
Overview table of specified lead screw straightness



Wear test dryspin® high helix thread
DST 10x25, load 175N, 540mm stroke, 125rpm



Wear test on C15 lead screw [mg/km]
Stroke 140mm, 50N, lead screw C15 rolled, 450rpm



Wear-resistant high helix thread 10x50, dryspin® high helix thread / standard high helix thread, load 36N, 100rpm for 50,000/150,000/200,000 cycles

Lead screw straightness

The dryspin® lead screws are designed in the igus® standard for a straightness of 0.3 per 300mm or part thereof. For higher requirements, the dryspin® lead screws can be aligned to a straightness of 0.1 per 300mm or part thereof.

Tested: Lubrication-free iglidur® materials from igus®

Liners, sliding elements and lead screw nuts from dryspin® adapted for your application: lubrication-free, tested and predictable.

- 12,000 tribology tests per year
- More than 300 parallel test facilities
- 140 trillion test movements
- Continuous testing of dryspin® products

► www.igus.eu/tests

dry-tech® tribo-plastics

In all dryspin® linear and drive units as well as screw drives, igus® high-performance polymers are used. Due to the homogeneously incorporated solid lubricants, the bearing materials are designed for continuous dry operation, i.e. maintenance-free over the complete service life.

Material selection

dryspin® lead screw nuts are made from tribologically optimised materials. Already during the development phase, the focus is on optimising the friction properties of the dryspin® lead screw drives, with the objective of attaining the lowest possible coefficient of wear and friction.

Service life

Every year, several hundred tests are set up and performed on test rigs in the igus® test laboratory. The results are incorporated into easily accessible online tools, where the service life and the required torque can be determined.

► www.igus.eu/leadscrew-expert



Stainless steel, rolled, AISI 304

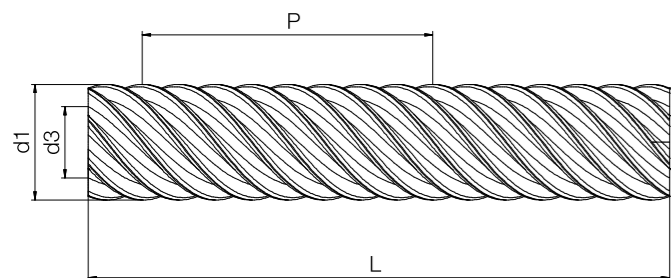


Aluminium, rolled (EN AW 6082)

Technical data

Pitch variation	0.1mm / 300mm
Straightness (standard)	0.3mm / 300mm
Aligned	<0.1mm / 300mm

The tensile/compressive strength of the EN AW 6082 lead screw material is 160MPa (elongation limit 0.2mm).



Technical data

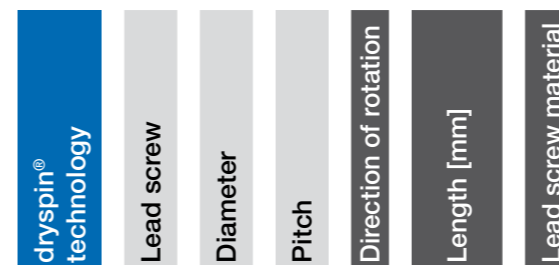
Thread	Direction of rotation		Material		Pitch P [mm]	Number of thread pitches	Pitch angle α [°]	Weight	
	Right	Left	Stainless steel	Aluminium				Stainless steel	Aluminium
			AISI 304	EN AW 6082				[kg/m]	[kg/m]
Ds5x5	●	-	●	-	5	2	17.66	0.16	-
Ds5x10	●	-	●	-	10	4	32.48	0.16	-
Ds6.35x6.35	●	-	●	-	6.35	3	17.66	0.25	-
Ds6.35x12.7	●	-	●	-	12.7	4	32.48	0.25	-
Ds6.35x25.4	●	-	●	-	25.4	8	51.85	0.25	-
Ds8x8	●	-	●	-	8	4	17.66	0.40	-
Ds8x10	●	●	●	●	10	4	21.70	0.40	0.14
Ds8x15	●	●	●	●	15	6	30.83	0.40	0.14
Ds8x24	●	-	●	-	24	8	43.78	0.40	-
Ds8x40	●	-	●	-	40	8	57.86	0.40	-
Ds10x12	●	●	●	●	12	4	21.54	0.62	0.21
Ds10x25	●	●	●	●	25	8	38.51	0.62	0.21
Ds10x50	●	●	●	●	50	10	57.86	0.62	0.21
Ds12.7x12.7	●	-	●	-	12.7	4	17.66	1.00	-
Ds12x15	●	-	●	-	15	5	21.69	0.89	-
Ds12x25	●	●	●	●	25	8	33.55	0.89	0.31
Ds14x25	●	●	●	●	25	5	29.61	1.22	0.42
Ds14x30	●	-	●	●	30	6	34.30	1.22	0.42
Ds14x40.6	●	-	●	-	40.6	8	42.71	1.22	-
Ds14x70	●	-	●	-	70	8	57.86	1.22	-
Ds16x35	●	-	●	●	35	7	34.85	1.59	0.54
Ds18x24	●	●	●	●	24	6	22.99	2.01	0.69
Ds18x40	●	●	●	●	40	8	35.55	2.01	0.69

Available from stock
On request

Order key

Part number	Thread	Options
-------------	--------	---------

DST-LS-10X50-R-1000-ES



Options:
 Direction of rotation
 R: Right-hand thread
 L: Left-hand thread
 Length in mm: Freely selectable (see table)
 Lead screw material
 ES: Stainless steel, rolled
 AL: Aluminium, rolled

Please contact us!

All dryspin® leads screws can be custom machined. Please configure this online or send us your drawing. We can then provide a quick quotation.

► www.igus.eu/lead-screw-configurator

Dimensions [mm]

Outer Ø d1 -0.1	Core Ø d3 -0.1	Max. total length L		Part No.
		ES	AL	
5.0 -0.05	3.30 -0.05	1,000	-	DST-LS-5X5-R-□-ES
5.0 -0.05	3.80 -0.05	1,000	-	DST-LS-5X10-R-□-ES New
6.35 -0.05	4.33 -0.05	1,000	-	DST-LS-6.35X6.35-R-□-ES New
6.35 -0.05	4.35 -0.05	1,000	-	DST-LS-6.35X12.7-R-□-ES
6.35 -0.05	4.10 -0.05	1,000	-	DST-LS-6.35X25.4-R-□-ES
8.0	5.78	1,500	-	DST-LS-8X8-R-□-ES New
8.0	5.63	1,500	1,000	DST-LS-8X10-□-□-ES
8.0	5.63	1,500	1,000	DST-LS-8X15-□-□-ES
8.0	5.55	1,500	-	DST-LS-8X24-R-□-ES
8.0	5.80	1,500	-	DST-LS-8X40-R-□-ES New
10.0	6.90	3,000	1,000	DST-LS-10X12-□-□-ES
10.0	7.10	3,000	1,000	DST-LS-10X25-□-□-ES
10.0	7.35	3,000	1,000	DST-LS-10X50-□-□-ES
12.7	9.60	3,000	-	DST-LS-12.7X12.7-R-□-ES
12.0	9.10	3,000	-	DST-LS-12X15-R-□-ES
12.0	8.97	3,000	1,500	DST-LS-12X25-R-□-ES New
14.0	9.60	3,000	1,500	DST-LS-14X25-□-□-ES
14.0	9.60	3,000	1,500	DST-LS-14X30-R-□-ES
14.0	9.65	3,000	-	DST-LS-14X40.6-R-□-ES
14.0	9.95	3,000	-	DST-LS-14X70-R-□-ES New
16.0	11.60	3,000	1,500	DST-LS-16X35-R-□-ES
18.0	14.33	3,000	1,500	DST-LS-18X24-□-□-ES
18.0	13.60	3,000	1,500	DST-LS-18X40-□-□-ES

Technical data

Thread	Direction of rotation		Material		Pitch P [mm]	Number of thread pitches	Pitch angle α [°]	Weight	
	Right	Left	Stainless	Aluminium				Stainless steel	Aluminium
			steel AISI 304	EN AW 6082					
Ds18x80	●	●	●	●	80	12	54.74	2.01	0.69
Ds18x100	●	●	●	●	100	12	60.51	2.01	0.69
Ds20x20	●	●	●	●	20	4	17.66	2.48	0.85
Ds20x50	●	–	●	●	50	8	38.51	2.48	0.85
Ds20x60	●	●	●	●	60	8	43.68	2.48	0.85
Ds20x80	●	●	●	●	80	12	51.85	2.48	0.85
Dx20x90	●	●	●	●	90	12	55.08	2.48	0.85

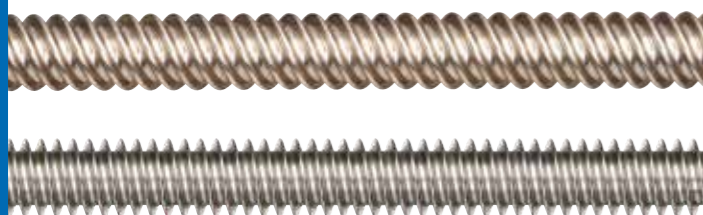
Dimensions [mm]

Outer Ø d1 -0.1	Core Ø d3 -0.1	Max. total length L		Part No.
		ES	AL	
		18.0	14.00	
18.0	13.55	3,000	1,500	DST-LS-18X100-□-□-ES
20.0	15.20	3,000	1,500	DST-LS-20X20-□-□-ES
20.0	15.58	3,000	1,500	DST-LS-20X50-□-□-ES
20.0	15.55	3,000	1,500	DST-LS-20X60-□-□-ES
20.0	15.98	3,000	1,500	DST-LS-20X80-□-□-ES
20.0	15.55	3,000	1,500	DST-LS-20X90-□-□-ES



Available from stock

On request

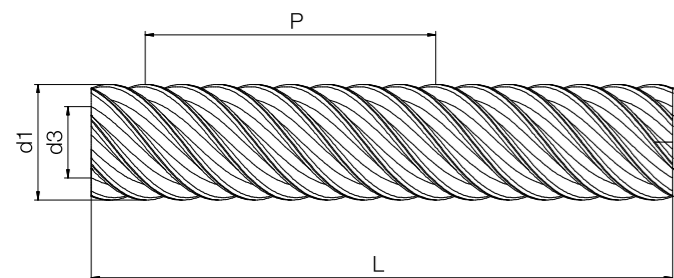


Technical data

Pitch variation	0.1mm / 300mm
Straightness (standard)	0.3mm / 300mm
Aligned	<0.1mm / 300mm

The tensile/compressive strength of the EN AW 6082 lead screw material is 160MPa (elongation limit 0.2mm).

Stainless steel, rolled, AISI 304



Technical data

Thread	Direction of rotation		Material		Pitch P [mm]	Number of thread pitches	Pitch angle α [°]	Weight	
	Right	Left	Stainless steel AISI 304	Aluminium EN AW 6082				Stainless steel [kg/m]	Aluminium [kg/m]
Ds4x2.4	●	–	●	–	2.4	2	10.81	0.10	–
Ds6.35x1	●	–	●	–	1	1	2.87	0.25	–
Ds6.35x2.54	●	●	●	–	2.54	2	7.26	0.25	–
Ds6.35x5.08	●	–	●	–	5.08	4	14.29	0.25	–
Ds10x2	●	●	●	–	2	1	3.64	0.62	–
Ds10x3	●	●	●	–	3	2	5.45	0.62	–
Ds12x3	●	–	●	–	3	1	4.55	0.89	–
Ds12x5	●	–	●	●	5	2	7.55	0.89	0.31
Ds14x4	●	●	●	–	4	1	5.20	1.22	–
Ds16x5	●	–	●	–	5	1	5.68	1.59	–
Ds16x10	●	–	●	–	10	2	11.25	1.59	–
Ds18x4	●	●	●	–	4	1	4.04	2.01	–
Ds20x5	●	–	●	–	5	1	4.55	2.48	–
Ds20x10	●	–	●	–	10	2	9.04	2.48	–

Order key

Part number	Thread	Options
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DST-LS- 4X2.4 - R -1000-ES

dryspin®
technology

Lead screw

Diameter

Pitch

Direction of rotation

Length [mm]

Lead screw material

Options:
 Direction of rotation
 R: Right-hand thread
 L: Left-hand thread
 Length in mm: Freely selectable (see table)
 Lead screw material
 ES: Stainless steel, rolled
 AL: Aluminium, rolled

Please contact us!

All dryspin® leads screws can be custom machined. Please configure this online or send us your drawing. We can then provide a quick quotation.

► www.igus.eu/lead-screw-configurator

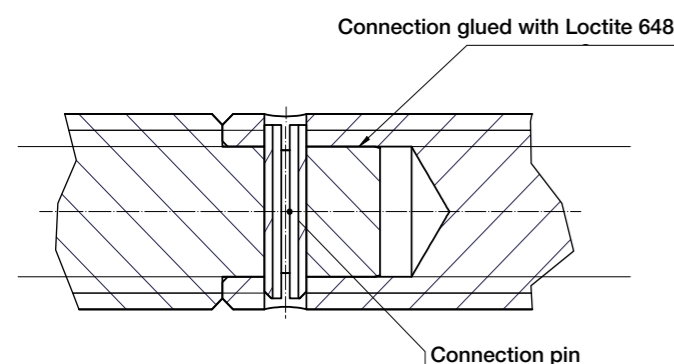
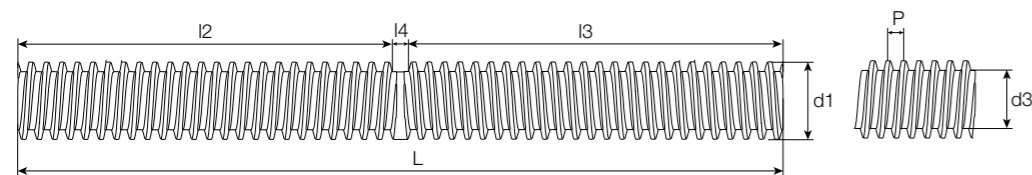
Dimensions [mm]

Outer Ø d1 -0.1	Core Ø d3 -0.1	Max. total length L		Part No.
		ES	AL	
4.0 -0.05	3.05 -0.05	1,000	–	DST-LS-4X2.4-R-□-ES
6.35 -0.05	5.35 -0.05	1,000	–	DST-LS-6.35X1-R-□-ES New
6.35 -0.05	4.35 -0.05	1,000	–	DST-LS-6.35X2.54-□-□-ES
6.35 -0.05	4.85 -0.05	1,000	–	DST-LS-6.35X5.08-R-□-ES
10.0	7.77	3,000	–	DST-LS-10X2-□-□-ES New
10.0	7.85	3,000	–	DST-LS-10X3-□-□-ES New
12.0	8.77	3,000	–	DST-LS-12X3-R-□-ES New
12.0	9.60	3,000	1,500	DST-LS-12X5-R-□-ES
14.0	9.95	3,000	–	DST-LS-14X4-□-□-ES New
16.0	11.15	3,000	–	DST-LS-16X5-R-□-ES New
16.0	11.55	3,000	–	DST-LS-16X10-R-□-ES New
18.0	13.95	3,000	–	DST-LS-18X4-□-□-ES New
20.0	15.20	3,000	–	DST-LS-20X5-R-□-ES New
20.0	15.60	3,000	–	DST-LS-20X10-R-□-ES New

Available from stock
 On request



Stainless steel, rolled, AISI 304



Our reverse lead screws with dryspin® thread geometry are mechanically connected in a non-positive and positive manner using metal adhesive and dowel pins.

Technical data - dryspin® high helix lead screws

Thread	Max. transferable torque [Nm]	Max. tensile strength [N]	Material Stainless steel AISI 304	Pitch P [mm]	Number of thread pitches	Pitch angle α [°]
Ds10x12	2.0	450	●	12	4	21.54
Ds10x25	2.0	450	●	25	8	38.51
Ds10x50	2.0	450	●	50	10	57.86
Ds14x25	4.0	1,000	●	25	5	29.61
Ds14x30	4.0	1,000	●	30	6	34.30
Ds14x40.6	4.0	1,000	●	40.6	8	42.71
Ds18x24	7.5	1,600	●	24	6	22.99
Ds18x40	7.5	1,600	●	40	8	35.55
Ds18x80	7.5	1,600	●	80	12	54.74
Ds18x100	7.5	1,600	●	100	12	60.51
Ds20x20	11.0	2,500	●	20	4	17.66
Ds20x50	11.0	2,500	●	50	8	38.51
Ds20x60	11.0	2,500	●	60	8	43.68
Ds20x80	11.0	2,500	●	80	12	51.85
Ds20x90	11.0	2,500	●	90	12	55.08
dryspin® lead screws						
Ds14x4	4.0	1,000	●	4	1	5.2
Ds18x4	7.5	1,600	●	4	1	4.04
Ds20x5	11.0	2,500	●	5	1	4.55
Ds20x10	11.0	2,500	●	10	2	9.04

⁴⁶⁾ Non-usable thread transition

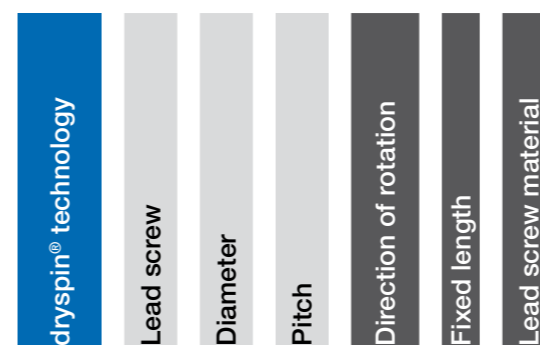
⁴⁷⁾ Fixed length (L)

⁴⁸⁾ Lead screw material

Order key

Part number	Thread	Options
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DST-LS-10X50-R/L-□-ES



Options:
Length in mm
Lead screw material
ES: Stainless steel, rolled

Please contact us!
Do you need an individual cut length instead of a fixed length? Configure your personal length easily and quickly using our dryspin® lead screw configurator.
► www.igus.eu/lead-screw-configurator

1,000mm standard length and 2,000mm total length incl. thread transition - available from stock for individual further processing

Dimensions [mm]

Outer Ø d1	Core Ø d3	Thread transition l ⁴⁶⁾	Max. thread length l ²⁴⁸⁾	Max. thread length l ³⁴⁷⁾	Max. total length L	Part No.
10	6.95	25	487	487	1,000	DST-LS-10X12-R/L-□-ES
10	7.10	25	487	487	1,000	DST-LS-10X25-R/L-□-ES
10	7.35	25	487	487	1,000	DST-LS-10X50-R/L-□-ES
14	9.60	25	987	987	2,000	DST-LS-14X25-R/L-□-ES
14	9.60	25	987	987	2,000	DST-LS-14X30-R/L-□-ES New
14	9.65	25	987	987	2,000	DST-LS-14X40.6-R/L-□-ES New
18	14.40	25	987	987	2,000	DST-LS-18X24-R/L-□-ES
18	1360	25	987	987	2,000	DST-LS-18X40-R/L-□-ES
18	14.00	25	987	987	2,000	DST-LS-18X80-R/L-□-ES
18	13.55	25	987	987	2,000	DST-LS-18X100-R/L-□-ES
20	15.20	25	987	987	2,000	DST-LS-20X20-R/L-□-ES New
20	15.58	25	987	987	2,000	DST-LS-20X50-R/L-□-ES New
20	15.55	25	987	987	2,000	DST-LS-20X60-R/L-□-ES New
20	15.98	25	987	987	2,000	DST-LS-20X80-R/L-□-ES New
20	15.55	25	987	987	2,000	DST-LS-20X90-R/L-□-ES New
14	9.95	25	987	987	2,000	DST-LS-14X4-R/L-□-ES New
18	13.95	25	987	987	2,000	DST-LS-18X4-R/L-□-ES New
20	15.20	25	987	987	2,000	DST-LS-20X5-R/L-□-ES New
20	15.60	25	987	987	2,000	DST-LS-20X10-R/L-□-ES New



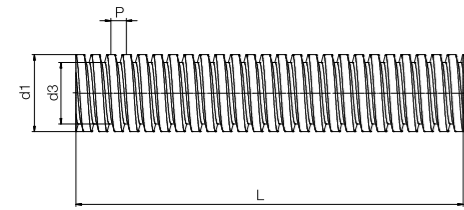
CF15, rolled, AISI 1015



Stainless steel, rolled



Aluminium, rolled (EN AW 6082)



Technical data

Pitch variation	0.1mm / 300mm
Straightness (standard)	0.3mm / 300mm
Aligned (optional)	<0.1mm / 300mm
Tolerance (according to DIN 103)	7e

The tensile/compressive strength of the EN AW 6082 lead screw material is 160MPa (elongation limit 0.2mm).

Technical data

Thread	Direction of rotation		Material						Pitch P [mm]	Pitch angle α [°]
	Right	Left	C15	Stainless steel				Aluminium EN AW 6082		
				AISI 304	AISI 303	AISI 316L	AISI 321			
Tr8x1.5	●	●	●	●	-	-	-	-	1.5	3.42
Tr10x2	●	●	●	●	-	-	-	●	2	3.64
Tr10x3	●	●	●	-	-	●	-	-	3	5.45
Tr12x2	●	-	-	●	-	-	-	-	2	3.04
Tr12x3	●	●	●	●	-	-	-	●	3	4.55
Tr14x3	●	●	●	●	-	-	-	-	3	3.90
Tr14x4	●	●	●	-	-	-	●	-	4	5.20
Tr16x2	●	●	●	-	●	-	-	-	2	2,28
Tr16x4	●	●	●	●	-	-	-	●	4	4.55
Tr18x2	●	-	-	●	-	-	-	-	2	2.03
Tr18x4	●	●	●	●	-	-	-	●	4	4.05
Tr20x4	●	●	●	●	-	-	-	●	4	3.64
Tr22x2	●	●	-	●	-	-	-	-	2	1.66
Tr24x5	●	●	●	●	-	-	-	-	5	3.79
Tr26x5	●	●	●	●	-	-	-	-	5	3.50
Tr28x5	●	●	●	●	-	-	-	-	5	3.25
Tr30x6	●	●	●	●	-	-	-	-	6	3.64
Tr32x6	●	●	●	-	●	-	-	-	6	3.42
Tr36x6	●	●	●	-	●	-	-	-	6	3.04
Tr40x7	●	●	●	●	-	-	-	-	7	3.19
Tr50x8	●	●	●	-	●	-	-	-	8	2.92



Please contact us!

All dryspin® leads screws can be custom machined. Please configure this online or send us your drawing. We can then provide a quick quotation.

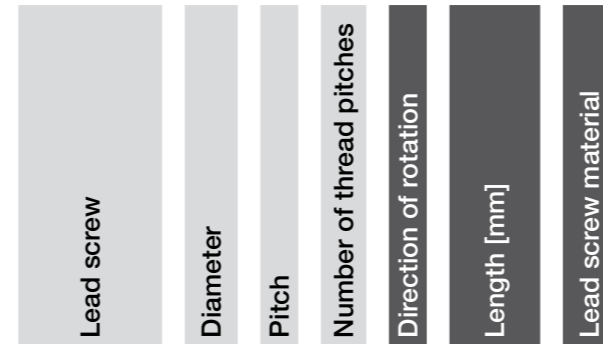
► www.igus.eu/lead-screw-configurator



Order key

Part number	Thread	Options
-------------	--------	---------

PTGSG-10X2-01-R-1000-ES



Options:
 Direction of rotation
R: Right-hand thread
L: Left-hand thread
Length in mm: Freely selectable (see table)
 Lead screw material
Blank: C15, rolled
ES: Stainless steel, rolled
AL: Aluminium, rolled



ACME thread (US standard)

► Page 1620

Dimensions [mm]

C15	Weight		Outer Ø		Core Ø		Max. total length		Part No.
	C15	Stainless steel	Aluminium	d1		d3		L	
				min.	max.	min.	max.		
[kg/m]	[kg/m]	[kg/m]	min.	max.	min.	max.	C15 / ES	AL	
0.39	0.40	0.14	7.8	8	5.4	6.2	1,500	-	PTGSG-8X1.5-01-□-□-□
0.62	0.62	0.21	9.8	10	7.2	7.5	3,000	1,000	PTGSG-10X2-01-□-□-□
0.62	0.62	0.21	9.8	10	6.2	6.5	3,000	-	PTGSG-10X3-01-□-□-□
-	0.89	-	11.8	12	9.2	9.5	3,000	-	PTGSG-12X2-01-□-□-□ New
0.89	0.89	0.31	11.8	12	7.7	8.5	3,000	1,000	PTGSG-12X3-01-□-□-□
1.21	1.22	0.42	13.8	14	9.7	10.5	3,000	-	PTGSG-14X3-01-□-□-□
1.21	1.22	0.42	13.7	14	9.1	9.5	3,000	-	PTGSG-14X4-01-□-□-□
1.58	1.59	0.54	15.8	16	11.8	12.8	3,000	-	PTGSG-16X2-01-□-□-□
1.58	1.59	0.54	15.7	16	10.5	11.5	3,000	1,000	PTGSG-16X4-01-□-□-□
-	2.01	-	17.8	18	15.2	15.5	3,000	-	PTGSG-18X2-01-□-□-□ New
2.00	2.01	0.69	17.7	18	12.5	13.5	3,000	2,000	PTGSG-18X4-01-□-□-□
2.47	2.48	0.85	19.7	20	14.5	15.5	3,000	2,000	PTGSG-20X4-01-□-□-□
-	3.00	-	21.8	22	18.1	18.5	3,000	-	PTGSG-22X2-01-□-□-□ New
3.55	3.57	1.22	23.7	24	17.3	18.5	3,000	-	PTGSG-24X5-01-□-□-□
4.17	4.19	1.43	25.7	26	19.3	20.5	3,000	-	PTGSG-26X5-01-□-□-□
4.83	4.86	1.66	27.7	28	21.3	22.5	3,000	-	PTGSG-28X5-01-□-□-□
5.55	5.58	1.91	29.6	30	21.6	23.0	3,000	-	PTGSG-30X6-01-□-□-□
6.31	6.35	2.17	31.6	32	24.5	25.0	3,000	-	PTGSG-32X6-01-□-□-□
7.99	8.04	2.75	35.6	36	27.6	29.0	3,000	-	PTGSG-36X6-01-□-□-□
9.86	9.93	3.39	39.6	40	30.4	32.0	3,000	-	PTGSG-40X7-01-□-□-□
15.41	15.51	5.30	49.6	50	39.2	41.0	3,000	-	PTGSG-50X8-01-□-□-□



The biggest lead screw shop
online

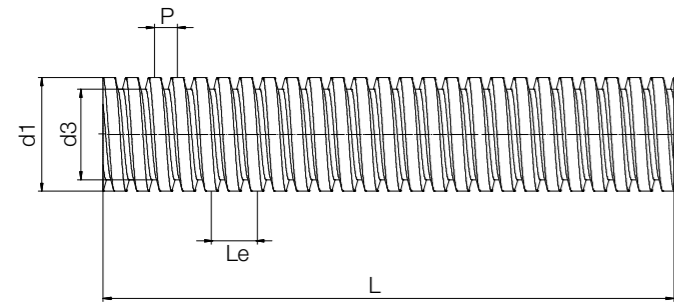
► www.igus.eu/leadscrowshop



CF15, rolled, AISI 1015



Stainless steel, rolled, AISI 304



Technical data

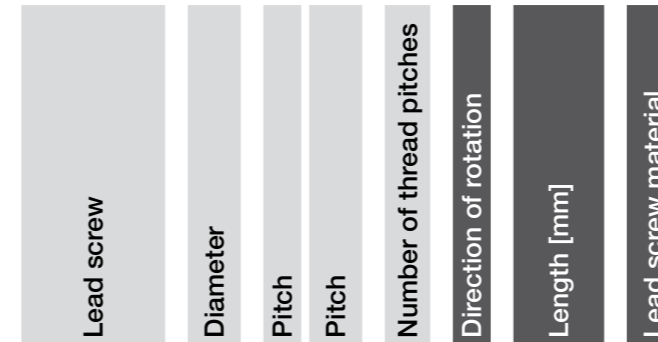
Pitch variation	0.1mm / 300mm
Straightness (standard)	0.3mm / 300mm
Aligned (optional)	<0.1mm / 300mm
Tolerance (according to DIN 103)	7e

P = Pitch
Le = Lead/pitch

Order key

Part number	Threads	Options
-------------	---------	---------

PTGSG-10X4 P2-02-R-1000-ES



Options:
 Direction of rotation
R: Right-hand thread
L: Left-hand thread
Length in mm: Freely selectable (see table)
 Lead screw material
Blank: C15, rolled, AISI 1015
ES: Stainless steel, rolled, AISI 304
AL: Aluminium, rolled

Please contact us!

Do you need an individual configuration and/or machined end for your lead screw? This is not a problem with the help of the dryspin® lead screw configurator: configure lead screw at

► www.igus.eu/lead-screw-configurator

Technical data

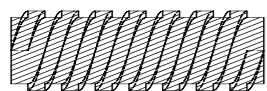
Thread	Direction of rotation		Material		Total pitch Le [mm]	Pitch P [mm]	Pitch angle α [°]	Weight	
	Right	Left	C15	Stainless steel AISI 304				C15 [kg/m]	Stainless steel [kg/m]
Tr06x2P1	●	–	–	●	2	1	6,06	0.22	0.22
Tr10x4P2	●	–	–	●	4	2	7.26	0.62	0.62
Tr12x6P3	●	●	●	●	6	3	9.04	0.89	0.89
Tr16x8P4	●	●	●	●	8	4	9.04	1.58	1.59
Tr18x8P4	●	●	●	●	8	4	8.05	2.00	2.01
Tr20x8P4	●	●	●	●	8	4	7.26	2.47	2.48

Dimensions [mm]

Outer Ø d1		Core Ø d3		Max. Total length	Part No.
min.	max.	min.	max.	L	
5.9	6	3.4	3.5	1,000	PTGSG-06X2P1-02-□-□-□
9.8	10	7.2	7.5	3,000	PTGSG-10X4P2-02-□-□-□
11.8	12	7.7	8.5	3,000	PTGSG-12X6P3-02-□-□-□
15.7	16	10.5	11.5	3,000	PTGSG-16X8P4-02-□-□-□
17.7	18	12.5	13.5	3,000	PTGSG-18X8P4-02-□-□-□
19.7	20	14.5	15.5	3,000	PTGSG-20X8P4-02-□-□-□

Definition: Multi start trapezoidal lead screw

Example 8P4 pitch

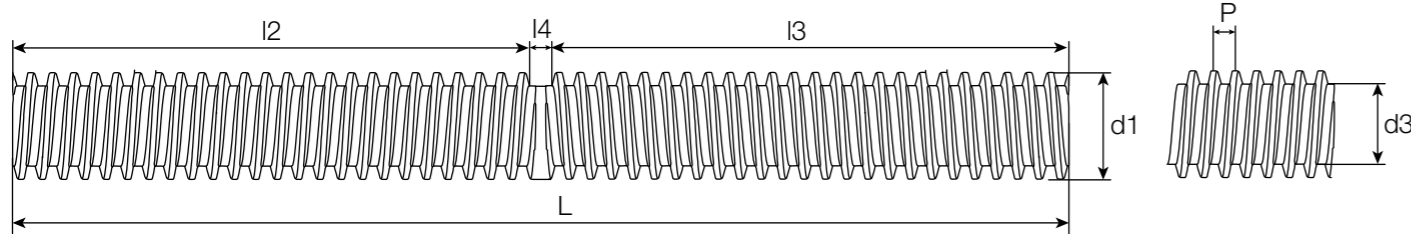


Pitch [P] = Pitch: distance to the next thread pitch, e.g. P4 = 4mm
 Lead [Le] = Pitch: distance between threads flanks per thread pitch, e.g. Pitch 8 = Distance of 8mm



Technical data

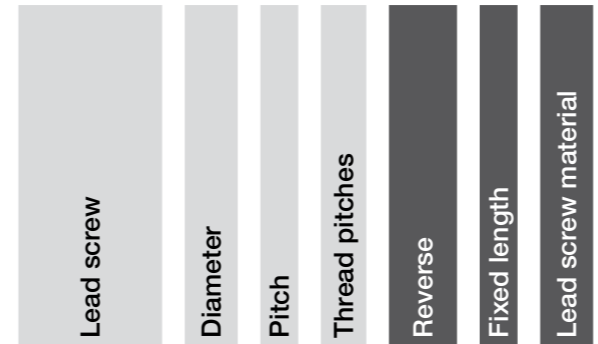
Pitch variation	0.1mm / 300mm
Straightness (standard)	0.3mm / 300mm
Aligned (optional)	<0.1mm / 300mm
Tolerance (according to DIN 103)	7e



Order key

Part number	Thread	Options
-------------	--------	---------

PTGSG-10X2-01-R/L-□-ES



Options:
Length in mm
Blank: C15, rolled, AISI 1015
ES: Stainless steel, rolled, AISI 304



Please contact us!

Do you need an individual cut length instead of a fixed length? Configure your personal length easily and quickly using our dryspin® lead screw configurator.

► www.igus.eu/lead-screw-configurator



1,000mm fixed length and 2,000mm total length incl. thread transition - available from stock for individual further processing.

Technical data

Thread	Material		Pitch P [mm]	Pitch angle α [°]	Weight	
	C15	Stainless steel			C15	Stainless steel
		AISI 304			[kg/m]	[kg/m]
Tr8x1.5	●	●	1.5	3.42	0.40	0.40
Tr10x2	●	●	2	3.64	0.62	0.62
Tr10x3	●	●	3	5.45	0.62	0.62
Tr12x3	●	●	3	4.55	0.89	0.89
Tr14x4	●	●	4	5.20	1.21	1.22
Tr16x3	●	●	3	3.42	1.58	1.59
Tr16x4	●	●	4	4.55	1.58	1.58
Tr18x4	●	●	4	4.05	2.00	2.01
Tr20x4	●	●	4	3.64	2.47	2.48
Tr24x5	●	●	5	3.79	3.55	3.57

⁴⁶⁾ Non-usable thread transition - the thread is not fully formed in this area

⁴⁷⁾ Fixed length (L)

⁴⁸⁾ Lead screw material

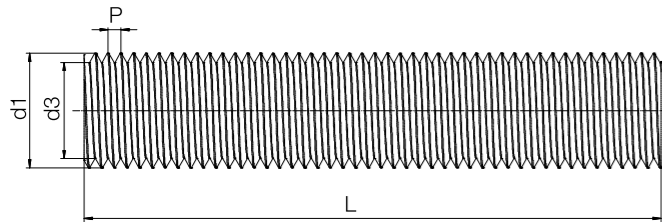
Dimensions [mm]

Outer Ø d1		Core Ø d3		Thread transition l4 ⁴⁶⁾	Max. total length L	Part No.
min.	max.	min.	max.			
7.0	8	5.4	6.2	25	1,000	PTGSG-8X1.5-01-R/L-□ ⁴⁷⁾ -□ ⁴⁸⁾ New
9.8	10	7.2	7.5	20	1,000	PTGSG-10X2-01-R/L-□ ⁴⁷⁾ -□ ⁴⁸⁾
9.8	10	6.2	6.5	45	1,000	PTGSG-10X3-01-R/L-□ ⁴⁷⁾ -□ ⁴⁸⁾ New
11.8	12	7.7	8.5	45	1,000	PTGSG-12X3-01-R/L-□ ⁴⁷⁾ -□ ⁴⁸⁾
13.7	14	9.1	9.5	60	1,000	PTGSG-14X4-01-R/L-□ ⁴⁷⁾ -□ ⁴⁸⁾
15.8	16	11.8	12.8	60	1,000	PTGSG-16X3-01-R/L-□ ⁴⁷⁾ -□ ⁴⁸⁾ New
15.7	16	10.5	11.5	60	1,000	PTGSG-16X4-01-R/L-□ ⁴⁷⁾ -□ ⁴⁸⁾
17.7	18	12.5	13.5	80	2,000	PTGSG-18X4-01-R/L-□ ⁴⁷⁾ -□ ⁴⁸⁾
19.7	20	14.5	15.5	80	2,000	PTGSG-20X4-01-R/L-□ ⁴⁷⁾ -□ ⁴⁸⁾
23.7	24	17.3	18.5	90	2,000	PTGSG-24X5-01-R/L-□ ⁴⁷⁾ -□ ⁴⁸⁾



Technical data

Pitch variation	0.1mm / 300mm
Tolerance (according to DIN 976)	6g



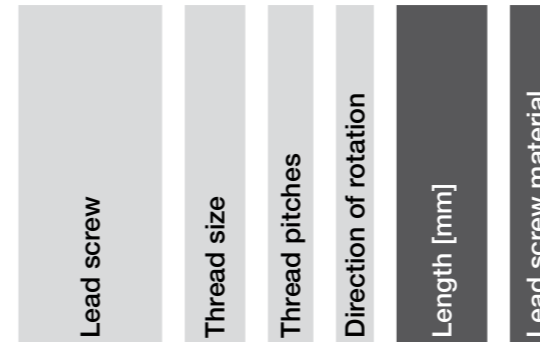
Technical data

Thread	Direction of rotation	Material	Pitch	Pitch angle α	Weight
	Right	Stainless steel AISI 304	P [mm]	α [°]	[kg/m]
M3	●	●	0.5	3.04	0.06
M4	●	●	0.7	3.19	0.10
M5	●	●	0.8	2.92	0.16
M6	●	●	1.0	3.04	0.22
M8	●	●	1.25	2.85	0.40
M10	●	●	1.5	2.73	0.62

Order key

Part number	Thread	Options
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PTGSG-M3-01-R-1000-ES



Options:
Length in mm: Freely selectable (see table)
 Lead screw material
ES: Stainless steel, rolled, AISI 304

Please contact us!

Do you need an individual configuration and/or machined end for your lead screw? This is not a problem with the help of the dryspin® lead screw configurator: configure lead screw at

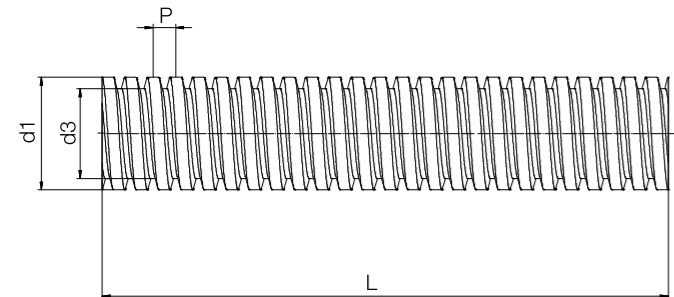
► www.igus.eu/lead-screw-configurator

Dimensions [mm]

	Outer Ø d1		Core Ø d3		Max. Total length	Part No.
	min.	max.	min.	max.	L	
	2.8	3.0	2.2	2.3	1,000	PTGSG-M3-01-R-□-ES
	3.8	4.0	2.9	3.1	1,000	PTGSG-M4-01-R-□-ES
	4.8	4.9	3.8	4.0	1,000	PTGSG-M5-01-R-□-ES
	5.7	5.9	4.5	4.7	1,000	PTGSG-M6-01-R-□-ES
	7.8	8.0	6.47	6.65	1,000	PTGSG-M8-01-R-□-ES
	9.8	10.0	8.16	8.38	1,000	PTGSG-M10-01-R-□-ES



Stainless steel, rolled, AISI 304



Technical data

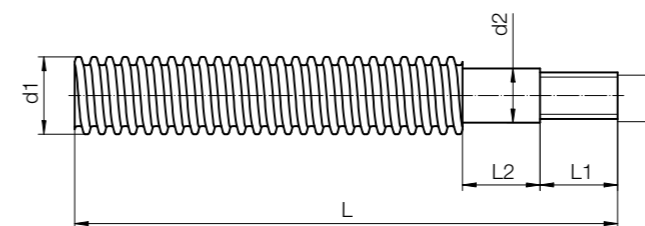
Pitch variation	0.25mm / 300mm
Straightness (standard)	0.625mm / 300mm
Aligned	<0.1mm / 300mm
Tolerance (ANSI/ASME B1.5)	Class 2C

Technical data

Thread	Hand of rotation	Pitch P [mm]	Number of thread pitches per inch	Pitch angle	Weight [lb]	Part No.
1/4-16	●	1,59	16	4,56°	0.25	ACME-1/4-16-R-ES
3/8-20	●	1,27	20	2,43°	0.56	ACME-3/8-20-R-ES
3/8-12	●	2,12	12	4,03°	0.56	ACME-3/8-12-R-ES
3/8-10	●	2,54	10	4,85°	0.56	ACME-3/8-10-R-ES
1/2-10	●	2,54	10	3,64°	1.00	ACME-1/2-10-R-ES
5/8-8	●	3,18	8	3,65°	1.60	ACME-5/8-8-R-ES
3/4-10	●	2,54	10	4,04°	2.25	ACME-3/4-10-R-ES
3/4-6	●	4,23	6	2,43°	2.25	ACME-3/4-6-R-ES
1-10	●	2,54	10	3,64°	4.00	ACME-1-10-R-ES
1-5	●	3,08	5	1,82°	4.00	ACME-1-5-R-ES

Dimensions

Outer Ø		Core Ø		Max. length	Part No.
d1 [mm]	d1 [inch]	d3 [mm]	d3 [inch]	[mm]	
6.35	0.250	4.76	0.187	1,829	ACME-1/4-16-R-ES
9.52	0.375	8.26	0.325	1,829	ACME-3/8-20-R-ES
9.52	0.375	7.40	0.292	1,829	ACME-3/8-12-R-ES
9.52	0.375	7.00	0.275	1,829	ACME-3/8-10-R-ES
12.70	0.500	10.16	0.400	1,829	ACME-1/2-10-R-ES
15.88	0.625	12.70	0.500	1,829	ACME-5/8-8-R-ES
19.05	0.750	14.87	0.585	1,829	ACME-3/4-10-R-ES
19.05	0.750	16.50	0.650	1,829	ACME-3/4-6-R-ES
25.40	1.000	20.30	0.800	1,829	ACME-1-10-R-ES
25.40	1.000	22.86	0.900	1,829	ACME-1-5-R-ES



Order key

Order example

DST-LS-MOT - 5X5 - R - □ - ES

dryspin® technology	Lead screws with precision machining	Diameter	Pitch	Direction of rotation	Total length	Stainless steel
------------------------	---	----------	-------	-----------------------	--------------	-----------------

ES: Stainless steel, rolled, AISI 304

Lead screw motor expert:
Assemble a complete system.
► www.igus.eu/DSE

Suitable motor size

Male thread	Motor size	Distance over hubs
M3	NEMA11/NEMA17S	28/42
M6	NEMA17M/NEMA23	42/56

Technical data and dimensions [mm]

Thread	d1	d2	d3	Pitch	Number of	Pitch	Part No.	
	[mm]	[mm]		P	gears	angle		
				[mm]		[°]		
DS5x5	5.0	4	M3	5.0	2	17.66	DST-LS-MOT-5X5-R-□-ES	New
DS5x10	5.0	4	M3	10.0	4	32.48	DST-LS-MOT-5X10-R-□-ES	New
TR06x2P1	6.0	4	M3	2.0	1	6.06	PTGSG-MOT-06X2P1-R-01-□-ES	New
DS6.35x1	6.35	4	M3	1.0	1	2.87	DST-LS-MOT-6.35X1-R-□-ES	New
DS6.35x2.54	6.35	4	M3	2.54	2	7.26	DST-LS-MOT-6.35X2.54-R-□-ES	New
DS6.35x5.08	6.35	4	M3	5.08	4	14.29	DST-LS-MOT-6.35X5.08-R-□-ES	New
DS6.35x6.35	6.35	4	M3	6.35	3	17.66	DST-LS-MOT-6.35X6.35-R-□-ES	New
DS6.35x12.7	6.35	4	M3	12.7	4	32.48	DST-LS-MOT-6.35X12.7-R-□-ES	New
DS6.35x25.4	6.35	4	M3	25.4	8	51.85	DST-LS-MOT-6.35X25.4-R-□-ES	New
TR08x1.5	8.0	7	M6	1.5	1	3.42	PTGSG-MOT-08X1.5-R-01-□-ES	New
DS8x10	8.0	7	M6	10.0	4	21.70	DST-LS-MOT-8X10-R-□-ES	New
DS8x15	8.0	7	M6	15.0	6	30.83	DST-LS-MOT-8X15-R-□-ES	New
DS8x24	8.0	7	M6	24.0	8	43.70	DST-LS-MOT-8X24-R-□-ES	New
DS8x40	8.0	7	M6	40.0	8	57.86	DST-LS-MOT-8X40-R-□-ES	New
DS10x2	10.0	4	M3	2.0	1	3.64	DST-LS-MOT4-10X2-R-□-ES	New
DS10x2	10.0	7	M6	2.0	1	3.64	DST-LS-MOT-10X2-R-□-ES	New
DS10x3	10.0	4	M3	3.0	2	5.45	DST-LS-MOT4-10X3-R-□-ES	New
DS10x3	10.0	7	M6	3.0	2	5.45	DST-LS-MOT-10X3-R-□-ES	New
DS10x12	10.0	4	M3	12.0	4	21.54	DST-LS-MOT4-10X12-R-□-ES	New
DS10x12	10.0	7	M6	12.0	4	21.54	DST-LS-MOT-10X12-R-□-ES	New
DS10x25	10.0	7	M6	25.0	8	38.51	DST-LS-MOT-10X25-R-□-ES	New
DS10x50	10.0	7	M6	50.0	10	57.86	DST-LS-MOT-10X50-R-□-ES	New
DS12x5	12.0	7	M6	5.0	2	21.69	DST-LS-MOT-12X5-R-□-ES	New
DS12x15	12.0	7	M6	15.0	8	33.55	DST-LS-MOT-12X15-R-□-ES	New

310mm fixed length and 490mm total length incl. machined end length - available from stock for individual further processing or assembly. A suitable force-diverting lead screw support must be ensured.



Order key

Order example

DST-LS-MOTK - 10X2 - R - 1000-ES

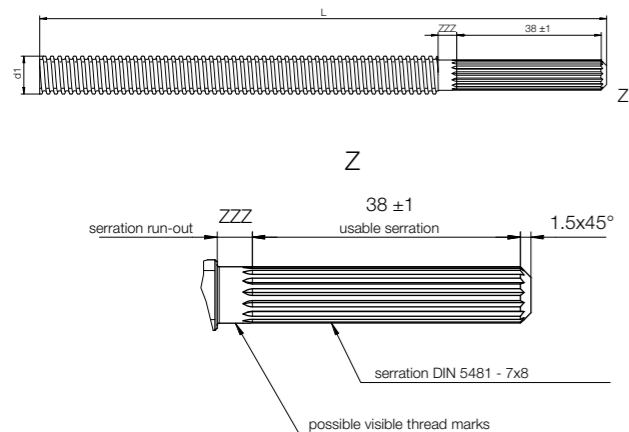
	Lead screws with spline	Diameter	Pitch	Direction of rotation	Total length	Stainless steel
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ES: Stainless steel, rolled, AISI 304

Please contact us!

Do you need a custom machined end or length of your lead screw?

► www.igus.eu/lead-screw-configurator



Technical data and dimensions

Thread	d1	Pitch P	Number of gears	Pitch angle	ZZZ	Weight	Part No.	
	[mm]	[mm]		[°]	[mm]	[kg]		
DS10x2	10	2	1	3.64	5.0	0.62	DST-LS-MOTK-10X2-R-1000-ES	New
DS10x3	10	3	2	5.45	5.0	0.62	DST-LS-MOTK-10X3-R-1000-ES	New
DS10x12	10	12	4	21.54	5.0	0.62	DST-LS-MOTK-10X12-R-1000-ES	New
DS10x25	10	25	8	38.51	5.0	0.62	DST-LS-MOTK-10X25-R-1000-ES	New
DS10x50	10	50	10	57.86	5.0	0.62	DST-LS-MOTK-10X50-R-1000-ES	New
DS12x5	12	5	2	7.55	6.5	0.89	DST-LS-MOTK-12X5-R-1000-ES	New
DS12x15	12	15	5	21.20	6.5	0.89	DST-LS-MOTK-12X15-R-1000-ES	New
DS12x25	12	25	8	33.55	6.5	0.89	DST-LS-MOTK-12X25-R-1000-ES	New
DS14x4	14	4	1	5.20	7.0	1.22	DST-LS-MOTK-14X4-R-1000-ES	New
DS14x25	14	25	5	29.61	7.0	1.22	DST-LS-MOTK-14X25-R-1000-ES	New
DS18x4	18	4	1	4.04	8.0	2.01	DST-LS-MOTK-18X4-R-1000-ES	New
DS18x24	18	24	6	22.99	8.0	2.01	DST-LS-MOTK-18X24-R-1000-ES	New

Left-hand thread upon request

Lead screw motor expert:
Assemble a complete system.
► www.igus.eu/DSE

1,000mm fixed total length incl. machined end length - available from stock for individual further processing or assembly. A suitable force-diverting lead screw support must be ensured.



dryspin® lead screw technology - lead screw nuts

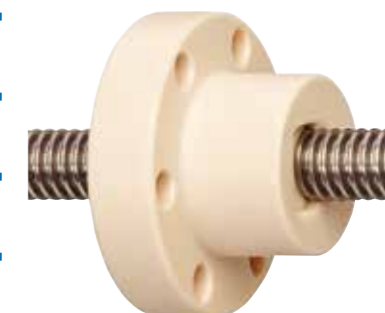
dryspin® lead screw technology

Trapezoidal and metric threads

ACME thread

Maintenance-free dry operation

Resistant to dirt and long service life



dryspin® technology | Nuts | Technical data



Highly efficient at all speeds:
iglidur® J



For temperatures up to +150°C:
iglidur® J350



For medium to high speeds:
iglidur® R



FDA-compliant for the food/
pharmaceutical industry:
iglidur® A180

Thread	Efficiency	Coefficient of friction
	η	μ
Ds4x2.4	41 - 64	0.1 - 0.25
Ds5x5	52 - 74	0.1 - 0.25
Ds5x10	60 - 81	0.1 - 0.25
Ds6.35x2.54	33 - 55	0.1 - 0.25
Ds6.35x5.08	47 - 70	0.1 - 0.25
Ds6.35x6.35	52 - 74	0.1 - 0.25
Ds6.35x12.7	60 - 81	0.1 - 0.25
Ds6.35x25.4	57 - 81	0.1 - 0.25
Ds8x10	55 - 77	0.1 - 0.25
Ds8x15	60 - 81	0.1 - 0.25
Ds8x24	60 - 82	0.1 - 0.25
Ds8x40	52 - 79	0.1 - 0.25
Ds10x3	27 - 48	0.1 - 0.25
Ds10x12	55 - 76	0.1 - 0.25
Ds10x25	61 - 82	0.1 - 0.25
Ds10x50	52 - 79	0.1 - 0.25
Ds12x5	34 - 56	0.1 - 0.25
Ds12.7x12.7	52 - 74	0.1 - 0.25
Ds12x15	55 - 77	0.1 - 0.25
Ds12x25	61 - 81	0.1 - 0.25
Ds14x4	26 - 47	0.1 - 0.25
Ds14x25	60 - 80	0.1 - 0.25
Ds14x30	61 - 81	0.1 - 0.25
Ds14x40.6	61 - 82	0.1 - 0.25
Ds14x70	52 - 79	0.1 - 0.25
Ds16x5	28 - 49	0.1 - 0.25
Ds16x10	42 - 65	0.1 - 0.25
Ds16x35	61 - 81	0.1 - 0.25
Ds18x4	22 - 41	0.1 - 0.25
Ds18x24	56 - 77	0.1 - 0.25
Ds18x40	61 - 81	0.1 - 0.25
Ds18x80	55 - 80	0.1 - 0.25
Ds18x100	49 - 78	0.1 - 0.25
Ds20x5	24 - 44	0.1 - 0.25
Ds20x10	37 - 60	0.1 - 0.25
Ds20x20	52 - 74	0.1 - 0.25
Ds20x50	61 - 82	0.1 - 0.25
Ds20x60	60 - 82	0.1 - 0.25
Ds20x80	57 - 81	0.1 - 0.25
Ds20x90	55 - 80	0.1 - 0.25

Thread	Efficiency	Coefficient of friction
	η	μ
Ds4x2.4	41 - 51	0.17 - 0.25
Ds5x5	52 - 62	0.17 - 0.25
Ds5x10	60 - 70	0.17 - 0.25
Ds6.35x2.54	33 - 42	0.17 - 0.25
Ds6.35x5.08	47 - 57	0.17 - 0.25
Ds6.35x6.35	62 - 74	0.17 - 0.25
Ds6.35x12.7	60 - 70	0.17 - 0.25
Ds6.35x25.4	57 - 69	0.17 - 0.25
Ds8x10	55 - 65	0.17 - 0.25
Ds8x15	60 - 70	0.17 - 0.25
Ds8x24	60 - 71	0.17 - 0.25
Ds8x40	66 - 70	0.17 - 0.25
Ds10x3	27 - 35	0.17 - 0.25
Ds10x12	55 - 65	0.17 - 0.25
Ds10x25	61 - 71	0.17 - 0.25
Ds10x50	52 - 66	0.17 - 0.25
Ds12x5	34 - 43	0.17 - 0.25
Ds12.7x12.7	52 - 62	0.17 - 0.25
Ds12x15	55 - 65	0.17 - 0.25
Ds12x25	61 - 71	0.17 - 0.25
Ds14x4	26 - 34	0.17 - 0.25
Ds14x25	60 - 70	0.17 - 0.25
Ds14x30	61 - 71	0.17 - 0.25
Ds14x40.6	61 - 71	0.17 - 0.25
Ds14x70	52 - 66	0.17 - 0.25
Ds16x5	28 - 36	0.17 - 0.25
Ds16x10	42 - 52	0.17 - 0.25
Ds16x35	61 - 71	0.17 - 0.25
Ds18x4	22 - 29	0.17 - 0.25
Ds18x24	56 - 66	0.17 - 0.25
Ds18x40	61 - 71	0.17 - 0.25
Ds18x80	55 - 68	0.17 - 0.25
Ds18x100	49 - 64	0.17 - 0.25
Ds20x5	24 - 31	0.17 - 0.25
Ds20x10	37 - 47	0.17 - 0.25
Ds20x20	52 - 62	0.17 - 0.25
Ds20x50	61 - 71	0.17 - 0.25
Ds20x60	60 - 71	0.17 - 0.25
Ds20x80	57 - 69	0.17 - 0.25
Ds20x90	55 - 68	0.17 - 0.25

Thread	Efficiency	Coefficient of friction
	η	μ
Ds4x2.4	37 - 47	0.2 - 0.3
Ds5x5	47 - 58	0.2 - 0.3
Ds5x10	55 - 66	0.2 - 0.3
Ds6.35x2.54	29 - 38	0.2 - 0.3
Ds6.35x5.08	42 - 53	0.2 - 0.3
Ds6.35x6.35	47 - 58	0.2 - 0.3
Ds6.35x12.7	55 - 66	0.2 - 0.3
Ds6.35x25.4	50 - 64	0.2 - 0.3
Ds8x10	55 - 61	0.2 - 0.3
Ds8x15	55 - 66	0.2 - 0.3
Ds8x24	54 - 67	0.2 - 0.3
Ds8x40	44 - 61	0.2 - 0.3
Ds10x3	23 - 32	0.2 - 0.3
Ds10x12	55 - 61	0.2 - 0.3
Ds10x25	55 - 67	0.2 - 0.3
Ds10x50	44 - 61	0.2 - 0.3
Ds12x5	29 - 39	0.2 - 0.3
Ds12.7x12.7	47 - 58	0.2 - 0.3
Ds12x15	55 - 61	0.2 - 0.3
Ds12x25	55 - 67	0.2 - 0.3
Ds14x4	23 - 31	0.2 - 0.3
Ds14x25	60 - 72	0.2 - 0.3
Ds14x30	61 - 74	0.2 - 0.3
Ds14x40.6	61 - 75	0.2 - 0.3
Ds14x70	44 - 61	0.2 - 0.3
Ds16x5	22 - 33	0.2 - 0.3
Ds16x10	37 - 48	0.2 - 0.3
Ds16x35	61 - 74	0.2 - 0.3
Ds18x4	19 - 26	0.2 - 0.3
Ds18x24	51 - 62	0.2 - 0.3
Ds18x40	61 - 74	0.2 - 0.3
Ds18x80	55 - 71	0.2 - 0.3
Ds18x100	40 - 58	0.2 - 0.3
Ds20x5	20 - 28	0.2 - 0.3
Ds20x10	33 - 43	0.2 - 0.3
Ds20x20	52 - 65	0.2 - 0.3
Ds20x50	55 - 67	0.2 - 0.3
Ds20x60	60 - 74	0.2 - 0.3
Ds20x80	50 - 64	0.2 - 0.3
Ds20x90	55 - 71	0.2 - 0.3

Thread	Efficiency	Coefficient of friction
	η	μ
Ds4x2.4	41 - 54	0.15 - 0.25
Ds5x5	52 - 65	0.15 - 0.25
Ds5x10	60 - 73	0.15 - 0.25
Ds6.35x2.54	33 - 45	0.15 - 0.25
Ds6.35x5.08	47 - 61	0.15 - 0.25
Ds6.35x6.35	65 - 74	0.15 - 0.25
Ds6.35x12.7	60 - 73	0.15 - 0.25
Ds6.35x25.4	57 - 72	0.15 - 0.25
Ds8x10	55 - 68	0.15 - 0.25
Ds8x15	60 - 73	0.15 - 0.25
Ds8x24	60 - 74	0.15 - 0.25
Ds8x40	52 - 70	0.15 - 0.25
Ds10x3	27 - 38	0.15 - 0.25
Ds10x12	55 - 68	0.15 - 0.25
Ds10x25	61 - 74	0.15 - 0.25
Ds10x50	52 - 70	0.15 - 0.25
Ds12x5	34 - 46	0.15 - 0.25
Ds12.7x12.7	52 - 65	0.15 - 0.25
Ds12x15	55 - 68	0.15 - 0.25
Ds12x25	61 - 81	0.15 - 0.25
Ds14x4	26 - 37	0.15 - 0.25
Ds14x25	60 - 72	0.15 - 0.25
Ds14x30	61 - 74	0.15 - 0.25
Ds14x40.6	61 - 75	0.15 - 0.25
Ds14x70	52 - 70	0.15 - 0.25
Ds16x5	28 - 39	0.15 - 0.25
Ds16x10	42 - 55	0.15 - 0.25
Ds16x35	61 - 74	0.15 - 0.25
Ds18x4	22 - 32	0.15 - 0.25
Ds18x24	56 - 69	0.15 - 0.25
Ds18x40	61 - 74	0.15 - 0.25
Ds18x80	55 - 71	0.15 - 0.25
Ds18x100	49 - 68	0.15 - 0.25
Ds20x5	24 - 34	0.15 - 0.25
Ds20x10	37 - 50	0.15 - 0.25
Ds20x20	52 - 65	0.15 - 0.25
Ds20x50	61 - 74	0.15 - 0.25
Ds20x60	60 - 74	0.15 - 0.25
Ds20x80	57 - 72	0.15 - 0.25
Ds20x90	55 - 71	0.15 - 0.25



For high speeds:
iglidur® E7



The specialist on hard anodised
aluminium:
iglidur® J200

Thread	Efficiency	Coefficient of friction
	η	μ
Ds4x2.4	37 - 47	0.2 - 0.3
Ds5x5	47 - 58	0.2 - 0.3
Ds5x10	55 - 66	0.2 - 0.3
Ds6.35x2.54	29 - 38	0.2 - 0.3
Ds6.35x5.08	42 - 53	0.2 - 0.3
Ds6.35x6.35	47 - 58	0.2 - 0.3
Ds6.35x12.7	55 - 66	0.2 - 0.3
Ds6.35x25.4	50 - 64	0.2 - 0.3
Ds8x10	55 - 61	0.2 - 0.3
Ds8x15	50 - 66	0.2 - 0.3
Ds8x24	54 - 67	0.2 - 0.3
Ds8x40	44 - 61	0.2 - 0.3
Ds10x3	23 - 32	0.2 - 0.3
Ds10x12	55 - 61	0.2 - 0.3
Ds10x25	55 - 67	0.2 - 0.3
Ds10x50	44 - 61	0.2 - 0.3
Ds12x5	29 - 39	0.2 - 0.3
Ds12.7x12.7	47 - 58	0.2 - 0.3
Ds12x15	55 - 61	0.2 - 0.3
Ds12x25	55 - 67	0.2 - 0.3
Ds14x4	23 - 31	0.2 - 0.3
Ds14x25	60 - 72	0.2 - 0.3
Ds14x30	61 - 74	0.2 - 0.3
Ds14x40.6	61 - 75	0.2 - 0.3
Ds14x70	44 - 61	0.2 - 0.3
Ds16x5	-	-
Ds16x10	-	-
Ds16x35	-	-
Ds18x4	-	-
Ds18x24	-	-
Ds18x40	-	-
Ds18x80	-	-
Ds18x100	-	-
Ds20x5	-	-
Ds20x10	-	-
Ds20x20	-	-
Ds20x50	-	-
Ds20x60	-	-
Ds20x80	-	-
Ds20x90	-	-

Thread	Efficiency	Coefficient of friction
	η	μ
Ds4x2.4	-	-
Ds5x5	-	-
Ds5x10	-	-
Ds6.35x2.54	-	-
Ds6.35x5.08	-	-
Ds6.35x6.35	-	-
Ds6.35x12.7	-	-
Ds6.35x25.4	-	-
Ds8x10	-	-
Ds8x15	-	-
Ds8x24	-	-
Ds8x40	-	-
Ds10x3	-	-
Ds10x12	-	-
Ds10x25	-	-
Ds10x50	-	-
Ds12x5	-	-
Ds12.7x12.7	-	-
Ds12x15	-	-
Ds12x25	-	-
Ds14x4	-	-
Ds14x25	-	-
Ds14x30	-	-
Ds14x40.6	-	-
Ds14x70	-	-
Ds16x5	28 - 49	0.1 - 0.25
Ds16x10	42 - 65	0.1 - 0.25
Ds16x35	61 - 81	0.1 - 0.25
Ds18x4	22 - 41	0.1 - 0.25
Ds18x24	56 - 77	0.1 - 0.25
Ds18x40	61 - 81	0.1 - 0.25
Ds18x80	55 - 80	0.1 - 0.25
Ds18x100	49 - 78	0.1 - 0.25
Ds20x5	24 - 44	0.1 - 0.25
Ds20x10	37 - 60	0.1 - 0.25
Ds20x20	52 - 74	0.1 - 0.25
Ds20x50	61 - 82	0.1 - 0.25
Ds20x60	60 - 82	0.1 - 0.25
Ds20x80	57 - 81	0.1 - 0.25
Ds20x90	55 - 80	0.1 - 0.25

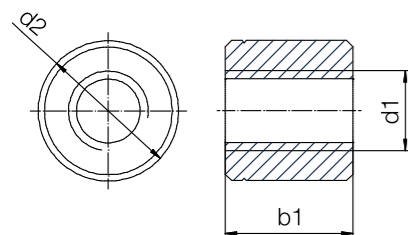
Lead screw nuts - "ACME" USA standard, iglidur® J (standard)

Technical data - iglidur® J

Thread	Efficiency	Idling torque ¹¹⁸⁾ [Nm]	Coefficient of friction
	η		μ
1/4-16	24 - 44	0.0029	0.1 - 0.25
3/8-20	14 - 30	0.0034	0.1 - 0.25
3/8-12	22 - 41	0.0041	0.1 - 0.25
3/8-10	25 - 46	0.0044	0.1 - 0.25
1/2-10	20 - 39	0.0052	0.1 - 0.25
5/8-8	20 - 39	0.0065	0.1 - 0.25
3/4-6	22 - 41	0.0082	0.1 - 0.25
3/4-10	14 - 30	0.0068	0.1 - 0.25
1-5	20 - 39	0.0105	0.1 - 0.25
1-10	11 - 24	0.0084	0.1 - 0.25

¹¹⁸⁾ Theoretical idling torque assuming the best coefficient of friction at a 5N load

Lead screw nuts, cylindrical (form S)



Order key

Type d2 b1 Thread

DST-□ S R M-1413DS10X12

dryspin® technology	iglidur® material	Form S	Direction of rotation	Metric	Outer Ø [mm]	Length [mm]	Thread type	Diameter [mm]	Pitch	Options:
										Direction of rotation
										R: Right-hand thread
										L: Left-hand thread

J	High efficiency at all speeds	Standard
J350	For temperatures up to +150°C	Optional
R	Vibration-dampening and vibration-inhibiting	Optional
A180	FDA-compliant for the food and pharmaceutical industries	Optional
J200	The specialist on hard anodised aluminium	Optional

Technical data

Thread	Direction of rotation		Effective supporting surface [mm²]	Pitch P [mm]	Max. stat. axial F [N] iglidur®				
	Right	Left			J	J350	R	A180	J200
Ds4x2.4	●	–	57	2.4	142	142	114	142	–
Ds5x5	●	–	58	5	144	144	115	144	–
Ds5x10	●	–	43	10	108	108	86	108	–
Ds6.35x1	●	–	119	1	299	299	239	299	–
Ds6.35x2.54	●	●	172	2.54	430	430	344	430	–
Ds6.35x5.08	●	–	135	5.08	338	338	270	338	–
Ds6.35x6.35	●	–	104	6.35	260	260	208	260	–
Ds6.35x12.7	●	–	69	12.7	172	172	138	172	–
Ds6.35x25.4	●	–	76	25.4	189	189	151	189	–
Ds8x8	●	–	144	8	360	360	288	360	–
Ds8x10	●	●	122	10	304	304	244	304	–
Ds8x15	●	●	122	15	304	304	244	304	–
Ds8x24	●	–	103	24	258	258	206	258	–
Ds8x40	●	–	57	40	143	143	114	143	–
Ds10x2	●	●	299	2	1,196	897	598	1,046	–
Ds10x3	●	●	402	3	1,608	1,206	804	1,407	–
Ds10x12	●	●	274	12	685	685	549	685	–
Ds10x25	●	●	249	25	623	623	499	623	–
Ds10x50	●	●	144	50	361	361	289	361	–
Ds12x3	●	–	422	3	1,686	1,265	843	1,475	–

Dimensions [mm]

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	b1 ¹⁵⁶⁾	Weight [g] iglidur®					Part No.
			J	J350	R	A180	J200	
4	14	13	2.74	2.65	2.55	2.68	–	DST-□SRM-131315DS4X2.4
5	14	13	2.6	2.5	2.4	2.6	–	DST-□SRM-1413DS5X5
5	14	13	2.6	2.5	2.4	2.6	–	DST-□SRM-1413DS5X10 New
6.35	14	13	2.4	2.3	2.2	2.3	–	DST-□SRM-1413DS6.35X1 New
6.35	14	13	2.4	2.3	2.2	2.3	–	DST-□S□M-1413DS6.35X2.54
6.35	14	13	2.4	2.3	2.2	2.3	–	DST-□SRM-1413DS6.35X5.08
6.35	14	13	2.4	2.3	2.2	2.3	–	DST-□SRM-1413DS6.35X6.35 New
6.35	14	13	2.4	2.3	2.2	2.3	–	DST-□SRM-1413DS6.35X12.7
6.35	14	13	2.4	2.3	2.2	2.3	–	DST-□SRM-1413DS6.35X25.4
8	18	12	3.7	3.5	3.4	3.6	–	DST-□SRM-1812DS8X8 New
8	18	12	3.7	3.5	3.4	3.6	–	DST-□S□M-1812DS8X10
8	18	12	3.7	3.5	3.4	3.6	–	DST-□S□M-1812DS8X15
8	18	12	3.7	3.5	3.4	3.6	–	DST-□SRM-1812DS8X24
8	18	12	3.7	3.5	3.4	3.6	–	DST-□SRM-1812DS8X40 New
10	22	20	9.0	8.7	8.4	8.8	–	DST-□S□M-2220DS10X2 New
10	22	20	9.0	8.7	8.4	8.8	–	DST-□S□M-2220DS10X3 New
10	22	20	9.0	8.7	8.4	8.8	–	DST-□S□M-2220DS10X12
10	22	20	9.0	8.7	8.4	8.8	–	DST-□S□M-2220DS10X25
10	22	20	9.0	8.7	8.4	8.8	–	DST-□S□M-2220DS10X50
12	26	24	14.9	14.4	13.9	14.6	–	DST-□SRM-2624DS12X3

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

Technical data

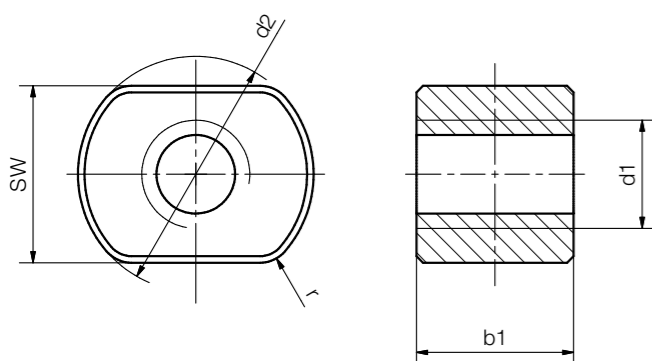
Thread	Direction of rotation		Effective supporting surface [mm²]	Pitch P [mm]	Max. stat. axial F [N] iglidur®				
	Right	Left			J	J350	R	A180	J200
	●	–							
Ds12x5	●	–	391	5	1,563	1,173	782	1,368	–
Ds12.7x12.7	●	–	410	12.7	1,026	1,026	821	1,026	–
Ds12x15	●	–	384	15	961	961	769	961	–
Ds12x25	●	●	383	25	958	958	767	958	–
Ds14x4	●	●	514	4	2,057	1,543	1,028	1,800	–
Ds14x25	●	●	440	25	1,101	1,101	881	1,101	–
Ds14x30	●	–	440	30	1,101	1,101	881	1,101	–
Ds14x40.6	●	–	430	40.6	1,075	1,075	860	1,075	–
Ds14x70	●	–	235	70	588	588	470	588	–
Ds16x5	●	–	662	5	2,648	1,986	1,324	2,317	1,324
Ds16x10	●	–	616	10	2,465	1,849	1,232	2,157	1,232
Ds16x35	●	–	610	35	1,526	1,526	1,221	1,526	1,221
Ds18x4	●	●	915	4	3,659	2,744	1,829	3,201	1,829
Ds18x24	●	●	839	24	2,097	2,097	1,677	2,097	1,677
Ds18x40	●	●	786	40	1,966	1,966	1,573	1,966	1,573
Ds18x80	●	●	543	80	1,357	1,357	1,086	1,357	1,086
Ds18x100	●	●	476	100	1,191	1,191	953	1,191	953
Ds20x5	●	–	1,062	5	4,246	3,185	2,123	3,716	2,123
Ds20x10	●	–	994	10	3,976	2,982	1,988	3,479	1,988
Ds20x20	●	●	984	20	2,460	2,460	1,968	2,460	1,968
Ds20x50	●	–	790	50	1,976	1,976	1,581	1,976	1,581
Ds20x60	●	●	663	60	1,657	1,657	1,325	1,657	1,325
Ds20x80	●	●	682	80	1,704	1,704	1,363	1,704	1,363
Ds20x90	●	●	663	90	1,657	1,657	1,325	1,657	1,325

Dimensions [mm]

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	b1 ¹⁵⁶⁾	Weight [g] iglidur®					Part No.	
			J	J350	R	A180	J200	J	J350
12	26	24	14.9	14.4	13.9	14.6	–	DST-□SRM-2624DS12X5	
12.7	26	24	14.5	14.0	13.5	14.2	–	DST-□SRM-2624DS12.7X12.7	
12	26	24	14.9	14.4	13.9	14.6	–	DST-□SRM-2624DS12X15	
12	26	24	14.9	14.4	13.9	14.6	–	DST-□S□M-2624DS12X25	New
14	30	27	22.2	21.5	20.8	21.8	–	DST-□S□M-3027DS14X4	New
14	30	27	22.2	21.5	20.8	21.8	–	DST-□S□M-3027DS14X25	
14	30	27	22.2	21.5	20.8	21.8	–	DST-□SRM-3027DS14X30	
14	30	27	22.2	21.5	20.8	21.8	–	DST-□SRM-3027DS14X40.6	
14	30	27	22.2	21.5	20.8	21.8	–	DST-□SRM-3027DS14X70	New
16	36	32	39.0	37.6	36.3	38.2	45.0	DST-□SRM-3632DS16X5	New
16	36	32	38.9	37.6	36.3	38.2	45.0	DST-□SRM-3632DS16X10	New
16	36	32	38.9	37.6	36.3	38.2	45.0	DST-□SRM-3632DS16X35	
18	40	36	53.8	52.0	50.2	52.7	62.1	DST-□SRM-4036DS18X4	New
18	40	36	53.8	52.0	50.2	52.7	62.1	DST-□S□M-4036DS18X24	
18	40	36	53.8	52.0	50.2	52.7	62.1	DST-□S□M-4036DS18X40	
18	40	36	53.8	52.0	50.2	52.7	62.1	DST-□S□M-4036DS18X80	
18	40	36	53.8	52.0	50.2	52.7	62.1	DST-□S□M-4036DS18X100	
20	45	40	76.1	73.5	71.0	74.5	87.8	DST-JSRM-4540DS20X5	New
20	45	40	76.1	73.5	71.0	74.5	87.8	DST-□SRM-4540DS20X10	New
20	45	40	76.1	73.5	71.0	74.5	87.8	DST-□S□M-4540DS20X20	
20	45	40	76.1	73.5	71.0	74.5	87.8	DST-□SRM-4540DS20X50	
20	45	40	76.1	73.5	71.0	74.5	87.8	DST-□S□M-4540DS20X60	
20	45	40	76.1	73.5	71.0	74.5	87.8	DST-□S□M-4540DS20X80	
20	45	40	76.1	73.5	71.0	74.5	87.8	DST-□S□M-4540DS20X90	

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

Cylindrical lead screw nuts with spanner flat



Order key

Type	SW	d2	b1	Thread
DST-□ S R M-17 22 20 DS 10X12				
dryspin® technology	iglidur® material	Form S	Direction of rotation	Metric
		Spanner flat [mm]	Outer Ø [mm]	Length [mm]
		Thread type	Diameter [mm]	Pitch

Options:
Direction of rotation
R: Right-hand thread
L: Left-hand thread

J	High efficiency at all speeds	Standard
J350	For temperatures up to +150°C	Optional
R	Vibration-dampening and vibration-inhibiting	Optional
A180	FDA-compliant for the food and pharmaceutical industries	Optional
J200	The specialist on hard anodised aluminium	Optional

Technical data

Thread	Direction of rotation		Effective support surface [mm²]	Pitch P [mm]	Max. stat. axial F [N] iglidur®				
	Right	Left			J	J350	R	A180	J200
DS10x2	●	●	299	2	1,196	897	598	1,046	-
DS10x3	●	●	402	3	1,608	1,206	804	1,407	-
DS10x12	●	●	274	12	686	686	549	686	-
DS10x25	●	●	249	25	623	623	499	623	-
DS10x50	●	●	144	50	361	361	289	361	-
DS12x3	●	-	422	3	1,686	1,265	843	1,475	-
DS12x5	●	-	391	5	1,563	1,173	782	1,368	-
DS12.7x12.7	●	-	410	12.7	1,026	1,026	821	1,026	-
DS12x15	●	●	384	15	961	961	769	961	-
DS12x25	●	-	383	25	958	958	767	958	-
DS14x4	●	-	514	4	2,057	1,543	1,028	1,800	-
DS14x25	●	●	440	25	1,101	1,101	881	1,101	-
DS14x30	●	-	440	30	1,101	1,101	881	1,101	-
DS14x40.6	●	-	430	40.6	1,075	1,075	860	1,075	-
DS14x70	●	-	235	70	588	588	470	588	-
DS16x5	●	-	662	5	2,648	1,986	1,324	2,317	1,324
DS16x10	●	-	616	10	2,465	1,849	1,232	2,157	1,232
DS16x35	●	-	610	35	1,526	1,526	1,221	1,526	1,221
DS18x4	●	-	915	4	3,659	2,744	1,829	3,201	1,829
DS18x24	●	●	839	24	2,097	2,097	1,677	2,097	1,677

Dimensions [mm]

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	b1 ¹⁵⁶⁾	SW	Weight [g] iglidur®					Part No.	
				J	J350	R	A180	J200		
10	22	20	17	6.65	6.42	6.20	6.51	-	DST-□S□M-172220DS10X2	New
10	22	20	17	6.65	6.42	6.20	6.51	-	DST-□S□M-172220DS10X3	New
10	22	20	17	6.65	6.42	6.20	6.51	-	DST-□S□M-172220DS10X12	
10	22	20	17	6.65	6.42	6.20	6.51	-	DST-□S□M-172220DS10X25	
10	22	20	17	6.65	6.42	6.20	6.51	-	DST-□S□M-172220DS10X50	
12	26	24	19	10.90	10.53	10.17	10.68	-	DST-□SRM-192624DS12X3	New
12	26	24	19	10.90	10.53	10.17	10.68	-	DST-□SRM-192624DS12X5	
12.7	26	24	19	9.93	9.59	9.26	9.73	-	DST-□SRM-192624DS12.7X12.7	New
12	26	24	19	10.90	10.53	10.17	10.68	-	DST-□S□M-192624DS12X15	
12	26	24	19	10.90	10.53	10.17	10.68	-	DST-□SRM-192624DS12X25	
14	30	27	25	16.05	15.51	14.97	15.73	-	DST-□SRM-253027DS14X4	New
14	30	27	25	16.05	15.51	14.97	15.73	-	DST-□S□M-253027DS14X25	
14	30	27	25	16.05	15.51	14.97	15.73	-	DST-□SRM-253027DS14X30	
14	30	32	25	19.02	18.39	17.75	18.64	-	DST-□SRM-253027DS14X40.6	
14	30	32	25	19.02	18.39	17.75	18.64	-	DST-□SRM-253027DS14X70	New
16	36	36	27	33.03	31.92	30.81	32.36	-	DST-□SRM-273632DS16X5	New
16	36	36	27	33.03	31.92	30.81	32.36	-	DST-JSRM-273632DS16X10	New
16	36	36	27	33.03	31.92	30.81	32.36	-	DST-□SRM-273632DS16X35	
18	40	36	27	40.11	38.76	37.41	39.30	46.30	DST-□SRM-274036DS18X4	New
18	40	36	27	40.11	38.76	37.41	39.30	46.30	DST-□S□M-274036DS18X24	

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

Technical data

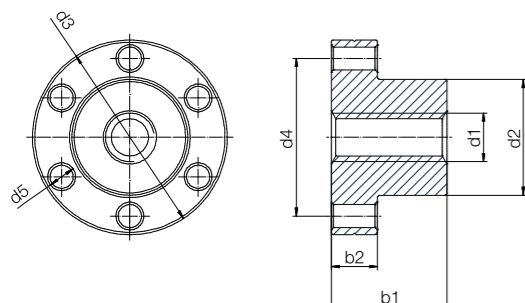
Thread	Direction of rotation		Effective support surface [mm²]	Pitch P [mm]	Max. stat. axial F [N] iglidur®				
	Right	Left			J	J350	R	A180	J200
	●	●							
DS18x40	●	●	786	40	1,966	1,966	1,573	1,966	1,573
DS18x80	●	●	543	80	1,357	1,357	1,086	1,357	1,086
DS18x100	●	●	476	100	1.191	1.191	953	1.191	953
DS20x5	●	–	1.062	5	4,246	3,185	2,123	3,716	2,123
DS20x10	●	–	994	10	3.976	2,982	1,988	3,479	1,988
DS20x20	●	●	984	20	2,460	2,460	1,968	2,460	1,968
DS20x50	●	–	790	50	1,976	1,976	1,581	1,976	1,581
DS20x60	●	●	663	60	1,657	1,657	1,325	1,657	1,325
DS20x80	●	●	382	80	1,704	1,704	1,363	1,704	1,363
DS20x90	●	●	663	90	1,657	1,657	1,325	1,657	1,325

Dimensions [mm]

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	b1 ¹⁵⁶⁾	SW	Weight [g] iglidur®					Part No.
				J	J350	R	A180	J200	
18	40	36	27	40.11	38.76	37.41	39.30	46.30	DST-□S□M-274036DS18X40
18	40	36	27	40.11	38.76	37.41	39.30	46.30	DST-□S□M-274036DS18X80
18	40	36	27	44.56	43.07	41.57	43.67	51.44	DST-□S□M-274036DS18X100
20	45	40	27	57.34	55.42	53.49	56.19	66.19	DST-JSRM-304540DS20X5 New
20	45	40	27	57.34	55.42	53.49	56.19	66.19	DST-□SRM-304540DS20X10 New
20	45	40	30	57.34	55.42	53.49	56.19	66.19	DST-□S□M-304540DS20X20
20	45	40	30	57.34	55.42	53.49	56.19	66.19	DST-□S□M-304540DS20X50
20	45	40	30	57.34	55.42	53.49	56.19	66.19	DST-□S□M-304540DS20X60
20	45	40	30	57.34	55.42	53.49	56.19	66.19	DST-□S□M-304540DS20X80
20	45	40	30	57.34	55.42	53.49	56.19	66.19	DST-□S□M-304540DS20X90

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

Lead screw nuts with flange (form F)



Order key

Type	d2	b1	Thread
DST-□ F R M-25 25DS 10X12			
dryspin® technology	iglidur® material	Form F	Direction of rotation
		Metric	Outer Ø [mm]
			Length [mm]
			Thread type
			Diameter [mm]
			Pitch

Options:
Direction of rotation
R: Right-hand thread
L: Left-hand thread

J	High efficiency at all speeds	Standard 24hrs
J350	For temperatures up to +150°C	Optional
R	Vibration-dampening and vibration-inhibiting	Optional
A180	FDA-compliant for the food and pharmaceutical industries	Optional
J200	The specialist on hard anodised aluminium	Optional

Technical data

Thread	Direction of rotation		Effective supporting surface [mm²]	Pitch P [mm]	Max. stat. axial F [N] iglidur®				
	Right	Left			J	J350	R	A180	J200
Ds4x2.4	●	–	69	2.4	164	164	132	164	–
Ds5x5	●	–	66	5	166	166	133	166	–
Ds5x10	●	–	50	10	124	124	100	124	–
Ds6.35x1	●	–	138	1	345	345	276	345	–
Ds6.35x2.54	●	●	199	2.54	496	496	397	496	–
Ds6.35x5.08	●	–	156	5.08	390	390	312	390	–
Ds6.35x6.35	●	–	120	6.35	300	300	240	300	–
Ds6.35x12.7	●	–	79	12.7	199	199	159	199	–
Ds6.35x25.4	●	–	87	25.4	218	218	174	218	–
Ds8x8	●	–	240	8	601	601	481	601	–
Ds8x10	●	●	203	10	507	507	406	507	–
Ds8x15	●	●	203	15	507	507	406	507	–
Ds8x24	●	–	172	24	430	430	344	430	–
Ds8x40	●	–	95	40	238	238	191	238	–
Ds10x2	●	●	374	2	1,495	1,121	747	1,308	–
Ds10x3	●	●	502	3	2,009	1,507	1,005	1,758	–
Ds10x12	●	●	343	12	857	857	686	857	–
Ds10x25	●	●	312	25	779	779	623	779	–
Ds10x50	●	●	181	50	451	451	361	451	–
Ds12x3	●	–	570	3	2,459	1,844	1,229	2,152	–
Ds12x5	●	–	570	5	2,280	1,710	1,140	1,995	–

Dimensions [mm]

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	d3	d4	d5	b1 ¹⁵⁶⁾	b2	Weight [g] iglidur®					Part No.
							J	J350	R	A180	J200	
4.0	13	25	19	3.2	15	5	5.4	5.2	5.0	5.3	–	DST-□FRM-1315DS4X2.4
5.0	13	25	19	3.2	15	5	5.2	5.0	4.9	5.1	–	DST-□FRM-1315DS5X5
5.0	13	25	19	3.2	15	5	5.2	5.0	4.9	5.1	–	DST-□FRM-1315DS5X10 New
6.35	13	25	19	3.2	15	5	4.9	4.8	4.6	4.8	–	DST-□F□M-1315DS6.35X1 New
6.35	13	25	19	3.2	15	5	4.9	4.8	4.6	4.8	–	DST-□F□M-1315DS6.35X2.54
6.35	13	25	19	3.2	15	5	4.9	4.8	4.6	4.8	–	DST-□FRM-1315DS6.35X5.08
6.35	13	25	19	3.2	15	5	4.9	4.8	4.6	4.8	–	DST-□F□M-1315DS6.35X6.35 New
6.35	13	25	19	3.2	15	5	4.9	4.8	4.6	4.8	–	DST-□FRM-1315DS6.35X12.7
6.35	13	25	19	3.2	15	5	4.9	4.8	4.6	4.8	–	DST-□FRM-1315DS6.35X25.4
8	20	34	28	4	20	5	12.3	11.9	11.5	12.0	–	DST-□F□M-2020DS8X8 New
8	20	34	28	4	20	5	12.3	11.9	11.5	12.0	–	DST-□F□M-2020DS8X10
8	20	34	28	4	20	5	12.3	11.9	11.5	12.0	–	DST-□F□M-2020DS8X15
8	20	34	28	4	20	5	12.3	11.9	11.5	12.0	–	DST-□FRM-2020DS8X24
8	20	34	28	4	20	5	12.3	11.9	11.5	12.0	–	DST-□FRM-2020DS8X40 New
10	25	42	34	5	25	10	28.7	27.7	26.8	28.1	–	DST-□F□M-2525DS10X2 New
10	25	42	34	5	25	10	28.7	27.7	26.8	28.1	–	DST-□F□M-2525DS10X3 New
10	25	42	34	5	25	10	28.7	27.7	26.8	28.1	–	DST-□F□M-2525DS10X12
10	25	42	34	5	25	10	28.7	27.7	26.8	28.1	–	DST-□F□M-2525DS10X25
10	25	42	34	5	25	10	28.7	27.7	26.8	28.1	–	DST-□F□M-2525DS10X50
12	28	48	38	6	35	12	47.6	46.0	44.4	46.6	–	DST-□FRM-2835DS12X3 New
12	28	48	38	6	35	12	47.6	46.0	44.4	46.6	–	DST-□FRM-2835DS12X5

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

Lead screw nuts with flange (form F)

Technical data

Thread	Direction of rotation		Effective supporting surface [mm²]	Pitch P [mm]	Max. stat. axial F [N]				
	Right	Left			iglidur®				
					J	J350	R	A180	J200
Ds12.7x12.7	●	–	599	12.7	1,496	1,496	1,197	1,496	–
Ds12x15	●	●	561	15	1,402	1,402	1,121	1,402	–
Ds12x25	●	●	559	25	1,397	1,397	1,118	1,397	–
Ds14x4	●	–	677	4	2,666	2,000	1,333	2,333	–
Ds14x25	●	●	571	25	1,427	1,427	1,142	1,427	–
Ds14x30	●	–	571	30	1,427	1,427	1,142	1,427	–
Ds14x40.6	●	–	557	40.6	1,393	1,393	1,114	1,393	–
Ds14x70	●	–	305	70	762	762	609	762	–
Ds16x5	●	–	724	5	2,896	2,172	1,448	2,534	1,448
Ds16x10	●	–	674	10	2,696	2,022	1,348	2,359	1,348
Ds16x35	●	–	668	35	1,669	1,669	1,335	1,669	1,335
Ds18x4	●	–	889	4	3,557	2,668	1,778	3,112	1,778
Ds18x24	●	●	815	24	2,038	2,038	1,631	2,038	1,631
Ds18x40	●	●	764	40	1,911	1,911	1,529	1,911	1,529
Ds18x80	●	●	528	80	1,319	1,319	1,056	1,319	1,056
Ds18x100	●	●	463	100	1,158	1,158	926	1,158	926
Ds20x5	●	–	1,168	5	4,671	3,503	2,336	4,087	2,336
Ds20x10	●	–	1,093	10	4,374	3,280	2,187	3,827	2,187
Ds20x20	●	●	1,083	20	2,707	2,707	2,165	2,707	2,165
Ds20x50	●	–	870	50	2,174	2,174	1,739	2,174	1,739
Ds20x60	●	●	729	60	1,822	1,822	1,458	1,822	1,458
Ds20x80	●	●	750	80	1,874	1,874	1,500	1,874	1,500
Ds20x90	●	●	729	90	1,822	1,822	1,458	1,822	1,342

Dimensions [mm]

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	d3	d4	d5	b1 ¹⁵⁶⁾	b2	Weight [g]					Part No.
							iglidur®					
							J	J350	R	A180	J200	
12	28	48	38	6	35	12	47.6	46.0	44.4	46.6	–	DST-□FRM-2835DS12.7X12.7
12	28	48	38	6	35	12	47.6	46.0	44.4	46.6	–	DST-□FRM-2835DS12X15
12	28	48	38	6	35	12	47.6	46.0	44.4	46.6	–	DST-□F□M-2835DS12X25 New
14	28	48	38	6	35	12	45.4	43.9	42.4	44.5	–	DST-□FRM-2835DS14X4 New
14	28	48	38	6	35	12	45.4	43.9	42.4	44.5	–	DST-□F□M-2835DS14X25
14	28	48	38	6	35	12	45.4	43.9	42.4	44.5	–	DST-□FRM-2835DS14X30
14	28	48	38	6	35	12	45.4	43.9	42.4	44.5	–	DST-□FRM-2835DS14X40.6
14	28	48	38	6	35	12	45.4	43.9	42.4	44.5	–	DST-□FRM-2835DS14X70 New
16	28	48	38	6	35	12	43.0	41.5	40.1	42.1	–	DST-□FRM-2835DS16X5 New
16	28	48	38	6	35	12	43.0	41.5	40.1	42.1	49.6	DST-□FRM-2835DS16X10 New
16	28	48	38	6	35	12	43.0	41.5	40.1	42.1	49.6	DST-□FRM-2835DS16X35
18	28	48	38	6	35	12	40.2	38.4	37.5	39.4	46.4	DST-□FRM-2835DS18X4 New
18	28	48	38	6	35	12	40.2	38.4	37.5	39.4	46.4	DST-□F□M-2835DS18X24
18	28	48	38	6	35	12	50.9	49.2	47.5	49.8	46.4	DST-□F□M-2835DS18X40
18	28	48	38	6	35	12	50.9	49.2	47.5	49.8	46.4	DST-□F□M-2835DS18X80
18	28	48	38	6	35	12	50.9	49.2	47.5	49.8	46.4	DST-□F□M-2835DS18X100
20	32	55	45	7	44	12	60.2	58.2	56.2	59.0	69.5	DST-□FRM-3244DS20X5 New
20	32	55	45	7	44	12	60.2	58.2	56.2	59.0	69.5	DST-□FRM-3244DS20X10 New
20	32	55	45	7	44	12	60.2	58.2	56.2	59.0	69.5	DST-□F□M-3244DS20X20
20	32	55	45	7	44	12	60.2	58.2	56.2	59.0	69.5	DST-□F□M-3244DS20X50
20	32	55	45	7	44	12	60.2	58.2	56.2	59.0	69.5	DST-□F□M-3244DS20X60
20	32	55	45	7	44	12	60.2	58.2	56.2	59.0	69.5	DST-□F□M-3244DS20X80
20	32	55	45	7	44	12	60.2	58.2	56.2	59.0	69.5	DST-□F□M-3244DS20X90

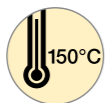
¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)



igidur® J



igidur® J350



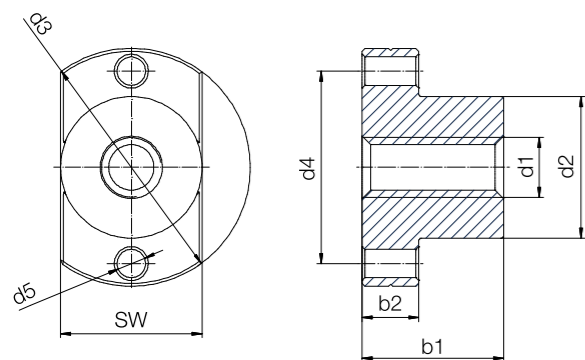
igidur® R



igidur® A180



igidur® J200



Technical data and dimensions [mm]

Thread	Direction of rotation		Effective supporting surface [mm²]	Pitch P [mm]	Max. stat. axial F [N] iglidur®					d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	d3
	Right	Left			J	J350	R	A180	J200			
Ds4x2.4	●	–	66	2.4	164	164	132	164	–	4.0	13	25
Ds5x5	●	–	66	5	166	166	133	166	–	5.0	13	25
Ds5x10	●	–	50	10	124	124	100	124	–	5.0	13	25
Ds6.35x1	●	–	138	1	345	345	276	345	–	6.35	13	25
Ds6.35x2.54	●	●	199	2.54	496	496	397	496	–	6.35	13	25
Ds6.35x5.08	●	–	156	5.08	390	390	312	390	–	6.35	13	25
Ds6.35x6.35	●	–	120	6.35	300	300	240	300	–	6.35	13	25
Ds6.35x12.7	●	–	79	12.7	199	199	159	199	–	6.35	13	25
Ds6.35x25.4	●	–	87	25.4	218	218	174	218	–	6.35	13	25
Ds8x8	●	–	240	8	601	601	481	601	–	8	20	34
Ds8x10	●	●	203	10	507	507	406	507	–	8	20	36
Ds8x15	●	●	203	15	507	507	406	507	–	8	20	36
Ds8x24	●	●	172	24	430	430	344	430	–	8	20	36
Ds8x40	●	–	95	40	238	238	191	238	–	8	20	36
Ds10x2	●	●	374	2	1,495	1,121	747	1,308	–	10	25	42
Ds10x3	●	●	502	3	2,009	1,507	1,005	1,758	–	10	25	42
Ds10x12	●	●	343	12	857	857	686	857	–	10	25	42
Ds10x25	●	●	312	25	779	779	623	779	–	10	25	42
Ds10x50	●	●	181	50	451	451	361	451	–	10	25	42
Ds12x3	●	–	570	3	2,459	1,844	1,229	2,152	–	12	28	48
Ds12x5	●	–	570	5	2,280	1,710	1,140	1,995	–	12	28	48

Order key

Type	SW	d2	b1	Thread
DST-□ F R M-25 25 25 DS 10X12				
dryspin® technology	igidur® material	Form F	Direction of rotation	Metric
			Spanner flat [mm]	Outer Ø [mm]
			Length [mm]	Thread type
			Diameter [mm]	Pitch

Options:
Direction of rotation
R: Right-hand thread
L: Left-hand thread

J	High efficiency at all speeds	Standard
J350	For temperatures up to +150°C	Optional
R	Vibration-dampening and vibration-inhibiting	Optional
A180	FDA-compliant for the food and pharmaceutical industries	Optional
J200	The specialist on hard anodised aluminium	Optional

Dimensions [mm]

d4	d5	b1 ¹⁵⁶⁾	b2	SW	Weight [g] iglidur®					Part No.
					J	J350	R	A180	J200	
19	3.2	15	5	13	4.1	3.98	3.84	4.04	–	DST-□FRM-131315DS4X2.4
19	3.2	15	5	13	4.0	3.8	3.7	3.9	–	DST-□FRM-131315DS5X5
19	3.2	15	5	13	4.0	3.8	3.7	3.9	–	DST-□FRM-131315DS5X10 New
19	3.2	15	5	13	4.9	4.8	4.6	4.8	–	DST-□FRM-131315DS6.35X1 New
19	3.2	15	5	13	3.7	3.6	3.4	3.6	–	DST-□F□M-131315DS6.35X2.54
19	3.2	15	5	13	3.7	3.6	3.4	3.6	–	DST-□FRM-131315DS6.35X5.08
19	3.2	15	5	13	3.7	3.6	3.4	3.6	–	DST-□FRM-131315DS6.35X6.35 New
19	3.2	15	5	13	3.7	3.6	3.4	3.6	–	DST-□FRM-131315DS6.35X12.7
19	3.2	15	5	13	3.7	3.6	3.4	3.6	–	DST-□FRM-131315DS6.35X25.4
28	4	20	5	20	12.3	11.9	11.5	12.0	–	DST-□FRM-202020DS8X8 New
28	4	20	8	20	12.7	12.3	11.8	12.4	–	DST-□F□M-202020DS8X10
28	4	20	8	20	12.7	12.3	11.8	12.4	–	DST-□F□M-202020DS8X15
28	4	20	8	20	12.7	12.3	11.8	12.4	–	DST-□F□M-202020DS8X24
28	4	20	8	20	12.7	12.3	11.9	12.5	–	DST-□FRM-202020DS8X40 New
34	5	25	10	25	28.7	27.7	26.8	28.1	–	DST-□F□M-252525DS10X2 New
34	5	25	10	25	23.7	22.9	22.1	23.2	–	DST-□F□M-252525DS10X3 New
34	5	25	10	25	23.7	22.9	22.1	23.2	–	DST-□F□M-252525DS10X12
34	5	25	10	25	23.7	22.9	22.1	23.2	–	DST-□F□M-252525DS10X25
34	5	25	10	25	23.7	22.9	22.1	23.2	–	DST-□F□M-252525DS10X50
38	6	35	12	28	47.6	46.0	44.4	46.6	–	DST-□FRM-282835DS12X3 New
38	6	35	12	28	39.2	37.9	36.6	38.4	–	DST-□FRM-282835DS12X5

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

Lead screw nuts with spanner flat and flange

Technical data

Thread	Direction of rotation		Effective supporting surface [mm²]	Pitch P [mm]	Max. stat. axial F [N]					d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	d3
	Right	Left			iglidur®							
					J	J350	R	A180	J200			
Ds12.7x12.7	●	–	599	12.7	1,496	1,496	1,197	1,496	–	12.7	28	48
Ds12x15	●	●	561	15	1,402	1,402	1,121	1,402	–	12	28	48
Ds12x25	●	–	559	25	1,397	1,397	1,118	1,397	–	12	28	48
Ds14x4	●	–	667	4	2,666	2,000	1,333	2,333	–	14	28	48
Ds14x25	●	●	571	25	1,427	1,427	1,142	1,427	–	14	28	48
Ds14x30	●	–	571	30	1,427	1,427	1,142	1,427	–	14	28	48
Ds14x40.6	●	–	557	40.6	1,393	1,393	1,114	1,393	–	14	28	48
Ds14x70	●	–	305	70	762	762	609	762	–	14	28	48
Ds16x5	●	–	724	5	2,896	2,172	1,448	2,534	1,448	16	28	48
Ds16x10	●	–	674	10	2,696	2,022	1,348	2,359	1,348	16	28	48
Ds16x35	●	–	668	35	1,669	1,669	1,335	1,669	1,335	16	28	48
Ds18x4	●	–	889	4	3,557	2,668	1,778	3,112	1,778	18	28	48
Ds18x24	●	●	815	24	2,038	2,038	1,631	2,038	1,631	18	28	48
Ds18x40	●	●	764	40	1,911	1,911	1,529	1,911	1,529	18	28	48
Ds18x80	●	●	528	80	1,319	1,319	1,056	1,319	1,056	18	28	48
Ds18x100	●	●	463	100	1,158	1,158	926	1,158	926	18	28	48
Ds20x5	●	–	1,168	5	4,671	3,503	2,336	4,087	2,336	20	32	55
Ds20x10	●	–	1,093	10	4,374	3,280	2,187	3,827	2,187	20	32	55
Ds20x20	●	●	1,083	20	2,707	2,707	2,165	2,707	2,165	20	32	55
Ds20x50	●	–	870	50	2,174	2,174	1,739	2,174	1,739	20	32	55
Ds20x60	●	●	729	60	1,822	1,822	1,458	1,822	1,458	20	32	55
Ds20x80	●	●	750	80	1,874	1,874	1,500	1,874	1,500	20	32	55
Ds20x90	●	●	729	90	1,822	1,822	1,458	1,822	1,458	20	32	55

Dimensions [mm]

d4	d5	b1 ¹⁵⁶⁾	b2	SW	Weight [g]					Part No.	
					iglidur®						
					J	J350	R	A180	J200		
38	6	35	12	28	38.5	37.2	35.9	37.8	–	DST-□FRM-282835DS12.7X12.7	New
38	6	35	12	28	47.5	45.9	44.3	46.5	–	DST-□F□M-282835DS12X15	
38	6	35	12	28	39.2	37.9	36.6	38.4	–	DST-□FRM-282835DS12X25	
38	6	35	12	28	37.1	35.9	34.6	36.4	–	DST-□FRM-282835DS14X4	New
38	6	35	12	28	37.1	35.9	34.6	36.4	–	DST-□F□M-282835DS14X25	
38	6	35	12	28	37.1	35.9	34.6	36.4	–	DST-□FRM-282835DS14X30	
38	6	35	12	28	37.1	35.9	34.6	36.4	–	DST-□FRM-282835DS14X40.6	
38	6	35	12	28	37.1	35.9	34.6	36.4	–	DST-□FRM-282835DS14X70	New
38	6	35	12	28	34.7	33.5	32.3	34.0	40.0	DST-□FRM-282835DS16X5	New
38	6	35	12	28	34.7	33.5	32.3	34.0	40.0	DST-□FRM-282835DS16X10	New
38	6	35	12	28	34.7	33.5	32.3	34.0	40.0	DST-□FRM-282835DS16X35	
38	6	35	12	28	34.7	33.5	32.3	34.0	36.8	DST-□FRM-282835DS18X4	New
38	6	35	12	28	31.9	30.8	29.7	31.2	36.8	DST-□F□M-282835DS18X24	
38	6	35	12	28	31.9	30.8	29.7	31.2	36.8	DST-□F□M-282835DS18X40	
38	6	35	12	28	31.9	30.8	29.7	31.2	36.8	DST-□F□M-282835DS18X80	
38	6	35	12	28	31.9	30.8	29.7	31.2	36.8	DST-□F□M-282835DS18X100	
45	7	44	12	32	49.2	47.6	45.9	48.2	56.8	DST-□FRM-323244DS20X5	New
45	7	44	12	32	49.2	47.6	45.9	48.2	56.8	DST-□FRM-323244DS20X10	New
45	7	44	12	32	49.2	47.6	45.9	48.2	56.8	DST-□F□M-323244DS20X20	
45	7	44	12	32	49.2	47.6	45.9	48.2	56.8	DST-□F□M-323244DS20X50	
45	7	44	12	32	49.2	47.6	45.9	48.2	56.8	DST-□F□M-323244DS20X60	
45	7	44	12	32	49.2	47.6	45.9	48.2	56.8	DST-□F□M-323244DS20X80	
45	7	44	12	32	49.2	47.6	45.9	48.2	56.8	DST-□F□M-323244DS20X90	

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

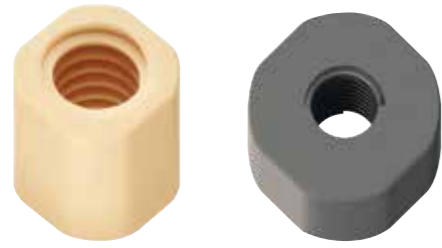
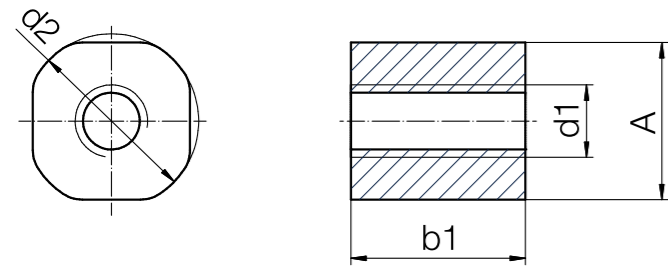


Image exemplary



Technical data

Thread	Direction of rotation		Effective supporting surface [mm²]	Pitch P [mm]	Max. stat. axial F [N] iglidur®	
	Right	Left			J	E7
Ds4x2.4	●	–	53	2.4	132	26
Ds5x5	●	–	53	5	133	27
Ds5x10	●	–	40	10	100	20
Ds6.35x1	●	–	110	1	276	55
Ds6.35x2.54	●	●	159	2.54	397	79
Ds6.35x5.08	●	–	125	5.08	312	62
Ds6.35x6.35	●	–	96	6.35	240	48
Ds6.35x12.7	●	–	64	12.7	159	32
Ds6.35x25.4	●	–	70	25.4	174	35
Ds8x8	●	–	240	8	601	120
Ds8x10	●	●	203	10	507	101
Ds8x15	●	●	203	15	507	101
Ds8x24	●	–	173	24	430	86
Ds8x40	●	–	95	40	238	48
Ds10x2	●	●	299	2	1,196	149
Ds10x3	●	●	402	3	1,608	201
Ds10x12	●	●	274	12	686	137
Ds10x25	●	●	249	25	623	125
Ds10x50	●	●	144	50	361	72
Ds12x3	●	–	439	3	1,756	220
Ds12x5	●	–	407	5	1,629	204
Ds12.7x12.7	●	–	428	12.7	1,069	214
Ds12x15	●	–	400	15	998	200
Ds12x25	●	●	399	25	1,069	200
Ds14x4	●	–	476	4	1,905	238

Order key

Type: d2 b1 Thread

DST- S M-C-01-DS 10X12

dryspin® technology	iglidur® material	Form S	Direction of rotation	Metric	Thread: cut	Type	Thread type	Diameter [mm]	Pitch

Options:
 Direction of rotation
R: Right-hand thread
L: Left-hand thread

J	High efficiency at all speeds	Standard 24hrs
E7	For high speeds and low loads	Optional

Dimensions [mm]

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	A	b1 ¹⁵⁶⁾	Weight [g] iglidur®		Part No.
				J	E7	
4	12	11.0	12	1.80	1.27	DST- <input type="checkbox"/> SRM-C-01-DS4X2.4
5	12	11.0	12	1.67	1.18	DST- <input type="checkbox"/> SRM-C-01-DS5X5
5	12	11.0	12	1.67	1.18	DST- <input type="checkbox"/> SRM-C-01-DS5X10 New
6.35	12	11.0	12	1.46	1.03	DST- <input type="checkbox"/> SRM-C-01-DS6.35X1 New
6.35	12	11.0	12	1.46	1.03	DST- <input type="checkbox"/> S <input type="checkbox"/> M-C-01-DS6.35X2.54
6.35	12	11.0	12	1.46	1.03	DST- <input type="checkbox"/> SRM-C-01-DS6.35X5.08
6.35	12	11.0	12	1.46	1.03	DST- <input type="checkbox"/> SRM-C-01-DS6.35X6.35 New
6.35	12	11.0	12	1.46	1.03	DST- <input type="checkbox"/> SRM-C-01-DS6.35X12.7
6.35	12	11.0	12	1.46	1.03	DST- <input type="checkbox"/> SRM-C-01-DS6.35X25.4
8	20	18.0	20	7.86	5.54	DST- <input type="checkbox"/> SRM-C-01-DS8X8 New
8	20	18.0	20	7.86	5.54	DST- <input type="checkbox"/> S <input type="checkbox"/> M-C-01-DS8X10
8	20	18.0	20	7.86	5.54	DST- <input type="checkbox"/> S <input type="checkbox"/> M-C-01-DS8X15
8	20	18.0	20	7.86	5.54	DST- <input type="checkbox"/> SRM-C-01-DS8X24
8	20	18.0	20	7.86	5.54	DST- <input type="checkbox"/> SRM-C-01-DS8X40 New
10	20	18.0	20	7.02	4.95	DST- <input type="checkbox"/> S <input type="checkbox"/> M-C-01-DS10X2 New
10	20	18.0	20	7.02	4.95	DST- <input type="checkbox"/> S <input type="checkbox"/> M-C-01-DS10X3 New
10	20	18.0	20	7.02	4.95	DST- <input type="checkbox"/> S <input type="checkbox"/> M-C-01-DS10X12
10	20	18.0	20	7.02	4.95	DST- <input type="checkbox"/> S <input type="checkbox"/> M-C-01-DS10X25
10	20	18.0	20	7.02	4.95	DST- <input type="checkbox"/> S <input type="checkbox"/> M-C-01-DS10X50
12	24	22.6	25	12.64	8.91	DST- <input type="checkbox"/> SRM-C-01-DS12X3 New
12	24	22.6	25	12.64	8.91	DST- <input type="checkbox"/> SRM-C-01-DS12X5
12.7	24	22.6	25	12.13	8.55	DST- <input type="checkbox"/> SRM-C-01-DS12.7X12.7
12	24	22.6	25	12.64	8.91	DST- <input type="checkbox"/> SRM-C-01-DS12X15
12	26	22.6	25	12.64	8.91	DST- <input type="checkbox"/> S <input type="checkbox"/> M-C-01-DS12X25 New
14	24	22.6	25	11.00	12.12	DST- <input type="checkbox"/> SRM-C-01-DS14X4 New

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

Technical data

Thread	Direction of rotation		Effective supporting surface [mm²]	Pitch P [mm]	Max. stat. axial F [N] iglidur®	
	Right	Left			J	E7
Ds14x25	●	●	408	25	1,019	204
Ds14x30	●	–	408	30	1,019	204
Ds14x40.6	●	–	398	40.6	995	199
Ds14x70	●	–	218	70	544	109
Ds16x5	●	–	517	5	2,068	–
Ds16x10	●	–	481	10	1,926	–
Ds16x35	●	–	477	35	1.192	–
Ds18x4	●	–	635	4	2,541	–
Ds18x24	●	●	582	24	1,456	–
Ds18x40	●	●	546	40	1,365	–
Ds18x80	●	●	377	80	942	–
Ds18x100	●	●	331	100	827	–
Ds20x5	●	–	1.062	5	4,246	–
Ds20x10	●	–	994	10	3.976	–
Ds20x20	●	●	984	20	2,460	–
Ds20x50	●	–	790	50	1,976	–
Ds20x60	●	●	663	60	1,657	–
Ds20x80	●	●	682	80	1,704	–
Ds20x90	●	●	663	90	1,657	–

Dimensions [mm]

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	A	b1 ¹⁵⁶⁾	Weight [g] iglidur®		Part No.
				J	E7	
14	24	22.6	25	11.12	12.12	DST-□S□M-C-01-DS14X25
14	24	22.6	25	11.12	12.12	DST-□SRM-C-01-DS14X30
14	28	22.6	25	17.20	12.12	DST-□SRM-C-01-DS14X40.6 New
14	28	22.6	25	17.20	12.12	DST-□SRM-C-01-DS14X70 New
16	28	26.2	25	15.00	–	DST-JSRM-C-01-DS16X5 New
16	28	26.2	25	15.45	–	DST-JSRM-C-01-DS16X10 New
16	28	26.2	25	15.45	–	DST-JSRM-C-01-DS16X35
18	28	26.2	25	13.00	–	DST-JSRM-C-01-DS18X4 New
18	28	26.2	25	13.46	–	DST-JS□M-C-01-DS18X24
18	28	26.2	25	13.46	–	DST-JS□M-C-01-DS18X40
18	28	26.2	25	13.46	–	DST-JS□M-C-01-DS18X80 New
18	28	26.2	25	13.46	–	DST-JS□M-C-01-DS18X100 New
20	32	26.2	40	47.53	–	DST-JSRM-C-01-DS20X5 New
20	32	29.0	40	47.53	–	DST-JSRM-C-01-DS20X10 New
20	32	29.0	40	47.54	–	DST-JS□M-C-01-DS20X20 New
20	32	29.0	40	47.54	–	DST-JSRM-C-01-DS20X50 New
20	32	29.0	40	47.54	–	DST-JS□M-C-01-DS20X60 New
20	32	29.0	40	47.54	–	DST-JS□M-C-01-DS20X80 New
20	32	29.0	40	47.54	–	DST-JS□M-C-01-DS20X90 New

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

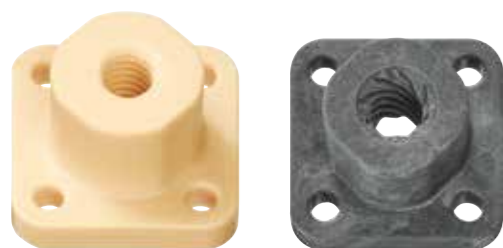
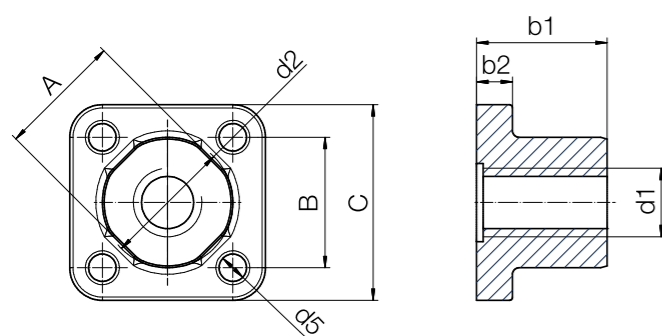


Image exemplary



Technical data

Thread	Direction of rotation		Effective supporting surface [mm²]	Pitch P [mm]	Max. stat. axial F [N] iglidur®	
	Right	Left			J	E7
Ds5x5	●	–	53	5	133	27
Ds5x10	●	–	40	10	100	20
Ds6.35x1	●	–	110	1	276	55
Ds6.35x2.54	●	●	159	2.54	397	79
Ds6.35x5.08	●	–	125	5.08	312	62
Ds6.35x6.35	●	–	96	6.35	240	48
Ds6.35x12.7	●	–	64	12.7	159	32
Ds6.35x25.4	●	–	70	25.4	174	35
Ds8x8	●	–	240	8	601	120
Ds8x10	●	●	203	10	507	101
Ds8x15	●	●	203	15	507	101
Ds8x24	●	–	172	24	430	86
Ds8x40	●	●	95	40	238	48
Ds10x2	●	●	299	2	1,196	149
Ds10x3	●	●	402	3	1,608	201
Ds10x12	●	●	274	12	686	137
Ds10x25	●	●	249	25	623	125
Ds10x50	●	●	144	50	361	72
Ds12x3	●	–	439	3	1,756	220
Ds12x5	●	–	407	5	1,629	204
Ds12.7x12.7	●	–	428	12.7	1,069	214

Order key

Type d2 b1 Thread

DST-□ F □ M- C -01-DS 10X12

dryspin® technology	iglidur® material	Form F	Direction of rotation	Metric	Thread: cut	Type	Thread type	Diameter [mm]	Pitch
	J								
	E7								

Options:
Direction of rotation
R: Right-hand thread
L: Left-hand thread

High efficiency at all speeds Standard 24hrs
For high speeds and low loads Optional

Dimensions [mm]

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	A	B	C	d5	b1 ¹⁵⁶⁾	b2	Weight [g] iglidur®		Part No.
								J	E7	
5.0	12	11.0	12	18	3.2	12	4.0	2,28	1.61	DST-□FRM-C-01-DS5X5
5.0	12	11.0	12	18	3.2	12	4.0	2,28	1.61	DST-□FRM-C-01-DS5X10 New
6.35	12	11.0	18	12	3.2	12	4.0	2.07	1.46	DST-□FRM-C-01-DS6.35X1 New
6.35	12	11.0	12	18	3.2	12	4.0	2.07	1.46	DST-□F□M-C-01-DS6.35X2.54
6.35	12	11.0	12	18	3.2	12	4.0	2.07	1.46	DST-□FRM-C-01-DS6.35X5.08
6.35	12	11.0	12	18	3.2	12	4.0	2.07	1.46	DST-□FRM-C-01-DS6.35X6.35 New
6.35	12	11.0	12	18	3.2	12	4.0	2.07	1.46	DST-□FRM-C-01-DS6.35X12.7
6.35	12	11.0	12	18	3.2	12	4.0	2.07	1.46	DST-□FRM-C-01-DS6.35X25.4
8	20	19.0	20	30	4.2	20	5.5	10.21	7.19	DST-□FRM-C-01-DS8X8 New
8	20	19.0	20	30	4.2	20	5.5	8.24	7.19	DST-□F□M-C-01-DS8X10
8	20	19.0	20	30	4.2	20	5.5	8.24	7.19	DST-□FRM-C-01-DS8X15
8	20	19.0	20	30	4.2	20	5.5	8.24	7.19	DST-□FRM-C-01-DS8X24
8	20	19.0	20	30	4.2	20	5.5	8.24	7.19	DST-□F□M-C-01-DS8X40 New
10	20	19.0	20	30	4.2	20	5.5	9.36	6.60	DST-□F□M-C-01-DS10X2 New
10	20	19.0	20	30	4.2	20	5.5	9.36	6.60	DST-□F□M-C-01-DS10X3 New
10	20	19.0	20	30	4.2	20	5.5	9.36	6.60	DST-□F□M-C-01-DS10X12
10	20	19.0	20	30	4.2	20	5.5	9.36	6.60	DST-□F□M-C-01-DS10X25
10	20	19.0	20	30	4.2	20	5.5	9.36	6.60	DST-□F□M-C-01-DS10X50
12	24	22.6	24	34	5.0	25	6.0	15.89	11.20	DST-□FRM-C-01-DS12X3 New
12	24	22.6	24	34	5.0	25	6.0	15.89	11.20	DST-□FRM-C-01-DS12X5
12	24	22.6	24	34	5.0	25	6.0	15.89	11.20	DST-□FRM-C-01-DS12.7X12.7

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

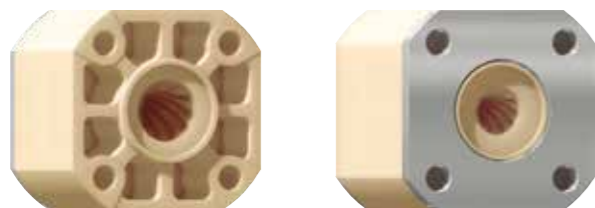
Technical data

Thread	Direction of rotation		Effective supporting surface [mm ²]	Pitch P [mm]	Max. stat. axial F [N]	
	Right	Left			iglidur®	
					J	E7
Ds12x15	●	●	400	15	1,001	200
Ds12x25	●	–	399	25	998	200
Ds14x4	●	–	476	4	1,905	238
Ds14x25	●	●	408	25	1,019	109
Ds14x30	●	–	408	30	1,019	204
Ds14x40.6	●	–	398	40.6	995	199
Ds14x70	●	–	218	70	544	109
Ds16x5	●	–	517	5	2,068	–
Ds16x10	●	–	481	10	1,926	–
Ds16x35	●	–	477	35	1.192	–
Ds18x4	●	–	635	4	2,541	–
Ds18x24	●	●	582	24	1,456	–
Ds18x40	●	●	546	40	1,365	–
Ds18x80	●	●	377	80	942	–
Ds18x100	●	●	331	100	827	–
Ds20x5	●	–	664	5	2,654	–
Ds20x10	●	–	615	10	2,460	–
Ds20x20	●	–	615	20	1,538	–
Ds20x50	●	●	494	50	1,235	–
Ds20x60	●	●	414	60	1,035	–
Ds20x80	●	●	426	80	1,065	–
Ds20x90	●	●	414	90	1,035	–

Dimensions [mm]

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	A	B	C	d5	b1 ¹⁵⁶⁾	b2	Weight [g]		Part No.	
								iglidur®			
								J	E7		
12	24	22.6	24	34	5.0	25	6.0	15.89	11.20	DST-□F□M-C-01-DS12X15	
12	24	22.6	24	34	5.0	25	6.0	15.89	11.20	DST-□FRM-C-01-DS12X25	New
14	24	22.6	24	34	5.0	25	6.0	14.37	10.13	DST-□FRM-C-01-DS14X4	New
14	24	22.6	24	34	5.0	25	6.0	14.37	10.13	DST-□F□M-C-01-DS14X25	
14	24	22.6	24	34	5.0	25	6.0	14.37	10.13	DST-□FRM-C-01-DS14X30	
14	24	22.6	24	34	5.0	25	6.0	14.37	10.13	DST-□FRM-C-01-DS14X40.6	New
14	24	22.6	24	34	5.0	25	6.0	14.37	10.13	DST-□FRM-C-01-DS14X70	New
16	28	25.5	27	38	6.0	25	6.5	19.42	–	DST-JFRM-C-01-DS16X5	New
16	28	25.5	27	38	6.0	25	6.5	27.15	–	DST-JFRM-C-01-DS16X10	New
16	28	25.5	27	38	6.0	25	6.5	37.01	–	DST-JFRM-C-01-DS16X35	
18	28	25.5	27	38	6.0	25	6.5	47.01	–	DST-JFRM-C-01-DS18X4	New
18	28	25.5	27	38	6.0	25	6.5	61.13	–	DST-JF□M-C-01-DS18X24	
18	28	25.5	27	38	6.0	25	6.5	77.38	–	DST-JF□M-C-01-DS18X40	
18	28	25.5	27	38	6.0	25	6.5	95.76	–	DST-JF□M-C-01-DS18X80	New
18	28	25.5	27	38	6.0	25	6.5	116.28	–	DST-JF□M-C-01-DS18X100	New
20	32	29.0	30	42	6.0	25	8.0	23.69	–	DST-JFRM-C-01-DS20X5	New
20	32	29.0	30	42	6.0	25	8.0	23.69	–	DST-JFRM-C-01-DS20X10	New
20	32	29.0	30	42	6.0	25	8.0	23.69	–	DST-JFRM-C-01-DS20X20	New
20	32	29.0	30	42	6.0	25	8.0	23.69	–	DST-JF□M-C-01-DS20X50	New
20	32	29.0	30	42	6.0	25	8.0	23.69	–	DST-JF□M-C-01-DS20X60	New
20	32	29.0	30	42	6.0	25	8.0	23.69	–	DST-JF□M-C-01-DS20X80	New
20	32	29.0	30	42	6.0	25	8.0	23.69	–	DST-JF□M-C-01-DS20X90	New

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)



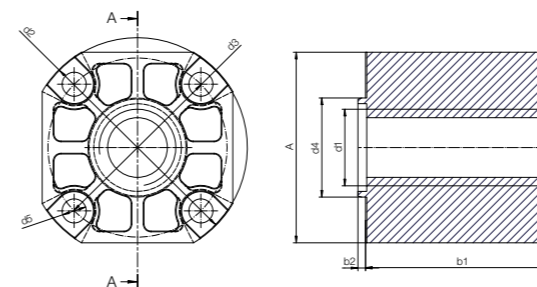
Robust and with conventional connection sizes

The new type of the DST-JGRM series with optimised injection-moulded design is the robust alternative to a flange lead screw nut. It is characterised by connection sizes and pitches that are identical to those of standard ball screw nuts. The special design enables easy installation and is especially suitable for radial loads. Also available as "heavy duty" version with stainless steel plate

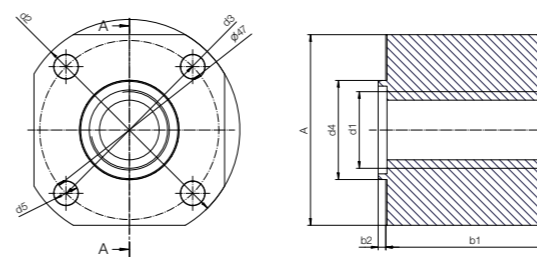
- Connecting dimensions and pitches identical to conventional ball screws
- Lubrication- and maintenance-free with high-performance polymers iglidur® J
- Cost-effective through plastic injection moulding
- Robust and strong design
- Available in 2 installation sizes for threads in Ø 14/16 and 18/20
- Heavy-duty version with 30% higher max. static axial loads

i Injection moulded lead screw nut blank incl. machined cut thread

You can find more information at:
► www.igus.eu/ball-crews-vs-dryspin



Design C-01



Design HD-02

Order key

Type	Option	Thread
DST- J G R M- □ -DS 14X25		
dryspin® technology	igidur® material	Lead screw drive
	Direction of rotation	Metric
	Design	Thread type
		Diameter [mm]
		Pitch

Options:
C-01 : Standard
HD-02 : Heavy duty

Technical data and dimensions [mm]

Thread	d1	d2	d3	d4	d5	b1		b2	A □
						Form	Form		
d1 x P						□ C-01	□ HD-02		
Ds14x25	14	48	38	20	5.3	45	42	2	40
Ds14x30	14	48	38	20	5.3	45	42	2	40
Ds14x70	14	48	38	20	5.3	45	42	2	40
Ds16x5	16	48	38	20	5.3	45	42	2	40
Ds16x10	16	48	38	20	5.3	45	42	2	40
Ds16x35	16	48	38	20	5.3	45	42	2	40
Ds18x24	18	58	47	26	6.3	50	46	2	50
Ds18x40	18	58	47	26	6.3	50	46	2	50
Ds18x80	18	58	47	26	6.3	50	46	2	50
Ds18x100	18	58	47	26	6.3	50	46	2	50
Ds20x5	20	58	47	26	6.3	50	46	2	50
Ds20x10	20	58	47	26	6.3	50	46	2	50
Ds20x20	20	58	47	26	6.3	50	46	2	50
Ds20x50	20	58	47	26	6.3	50	46	2	50
Ds20x60	20	58	47	26	6.3	50	46	2	50
Ds20x80	20	58	47	26	6.3	50	46	2	50
Ds20x90	20	58	47	26	6.3	50	46	2	50

□ = C-01/HD-02

Order example: DST-JGRM-C-01-DS14x25: C-01 lead screw nut made of iglidur® J, with 14x25 right-hand thread

Effective support surface [mm²]		Max. static load axial [N]		Part No.
□ C-01	□ HD-02	□ C-01	□ HD-02	
734	685	2,936	4,110	DST-JGRM-□-DS14X25 New
734	685	2,936	4,110	DST-JGRM-□-DS14X30 New
392	366	1,567	2,194	DST-JGRM-□-DS14X70 New
867	809	3,466	4,853	DST-JGRM-□-DS16X5 New
867	809	3,466	4,853	DST-JGRM-□-DS16X10 New
858	801	3,434	4,807	DST-JGRM-□-DS16X35 New
1,179	1,085	4,716	6,508	DST-JGRM-□-DS18X24 New
1,092	1,005	4,368	6,028	DST-JGRM-□-DS18X40 New
754	694	3,016	4,162	DST-JGRM-□-DS18X80 New
662	609	2,646	3,652	DST-JGRM-□-DS18X100 New
1,255	1,154	5,019	6,924	DST-JGRM-□-DS20X5 New
1,255	1,154	5,019	6,926	DST-JGRM-□-DS20X10 New
1,230	1,132	4,921	6,791	DST-JGRM-□-DS20X20 New
1,008	927	4,031	5,562	DST-JGRM-□-DS20X50 New
828	762	3,313	4,572	DST-JGRM-□-DS20X60 New
852	784	3,408	4,703	DST-JGRM-□-DS20X80 New
828	762	3,313	4,572	DST-JGRM-□-DS20X90 New



Highly efficient at all speeds: iglidur® J



Highly resilient and wear-resistant: iglidur® W300



For temperatures up to +150°C: iglidur® J350



For medium to high speeds: iglidur® R

Thread	Efficiency η	Coefficient of friction μ	Efficiency η	Coefficient of friction μ
Single start				
Tr8x1.5	19 - 37	0.1 - 0.25	19 - 33	0.12 - 0.25
Tr10x2	20 - 39	0.1 - 0.25	20 - 34	0.12 - 0.25
Tr10x3	27 - 48	0.1 - 0.25	27 - 44	0.12 - 0.25
Tr12x3	24 - 44	0.1 - 0.25	24 - 39	0.12 - 0.25
Tr14x3	24 - 40	0.1 - 0.25	21 - 36	0.12 - 0.25
Tr14x4	26 - 47	0.1 - 0.25	26 - 43	0.12 - 0.25
Tr16x2	14 - 28	0.1 - 0.25	14 - 25	0.12 - 0.25
Tr16x4	24 - 44	0.1 - 0.25	24 - 39	0.12 - 0.25
Tr18x4	22 - 41	0.1 - 0.25	22 - 37	0.12 - 0.25
Tr20x4	20 - 39	0.1 - 0.25	20 - 34	0.12 - 0.25
Tr24x5	21 - 40	0.1 - 0.25	21 - 35	0.12 - 0.25
Tr26x5	19 - 38	0.1 - 0.25	19 - 34	0.12 - 0.25
Tr28x5	18 - 36	0.1 - 0.25	18 - 32	0.12 - 0.25
Tr30x6	20 - 39	0.1 - 0.25	20 - 34	0.12 - 0.25
Tr32x6	19 - 37	0.1 - 0.25	19 - 33	0.12 - 0.25
Tr36x6	17 - 34	0.1 - 0.25	17 - 30	0.12 - 0.25
Tr40x7	18 - 36	0.1 - 0.25	18 - 31	0.12 - 0.25
Tr50x8	17 - 34	0.1 - 0.25	17 - 30	0.12 - 0.25
Multi start				
Tr06x2P1	29 - 51	0.1 - 0.25	29 - 46	0.12 - 0.25
Tr10x4P2	33 - 55	0.1 - 0.25	33 - 51	0.12 - 0.25
Tr12x6P3	37 - 60	0.1 - 0.25	37 - 56	0.12 - 0.25
Tr16x8P4	37 - 60	0.1 - 0.25	37 - 56	0.12 - 0.25
Tr18x8P4	35 - 58	0.1 - 0.25	35 - 53	0.12 - 0.25
Tr20x8P4	33 - 55	0.1 - 0.25	33 - 51	0.12 - 0.25
Metric				
M3	17 - 34	0.1 - 0.25	17 - 30	0.12 - 0.25
M4	18 - 36	0.1 - 0.25	18 - 31	0.12 - 0.25
M5	17 - 34	0.1 - 0.25	17 - 30	0.12 - 0.25
M6	17 - 34	0.1 - 0.25	17 - 30	0.12 - 0.25
M8	16 - 33	0.1 - 0.25	16 - 29	0.12 - 0.25
M10	16 - 32	0.1 - 0.25	16 - 28	0.12 - 0.25

Thread	Efficiency η	Coefficient of friction μ	Efficiency η	Coefficient of friction μ
Single start				
Tr8x1.5	19 - 26	0.17 - 0.25	16 - 23	0.2 - 0.3
Tr10x2	20 - 27	0.17 - 0.25	17 - 24	0.2 - 0.3
Tr10x3	27 - 35	0.17 - 0.25	23 - 32	0.2 - 0.3
Tr12x3	24 - 34	0.17 - 0.25	20 - 28	0.2 - 0.3
Tr14x3	21 - 28	0.17 - 0.25	18 - 25	0.2 - 0.3
Tr14x4	26 - 34	0.17 - 0.25	23 - 31	0.2 - 0.3
Tr16x2	14 - 19	0.17 - 0.25	12 - 16	0.2 - 0.3
Tr16x4	24 - 31	0.17 - 0.25	20 - 28	0.2 - 0.3
Tr18x4	22 - 29	0.17 - 0.25	19 - 26	0.2 - 0.3
Tr20x4	20 - 27	0.17 - 0.25	17 - 24	0.2 - 0.3
Tr24x5	21 - 28	0.17 - 0.25	18 - 25	0.2 - 0.3
Tr26x5	19 - 26	0.17 - 0.25	17 - 23	0.2 - 0.3
Tr28x5	18 - 25	0.17 - 0.25	16 - 22	0.2 - 0.3
Tr30x6	20 - 27	0.17 - 0.25	17 - 24	0.2 - 0.3
Tr32x6	19 - 26	0.17 - 0.25	16 - 23	0.2 - 0.3
Tr36x6	17 - 24	0.17 - 0.25	-	-
Tr40x7	18 - 24	0.17 - 0.25	-	-
Tr50x8	-	-	-	-
Multi start				
Tr06x2P1	29 - 38	0.17 - 0.25	25 - 34	0.2 - 0.3
Tr10x4P2	33 - 42	0.17 - 0.25	29 - 38	0.2 - 0.3
Tr12x6P3	37 - 47	0.17 - 0.25	33 - 43	0.2 - 0.3
Tr16x8P4	37 - 47	0.17 - 0.25	33 - 43	0.2 - 0.3
Tr18x8P4	35 - 44	0.17 - 0.25	31 - 40	0.2 - 0.3
Tr20x8P4	33 - 42	0.17 - 0.25	29 - 38	0.2 - 0.3
Metric				
M3	17 - 24	0.17 - 0.25	15 - 21	0.2 - 0.3
M4	18 - 24	0.17 - 0.25	15 - 22	0.2 - 0.3
M5	17 - 23	0.17 - 0.25	14 - 20	0.2 - 0.3
M6	17 - 24	0.17 - 0.25	15 - 21	0.2 - 0.3
M8	16 - 22	0.17 - 0.25	14 - 20	0.17 - 0.25
M10	16 - 22	0.17 - 0.25	14 - 19	0.17 - 0.25



FDA-compliant for the food/
pharmaceutical industry:
iglidur® A180



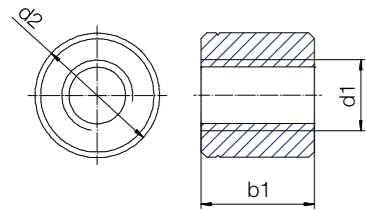
For high speeds:
iglidur® E7

Thread	Efficiency η	Coefficient of friction μ	Efficiency η	Coefficient of friction μ
Single start				
Tr8x1.5	19 - 28	0.15 - 0.25	16 - 23	0.2 - 0.3
Tr10x2	20 - 30	0.15 - 0.25	17 - 24	0.2 - 0.3
Tr10x3	27 - 38	0.15 - 0.25	23 - 32	0.2 - 0.3
Tr12x3	24 - 44	0.15 - 0.25	20 - 28	0.2 - 0.3
Tr14x3	21 - 31	0.15 - 0.25	18 - 25	0.2 - 0.3
Tr14x4	26 - 47	0.15 - 0.25	23 - 31	0.2 - 0.3
Tr16x2	14 - 21	0.15 - 0.25	-	-
Tr16x4	24 - 34	0.15 - 0.25	-	-
Tr18x4	22 - 32	0.15 - 0.25	-	-
Tr20x4	20 - 30	0.15 - 0.25	-	-
Tr24x5	21 - 30	0.15 - 0.25	-	-
Tr26x5	19 - 29	0.15 - 0.25	-	-
Tr28x5	18 - 27	0.15 - 0.25	-	-
Tr30x6	20 - 30	0.15 - 0.25	-	-
Tr32x6	19 - 28	0.15 - 0.25	-	-
Tr36x6	17 - 26	0.15 - 0.25	-	-
Tr40x7	18 - 27	0.15 - 0.25	-	-
Tr50x8	-	-	-	-
Multi start				
Tr06x2P1	29 - 41	0.15 - 0.25	25 - 34	0.2 - 0.3
Tr10x4P2	33 - 45	0.15 - 0.25	29 - 38	0.2 - 0.3
Tr12x6P3	37 - 50	0.15 - 0.25	33 - 43	0.2 - 0.3
Tr16x8P4	37 - 50	0.15 - 0.25	-	-
Tr18x8P4	35 - 48	0.15 - 0.25	-	-
Tr20x8P4	33 - 45	0.15 - 0.25	-	-
Metric				
M3	17 - 26	0.15 - 0.25	15 - 21	0.2 - 0.3
M4	18 - 27	0.15 - 0.25	15 - 22	0.2 - 0.3
M5	17 - 25	0.15 - 0.25	14 - 20	0.2 - 0.3
M6	17 - 26	0.15 - 0.25	15 - 21	0.2 - 0.3
M8	16 - 25	0.15 - 0.25	14 - 20	0.2 - 0.3
M10	16 - 24	0.15 - 0.25	14 - 19	0.2 - 0.3



The specialist on hard anodised
aluminium:
iglidur® J200

Thread	Efficiency η	Coefficient of friction μ
Single start		
Tr8x1.5	-	-
Tr10x2	-	-
Tr10x3	-	-
Tr12x3	-	-
Tr14x3	-	-
Tr14x4	-	-
Tr16x2	-	-
Tr16x4	24 - 44	0.1 - 0.25
Tr18x4	22 - 41	0.1 - 0.25
Tr20x4	20 - 39	0.1 - 0.25
Tr24x5	21 - 40	0.1 - 0.25
Tr26x5	19 - 38	0.1 - 0.25
Tr28x5	18 - 36	0.1 - 0.25
Tr30x6	20 - 39	0.1 - 0.25
Tr32x6	19 - 37	0.1 - 0.25
Tr36x6	17 - 34	0.1 - 0.25
Tr40x7	18 - 36	0.1 - 0.25
Tr50x8	17 - 34	0.1 - 0.25
Multi start		
Tr06x2P1	29 - 51	0.1 - 0.25
Tr10x4P2	33 - 55	0.1 - 0.25
Tr12x6P3	37 - 60	0.1 - 0.25
Tr16x8P4	37 - 60	0.1 - 0.25
Tr18x8P4	35 - 58	0.1 - 0.25
Tr20x8P4	33 - 55	0.1 - 0.25
Metric		
M3	17 - 34	0.1 - 0.25
M4	18 - 36	0.1 - 0.25
M5	17 - 34	0.1 - 0.25
M6	17 - 34	0.1 - 0.25
M8	16 - 33	0.1 - 0.25
M10	-	-



Order key

Type	d2	b1	Thread
------	----	----	--------

S R M-2215TR10X2

iglidur® material	Form S
	Direction of rotation
	Metric
	Outer Ø [mm]
	Length [mm]
	Thread type
	Diameter [mm]
Pitch	

Options:
Direction of rotation
R: Right-hand thread
L: Left-hand thread

J	High efficiency at all speeds	Standard
J350	For temperatures up to +150°C	Optional
R	Vibration-dampening and vibration-inhibiting	Optional
A180	FDA-compliant for the food and pharmaceutical industries	Optional
W(300)	Extremely strong and wear-resistant	Optional

Technical data

Thread	Direction of rotation		Effective supporting surface [mm²]	Max. stat. axial F [N]				
	Right	Left		iglidur®				
				J	W300	J350	R	A180
Tr8x1.5	●	●	205	500 ⁴³⁾	500 ⁴³⁾	500 ⁴³⁾	500 ⁴³⁾	500 ⁴³⁾
Tr8x1.5	●	●	137	547	683	410	273	478
Tr10x2	●	●	212	848	1,060	636	424	742
Tr10x2	●	●	283	1,131	1,414	848	565	990
Tr10x3	●	●	200	801	1,001	601	401	701
Tr10x3	●	●	267	1,068	1,335	801	534	935
Tr12x3	●	●	297	1,188	1,484	891	594	1,039
Tr12x3	●	●	396	1,583	1,979	1,188	792	1,385
Tr14x3	●	●	550	2,199	2,749	1,649	1,100	1,924
Tr14x4	●	●	396	1,583	1,979	1,188	792	1,385
Tr14x4	●	●	528	2,111	2,639	1,583	1,056	1,847
Tr16x2	●	●	565	2,262	2,827	1,696	1,131	1,979
Tr16x2	●	●	754	3,016	3,770	2,262	1,508	2,639
Tr16x4	●	●	528	2,111	2,639	1,583	1,056	1,847
Tr16x4	●	●	528	2,111	2,639	1,583	1,056	1,847
Tr16x4	●	●	704	2,815	3,519	2,111	1,407	2,463
Tr18x4	●	●	679	2,362 ⁴³⁾	2,362 ⁴³⁾	2,362 ⁴³⁾	2,362 ⁴³⁾	2,362 ⁴³⁾
Tr18x4	●	●	679	2,714	3,393	2,036	1,357	2,375
Tr18x4	●	●	905	3,619	4,524	2,714	1,810	3,167

⁴³⁾ Reduced axial load due to nut geometry

Dimensions [mm]

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	b1 ¹⁵⁶⁾	Weight [g]					Part No.
			iglidur®					
			J	W300	J350	R	A180	
8	14	18	2.8	2.9	2.7	2.6	2.7	<input type="checkbox"/> S <input type="checkbox"/> M-1418TR8X1.5
8	18	12	3.7	3.8	3.5	3.4	3.6	<input type="checkbox"/> S <input type="checkbox"/> M-1812TR8X1.5
10	22	15	6.7	7.0	6.5	6.3	6.6	<input type="checkbox"/> S <input type="checkbox"/> M-2215TR10X2
10	22	20	9.0	9.3	8.7	8.4	8.8	<input type="checkbox"/> S <input type="checkbox"/> M-2220TR10X2
10	22	15	6.7	7.0	6.5	6.3	6.6	<input type="checkbox"/> S <input type="checkbox"/> M-2215TR10X3
10	22	20	9.0	9.3	8.7	8.4	8.8	<input type="checkbox"/> S <input type="checkbox"/> M-2220TR10X3
12	26	18	11.2	11.6	10.8	10.5	11.0	<input type="checkbox"/> S <input type="checkbox"/> M-2618TR12X3
12	26	24	14.9	15.4	14.4	13.9	14.6	<input type="checkbox"/> S <input type="checkbox"/> M-2624TR12X3
14	30	28	23.1	23.8	22.3	21.5	22.6	<input type="checkbox"/> S <input type="checkbox"/> M-3028TR14X3
14	30	21	17.3	17.9	16.7	16.1	17.0	<input type="checkbox"/> S <input type="checkbox"/> M-3021TR14X4
14	30	28	23.1	23.8	22.3	21.5	22.6	<input type="checkbox"/> S <input type="checkbox"/> M-3028TR14X4
16	36	24	29.2	30.1	28.2	27.2	28.6	<input type="checkbox"/> S <input type="checkbox"/> M-3624TR16X2
16	36	32	38.9	40.2	37.6	36.3	38.2	<input type="checkbox"/> S <input type="checkbox"/> M-3632TR16X2
16	30	24	18.1	18.7	17.5	16.9	17.7	<input type="checkbox"/> S <input type="checkbox"/> M-3024TR16X4
16	36	24	29.2	30.1	28.2	27.2	28.6	<input type="checkbox"/> S <input type="checkbox"/> M-3624TR16X4
16	36	32	38.9	40.2	37.6	36.3	38.2	<input type="checkbox"/> S <input type="checkbox"/> M-3632TR16X4
18	30	27	18.2	18.8	17.6	17.0	17.8	<input type="checkbox"/> S <input type="checkbox"/> M-3027TR18X4
18	40	27	40.3	41.6	39.0	37.6	39.5	<input type="checkbox"/> S <input type="checkbox"/> M-4027TR18X4
18	40	36	53.8	55.5	52.0	50.1	52.7	<input type="checkbox"/> S <input type="checkbox"/> M-4036TR18X4

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)



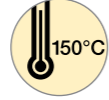
iglidur® J



iglidur® W300



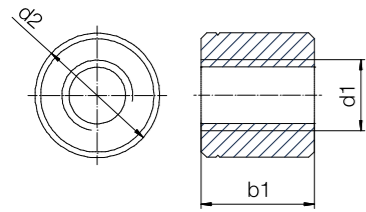
iglidur® J350



iglidur® R



iglidur® A180



Order key

Type	d2	b1	Thread
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S R M-30 25 TR 20X4

iglidur® material	Form S
	Direction of rotation
	Metric
	Outer Ø [mm]
	Length [mm]
	Thread type
	Diameter [mm]
Pitch	

Options:

Direction of rotation

R: Right-hand thread

L: Left-hand thread

J	High efficiency at all speeds	Standard
J350	For temperatures up to +150°C	Optional
R	Vibration-dampening and vibration-inhibiting	Optional
A180	FDA-compliant for the food and pharmaceutical industries	Optional
W(300)	Extremely strong and wear-resistant	Optional

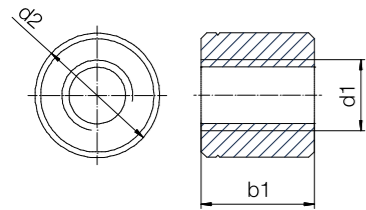
Technical data

Thread	Direction of rotation		Effective supporting surface [mm²]	Max. stat. axial F [N]				
	Right	Left		iglidur®				
				J	W300	J350	R	A180
Tr20x4	●	●	707	2,827	3,534	2,121	1,414	2,474
Tr20x4	●	●	848	3,393	4,241	2,545	1,696	2,969
Tr20x4	●	●	1,131	4,524	5,655	3,393	2,262	3,958
Tr24x5	●	●	1,216	4,863	6,079	3,647	2,432	4,255
Tr24x5	●	●	1,621	6,484	8,105	4,863	3,242	5,674
Tr26x5	●	●	1,440	5,759	7,198	4,319	2,879	5,039
Tr26x5	●	●	1,920	7,678	9,598	5,759	3,839	6,718
Tr28x5	●	●	1,682	6,729	8,412	5,047	3,365	5,888
Tr28x5	●	●	2,243	8,972	11,215	6,729	4,486	7,851
Tr30x6	●	●	1,909	7,634	9,543	5,726	3,817	6,680
Tr30x6	●	●	2,545	10,179	12,723	7,634	5,089	8,906
Tr32x6	●	●	2,733	10,933	13,666	8,200	5,466	9,566
Tr36x6	●	●	3,732	14,929	18,661	-	-	13,063
Tr40x7	●	●	4,587	18,347	22,934	-	-	16,054
Tr50x8	●	●	7,226	28,903	-	-	-	-

Dimensions [mm]

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	b1 ¹⁵⁶⁾	Weight [g]					Part No.
			iglidur®					
			J	W300	J350	R	A180	
20	30	25	14.6	15.1	14.1	13.6	14.3	<input type="checkbox"/> S <input type="checkbox"/> M-3025TR20X4
20	45	30	57.0	58.9	55.1	53.2	55.9	<input type="checkbox"/> S <input type="checkbox"/> M-4530TR20X4
20	45	40	76.1	78.5	73.5	71.0	74.5	<input type="checkbox"/> S <input type="checkbox"/> M-4540TR20X4
24	50	36	81.1	83.6	78.3	75.6	79.4	<input type="checkbox"/> S <input type="checkbox"/> M-5036TR24X5
24	50	48	108.1	111.5	104.4	100.8	105.9	<input type="checkbox"/> S <input type="checkbox"/> M-5048TR24X5
26	50	39	83.2	85.9	80.5	77.7	81.6	<input type="checkbox"/> S <input type="checkbox"/> M-5039TR26X5
26	50	52	111.0	114.5	107.3	103.5	108.8	<input type="checkbox"/> S <input type="checkbox"/> M-5052TR26X5
28	60	42	138.4	142.8	133.8	129.1	135.6	<input type="checkbox"/> S <input type="checkbox"/> M-6042TR28X5
28	60	56	184.5	190.4	178.3	172.2	180.8	<input type="checkbox"/> S <input type="checkbox"/> M-6056TR28X5
30	60	45	142.2	146.7	137.4	132.6	139.3	<input type="checkbox"/> S <input type="checkbox"/> M-6045TR30X6
30	60	60	189.6	195.6	183.2	176.9	185.8	<input type="checkbox"/> S <input type="checkbox"/> M-6060TR30X6
32	60	60	180.9	186.7	174.8	168.7	177.2	<input type="checkbox"/> S <input type="checkbox"/> M-6060TR32X6
36	75	72	364.8	376.4	-	-	357.4	<input type="checkbox"/> S <input type="checkbox"/> M-7572TR36X6
40	76	80	391.0	403.4	-	-	383.1	<input type="checkbox"/> S <input type="checkbox"/> M-7680TR40X7
50	90	100	655.3	-	-	-	-	<input type="checkbox"/> S <input type="checkbox"/> M-90100TR50X8

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)



Order key

Type d2 b1 Thread

S R M-28 35 TR 12X6P3

iglidur® material	Form S
	Direction of rotation
	Metric
	Outer Ø [mm]
	Length [mm]
	Thread type
	Diameter [mm]
Pitch	

Options:

Direction of rotation
R: Right-hand thread
L: Left-hand thread

J	High efficiency at all speeds	Standard
J350	For temperatures up to +150°C	Optional
R	Vibration-dampening and vibration-inhibiting	Optional
A180	FDA-compliant for the food and pharmaceutical industries	Optional
W(300)	Extremely strong and wear-resistant	Optional

Technical data

Thread	Direction of rotation		Effective supporting surface [mm²]	Max. stat. axial F [N]				
	Right	Left		iglidur®				
				J	W300	J350	R	A180
Tr06x2P1	●	–	112	382	477	286	191	334
Tr10x4P2	●	●	283	961	1,202	721	481	841
Tr12x6P3	●	●	396	1,346	1,682	1,009	673	1,178
Tr16x8P4	●	●	528	1,794	2,243	1,346	897	1,570
Tr16x8P4	●	●	704	2,393	2,991	1,794	1,196	2,094
Tr18x8P4	●	–	905	3,076	3,845	2,307	1,538	2,692
Tr20x8P4	●	–	1,131	3,845	4,807	2,884	1,923	3,365

Reduced axial load compared to single start threads due to nut geometry.

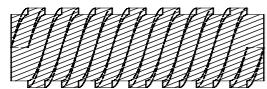
Dimensions [mm]

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	b1 ¹⁵⁶⁾	Weight [g]					Part No.
			iglidur®					
			J	W300	J350	R	A180	
6	14	13	2.4	2.5	2.4	2.3	2.4	<input type="checkbox"/> SRM-1413TR06X2P1
10	26	24	14.9	12.4	14.4	13.9	14.6	<input type="checkbox"/> SM-2624TR10X4P2
12	30	24	21.2	17.7	20.5	19.8	20.8	<input type="checkbox"/> SM-3024TR12X6P3
16	30	24	18.1	15.1	17.5	16.9	17.7	<input type="checkbox"/> SM-3024TR16X8P4
16	36	32	38.9	32.4	37.6	36.3	38.2	<input type="checkbox"/> SM-3632TR16X8P4
18	40	36	53.8	44.7	52.0	50.1	52.7	<input type="checkbox"/> SRM-4036TR18X8P4
20	45	40	76.1	63.3	73.5	71.0	74.5	<input type="checkbox"/> SRM-4540TR20X8P4

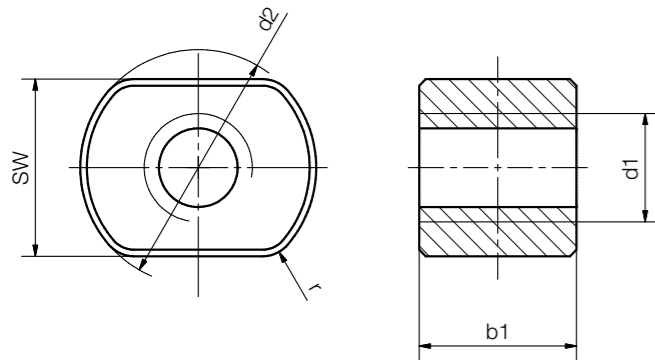
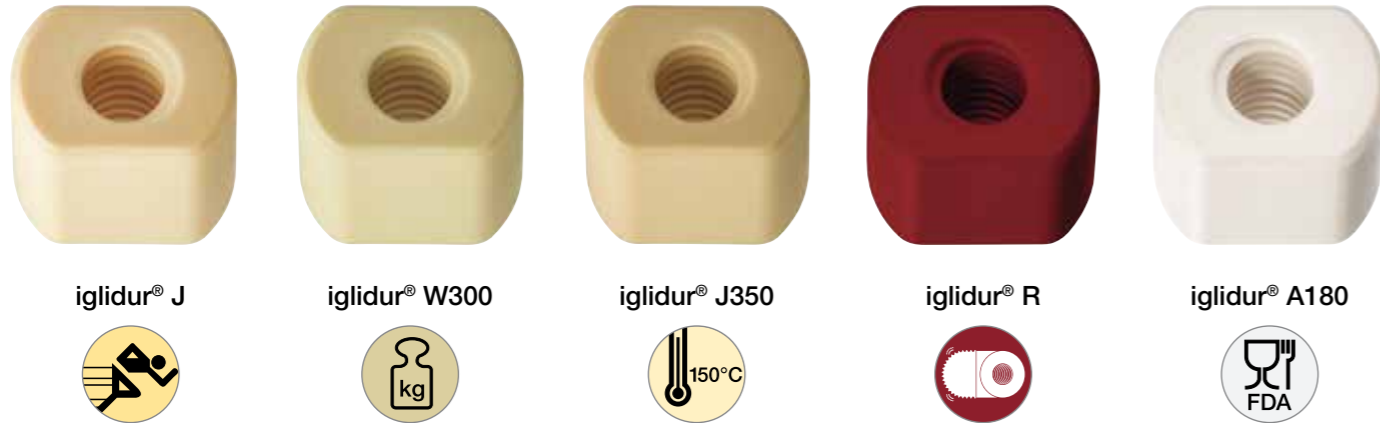
¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

i Definition: Multi start trapezoidal lead screw

Example 8P4 pitch



P4 pitch: Distance to the next thread pitch 4mm
Pitch 8: Pitch 8mm



Technical data

Thread	Direction of rotation		Effective support surface [mm²]	Pitch P [mm]	Max. stat. axial F [N]				
	Right	Left			igidur®				
Tr08x1.5	●	●	228	1.5	J	W300	J350	R	A180
Tr10x2	●	●	283	2	911	1,139	683	456	797
Tr10x3	●	●	267	3	1,131	1,414	848	565	990
Tr12x3	●	●	396	3	1,068	1,335	801	534	935
Tr16x2	●	●	528	2	1,583	1,979	1,188	792	1,385
Tr16x4	●	●	528	4	2,262	2,827	1,696	1,131	1,979
Tr18x4	●	●	603	4	2,111	2,639	1,583	1,056	1,847
Tr20x4	●	●	1,131	4	2,413	3,016	1,810	1,206	2,111
Tr24x5	●	●	1,621	5	4,524	5,655	3,393	2,262	3,958
Tr28x5	●	●	1,682	5	6,484	8,105	4,863	3,242	5,674
Tr30x6	●	●	2,545	6	6,729	8,412	5,047	3,365	5,888
					10,179	12,723	7,634	5,089	8,906

Order key

Type SW d2 b1 Thread

□ S R M-17 22 20 TR 10X2

igidur® material	Form S	Direction of rotation	Metric	Width across flats	Outer Ø [mm]	Length [mm]	Trapezoidal thread	Diameter [mm]	Pitch
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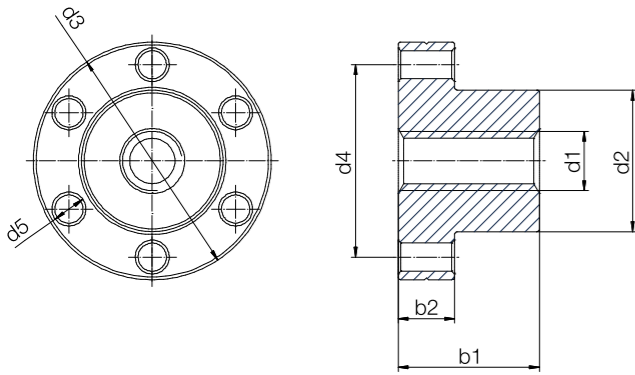
Options:
Direction of rotation
R: Right-hand thread
L: Left-hand thread

J	High efficiency at all speeds	Standard
J350	For temperatures up to +150°C	Optional
R	Vibration-dampening and vibration-inhibiting	Optional
A180	FDA-compliant for the food and pharmaceutical industries	Optional
W(300)	Extremely strong and wear-resistant	Optional

Dimensions [mm]

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	b1 ¹⁵⁶⁾	SW	Weight [g]					Part No.
				igidur®					
				J	W300	J350	R	A180	
8	22	20	17	8.9	7.4	8.6	8.3	8.7	□S□M-172220TR8X1.5 New
10	22	20	17	4.7	3.9	4.5	4.4	4.6	□S□M-172220TR10X2
10	22	20	17	8.4	7.0	8.1	7.8	8.2	□S□M-172220TR10X3 New
12	26	24	19	10.9	9.1	10.5	10.2	10.7	□S□M-192624TR12X3
16	36	24	27	27.0	22.5	26.1	25.2	26.4	□S□M-273624TR16X2 New
16	36	24	27	22.0	18.3	21.3	20.5	21.6	□S□M-273624TR16X4
18	36	24	27	27.0	22.5	26.1	25.2	26.4	□S□M-273624TR18X4 New
20	45	40	30	57.3	47.7	55.4	53.5	56.2	□S□M-304540TR20X4
24	50	48	36	75.7	63.0	73.2	70.6	74.2	□S□M-365048TR24X5
28	60	42	45	123.2	102.5	119.1	115.0	120.7	□S□M-456042TR28X5 New
30	60	60	45	126.4	105.2	123.8	122.1	117.9	□S□M-456060TR30X6

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)



Order key

Type d2 b1 Thread

F R M-22 20 TR 10X2

iglidur® material	Form F	Direction of rotation	Metric	Outer Ø [mm]	Length [mm]	Trapezoidal thread	Diameter [mm]	Pitch
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Options:
Direction of rotation
R: Right-hand thread
L: Left-hand thread

J	High efficiency at all speeds	Standard 24hrs
J350	For temperatures up to +150°C	Optional
R	Vibration-dampening and vibration-inhibiting	Optional
A180	FDA-compliant for the food and pharmaceutical industries	Optional
W(300)	Extremely strong and wear-resistant	Optional
J200	The specialist on hard anodised aluminium	Optional

Technical data

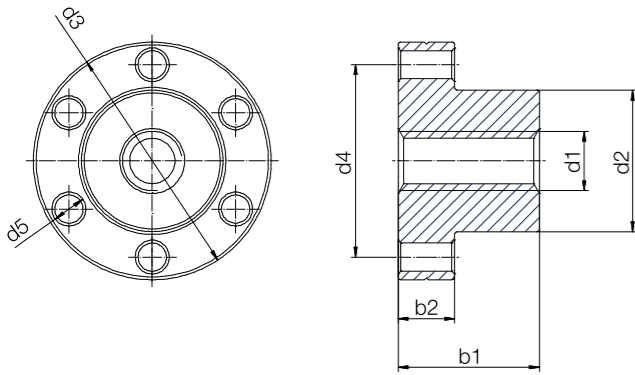
Thread	Direction of rotation		Effective supporting surface [mm²]	Max. stat. axial F [N] iglidur®					
	Right	Left		J	W300	J350	R	A180	J200
Tr8x1.5	●	●	228	911	1,139	683	456	797	-
Tr10x2	●	●	353	1,414	1,767	1,060	707	1,237	-
Tr10x3	●	●	334	1,335	1,669	1,001	668	1,168	-
Tr12x3	●	●	577	2,309	2,886	1,732	1,155	2,020	-
Tr14x3	●	●	687	2,749	3,436	2,062	1,374	2,405	-
Tr14x4	●	●	660	2,639	3,299	1,979	1,319	2,309	-
Tr16x2	●	●	825	3,299	4,123	2,474	1,649	2,886	1,650
Tr16x4	●	●	770	3,079	3,848	2,309	1,539	2,694	1,540
Tr18x4	●	●	880	3,519	4,398	2,639	1,759	3,079	1,760
Tr20x4	●	●	1,244	4,976	6,220	3,732	2,488	4,354	2,488
Tr24x5	●	●	1,486	5,944	7,430	4,458	2,972	5,201	2,972
Tr26x5	●	●	1,698	6,320 ⁴³⁾	6,320 ⁴³⁾	6,320 ⁴³⁾	6,320 ⁴³⁾	6,320 ⁴³⁾	-
Tr28x5	●	●	1,843	4,560 ⁴³⁾	4,560 ⁴³⁾	4,560 ⁴³⁾	4,560 ⁴³⁾	4,560 ⁴³⁾	-
Tr30x6	●	●	1,951	3,576 ⁴³⁾	3,576 ⁴³⁾	3,576 ⁴³⁾	3,576 ⁴³⁾	3,576 ⁴³⁾	-
Tr30x6	●	●	1,951	7,804	9,755	-	-	6,828	-
Tr32x6	●	●	2,095	8,382	10,477	-	-	-	-
Tr36x6	●	●	3,629	14,514	-	-	-	-	-
Tr40x7	●	●	4,013	16,054	-	-	-	-	-

⁴³⁾ Reduced load due to nut geometry

Dimensions [mm]

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	d3	d4	d5	b1 ¹⁵⁶⁾	b2	Weight [g] iglidur®						Part No.
							J	W300	J350	R	A180	J200	
8	20	36	28	4	20	8	16.3	13.5	15.7	15.2	15.9	-	<input type="checkbox"/> F <input type="checkbox"/> M-2020TR8X1.5
10	25	42	34	5	25	10	28.7	23.9	27.7	26.8	28.1	-	<input type="checkbox"/> F <input type="checkbox"/> M-2525TR10X2
10	25	42	34	5	25	10	28.7	23.9	27.7	26.8	28.1	-	<input type="checkbox"/> F <input type="checkbox"/> M-2525TR10X3
12	28	48	38	6	35	12	47.6	39.6	46.0	44.4	46.6	-	<input type="checkbox"/> F <input type="checkbox"/> M-2835TR12X3
14	28	48	38	6	35	12	45.4	37.8	43.9	42.4	44.5	-	<input type="checkbox"/> F <input type="checkbox"/> M-2835TR14X3
14	28	48	38	6	35	12	45.4	37.8	43.9	42.4	44.5	-	<input type="checkbox"/> F <input type="checkbox"/> M-2835TR14X4
16	28	48	38	6	35	12	43.0	35.8	41.5	40.1	42.1	50	<input type="checkbox"/> F <input type="checkbox"/> M-2835TR16X2
16	28	48	38	6	35	12	43.0	35.8	41.5	40.1	42.1	50	<input type="checkbox"/> F <input type="checkbox"/> M-2835TR16X4
18	28	48	38	6	35	12	40.2	33.4	38.8	37.5	39.4	48	<input type="checkbox"/> F <input type="checkbox"/> M-2835TR18X4
20	32	55	45	7	44	12	60.2	50.1	58.2	56.2	59.0	73	<input type="checkbox"/> F <input type="checkbox"/> M-3244TR20X4
24	32	55	45	7	44	12	51.2	42.6	49.5	47.7	50.1	66	<input type="checkbox"/> F <input type="checkbox"/> M-3244TR24X5
26	38	62	50	7	46	14	80.7	67.1	78.0	75.2	79.0	-	<input type="checkbox"/> F <input type="checkbox"/> M-3846TR26X5
28	38	62	50	7	46	14	74.8	62.3	72.3	69.8	73.3	-	<input type="checkbox"/> F <input type="checkbox"/> M-3846TR28X5
30	38	62	50	7	46	14	68.6	57.1	66.3	64.0	67.2	-	<input type="checkbox"/> F <input type="checkbox"/> M-3846TR30X6
30	45	70	58	7	46	16	114.4	95.2	-	-	112.1	-	<input type="checkbox"/> F <input type="checkbox"/> M-4546TR30X6
32	45	70	58	7	46	16	72.6	60.4	-	-	-	-	<input type="checkbox"/> F <input type="checkbox"/> M-4546TR32X6
36	67	95	81	7	70	25	394.3	-	-	-	-	-	<input type="checkbox"/> F <input type="checkbox"/> M-6770TR36X6
40	67	95	81	7	70	25	369.4	-	-	-	-	-	<input type="checkbox"/> F <input type="checkbox"/> M-6770TR40X7

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)



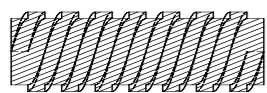
Technical data

Thread	Direction of rotation		Effective supporting surface [mm²]	Max. stat. axial F [N] iglidur®					
	Right	Left		J	W300	J350	R	A180	J200
Tr06x2P1	●	–	130	441	551	1,124	936	386	–
Tr10x4P2	●	–	353	1,202	1,502	1,051	3,064	2,552	–
Tr12x6P3	●	●	577	1,963	2,453	5,005	4,171	1,717	–
Tr16x8P4	●	●	770	2,617	3,271	6,673	5,561	2,290	1,540
Tr18x8P4	●	–	880	2,991	3,738	7,627	6,355	2,617	1,760
Tr20x8P4	●	–	1,244	4,230	5,287	10,786	8,988	3,701	2,488

Reduced axial load compared to single start threads due to nut geometry.

i Definition: Multi start trapezoidal lead screw

Example 8P4 pitch



P4 pitch: Distance to the next thread pitch 4mm

Pitch 8: Pitch 8mm

Order key

Type d2 b1 Thread

F R M-28 35 TR 12X6P3

igidur® material	Form F	Direction of rotation	Metric	Outer Ø [mm]	Length [mm]	Thread type	Diameter [mm]	Pitch
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Options:

Direction of rotation

R: Right-hand thread

L: Left-hand thread

J	High efficiency at all speeds	Standard 24hrs
J350	For temperatures up to +150°C	Optional
R	Vibration-dampening and vibration-inhibiting	Optional
A180	FDA-compliant for the food and pharmaceutical industries	Optional
W(300)	Extremely strong and wear-resistant	Optional
J200	The specialist on hard anodised aluminium	Optional

Dimensions [mm]

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	d3	d4	d5	b1 ¹⁵⁶⁾	b2	Weight [g] iglidur®						Part No.
							J	W300	J350	R	A180	J200	
6	13	25	19	3.2	15	5	5.0	4.2	4.8	4.7	4.9	–	□FRM-1315TR06X2P1
10	25	42	34	5	25	10	25.6	21.3	25.1	24.8	23.9	–	□FRM-2525TR10X4P2
12	28	48	38	6	35	12	47.6	39.6	46.0	44.4	46.6	–	□FRM-2835TR12X6P3
16	28	48	38	6	35	12	43.0	35.8	41.5	40.1	42.1	50	□FRM-2835TR16X8P4
18	28	48	38	6	35	12	40.2	33.4	38.8	37.5	39.4	48	□FRM-2835TR18X8P4
20	32	55	45	7	44	12	60.2	50.1	58.2	56.2	59.0	73	□FRM-3244TR20X8P4

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)



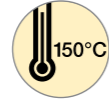
iglidur® J



iglidur® W300



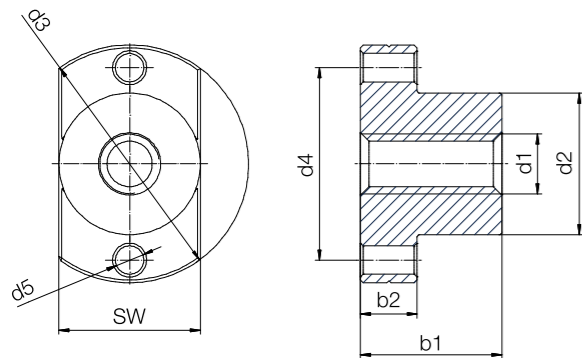
iglidur® J350



iglidur® R



iglidur® A180



Technical data

Thread	Direction of rotation		Effective support surface [mm²]	Pitch P [mm]	Max. stat. axial F [N]				
	Right	Left			iglidur®				
Single start					J	W300	J350	R	A180
Tr8x1.5	●	●	228	1.5	911	1,139	683	456	797
Tr10x2	●	●	353	2	1,414	1,767	1,060	707	1,237
Tr10x3	●	●	334	3	1,335	1,669	1,001	668	1,168
Tr12x3	●	●	577	3	2,309	2,886	1,732	1,155	2,020
Tr14x4	●	●	660	4	2,639	3,299	1,979	1,319	2,309
Tr16x2	●	●	825	2	3,299	4,213	2,474	1,649	2,886
Tr16x4	●	●	770	4	3,079	3,848	2,309	1,539	2,694
Tr18x4	●	●	880	4	3,519	4,398	2,639	1,759	3,079
Multi start									
Tr06x2P1	●	–	130	6	441	551	330	220	386
Tr12x6P3	●	●	577	6	1,963	2,453	5,005	4,171	1,717
Metric									
M5	●	–	101	0.8	75 ⁴³⁾	75 ⁴³⁾	75 ⁴³⁾	75 ⁴³⁾	75 ⁴³⁾
M8	●	–	249	1.25	994	1,243	746	497	870
M10	●	–	390	1.5	1,559	1,949	1,169	780	1,364

⁴³⁾ Reduced load due to nut geometry

Order key

Type	SW	d2	b1	Thread
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□ F R M-131313TR6X2P1

iglidur® material	Form F	Direction of rotation	Metric	Width across flats	Outer Ø [mm]	Length [mm]	Trapezoidal thread	Diameter [mm]	Pitch
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Options:

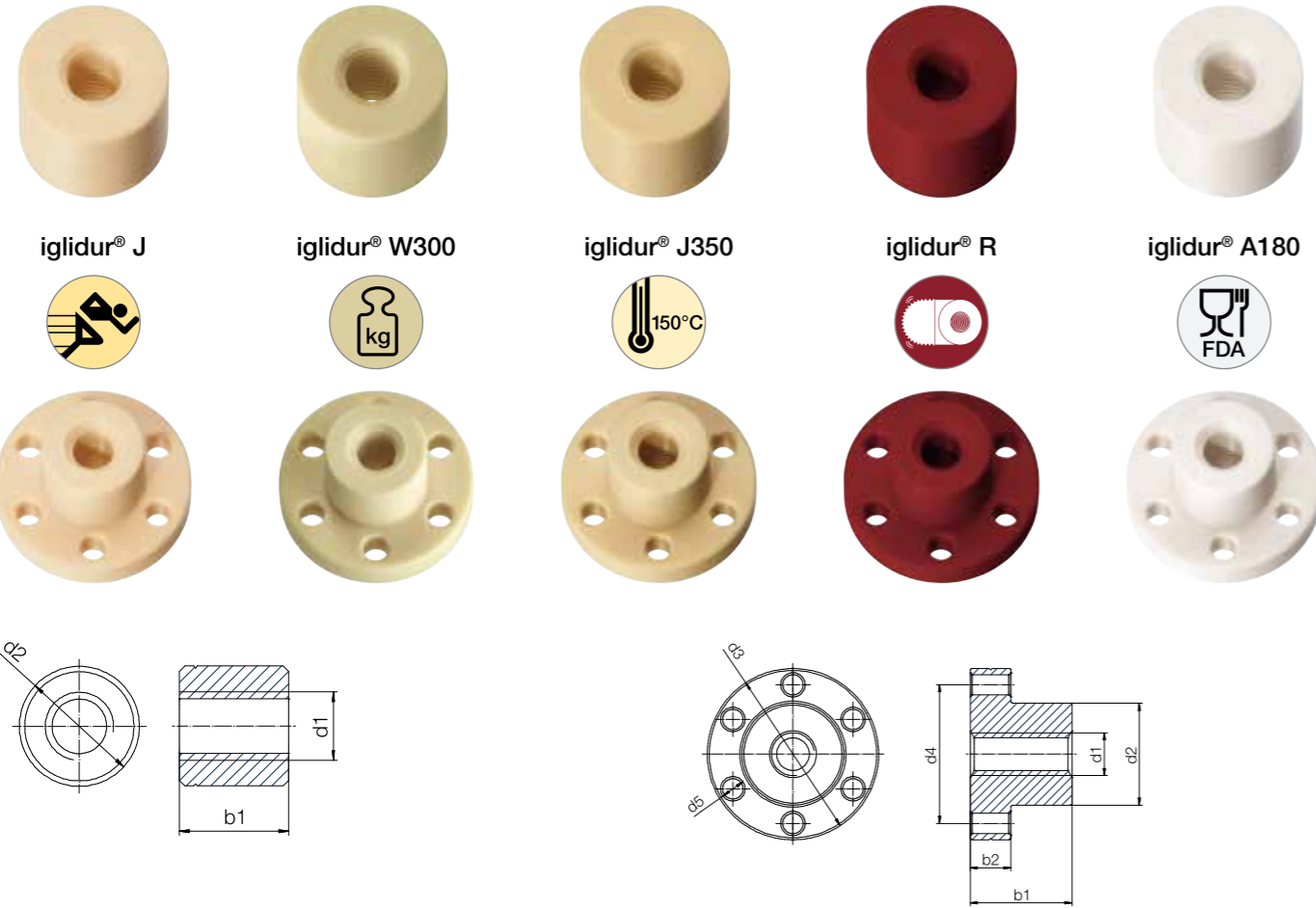
- Direction of rotation
- R: Right-hand thread
- L: Left-hand thread

J	High efficiency at all speeds	Standard
J350	For temperatures up to +150°C	Optional
R	Vibration-dampening and vibration-inhibiting	Optional
A180	FDA-compliant for the food and pharmaceutical industries	Optional
W(300)	Extremely strong and wear-resistant	Optional

Dimensions [mm]

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	d3	d4	d5	b1 ¹⁵⁶⁾	b2	SW	Weight [g]					Part No.
								iglidur®					
								J	W300	J350	R	A180	
8	20	36	28	4	20	8	20	12.7	10.6	–	–	12.4	□F□M-202020TR8X1.5
10	25	42	34	5	25	10	25	23.7	19.7	12.28	22.10	23.2	□F□M-252525TR10X2
10	25	42	34	5	25	10	25	23.7	19.7	12.28	22.10	23.2	□F□M-252525TR10X3 New
12	28	48	38	6	35	12	28	39.2	32.7	37.92	36.60	38.4	□F□M-282835TR12X3
14	28	48	38	6	35	12	28	37.1	30.9	35.86	34.61	36.4	□F□M-282835TR14X4
16	28	48	38	6	35	12	28	34.6	28.8	33.48	32.32	33.9	□F□M-282835TR16X2 New
16	28	48	38	6	35	12	28	34.6	28.8	33.48	32.32	33.9	□F□M-282835TR16X4
18	28	48	38	6	35	12	28	31.9	26.5	30.79	29.72	31.2	□F□M-282835TR18X4
6	13	25	19	3.2	15	5	13	3.8	3.1	3.5	–	3.7	□FRM-131315TR06X2P1
12	28	48	38	6.0	35	12	28	39.2	32.7	37.92	36.30	38.4	□F□M-282835TR12X6P3 New
5	9	18	15.2	3.2	13	3	9	1.3	1.1	1.2	–	1.3	□FRM-090913M5
8	20	36	28	4	20	8	20	12.7	10.57	12.28	11.85	12.45	□FRM-202020M8
10	25	42	34	5	25	10	25	23.7	19.70	22.90	22.10	23.20	□FRM-252525M10

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)



Order key

Type d2 b1 Thread

S R M-1413M3

iglidur® material	Form S	Direction of rotation	Metric	Outer Ø [mm]	Length [mm]	Diameter
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Options:
Form S: Cylindrical
Form F: With flange

J	High efficiency at all speeds	Standard
J350	For temperatures up to +150°C	Optional
R	Vibration-dampening and vibration-inhibiting	Optional
A180	FDA-compliant for the food and pharmaceutical industries	Optional
W(300)	Extremely strong and wear-resistant	Optional

i Also available as flanged nut and spanner flats
▶ Page 1510

Technical data

Thread	Effective supporting surface [mm²]	Max. stat. axial F [N]				
		iglidur®				
		J	W300	J350	R	A180
Cylindrical (form S)						
M3	56	225	281	168	112	197
M4	75	298	373	224	149	261
M5	94	376	470	282	188	329
M6	112	449	562	337	225	393
M8	151	602	753	452	301	527
M10	189	756	944	567	378	661
With flange (form F)						
M3	56	225	281	168	112	197
M4	75	298	373	224	149	261
M5	94	376	470	282	188	329
M6	130	518	648	389	259	454
M8	228	911	1,139	683	456	797
M10	253	1,414	1,767	1,060	707	1,237

Dimensions [mm]

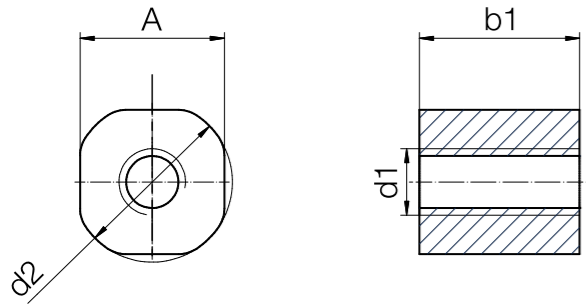
d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	b1 ¹⁵⁶⁾	Weight [g]					Part No.
			iglidur®					
			J	W300	J350	R	A180	
3	14	13	2.8	2.4	2.7	2.7	2.8	<input type="checkbox"/> SRM-1413M3
4	14	13	2.7	2.3	2.6	2.6	2.7	<input type="checkbox"/> SRM-1413M4
5	14	13	2.6	2.2	2.5	2.4	2.5	<input type="checkbox"/> SRM-1413M5
6	14	13	2.4	2.0	2.4	2.3	2.4	<input type="checkbox"/> SRM-1413M6
8	20	18	7.08	5.89	6.69	6.60	6.94	<input type="checkbox"/> SRM-2018M8
10	22	20	8.99	7.48	8.69	8.38	8.81	<input type="checkbox"/> SRM-2220M10

d1	d2	d3	d4	d5	b1	b2						
3	9	18	15.2	3.2	13	3	1.9	1.6	1.9	1.8	1.9	<input type="checkbox"/> FRM-0913M3
4	9	18	15.2	3.2	13	3	1.8	1.5	1.8	1.7	1.8	<input type="checkbox"/> FRM-0913M4
5	9	18	15.2	3.2	13	3	1.7	1.4	1.6	1.6	1.7	<input type="checkbox"/> FRM-0913M5
6	13	25	19.0	3.2	15	5	4.7	3.9	4.5	4.4	4.6	<input type="checkbox"/> FRM-1315M6
8	20	36	28.0	4.0	20	8	16.25	13.53	15.93	15.71	15.17	<input type="checkbox"/> FRM-2020M8
10	25	42	34.0	5.0	25	10	28.69	23.88	28.11	27.73	26.76	<input type="checkbox"/> FRM-2525M10

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)



Image exemplary



Technical data

Thread	Direction of rotation		Effective supporting surface [mm²]	Pitch P [mm]	Max. stat. axial F [N] iglidur®	
	Right	Left			J	E7
single start						
Tr8x1.5	●	●	228	1.5	911	114
Tr10x2	●	●	283	2	1,131	141
Tr10x3	●	●	267	3	1,068	134
Tr12x3	●	●	412	3	1,649	206
Tr14x3	●	●	491	3	1,963	245
Tr14x4	●	●	471	4	1,885	236
Tr16x2	●	●	589	2	2,356	-
Tr16x4	●	●	550	4	2,199	-
Tr18x4	●	●	628	4	2,513	-
Tr20x4	●	●	1,131	4	4,524	-
multi start						
Tr6x2P1	●	-	104	2	352	52
Tr10x4P2	●	-	283	4	961	141
Tr12x6P3	●	●	412	6	1,402	206
Tr16x8P4	●	●	550	8	1,869	-
Tr18x8P4	●	●	628	8	3,845	-
Tr20x8P4	●	●	1,131	8	3,845	-

Order key

Type d2 b1 Thread

J S **M-C-01-TR 10X12**

iglidur® material	Form S	Direction of rotation	Metric	Thread: cut	Type	Thread type	Diameter [mm]	Pitch
J								
E7								

Options:
Direction of rotation
R: Right-hand thread
L: Left-hand thread

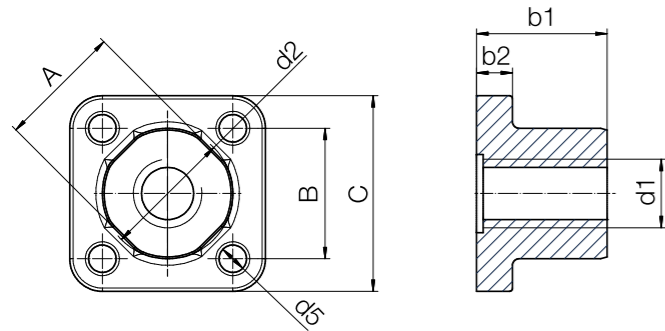
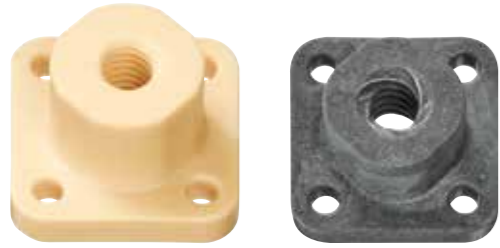
J High efficiency at all speeds Standard 24hrs
E7 For high speeds and low loads Optional

i Injection moulded lead screw nut blank incl. machined cut thread

Dimensions [mm]

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	A	b1 ¹⁵⁶⁾	Weight [g] iglidur®		Part No.
				J	E7	
8	20	18.0	20	7.6	5.4	<input type="checkbox"/> S <input type="checkbox"/> M-C-01-TR8X1.5
10	20	18.0	20	7.1	5.0	<input type="checkbox"/> S <input type="checkbox"/> M-C-01-TR10X2
10	20	18.0	20	7.1	5.0	<input type="checkbox"/> S <input type="checkbox"/> M-C-01-TR10X3
12	24	22.6	25	13.9	9.8	<input type="checkbox"/> S <input type="checkbox"/> M-C-01-TR12X3
14	24	22.6	25	12.7	9.8	<input type="checkbox"/> S <input type="checkbox"/> M-C-01-TR14X3
14	24	22.6	25	12.7	9.8	<input type="checkbox"/> S <input type="checkbox"/> M-C-01-TR14X4
16	28	26.2	25	16.2	-	JS <input type="checkbox"/> M-C-01-TR16X2
16	28	26.2	25	16.2	-	JS <input type="checkbox"/> M-C-01-TR16X4
18	28	26.2	25	16.2	-	JS <input type="checkbox"/> M-C-01-TR18X4
20	32	29.0	40	32.7	-	JS <input type="checkbox"/> M-C-01-TR20X4 New
6	12	11.0	12	1.5	1.0	<input type="checkbox"/> SRM-C-01-TR6X2P1 New
10	20	18.0	20	7.1	5.0	<input type="checkbox"/> SRM-C-01-TR10X4P2
12	24	22.6	25	13.9	9.8	<input type="checkbox"/> S <input type="checkbox"/> M-C-01-TR12X6P3
16	28	26.2	25	16.2	-	JS <input type="checkbox"/> M-C-01-TR16X8P4
18	28	26.2	25	16.2	-	JS <input type="checkbox"/> M-C-01-TR18X8P4
20	32	29.0	40	32.7	-	JS <input type="checkbox"/> M-C-01-TR20X8P4 New

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)



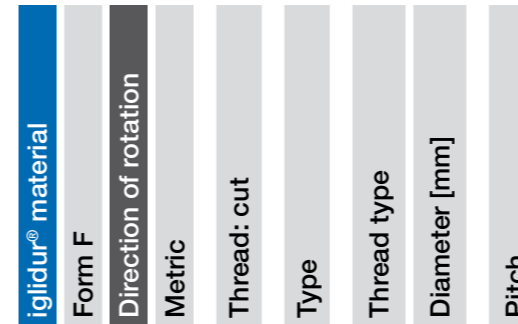
Technical data

Thread	Direction of rotation		Effective supporting surface [mm²]	Pitch P [mm]	Max. stat. axial F [N] iglidur®	
	Right	Left			J	E7
single start						
Tr8x1.5	●	●	228	1.5	911	114
Tr10x2	●	●	283	2	1,131	141
Tr10x3	●	●	267	3	1,068	134
Tr12x3	●	●	412	3	1,649	206
Tr14x3	●	●	491	3	1,963	245
Tr14x4	●	●	471	4	1,885	236
Tr16x2	●	●	589	2	2,356	-
Tr16x4	●	●	550	4	2,199	-
Tr18x4	●	●	628	4	2,513	-
Tr20x4	●	●	1,131	4	4,524	-
multi start						
Tr6x2P1	●	-	104	2	352	52
Tr10x4P2	●	-	283	4	961	141
Tr12x6P3	●	●	412	6	1,402	206
Tr16x8P4	●	●	550	8	1,869	-
Tr18x8P4	●	●	628	8	2,136	-
Tr20x8P4	●	●	1,131	8	3,845	-

Order key

Type d2 b1 Thread

J F □ M - C - 01 - TR 10X12



Options:

Direction of rotation

R: Right-hand thread

L: Left-hand thread

J	High efficiency at all speeds	Standard 24hrs
E7	For high speeds and low loads	Optional

i Injection moulded lead screw nut blank incl. machined cut thread

Dimensions [mm]

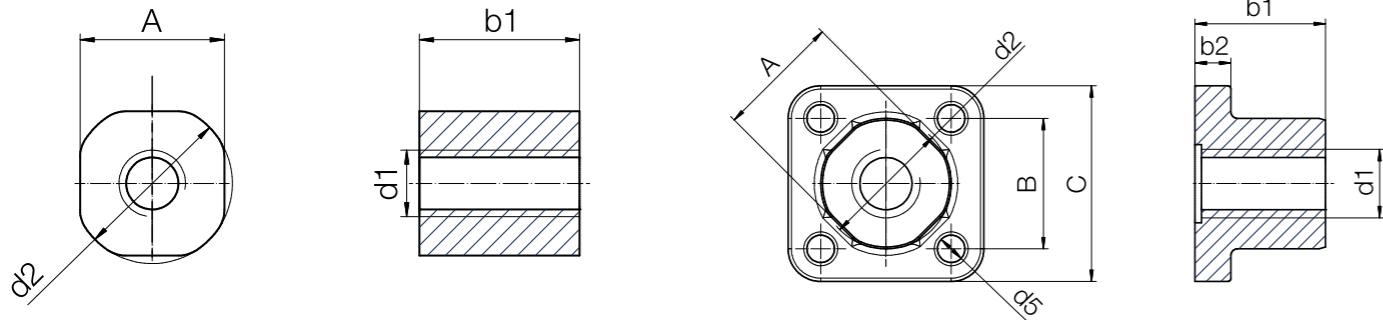
d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	A	B	C	d5	b1 ¹⁵⁶⁾	b2	Weight [g] iglidur®		Part No.
								J	E7	
8	20	19.0	20	30	4.2	20	5.5	11.6	8.3	□F□M-C-01-TR8X1.5
10	20	19.0	20	30	4.2	20	5.5	11.8	8.3	□F□M-C-01-TR10X2
10	20	19.0	20	30	4.2	20	5.5	11.8	8.3	□F□M-C-01-TR10X3
12	24	22.6	24	34	5.0	25	6.0	19.3	13.6	□F□M-C-01-TR12X3
14	24	22.6	24	34	5.0	25	6.0	19.3	13.6	□F□M-C-01-TR14X3
14	24	22.6	24	34	5.0	25	6.0	19.3	13.6	□F□M-C-01-TR14X4
16	28	25.5	27	38	6.0	25	6.5	24.1	-	JF□M-C-01-TR16X2
16	28	25.5	27	38	6.0	25	6.5	24.1	-	JF□M-C-01-TR16X4
18	28	25.5	27	38	6.0	25	6.5	22.7	-	JF□M-C-01-TR18X4
20	32	29.0	30	42	6.0	25	8.0	30.4	-	JF□M-C-01-TR20X4 New
6	12	11.0	12	18	3.2	12	4.0	2.5	1.8	□FRM-C-01-TR6X2P1 New
10	20	19.0	20	30	4.2	20	5.5	11.8	8.3	□FRM-C-01-TR10X4P2
12	24	22.6	24	34	5.0	25	6.0	19.3	13.6	□FRM-C-01-TR12X6P3
16	28	25.5	27	38	6.0	25	6.5	24.1	-	JFRM-C-01-TR16X8P4
18	28	25.5	27	38	6.0	25	6.5	22.7	-	JFRM-C-01-TR18X8P4
20	32	29.0	30	42	6.0	25	8.0	30.7	-	JFRM-C-01-TR20X8P4 New

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

Cylindrical (form S)



With flange (form F)



Order key

Type d2 b1 Thread

J S R M - C - 01 - M5

iglidur® material	Form S	Direction of rotation	Metric	Thread: cut	Type	Diameter
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Options:
Form S: Cylindrical
Form F: With flange

i Injection moulded lead screw nut blank incl. machined cut thread

Technical data

Thread	Effective supporting surface [mm ²]	Max. static axial F [N]
Cylindrical (form S)		
M5	94	376
M6	112	449
M8	151	602
With flange (form F)		
M5	90	358
M6	104	415
M8	232	927

Dimensions [mm]

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	A	b1 ¹⁵⁶⁾	Weight [g]	Part No.
5	12	11	12	1.74	JSRM-C-01-M5
6	12	11	12	1.44	JSRM-C-01-M6
8	20	19	20	7.58	JSRM-C-01-M8

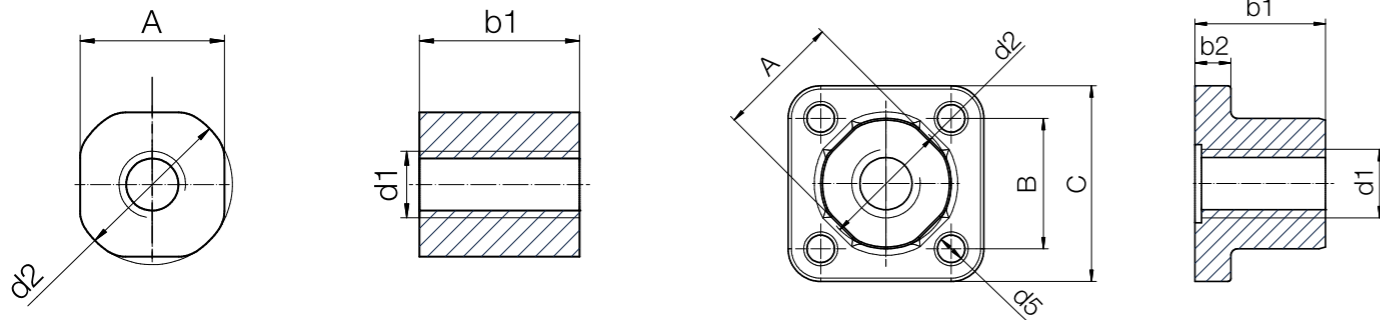
d1	d2	A	B	C	d5	b1	b2	[g]	Part No.
5	12	11	12	18	3.2	12	4	2.59	JFRM-C-01-M5
6	12	11	12	18	3.2	12	4	2.62	JFRM-C-01-M6
8	20	19	20	30	4.2	20	5.5	12.2	JFRM-C-01-M8

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

Cylindrical (form S)



With flange (form F)



Order key

Type d2 b1 Thread

J F R M-M-01-TR 10X12

iglidur® material	Form F	Direction of rotation	Metric	Thread: injection moulding	Type	Thread type	Diameter [mm]	Pitch
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Options:
Form S: Cylindrical
Form F: With flange

i Completely injection-moulded lead screw nut (off-the-tool) incl. injection-moulded thread

Technical data

Thread	Direction of rotation		Effective supporting surface [mm²]	Pitch P [mm]	Max. static axial F [N]
	Right	Left			
Cylindrical (form S)					
Tr8x1.5	●	–	228	1.5	500 ⁴³⁾
Tr10x2	●	–	283	2	1,131
Tr12x3	●	–	412	3	1,649
Tr16x2	●	–	589	2	2,356
Tr16x4	●	–	550	4	2,199
With flange (form F)					
Tr8x1.5	●	–	118	1.5	471
Tr10x2	●	–	228	2	911
Tr12x3	●	–	412	3	1,649
Tr16x2	●	–	589	2	2,356
Tr16x4	●	–	353	4	1,414

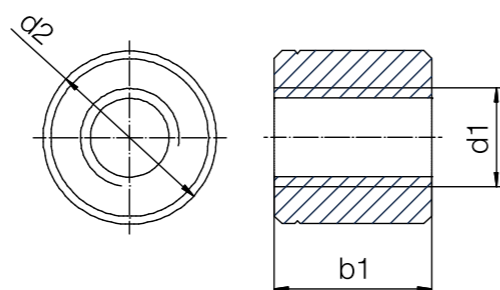
⁴³⁾ Reduced load due to nut geometry

Dimensions [mm]

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	A	b1 ¹⁵⁶⁾	Weight [g]	Part No.
8	20	19	20	7.86	JSRM-M-01-TR8X1.5
10	20	19	20	7.02	JSRM-M-01-TR10X2
12	24	22.6	25	12.64	JSRM-M-01-TR12X3 New
16	28	26.2	25	15.45	JSRM-M-01-TR16X2 New
16	28	26.16	25	15.45	JSRM-M-01-TR16X4

d1	d2	A	B	C	d5	b1	b2	[g]	Part No.
8	20	19.0	20	30	4.2	20	5.5	7.38	JFRM-M-01-TR8X1.5
10	20	19.0	20	30	4.2	20	5.5	7.38	JFRM-M-01-TR10X2
12	24	22.6	24	34	5.0	25	6.0	10.3	JFRM-M-01-TR12X3 New
16	28	25.5	27	38	6.0	25	6.5	13.99	JFRM-M-01-TR16X2 New
16	28	25.5	27	38	6.0	25	6.5	13.99	JFRM-M-01-TR16X4

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)



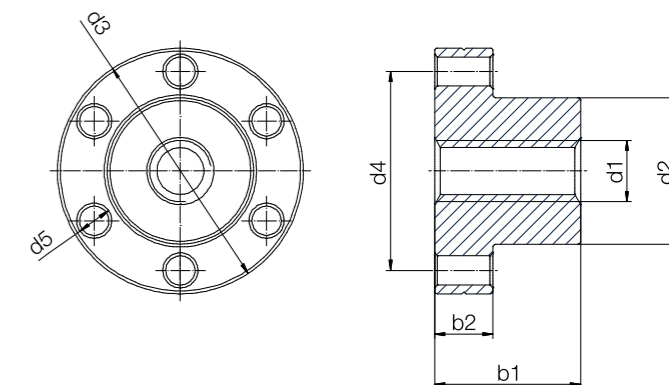
Technical data and dimensions - cylindrical lead screw nuts

Thread	Hand of rotation right	Effective support surface [mm²]	Max. static, axial F [N] J/W300/J350/A180/R	Part No.
1/4-16	●	111	200	JSRI-01-1/4-16
3/8-20	●	256	1,024	JSRI-01-3/8-20
3/8-12	●	254	1,018	JSRI-01-3/8-12
3/8-10	●	245	980	JSRI-01-3/8-10
1/2-10	●	449	1,796	JSRI-01-1/2-10
5/8-8	●	568	2,272	JSRI-01-5/8-8
3/4-10	●	913	3,652	JSRI-01-3/4-10
3/4-6	●	978	3,912	JSRI-01-3/4-6
1-10	●	1,830	7,320	JSRI-01-1-10
1-5	●	1,896	7,584	JSRI-01-1-5

Dimensions - cylindrical lead screw nuts

d1 [inch]	d2 [inch]	b1 [inch]	Weight [lb] J/A180/R/J350/W300	Part No.
0.250	0.625	0.500	0.006-0.007	JSRI-01-1/4-16
0.380	0.875	0.750	0.016-0.020	JSRI-01-3/8-20
0.380	0.875	0.750	0.016-0.020	JSRI-01-3/8-12
0.380	0.875	0.750	0.016-0.020	JSRI-01-3/8-10
0.500	1,000	1,000	0.026-0.032	JSRI-01-1/2-10
0.630	1.375	1,000	0.053-0.063	JSRI-01-5/8-8
0.750	1,500	1.375	0.080-0.096	JSRI-01-3/4-10
0.750	1,500	1.375	0.080-0.096	JSRI-01-3/4-6
1,000	2,000	2,000	0.212-0.255	JSRI-01-1-10
1,000	2,000	2,000	0.212-0.255	JSRI-01-1-5

Full product range online
Split lead screw nuts made from
5 iglidur® materials
► www.igus.eu/ACME-thread

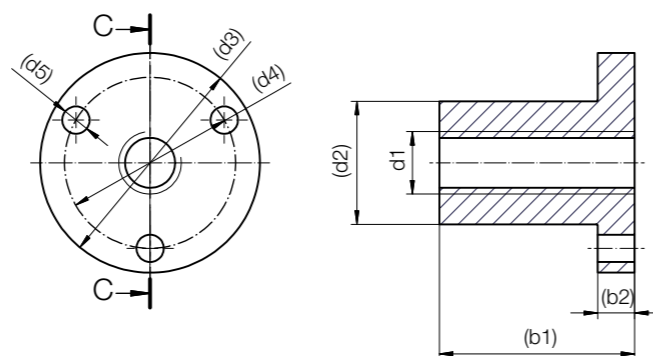


Technical data - with flange

Thread	Hand of rotation right	Effective support surface [mm²]	Max. static, axial F [N] J/A180/R/J350/W300	Part No.
1/4-16	●	111	111	JFRI-01-1/4-16
3/8-20	●	341	1,364	JFRI-01-3/8-20
3/8-12	●	327	1,320	JFRI-01-3/8-12
3/8-10	●	326	1,304	JFRI-01-3/8-10
1/2-10	●	618	2,472	JFRI-01-1/2-10
5/8-8	●	781	3,124	JFRI-01-5/8-8
3/4-10	●	913	3,652	JFRI-01-3/4-10
3/4-6	●	978	3,912	JFRI-01-3/4-6
1-10	●	1,601	6.404	JFRI-01-1-10
1-5	●	1,659	6.636	JFRI-01-1-5

Dimensions - with flange

d1 [inch]	d2 [inch]	d3 [inch]	d4 [inch]	d5 [inch]	b1 [inch]	b2 [inch]	Weight [lb] J/A180/R/J350/W300	Part No.
0.250	0.500	1,000	0.750	0.130	0.500	0.200	0.008-0.010	JFRI-01-1/4-16
0.380	1,000	1.630	1.310	1,200	1,000	0.380	0.052-0.062	JFRI-01-3/8-20
0.380	1,000	1.630	1.310	0.200	1,000	0.380	0.052-0.062	JFRI-01-3/8-12
0.380	1,000	1.630	1.310	0.200	1,000	0.380	0.052-0.062	JFRI-01-3/8-10
0.500	1,125	1.880	1,000	0.240	1.380	0.500	0.080-0.097	JFRI-01-1/2-10
0.630	1,125	1.880	1,000	0.240	1.380	0.500	0.082-0.098	JFRI-01-5/8-8
0.750	1,125	1.880	1,500	0.240	1.380	0.500	0.072-0.087	JFRI-01-3/4-10
0.750	1,125	1.880	1,500	0.240	1.380	0.500	0.072-0.087	JFRI-01-3/4-6
1,000	1,500	2,500	2,000	0.280	1,750	0.590	0.160-0.192	JFRI-01-1-10
1,000	1,500	2,500	2,000	0.280	1,750	0.590	0.160-0.192	JFRI-01-1-5



Material iglidur® J4:
Cost-effective and wear-resistant

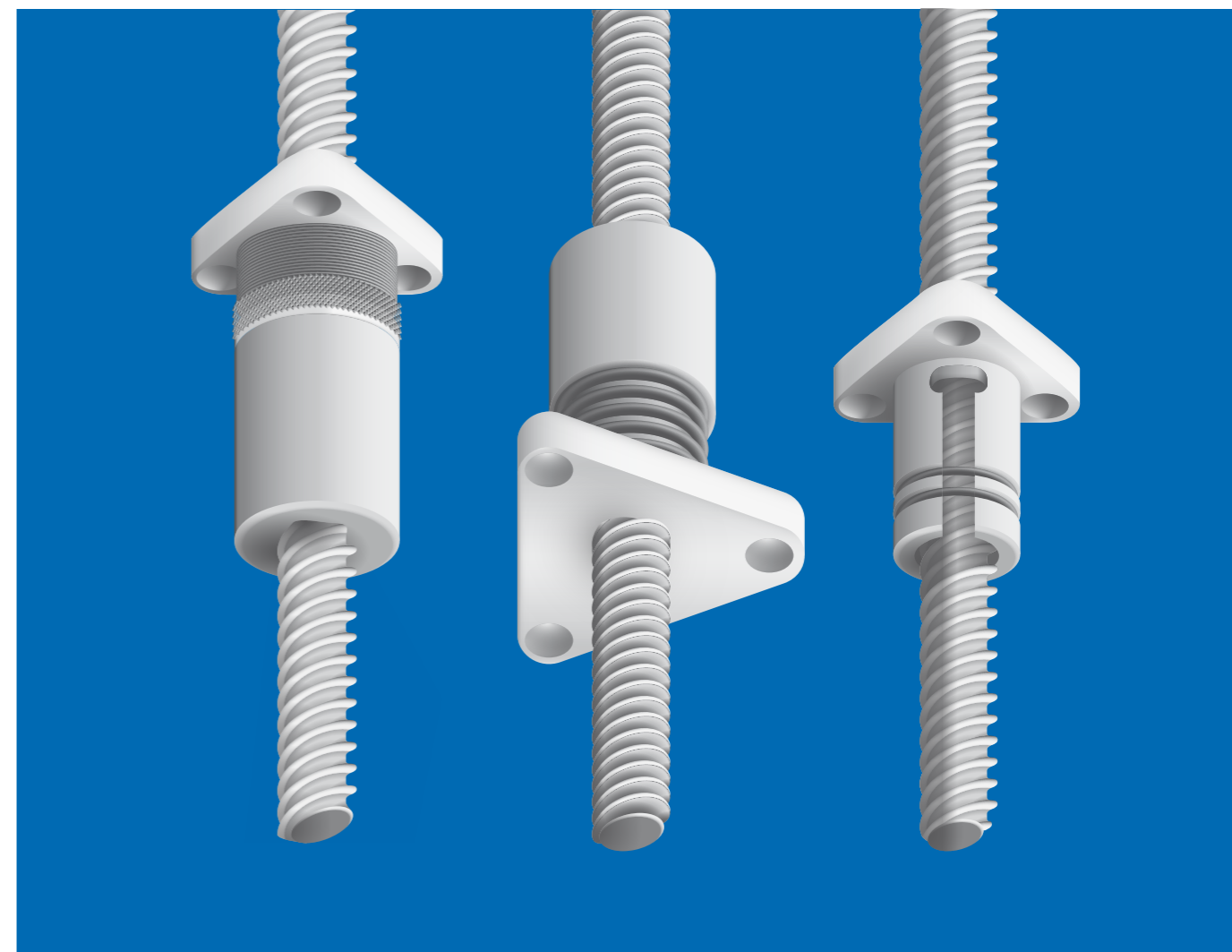
i Injection moulded lead screw nut blank incl. machined cut thread

Technical data - with flange

Thread	Hand of rotation right	Effective support surface [mm²]	Max. stat. axial F [N] J4	Part No.
1/4-16	●	111	175	J4FRI-C-01-1/4-16
3/8-10	●	341	1,352	J4FRI-C-01-3/8-10
3/8-12	●	327	1,318	J4FRI-C-01-3/8-12
3/8-20	●	326	1,320	J4FRI-C-01-3/8-20
1/2-10	●	674	3,136	J4FRI-C-01-1/2-10
5/8-8	●	852	3,902	J4FRI-C-01-5/8-8
3/4-6	●	1,328	6,739	J4FRI-C-01-3/4-6
3/4-10	●	1,423	6,385	J4FRI-C-01-3/4-10
1-5	●	1,830	6,385	J4FRI-C-01-1-5
1-10	●	1,896	6,385	J4FRI-C-01-1-10

Dimensions - with flange

d1 [inch]	d2 [mm²]	d3 [mm²]	d4 [mm²]	d5 [mm²]	b1 [mm²]	b2 [mm²]	Weight [lb]	Part No.
0.250	0.50	1.00	0.750	0.140	1.0	0,19	6.90	J4FRI-C-01-1/4-16
0.380	0.63	1,125	0.876	0.140	1.0	0,19	9.24	J4FRI-C-01-3/8-10
0.380	0.63	1,125	0.876	0.140	1.0	0,19	9.24	J4FRI-C-01-3/8-12
0.500	0.63	1,125	0.876	0.140	1.0	0,19	9.24	J4FRI-C-01-3/8-20
0.630	0.75	1.50	1.126	0.140	1.5	0,19	19.5	J4FRI-C-01-1/2-10
0.750	0.875	1.50	1.188	0.203	1.5	0.188	21.3	J4FRI-C-01-5/8-8
0.630	1,13	1.75	1.438	0.203	2.0	0.25	48.1	J4FRI-C-01-3/4-6
0.750	1,13	1.75	1.438	0.203	2.0	0.25	48.1	J4FRI-C-01-3/4-10
1,000	1/1.5	2.25	1.876	0.203	2.0	0.25	83.4	J4FRI-C-01-1-5
1,000	1/1.5	2.25	1.876	0.203	2.0	0.25	83.4	J4FRI-C-01-1-10



dryspin® lead screw technology - low-clearance lead screw nuts

Zero-backlash lead screw nuts

Pre-load lead screw nuts

Low-clearance lead screw nuts

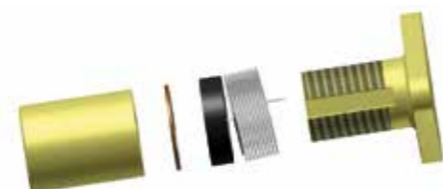
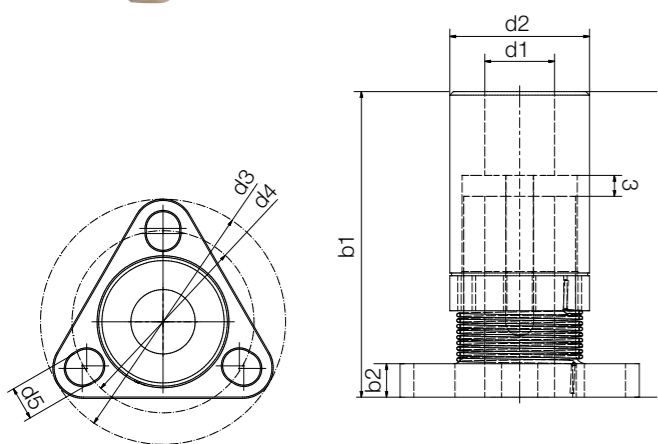
Anti-backlash lead screw nuts





i Backlash is created on the lead screw drive by the axial clearance. By adding a radial pre-load, vibrations are significantly reduced.

i We recommend using our zero backlash lead screw nuts at constant temperatures. Large temperature differences can cause the lead screw nut develop unwanted adjustment, which can increase the required driving torque of the lead screw nut.



i Installation instructions and video tutorials
▶ www.igus.eu/zero-backlash-nut

Technical data

Thread	Max. stat. axial F [N]	Max. idling torque (with spring) ¹⁷⁰⁾ from [Nm]	Weight [g]
Ds5x5	75	0.02	6.5
Ds6.35x2.54	75	0.02	6.2
Ds6.35x5.08	75	0.02	6.2
Ds6.35x12.7	75	0.02	6.2
Ds6.35x25.4	75	0.02	6.2
Ds8x10	150	0.03	17.7
Ds8x15	150	0.03	17.7
Ds8x24	150	0.03	17.7
Ds10x12	150	0.04	16.8
Ds10x25	150	0.04	16.8
Ds10x50	150	0.04	16.8
DS12x3	500	0.08	29.3
DS12x5	500	0.08	29.3
DS12.7x12.7	500	0.08	29.3
DS12x15	500	0.08	29.3
DS12x25	500	0.08	29.3
DS14x4	500	0.08	27.7
DS14x24	500	0.08	27.7
DS14x30	500	0.08	27.7

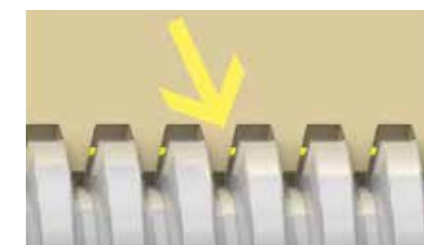
¹⁷⁰⁾ The idling torque of the zero-backlash lead screw nut increases with service life. When calculating the dimensions, it is recommended that the maximum idling torque be taken into account.

i Order key

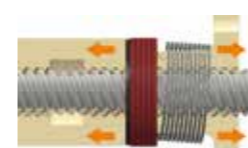
Part number	Type	Thread
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DST - J F R M - ZB - 0001 - DS 10X12

dryspin® technology
iglidur® J
Form F
Direction of rotation
Metric
Zero-Backlash
Type 0001
Thread type
Thread Ø [mm]
Pitch



Yellow markings show the axial clearance of a standard lead screw nut



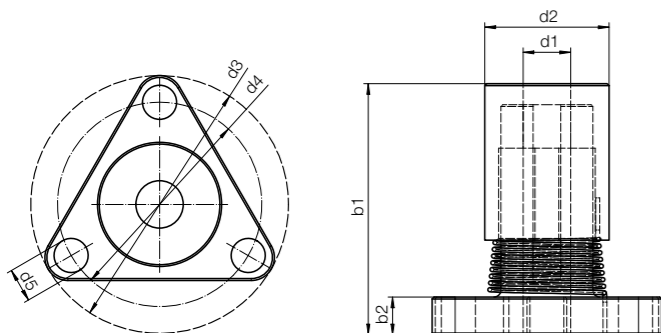
The lead screw nut consists of a support nut, an adjusting ring with torsion spring, a friction disc and the axial element. With the help of the torsion spring, the pretension is brought into the lead screw system.

Dimensions [mm]

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	d3	d4	d5	b1 ^{40) 156)}	b2	Part No.
5	13.5	28	22.2	3.7	31 - 36	4.1	DST-JFRM-ZB-0001-DS5X5
6.35	13.5	28	22.2	3.7	31 - 36	4.1	DST-JFRM-ZB-0001-DS6.35X2.54
6.35	13.5	28	22.2	3.7	31 - 36	4.1	DST-JFRM-ZB-0001-DS6.35X5.08
6.35	13.5	28	22.2	3.7	31 - 36	4.1	DST-JFRM-ZB-0001-DS6.35X12.7
6.35	13.5	28	22.2	3.7	31 - 36	4.1	DST-JFRM-ZB-0001-DS6.35X25.4
8	20	38.1	28.3	5.2	41 - 47	4.8	DST-JFRM-ZB-0001-DS8X10
8	20	38.1	28.3	5.2	41 - 47	4.8	DST-JFRM-ZB-0001-DS8X15
8	20	38.1	28.3	5.2	41 - 47	4.8	DST-JFRM-ZB-0001-DS8X24
10	20	38.1	28.3	5.2	41 - 47	4.8	DST-JFRM-ZB-0001-DS10X12
10	20	38.1	28.3	5.2	41 - 47	4.8	DST-JFRM-ZB-0001-DS10X25
10	20	38.1	28.3	5.2	41 - 47	4.8	DST-JFRM-ZB-0001-DS10X50
12	24	41.2	31.8	5.2	55 - 61	7.0	DST-JFRM-ZB-0001-DS12X3 New
12	24	41.2	31.8	5.2	55 - 61	7.0	DST-JFRM-ZB-0001-DS12X5 New
12	24	41.2	31.8	5.2	55 - 61	7.0	DST-JFRM-ZB-0001-DS12.7X12.7 New
12	24	41.2	31.8	5.2	55 - 62	7.0	DST-JFRM-ZB-0001-DS12X15 New
12	24	41.2	31.8	5.2	55 - 63	7.0	DST-JFRM-ZB-0001-DS12X25 New
14	24	41.2	31.8	5.2	55 - 64	7.0	DST-JFRM-ZB-0001-DS14X4 New
14	24	41.2	31.8	5.2	55 - 65	7.0	DST-JFRM-ZB-0001-DS14X24 New
14	24	41.2	31.8	5.2	55 - 66	7.0	DST-JFRM-ZB-0001-DS14X30 New

⁴⁰⁾ Variable according to thread pitch / clearance

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)



i Backlash is created on the lead screw drive by the axial clearance. By adding a radial pre-load, vibrations are significantly reduced.



Technical data

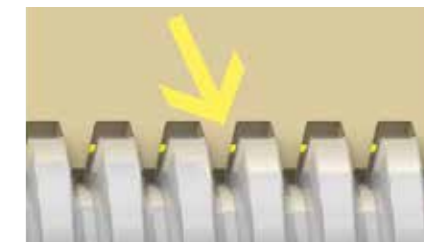
Thread	Max. stat. axial F	Max. idling torque (with spring) from	Weight
	[N]	[Nm]	
DS6.35x2.54	30	0.10	5.1
DS6.35x5.08	30	0.10	5.1
DS6.35x6.35	30	0.10	5.1
DS6.35x1	30	0.10	5.1
DS10x2	40	0.10	22.0
DS10x3	40	0.10	22.0
DS10x12	35	0.10	22.0

Key Order key

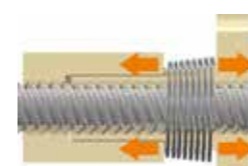
Part number	Type	Thread
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DST - J F R M-PL -0001-DS 10X12

dryspin® technology	iglidur® J	Form F	Direction of rotation	Metric	Pre-load	Type 0001	Thread type	Thread Ø [mm]	Pitch
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Yellow markings show the axial clearance of a standard lead screw nut

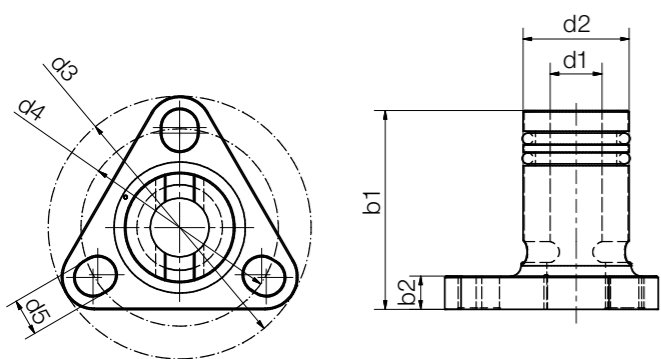


It is the cost-effective alternative to the zero backlash lead screw nuts and perfectly suited for small pitches. This is the proven preload principle from SHT-PL.

Dimensions [mm]

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	d3	d4	d5	b1 ¹⁵⁶⁾	b2	Part No.
6.35	13.5	28.0	22.2	3.7	31 - 36	4.1	DST-JFRM-PL-0001-DS6.35X2.54 New
6.35	13.5	28.0	22.2	3.7	31 - 36	4.1	DST-JFRM-PL-0001-DS6.35X5.08 New
6.35	13.5	28.0	22.2	3.7	31 - 36	4.1	DST-JFRM-PL-0001-DS6.35X6.35 New
6.35	13.5	28.0	22.2	3.7	31 - 36	4.1	DST-JFRM-PL-0001-DS6.35X1 New
10.0	20.0	38.1	28.2	5.2	41 - 46	4.8	DST-JFRM-PL-0001-DS10X2 New
10.0	20.0	38.1	28.2	5.2	41 - 46	4.8	DST-JFRM-PL-0001-DS10X3 New
10.0	20.0	38.1	28.2	5.2	41 - 46	4.8	DST-JFRM-PL-0001-DS10X12 New

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)



i Backlash is created on the lead screw drive by the axial clearance. By adding a radial pre-load, vibrations are significantly reduced.

i The pre-load can increase the maximum idling torque by up to 0.2Nm.

Technical data

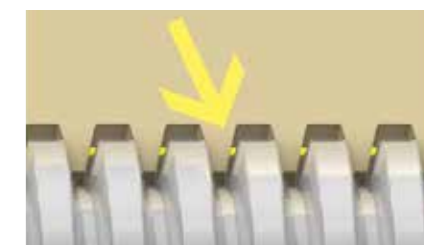
Thread	Max. stat. axial F [N]	Weight [g]
Ds5x5	40	3.0
Ds5x10	40	3.0
Ds6.35x1	40	2.7
Ds6.35x2.54	40	3.8
Ds6.35x5.08	40	3.8
Ds6.35x6.35	40	2.7
Ds6.35x12.7	40	3.8
Ds6.35x25.4	40	3.8
Ds8x8	75	8.2
Ds8x10	75	12.1
Ds8x15	75	12.1
Ds8x24	75	8.2
Ds8x40	75	8.2
Ds10x2	75	7.3
Ds10x3	75	7.3
Ds10x12	75	12.1
Ds10x25	75	12.1
Ds10x50	75	12.1
Ds12x3	125	15.1
Ds12x5	125	15.1
Ds12.7x12.7	125	15.1
Ds12x15	125	15.1
Ds12x25	125	15.1

Key Order key

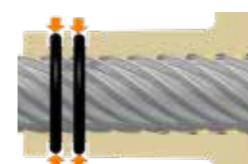
Part number	Type	Thread
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DST- J F R M-LC-0001-DS 10X12

dryspin® technology
igidur® J
Form F
Direction of rotation
Metric
Low Clearance
Type 0001
Thread type
Thread Ø [mm]
Pitch



Yellow markings show the axial clearance of a standard lead screw nut



The O-rings apply a circumferential radial pretension to the thread system, pressing the flanks of the lead screw nut and the threads of the lead screw. This ensures a constant axial and radial pretension of the nut.

Dimensions [mm]

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	d3	d4	d5	b1 ¹⁵⁶⁾	b2	Part No.
5	10	28	22.2	3.7	25.0	4.1	DST-JFRM-LC-0001-DS5X5
5	10	28	22.2	3.7	25.0	4.1	DST-JFRM-LC-0001-DS5X10
6.35	10	28	22.2	3.7	25.0	4.1	DST-JFRM-LC-0001-DS6.35X1
6.35	10	28	22.2	3.7	25.0	4.1	DST-JFRM-LC-0001-DS6.35X2.54
6.35	10	28	22.2	3.7	25.0	4.1	DST-JFRM-LC-0001-DS6.35X5.08
6.35	10	28	22.2	3.7	25.0	4.1	DST-JFRM-LC-0001-DS6.35X6.35
6.35	10	28	22.2	3.7	25.0	4.1	DST-JFRM-LC-0001-DS6.35X12.7
6.35	10	28	22.2	3.7	25.0	4.1	DST-JFRM-LC-0001-DS6.35X25.4
8	16	38.1	28.2	5.2	28.8	4.8	DST-JFRM-LC-0001-DS8X8
8	16	38.1	28.2	5.2	28.8	4.8	DST-JFRM-LC-0001-DS8X10
8	16	38.1	28.2	5.2	28.8	4.8	DST-JFRM-LC-0001-DS8X15
8	16	38.1	28.2	5.2	28.8	4.8	DST-JFRM-LC-0001-DS8X24
8	16	38.1	28.2	5.2	28.8	4.8	DST-JFRM-LC-0001-DS8X40
10	16	38.1	28.2	5.2	28.8	4.8	DST-JFRM-LC-0001-DS10X2
10	16	38.1	28.2	5.2	28.8	4.8	DST-JFRM-LC-0001-DS10X3
10	16	38.1	28.2	5.2	28.8	4.8	DST-JFRM-LC-0001-DS10X12
10	16	38.1	28.2	5.2	28.8	4.8	DST-JFRM-LC-0001-DS10X25
10	16	38.1	28.2	5.2	28.8	4.8	DST-JFRM-LC-0001-DS10X50
12	20	41.2	31.8	5.2	44.0	7.0	DST-JFRM-LC-0001-DS12X3
12	20	41.2	31.8	5.2	44.0	7.0	DST-JFRM-LC-0001-DS12X5
12	20	41.2	31.8	5.2	44.0	7.0	DST-JFRM-LC-0001-DS12.7X12.7
12	20	41.2	31.8	5.2	44.0	7.0	DST-JFRM-LC-0001-DS12X15
12	20	41.2	31.8	5.2	44.0	7.0	DST-JFRM-LC-0001-DS12X25

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

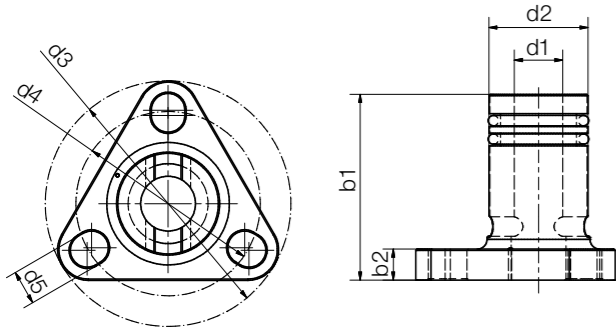
Technical data

Thread	Max. stat. axial F [N]	Weight [g]
Ds14x4	125	14.2
Ds14x25	125	14.2
Ds14x30	125	14.2
Ds14x40.6	125	14.2
Ds14x70	125	14.2

Dimensions [mm]

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	d3	d4	d5	b1 ¹⁵⁶⁾	b2	Part No.
14	20	41.2	31.8	5.2	44.0	7.0	DST-JFRM-LC-0001-DS14X4 New
14	20	41.2	31.8	5.2	44.0	7.0	DST-JFRM-LC-0001-DS14X25
14	20	41.2	31.8	5.2	44.0	7.0	DST-JFRM-LC-0001-DS14X30
14	20	41.2	31.8	5.2	44.0	7.0	DST-JFRM-LC-0001-DS14X40.6
14	20	41.2	31.8	5.2	44.0	7.0	DST-JFRM-LC-0001-DS14X70 New

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)



i Backlash is created on the lead screw drive by the axial clearance. By adding a radial pre-load, vibrations are significantly reduced.

i The pre-load can increase the maximum idling torque by up to 0.2Nm.

Technical data

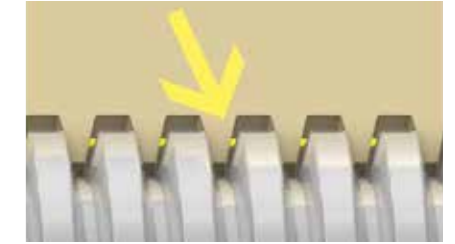
Thread	Max. static axial F [N]	Weight [g]
Single start		
Tr8x1.5	75	8.2
Tr10x2	75	7.3
Tr10x3	75	7.3
Tr12x3	125	15.1
Tr14x3	125	14.2
Tr14x4	125	14.2
Multi start		
Tr06x2P1	40	3.9
Tr12x6P3	125	18.0

Order key

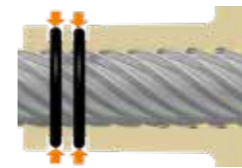
Type	Thread
------	--------

J F R M-LC-0001-TR 10X2

iglidur® material	Form F	Direction of rotation	Metric	Low Clearance	Type	Trapezoidal thread	Diameter [mm]	Pitch
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Yellow markings show the axial clearance of a standard lead screw nut

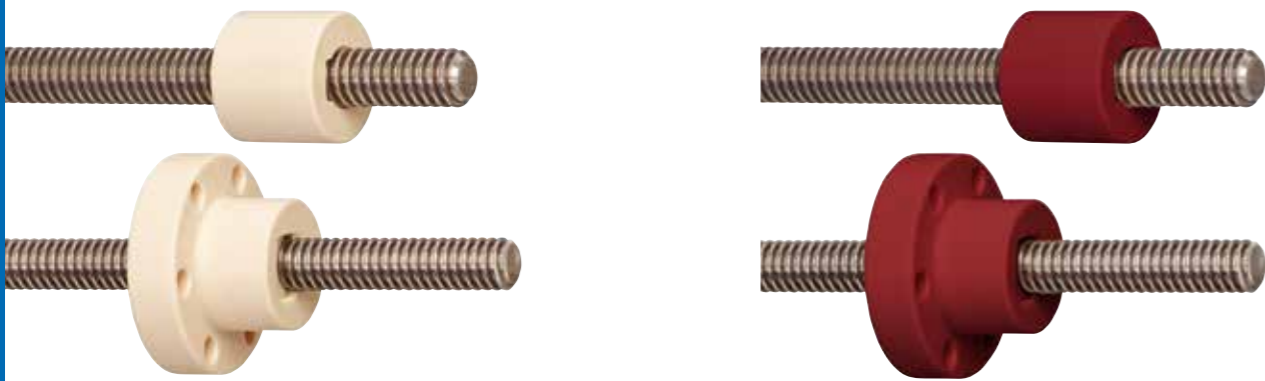


The O-rings apply a circumferential radial pretension to the thread system, pressing the flanks of the lead screw nut and the threads of the lead screw. This ensures a constant axial and radial pretension of the nut.

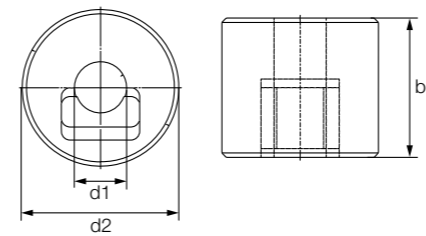
Dimensions [mm]

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	d3	d4	d5	b1 ¹⁵⁶⁾	b2	Part No.
8	16.0	38.1	28.2	5.2	28.3	4.8	JFRM-LC-0001-TR8X1.5
10	16.0	38.1	28.2	5.2	28.3	4.8	JFRM-LC-0001-TR10X2
10	16.0	38.1	28.2	5.2	28.3	4.8	JFRM-LC-0001-TR10X3
12	20	41.2	31.8	5.2	44.0	7.0	JFRM-LC-0001-TR12X3
14	20	41.2	31.8	5.2	44.0	7.0	JFRM-LC-0001-TR14X3
14	20	41.2	31.8	5.2	44.0	7.0	JFRM-LC-0001-TR14X4
6	10.0	28.0	22.2	3.7	25.0	4.1	JFRM-LC-0001-TR06X2P1
12	20	41.2	31.8	4.8	44.0	7.0	JFRM-LC-0001-TR12X6P3

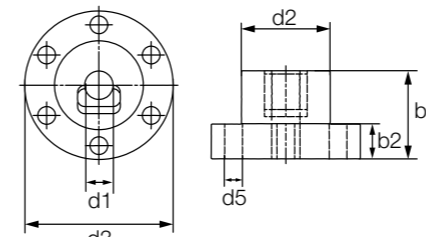
¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)



In the case of this lead screw nut, an elastomer ring applies a force on an insert with a matching thread, which is pressed into the threads of the lead screw. It is important that this pretensioning is not present over the entire length or the entire circumference. This ensures low axial clearance in only a small range.



Cylindrical (form S)



With flange (form F)

Order key

Type d2 b1 Thread

S R M-AB-25 25 TR 10X2

iglidur® material	Form S	Direction of rotation	Metric	Anti-backlash	Outer Ø [mm]	Length [mm]	Trapezoidal thread	Diameter [mm]	Pitch	Options: Form S: Cylindrical Form F: With flange
		J								High efficiency at all speeds
		R								Vibration-dampening and vibration-inhibiting

Technical data - cylindrical design

Thread	Direction of rotation		Effective supporting surface [mm²]	Pitch P [mm]	Max. stat. axial F [N] iglidur®	
	Right	Left			J	R
Cylindrical - form S						
Tr8x1.5	●	–	228	1.5	683	342
Tr10x2	●	●	283	2	848	424
Tr12x3	●	–	396	3	1,188	594
Tr16x2	●	–	613	2	1,838	919
Tr16x4	●	–	613	4	1,838	919
Tr18x4	●	●	905	4	2,714	1,357
Tr20x4	●	●	1,131	4	3,393	1,696
Tr24x5	●	–	1,621	5	4,863	2,432

Technical data - with flange

Thread	Direction of rotation		Effective supporting surface [mm²]	Pitch P [mm]	Max. stat. axial F [N] iglidur®	
	Right	Left			J	R
With flange - form F						
Tr8x1.5	●	–	285	1.5	683	342
Tr10x2	●	●	353	2	1,060	530
Tr10x3	●	–	334	3	1,001	501
Tr12x3	●	–	396	3	1,188	594
Tr14x4	●	●	471	4	1,414	707
Tr16x2	●	●	613	2	1,838	919
Tr16x4	●	●	445	4	1,336	668
Tr18x4	●	●	905	4	2,714	1,357
Tr18x8P4	●	–	1,002	8P4	2,243	1,153
Tr20x4	●	●	1,131	4	3,393	1,696
Tr20x8P4	●	–	1,255	8P4	3,172	1,442
Tr24x5	●	●	1,621	5	4,863	2,432

Dimensions [mm] - cylindrical design

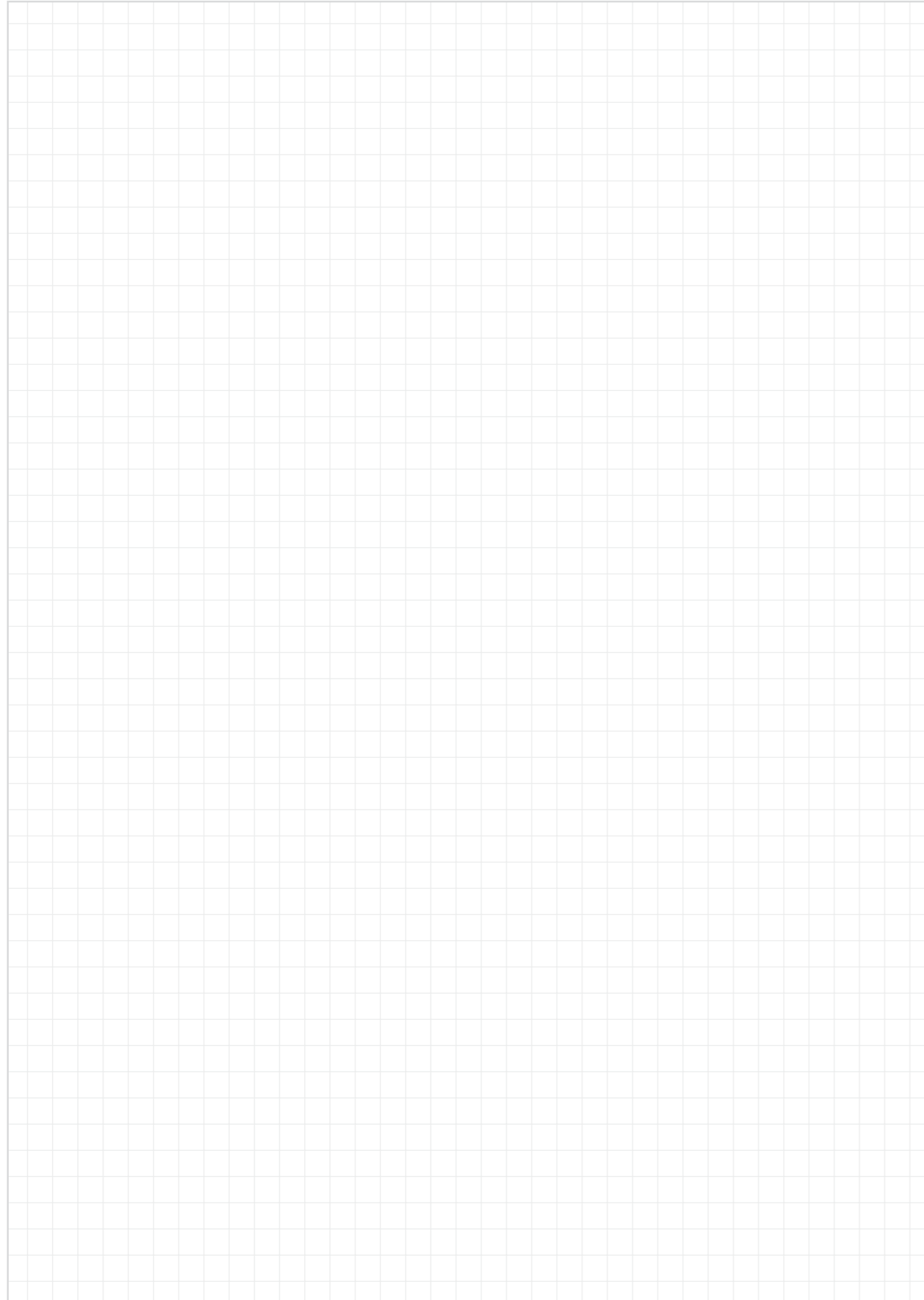
d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	b1 ¹⁵⁶⁾	Weight [g] iglidur®		Part No.
			J	R	
8	22	20	11.8	11.0	□SRM-AB-2220-TR8X1.5
10	22	20	11.0	10.2	□S□M-AB-2220-TR10X2
12	26	24	17.2	16.0	□SRM-AB-2624-TR12X3
16	36	32	44.8	41.9	□SRM-AB-3632-TR16X2 New
16	36	32	44.8	41.9	□SRM-AB-3632-TR16X4
18	40	36	59.7	55.8	□S□M-AB-4036-TR18X4
20	45	40	83.1	77.7	□S□M-AB-4540-TR20X4
24	50	48	112.1	104.8	□SRM-AB-5048-TR24X5

Dimensions [mm] - with flange

d1 ¹⁵⁶⁾	d2 ¹⁵⁶⁾	d3	d4	d5	b1 ¹⁵⁶⁾	b2	Weight [g] iglidur®		Part No.
							J	R	
8	20	36	28	4	20	8	17.5	16.3	□FRM-AB-2020-TR8X1.5 New
10	25	42	34	5	25	10	28.9	27.0	□F□M-AB-2525-TR10X2
10	25	42	34	5	25	10	28.7	26.8	□FRM-AB-2525-TR10X3
12	28	48	35	5	35	12	30.3	28.3	□FRM-AB-2835-TR12X3
14	28	48	38	6	35	12	45.2	42.1	□F□M-AB-2835-TR14X4
16	28	48	38	6	35	12	45.0	42.0	□F□M-AB-2835-TR16X2
16	28	48	38	6	35	12	42.6	39.7	□F□M-AB-2835-TR16X4
18	28	48	38	6	35	12	43.5	40.5	□F□M-AB-2835-TR18X4
18	28	48	38	6	35	12	43.5	40.5	□FRM-AB-2835-TR18X8P4 New
20	32	55	45	7	44	12	62.5	58.3	□F□M-AB-3244-TR20X4
20	32	55	45	7	44	12	62.5	58.3	□FRM-AB-3244-TR20X8P4 New
24	32	55	45	7	44	12	49.7	46.4	□F□M-AB-3244-TR24X5

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

i Backlash is created on the lead screw drive by the axial clearance. By adding a radial pre-load, vibrations are significantly reduced.



dryspin[®] lead screw technology - special designs and accessories

Linear module lead screw nuts

Angular compensation with spherical balls

With "Fast Forward" quick release mechanism

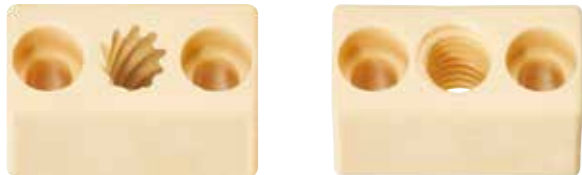
Split lead screw nuts

Lead screw support block

Clamping rings

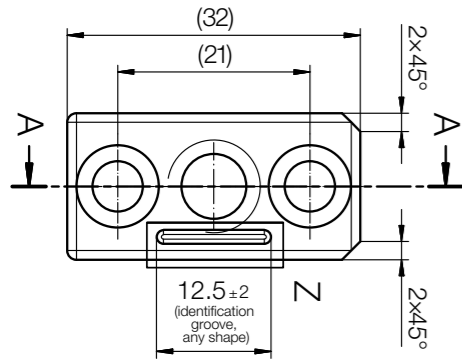


Square lead screw nuts



DST-SHT-1210

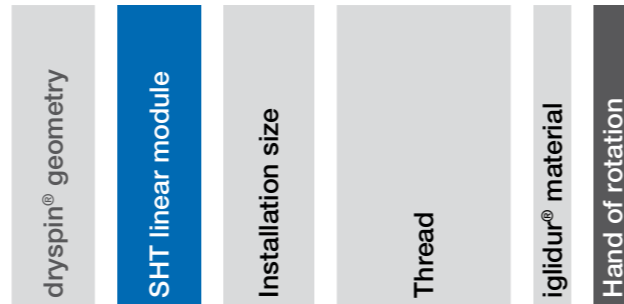
SHT-1210-TR



Order key

Order example

DST-SHT-1210-DS10x12-□-□



Options:

Hand of rotation

RH: Right-Hand

LH: Left-hand

Dimensions

Part No.	Direction of rotation		Thread d1xP	Max. stat. axial F [N]		Weight [g]		From SLW linear module
	Right	Left		J	A180	J	A180	
DST-SHT-1210-DS10x2-□-□	●	●	Ds10x2	750	750	10	10	SHT-12 ► Page 1594
DST-SHT-1210-DS10x3-□-□	●	●	Ds10x3	1,000	1,000	10	10	SHT-12 ► Page 1594
DST-SHT-1210-DS10x12-□-□	●	●	Ds10x12	700	700	10	10	SHT-12 ► Page 1594
DST-SHT-1210-DS10x25-□-□	●	●	Ds10x25	625	625	10	10	SHT-12 ► Page 1594
DST-SHT-1210-DS10x50-□-□	●	●	Ds10x50	370	370	10	10	SHT-12 ► Page 1594
SHT-1210-DS10x2-□-□	●	●	Tr10x2	750	750	10	10	SHT-12 ► Page 1594
SHT-1210-DS10x3-□-□	●	●	Tr10x3	910	910	10	10	SHT-12 ► Page 1594

Part number suffix LH for left-hand thread, RH for right-hand thread

From SHT linear module SHT-12 ► Page 1594

Assembly instructions ► Page 1438

and ► www.igus.eu/dryspin-assembly-instructions

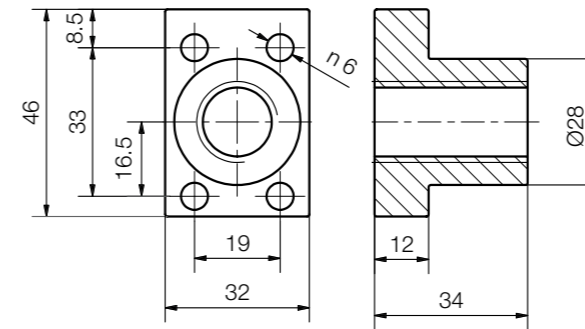


Lead screw nuts with flange



DST-SHT-2018

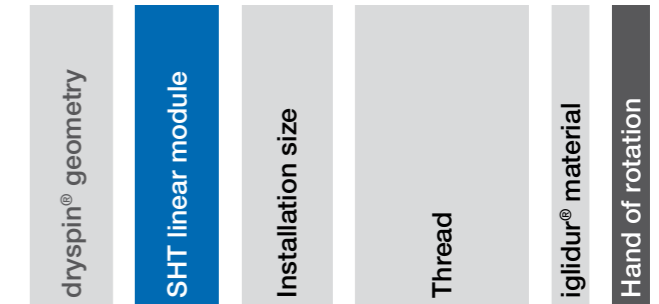
SHT-2018-TR



Order key

Order example

DST-SHT-2018-DS18x24- J -□



Options:

Hand of rotation

RH: Right-Hand

LH: Left-hand

Please note: not symmetrical

Dimensions

Part No.	Direction of rotation		Thread d1xP	Max. stat. axial F [N]		Weight [g]		From SLW linear module
	Right	Left		J	A180	J	A180	
DST-SHT-2018-DS18x4-□-□	●	●	Ds18x4	2,400	2,400	32	36	SHT-20 ► Page 1594
DST-SHT-2018-DS18x24-□-□	●	●	Ds18x24	1,688	1,688	32	36	SHT-20 ► Page 1594
DST-SHT-2018-DS18x40-□-□	●	●	Ds18x40	1,528	1,528	32	36	SHT-20 ► Page 1594
DST-SHT-2018-DS18x80-□-□	●	●	Ds18x80	1,056	1,056	32	36	SHT-20 ► Page 1594
DST-SHT-2018-DS18x100-□-□	●	●	Ds18x100	985	985	32	36	SHT-20 ► Page 1594
SHT-2018-TR18x4-□-□	●	●	Tr18x4	2,400	2,400	32	36	SHT-20 ► Page 1594
SHT-2018-TRM18x8P4-□-□	●	●	Tr18x8p4	1,960	1,960	32	36	SHT-20 ► Page 1594

Part number suffix LH for left-hand thread, RH for right-hand thread

From SHT linear module SHT-20 ► Page 1594

Assembly instructions ► Page 1438

and ► www.igus.eu/dryspin-assembly-instructions



Lead screw nuts



DST-SLW-063001 SWZ-063009

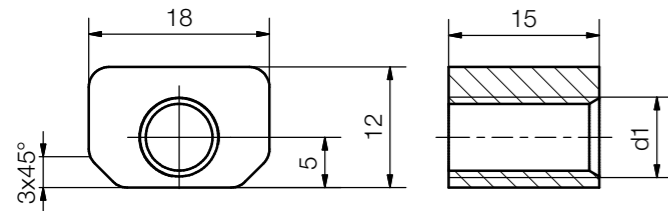
Order key

Order example

DST-SLW-063001-DS8x10- J - □

dryspin® geometry	SLW linear module	Installation size	Thread	iglidur® material	Hand of rotation
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Options:
Hand of rotation
RH: Right-Hand
LH: Left-hand



Dimensions

Part No.	Direction of rotation		Thread d1xP	Max. stat. axial F [N]	Weight [g]	From SLW linear module
	Right	Left				
DST-SLW-063001-DS8X8-J-□ New	●	–	Ds8x8	150	3.5	SLW-0630 ▶ Page 1608
DST-SLW-063001-DS8X10-□	●	●	Ds8x10	130	3.5	SLW-0630 ▶ Page 1608
DST-SLW-063001-DS8X15-□	●	●	Ds8x15	140	3.5	SLW-0630 ▶ Page 1608
SLW-063001-M8-J-□	●	●	M8	165	3.5	SLW-0630 ▶ Page 1608
SLW-063001-TR8X1.5-J-□	●	●	Tr8x1.5	200	3.5	SLW-0630 ▶ Page 1608

Part number suffix LH for left-hand thread, RH for right-hand thread

Partly reduced axial loads due to the component geometry

Assembly instructions ▶ Page 1438

and ▶ www.igus.eu/dryspin-assembly-instructions

Lead screw nuts



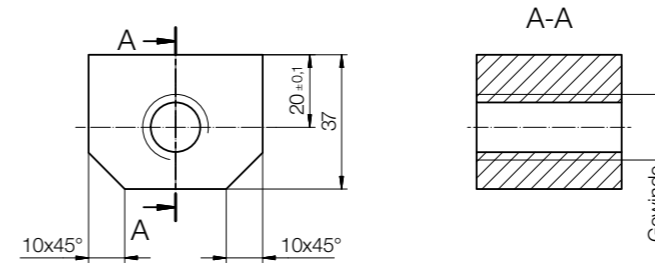
Order key

Order example

DST-SLW-25120-DS18x24- J - □

dryspin® geometry	SLW linear module	Installation size	Thread	iglidur® material	Hand of rotation
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Options:
Hand of rotation
RH: Right-Hand
LH: Left-hand



Dimensions

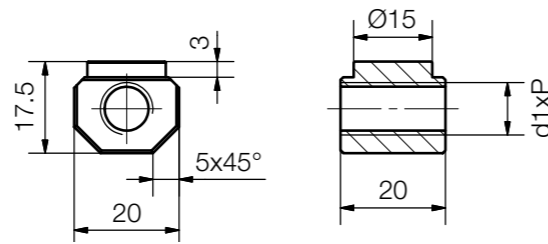
Part No.	Direction of rotation		Thread d1xP	Max. stat. axial F [N]	Weight [g]	From SLW linear module
	Right	Left				
DST-SLW-25120-DS18X4-J-□ New	●	●	Ds18x4	3,350	90	SLW-25120 ▶ Page 1608
DST-SLW-25120-DS18X24-J-□	●	●	Ds18x24	2,330	90	SLW-25120 ▶ Page 1608
DST-SLW-25120-DS18X40-J-□	●	●	Ds18x40	2,184	90	SLW-25120 ▶ Page 1608
DST-SLW-25120-DS18X80-J-□	●	●	Ds18x80	1,506	90	SLW-25120 ▶ Page 1608
DST-SLW-25120-DS18X100-J-□	●	●	Ds18x100	1,322	90	SLW-25120 ▶ Page 1608
DST-SLW-25120-DS20X5-J-□ New	●	●	Ds20x5	4,200	90	SLW-25120 ▶ Page 1608
DST-SLW-25120-DS20X10-J-□ New	●	●	Ds20x10	3,975	90	SLW-25120 ▶ Page 1608
DST-SLW-25120-DS20X20-J-□ New	●	●	Ds20x20	2,460	90	SLW-25120 ▶ Page 1608
DST-SLW-25120-DS20X50-J-□ New	●	●	Ds20x50	1,976	90	SLW-25120 ▶ Page 1608
DST-SLW-25120-DS20X60-J-□ New	●	●	Ds20x60	1,656	90	SLW-25120 ▶ Page 1608
DST-SLW-25120-DS20X80-J-□ New	●	●	Ds20x80	1,703	90	SLW-25120 ▶ Page 1608
DST-SLW-25120-DS20X90-J-□ New	●	●	Ds20x90	1,656	90	SLW-25120 ▶ Page 1608
SLW-25120-TR24X5-J-□ New	●	●	Tr24x5	5,403	90	SLW-25120 ▶ Page 1608

Part number suffix LH for left-hand thread, RH for right-hand thread

Lead screw nuts with locating spigot



DST-SLW-1040 SWZ-W-10XX

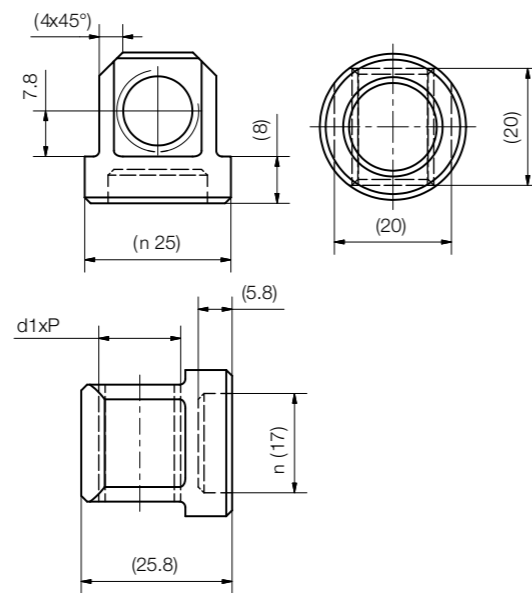


Dimensions

Part No.	Hand of rotation		Thread d1xP	Max. stat. axial F [N]	Weight [g]	From SLW linear module
	Right	Left				
DST-SLW-1040-DS10X2-J-□	New ●	●	Ds10x2	747	8	SLW-1040 ► Page 1608
DST-SLW-1040-DS10X3-J-□	New ●	●	Ds10x3	1,005	8	SLW-1040 ► Page 1608
DST-SLW-1040-DS10X12-J-□	●	●	Ds10x12	686	8	SLW-1040 ► Page 1608
DST-SLW-1040-DS10X25-J-□	●	●	Ds10x25	623	8	SLW-1040 ► Page 1608
DST-SLW-1040-DS10X50-J-□	●	●	Ds10x50	361	8	SLW-1040 ► Page 1608
SLW-1040-TR10X2-J-□	●	●	Tr10x2	1,131	8	SLW-1040 ► Page 1608
SLW-1040-TR10X3-J-□	●	●	TR10x3	1,068	8	SLW-1040 ► Page 1608



SWZ-W-16XX

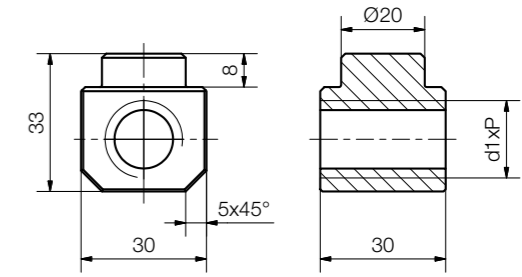


Dimensions

Part No.	Hand of rotation		Thread d1xP	Max. stat. axial F [N]	Weight [g]	From SLW linear module
	Right	Left				
DST-SLW-1660-DS14X4-J-□	●	●	Ds14x4	952	13	SLW-1660 ► Page 1608
DST-SLW-1660-DS14X25-J-□	●	●	Ds14x25	825	13	SLW-1660 ► Page 1608
DST-SLW-1660-DS14X30-J-□	●	●	Ds14x30	825	13	SLW-1660 ► Page 1608
SLW-1660-TR14X3-J-□	●	●	Tr14x3	1,570	13	SLW-1660 ► Page 1608
SLW-1660-TR14X4-J-□	●	●	Tr14x4	1,508	13	SLW-1660 ► Page 1608

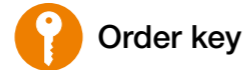


DST-SLW-2080 SWZ-W-20XX



SWZ-W-2080..

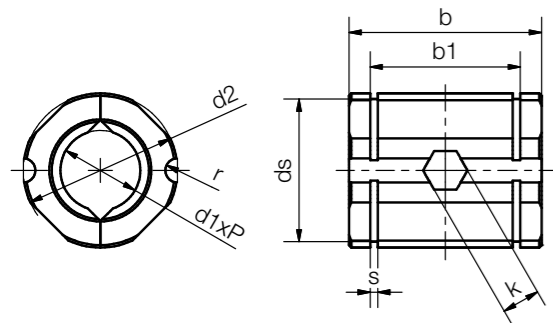
Part No.	Hand of rotation		Thread d1xP	Max. stat. axial F [N]	Weight [g]	From SLW linear module
	Right	Left				
DST-SLW-2080-DS18X4-J-□	New ●	●	Ds18x4	2,513	30	SLW-2080 ► Page 1608
DST-SLW-2080-DS18X24-J-□	●	●	Ds18x24	1,747	30	SLW-2080 ► Page 1608
DST-SLW-2080-DS18X40-J-□	●	●	Ds18x40	1,638	30	SLW-2080 ► Page 1608
DST-SLW-2080-DS18X80-J-□	●	●	Ds18x80	1,130	30	SLW-2080 ► Page 1608
DST-SLW-2080-DS18X100-J-□	●	●	Ds18x100	992	30	SLW-2080 ► Page 1608
SLW-2080-TR18X4-J-□	●	●	Tr18x4	2,513	30	SLW-2080 ► Page 1608
SLW-2080-TR18X8P4-J-□	●	●	Tr18x8P4	2,991	30	SLW-2080 ► Page 1608



Order key

Part number	Dimension	Thread
J T R M- 22 30 -TR 10X2		
igidur® material	Split nut	
	Direction of rotation	
	Metric	
	d2	
	b1	
	Trapezoidal thread	
	Diameter [mm]	
	Pitch	

i This part includes 2 nut halves and 1 piece nut each based on DIN 934 made from 304 stainless steel to prevent twisting



Technical data

Part No.	Max. axial load		Mounting with nut
	static ⁵⁰⁾ [N]	static ⁵¹⁾ [N]	
JTRM-2230TR10X2	300	500	DIN 934 M4
JTRM-3240TR20X4	1,000	1,500	M5
JTRM-3240TR20X8P4	1,000	1,500	M5

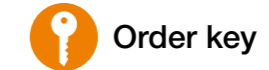
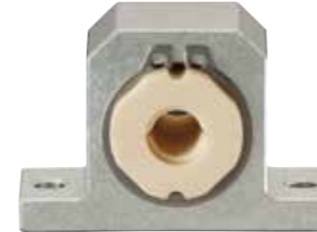
Dimensions [mm]

Thread	b	b1 ¹⁵⁶⁾	d2	ds	k	r	Øs	Part No.
Tr10x2	30	22.6	22	20.5	7	1.5	1.3	JTRM-2230TR10X2
Tr20x4	40	31.2	32	29.6	8	2.5	1.6	JTRM-3240TR20X4
Tr20x8P4	40	31.2	32	29.6	8	2.5	1.6	JTRM-3240TR20X8P4

⁵⁰⁾ Mounting in the housing via radially inserted nut DIN 934

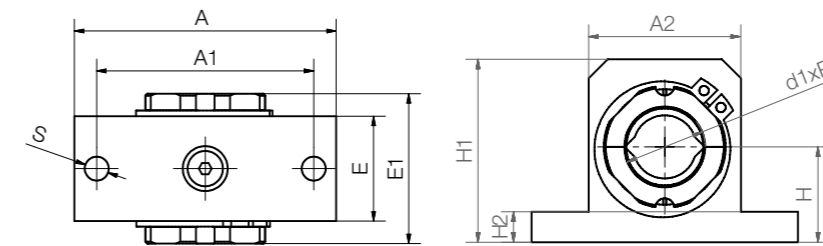
⁵¹⁾ Mounting in the housing via circlips DIN471

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)



Order key

Part number	Thread
RG A S - J T R M-TR 10X2	
Linear housing	
Aluminium	
Small	
igidur® material	
Split nut	
Direction of rotation	
Metric	
Trapezoidal thread	
Diameter [mm]	
Pitch	



Technical data

Part No.	Nut	Locking ring
RGAS-JTRM-TR10X2	DIN 439 M4	DIN 471-A22
RGAS-JTRM-TR20X4	DIN 439 M5	DIN 471-A32
RGAS-JTRM-TR20X8P4	DIN 439 M5	DIN 471-A32

Dimensions [mm]

Thread	H	H1	H2	A	A1	A2	E	E1	S	Part No.
Tr10x2	18	35	6	52	42	30	20	32	5.3	RGAS-JTRM-TR10X2
Tr20x4	25	48	8	70	58	40	28	40	6.4	RGAS-JTRM-TR20X4
Tr20x8P4	25	48	8	70	58	40	28	40	6.4	RGAS-JTRM-TR20X8P4

Spherical lead screw nuts with spherical ball
in flanged bearing housing



Part number Thread

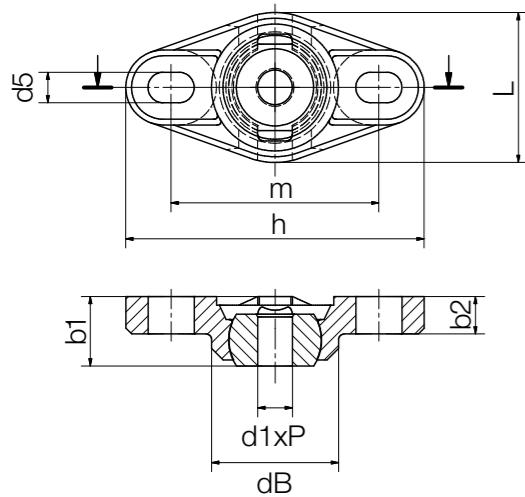
J F R K M-EFOM-TR 8X1.5

iglidur® material	Form F	Direction of rotation	K series	Metric	Flanged bearing housing	Trapezoidal thread	Diameter [mm]	Pitch
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Options:

DS: High helix thread

TR: Trapezoidal thread



Dimensions [mm] - trapezoidal thread

Thread	Effective support surface [mm²]	d1 ¹⁵⁶⁾	h	L	b1 ¹⁵⁶⁾	b2	m	dB	d5	Max. static, axial F [N]	Pivoting angle		Part No.
											stat.	dyn.	
Tr8x1.5	102	8	52	26	12	6.5	36	22.2	5.3x8	100	25°	30°	JFRKM-EFOM-TR8X1.5
Tr10x2	127	10	52	26	12	6.5	36	22.2	5.3x8	100	25°	30°	JFRKM-EFOM-TR10X2
Tr10x3	120	10	52	26	12	6.5	36	22.2	5.3x8	100	25°	30°	JFRKM-EFOM-TR10X3

Dimensions [mm] - high helix thread

Thread	Effective support surface [mm²]	d1 ¹⁵⁶⁾	h	L	b1 ¹⁵⁶⁾	b2	m	dB	d5	Max. static, axial F [N]	Pivoting angle		Part No.
											stat.	dyn.	
Ds8x15	61	8	52	26	12	6.5	36	22.2	5.3x8	50	25°	30°	JFRKM-EFOM-DS8X15
Ds10x12	82	10	52	26	12	6.5	36	22.2	5.3x8	50	25°	30°	JFRKM-EFOM-DS10X12

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

Spherical lead screw nuts with spherical ball
in pillow block bearing housing



Part number Thread

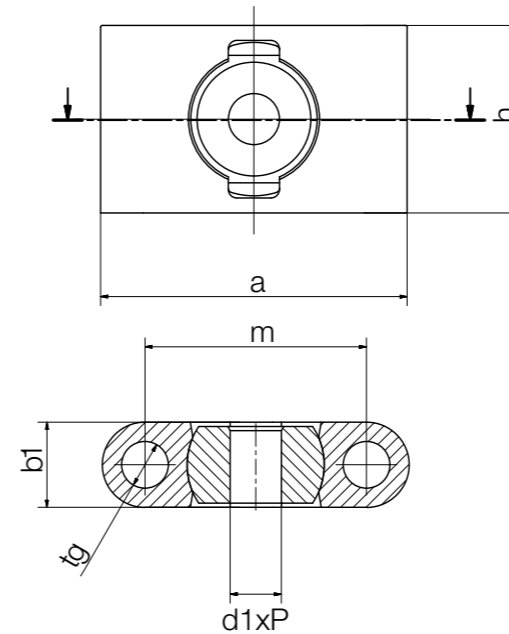
J F R K M-ESTM-TR 8X1.5

iglidur® material	Form F	Direction of rotation	K series	Metric	Pillow block bearing housing	Trapezoidal thread	Diameter [mm]	Pitch
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Options:

DS: High helix thread

TR: Trapezoidal thread



Dimensions [mm] - trapezoidal thread

Thread	Effective support surface [mm²]	h	a	b1 ¹⁵⁶⁾	m	tg	Max. static, axial F [N]	Pivoting angle		Part No.
								stat.	dyn.	
Tr8x1.5	102	22	36	10	26	5.5	100	25°	30°	JFRKM-ESTM-TR8X1.5
Tr10x2	127	22	36	10	26	5.5	100	25°	30°	JFRKM-ESTM-TR10X2
Tr10x3	120	22	36	10	26	5.5	100	25°	30°	JFRKM-ESTM-TR10X3

Dimensions [mm] - high helix thread

Thread	Effective support surface [mm²]	h	a	b1 ¹⁵⁶⁾	m	tg	Max. static, axial F [N]	Pivoting angle		Part No.
								stat.	dyn.	
Ds8x15	61	22	36	10	26	5.5	50	25°	30°	JFRKM-ESTM-DS8X15
Ds10x12	82	22	36	10	26	5.5	50	25°	30°	JFRKM-ESTM-DS10X12

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)



Order key

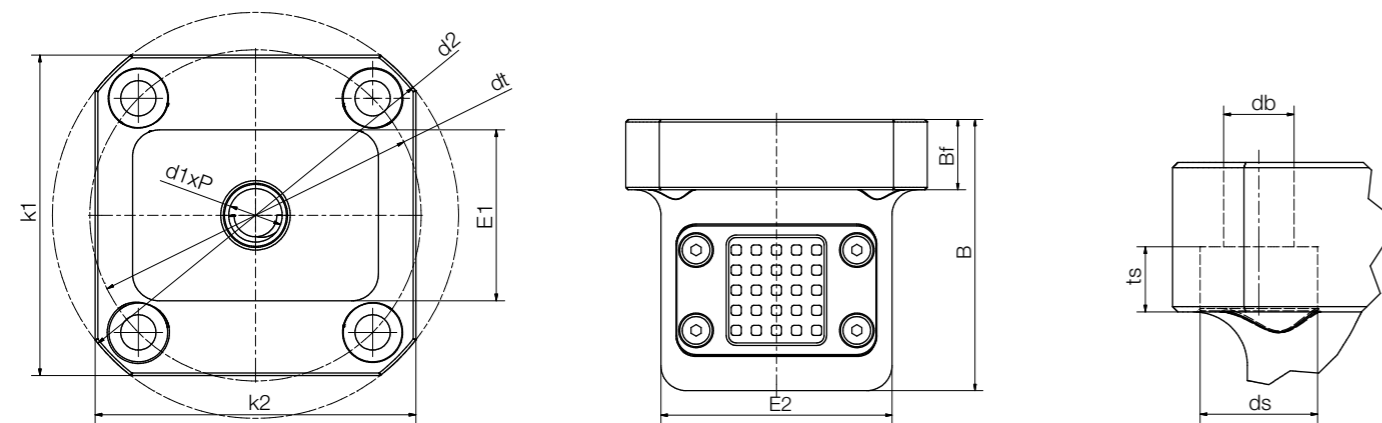
Part number Thread

F T R M-FF-10X2

Form F
Trapezoidal thread
Direction of rotation
Metric
Fast Forward
Diameter
Pitch

Quick release mechanism: a combination of accurate positioning and fast manual adjustment with trapezoidal lead screw nuts.

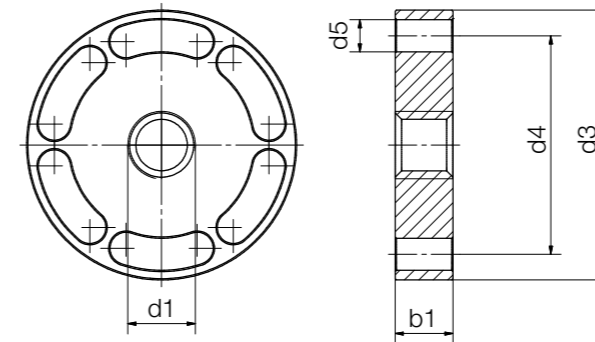
- For quick format adjustments
- Incl. "stop/go" through automatic self-locking with thread
- Housing: AL anodised, lead screw nut made from iglidur® J
- Tough and reliable
- Only recommended for horizontal applications
- Max. axial load stat.: 200N, dyn.: 50N
see SHT-FF ► **Page 1602**



Dimensions [mm]

Thread	d2 ¹⁵⁶⁾	dt	B	Bf	ts	db	ds	k1	k2	E1	E2	Part No.
Tr10x2	76	62	54	14	6.1	6.6	11	60	60	32	46	FTRM-FF-10X2

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)



Order key

Type d3 b1 Thread

J D R M-4209TR10X2

iglidur® material
Form: disc
Direction of rotation
Metric
Outer Ø [mm]
Height [mm]
Trapezoidal thread
Diameter
Pitch

Material properties:
iglidur® J ► **Page 163**

Technical data and dimensions [mm]

Thread	Effective supporting surface [mm ²]	Max. stat. axial F ⁴⁹⁾ [N]	d1 ¹⁵⁶⁾	d3	d4	d5	b1 ¹⁵⁶⁾	Weight [g]	Part No.
Tr10x2	127	508	10	42	34	5	9	17.5	JDRM-4209TR10X2
Tr12x3	181	724	12	48	38	6	11	27.8	JDRM-4811TR12X3
Tr14x4	207	828	14	48	38	6	11	27.1	JDRM-4811TR14X4
Tr16x4	241	964	16	48	38	6	11	26.4	JDRM-4811TR16X4
Tr18x4	276	1,104	18	48	38	6	11	25.5	JDRM-4811TR18X4
Tr20x4	367	1,468	20	55	45	7	13	39.9	JDRM-5513TR20X4
Tr24x5	439	1,756	24	55	45	7	13	37.3	JDRM-5513TR24X5
Tr30x6	551	2,204	30	62	50	7	14	48.2	JDRM-6214TR30X6
Tr36x6	829	3,316	36	70	58	7	16	67.5	JDRM-7016TR36X6

⁴⁹⁾ Max. stat. F axial can be added when used with flange nut

¹⁵⁶⁾ Tolerances according to DIN ISO 2768-1, tolerance class m (medium)

dryspin® | Special geometries | Product range

Assembled dryspin® lead screw nut housing, including lead screw nut



Order key

Part number

MH-1210-AL-TR10X2-R-J

Lead screw nut housing without nut	Lead screw nut design (see drawing)	Aluminium	Thread size	Right-hand thread	iglidur® J nut
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Order key

Part number

MHM-1210-AL-TR10X2-R-J

Lead screw nut housing with nut	Lead screw nut design (see drawing)	Aluminium	Thread size	Right-hand thread	iglidur® J nut
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- Standard lead screw nuts secured with fixing screws
- Can be fixed from above
- One housing is suitable for many thread geometries
- Limitless combinations

i Please use MHM (assembled lead screw nut housing, including lead screw nut) for fully assembled systems. Order example: **MHM-1210-AL-TR10x2-R-J**

MHM-2835-AL-□ / MHM-3244-AL-□



MHM-2018-AL-□



MHM-ZB0810-AL-□



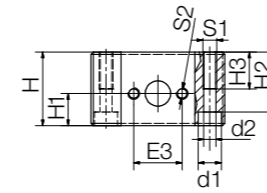
MHM-1210-AL-□



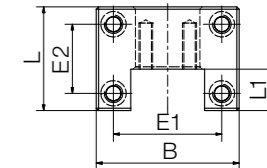
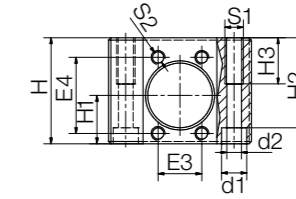
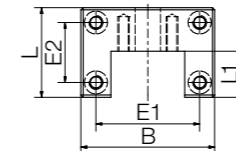
dryspin® | Special geometries | Product range

dryspin® lead screw nut housings and lead screw nuts as an individual part

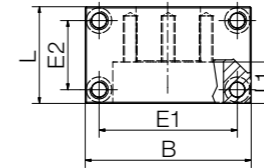
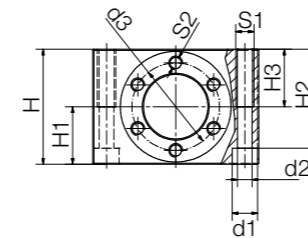
MH-1210-AL



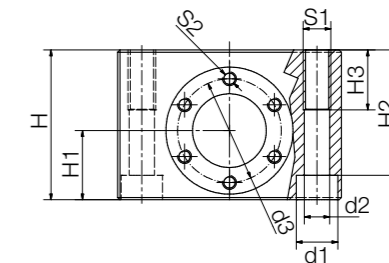
MH-2018-AL



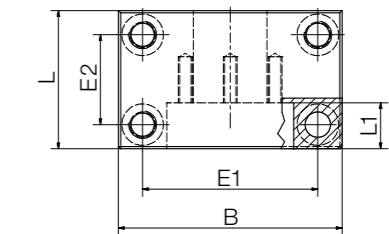
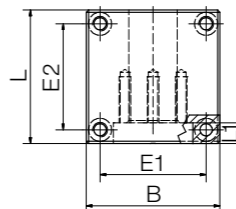
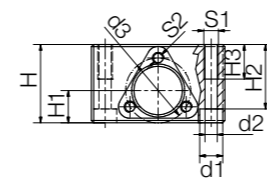
MH-2835-AL



MH-3244-AL



MH-ZB0810-AL



Dimensions [mm]

Part No.	H	H1	H2	H3	S1	S2	B	L	L1	E1	E2	E3	E4	d1	d2	d3	Can be combined with laser sintering
							±0.3	±0.3		±0.15	±0.15						●
MH-1210-AL	32	14	26	16	M6	M5	58	39	20	45	26	21	-	10	5.3	-	●
MH-2018-AL	46	21	39	20	M8	M6	62	45	18	47	30	19	33	11	6.4	-	●
MH-2835-AL	50	25	43	25	M8	M6	72	42	18	60	30	-	-	11	6.4	38	●
MH-3244-AL	65	30	54.4	26	M12	M6	97	60	20	76	39	-	-	18	11	45	●
MH-ZB0810-AL	34	14	28	15	M6	M5	58	34	9	46	46	-	-	10	5.3	28.2	●

Part No.	Lead screw nut design	Thread size DS	Thread size TR
MH-1210-AL	□-SHT-1210-□	Ds10x2 / Ds10x3 / Ds10x12 / Ds10x25 / Ds10x50	Tr10x2 / Tr10x3
MH-2018-AL	□-SHT-2018-□	Ds18x4 / Ds18x24 / Ds18x40 / Ds18x80 / Ds18x100	Tr18x4 / Tr18x8P4
MH-2835-AL	□FRM-2835	Ds12x3 / Ds12x5 / Ds12x25 / Ds14x4 / Ds16x5 / Ds16x10 / Ds18x4 / Ds18x24 / Ds18x40 / Ds18x80 / Ds18x100	Tr12x3 / Tr12x6P3 / Tr14x3 / Tr14x4 / Tr16x2 / Tr16x4 / Tr16x8P4 / Tr18x4 / Tr18x8P4
MH-3244-AL	□FRM-3244	Ds20x5 / Ds20x10 / Ds20x20 / Ds20x50 / Ds20x60 / Ds20x80 / Ds20x90	Tr20x4 / Tr20x8P4 / Tr24x5
MH-ZB0810-AL	Zero-Backlash	Ds8x8 / Ds8x10 / Ds8x15 / Ds8x24 / Ds8x40 / Ds10x12 / Ds10x25 / Ds10x50	-



► Page 1695

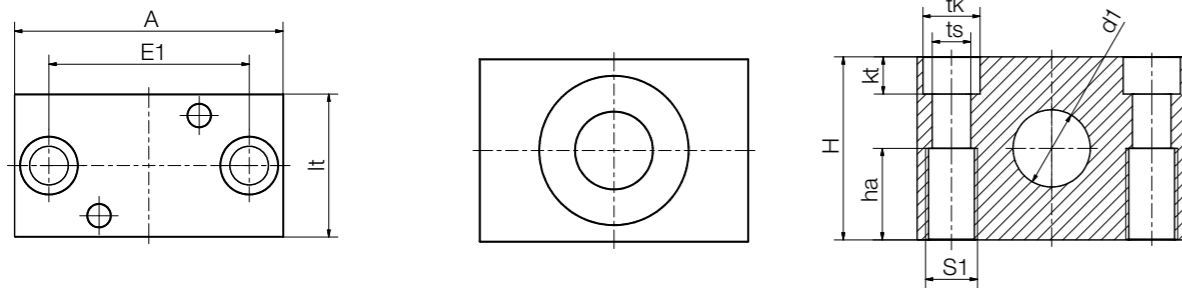


Scope of delivery: Anodised lead screw support block

FL: Fixed bearing with anodised clamping ring with RH thread (standard) and maintenance-free iglidur® plain bearing⁵²⁾

LL: Floating bearing with lubrication-free iglidur® plain bearing

Fixed bearing



Technical data and dimensions [mm] - (for both right and left-hand threads)

Part No.	Weight [g]	Max. static load capacity axial [N]	S1	S2	S3
SLS-10X2-FL (-LH)	88	700	M8	-	-
SLS-10X2-LL	115	-	M8	M4	M6
SLS-10X3-FL (-LH)	88	700	M8	-	-
SLS-10X3-LL	115	-	M8	M4	M6
SLS-12X3-FL	205	1,600	M12	-	-
SLS-12X3-LL	295	-	M12	M4	M6
SLS-14X3-FL	205	1,600	M12	-	-
SLS-14X3-LL	295	-	M12	M4	M6

⁵²⁾ FL lead screw support block with trapezoidal thread TR10x2, TR10x3, TR18x4, TR24x5 lead screw also available with clamping rings with left-hand thread

⁵³⁾ Can exceed max. stat. load of the lead screw nut

⁵⁴⁾ Lead screw end must be turned to d1 value

⁵⁵⁾ Lead screw end must be turned to 18mm



Order key

Part No.	Thread	Options
----------	--------	---------

SLS - 10X2 - FL - LH

Lead screw support block	Diameter	Pitch	Fixed bearing	Option left-hand thread
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Options:

FL: Fixed bearing

LL: Floating bearing

LH: Left-hand thread option only for Tr10x2, Tr10x3, Tr18x4, Tr24x5



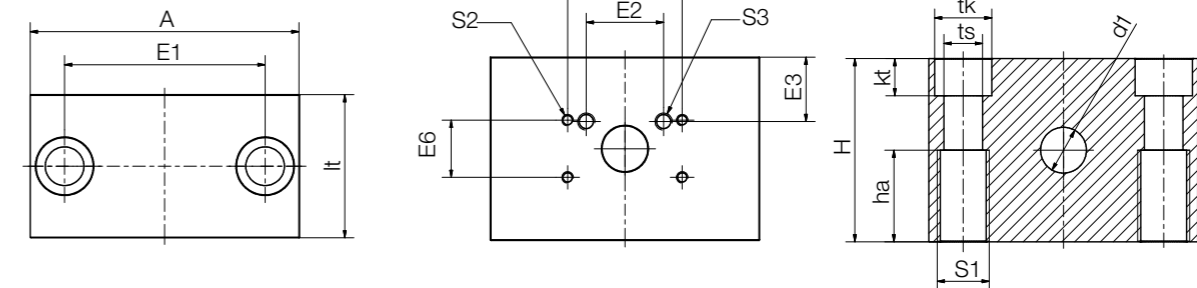
Order key

Part No.	Options
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SLS - S6 - FL

Lead screw support block	Lead screw/machined end outer diameter	Fixed bearing
--------------------------	--	---------------

Floating bearing



Dimensions [mm] - (for both right and left-hand threads)

A	H	E1	E2	E3	E5	E6	lt	kt	tk	ts	d1	ha
50	32	36	-	-	-	-	30	6.5	11	6.6	10	16
50	32	36	27	6.5	40	20	30	6.5	11	6.6	10	16
50	32	36	-	-	-	-	30	6.5	11	6.6	10	16
50	32	36	27	6.5	40	20	30	6.5	11	6.6	10	16
72	46	54	-	-	-	-	36	8.6	15	9	12	23
72	46	54	27	13.5	40	20	36	8.6	15	9	12	23
72	46	54	-	-	-	-	36	8.6	15	9	14	23
72	46	54	27	13.5	40	20	36	8.6	15	9	14	23

Technical data and dimensions [mm] - (for both right and left-hand threads)

Part No.	Weight [g]	Max. static load capacity axial [N]	S1	S2	S3
SLS-14X4-FL	205	1,600	M12	-	-
SLS-14X4-LL	295	-	M12	M4	M6
SLS-16X2-FL	205	1,600	M12	-	-
SLS-16X2-LL ⁵⁴⁾	295	-	M12	M4	M6
SLS-16X4-FL	205	1,600	M12	-	-
SLS-16X4-LL ⁵⁴⁾	295	-	M12	M4	M6
SLS-18X4-FL-(LH)	205	1,600	M12	-	-
SLS-18X4-LL ⁵⁴⁾	295	-	M12	M4	M6
SLS-18X8P4-FL	205	1,600	M10	-	-
SLS-18X8P4-LL ⁵⁴⁾	295	-	M10	M4	M6
SLS-20X4-FL	525	2,500	M16	-	-
SLS-20X4-LL	725	-	M16	M4	M6
SLS-24X5-FL-(LH)	525	2,500	M16	-	-
SLS-24X5-LL ⁵⁴⁾	725	-	M16	M4	M6
Lead screw support blocks with plain bearings (clamping rings without thread) Suitable for both right and left-hand threads					
SLS-S6-FL	115	-	M8	-	-
SLS-S6-LL ⁵⁴⁾	88	150	M8	M4	M6
SLS-S6.35-FL	115	-	M8	-	-
SLS-S6.35-LL ⁵⁴⁾	88	150	M8	M4	M6
SLS-S8-FL	115	-	M8	-	-
SLS-S8-LL ⁵⁴⁾	88	500	M8	M4	M6
SLS-S10-FL	88	700	M8	-	-
SLS-S10-LL ⁵⁴⁾	115	-	M8	M4	M6
SLS-S12-FL	205	1,600	M10	-	-
SLS-S12-LL ⁵⁴⁾	295	-	M10	M4	M6
SLS-S14-FL	205	1,600	M10	-	-
SLS-S14-LL ⁵⁴⁾	295	-	M10	M4	M6
SLS-S16-FL	205	1,600	M10	-	-
SLS-S16-LL ⁵⁴⁾	295	-	M10	M4	M6
SLS-S18-FL	205	1,600	M10	-	-
SLS-S18-LL ⁵⁴⁾	295	-	M10	M4	M6
SLS-S20-FL	525	2,500	M16	-	-
SLS-S20-LL ⁵⁴⁾	725	-	M16	M4	M6

⁵³⁾ Can exceed max. stat. load of the lead screw nut

⁵⁴⁾ Lead screw end must be turned to d1 value

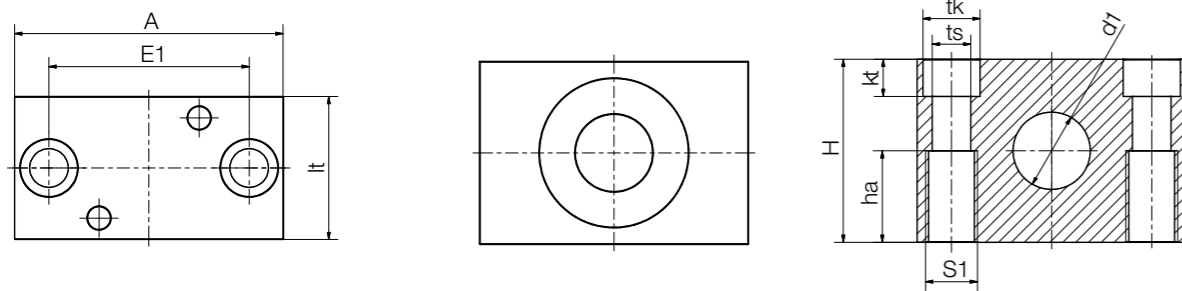
⁵⁵⁾ Lead screw end must be turned to 18mm

A	H	E1	E2	E3	E5	E6	lt	kt	tk	ts	d1	ha
72	46	54	-	-	-	-	36	8.6	15	9	14	23
72	46	54	27	13.5	40	20	36	8.6	15	9	14	23
72	46	54	-	-	-	-	36	8.6	15	9	16	23
72	46	54	27	13.5	40	20	36	8.6	15	9	12	23
72	46	54	-	-	-	-	36	8.6	15	9	16	23
72	46	54	27	13.5	40	20	36	8.6	15	9	12	23
72	46	54	-	-	-	-	36	8.6	15	9.0	18	23
72	46	54	27	13.5	40	20	36	8.6	15	9.0	18	23
72	46	54	-	-	-	-	36	8.6	15	9.0	18	23
72	46	54	27	13.5	40	20	36	8.6	15	9.0	18	23
94	64	70	-	-	-	-	50	13	20	13.5	20	32
94	64	70	27	22.5	40	20	50	13	20	13.5	20	32
94	64	70	-	-	-	-	50	13	20	13.5	24	32
94	64	70	27	22.5	40	20	50	13	20	13.5	24	32
50	32	36	-	-	-	-	30	6.5	11	6.6	6	16
50	32	36	27	6.5	40	20	30	6.5	11	6.6	6	16
50	32	36	-	-	-	-	30	6.5	11	6.6	6.35	16
50	32	36	27	6.5	40	20	30	6.5	11	6.6	6.35	16
50	32	36	-	-	-	-	30	6.5	11	6.6	8	16
50	32	36	27	6.5	40	20	30	6.5	11	6.6	8	16
50	32	36	-	-	-	-	30	6.5	11	6.6	10	16
50	32	36	27	6.5	40	20	30	6.5	11	6.6	10	16
72	46	54	-	-	-	-	36	8.6	15	9.0	12	23
72	46	54	27	13.5	40	20	36	8.6	15	9.0	12	23
72	46	54	-	-	-	-	36	8.6	15	9.0	14	23
72	46	54	27	13.5	40	20	36	8.6	15	9.0	14	23
72	46	54	-	-	-	-	36	8.6	15	9.0	16	23
72	46	54	27	13.5	40	20	36	8.6	15	9.0	16	23
72	46	54	-	-	-	-	36	8.6	15	9.0	18	23
72	46	54	27	13.5	40	20	36	8.6	15	9.0	18	23
94	64	70	-	-	-	-	50	13.0	20	13.5	20	32
94	64	70	27	22.5	40	20	50	13.0	20	13.5	20	32



► Page 1695

Fixed bearing



Technical data and dimensions, ball bearing [mm]

Part No.	Weight [g]	Max. static load capacity axial [N]	S1	S2
SLS-S6-BB	110	150	M8	M4
SLS-S6.35-BB	110	150	M8	M4
SLS-S8-BB	110	350	M8	M4
SLS-S10-BB	110	350	M8	M4
SLS-S12-BB	265	1,000	M12	M4
SLS-S14-BB	265	1,000	M12	M4
SLS-S16-BB	265	1,000	M12	M4
SLS-S18-BB	265	1,000	M12	M4
SLS-S20-BB	350	1,500	M16	M4
SLS-10X2-BB	110	350	M8	M4
SLS-10X3-BB	110	350	M8	M4
SLS-12X3-BB	265	1,000	M12	M4
SLS-14X4-BB	265	1,000	M12	M4
SLS-16X2-BB	265	1,000	M12	M4
SLS-16X4-BB	265	1,000	M12	M4
SLS-18X4-BB	265	1,000	M12	M4
SLS-18X8P4-BB	265	1,000	M10	M4
SLS-20X4-BB	350	1,500	M16	M4
SLS-24X5-BB	350	1,500	M16	M4

⁵⁵⁾ Lead screw end must be turned to 18mm

Order key

Part No.	Thread	Options
SLS - 10X2 - BB		Options: BB: Ball bearings FL: Fixed bearing LL: Floating bearing

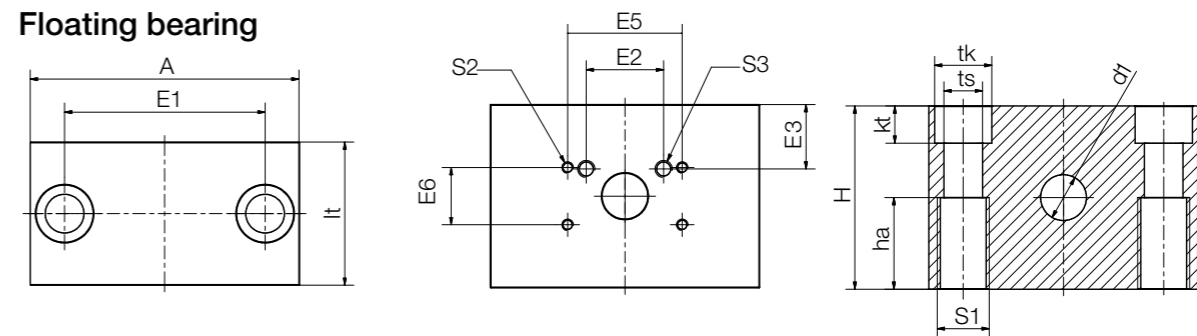
Lead screw support block
Diameter
Pitch
Ball bearing

Order key

Part No.	Options
SLS - S6 - BB	Options: BB: Ball bearings FL: Fixed bearing LL: Floating bearing

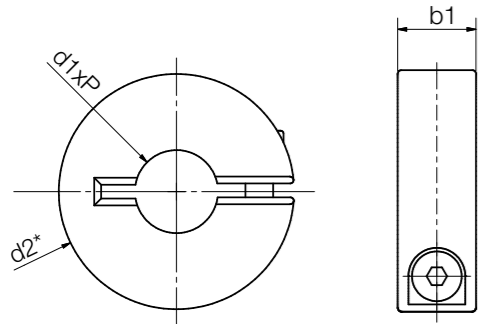
Lead screw support block
Lead screw/machined end outer diameter
Ball bearing

Floating bearing



Dimensions, ball bearing [mm]

A	H	E1	E5	E6	lt	kt	tk	ts	d1	ha
50	32	36	40	20	30	6.5	11	6.6	6	16
50	32	36	40	20	30	6.5	11	6.6	6.35	16
50	32	36	40	20	30	6.5	11	6.6	8	16
50	32	36	40	20	30	6.5	11	6.6	10	16
72	46	54	48	36	36	8.6	15	9.0	12	23
72	46	54	48	36	36	8.6	15	9.0	14	23
72	46	54	48	36	36	8.6	15	9.0	16	23
72	46	54	48	36	36	8.6	15	9.0	18	23
94	64	70	48	36	50	13.0	20	13.5	20	32
50	32	36	40	20	30	6.5	11	6.6	10	16
50	32	36	40	20	30	6.5	11	6.6	10	16
72	46	54	48	36	36	8.6	15	9.0	12	23
72	46	54	48	36	36	8.6	15	9.0	14	23
72	46	54	48	36	36	8.6	15	9.0	16	23
72	46	54	48	36	36	8.6	15	9.0	16	23
72	46	54	48	36	36	8.6	15	9.0	18	23
72	46	54	48	36	36	8.6	15	9.0	18	23
94	64	70	48	36	50	13.0	20	13.5	20	32
94	64	70	48	36	50	13.0	20	13.5	24	32



Order key

Part number Thread

CR R -01-TR 10X2

Clamping ring	Direction of rotation	Type	Trapezoidal thread	Diameter	Pitch
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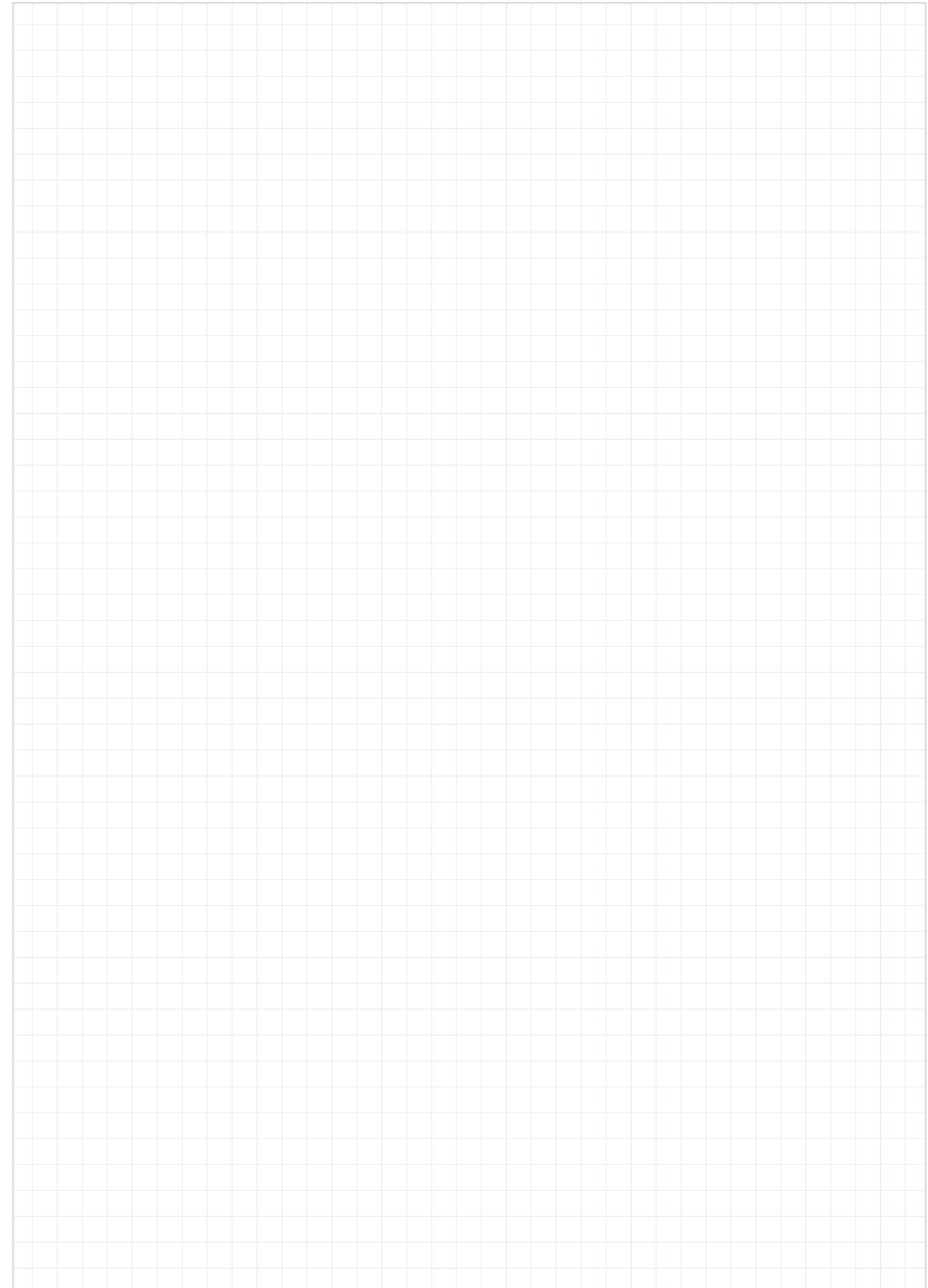
Dimensions [mm]

Thread	d2 ⁵⁶⁾	b1	Part No.	Thread	d2 ⁵⁶⁾	b1	Part No.
	h9		Right-hand thread		h9		Left-hand thread
Tr8x1.5	16	9	CRR-01-TR8X1.5	Tr8x1.5	16	9	CRL-01-TR8X1.5
Tr10x2	24	8	CRR-01-TR10X2	Tr10x2	24	8	CRL-01-TR10X2
Tr12x3	28	8	CRR-01-TR12X3	Tr10x3	24	8	CRL-01-TR10X3 New
Tr14x4	30	11	CRR-01-TR14X4	Tr12x3	28	8	CRL-01-TR12X3
Tr16x2	34	11	CRR-01-TR16X2 New	Tr14x4	30	11	CRL-01-TR14X4
Tr16x4	34	11	CRR-01-TR16X4	Tr16x4	34	11	CRL-01-TR16X4
Tr18x4	36	13	CRR-01-TR18X4	Tr18x4	36	13	CRL-01-TR18X4
Tr20x4	45	15	CRR-01-TR20X4	Tr20x4	45	15	CRL-01-TR20X4
Tr24x5	45	15	CRR-01-TR24X5	Tr24x5	45	15	CRL-01-TR24X5
Tr26x5	45	15	CRR-01-TR26X5 New	Tr26x5	45	15	CRL-01-TR26X5 New
Tr30x6	54	15	CRR-01-TR30X6 New	Tr30x6	54	15	CRL-01-TR30X6 New

⁵⁶⁾ Clamping ring outer dimension. Screw head may protrude. Installation dimension d2 (+2mm)

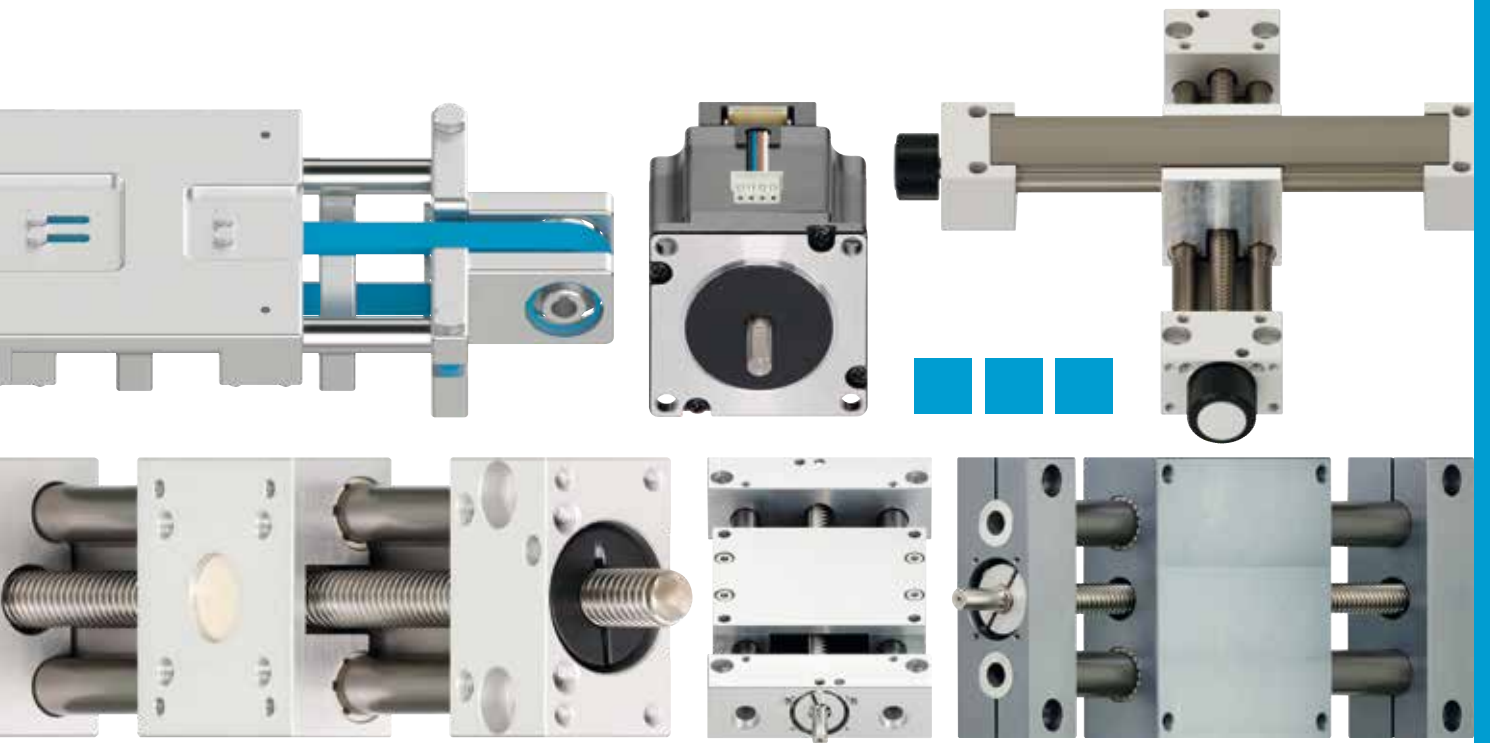
Dimensions [mm] - clamping ring without thread

Ø	d2	b1	Part No.
6	14	8	KRM-S6-V New
6.35	14	8	KRM-S6.35-V New
8	14	8	KRM-S-8-V New
10	24	8	KRM-S10-V
12	28	11	KRM-S12-V
14	30	11	KRM-S14-V
16	34	11	KRM-S16-V
18	36	13	KRM-S18-V
20	45	15	KRM-S20-V New
24	45	15	KRM-S24-V
30	54	15	KRM-S30-V New



drylin®

Drive technology



...plastics



Camera/laser adjustment in labelling system
In a labelling system the camera and laser positioning are guided with two drylin® SHT/SLWE-XY XY table units. (Fa. Pago Etikettiersysteme GmbH)



Pick & place
Quick and maintenance-free handling with drylin® toothed belt axes as a room linear robot (X, Y, Z-axis).

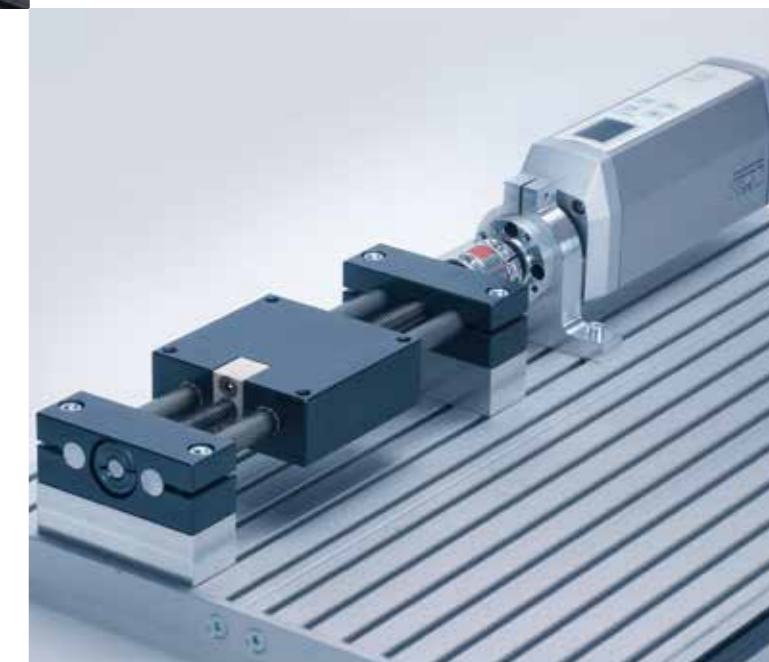
Positioning of milling heads

Aluminium dust and swarf cannot stick due to the absence of lubricants at any of the bearing points of the drylin® SHT linear module. (Berchtold GmbH)



Electric actuator

drylin® linear module combined with an electric actuator for use in a variety of format adjustments. (Festo AG & Co. KG)



Height adjustment of coding device

The drylin® linear module gives variable and precise adjustment, free from any maintenance or lubrication. (Filtec Europe GmbH)



Adjustment of inspection camera

drylin® ZLW toothed belt axis in an inspection camera adjustment for checking the position of sealing rings. (OLPE Jena GmbH)

drylin® drive technology - SHT linear modules



Self-locking:

SHT
▶ Page 1594



Axial pre-load,
radial adjustment:

SHT-PL
▶ Page 1595



Compact design:

SHTC
▶ Page 1596



The fast one with dryspin®
high helix thread:

SHTS
▶ Page 1597



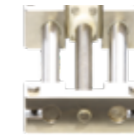
With ball bearing
supported lead screw:

SHT-BB
▶ Page 1598



Made of stainless steel:

SHT-ESJ
▶ Page 1600



Hygienic design:

SHTC-HYD
▶ Page 1601



With quick-release
mechanism:

SHTC-FF
▶ Page 1602

SHT linear modules



With quick-release
mechanism:

SHT-FF
▶ Page 1603



XY tables:

SHT-XY
▶ Page 1604



Self-locking:

SLW
▶ Page 1608



With short carriages:

SLWC
▶ Page 1610

New



Axial pre-load, radial
adjustment:

SLWE-PL
▶ Page 1611



With ball bearing
supported lead screws:

SLEW-BB
▶ Page 1612



The fast one with dryspin®
high helix thread:

SLWS
▶ Page 1614



With protected
lead screw:

SLW-PT
▶ Page 1616

SLW linear modules



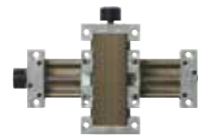
Dual action
linear system:

SLWT
▶ Page 1617



Stainless steel version:

SLW-ES
▶ Page 1618



XY tables:

SLW-XY
▶ Page 1620



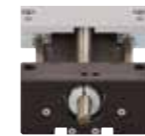
XY tables - stainless steel
version:

SLW-XY-ES
▶ Page 1622



Robust design:

SAW
▶ Page 1626



Clearance-reduced
with pre-load:

SAW-PL
▶ Page 1627



Direct drive in short
design:

SAWC
▶ Page 1628

easytube linear units



Single tube linear unit
easytube:

SET
▶ Page 1632



easytube with double
flange:

SET-F
▶ Page 1633



easytube with single
flange:

SETB
▶ Page 1634



easytube with
measurement scale:

SETM-SC
▶ Page 1635



easytube "light":

SETC
▶ Page 1636



Ball bearing supported lead
screws based on drylin® T:

SLT-BB
▶ Page 1639

Flat linear modules

Miniature linear modules



Pre-load miniature
linear module:

SLN-27
▶ Page 1643



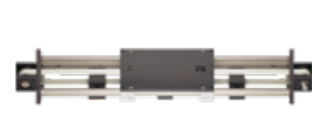
Prism module for precise
adjustment:

SLNV
▶ Page 1644



Standard toothed belt
axes:

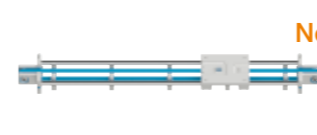
ZLW
▶ Page 1656



Modular
toothed belt axes:

ZLW-AL/-ES
▶ Page 1658

ZLW toothed belt axes



Linear axis with hygienic
design:

ZLW-HYD
▶ Page 1660

New



Tandem
toothed belt axis:

ZLWT
▶ Page 1661



Opposite drive toothed
belt axes:

ZLW-OD
▶ Page 1662



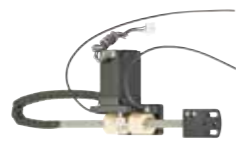
Cost-effective econ
toothed belt axis:

ZLN econ
▶ Page 1664

drylin® electric drive technology - cantilever axes



Dynamic z-axis for linear robot structures:
drylin® GRW
▶ Page 1666



Extremely light axis for pick & place:
drylin® GRQ
▶ Page 1667



Lightweight z-axis with direct rack drive:
drylin® GRR
▶ Page 1668



Cantilever axis:
drylin® ZAW
▶ Page 1669

econ entry-level series



The SLW entry-level model:
SLWP-E
▶ Page 1674



The SLT entry-level model:
SLTP-E
▶ Page 1675



The SHT miniature version:
SHTP-AWM
▶ Page 1676

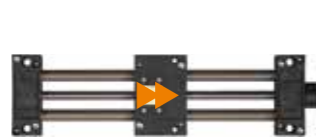


The lightweight entry-level model:
SHTP
▶ Page 1677

econ entry-level series



The cost-effective SHT version:
SHTP-AWM
▶ Page 1678



With quick-release mechanism:
SHTP-AWM-FF
▶ Page 1679



Miniature linear modules:
SLN basic
▶ Page 1680



Cost-effective toothed belt axis:
ZLW-E
▶ Page 1681

drylin® accessories - control elements



Accessories for manual positioning and format adjustment
▶ Page 1683

drylin® E - motors



Stepper motors:
drylin® stepper motors
▶ Page 1702



Specialist stepper motors
▶ Page 1710

drylin® E - motors



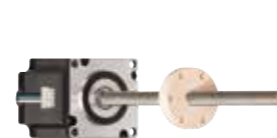
Lead screw stepper motors:
drylin® lead screw stepper motors
▶ Page 1712



EC/BLDC motors:
drylin® EC/BLCD motors
▶ Page 1717



DC motors:
drylin® direct-current motors
▶ Page 1721



Linear actuators:
drylin® linear actuators
▶ Page 1730



Motor control system:
D1 dryve
▶ Page 1732



Motor control system:
D3 dryve
▶ Page 1733



Motor control system:
D7/8/9 dryve
▶ Page 1734



Motor control system:
D5/6 dryve
▶ Page 1735

drylin® E - motors



Motor-driven:
Planetary gear for stepper motors
▶ Page 1736



Jaw couplings:
Vibration dampening and pluggable
▶ Page 1739



Accessories for drylin® E
Motor flanges, cables and mounting accessories
▶ Page 1741

drylin® E - accessories

Low Cost Automation



Articulated arm robot
ReBeL® cobot
roboLink® DC/DP
▶ Page 1767



Linear robots and other Kinematics
▶ Page 1773



SCARA robot
▶ Page 1784



roboLink® igus® robot control system
▶ Page 1788

Low Cost Automation



Low Cost Automation Accessories
▶ Page 1790



roboLink® D worm gears
▶ Page 1794



drygear® Apero modular gearbox system
▶ Page 1800



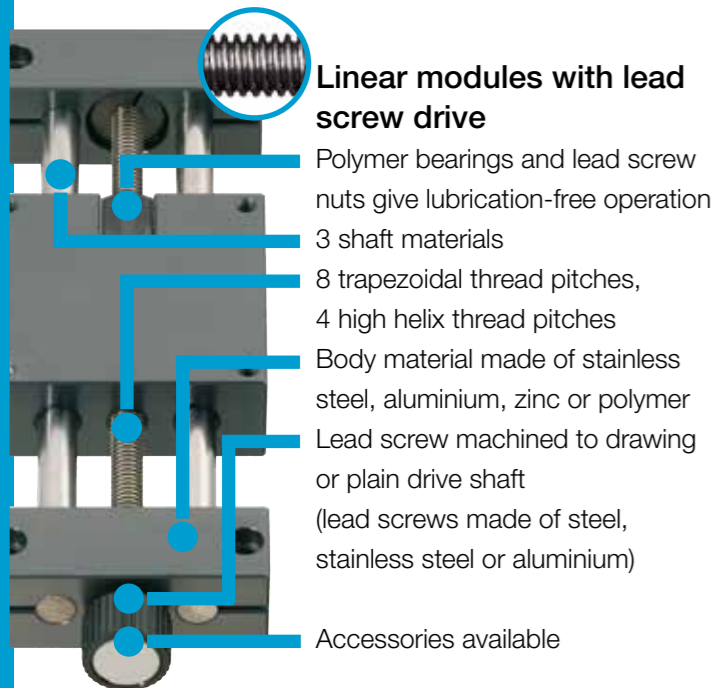
drygear® strain wave gear
▶ Page 1809



drygear® planetary gearboxes
▶ Page 1810

drylin® drive technology | Linear modules

The drylin® product portfolio provides lubrication-free linear modules that are driven either by a trapezoidal thread, high helix thread or toothed belt. The user can choose a suitable individual solution from lightweight solid plastic units up to heavy-duty stainless steel solutions. In all systems, the stroke length is freely selectable and the drive given either via hand wheel or motor.

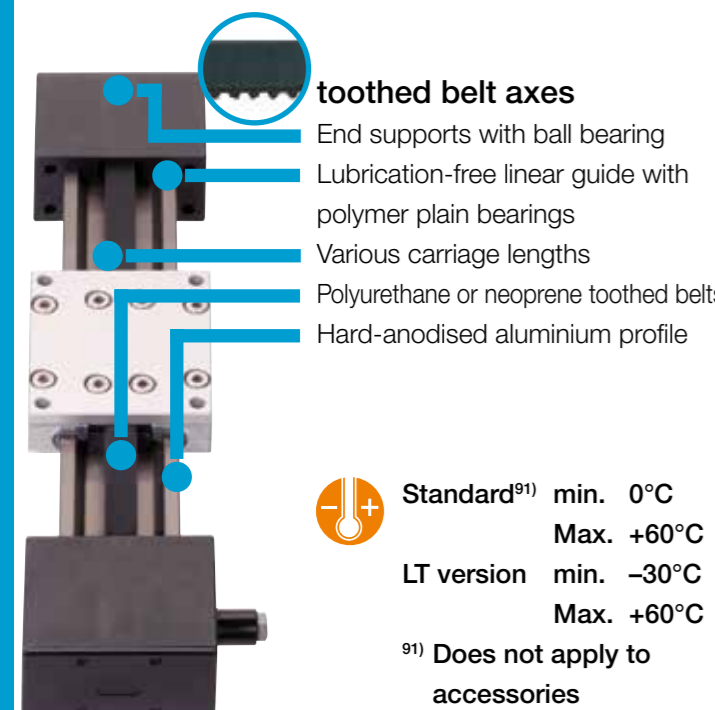


Linear modules with lead screw drive

- Polymer bearings and lead screw nuts give lubrication-free operation
- 3 shaft materials
- 8 trapezoidal thread pitches, 4 high helix thread pitches
- Body material made of stainless steel, aluminium, zinc or polymer
- Lead screw machined to drawing or plain drive shaft (lead screws made of steel, stainless steel or aluminium)

Accessories available

- Standard** min. 0°C Max. +60°C
- Stainless steel version with iglidur® X** Min. 0°C Max. +180°C



toothed belt axes

- End supports with ball bearing
- Lubrication-free linear guide with polymer plain bearings
- Various carriage lengths
- Polyurethane or neoprene toothed belts
- Hard-anodised aluminium profile

- Standard⁹¹⁾** min. 0°C Max. +60°C
- LT version** min. -30°C Max. +60°C

⁹¹⁾ Does not apply to accessories



When to use it?

- For format adjustments
- In extreme environments
- When a cost-effective, ready-to-fit solution is required
- When corrosion resistance is required
- When a quiet operation is required



When not to use it?

- When high loads need to travel at highly dynamic forces
- When positioning accuracy <0.1mm is required
- When high running performance is required in continuous operation



When to use it?

- Fast positioning of small loads
- Quiet operation
- Slim design
- Underwater use with UW belt
- Cost-effective solution as basic version
- Continuous operation



When not to use it?

- When high loads need to travel at highly dynamic forces
- When positioning accuracy <0.1mm is required

drylin® drive technology | Product overview



SHT linear modules

- Drive: trapezoidal or high-helix lead screw
 - Ball-bearing mounted lead screw drives for higher dynamic forces
 - Carriage in either quad block or compact design
- Page 1591



SAW linear modules

- Drive: Ball bearing supported lead screw
 - Rail profile in high design
 - Extremely torsion-resistant
- Page 1623



SLT linear modules

- Variable pitch
 - Adjustable drylin® T miniature carriage
 - Lead screw arrangement can be selected either left or right
- Page 1637



ZLW toothed belt axes

- Versions basic, standard and econ
 - For fast positioning
 - End supports with ball bearing
- Page 1645



drylin® - automation

- Lubrication-free linear modules with motor
 - Ready to install with motor, cable and initiator
 - Drive: Lead screw, toothed belt or rack
- Page 1759



SLW linear modules

- Based on drylin® W
 - Drive: trapezoidal or high-helix lead screw
 - Torsion-resistant double shaft systems
- Page 1605



SET easytube linear modules

- Corrosion-resistant
 - Lightweight due to aluminium and polymer
 - Simple, smooth design, protected lead screw
- Page 1629



SLN miniature linear modules

- Based on drylin® N, low installation height
 - Basic, adjustable and pre-load versions
- Page 1641



econ entry-level series

- Lightweight
 - Cost-effective
 - Corrosion-resistant
- Page 1671



Cantilever axis GRW

- Dynamic force transmission through rack
 - Assembly option for limit and reference switch
- Page 1666

Accessories for linear modules

- Position indicator, hand wheels, lead screw clamps, angular drives and more
- Page 1683

Linear module						
Linear module	Shaft Ø	Thread	Pitch	Lead screw Self-locking	Carriage length	Motor connection possible
	[mm]				[mm]	
SHT(C)-08	8	TR	6x2P1	+	38 / 65	+
		DS	6.35x2.54	-	38 / 65	+
		DS	6.35x5.08	-	38 / 65	+
		DS	6.35x12.7	-	38 / 65	+
		DS	6.35x25.4	-	38 / 65	+
SHT(C)-12	12	TR	10x2	+	30 / 85	+
		DS	10x2	+	30 / 85	+
		TR	10x3	+	30 / 85	+
		DS	10x3	-	30 / 85	+
		TR	10x4	+	30 / 85	+
		DS	10x12	-	30 / 85	+
		DS	10x25	-	30 / 85	+
		DS	10x50	-	30 / 85	+
SHT(C)-20	20	TR	18x4	+	36 / 130	+
		DS	18x4	+	36 / 130	+
		TR	18x8P4	+	36 / 130	+
		DS	18x24	-	36 / 130	+
		DS	18x40	-	36 / 130	+
		DS	18x80	-	36 / 130	+
		DS	18x100	-	36 / 130	+
SHT(C)-30	30	DS	20x5	-	50 / 180	+
		DS	20x10	-	50 / 180	+
		DS	20x20	-	50 / 180	+
		DS	20x50	-	50 / 180	+
		DS	20x60	-	50 / 180	+
		DS	20x80	-	50 / 180	+
		DS	20x90	-	50 / 180	+
SHTC-40	40	TR	24x5	+	50 / 180	+
SHTC-50	50	TR	26x5	+	70	+
SLW-0630	6	TR	8x1.5	+	20 / 60 / 100 / 150	+
		DS	8x10	-	20 / 60 / 100 / 150	+
		DS	8x15	-	20 / 60 / 100 / 150	+
SLW-0660	6	TR	8x1.5	+	60 / 100 / 150	+(121)
		DS	8x10	-	60 / 100 / 150	+(121)
		DS	8x15	-	60 / 100 / 150	+(121)

¹²⁰⁾ When configuring your linear module, we ask that you note the igus® specifications for maximum stroke lengths. The performance and load specifications shown above for all drive units are based exclusively on stroke lengths within the recommended values. Exceeding these can result in undesirable effects to the function such as increased wear and noise. Belt or lead screw contact cannot be excluded, and the rated performance and load specifications may not be attainable.

Lead screw with plain bearing support ¹²¹⁾					Ball bearing supported lead screws				
Max. stroke length ¹²⁰⁾	Max. static axial load capacity	Max. static radial load capacity	Max. speed	Max. feed rate	Max. stroke length ¹²⁰⁾	Max. static axial load capacity	Max. static radial load capacity	Max. speed	Max. feed rate
[mm]	[N]	[N]	[rpm]	[m/min]	[mm]	[N]	[N]	[rpm]	[m/min]
300	100	400	100	0.1	300	100	360	500	0.5
300	100	360	100	0.254	300	100	360	1,000	2.54
300	70	280	100	0.508	300	70	280	1,000	5.08
300	35	140	100	1.27	300	35	140	1,000	12.7
300	18	72	100	2.54	300	18	72	1,000	25.4
500	700	2,800	100	0.2	500	350	1,400	500	1.0
500	700	2,800	100	0.2	500	500	2,000	1,000	2.0
500	500	2,000	100	0.3	500	350	1,400	500	1.5
500	500	2,000	100	0.2	500	500	2,000	1,000	3.0
500	400	1,600	100	0.4	500	350	1,400	500	2.0
500	400	1,600	100	1.2	500	300	1,200	1,000	12.0
500	250	1,000	100	2.5	500	250	1,000	1,000	25.0
500	100	400	100	5.0	500	100	400	1,000	50.0
900	1,600	6,400	100	0.4	900	1,000	4,000	500	2.0
900	1,600	6,400	100	0.4	900	1,000	4,000	500	2.0
900	1,200	4,800	100	0.4	900	1,200	4,800	500	2.0
900	800	3,200	100	2.4	900	800	3,200	1,000	24.0
900	500	2,000	100	4.0	900	500	2,000	1,000	40.0
900	250	1,000	100	8.0	900	250	1,000	900	72.0
900	200	800	100	10.0	900	200	800	750	75.0
-	-	-	-	-	1,000	1,500	6,000	1,000	-
-	-	-	-	-	1,000	1,200	4,800	1,000	-
-	-	-	-	-	1,000	1,000	4,000	1,000	-
-	-	-	-	-	1,000	700	2,800	1,000	-
-	-	-	-	-	1,000	600	2,400	1,000	-
-	-	-	-	-	1,000	400	1,600	1,000	-
-	-	-	-	-	1,000	300	1,200	1,000	-
1,000	2,500	10,000	100	0.5	1,000	1,500	6,000	500	2.5
1,500	4,000	16,000	100	0.5	-	-	-	-	-
1,500	6,250	25,000	100	0.6	-	-	-	-	-
300	100	400	100	0.15	300	100	400	500	0.75
300	100	400	100	1.0	300	100	400	1,000	10.0
300	100	400	100	1.5	300	100	400	1,000	15.0
300	100	200	100	0.15	300	100	400	500	0.75
300	100	400	100	1.0	300	100	400	1,000	10.0
300	100	400	100	1.5	300	100	400	1,000	15.0

¹²¹⁾ Linear modules on plain bearings require an aluminium shaft end support when connected to a motor. The technical values in the specifications are maximum values for each criterion, e.g. speed, stroke length etc.; they are not cumulative values. Suitability under consideration of the individual parameters for usage can be checked online at www.igus.eu/linearmodule-finder.

Linear module						
Linear module	Shaft Ø	Thread	Pitch	Lead screw Self-locking	Carriage length	Motor connection possible
	[mm]				[mm]	
SLW-1030	10	TR	10x2	+	48 / 69 / 100	+
		DS	10x2	+	48 / 69 / 100	+
		TR	10x3	+	48 / 69 / 100	+
		DS	10x3	-	48 / 69 / 100	+
		TR	10x4	+	48 / 69 / 100	+
		DS	10x12	-	48 / 69 / 100	+
		DS	10x25	-	48 / 69 / 100	+
SLW-1040	10	TR	10x2	+	29 / 69 / 87 / 100	+
		DS	10x2	+	29 / 69 / 87 / 100	+
		TR	10x3	+	29 / 69 / 87 / 100	+
		DS	10x3	-	29 / 69 / 87 / 100	+
		TR	10x4	+	29 / 69 / 87 / 100	+
		DS	10x12	-	29 / 69 / 87 / 100	+
		DS	10x25	-	29 / 69 / 87 / 100	+
SLW-1080	10	DS	10x50	-	29 / 69 / 87 / 100	+
		TR	10x2	+	100 / 150 / 200	+
		DS	10x2	+	100 / 150 / 200	+
		TR	10x3	+	100 / 150 / 200	+
		DS	10x3	-	100 / 150 / 200	+
		TR	10x4	+	100 / 150 / 200	+
		DS	10x12	-	100 / 150 / 200	+
SLW-10120	10	DS	10x25	-	100 / 150 / 200	+
		DS	10x50	-	100 / 150 / 200	+
		TR	10x2	+	100 / 150 / 200	+
		DS	10x2	+	100 / 150 / 200	+
		TR	10x3	+	100 / 150 / 200	+
		DS	10x3	-	100 / 150 / 200	+
		TR	10x4	+	100 / 150 / 200	+
SLW-1660	16	DS	10x12	-	100 / 150 / 200	+
		DS	10x25	-	100 / 150 / 200	+
		DS	10x50	-	100 / 150 / 200	+
		TR	14x3	+	36 / 100 / 150 / 200	+
		TR	14x4	+	36 / 100 / 150 / 200	+
		DS	14x4	+	36 / 100 / 150 / 200	+
DS	14x25	-	36 / 100 / 150 / 200	+		
DS	14x30	-	36 / 100 / 150 / 200	+		
DS	14x40.6	-	36 / 100 / 150 / 200	+		

¹²⁰⁾ When configuring your linear module, we ask that you note the igus® specifications for maximum stroke lengths. The performance and load specifications shown above for all drive units are based exclusively on stroke lengths within the recommended values. Exceeding these can result in undesirable effects to the function such as increased wear and noise. Belt or lead screw contact cannot be excluded, and the rated performance and load specifications may not be attainable.

Lead screw with plain bearing support ¹²¹⁾					Ball bearing supported lead screws				
Max. stroke length ¹²⁰⁾	Max. static axial load capacity	Max. static radial load capacity	Max. speed	Max. feed rate	Max. stroke length ¹²⁰⁾	Max. static axial load capacity	Max. static radial load capacity	Max. speed	Max. feed rate
[mm]	[N]	[N]	[rpm]	[m/min]	[mm]	[N]	[N]	[rpm]	[m/min]
-	-	-	-	-	500	250	1,000	1,000	2.0
-	-	-	-	-	500	500	2,000	500	1.0
-	-	-	-	-	500	400	1,600	500	1.5
-	-	-	-	-	500	500	2,000	500	1.5
-	-	-	-	-	500	100	400	1,000	4.0
-	-	-	-	-	500	500	2,000	1,000	12.0
-	-	-	-	-	500	500	2,000	1,000	25.0
500	700	2,800	100	0.2	500	500	2,000	500	1.0
500	700	2,800	100	0.2	500	500	2,000	500	2.0
500	700	2,000	100	0.3	500	500	2,000	500	1.5
500	500	2,000	100	0.3	500	500	2,000	1,000	3.0
500	400	1,600	100	0.4	500	400	1,600	500	2.0
500	400	1,600	100	1.2	500	300	1,200	1,000	12.0
500	250	1,000	100	2.5	500	250	1,000	1,000	25.0
500	100	400	100	5.0	500	100	400	1,000	50.0
500	700	2,800	100	0.2	500	500	2,000	500	1.0
500	700	2,800	100	0.2	500	500	2,000	1,000	2.0
500	500	2,000	100	0.3	500	500	2,000	500	1.5
500	500	2,000	100	0.3	500	500	2,000	1,000	3.0
500	400	1,600	100	0.4	500	400	1,600	500	2.0
500	400	1,600	100	1.2	500	300	1,200	1,000	12.0
500	250	1,000	100	2.5	500	250	1,000	1,000	25.0
500	100	400	100	5.0	500	100	400	1,000	50.0
500	700	2,800	100	0.2	500	500	2,000	500	1.0
500	700	2,800	100	0.2	500	500	2,000	1,000	2.0
500	500	2,000	100	0.3	500	500	2,000	1,000	1.5
500	500	2,000	100	0.3	500	500	2,000	100	3.0
500	400	1,600	100	0.4	500	400	1,600	500	2.0
500	400	1,600	100	1.2	500	300	1,200	1,000	12.0
500	250	1,000	100	2.5	500	250	1,000	1,000	25.0
500	100	400	100	5.0	500	100	400	1,000	50.0
750	1,200	4,600	100	0.3	750	700	2,800	500	1.5
750	1,200	4,600	100	0.4	750	700	2,800	500	2.0
750	1,200	4,600	100	0.4	750	700	2,800	1,000	4.0
750	1,200	4,600	100	2.5	750	350	1,400	1,000	25.0
750	400	1,600	100	3.0	750	350	1,400	1,000	30.0
750	250	1,000	100	4.06	750	250	1,000	1,000	40.6

¹²¹⁾ Linear modules on plain bearings require an aluminium shaft end support when connected to a motor. The technical values in the specifications are maximum values for each criterion, e.g. speed, stroke length etc.; they are not cumulative values. Suitability under consideration of the individual parameters for usage can be checked online at www.igus.eu/linearmodule-finder.

Linear module						
Linear module	Shaft Ø	Thread	Pitch	Lead screw Self-locking	Carriage length	Motor connection possible
	[mm]				[mm]	
SLW-16120	16	TR	14x3	+	150 / 200 / 250	+
		TR	14x4	+	150 / 200 / 250	+
		DS	14x4	+	150 / 200 / 250	+
		DS	14x25	-	150 / 200 / 250	+
		DS	14x30	-	150 / 200 / 250	+
		DS	14x40.6	-	150 / 200 / 250	+
SLW-2080	20	TR	18x4	+	45 / 150 / 200 / 250	+
		DS	18x4	+	45 / 100 / 150 / 200	+
		TR	18x8P4	+	45 / 150 / 200 / 250	+
		DS	18x24	-	45 / 150 / 200 / 250	+
		DS	18x40	-	45 / 150 / 200 / 250	+
		DS	18x80	-	45 / 150 / 200 / 250	+
		DS	18x100	-	45 / 150 / 200 / 250	+
SLW-25120	25	DS	20x5	-	150 / 200 / 250	+
		DS	20x10	-	150 / 200 / 250	+
		DS	20x20	-	150 / 200 / 250	+
		DS	20x50	-	150 / 200 / 250	+
		DS	20x60	-	150 / 200 / 250	+
		DS	20x80	-	150 / 200 / 250	+
		DS	20x90	-	150 / 200 / 250	+
SAW-0630	6	TR	8x1.5	+	50 / 60 / 100	+
		DS	8x10	-	50 / 60 / 100	+
		DS	8x15	-	50 / 60 / 100	+
SAW-0660	6	TR	10x2	+	100	+
		DS	10x2	+	100	+
		DS	10x3	-	100	+
		DS	10x12	-	100	+
		DS	10x25	-	100	+
		DS	10x50	-	100	+
SAW-1040	10	TR	10x2	+	69 / 100 / 150	+
		DS	10x2	+	69 / 100 / 150	+
		TR	10x3	+	69 / 100 / 150	+
		DS	10x3	-	69 / 100 / 150	+
		TR	10x4	+	69 / 100 / 150	+
		DS	10x12	-	69 / 100 / 150	+
		DS	10x25	-	69 / 100 / 150	+
		DS	10x50	-	69 / 100 / 150	+

¹²⁰⁾ When configuring your linear module, we ask that you note the igus® specifications for maximum stroke lengths. The performance and load specifications shown above for all drive units are based exclusively on stroke lengths within the recommended values. Exceeding these can result in undesirable effects to the function such as increased wear and noise. Belt or lead screw contact cannot be excluded, and the rated performance and load specifications may not be attainable.

Lead screw with plain bearing support ¹²¹⁾					Ball bearing supported lead screws				
Max. stroke length ¹²⁰⁾	Max. static, axial load capacity	Max. static, radial load capacity	Max. speed	Max. feed rate	Max. stroke length ¹²⁰⁾	Max. static, axial load capacity	Max. static, radial load capacity	Max. speed	Max. feed rate
[mm]	[N]	[N]	[rpm]	[m/min]	[mm]	[N]	[N]	[rpm]	[m/min]
750	1,200	4,600	100	0.3	750	700	2,800	500	1.5
750	1,200	4,600	100	0.4	750	700	2,800	500	2.0
750	1,200	4,600	100	0.4	750	700	2,800	1,000	4.0
750	600	2,400	100	2.5	750	350	1,400	1,000	25.0
750	600	1,600	100	3.0	750	350	1,400	1,000	30.0
750	250	1,000	100	4.06	750	250	1,400	1,000	40.6
900	1,600	6,400	100	0.4	900	1,250	5,000	500	2.0
900	1,600	6,400	100	0.4	900	1,000	4,000	500	2.0
900	1,200	4,800	100	0.8	900	1,200	4,800	500	2.0
900	800	3,200	100	2.4	900	800	3,200	1,000	24.0
900	500	2,000	100	4.0	900	500	2,000	1,000	40.0
900	250	1,000	100	8.0	900	250	1,000	900	72.0
900	200	800	100	10.0	900	200	800	750	75.0
-	-	-	-	-	1,000	1,500	6,000	1,000	5.0
-	-	-	-	-	1,000	1,200	4,800	1,000	10.0
-	-	-	-	-	1,000	1,000	4,000	1,000	20.0
-	-	-	-	-	1,000	700	2,800	1,000	50.0
-	-	-	-	-	1,000	600	2,800	1,000	60.0
-	-	-	-	-	1,000	400	1,600	1,000	80.0
-	-	-	-	-	1,000	300	1,200	1,000	90.0
1,000	2,500	10,000	100	0.5	1,000	1,500	6,000	500	2.5
-	-	-	-	-	300	100	200	500	0.75
-	-	-	-	-	300	100	200	1,000	10.0
-	-	-	-	-	300	100	200	1,000	15.0
-	-	-	-	-	500	100	400	500	1.0
-	-	-	-	-	500	500	2,000	1,000	2.0
-	-	-	-	-	500	500	2,000	1,000	3.0
-	-	-	-	-	500	100	400	1,000	12.0
-	-	-	-	-	500	100	400	1,000	25.0
-	-	-	-	-	500	100	400	1,000	3.0
-	-	-	-	-	500	500	2,000	500	1.0
-	-	-	-	-	500	500	2,000	1,000	2.0
-	-	-	-	-	500	500	2,000	500	1.5
-	-	-	-	-	500	500	2,000	1,000	3.0
-	-	-	-	-	500	400	1,600	500	2.0
-	-	-	-	-	500	300	1,200	1,000	12.0
-	-	-	-	-	500	250	1,000	1,000	25.0
-	-	-	-	-	500	100	400	1,000	50.0

¹²¹⁾ Linear modules on plain bearings require an aluminium shaft end support when connected to a motor. The technical values in the specifications are maximum values for each criterion, e.g. speed, stroke length etc.; they are not cumulative values. Suitability under consideration of the individual parameters for usage can be checked online at www.igus.eu/linearmodule-finder.

Linear module						
Linear module	Shaft Ø	Thread	Pitch	Lead screw Self-locking	Carriage length	Motor connection possible
	[mm]				[mm]	
SAW-1080	10	TR	12x3	+	100 / 150	+
		TR	12x6P3	+	100 / 150	+
		DS	12x5	+	100 / 150	+
		DS	12x25	-	100 / 150	+
SAW-1660	16	TR	14x3	+	100 / 150 / 200	+
		TR	14x4	+	100 / 150 / 200	+
		DS	14x4	+	100 / 150 / 200	+
		DS	14x25	-	100 / 150 / 200	+
		DS	14x30	-	100 / 150 / 200	+
		DS	14x40.6	-	100 / 150 / 200	+
SLT-0412	5	TR	8x1,5	+	38	+
		DS	8x10	-	38	+
		DS	8x15	-	38	+
SLT-0415	10	TR	12x3	+	45	+
		TR	12x6P3	+	45	+
		DS	12x5	+	45	+
		DS	12x25	-	45	+
SLN(V)-27	27	M	M5x0.8	+	35	+
		DS	5x5	-	35	+
		DS	6.35x2.54	-	35	+
		DS	6.35x5.08	-	35	+
		DS	6.35x12.7	-	35	+
		DS	6.35x25.4	-	35	+
SHTP-01-06	6	M	M8x1.25	+	45	+
SHTP-01-10	10	TR	8x1.5	+	26	+
SHTP-01-12	12	TR	10x2	+	55	+
SHTP-02-12	12	TR	10x2	+	55	-
SET-12	12	M	M4x0.7	+	30	-
SET-25	25	TR	10x2	+	55	-
SET-30	30	TR	12x3	+	55	-

¹²⁰⁾ When configuring your linear module, we ask that you note the igus® specifications for maximum stroke lengths. The performance and load specifications shown above for all drive units are based exclusively on stroke lengths within the recommended values. Exceeding these can result in undesirable effects to the function such as increased wear and noise. Belt or lead screw contact cannot be excluded, and the rated performance and load specifications may not be attainable.

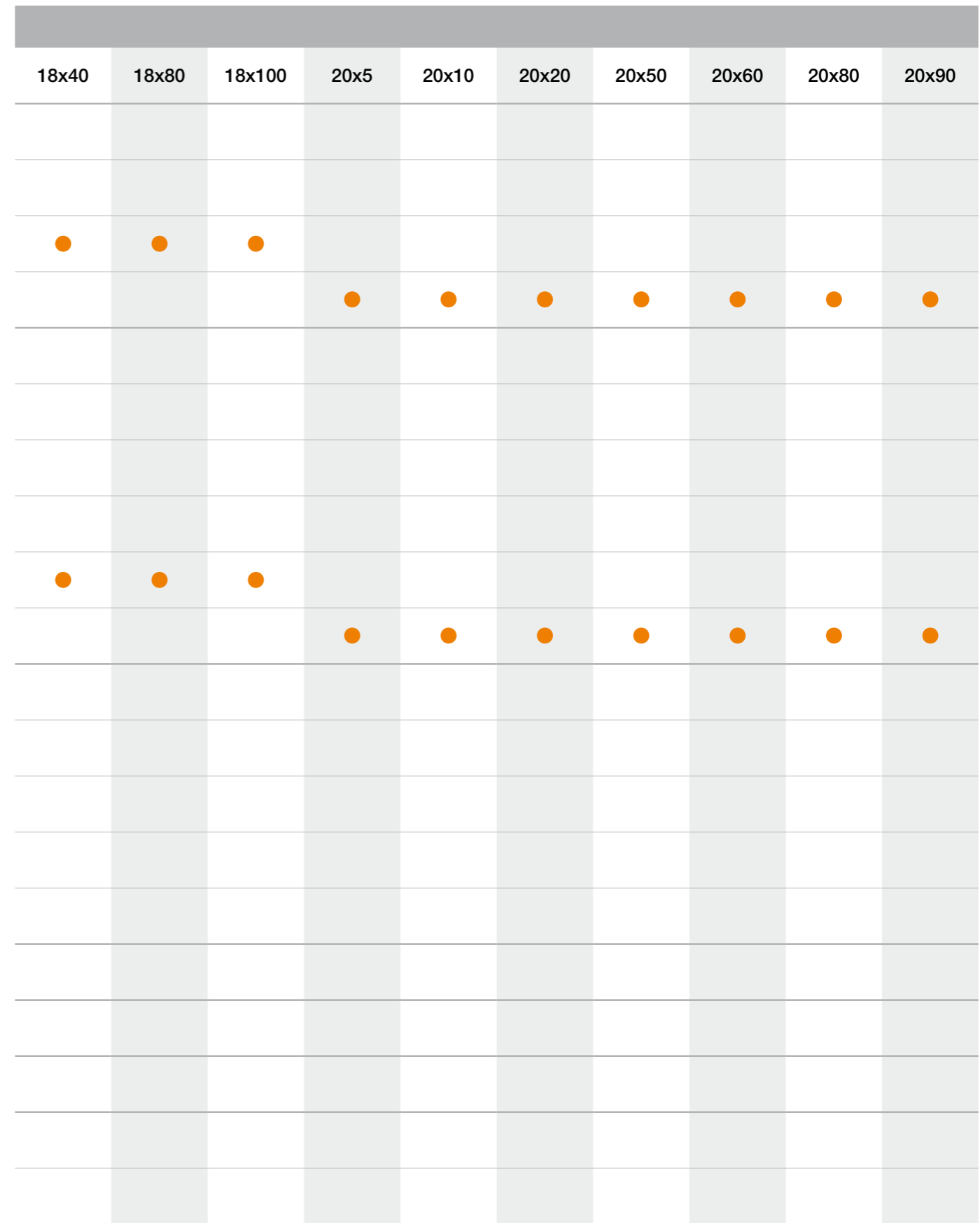
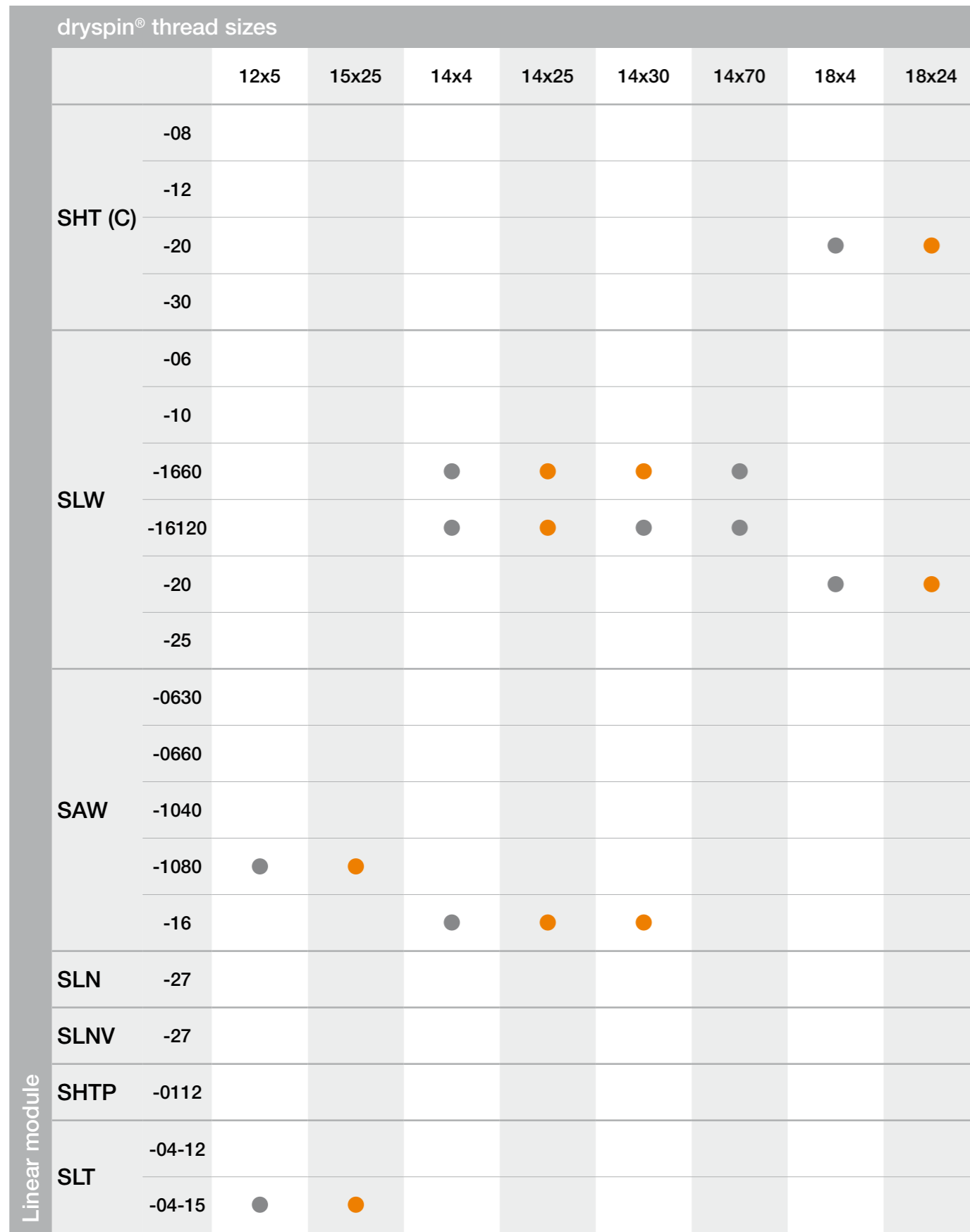
Lead screw with plain bearing support ¹²¹⁾					Ball bearing supported lead screws				
Max. stroke length ¹²⁰⁾	Max. static axial load capacity	Max. static radial load capacity	Max. speed	Max. feed rate	Max. stroke length ¹²⁰⁾	Max. static axial load capacity	Max. static radial load capacity	Max. speed	Max. feed rate
[mm]	[N]	[N]	[rpm]	[m/min]	[mm]	[N]	[N]	[rpm]	[m/min]
-	-	-	-	-	750	750	2,000	500	1.5
-	-	-	-	-	750	400	1,600	500	1.5
-	-	-	-	-	750	300	1,200	1,000	1.5
-	-	-	-	-	750	200	800	300	25.0
-	-	-	-	-	750	700	2,800	1,000	4.5
-	-	-	-	-	750	700	2,800	1,000	6.0
-	-	-	-	-	750	700	2,800	1,000	6.0
-	-	-	-	-	750	350	1,400	400	10.0
-	-	-	-	-	750	350	1,400	400	12.0
-	-	-	-	-	750	250	1,000	400	16.24
-	-	-	-	-	300	100	400	1,000	1.5
-	-	-	-	-	300	25	100	600	6.0
-	-	-	-	-	300	25	100	600	9.0
-	-	-	-	-	600	200	800	1,000	4.5
-	-	-	-	-	600	100	400	750	4.5
-	-	-	-	-	600	100	400	750	3.75
-	-	-	-	-	600	100	400	750	18.75
300	10	40	100	0.08	300	10	40	250	0.2
250	10	40	100	0.5	250	10	40	100	0.5
300	10	40	100	0.254	300	10	40	500	1.27
300	10	40	100	0.508	300	10	40	500	2.54
300	10	40	100	1.27	300	10	40	500	6.35
300	10	40	100	2.54	300	10	40	500	12.7
300	50	50	100	0.125	-	-	-	-	-
300	100	200	100	0.15	-	-	-	-	-
500	200	400	100	0.2	-	-	-	-	-
500	200	800	100	0.2	-	-	-	-	-
100	10	20	100	0.07	-	-	-	-	-
500	150	300	100	0.2	-	-	-	-	-
750	200	400	100	0.3	-	-	-	-	-

¹²¹⁾ Linear modules on plain bearings require an aluminium shaft end support when connected to a motor. The technical values in the specifications are maximum values for each criterion, e.g. speed, stroke length etc.; they are not cumulative values. Suitability under consideration of the individual parameters for usage can be checked online at www.igus.eu/linearmodule-finder.

		dryspin® thread sizes							
		5x5	5x10	6.35x1	6.35x2.54	6.35x5.08	6.35x6.35	6.35x12.7	6.35x25.4
SHT (C)	-08			●	●	●	●	●	●
	-12								
	-20								
	-30								
SLW	-06								
	-10								
	-1660								
	-16120								
	-20								
SAW	-25								
	-0630								
	-0660								
	-1040								
	-1080								
SLN	-16								
	-27	●	●	●	●	●	●	●	●
SLNV	-27	●	●	●	●	●	●	●	●
	-27	●	●	●	●	●	●	●	●
SHTP	-0112								
	-04-12								
SLT	-04-15								
	-04-15								

● = dryspin® thread
● = Upon request

		8x8	8x10	8x15	8x24	8x40	10x2	10x3	10x12	10x25	10x50	12x3	12x5
		SHT (C)	-08						●	●	●	●	
-12							●	●	●	●			
SLW	-06	●	●	●	●	●							
	-10						●	●	●	●			
	-1660												
	-16120												
	-20												
SAW	-25												
	-0630	●	●	●	●	●							
	-0660						●	●	●	●			
	-1040						●	●	●	●			
	-1080											●	●
SLN	-16												
	-27	●	●	●	●	●							
SLNV	-27	●	●	●	●	●							
	-27	●	●	●	●	●							
SHTP	-0112							●	●	●			
	-04-12	●	●	●	●	●							
SLT	-04-15											●	●
	-04-15											●	●



● = dryspin® thread
 ● = Upon request

drylin® drive technology | Technical options

In addition to the standard configurations, drylin® drives offer numerous solutions for the many requirements of different applications.

The following options can be configured online with the SHT configurator:
www.igus.eu/sht-configurator

Pre-load (PL)

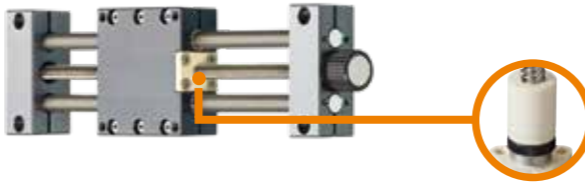
The axial preload reduces the backlash of the system. Positioning and repeatability can be optimised. The required drive torque increases only slightly.



For SHT, SLW and SAW linear modules

Zero-backlash (ZB)

Self-adjusting zero-backlash lead screw nuts are available for SHT modules in sizes 08 and 12. For movements that require repeatability and which are implemented through high helix thread, the ZB function provides a minimal lifelong backlash.



Linear modules with ball-bearing mounted lead screw

The SHT and SLW linear modules with ball bearing supported lead screws give reduced vibration, and increased dynamic capability. These are also suitable for applications with motor drives.



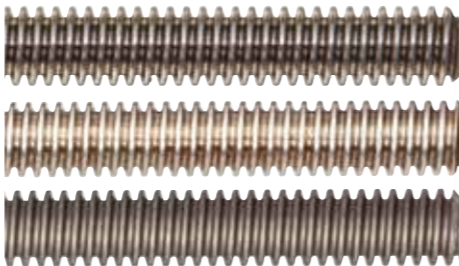
Shaft materials

When using linear modules of the SHT series, you can choose a shaft material from steel, stainless steel, or hard-anodised aluminium (standard). The short delivery time and excellent coefficient of friction and wear make the aluminium version the most common choice.



Lead screw materials

All drylin® linear modules can be delivered with self-locking trapezoidal steel and stainless steel lead screws; upon request, these can also be made from hard-anodised aluminium. The SHT and SLW series can also be configured with dryspin® high helix lead technology. This allows for much higher pitches and drive speeds, but without the self-locking feature.



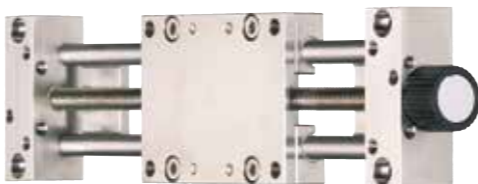
Bearing materials

The bearing surfaces of the drylin® drive units are equipped with lubrication and maintenance-free igus® high performance polymers. Options include materials for high temperature application up to +180°C (iglidur® X, SHT-ES series), and also for FDA-compliant environments (iglidur® A180).



Complete solutions made of stainless steel

The use of AISI 316Ti and AISI 304 makes of the guides resistant to seawater and chemical contact corrosion. The guide shafts are also made from AISI 316Ti.



drylin® drive technology | Technical options

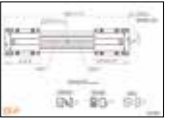
Linear modules with several carriages

All drylin® linear modules can be configured with multiple carriages. The short carriages from the SHTC series are perfectly suited for this. The second (or additional) carriage can be installed as a freely moving unit without lead screw, or as a fixed unit with its own trapezoidal lead screw nut.



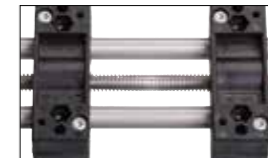
Online customer drawing

► www.igus.eu/customerdrawing



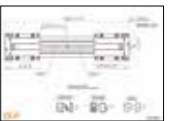
Right/left opposite drive

In addition to the standard right-handed lead screws, left-hand lead screws and opposite drive lead screws can also be used. This option often used in format adjustments can be specified for all diameters and types. Also available as a multi-carriage system or with right/left opposite drive.



Online customer drawing

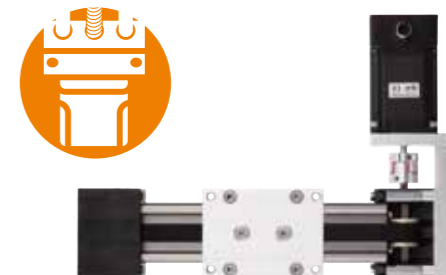
► www.igus.eu/customerdrawing



Linear axes with motor: www.igus.eu/drylinE-finder

Linear modules with motor

Several drylin® drive units are compatible with the drylin® modular kit. As linear axes, they can be easily and quickly configured directly to the matching igus® stepper motors, power cables and proximity switches - assembled and tested from one source.



More options:

Adjustable radial clearance

The "turn to fit" feature allows individual clearance adjustment by hand. The adjustment is done in 0.01-mm increments and cannot be triggered unintentionally during the operation (SLW series 10-20).

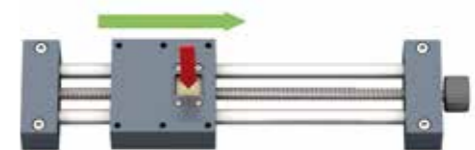


For SLW and SAW linear modules

For SHT linear modules

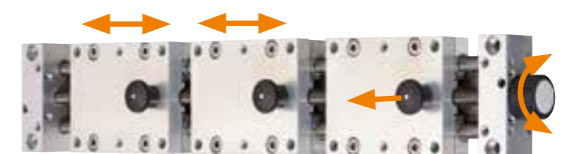
Fast Forward (FF)

SHT linear modules and SHTP plastic linear modules with quick-release mechanism offer a combination of accurate positioning and fast manual adjustment.



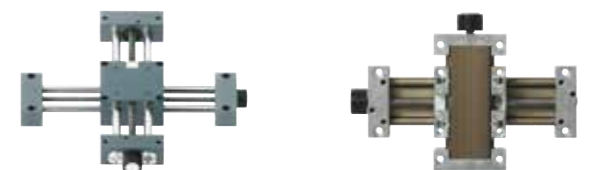
drylin® SLW "Stop and Go"

This additional function for linear carriages enables the use of an unlimited number of carriages on one guide - controlled by only one lead screw. The connection to the lead screw is engaged or released via the button.



XY-tables

The SHT and SLW linear modules can also be configured as XY tables. XY adjustments can therefore be given with a single unit.

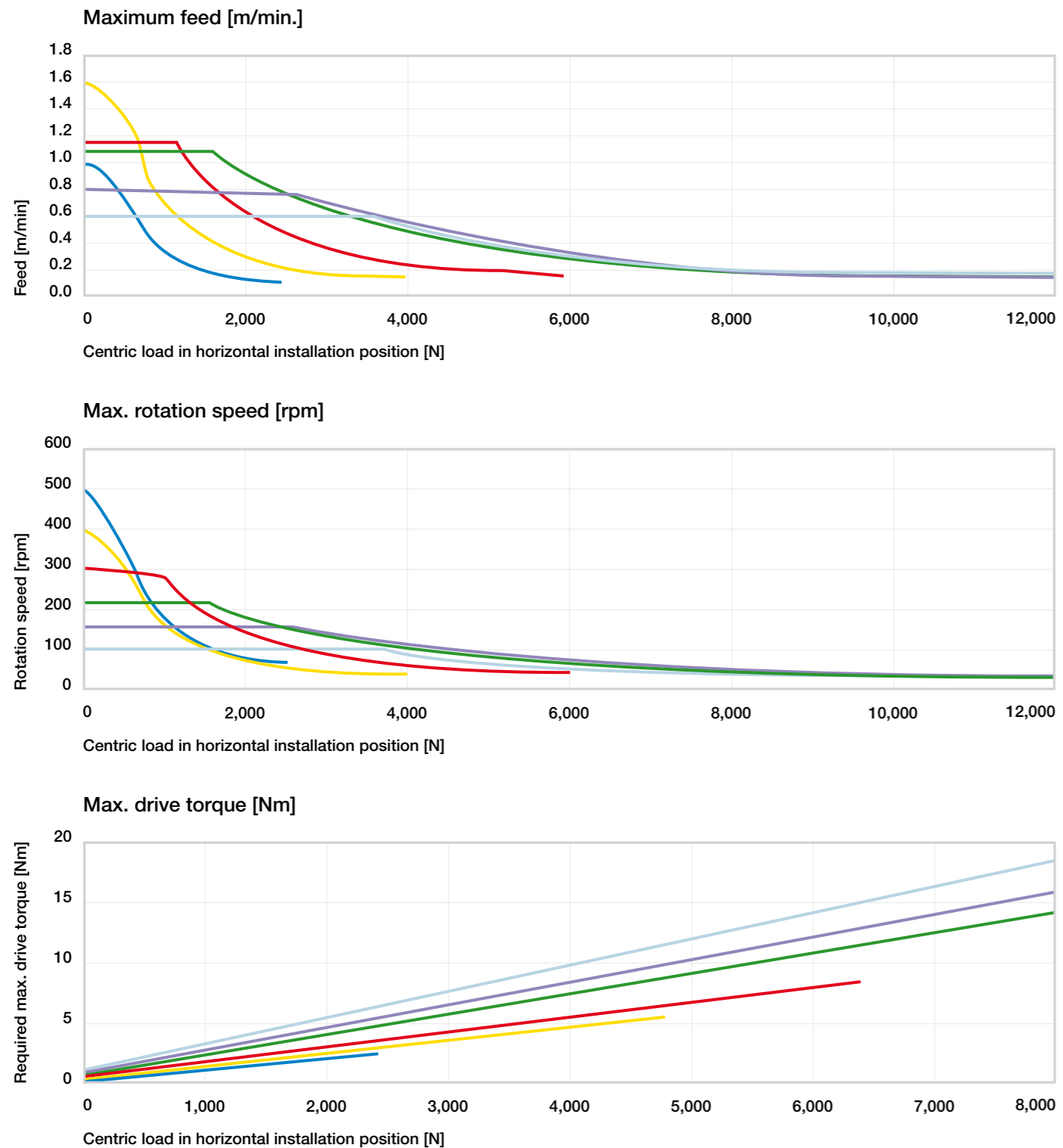


drylin® drive technology | Design and calculation

drylin® linear modules have been developed for position settings of all types. The linear setting is achieved by means of trapezoidal lead screws that can be operated manually or by motor. The maximum linear continuous speed is 1.6m/min depending on thread pitch and load. The suitability of the lead screw linear units for an application can be checked using the graphs below.



HORIZONTAL



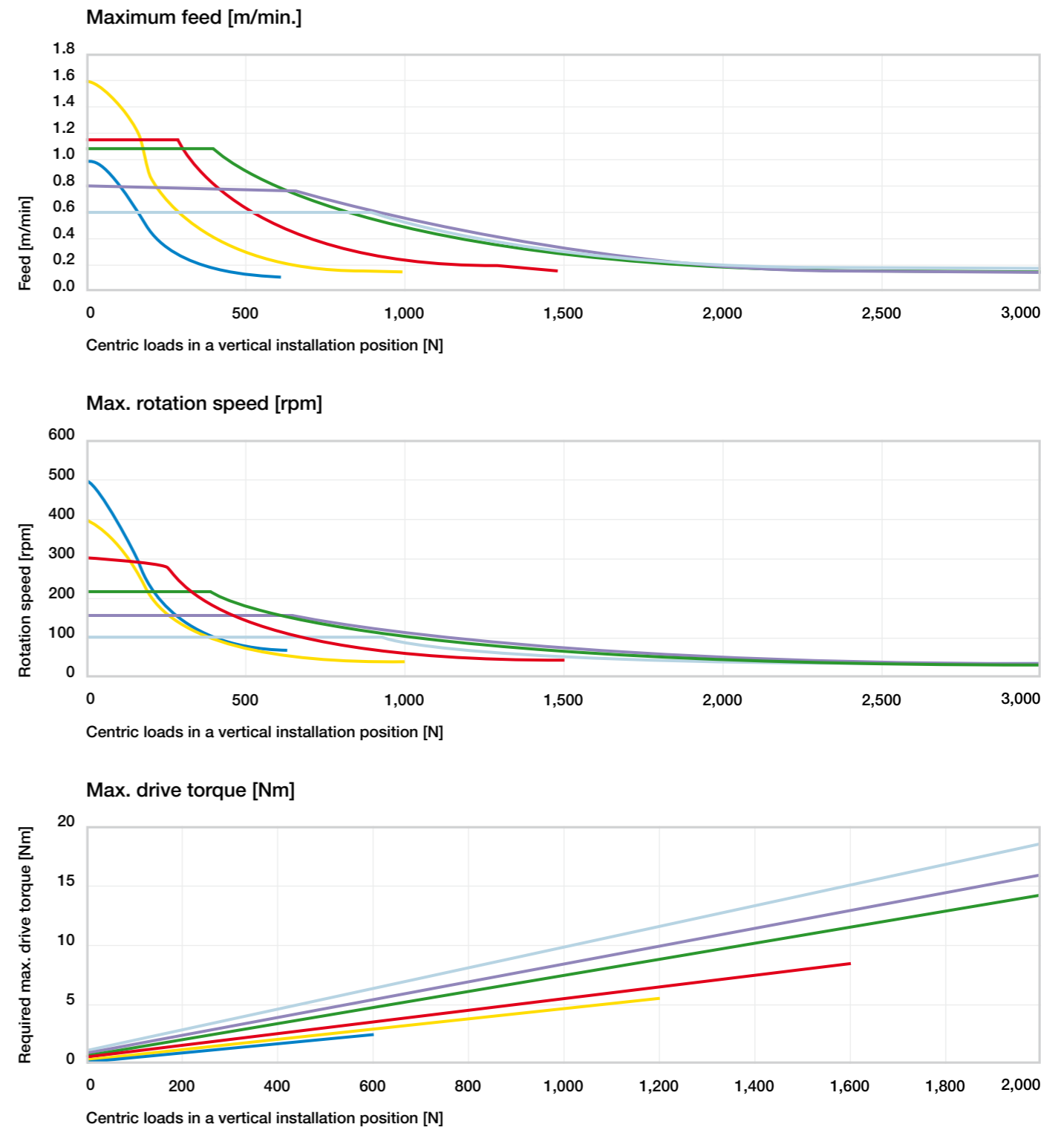
drylin® drive technology | Design and calculation

The following trapezoidal lead screw drive sizes are used in SHT, SLW and SET linear modules:

- **Tr10x2:** SHT-12, SHTC-12, SHTP-12, SLW-1040, SLW-1080, SLW-1040-ES, SET-25
- **Tr14x4:** SLW-1660
- **Tr18x4:** SHT-20, SHTC-20, SLW-2080
- **Tr24x5:** SHT-30, SHTC-30, SLW-25120
- **Tr26x5:** SHTC-40
- **Tr30x6:** SHTC-50



VERTICAL



 Example configurations:

drylin® SHT-12, Tr10x2



With machined end Ø 6h9,
17mm length
DL-SHT-0926, 250mm stroke
DL-SHT-0927, 500mm stroke

With position indicator, lead screw
clamp and hand wheel
DL-SHT-0928, 250mm stroke
DL-SHT-0929, 500mm stroke

drylin® SLW-1040, Tr10x2



With machined end Ø 6h9,
17mm length
DL-SLW-0549, 250mm stroke
DL-SLW-0550, 500mm stroke

With position indicator, lead screw
clamp and hand wheel
DL-SLW-0551, 250mm stroke
DL-SLW-0552, 500mm stroke

drylin® SAW-0660, Ds10x25



With machined end Ø 6h9,
15mm length
DL-SAW-0085, 100mm stroke
DL-SAW-0086, 500mm stroke

drylin® ZLW-0660-S



Toothed belt axis ZLW-0660-S
DL-ZLW-0709, 250mm stroke

Toothed belt axis ZLW-1080-S
DL-ZLW-0711, 500mm stroke
DL-ZLW-00712, 1,000mm stroke

drylin® SAW-0630, Tr8x1.5



With NEMA17 stepper motor
with stranded wires
DLE-SA-0004, 250mm stroke


SAW-1040 linear module, Tr10x2
With NEMA23 stepper motor
with stranded wires
DLE-SA-0005, 500mm stroke

drylin® ZLW-1040-B



With NEMA23 stepper motor
with stranded wires
DLE-SA-0002, 500mm stroke

Toothed belt axis ZLW-1080-S
With NEMA23XL stepper motor
with stranded wires
DLE-SA-0003, 1,000mm stroke

 More information
▶ www.igus.eu/drylin-express


The screenshot shows the 'drylin® E Linear modules with lead screw' product page. It features a navigation bar with 'Shop', 'Configurators', 'Information', 'Industries', 'Service', and 'Company'. The main content area includes a breadcrumb trail, a title, and a list of products. Two products are highlighted:

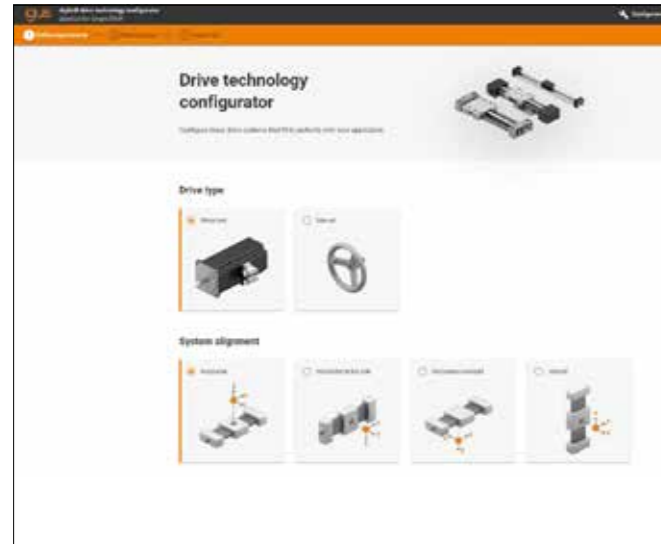
- drylin® SAW-1080 linear module with stepper motor**: 654.97 EUR/Pc. 1 item, thereof ready for shipping: 1 in 24 hours.
- drylin® SLW-1040 linear module**: 212.48 EUR/Pc. 2 items, thereof ready for shipping: 2 in 24 hours.

Each product listing includes a small image, a list of specifications (e.g., thread type, carriage length, stroke length), and a 'Configure individual linear module!' link. A filter sidebar on the left allows users to filter by 'System', 'Thread type', and 'With motor'.

Linear modules with just one click

- Simple ordering from the online shop:
ready-to-connect linear modules and linear axes
- Two defined stroke lengths for each system
- With drive pins for manual and electric drive
- Ready-to-install with lead screw clamp, position indicator, hand wheel for fast adjustments or NEMA stepper motor.

 More information and prices online
▶ www.igus.eu/linear-module-shop



Complete drive technology configurable with or without motor

After you have selected your application parameters, the product finder shows an overview of the linear systems and the motors that are suitable. The product finder calculates the individual price of the linear axis as well as the utilisation rate of the motors and the service life in strokes. With just a few clicks, you can put together a complete linear axis including motor, connection cables and built-on parts.



► www.igus.eu/linearmodule-configurator

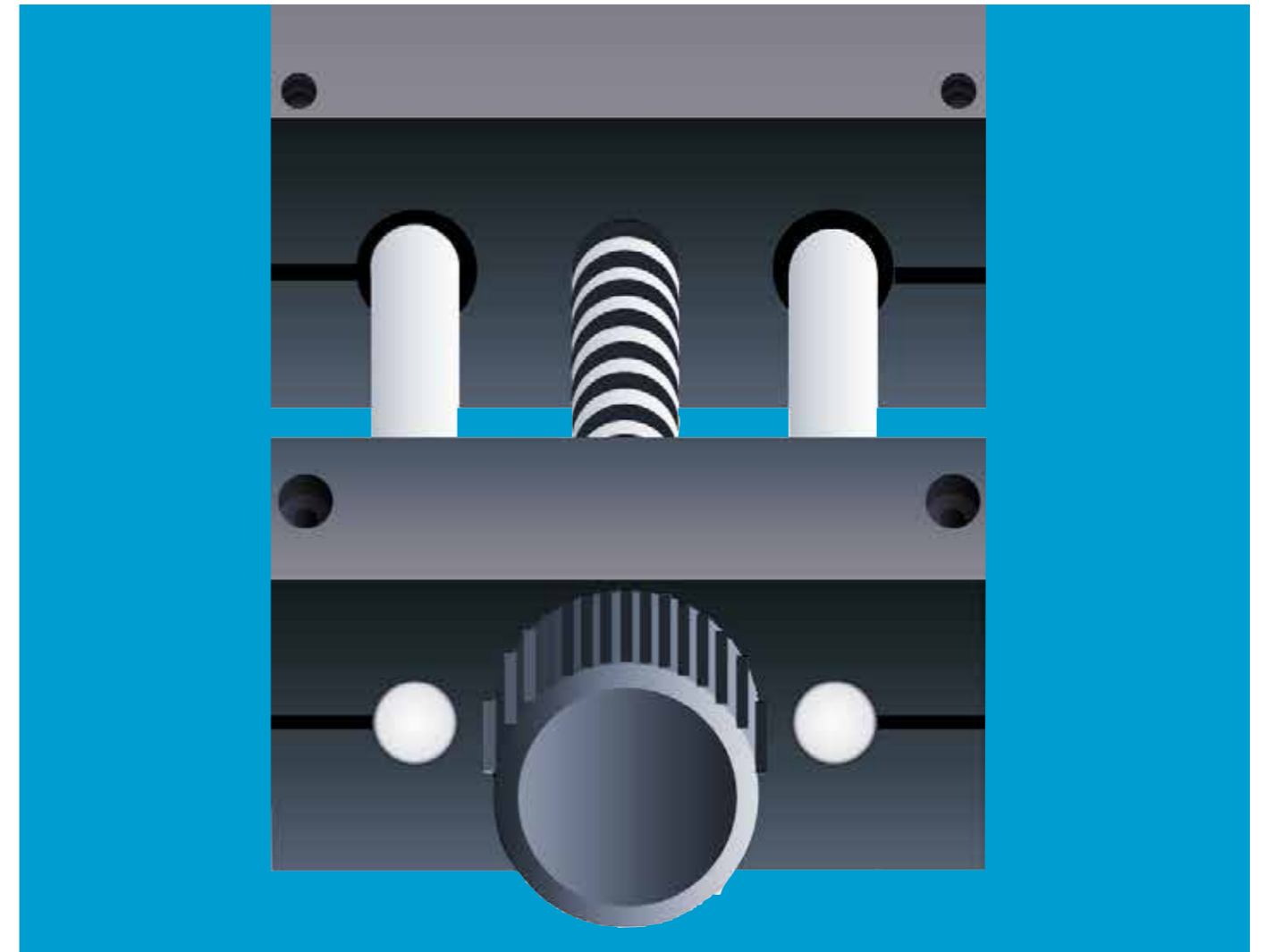
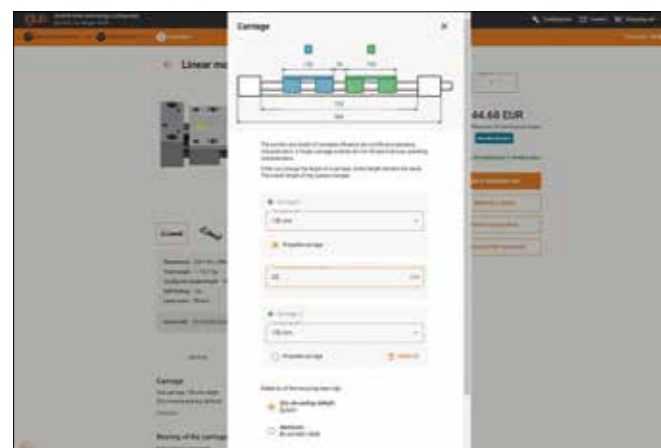


Product finder for drylin® linear module

Whether on laptop, pad or smart phone, selecting the right linear module is now very convenient and easy. Simply select the right system with a few technical parameters and the desired stroke length.



► www.igus.eu/linear-module-product-finder



drylin® drive technology - SHT linear modules

Drive: trapezoidal or high-helix lead screw

Ball-bearing mounted lead screw drives for higher dynamic forces

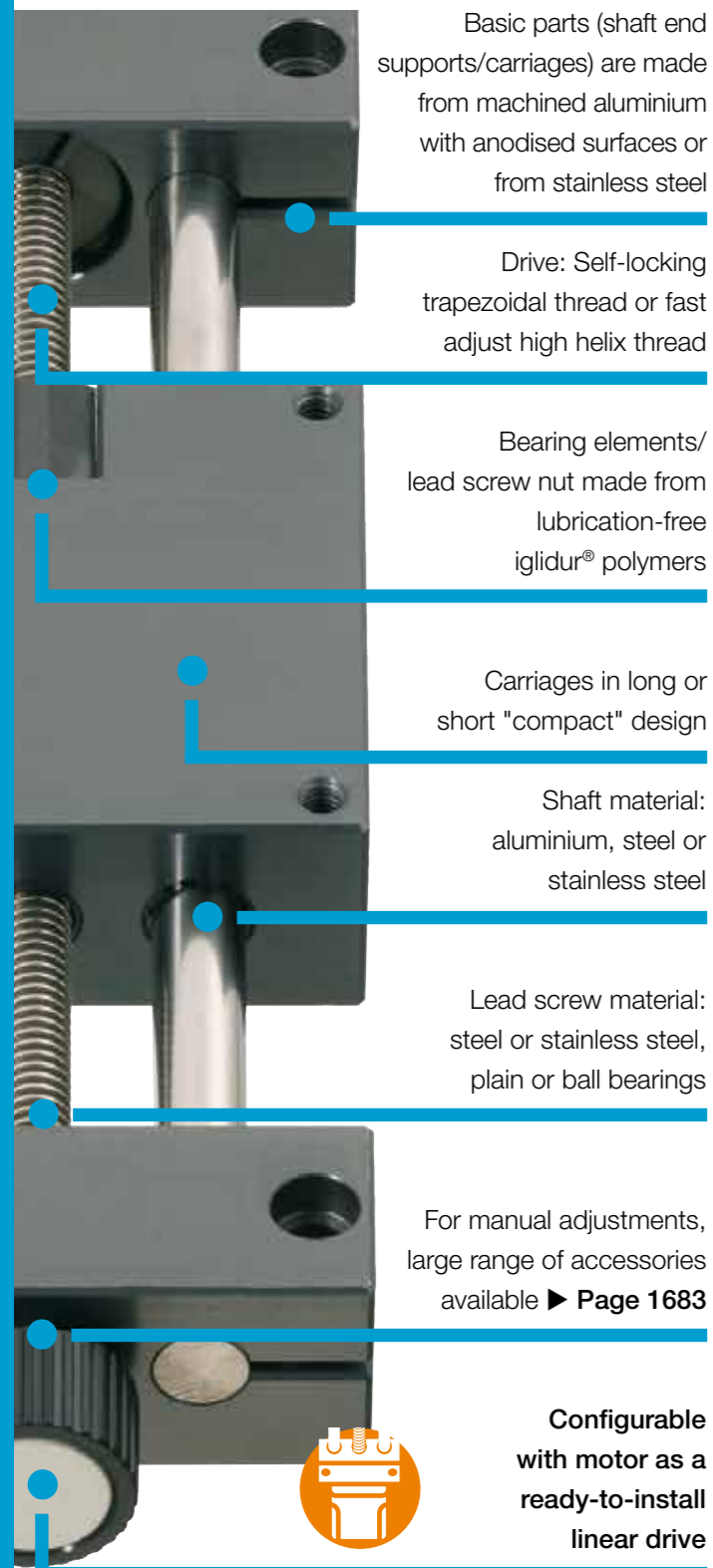
Lead screws made from steel, stainless steel or aluminium

Carriage in either quad block or compact design

Configurable online



Robust and precise



Basic parts (shaft end supports/carriages) are made from machined aluminium with anodised surfaces or from stainless steel

Drive: Self-locking trapezoidal thread or fast adjust high helix thread

Bearing elements/lead screw nut made from lubrication-free iglidur® polymers

Carriages in long or short "compact" design

Shaft material: aluminium, steel or stainless steel

Lead screw material: steel or stainless steel, plain or ball bearings

For manual adjustments, large range of accessories available ▶ Page 1683

Configurable with motor as a ready-to-install linear drive


Lubrication-free linear modules - drylin® SHT


The drylin® SHT linear modules can be moved lubrication-free, while also offering high precision and robust components. The units can be individually configured with various shaft and lead screw materials, carriage lengths and additional functions. The SHT series is suitable for manual and motorised operation and is supplied ready for connection with drylin® motors.


- All bearing positions are completely lubrication-free due to the use of iglidur® high performance polymers
- Freely selectable stroke lengths
- High temperature version available
- SHT linear modules can be configured as a multi-carriage system or with right/left opposite drive

Typical application areas


- Format adjustment
- Actuators
- Sensor adjustment
- Marking and engraving technology
- Laboratory equipment

 **Available in 3-8 days**
Detailed information about delivery time online.

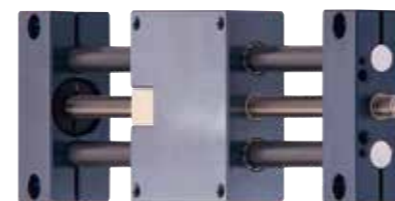
 **Price breaks online**
No minimum order value. No minimum order quantity

 **Carriage lengths: 30-180mm**
Pitch: 2-100mm/rotation
Stroke lengths: up to 1,500mm

 **Product finder**
▶ www.igus.eu/sht-productfinder

 **Configure SHT modules quickly and easily online**
▶ www.igus.eu/drylin-sht-configurator

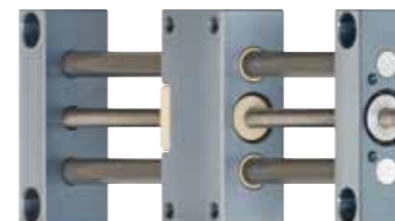
100% lubrication and maintenance-free



SHT linear module - standard

- Solid design
- Three different sizes
- Various materials for shaft and lead screw
- Maintenance-free and optionally corrosion-resistant

▶ Page 1594



SHTC linear module - variable

- Design flexibility due to short carriages
- Ideal for 2 carriages
- 5 sizes from Ø 12 up to 50mm

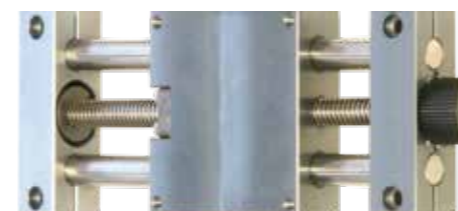
▶ Page 1596



SHT-BB linear module - ball-bearing supported

- Higher rotation speed and higher precision
- Belt drive permits radial loads
- Constant drive torque
- Less axial clearance

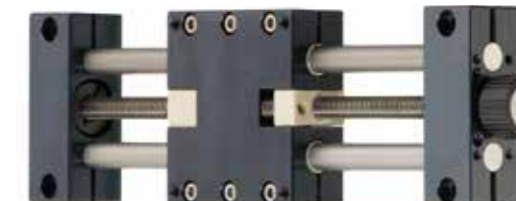
▶ Page 1598



SHT linear module made from stainless steel

- All components (shaft end supports, carriages, shafts, lead screws) made of corrosion-resistant stainless steel
- Select bearings from three different iglidur® materials

▶ Page 1600



SHT-PL linear modules, pre-load

- Pre-loaded trapezoidal lead screw nuts, pre-load force: 50N
- Manually and continuously adjustable radial clearance
- Lightweight due to aluminium and polymer

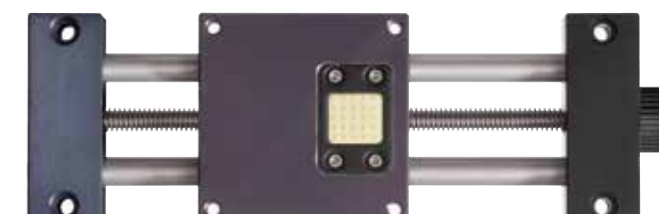
▶ Page 1595



SHTS linear module - the fast one

- With high helix lead screw
- High-speed solution for fast positioning
- Up to 100mm stroke/rotation

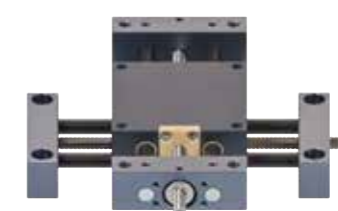
▶ Page 1597



SHT-FF linear module - "Fast-Forward"

- With quick-release mechanism
- Precise and fast positioning
- Including self-locking brake
- Only recommended for horizontal applications

▶ Page 1602



XY-tables

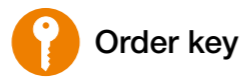
- XY tables standard and pre-load

▶ Page 1604

Self-locking



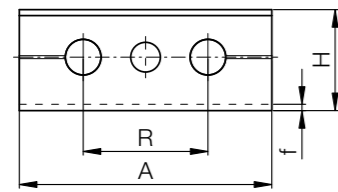
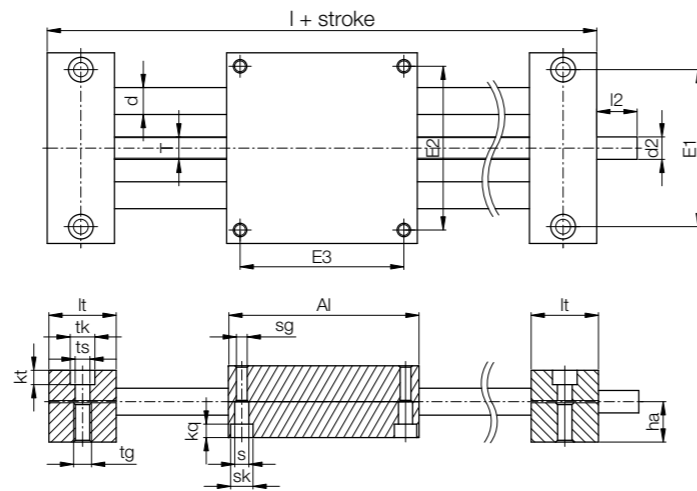
- Solid design
- Various materials for shaft and lead screw
- Maintenance-free and optionally corrosion-resistant
- Tr6x2, Tr10x2, Tr18x4, Tr24x5
- Temperature-resistant up to +60°C
- Accessories available
▶ **Page 1683**
- Lead screw nuts are available separately ▶ **Page 1540**
- **Available with motor**



Order example

SHT-12-AWM

Standard	Installation size	Shaft material
----------	-------------------	----------------



Configurable online
▶ www.igus.eu/drylin-SHT-configurator

Technical data

Part No.	Max. stroke length	Aluminium shaft		Steel shaft		Max. static load capacity	
		Weight	addit. (per 100mm)	Weight	addit. (per 100mm)	axial	radial
	[mm]	[kg]	[kg]	[kg]	[kg]	[N]	[N]
SHT-08-AWM	300	0.24	0.05	0.27	0.1	100	360
SHT-12-AWM	750	1.1	0.1	1.3	0.2	700	2,800
SHT-20-AWM	1,000	3.2	0.3	3.9	0.6	1,600	6,400
SHT-30-AWM	1,250	8.6	0.6	10.9	1.4	2,500	10,000

Dimensions [mm]

Part No.	A	AI	H	E1	E2	E3	I	R	f	lt	tk	ts
	-0.3	-0.3		±0.15	±0.15	±0.15						
SHT-08-AWM	65	65	23	52	55	55	96	32	1.5	15.5	10	5.5
SHT-12-AWM	85	85	34	70	73	73	145	42	2	30	11	6.6
SHT-20-AWM	130	130	48	108	115	115	202	72	2	36	15	9.0
SHT-30-AWM	180	180	68	150	158	158	280	96	4	50	20	13.5

Part No.	tg	kt	Øs	sk	sg	kq	d	T	l2	d2	ha
	±0.1	±0.1								Standard	
SHT-08-AWM	M6x8	7	4.2	8	M5	4.6	8	Tr6x2	17	Tr6x2	13
SHT-12-AWM	M8x18	6.4	5.3	10	M6	6.0	12	Tr10x2 ¹⁵⁷⁾	17	Tr10x2 ⁹²⁾ 157)	18
SHT-20-AWM	M10x23	8.6	6.4	11	M8	7.0	20	Tr18x4	26	12h9	23
SHT-30-AWM	M16x25	12.6	11.0	18	M12	10.6	30	Tr24x5	38	14h9	36

⁹²⁾ Lead screw end unmachined; ¹⁵⁷⁾ Also available with Tr10x3

Axial pre-load, radial adjustment



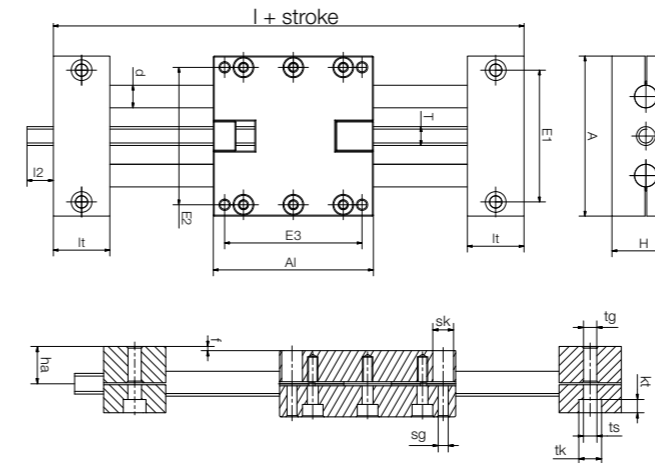
Pre-loaded trapezoidal lead screw nut



Order example

SHT-12-AWM-PL

Standard	Installation size	Shaft material	Clearance-free, pre-loaded
----------	-------------------	----------------	----------------------------



- Pre-loaded trapezoidal lead screw nuts, pre-load force: 50N
- Manually and continuously adjustable radial clearance
- Lightweight due to aluminium and polymer
- Lead screw end unmachined
- Temperature-resistant up to +60°C
- Accessories available ▶ **Page 1683**
- Lead screw nuts are available separately ▶ **Page 1540**
- **Available with motor**

Configurable online
▶ www.igus.eu/drylin-SHT-configurator

Technical data

Part No.	Max. stroke length	Aluminium shaft		Steel shaft		Max. static load capacity	
		Weight	addit. (per 100mm)	Weight	addit. (per 100mm)	axial	radial
	[mm]	[kg]	[kg]	[kg]	[kg]	[N]	[N]
SHT-12-AWM-PL	750	1.1	0.1	1.3	0.2	700	2,800
SHT-20-AWM-PL	1,000	3.2	0.3	3.9	0.6	1,600	6,400
SHT-30-AWM-PL	1,250	8.6	0.6	10.9	1.4	2,500	10,000

Dimensions [mm]

Part No.	A	AI	H	E1	E2	E3	I	R	f	lt	tk	ts
	-0.3	-0.3		±0.15	±0.15	±0.15						
SHT-12-AWM-PL	85	85	34	70	73	73	145	42	2	30	11	6.6
SHT-20-AWM-PL	130	130	48	108	115	115	202	72	2	36	15	9.0
SHT-30-AWM-PL	180	180	68	150	158	158	280	96	4	50	20	13.5

Part No.	tg	kt	sk	sg	d	T	l2	d2	ha
		±0.1						Standard	
SHT-12-AWM-PL	M8x18	6.4	10	M6	12	Tr10x2 ¹⁵⁷⁾	17	Tr10x2 ⁹²⁾ 157)	18
SHT-20-AWM-PL	M10x23	8.6	11	M8	20	Tr18x4	26	12h9	23
SHT-30-AWM-PL	M16x25	12.6	18	M12	30	Tr24x5	38	14h9	36

⁹²⁾ Lead screw end unmachined; ¹⁵⁷⁾ Also available with Tr10x3

Compact design



- Design flexibility
- Ideal for 2 carriages
- Adjustable bearing clearance
- Accessories available
 - ▶ Page 1683
- Lead screw nuts are available separately ▶ Page 1540
- Available with motor



Order key



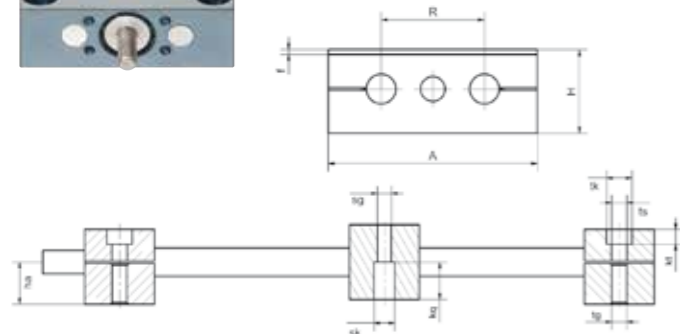
Order example

SHTC-12-AWM

Flexible

Installation size

Shaft material



Configurable online

▶ www.igus.eu/drylin-SHT-configurator

Technical data and dimensions [mm]

Part No.	Max. stroke length [mm]	Aluminium shaft		Steel shaft		Max. static load capacity	
		Weight [kg]	addit. (per 100mm) [kg]	Weight [kg]	addit. (per 100mm) [kg]	axial [N]	radial [N]
SHTC-08-AWM	300	0.2	0.05	0.23	0.1	100	360
SHTC-12-AWM	750	0.7	0.1	0.8	0.2	700	2,800
SHTC-20-AWM	1,000	1.9	0.3	2.3	0.6	1,600	6,400
SHTC-30-AWM	1,250	4.6	0.6	5.8	1.4	2,500	10,000
SHTC-40-SWMH	1,500	11.0	0.9	16.0	2.4	4,000	16,000
SHTC-50-SWMH	1,500	17.0	1.2	26.3	3.5	6,250	25,000

Part No.	A	Al	H	E1	E2	I	R	f	lt	tk	ts	tg
	-0.3	-0.3		±0.15	±0.15							
SHTC-08-AWM	65	38	23	55	55	69	32	1.5	15.5	10	5.5	M6x8
SHTC-12-AWM	85	30	34	70	73	90	42	2	30	11	6.6	M8x18
SHTC-20-AWM	130	36	48	108	115	108	72	2	36	15	9.0	M10x23
SHTC-30-AWM	180	50	68	150	158	150	96	4	50	20	13.5	M16x25
SHTC-40-SWMH	230	70	84	202	202	210	122	4	70	20	13.5	M16x40
SHTC-50-SWMH	280	80	100	250	250	240	152	4	80	20	13.5	M16x35

Part No.	kt	sk	sg	kq	d	T	l2	d2	ha
	±0.1							Standard	
SHTC-08-AWM	7	8	M5	4.6	8	Tr6x2	17	Tr6x2	13
SHTC-12-AWM	6.4	10	M6	6.0	12	Tr10x2 ¹⁵⁷⁾	17	Tr10x2 ^{92) 157)}	18
SHTC-20-AWM	8.6	11	M8	7.0	20	Tr18x4	26	12h9	23
SHTC-30-AWM	12.6	18	M12	10.6	30	Tr24x5	38	14h9	36
SHTC-40-SWMH	12.6	20	M16	39	40	Tr26x5	45	16h9	44
SHTC-50-SWMH	12.6	20	M16	49	50	Tr30x6	50	20h9	52

⁹²⁾ Lead screw end unmachined; ¹⁵⁷⁾ Also available with Tr10x3

The fast one with dryspin® high helix thread



- Pitch Ds10x12, Ds10x50, Ds18x100
- High-speed solution
- Accessories available
 - ▶ Page 1683
- Lead screw nuts are available separately ▶ Page 1540
- Available with motor



reddot design award
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Order key



Order example

SHT S-12-AWM-10x12

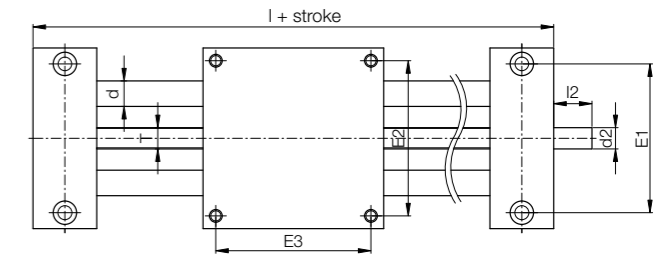
Standard

High helix thread

Dimension

Shaft material

Pitch



Configurable online

▶ www.igus.eu/drylin-SHT-configurator



The complete overview of the available lead screw sizes can be found on ▶ Page 1580

Technical data and dimensions [mm]

Part No.	Max. stroke length [mm]	Aluminium shaft		Max. static load capacity	
		Weight [kg]	additional (per 100mm) [kg]	axial [N]	radial [N]
SHTS-12-AWM-10x12	750	1.1	0.1	100	400
SHTS-12-AWM-10x50	750	1.1	0.1	100	400
SHTS-20-AWM-18x100	1,000	3.2	0.3	400	1,600
SHTS-30-AWM-20x5 New	1,000	8.6	0.6	1,000	4,000

Dimensions [mm]

Part No.	A	Al	H	E1	E2	E3	I	R	f	lt	tk	ts	tg
				±0.15	±0.15	±0.15							
SHTS-12-AWM-10x12	85	85	34	70	73	73	145	42	2	30	11	6.6	M6x8
SHTS-12-AWM-10x50	85	85	34	70	73	73	145	42	2	30	11	6.6	M6x8
SHTS-20-AWM-18x100	130	130	48	108	115	115	202	72	2	36	15	9.0	M10x23
SHTS-30-AWM-20x5 New	180	180	68	150	158	158	280	96	4	50	20	13.5	M16x25

Part No.	kt	Øs	sk	sg	kq	d	T	l2	d2	ha
	±0.1								Standard	
SHTS-12-AWM-10x12	6.4	6.3	10	M6	6.0	12	10x12	17	Ds10x12 ⁹²⁾	18
SHTS-12-AWM-10x50	6.4	6.3	10	M6	6.0	12	10x50	17	Ds10x50 ⁹²⁾	18
SHTS-20-AWM-18x100	8.6	6.4	11	M8	7.0	20	18x100	26	12h9	23
SHTS-30-AWM-20x5 New	12.6	11	18	M12	10.6	30	Ds20x5	38	14h9	36

⁹²⁾ Lead screw end unmachined

With ball bearing supported lead screw



- Higher speeds
- Higher precision
- Reduced axial clearance
- Belt drive permits radial loads
- Constant drive torque
- Zero-backlash function available for sizes 08 and 12
- Accessories available
▶ Page 1683
- Lead screw nuts are available separately ▶ Page 1540
- Available with motor



Order key



Order example

SHT-BB-12-AWM

Standard	Ball bearing	Installation size	Shaft material
----------	--------------	-------------------	----------------



Order key

Order example

SHT-08-ZB-AWM

Standard	Installation size	Ball bearing, zero-backlash	Shaft material
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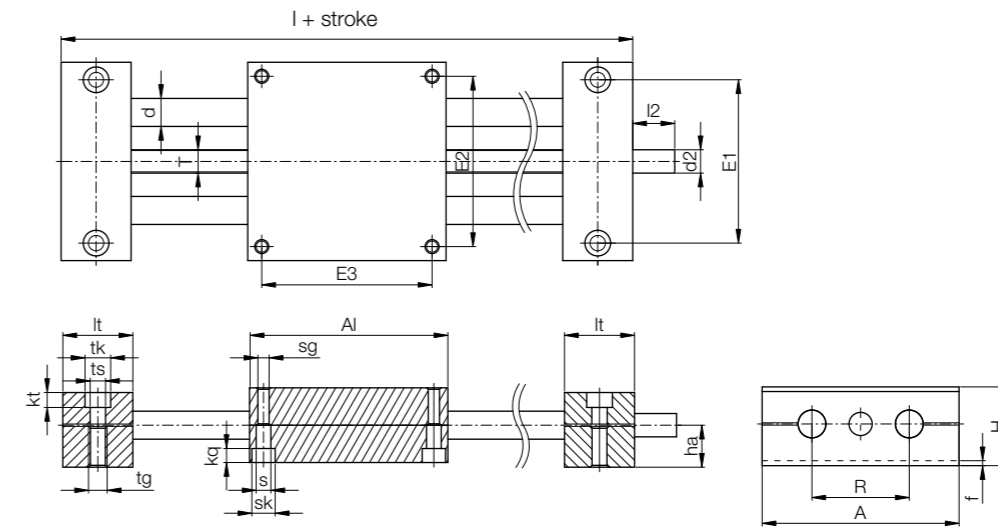


Configurable online

▶ www.igus.eu/drylin-SHT-configurator

Technical data

Part No.	Max. stroke length [mm]	Aluminium shaft		Steel shaft		Max. static load capacity	
		Weight [kg]	addit. (per 100mm) [kg]	Weight [kg]	addit. (per 100mm) [kg]	axial [N]	radial [N]
SHTC-08-ZB-AWM	300	0.240	0.05	0.270	0.094	100	360
SHT-08-ZB-AWM-6X2P1	300	0.205	0.05	0.228	0.103	100	400
SHT-08-ZB-AWM-6.35x12.7	300	0.205	0.05	0.228	0.103	100	400
SHT-12-ZB-AWM-10x12	500	1.1	0.1	1.3	0.2	150	600
SHT-BB-12-AWM	500	1.1	0.1	1.3	0.2	350	1,400
SHT-BB-20-AWM	900	3.2	0.3	3.9	0.6	1,000	4,000
SHT-BB-30-AWM	1,000	8.6	0.6	10.9	1.4	1,500	6,000



Dimensions [mm]

Part No.	A	AI	H	E1	E2	E3	I	R	f	lt	tk	ts
	-0.3	-0.3		±0.15	±0.15	±0.15						
SHTC-08-ZB-AWM	65	38	23	52	55	26	96	32	1.5	15.5	10	5.5
SHT-08-ZB-AWM-6X2P1	65	65	23	52	55	55	96	32	1.5	15.5	10	5.5
SHT-08-ZB-AWM-6.35x12.7	65	65	23	52	55	55	96	32	1.5	15.5	10	5.5
SHT-12-ZB-AWM-10x12	85	85	34	70	73	73	145	42	2	30	11	6.6
SHT-BB-12-AWM	85	85	34	70	73	73	145	42	2	30	11	6.6
SHT-BB-20-AWM	130	130	48	108	115	115	202	72	2	36	15	9.0
SHT-BB-30-AWM	180	180	68	150	158	158	280	96	4	50	20	13.5

Part No.	tg	kt	Øs	sk	sg	kq	d	T	l2	d2	ha
		±0.1								Standard	
SHTC-08-ZB-AWM	M6x8	7	4.2	8	M5	4.6	8	6 / 6.35	15	6 / 6.35	13
SHT-08-ZB-AWM-6X2P1	M6x8	7	4.2	8	M5	4.6	8	Tr6x2	15	Tr6x2 ⁹²⁾	13
SHT-08-ZB-AWM-6.35x12.7	M6x8	7	4.2	8	M5	4.6	8	6.35x12.7	15	6.35 ⁹²⁾	13
SHT-12-ZB-AWM-10x12	M8x18	6.4	6.3	10	M6	6.0	12	10x12	17	10x12 ⁹²⁾	18
SHT-BB-12-AWM	M8x18	6.4	6.3	10	M6	6.0	12	Tr10x2	17	Tr10x2 ⁹²⁾	18
SHT-BB-20-AWM	M10x23	8.6	6.4	11	M8	7.0	20	Tr18x4	26	12h9	23
SHT-BB-30-AWM	M16x25	12.6	11.0	18	M12	10.6	30	Tr24x5	38	14h9	36

⁹²⁾ Lead screw end unmachined

Made of stainless steel



- Corrosion-resistant carriages and shaft end supports made of stainless steel
- High grade stainless steel shafts (AISI 440B)
- Choice of bearing material:
iglidur® J = Standard
iglidur® A180 = FDA-compliant
iglidur® X = High temperature up to +150°C¹¹⁷⁾
- Can be configured online as SHTC compact version

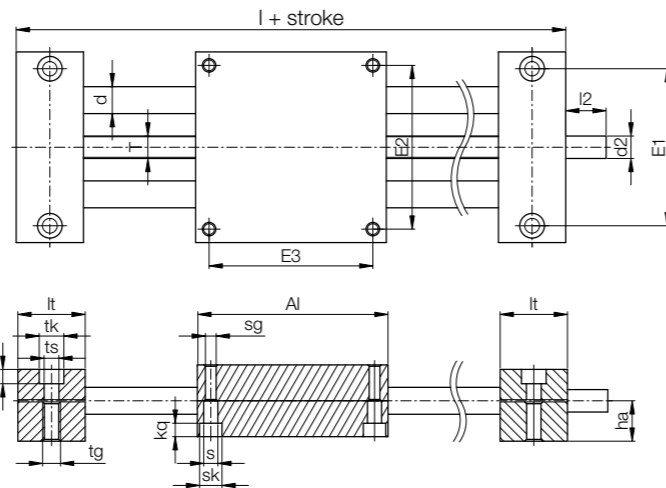
Order key



Order example

SHT-ES J - 08

Standard	Stainless steel	Bearing material	Installation size
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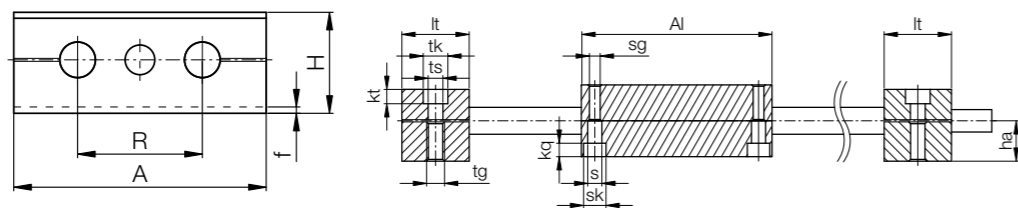


Configurable online

► www.igus.eu/drylin-SHT-configurator



reddot design award
winner 2006



Technical data

Part No.	Max. stroke length [mm]	Steel shaft			Max. static load capacity	
		Weight [kg]	additional (per 100mm) [kg]	axial [N]	radial [N]	
SHT-ESJ-08	300	1.01	0.1	100	360	
SHT-ESJ-12	750	2.81	0.24	700	2,800	
SHT-ESJ-20	1,000	8.72	0.7	1,600	6,400	
SHT-ESJ-30	1,250	24.11	1.47	2,500	10,000	

Dimensions [mm]

Part No.	A	Al	H	E1	E2	E3	I	R	f	lt	tk	ts
	-0.3	-0.3		±0.15	±0.15	±0.15						
SHT-ESJ-08	65	65	23	52	55	55	96	32	1.5	15.5	10	5.5
SHT-ESJ-12	85	85	34	70	73	73	145	42	2	30	11	6.6
SHT-ESJ-20	130	130	48	108	115	115	202	72	2	36	15	9.0
SHT-ESJ-30	180	180	68	150	158	158	280	96	4	50	20	13.5

Part No.	tg	kt	Øs	sk	sg	kq	d	T	I2	d2	ha
		±0.1								Standard	
SHT-ESJ-08	M6x8	7	4.2	8	M5	4.6	8	Tr6x2	17	Tr6x2	13
SHT-ESJ-12	M8x18	6.4	6.3	10	M6	6.0	12	Tr10x2	17	Tr10x2 ⁹²⁾	18
SHT-ESJ-20	M10x23	8.6	6.4	11	M8	7.0	20	Tr18x4	26	12h9	23
SHT-ESJ-30	M16x25	12.6	11.0	18	M12	10.6	30	Tr24x5	38	14h9	36

⁹²⁾ Lead screw end unmachined

¹¹⁷⁾ In the event of severe temperature fluctuations during transport, storage and use, thermal expansion effects cannot be ruled out

Hygienic design



Order key

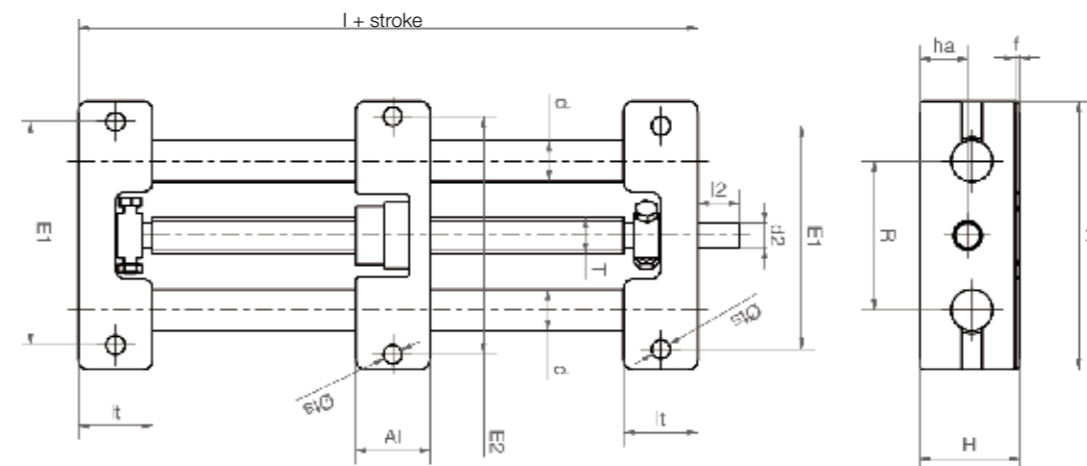


Order example

SHTC-20-EWM-HYD

Flexible	Dimension	Shaft material	Hygienic design
----------	-----------	----------------	-----------------

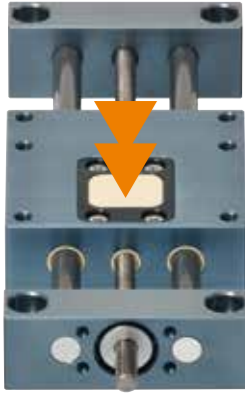
- Lightweight
- For washdown
- Wide gaps
- Materials: plastic and stainless steel
- Lead screw nuts made of FDA-compliant iglidur® A180
- Accessories available ► **Page 1683**



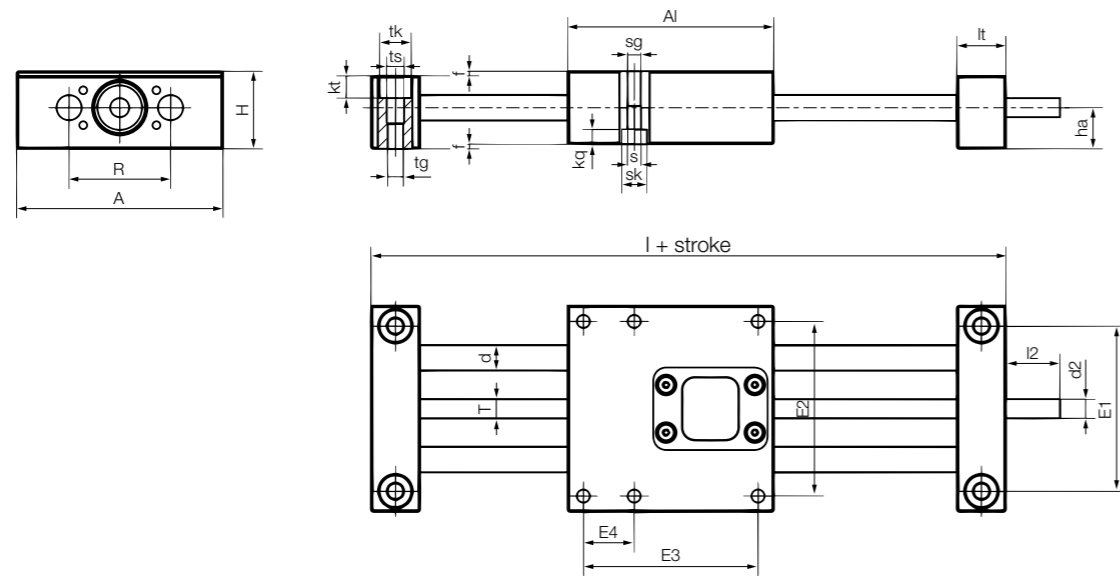
The lead screw linear unit can be delivered with complete FDA-compliant materials.

Dimensions [mm]

Part No.	A	Al	H	E1	E2	I	R	f	lt	ts	d	T	I2	d2	ha
	-0.3	-0.3		±0.15	±0.15										
SHTC-20-EWM-HYD	130	35	48	108	115	108	72	2	36	9.0	20	Tr18x4	26	12 h9	23



- Fast manual format adjustments
- Precise aluminium version
- Variable stroke length
- Multi-carriage solutions
- Recommended only for horizontal applications
- Accessories available ► **Page 1683**
- Available with motor



Technical data

Part No.	Max. stroke length	Aluminium shaft		Max. static axial load
		Weight	addit. (per 100mm)	
	[mm]	[kg]	[kg]	[N]
SHT-08-AWM-FF	300	0.35	0.04	100
SHT-12-AWM-FF	750	1.1	0.1	150

Dimensions [mm]

Part No.	A	Al	H	E1	E2	E3	E4	I	R	It	I2	d2
SHT-08-AWM-FF	65	65	23	52	55	55	16	96	32	15.5	17	6
SHT-12-AWM-FF	85	85	34	70	73	73		145	42	30	17	Tr10x2 ⁹²⁾

Part No.	f	tk	ts	tg	kt	Øs	sk	sg	kg	d	T	ha
		±0.1								Standard		
SHT-08-AWM-FF	1.5	10	5.5	M6x8	7	4.2	8	M5	4.6	8	6	13
SHT-12-AWM-FF	2	11	6.6	M8x18	6.4	6.3	10	M6	6.0	12	Tr10x2	18

⁹²⁾ Lead screw end unmachined



- Fast manual format adjustments
- Aluminium version
- For fast format adjustments
- Including self-locking brake
- Variable stroke length
- Only recommended for horizontal applications
- Max. stat. axial load 200N (horizontal mounting position)
- Max. dynamic. axial load 50N
- Accessories available
- **Page 1683**
- Available with motor

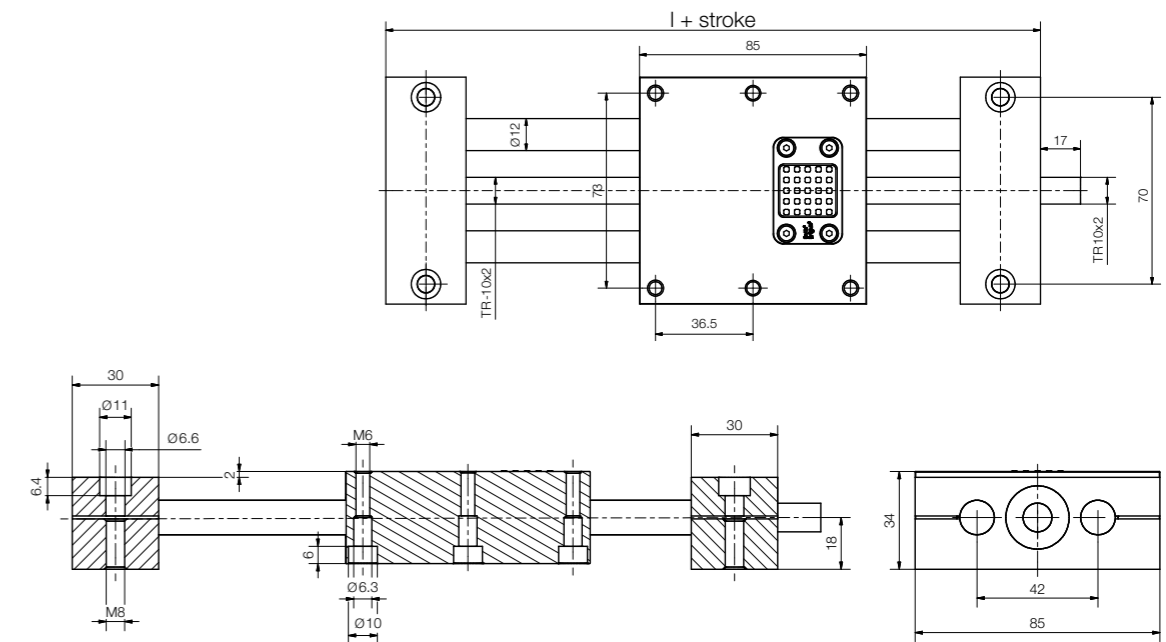


Order key

Order example

SHT-12-AWM-FF

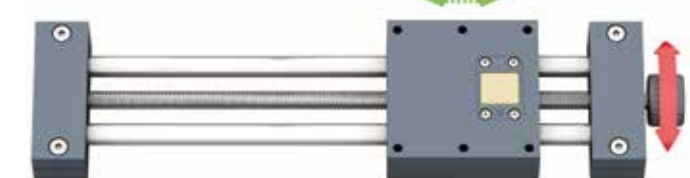
Standard	Installation size	Shaft material	Fast Forward
----------	-------------------	----------------	--------------



1.



2.



press > disengage > move manually > click into place > fine-tuning



Order key

Order example

SHT-XY-12-AWM-PL-R

Standard	XY table	Dimension	Shaft material	Pre-load (optional)	Unit
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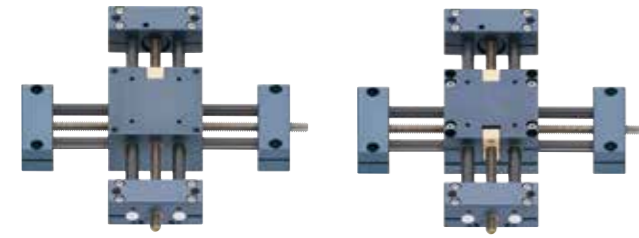
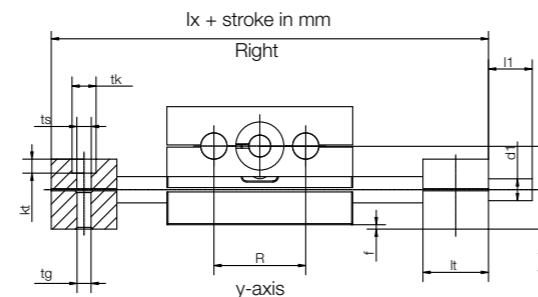
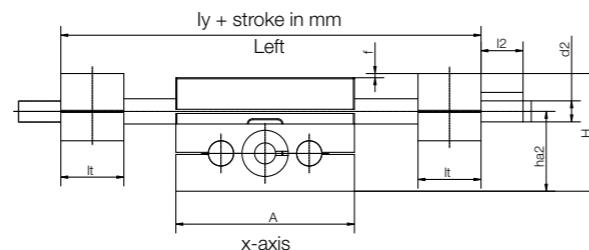
Options: unit

R: y-unit

right adjustment

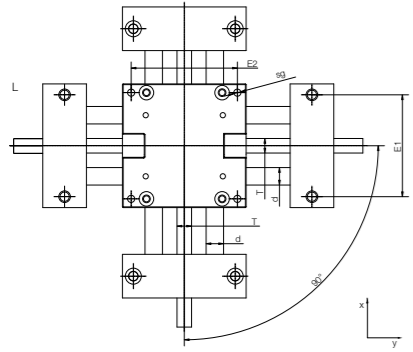
L: y-unit

left adjustment



drylin® SHT

drylin® SHT-PL



- Available as standard and pre-loaded version
- High precision, extreme stiffness and accurate alignment due to the single-piece carriage
- Adjustments by trapezoidal thread
- Assembly of upper unit with left or right alignment possible
- Accessories available ▶ **Page 1683**

Select versions and accessories online
▶ www.igus.eu/drylinSHT

Dimensions [mm]

Part No.	Max. stroke length [mm]	A	H	E1	E2	Base length lx	Base length ly	R	f	l1	tk	ts	tg	kt
SHT-XY-08-AWM	150	65	42	52	56	96	96	32	1.5	15.5	10	5.5	M6x8	7
SHT-XY-12-AWM	350	85	56	70	73	145	145	42	2	30	11	6.6	M8x18	6.4
SHT-XY-12-AWM-PL	350	85	56	70	73	145	145	42	2	30	11	6.6	M8x18	6.4
SHT-XY-20-EWM-PL ⁹³⁾	500	130	86	108	115	202	202	72	2	36	15	9.0	M10x23	8.6

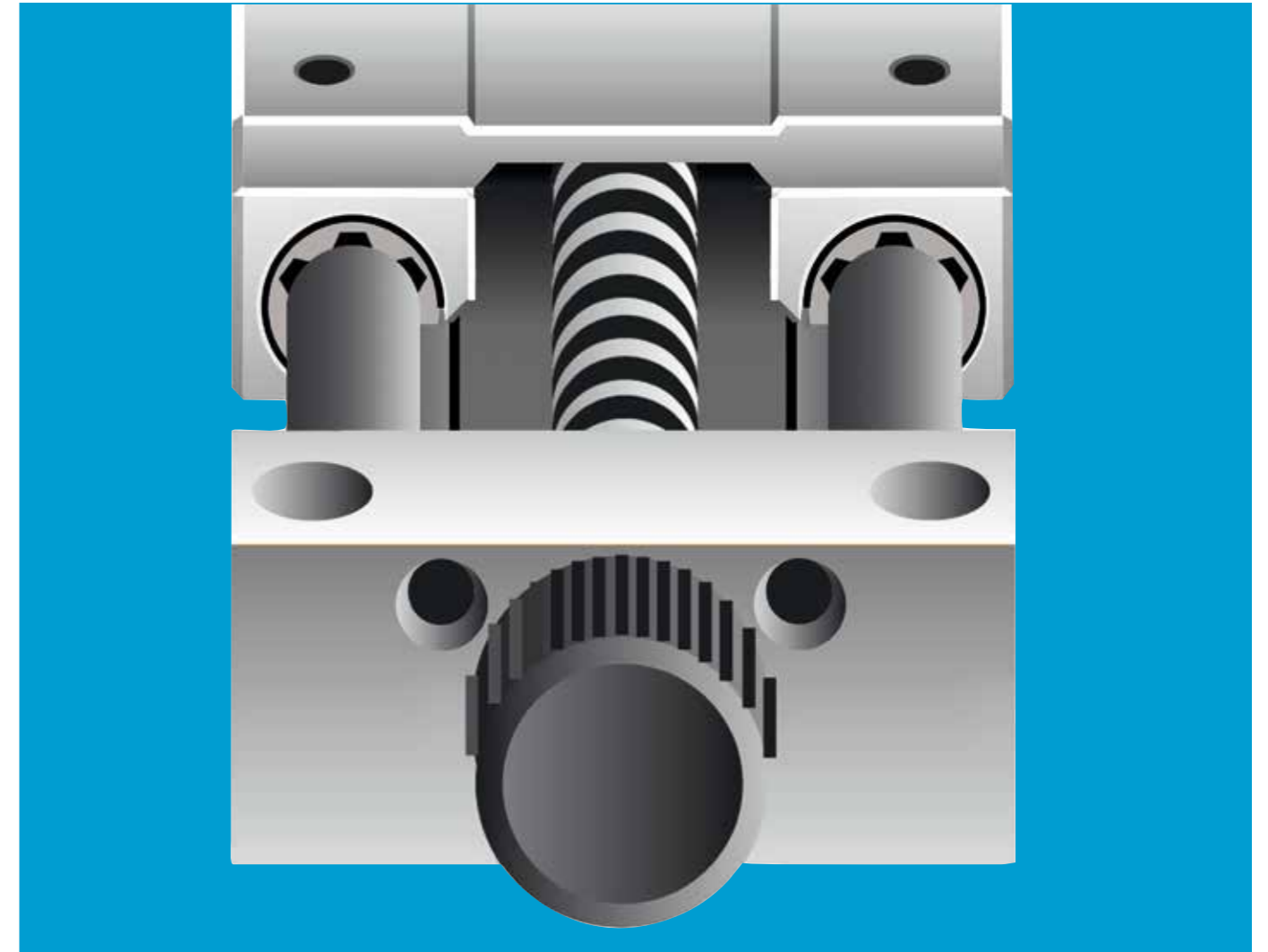
Part No.	sg	d	T	l1	d1		l2	d2		ha1	ha2	W
					Standard	Alternative		Standard	Alternative			
SHT-XY-08-AWM	M5	8	Tr6x2/ Tr6.35x2.54	15	Tr6x2/ Tr6.35x2.54	-	15	5	-	13	29	16
SHT-XY-12-AWM	M6	12	Tr10x2	17	Tr10x2	6 h9	17	Tr10x2	6 h9	18	38	20
SHT-XY-12-AWM-PL	M6	12	Tr10x2	17	Tr10x2	6 h9	17	Tr10x2	6 h9	18	38	20
SHT-XY-20-EWM-PL ⁹³⁾	M8	20	TR18x4	26	TR18x4	12 h9	26	12 h9	-	23	63	40

Required accessories (e.g. hand wheel) can be ordered left- or right-mounted in the y-direction.

Order example for SHT-XY-12-AWM-L-200-300-HR, left adjustment, stroke 200/300mm, two hand wheels

⁹³⁾ For size 20 we recommend stainless steel shafts (EWM), AWM also available

1604 Online tools and more information ▶ www.igus.eu/drylinSHT



drylin® general drive technology - SLW linear modules

Lubrication-free linear modules based on drylin® W guides

Drive: Trapezoidal or high helix lead screw

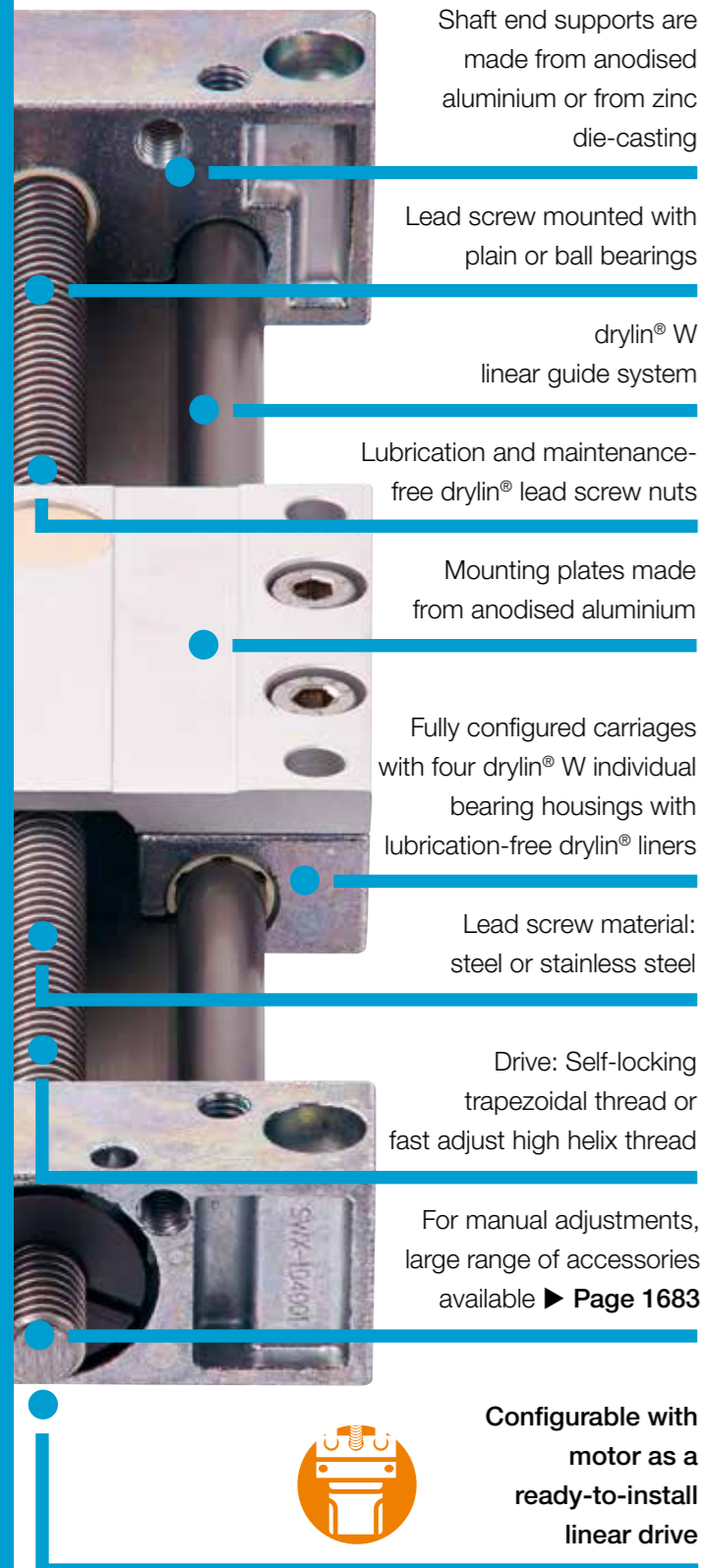
Torsion-resistant double shaft systems

Many carriage and rail options

Suitable for manual and motor-operated adjustments



Modular design



Shaft end supports are made from anodised aluminium or from zinc die-casting

Lead screw mounted with plain or ball bearings

drylin® W linear guide system

Lubrication and maintenance-free drylin® lead screw nuts

Mounting plates made from anodised aluminium

Fully configured carriages with four drylin® W individual bearing housings with lubrication-free drylin® liners

Lead screw material: steel or stainless steel

Drive: Self-locking trapezoidal thread or fast adjust high helix thread

For manual adjustments, large range of accessories available ▶ Page 1683



Configurable with motor as a ready-to-install linear drive

Lubrication-free linear modules - drylin® SLW

Torsion-resistant aluminium double shaft rails with many carriage versions characterise the drylin® W product range, and form a well rounded modular kit for the drylin® SLW linear modules. The modules are low profile, as well as robust. The drylin® SLW linear modules are ideal for manual adjustments, but can also be fitted with a motor to make an electrical linear actuator.

- Variable carriage widths and lengths
- Flat drylin® guide rails or high profile
- Corrosion-resistant option made of stainless steel available

Typical application areas

- Format and lane adjustments
- Packaging technology
- Height adjustments
- 3D printer
- Camera adjustment



Available in 3-8 days
Detailed information about delivery time online.



Price breaks online
No minimum order value. No minimum order quantity



Carriage lengths: 60-250mm
Carriage widths: 54-195mm
Stroke lengths: up to 1,250mm



Product finder
▶ www.igus.eu/slw-productfinder

Flat and torsion-resistant



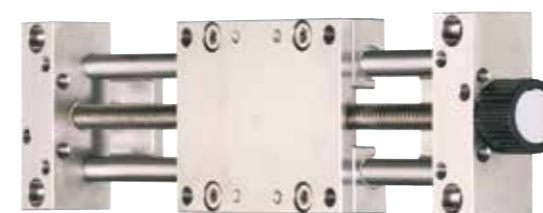
SLW linear module - compact

- High torsional stability, fully supported
 - Cost-effective
 - Shaft end supports made from zinc, anodised aluminium or plastic (depending on installation size)
- ▶ Page 1608



SLWE-BB linear module, ball bearing

- Efficient and dynamic
 - Quiet, reduced clearance
 - Up to 1,500rpm (depending on length and load)
- ▶ Page 1613



SLW-ES linear module - stainless steel version

- With corrosion-resistant steel components
 - Choice of bearing material: iglidur® J (standard), iglidur® A180 (FDA-compliant), iglidur® X (high temperature up to +150°C)
 - For environments involving contact with water and chemicals
- ▶ Page 1618



SLWE-PL linear module, pre-load

- Lubrication-free and precise
 - Pre-loaded trapezoidal lead screw nut (pre-load force: 50N)
 - Manually adjustable radial clearance, reduction of the axial clearance
- ▶ Page 1611



SLWS linear module with dryspin® high helix technology

- Fast positioning
 - High-helix lead screw drives
 - Up to 100mm stroke per rotation
- ▶ Page 1614



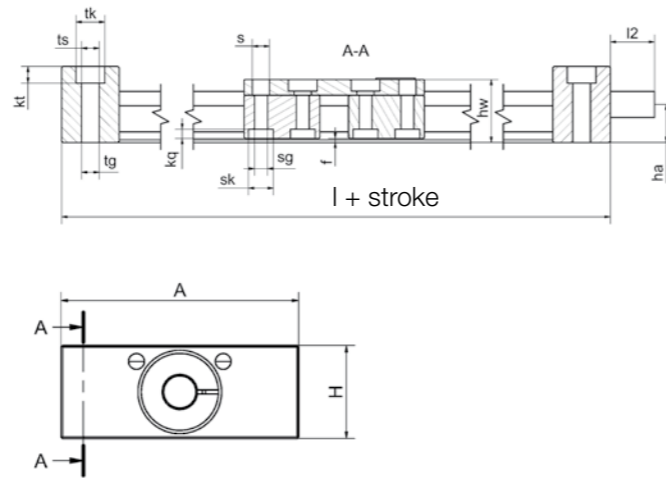
Linear module special designs

- SLW with protect mechanism for applications with high levels of dirt
 - High flexibility through SLWT with double lead screw
 - XY table solutions
- ▶ Page 1621

Self-locking



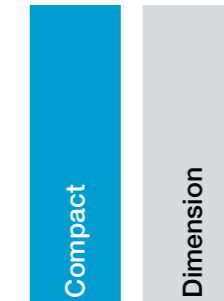
- Flat and compact
- High torsional stability
- Fully supported
- Aluminium drylin® W guide rails, hard-anodised
- Accessories available
▶ Page 1683
- Lead screw nuts are available separately ▶ Page 1542
- Available with motor



 Order key

Order example

SLW-1040



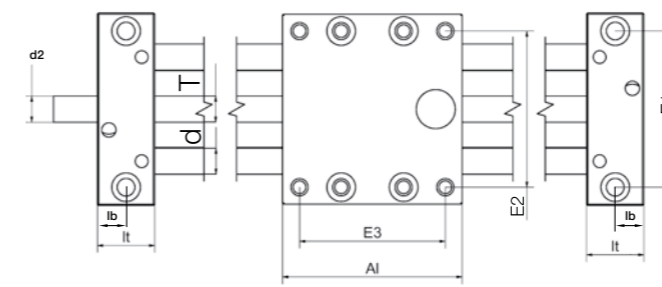
Select versions and accessories online
▶ www.igus.eu/drylinSLW

Technical data and dimensions [mm]

Part No.	Form	Max. stroke length [mm]	Weight [kg]	addit. (per 100mm) [kg]	Max. static load capacity		Shaft end support material
					axial [N]	radial [N]	
SLW-0630	■	300	0.2	0.08	50	200	Polymer
SLW-1040	●	750	0.7	0.10	700	2,800	Zinc die-casting
SLW-1080	●	750	0.9	0.20	700	2,800	Aluminium
SLW-10120	●	750	1.6	0.25	700	2,800	Aluminium
SLW-1660	●	750	1.5	0.30	1,200	4,600	Aluminium
SLW-16120 New	●	750	1.7	0.40	1,200	4,600	Aluminium
SLW-2080	●	1,000	3.0	0.40	1,600	6,400	Aluminium
SLW-25120	●	1,250	5.9	0.90	2,500	10,000	Aluminium

Part No.	A	AI ⁹⁴⁾	H	E1	E2	E3	I
	-0.3	-0.3		±0.15	±0.15	±0.15	
SLW-0630	54	60	20	40	45	51	100
SLW-1040	74	69	29	60	60	56	113
SLW-1080	108	100	29	94	94	87	144
SLW-10120	154	100	29	140	140	87	144
SLW-1660	104	100	37	84	86	82	150
SLW-16120 New	166	100	37	84	86	82	150
SLW-2080	134	150	46	116	116	132	206
SLW-25120	200	150	60	173	173	128	220

⁹²⁾ Lead screw end unmachined; ⁹⁴⁾ Carriages also in 100, 150, 200 and 250mm lengths available upon request



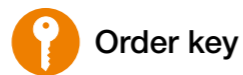
kt	Øs	sk	sg	kq	d	T	l2	d2	ha
±0.1								Standard	
6.0	4.5	7.0	M4	2.0	6	M8	15	M8	9.5
6.4	6.6	9.5	M6	4.4	10	Tr10x2	17	Tr10x2 ⁹²⁾	14.5
6.4	6.6	9.5	M6	4.4	10	Tr10x2	17	Tr10x2 ⁹²⁾	14.5
M8	6.4	9.5	M6	4.4	10	Tr10x2	17	Tr10x2 ⁹²⁾	14.5
8.6	9.0	11	M8	5.5	16	Tr14x4	20	Tr14x4 ⁹²⁾	18.5
8.6	9.0	11	M8	5.5	16	Tr14x4	20	Tr14x4 ⁹²⁾	18.5
8.6	9.0	14	M8	5.5	20	Tr18x4	26	12 h9	23.0
12.6	11.0	15	M10	5.0	25	Tr24x5	38	14 h9	30.0

hw	f	lt	lb	tk	ts	tg
18	1.2	20	8	9	7.0	-
24	1.5	22	11	11	6.8	M8x10
24	1.5	22	11	11	6.8	M8x10
24	1.5	22	11	11	6.8	M8x10
35	1.5	25	12.5	15	9.0	M10x20
35	1.5	25	12.5	15	9.0	M10x20
44	1.5	28	14	15	8.6	M10x15
55	2.5	35	17.5	20	13.5	M16x30

With short carriages



- For small installation spaces
- Save up to 70% installation space with a short linear carriage
- Ideal for multi-carriage or right/left opposite drives



Order key

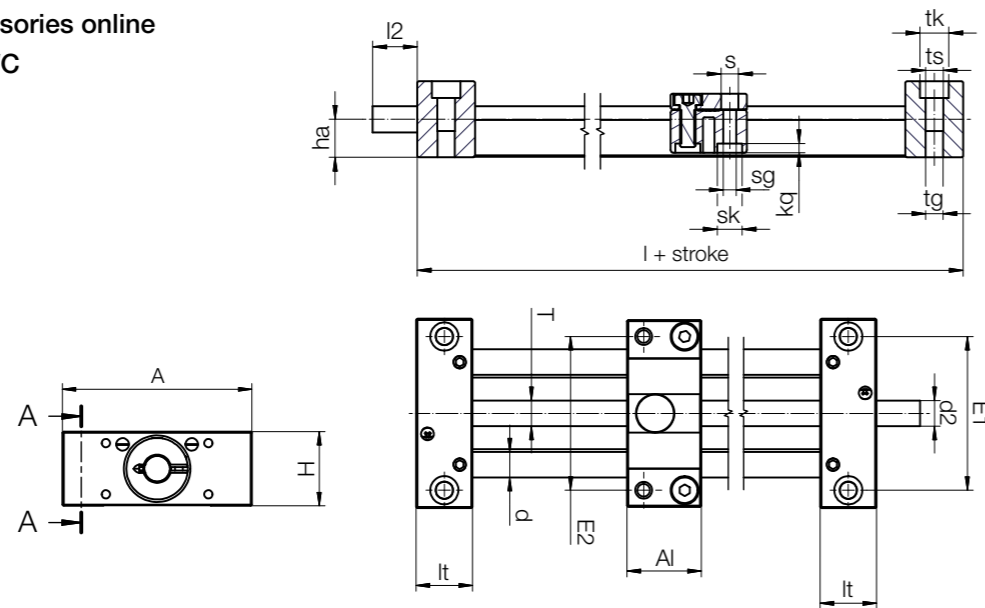


Order example

SLWC-0630



Select versions and accessories online
► www.igus.eu/drylinSLWC



Technical data ► Similar to SLW, page 1608

Dimensions [mm]

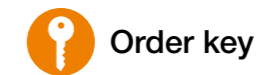
Part No.	A	Al	H	E1	E2	l	hw	f	lt	tk	ts
	-0.3	-0.3		±0.15	±0.15				+0.1	+0.1	
SLWC-0630 New	54	20	20	40	45	60	18	1.2	20	11	6.2
SLWC-1040 New	74	29	29	60	60	73	24	1.5	22	11	6.8
SLWC-1660 New	104	36	37	84	86	86	35	1.5	25	15	9.0
SLWC-2080 New	134	45	46	116	116	101	44	1.5	28	15	8.6
SLWC-25120 New	200	58	60	173	173	128	55	2.5	35	20	13.5

Part No.	tg	kt	Øs	sk	sg	kq	d	T	l2	d2	d2	ha
		±0.1								Standard	Optional	
SLWC-0630 New	M8x12	8.0	4.5	7.0	M4	2.0	6	Tr08x1.5	15	Tr08x1.5	–	9.5
SLWC-1040 New	M8x10	6.4	6.6	9.5	M6	4.4	10	Tr10x2	17	Tr10x2	6 h9	14.5
SLWC-1660 New	M10x20	8.6	9.0	11.0	M8	5.5	16	Tr14x4	20	Tr14x4	8 h9	18.5
SLWC-2080 New	M10x15	8.6	9.0	14.0	M8	5.5	20	Tr18x4	26	12 h9	–	23.0
SLWC-25120 New	M16x30	12.6	11.0	15.0	M8	5.0	25	Tr24x5	38	12 h9	14 h9	30.0

Axial pre-load, radial adjustment



- Radial and axial pre-load
- Manual adjustable clearance
- High torsional stability
- Fully supported
- Aluminium drylin® W guide rails, hard-anodised
- Accessories available
► **Page 1683**
- Lead screw nuts are available separately ► **Page 1540**
- Available with motor



Order key

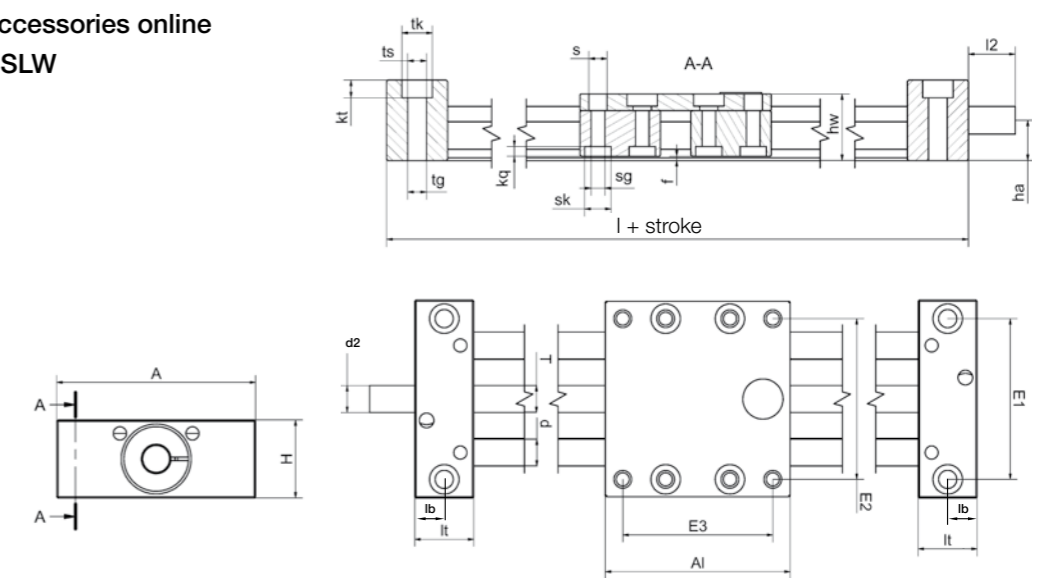


Order example

SLW E - 1040 - PL



Select versions and accessories online
► www.igus.eu/drylinSLW



Technical data ► Similar to SLW, page 1608

Dimensions [mm]

Part No.	A	Al ⁹⁴⁾	H	E1	E2	E3	l	hw	f	lt	lb	tk	ts
	-0.3	-0.3		±0.15	±0.15	±0.15							
SLWE-1040-PL	74	69	29	60	60	56	113	24	1.5	22	11	11	6.8
SLWE-1080-PL	108	100	29	94	94	87	144	24	1.5	22	11	11	6.8
SLWE-10120-PL New	154	100	29	140	140	87	144	24	1.5	22	11	11	6.8
SLWE-1660-PL	104	100	37	84	86	82	150	35	1.5	25	12.5	15	9.0
SLWE-2080-PL	134	150	46	116	116	132	206	44	1.5	28	14	15	8.6

Part No.	tg	kt	Øs	sk	sg	kq	d	T	l2	d2	ha
		±0.1								Standard	
SLWE-1040-PL	M8x10	6.4	6.6	9.5	M6	4.4	10	Tr10x2	17	Tr10x2 ⁹²⁾	14.5
SLWE-1080-PL	M8x10	6.4	6.6	9.5	M6	4.4	10	Tr10x2	17	Tr10x2 ⁹²⁾	14.5
SLWE-10120-PL New	M8x10	M8	6.4	9.5	M6	4.4	10	Tr10x2	17	Tr10x2 ⁹²⁾	14.5
SLWE-1660-PL	M10x20	8.6	9.0	11.0	M8	5.5	16	Tr14x4	20	Tr14x4 ⁹²⁾	18.5
SLWE-2080-PL	M10x15	8.6	9.0	14.0	M8	5.5	20	Tr18x4	26	12 h9	23.0

⁹²⁾ Lead screw end unmachined; ⁹⁴⁾ Carriages also in 100, 150, 200 and 250mm lengths available upon request

With ball bearing supported lead screw



- Lower drive force
- Optimised clearance
- Up to 1,500rpm (depending on length and load)
- Aluminium drylin® W guide rails, hard-anodised
- Quiet operation - reduced vibration of the overall system
- Ball bearings in both shaft end supports
- Accessories available ► **Page 1683**
- Lead screw nuts are available separately
► **Page 1540**
- Available with motor



Select versions and accessories online

► www.igus.eu/drylinSLW

Technical data and dimensions [mm]

Part No.	Design ⁹⁶⁾	Max. stroke length [mm]	Weight [kg]	additional (per 100mm) [kg]	Max. static load capacity		Max. speed [1/min]
					axial [N]	radial [N]	
SLW-BB-0630	■	300	0.25	0.08	100	200	1,000
SLWE-BB-1040	●	500	0.90	0.10	500	2,000	1,500
SLWE-BB-1080	●	500	1.10	0.20	500	2,000	1,500
SLWE-BB-1660	●	750	1.80	0.30	700	2,800	1,500
SLW-BB-16120 New	●	750	1.90	0.40	700	2,800 ¹⁸⁶⁾	1,500
SLWE-BB-2080	●	900	3.30	0.40	1,250	5,000	1,500
SLW-BB-25120	●	1,000	3.30	0.40	1,500	6,000	1,200

Dimensions [mm]

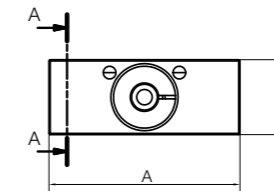
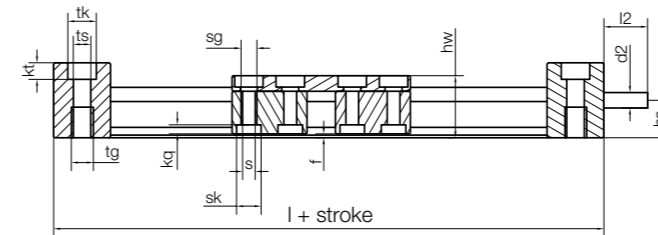
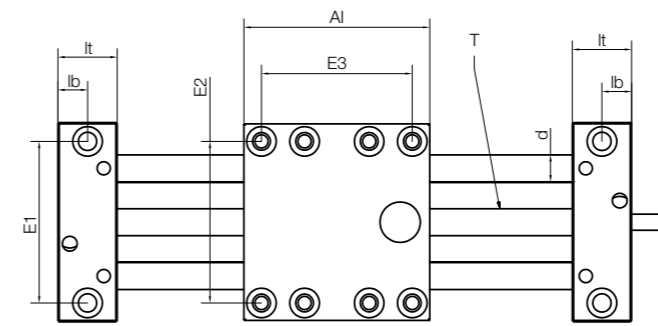
Part No.	A	Al	H	E1	E2	E3
	-0.3	-0.3		±0.15	±0.15	±0.15
SLW-BB-0630	54	60	20	40	45	51
SLWE-BB-1040	74	69	29	60	60	56
SLWE-BB-1080	108	100	29	94	94	87
SLWE-BB-1660	104	100	37	84	86	82
SLW-BB-16120 New	166	150	37	146	148	132
SLWE-BB-2080	134	150	46	116	116	132
SLW-BB-25120	200	150	60	173	173	128

⁹⁵⁾ Version with turned lead screw end available

⁹⁶⁾ Double rail, square ► **Page 1148**, round ► **Page 1154**

¹⁸⁶⁾ Only bearing load without consideration of possible shaft deflection

¹⁸⁷⁾ Other carriage lengths: 200mm and 250mm



Order key



Order example

SLW E -BB-1040



Max. feed rate [m/min]	kt ±0.1	sk	sg	kq	Øs	d	T	l2	d2 Standard	d2 ⁹⁵⁾	ha
1.5	8.0	7.0	M4	2.0	4.5	6	Tr8x1.5	15	Tr08x1.5	-	9.5
3.0	6.4	9.5	M6	4.4	6.6	10	Tr10x2	17	Tr10x2	6 h9	14.5
3.0	6.4	9.5	M6	4.4	6.6	10	Tr10x2	17	Tr10x2	6 h9	14.5
6.0	8.6	11.0	M8	5.5	9.0	16	Tr14x4	20	Tr14x4	8 h9	18.5
4.5	8.6	11.0	M8	5.5	9.0	16	Tr14x3	20	Tr14x3	8 h9	18.5
6.0	8.6	14.0	M8	5.5	9.0	20	Tr18x4	26	12 h9	-	23.0
6.0	12.6	15	M10	5.0	11.0	25	Tr24x5	38	14 h9	-	30.0

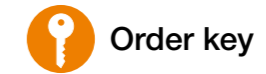
l	hw	f	lt	lb	tk	ts	tg
112	18	1.2	26	14.0	11	6.8	M8x12
129	24	1.5	30	19.0	11	6.8	M8x10
160	24	1.5	30	19.0	11	6.8	M8x10
170	35	1.5	35	22.5	15	9.0	M10x20
200	35	1.5	35	17.5	15	9.0	M10x20
230	44	1.5	40	26.0	15	8.6	M10x15
220	55	2.5	49	17.5	20	13.5	M16x30



- High torsional stability
- Aluminium drylin® W guide rails, hard-anodised
- BB version with ball bearing supported lead screw available
- Accessories available ► **Page 1683**
- Lead screw nuts are available separately ► **Page 1540**

Select versions and accessories online
► www.igus.eu/drylinSLW

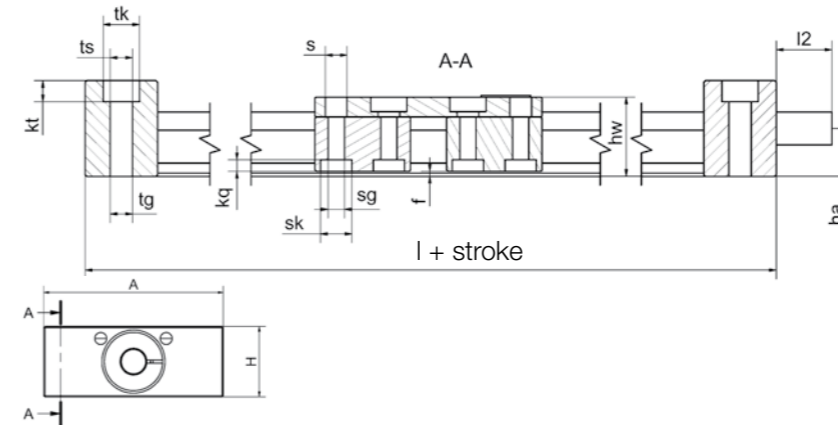
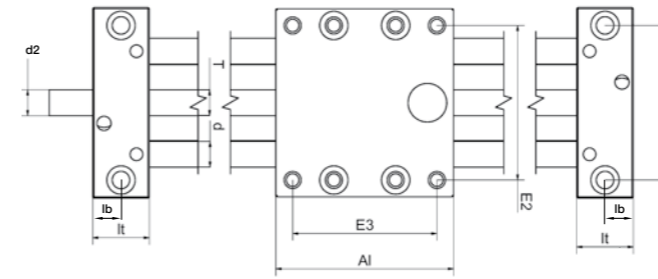
The complete overview of the available lead screw sizes can be found on ► **Page 1580**



Order example

SLW S - 0630 - 08x15

Compact	High helix thread	Dimension	Pitch
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Technical data and dimensions [mm]

Part No.	Design ⁹⁶⁾	Max. stroke length	Weight [kg]	addit. (per 100mm) [kg]	Max. static load capacity	
					axial [N]	radial [N]
SLWS-0630-08x15	■	300	0.2	0.08	50	200
SLWS-1040-10x12	●	750	0.7	0.10	100	400
SLWS-1040-10x50	●	750	0.7	0.10	100	400
SLWS-1080-10x12	●	750	0.9	0.20	100	400
SLWS-1080-10x50	●	750	0.9	0.20	100	400
SLWS-16120	New ●	750	1.5	0.30	250	1,000
SLWS-2080-18x100	●	750	0.9	0.20	400	1,600
SLWS-25120	New ●	1,250	5.9	0.90	1,000	4,000

Part No.	lt	lb	tk	ts	tg	kt ±0.1	Øs
SLWS-0630-08x15	20	10.0	9	7.0	-	6.0	4.5
SLWS-1040-10x12	22	11.0	11	6.8	M8x12	6.4	6.6
SLWS-1040-10x50	22	11.0	11	6.8	M8x10	6.4	6.6
SLWS-1080-10x12	22	11.0	11	6.8	M8x10	6.4	6.6
SLWS-1080-10x50	22	11.0	11	6.8	M8x10	6.4	6.6
SLWS-16120	New 25	12.5	15	9.0	M10x20	8.6	9.0
SLWS-2080-18x100	28	14.0	15	8.6	M10x15	12.6	11.0
SLWS-25120	New 49	17.5	20	13.5	M16x30	12.6	11.0

A	AI	H	E1	E2	E3	I	hw	f
-0.3	-0.3		±0.15	±0.15	±0.15			
54	60	20	40	45	51	100	17.5	1.2
74	69	29	60	60	56	113	24	1.5
74	69	29	60	60	56	113	24	1.5
108	100	29	94	94	87	144	24	1.5
108	100	29	94	94	87	144	24	1.5
166	150	37	146	148	132	200	35	1.5
134	150	46	116	116	132	206	44	1.5
200	150	60	173	173	128	220	55	2.5

sk	sg	kq	d	T	l2	d2	ha
7.0	M4	2.0	6	Ds08x15	15	Ds8x15 ⁹²⁾	9.5
9.5	M6	4.4	10	Ds10x12	17	Ds10x12 ⁹²⁾	14.5
9.5	M6	4.4	10	Ds10x50	17	Ds10x50 ⁹²⁾	14.5
9.5	M6	4.4	10	Ds10x12	17	Ds10x12 ⁹²⁾	14.5
9.5	M6	4.4	10	Ds10x50	17	Ds10x50 ⁹²⁾	14.5
11.0	M8	5.5	16	Tr14x3	20	Tr14x3	18.5
15.0	M8	5.0	25	Ds18x100	38	14 h9	30.0
15.0	M10	5.0	25	Tr24x5	38	14 h9	30.0

⁹²⁾ Lead screw end unmachined ⁹⁶⁾ Double rails, square ► **Page 1148**, round ► **Page 1154**

With protected lead screw



- drylin® W profile rail as a protective mechanism
- Available with pitches 10x2, 10x12, 10x25, 10x50
- Low profile design
- Available with motor

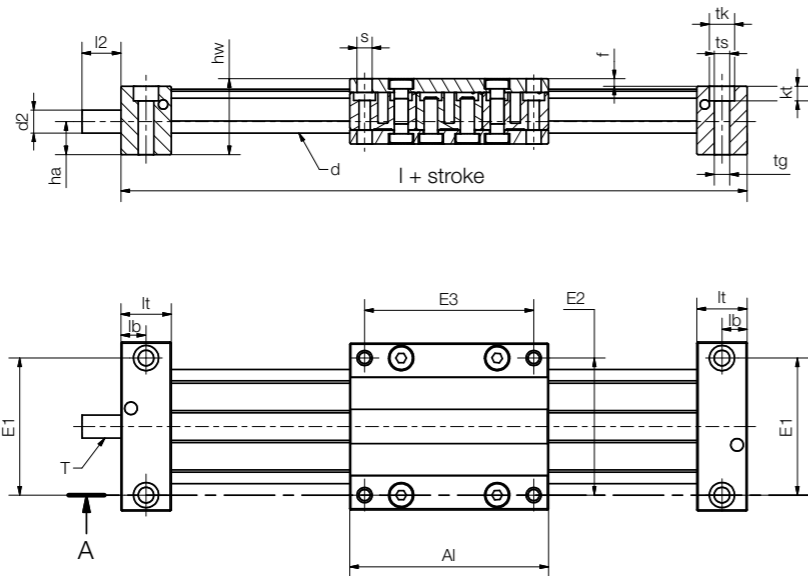
Order key

Order example

SLW-BB-PT-1040



Select versions and accessories online
▶ www.igus.eu/drylinSLW



Technical data

Part No.	Max. stroke length [mm]	Weight [kg]	additional (per 100mm) [kg]	Max. static load capacity		Shaft end support material
				axial [N]	radial ⁹⁷⁾ [N]	
SLW-PT-1040	750	0.75	0.20	700	2,000	Aluminium
SLW-BB-PT-1040	750	1.10	0.20	500	2,000	Aluminium

Dimensions [mm]

Part No.	A	Al	H	E1/E2	E3	l	hw	f	lt	lb	tk	ts	tg
SLW-PT-1040	74	87	29	60	74	131	33.25	3.25	22	11	11	6.8	M8x10
SLW-BB-PT-1040	74	87	29	60	74	147	33.25	3.25	30	19	11	6.8	M8x10

Part No.	kt	d	T	l2	d2	d2 ⁹⁸⁾	ha
SLW-PT-1040	6.4	10	Tr10x2	17	Tr10x2	6 h9	14.50
SLW-BB-PT-1040	6.4	10	Tr10x2	17	Tr10x2	6 h9	14.50

⁹⁷⁾ Depends on load and rotation speed ⁹⁸⁾ Thread/remaining thread visible

Dual action linear system



- Carriages can be controlled separately
- Different lead screw pitches can be applied
- Separate manual adjustment of carriages
- Design flexibility
- Clearance adjustment (optional)

Order key

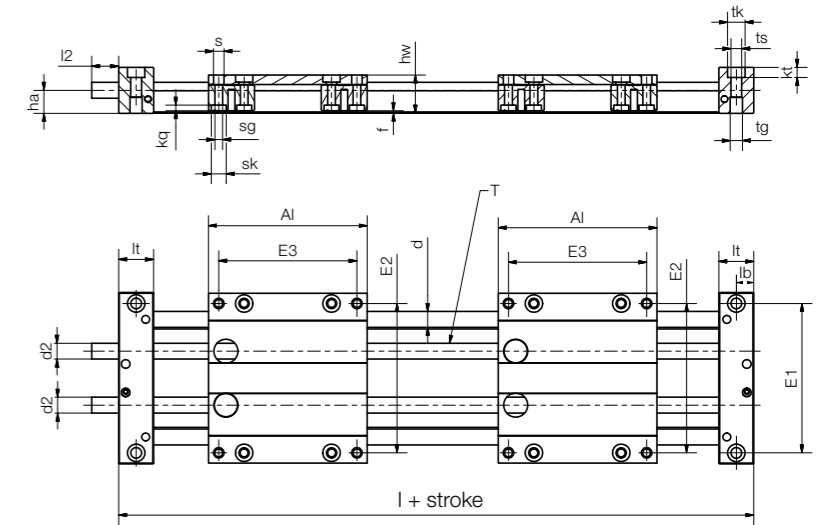
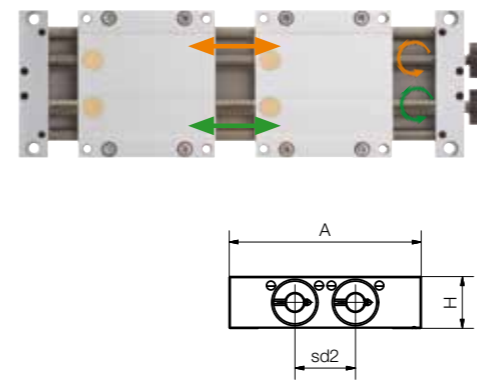
Order example

SLW T -1080



Options:
BB Ball bearings

Select versions and accessories online
▶ www.igus.eu/drylinSLW



Technical data

Part No.	Max. stroke length [mm]	Weight [kg]	additional (per 100mm) [kg]	Max. static load capacity		Shaft end support material
				axial [N]	radial [N]	
SLWT-1080	750	1.6	0.25	700	2,800	Aluminium
SLWT-16120 New	750	1.8	0.50	1,200	4,600	Aluminium
SLWT-BB-1080	750	1.6	0.25	700	2,800	Aluminium
SLWT-BB-16120 New	750	2.1	0.50	700	2,800	Aluminium

Dimensions [mm]

Part No.	A	Al	H	E1	E2	E3	l	hw	f	lt	tk	ts	tg	lb
SLWT-1080	108	100	29	94	94	87	244	24	1.5	22	11	6.8	M8x10	11.0
SLWT-16120 New	166	150	37	146	148	132	200	35	1.5	25	15	9.0	M10x20	12.5
SLWT-BB-1080	108	100	29	94	94	87	244	24	1.5	30	11	6.8	M8x10	19.0
SLWT-BB-16120 New	166	150	37	146	148	132	220	35	1.5	35	15	9.0	M10x20	17.5

Part No.	kt	sk	Øs	sg	kq	d	T	l2	d2	d2	ha	sd2
SLWT-1080	6.4	9.5	6.6	M6	4.4	10	Tr10x2 ⁹²⁾	17	Tr10x2	6 h9	14.50	34
SLWT-16120 New	8.6	11.0	9.0	M8	5.5	16	Tr14x3	20	Tr14x3	8 h9 ¹⁸⁶⁾	18.50	65
SLWT-BB-1080	6.4	9.5	6.6	M6	4.4	10	Tr10x2 ⁹²⁾	17	Tr10x2	6 h9	14.50	34
SLWT-BB-16120 New	8.6	11.0	9.0	M8	5.5	16	Tr14x3	20	Tr14x3	8 h9 ¹⁸⁶⁾	18.50	65

⁹²⁾ Lead screw end unmachined; ¹⁸⁶⁾ Only bearing load without consideration of possible shaft deflection

Made of stainless steel



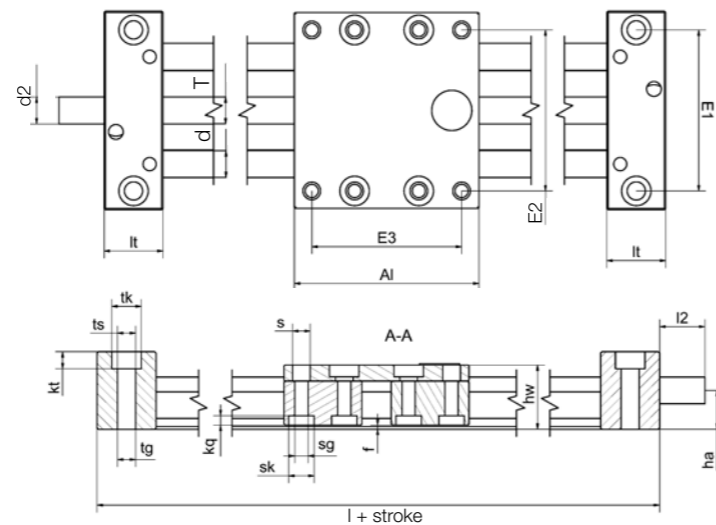
- Stainless steel version with corrosion-resistant steel components (AISI 303, AISI 316 and (AISI 316Ti)
- Choice of bearing material:
iglidur® J = Standard
iglidur® A180 = FDA-compliant
iglidur® X = High temperature up to +150°C¹¹⁷⁾
- Accessories available
▶ Page 1683

Order key

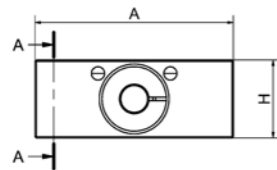
Order example

SLW-ES J-1040

Compact	Stainless steel	Bearing material	Dimension
---------	-----------------	------------------	-----------



Select versions and accessories online
▶ www.igus.eu/drylinSLW



Technical data

Part No.	Shaft Ø [mm]	Max. stroke length [mm]	Weight [kg]	additional (per 100mm) [kg]	Max. stat. load capacity	
					axial [N]	radial [N]
SLW-ESJ-1040	10	750	1.4	0.2	700	2,800
SLW-ESX-1040	10	750	1.4	0.2	700	2,800
SLW-ESA180-1040	10	750	1.4	0.2	700	2,800
SLW-ESJ-2080	20	1,000	5.7	0.64	1,600	6,400
SLW-ESA180-2080	20	1,000	5.7	0.64	1,600	6,400

Dimensions [mm]

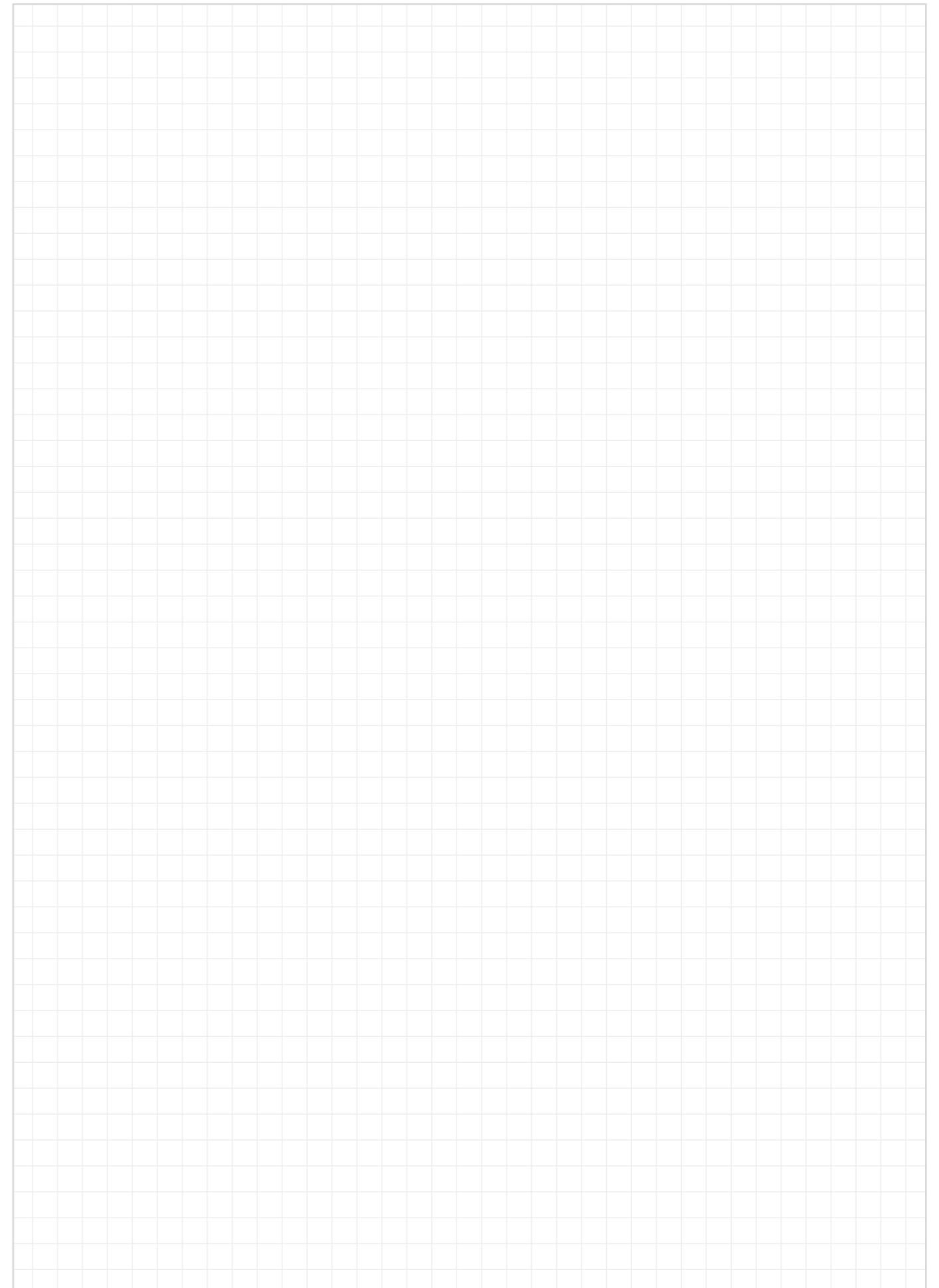
Part No.	A	Al	H	E1	E2	E3	l	hw	f	lt	lb	tk	ts	tg
	-0.3	-0.3		±0.15	±0.15	±0.15								
SLW-ES-1040	74	100	29	60	60	87	144	24	1.5	22	11	11	6.8	M8x10
SLW-ES-2080	134	150	46	116	116	132	206	44	1.5	28	14	15	8.6	M10x15

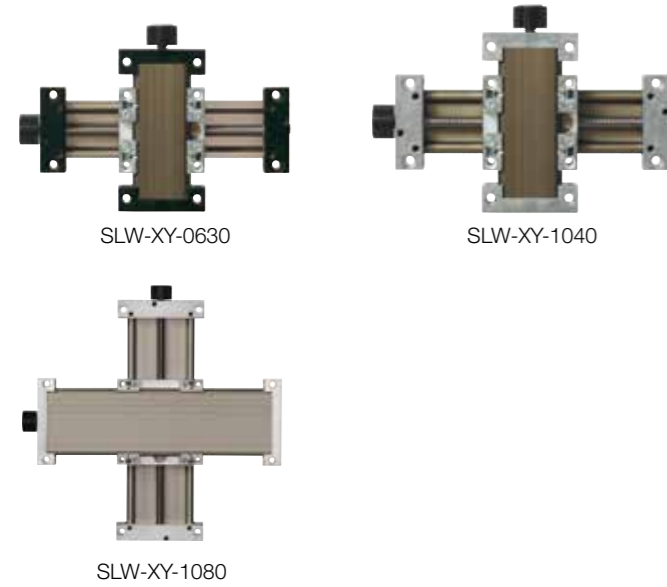
Part No.	kt	Øs	sk	sg	kq	d	T	l2	d2	ha
	±0.1								Standard	
SLW-ES-1040	6.4	6.6	9.5	M6	4.4	10	Tr10x2	17	Tr10x2 ⁹²⁾	14.5
SLW-ES-2080	8.6	9.0	14	M8	5.5	20	Tr18x4	26	12 h9	23.0

⁹²⁾ Lead screw end unmachined

¹¹⁷⁾ In the event of severe temperature fluctuations during transport, storage and use, thermal expansion effects cannot be ruled out

Notes





- Aluminium drylin® W guide rails, hard-anodised
- Pre-load SLWE-XY-PL version also available (optional, sizes: 1040/1080)
- Accessories available ▶ **Page 1683**

Select versions and accessories online
▶ www.igus.eu/drylinSLW

Dimensions [mm]

Part No.	Max. stroke length [mm]	A	Al	H	E1	E2
		-0.3			±0.15	±0.15
SLW-XY-0630	150	54	54	38.0	40	45
SLW-XY-0660 New	150	85	85	37.4	71	76
SLW-XY-1040	300	74	73	48.0	60	60
SLW-XY-1080	300	108	107	48.0	94	94
SLW-XY-1660 New	400	104	104	72.5	84	86
SLW-XY-16120 New	500	166	166	72.5	146	148
SLW-XY-2080 New	500	134	134	82.0	116	116

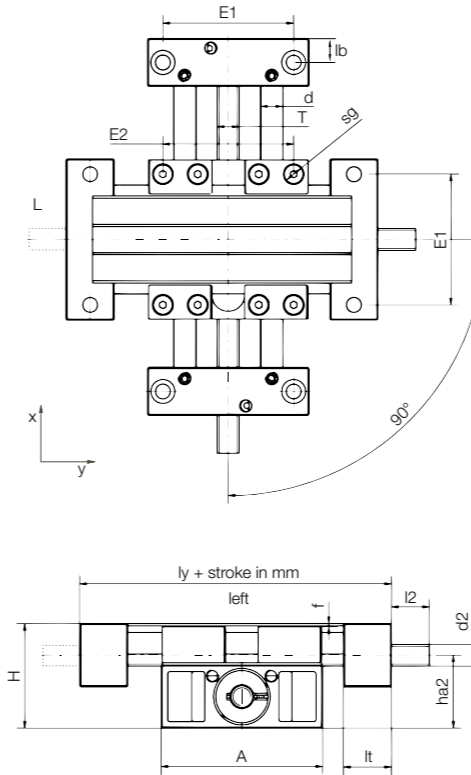
Dimensions [mm]

Part No.	sg	d	T	l1	d1
					Standard
SLW-XY-0630	M4	5	M8	15	M8
SLW-XY-0660 New	M4	5	Tr08x1.5	15	Tr08x1.5
SLW-XY-1040	M6	10	Tr10x2	17	Tr10x2
SLW-XY-1080	M6	10	Tr10x2	17	Tr10x2
SLW-XY-1660 New	M8	16	Tr14x4	20	Tr14x4
SLW-XY-16120 New	M8	16	Tr14x3	20	Tr14x3
SLW-XY-2080 New	M8	20	Tr18x4	26	12 h9

The hand wheel can be ordered left or right-mounted in the y-direction.

Left: SLW-XY-1040-L-200-300 for 200mm stroke length on the x-axis and 300mm on the y-axis

Right: SLW-XY-1040-R-200-300 for 200mm stroke length on the x-axis and 300mm on the y-axis

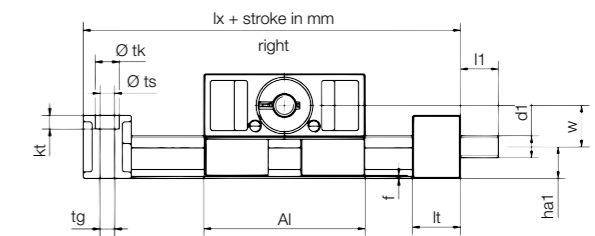


Order key

Order example

SLW-XY-1040-PL

Compact	XY table	Dimension	Preload	Options: Preload optional with sizes 1040 and 1080
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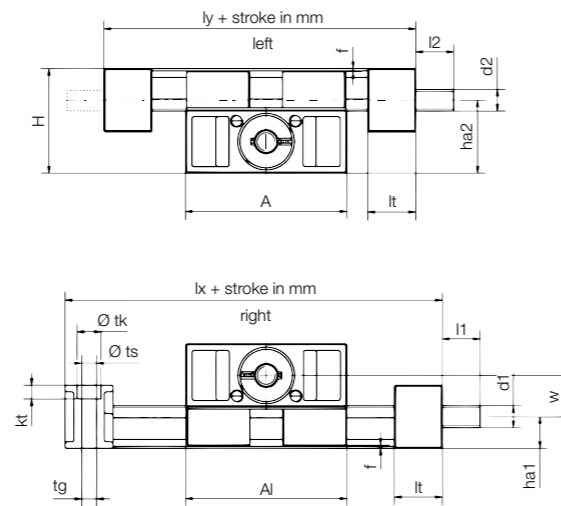
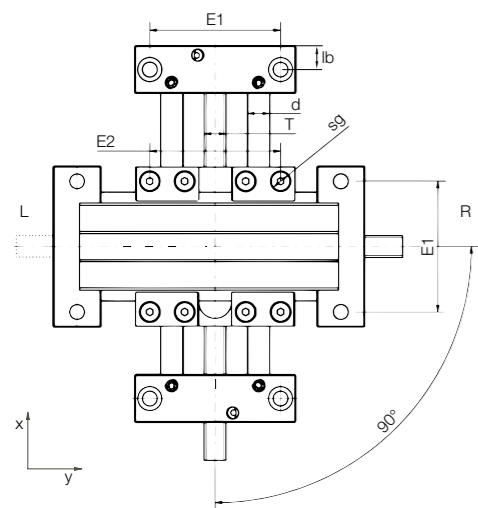


Base length lx	Base length ly	f	lt	lb	tk	ts	tg	kt
94	94	1.5	20	10.0	9	7.0	–	6.0
125	125	1.5	20	10.0	11	6.6	–	8.0
117	117	1.5	22	11.0	11	6.8	M8x10	6.4
151	151	1.5	22	11.0	11	6.8	M8x10	6.4
154	154	1.5	25	12.5	15	9.0	M10x20	8.6
216	216	1.5	25	12.5	15	9.0	M10x20	8.6
190	190	1.5	28	14.0	15	8.6	M10x15	8.6

d1 Alternative	l2	d2 Standard	d2 Alternative	ha1	ha2	W ha2-ha1
–	15	M8	–	9.5	28.5	18.4
–	15	Tr08x1.5	–	9.5	28.0	18.5
6 h9	17	Tr10x2	6 h9	14.5	33.5	19.0
6 h9	17	Tr10x2	6 h9	14.5	33.5	19.0
8 h9	20	Tr14x4	8 h9	18.5	54.0	35.5
8 h9	20	Tr14x3	8 h9	18.5	54.0	35.5
–	26	12 h9	–	23.0	59.0	36.0



- For manual adjustments
- High torsional stability
- Structure entirely made from 316 stainless steel materials
- Chemical and corrosion-resistant
- Accessories available ► Page 1683



Select versions and accessories online
► www.igus.eu/drylinSLW

Dimensions [mm]

Part No.	Max. stroke length [mm]	A	Al	H	E1	E2	Base length lx	Base length ly	f	lt	lb	tk	ts	tg	kt			
SLW-XY-ESJ-1040	300	-0.3	74	73	48	±0.15	±0.15	60	60	117	117	1.5	22	11	11	6.8	M8x10	6.4

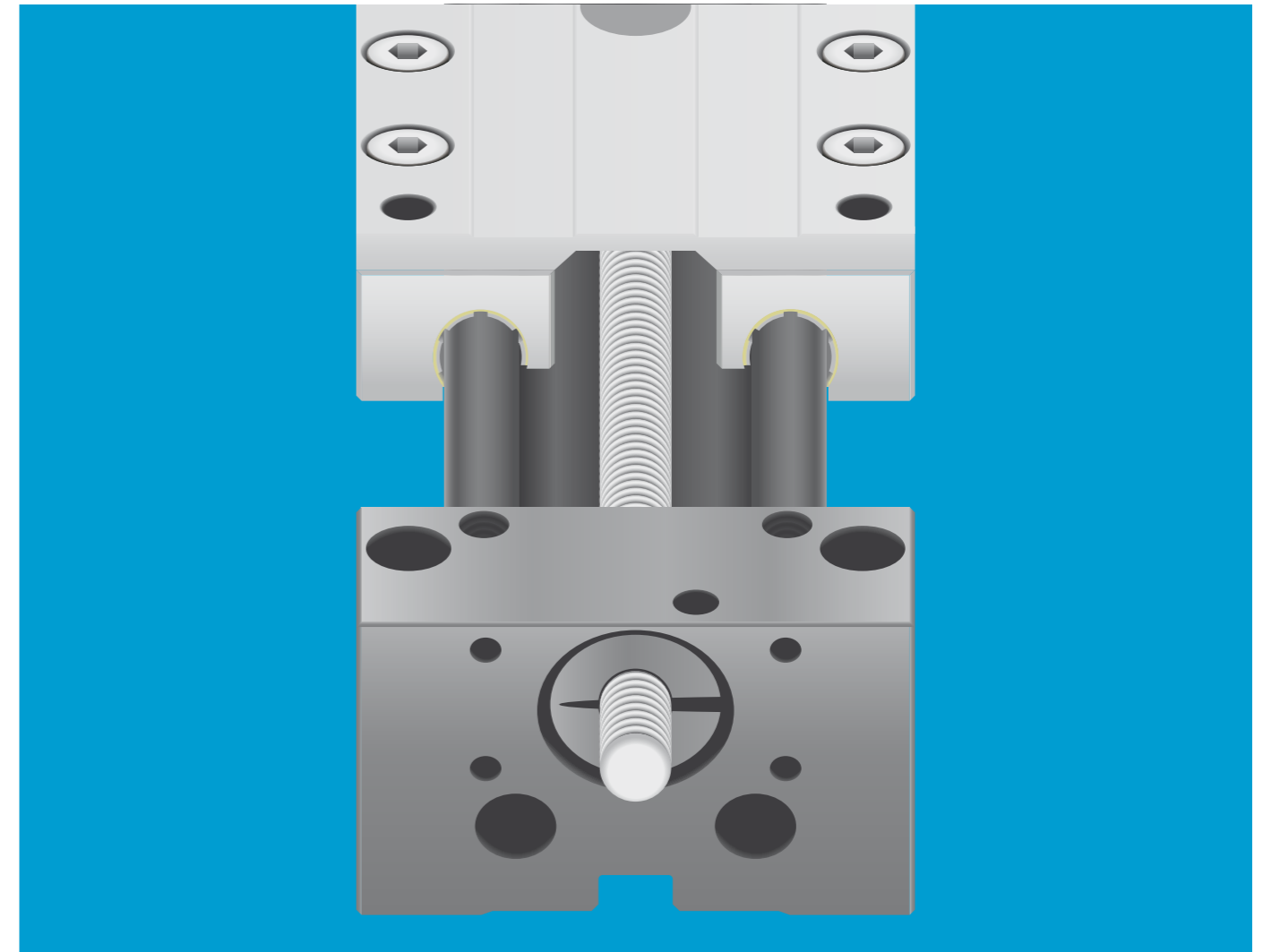
Dimensions [mm]

Part No.	sg	d	T	l1	d1 Standard	d1 Alternative	l2	d2 Standard	d2 Alternative	ha1	ha2	W
SLW-XY-ESJ-1040	M6	10	Tr10x2	17	Tr10x2	6 h9	17	Tr10x2	6 h9	14.5	33.5	19

The hand wheel can be ordered left or right-mounted in the y-direction.

Left: SLW-XY-ESJ-1040-L-200-300 for 200mm stroke length on the x-axis and 300mm on the y-axis

Right: SLW-XY-ESJ-1040-R-200-300 for 200mm stroke length on the x-axis and 300mm on the y-axis



drylin® general drive technology - SAW linear modules

Lubrication-free linear modules based on drylin® W guides

Drive: Trapezoidal or high helix lead screw

Robust design

Ready-to-install stepper or DC motors

Ball bearing



Compact high design



Shaft end supports made from black anodised aluminium

Lead screws with ball bearings, standard

Extremely torsion-resistant drylin® W high profile rail made from hard-anodised aluminium

Lubrication and maintenance-free drylin® lead screw nuts

The carriages consist of four drylin® W individual bearing housings equipped with lubrication-free drylin® liners

Mounting plates made from anodised aluminium, available in different lengths

Adapter plates for linear robot solutions available

Lead screw material steel/stainless steel/aluminium

Drive: Self-locking trapezoidal thread or fast adjust high helix thread

Configurable with motor as a ready-to-install linear drive


Lubrication-free linear modules - drylin® SAW


The drylin® W high profile provides the torsion-resistant base for the linear axes of the SAW series. Thanks to the ball bearing supported lead screw and high profile design, the SAW linear modules are perfectly suitable for the direct connection to stepper or DC motors. Slots in profile sections enable initiators to be freely positioned and, at the same time, enable set-up as a multi-axis linear robot by means of suitable adapter plates.


- Optimised unit for motor connection
- drylin® W high profile with variable mounting options using clamping elements or slot nuts
- For manual or electrical adjustments
- Ideal for single and/or multi-axial constructions


Typical application areas

- Positioning functions
- 3D scanner
- Format adjustments
- Linear robot structures
- Height adjustments

 **Available in 3-8 days**
Detailed information about delivery time online.

 **Price breaks online**
No minimum order value. No minimum order quantity

 **Carriage lengths: 60-250mm**
Carriage widths: 54-107mm
Stroke lengths: up to 750mm

 **Product finder**
▶ www.igus.eu/saw-productfinder

Ball bearings



SAW linear module

- Robust high design in 4 sizes
- Drive: Trapezoidal or high helix lead screw
- For manual positioning or motorised operation
- ▶ Page 1626



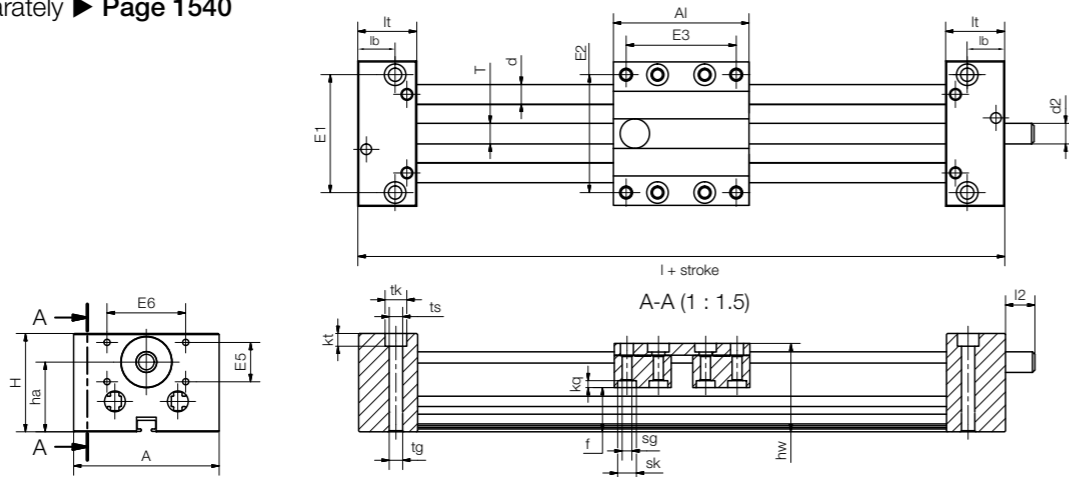
SAWC linear module

- Compact short design
- With integrated drylin® lead screw motor
- Optimised ratio of useful length to total length
- ▶ Page 1628

Robust design



- Trapezoidal or high helix threads
- Ball bearing supported lead screw
- Rail profile in high design, extremely torsion-resistant
- Aluminium drylin® W guide rails, hard-anodised
- High strength
- Cost-effective and 100% lubrication-free
- Accessories available ► Page 1683
- Lead screw nuts are available separately ► Page 1540



Technical data

Part No.	Max. stroke length [mm]	Weight [kg]	Additional (per 100mm)	Max. rotational speed [rpm]	Max. static load capacity axial [N]	Max. static load capacity radial [N]
SAW-0630	300	0.5	0.1	1,000	100	400
SAW-0660	500	0.9	0.1	1,000	100	400
SAW-1040	500	1.0	0.1	1,500	500	2,000
SAW-1080	750	1.9	0.2	1,500	750	2,000
SAW-1660	750	2.8	0.5	1,500	750	3,000

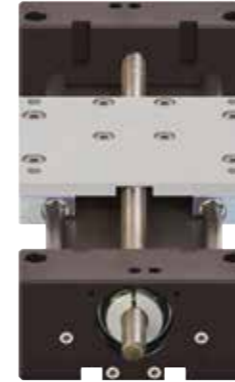
Dimensions [mm]

Part No.	A	Al	H	E1	E2	E3	E5	E6	I	lc	hw	f	lt	lb
	-0.3	-0.3		+0.15	+0.15	+0.15								
SAW-0630	54	60/100	32	40	45	51/91	11	23	112/152	92	30	13.5	26	10
SAW-0660	85	100	38	71	76	91	-	-	156	-	34	13.7	28	-
SAW-1040	74	69/100/150	50	60	60	56/87/137	20	40	129/160/210	91	45	22.5	30	19
SAW-1080	108	100	58	94	94	87	-	-	163	131.5	49	22.5	31.5	15.75
SAW-1660	104	150	77	84	86	132	20	40	220	175	72	38.5	35	22.5

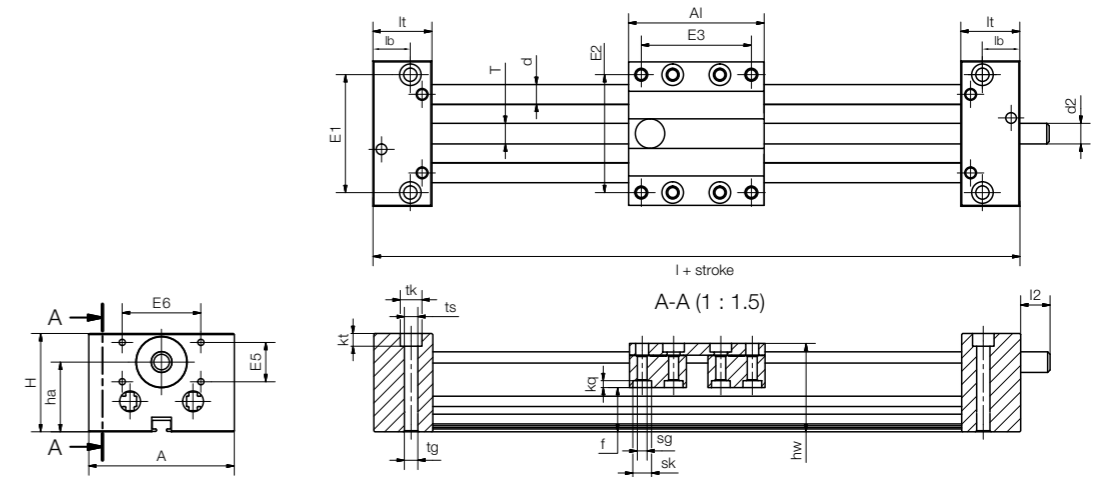
Part No.	tk	ts	tg	kt	sk	sg	kq	d	T	l2	d2	ha
				±0.1					∅			
SAW-0630	11	6.6	-	20	-	M4	10	□5	Tr8x1.5	15	Tr8x1.5	21.5
SAW-0660	-	-	M8x12	20	7	M4	2	□6	Tr10x2	15	Tr10x2	23.0
SAW-1040	11	6.8	M8x20	6.4	9.5	M6	3.5	10	Tr10x2	17	Tr10x2 ∅6 h9 ¹¹³⁾	35.5
SAW-1080	11	6.8	M8x20	18	9.5	M6	3.5	10	Tr12x3	17	Tr12x3 ∅8 h9 ¹¹³⁾	37.5
SAW-1660	15	9.0	M10x29	8.6	11	M8	5.5	16	Tr14x4	20	Tr14x4 ∅8 h9 ¹¹³⁾	59.0

¹¹³⁾ Lead screw end unmachined, also available with machined end

Reduced clearance with pretension in lead screw support and lead screw nut



- Lubrication and maintenance-free
- Quiet, reduced backlash
- Trapezoidal or high helix threads
- 3 carriage lengths (100/150/200mm) with spring-loaded second lead screw nut
- Liners made from wear-resistant high-performance polymers
- For manual and electric adjustment even in multi-axis linear robots



Technical data

Part No.	Max. stroke length [mm]	Weight [kg]	Additional (per 100mm)	Max. rotational speed [rpm]	Max. static load capacity axial [N]	Max. static load capacity radial [N]
SAW-1080-PL	750	1.9	0.2	1,500	750	2,000

Dimensions [mm]

Part No.	A	Al	H	E1	E2	E3	E5	E6	I	lc	hw	f	lt	lb
	-0.3	-0.3		+0.15	+0.15	+0.15								
SAW-1080-PL	108	100	58	94	94	87	-	-	163	131.5	49	22.5	31.5	15.75

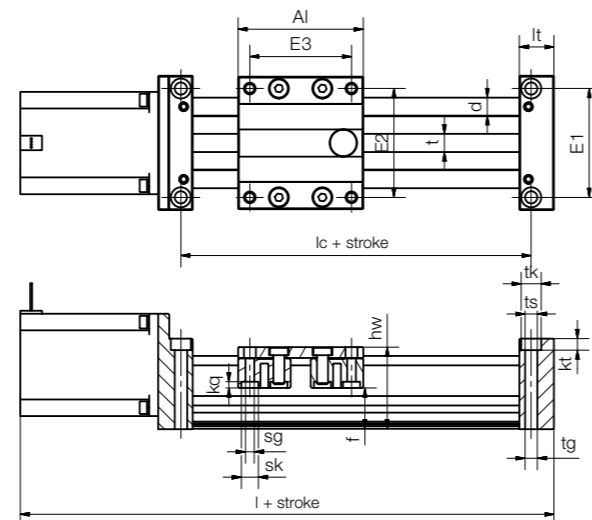
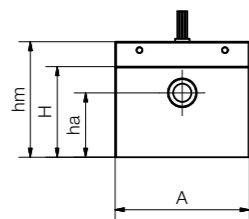
Part No.	tk	ts	tg	kt	sk	sg	kq	d	T	l2	d2	ha
				±0.1					∅			
SAW-1080-PL	11	6.8	M8x20	18	9.5	M6	3.5	10	Tr12x3	17	Tr12x3 ∅8 h9 ¹¹³⁾	37.5

¹¹³⁾ Lead screw end unmachined, also available with machined end

Direct drive in short design



- Smaller installation space and more stroke
- Compact short design due to the use of drylin® lead screw motors
- Optimised ratio of useful length to total length (compared to the SAW series, up to 70mm)
- Improved operating characteristics
- Space-saving and lightweight



Technical data

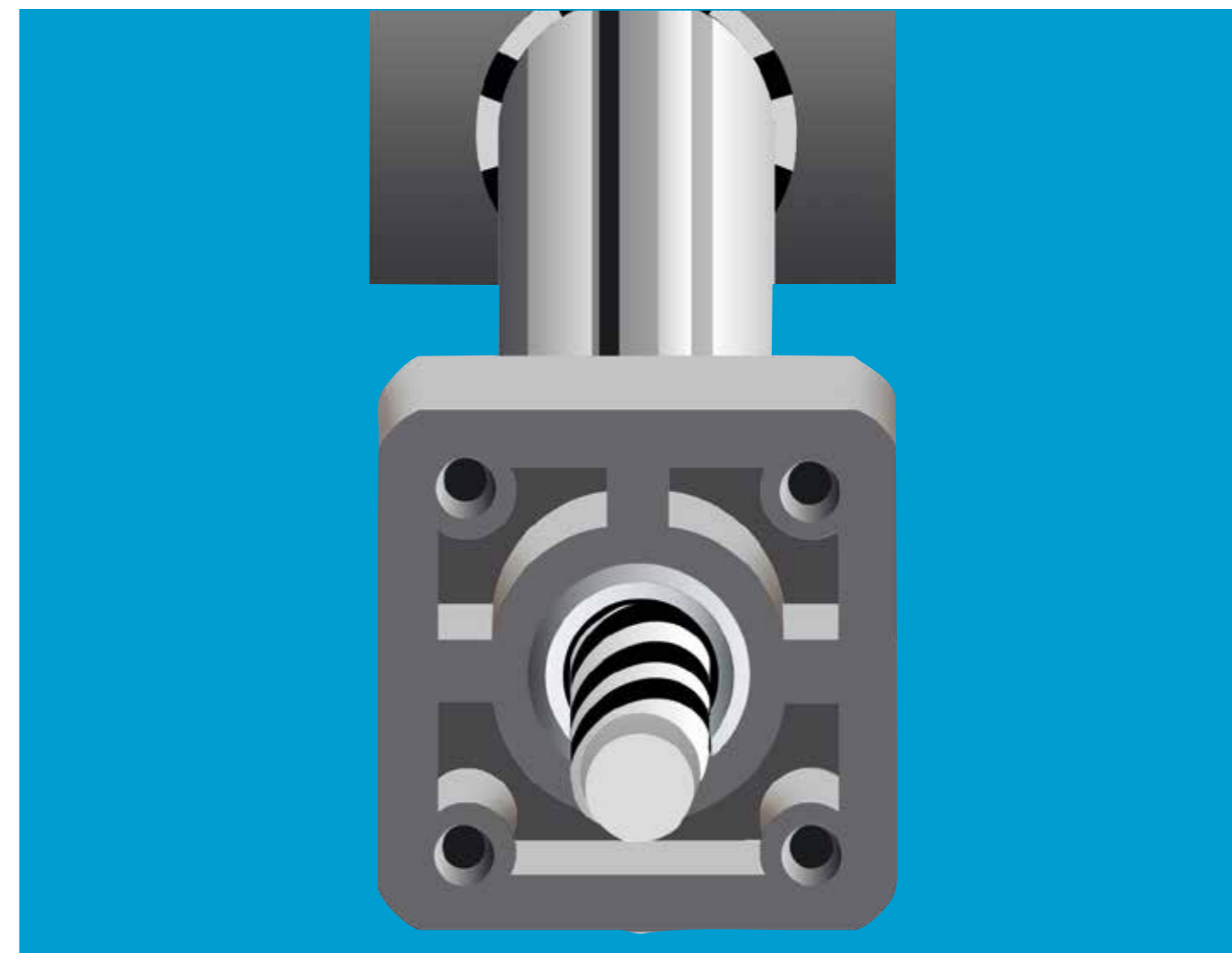
Part No.	Max. stroke length [mm]	Weight [kg]	Additional (per 100mm)	Max. rotational speed [rpm]	Max. static load capacity	
					axial [N]	radial [N]
SAWC-0630	300	0.5	0.1	1,000	100	200
SAWC-1040	500	1.0	0.1	1,500	500	2,000

Dimensions [mm]

Part No.	A	Al	H	E1	E2	E3	l	lc	hw	f	lt	lb
	-0.3	-0.3		+0.15	+0.15	+0.15						
SAWC-0630	54	60/100	42.5	40	45	51	139	75	30	13.5	15	7.5
SAWC-1040	74	69/100/150	50.0	60	60	56	183	82	45	22.5	19	9.5

Part No.	tk	ts	tg	kt	sk	sg	kq	d	T	ha
				±0.1					∅	
SAWC-0630	8	4.2	M5x12	20	7	M4	2	5	Tr08x1.5 Ds08x15	21.5
SAWC-1040	11	6.8	M6x20	6.4	9.5	M6	3.5	10	Tr10x2 ⁹²⁾ Ds10x12	35.5

⁹²⁾ Lead screw end unmachined

drylin® general drive technology -
SET linear modules

Lubrication-free single-tube adjustment

Drive: trapezoidal thread

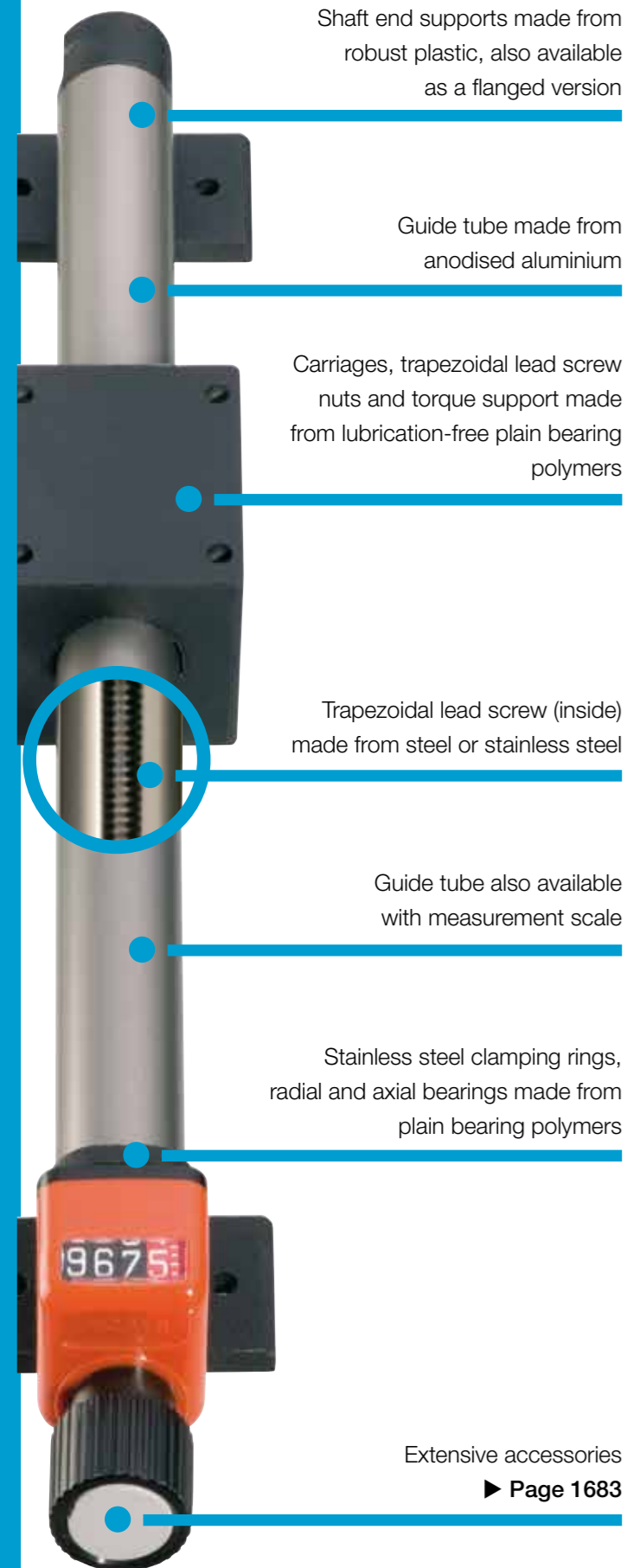
Simple, smooth design

Lightweight due to aluminium and polymer

Temperature resistance up to +50°C



Single-tube adjustment



Shaft end supports made from robust plastic, also available as a flanged version

Guide tube made from anodised aluminium

Carriages, trapezoidal lead screw nuts and torque support made from lubrication-free plain bearing polymers

Trapezoidal lead screw (inside) made from steel or stainless steel

Guide tube also available with measurement scale

Stainless steel clamping rings, radial and axial bearings made from plain bearing polymers

Extensive accessories
▶ Page 1683


Lubrication-free linear unit "easytube"


The linear unit for easy adjustment functions is characterised by a simple but effective and solid design. A complete system is built up from few components. The outer anodised aluminium tube guides the carriage/s and at the same time protects the trapezoidal lead screw and lead screw nut from external influences. Carriage, torque support and trapezoidal lead screw nut are in one component and are made from a special plain bearing high-performance polymer. This guarantees freedom from lubrication with simultaneously low coefficient of friction and optimal wear rates. The iglidur® bearing materials are also used in the thrust bearings of the lead screw.


- Protected lead screw
- Effective design
- Available with measurement scale without lead screw
- Flanged version for axial mounting in surfaces and profiles


Typical application areas

- Sensor and camera positioning
- Format adjustment

 **Available in 3-8 days**
Detailed information about delivery time online.

 **Price breaks online**
No minimum order value. No minimum order quantity

 **Carriage lengths: 30-55mm**
Stroke lengths: up to 850mm

 **Product finder**
▶ www.igus.eu/set-productfinder

Efficient design with protected lead screw and variable mounting



easytube single tube linear unit

- For light format adjustments
 - Protected lead screw, torque-resistant
 - Drive: trapezoidal or high-helix lead screw
- ▶ Page 1632



easytube with double flange

- For axial mounting
 - Simple, smooth design
- ▶ Page 1633



easytube with single flange

- For horizontal and vertical adjustments
 - Single aluminium flange
 - Space-saving structure
- ▶ Page 1634



easytube with measurement scale

- With lasered, wash-proof scale
 - Carriage with clamp
 - Available with/without lead screw
- ▶ Page 1635




easytube "light"

- Lightweight linear carriage
 - Compact structure
 - Also available as flanged version
- ▶ Page 1636



Accessories for linear modules

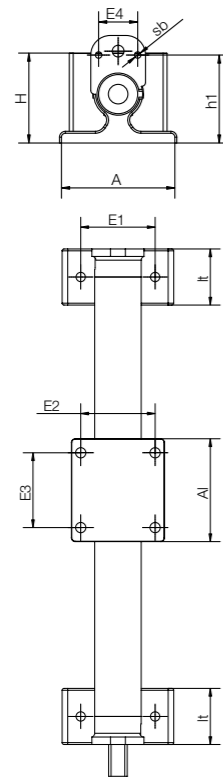
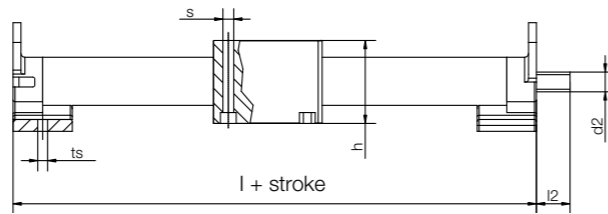
- Position indicator, hand wheels, lead screw clamps, angular drives and more
- ▶ From page 1683

 Order key

Order example

SET-25-AWM

easytube	Dimension	Shaft material
----------	-----------	----------------



- For simple adjustments
- With protected lead screw
- Corrosion-free with stainless steel lead screw
- Lightweight due to aluminium and polymer
- Temperature-resistant up to +60°C
- Accessories available ► Page 1683

Technical data

Part No.	Max. stroke length	Aluminium shaft			Max. static load capacity	
		Weight shaft end supports and guide carriage	additional (per 100mm)	axial	radial	
	[mm]	[kg]	[kg]	[N]	[N]	
SET-12-AWM	200	0.05	0.03	10	20	
SET-25-AWM	750	0.15	0.12	150	300	
SET-30-AWM	850	0.20	0.21	200	400	

Dimensions [mm]

Part No.	A	A1	H	E1	E2	E3	E4	l	h	h1	lt	ts	Øs	sb	l2	d2 ⁹²⁾
SET-12-AWM	30	30	23.5	20	20	20	-	60	22	-	15	3.3	4.2	-	10	M4
SET-25-AWM	60	55	44	40	40	40	20	115	39	45	30	5.2	5.2	M4	17	Tr10x2
SET-30-AWM	80	55	49	60	40	40	20	125	39	50	35	6.5	5.2	M4	20	Tr12x3

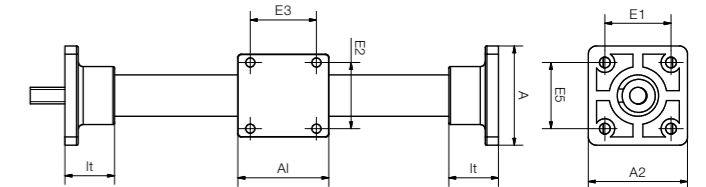
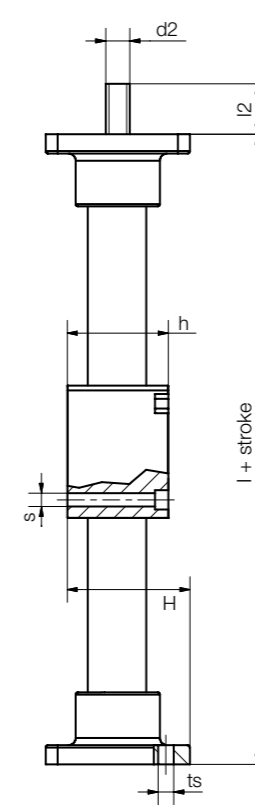
⁹²⁾ Lead screw end unmachined

 Order key

Order example

SET-25-AWM-F

easytube	Dimension	Shaft material	With flange
----------	-----------	----------------	-------------



- Flanged version for axial mounting
- Simple, smooth design
- Accessories available ► Page 1683

Technical data

Part No.	Max. stroke length	Aluminium shaft			Max. static load capacity	
		Weight shaft end supports and guide carriage	additional (per 100mm)	axial	radial	
	[mm]	[kg]	[kg]	[N]	[N]	
SET-25-AWM-F	750	0.15	0.12	150	300	
SET-30-AWM-F	850	0.20	0.21	200	400	

Dimensions [mm]

Part No.	A1	A	A2	H	E1	E2	E3	E5	l	h	lt	ts	Øs	l2	d2 ⁹²⁾
SET-25-AWM-F	55	60	60	49	40	40	40	40	115	39	30	5.2	5.2	27	Tr10x2
SET-30-AWM-F	55	60	80	59	60	40	40	40	125	39	35	6.5	5.2	30	Tr12x3

⁹²⁾ Lead screw end unmachined

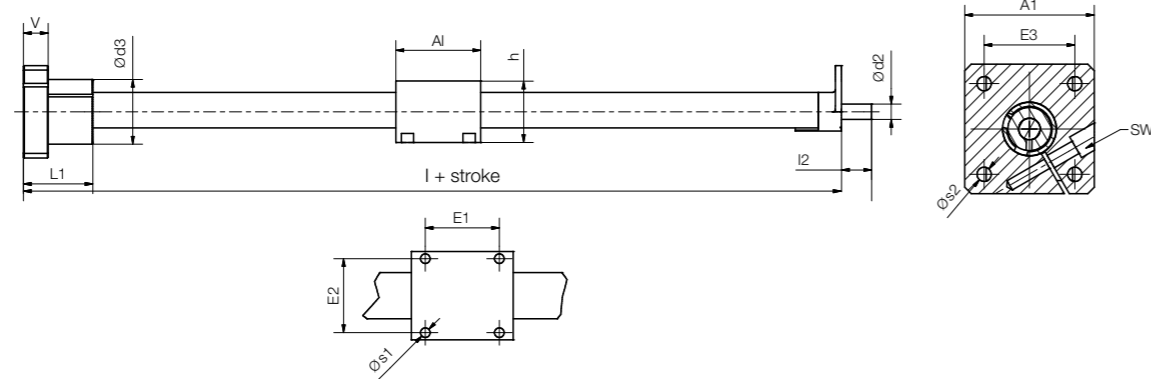


Order key

Order example

SETB-25-AWM

easytube	Dimension	Shaft material
----------	-----------	----------------



- Horizontal and vertical installation at one end
- Ideal for the positioning of sensors and cameras in format adjustments
- Easy assembly
- Flexible installation
- Space-saving
- Protected lead screw

Technical data

Part No.	Max. stroke length [mm]	Max. static load capacity	
		axial [N]	radial ¹²⁸⁾ [N]
SETB-25-AWM	300	150	12.5

Dimensions [mm]

Part No.	A1	A1	h	E1	E2	E3	V	L1	I2	d2 ⁹²⁾	d3	l	s1	s2	SW
SETB-25-AWM	60	55	39	40	40	42	16	45	17	Tr10x2	42	130	5.2	6.6	5

⁹²⁾ Lead screw end unmachined

More dimensions upon request

¹²⁸⁾ The supporting torque at the clamping flange must not exceed 10Nm



Order key

Order example

SET M-25-AWM-200-SC

easytube	Manual	Dimension	Shaft material	Stroke length	Scaling
----------	--------	-----------	----------------	---------------	---------

Options:

Manual

without lead screw (optional)

- Lasered, wash-proof scale
- Corrosion-resistant
- Multi-position clamp
- Available with/without lead screw
- 3 stroke lengths available from stock

Technical data

F radial	[N]	300
Max. extension at maximum load	[mm]	66
Max. extension at 100N nominal load	[mm]	200
Max. drive force without load	[N]	10
Max. holding force	[N]	100
Max. stroke length	[mm]	600

Dimensions [mm]

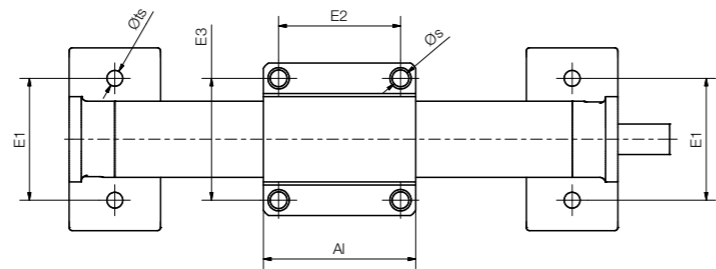
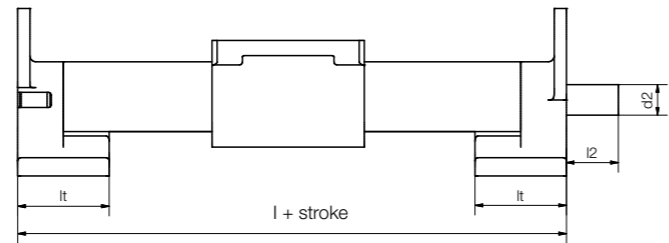
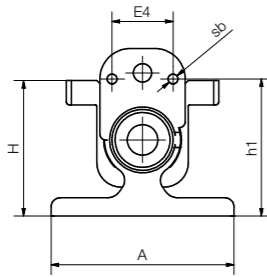
Part No. measurement scale without lead screw	Part No. measurement scale with trapezoidal lead screw 10x2	Stroke length [mm]
SETM-25-AWM-200-SC	SET-25-AWM-200-SC	200
SETM-25-AWM-400-SC	SET-25-AWM-400-SC	400
SETM-25-AWM-600-SC	SET-25-AWM-600-SC	600

More dimensions see SET ► Page 1632



Order example

SETC-25-AWM



- Weight-optimised
- Cost-effective
- Simplified assembly
- Light, clean and quiet

Technical data

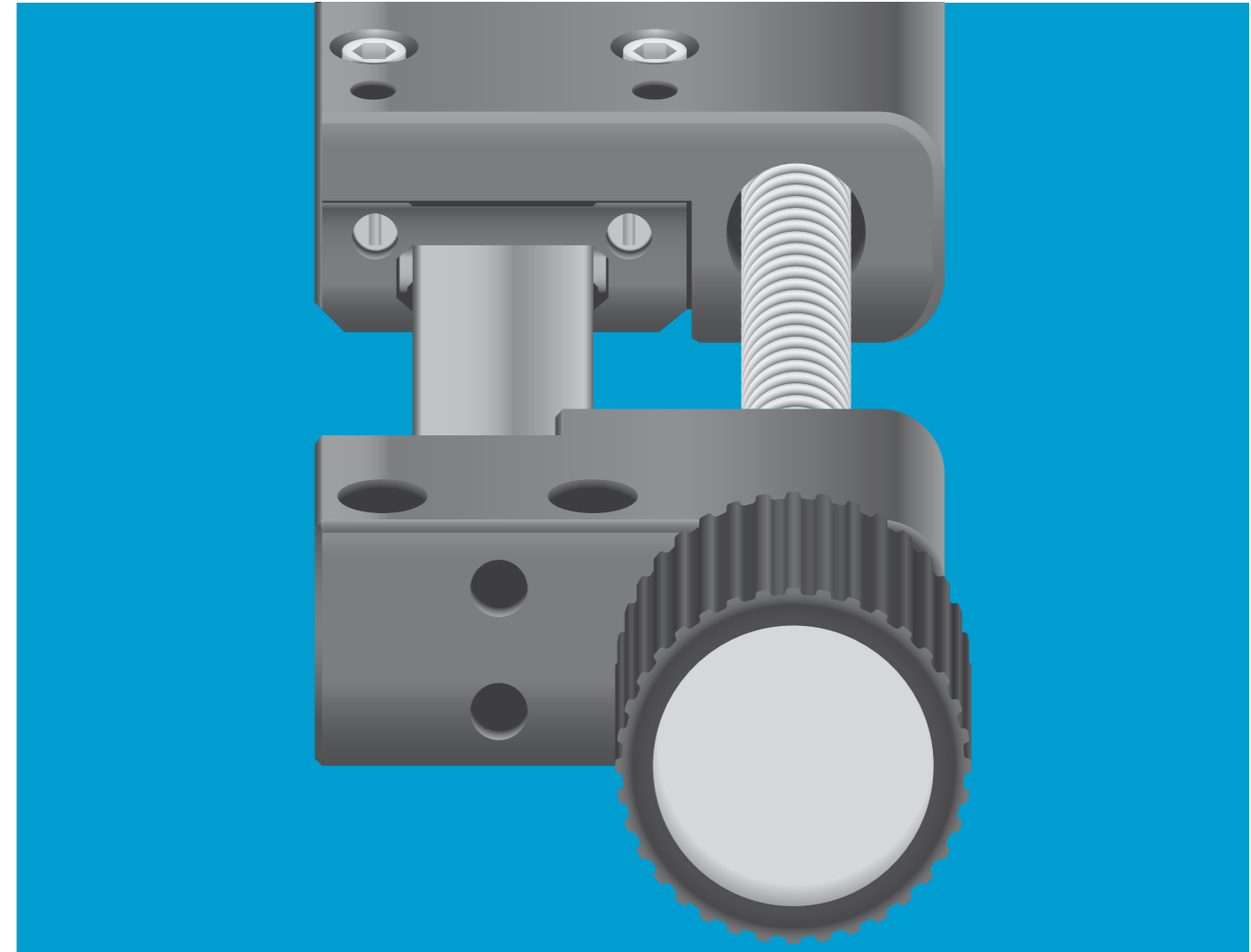
Part No.	Weight [kg]	Max. stroke length [mm]	Max. static load capacity	
			axial [N]	radial [N]
SETC-25-AWM	0.15	750	150	300

Dimensions [mm]

Part No.	A	Al	H	E1	E2	E3	E4	I	h1	lt	ts	Øs	sb	l2	d2 ⁹²⁾
SETC-25-AWM	60	55	44	40	40	40	20	115	45	30	5.2	5.2	M4	17	Tr10x2

⁹²⁾ Lead screw end unmachined

More dimensions upon request



drylin® general drive technology - SLT linear modules

Based on lubrication-free drylin® T miniature guide

Drive: Trapezoidal or high helix lead screw

Low-profile and compact design

Carriages with individual clearance adjustment

Variable lead screw options



Flat, lightweight and lubrication-free


Lubrication-free linear modules - drylin® SLT


The low profile, the lateral lead screw arrangement and a striking design, are just some of the reasons why the drylin® SLT linear module was honoured with the 2014 IF Award. Technically, the system impresses with ball bearing mounted trapezoidal or high helix thread lead screws for motorised or manual operation. The basis of the SLT series is the drylin® T miniature guide in sizes 12 and 15.

- Low-profile structure through lateral lead screw arrangement
- Lubrication-free, corrosion-resistant, lightweight
- Variable pitch
- Adjustable drylin® T miniature carriage with individual clearance adjustment
- Lead screw arrangement can be selected either left or right


Typical application areas


- Format adjustments
- Laboratory and medical technology
- Optical equipment

 **Available in 3-8 days**
Detailed information about delivery time online.

 **Max. +60°C**
min. -40°C

 **Stroke lengths 300-600mm**
More dimensions upon request.

 **Product finder**
► www.igus.eu/slt-productfinder

 **In accordance with EC Directive 2011/65 EU (RoHS 2) Restriction (of the use of certain) hazardous substances**

Shaft end supports/ carriages made of anodised aluminium

Ball bearing supported lead screws

Lead screw arrangement left or right of the carriage

Self-locking trapezoidal thread or fast adjustment with high helix thread

drylin® T miniature carriage with individual clearance adjustment

Lead screws of steel or stainless steel

Hard-anodised drylin® T miniature guide rail

Hand wheel, position indicator and lead screw clamp as accessories
► [Page 1683](#)



Can be configured as ready-to-connect linear axis with motor and initiators

► www.igus.eu/drylin-automation



2013

With ball bearing supported lead screw

 **Order key**

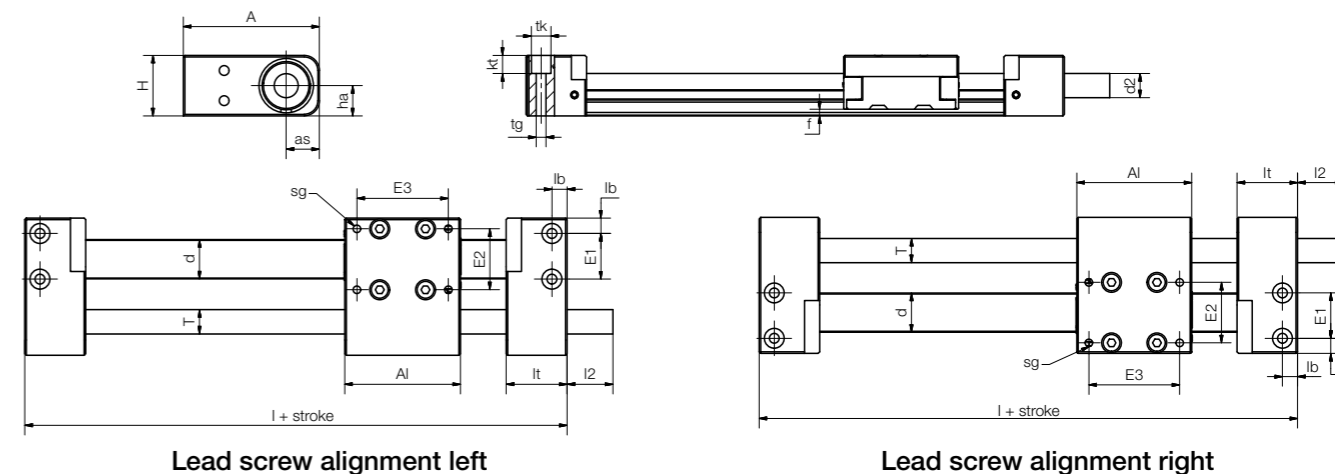
Order example

SLT-BB-0412- E R-S 0015 R G-□

Type	Design	Installation size	Adjustable carriage TWE	Lead screw alignment	Lead screw	Pitch	Thread	Lead screw end	Stroke length in mm
------	--------	-------------------	-------------------------	----------------------	------------	-------	--------	----------------	---------------------

Options:

Design	Lead screw	Lead screw end
BB: With ball bearings	S: Steel	G: Threaded end
Lead screw alignment	ES Stainless steel	
R: Right (standard)	Thread	
L: Left	R: Right	

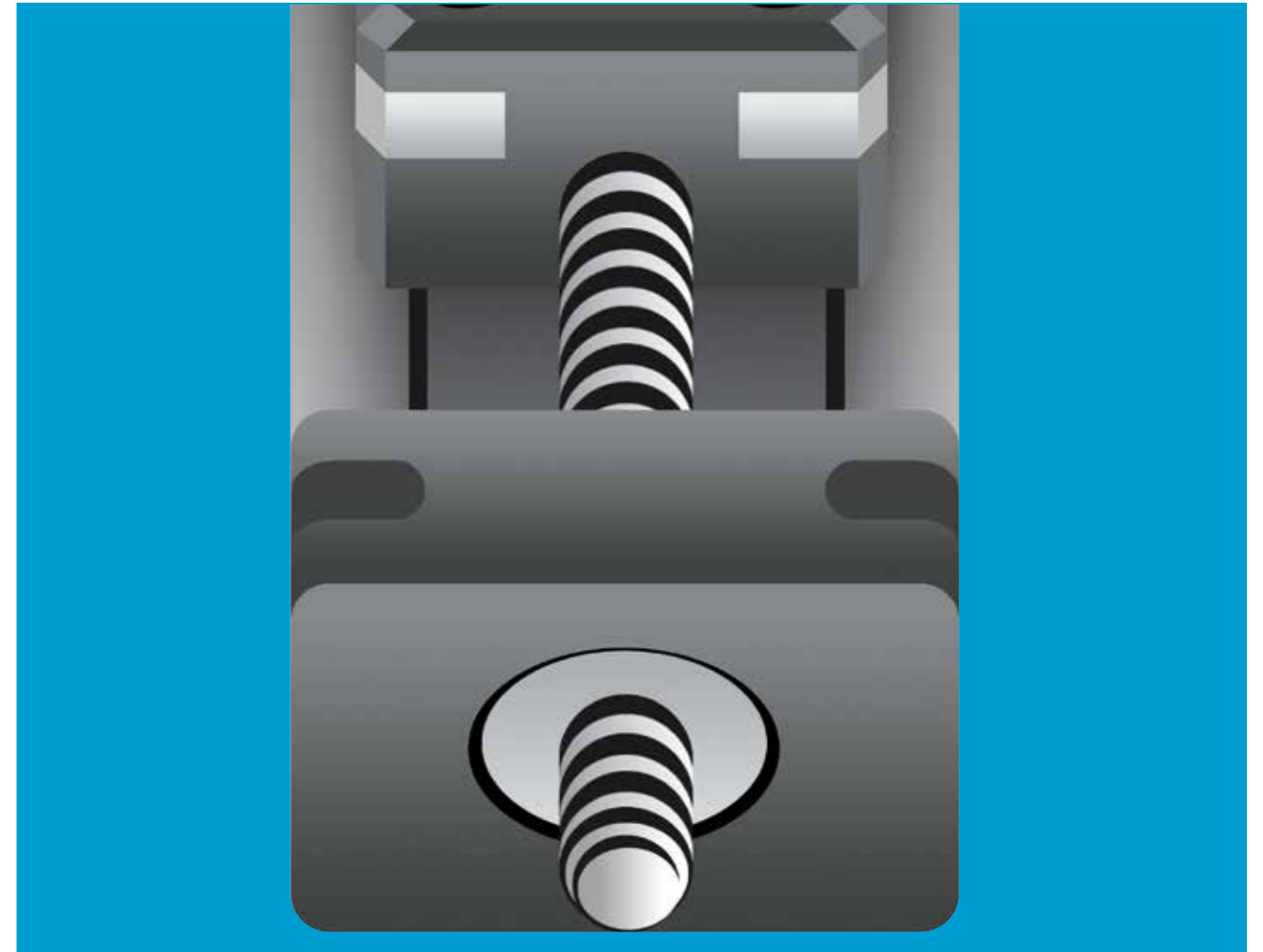
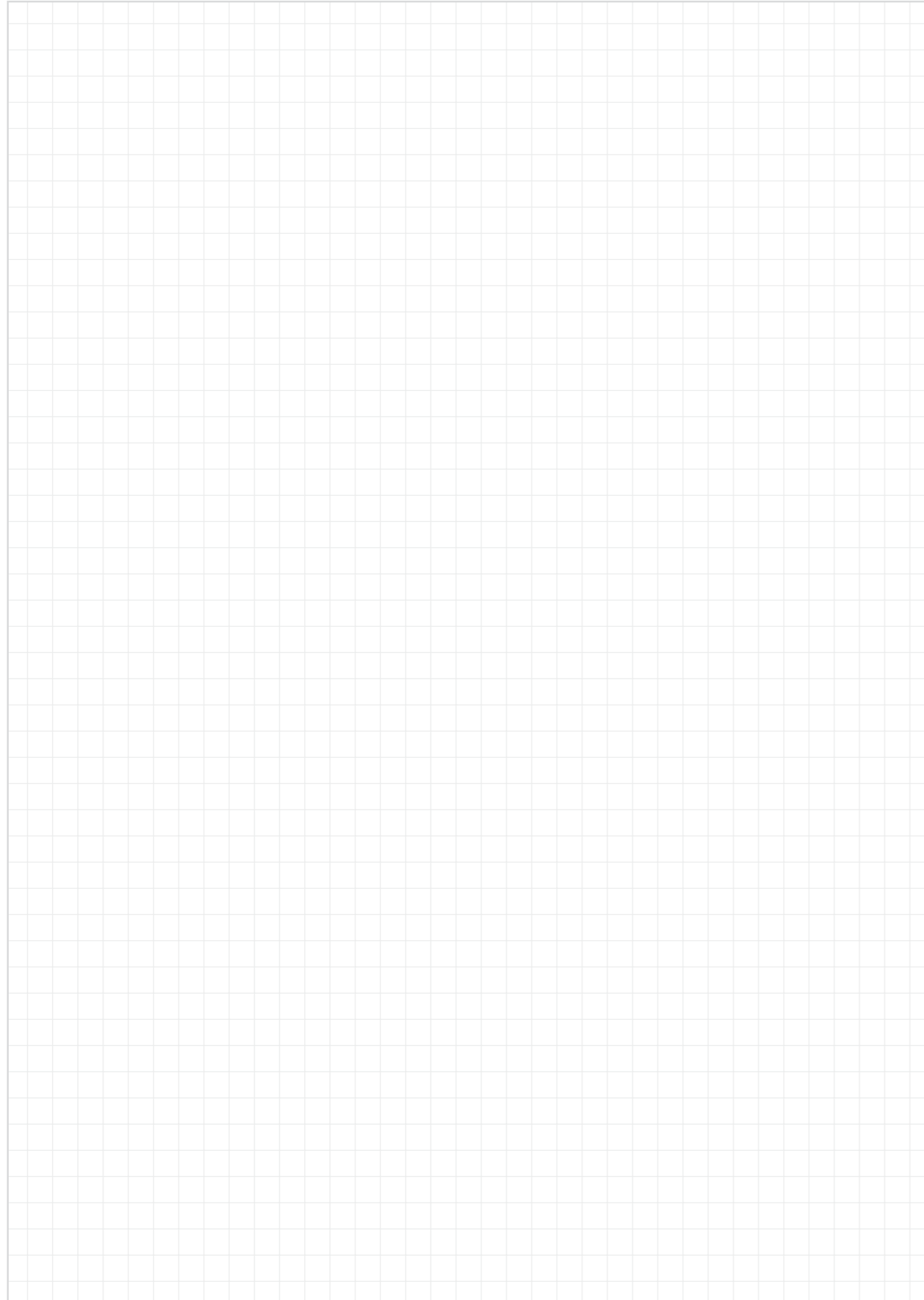


Technical data and dimensions [mm]

Part No.	Pitch	Max. stroke length	Weight additional (per 100mm)		Max. static load capacity		Max. speed [1/min]	Max. speed [m/min]
			[kg]	[kg]	axial [N]	radial [N]		
SLT-BB-0412	Ds8x15	300	0.15	0.06	25	100	1,000	15
SLT-BB-0415	Ds12x25	600	0.40	0.12	100	400	1,000	25

Part No.	A	Al	H	E1	E2	E3	l	l2	d2	ha	sg	tk	kt	tg	f	lb	lt	d	T	as
SLT-BB-0412	45	38	20	15	20	30	78	15	-	10	M3-7	6.5	6	M4	2.2	5	20	13	Tr08x1.5	11
SLT-BB-0415	58	45	30	19	25	35	89	17	12	15	M3-13	8	4.5	M5-15	2.8	6.5	22	17	Tr12x3	16

Also see econ chapter ► [Page 1675](#)



drylin[®] general drive technology - SLN/SLNV linear modules

Based on lubrication-free drylin[®] N low-profile
linear guide

Drive: Trapezoidal or high helix lead screw

Compact design

Clearance adjustment on carriage

Precise with pre-load



Compact, precise and lubrication-free


Lubrication-free miniature linear modules - drylin® SLN


drylin® SLN linear axes is a compact solution. The axis measures 28 x 22mm and can be configured with stroke lengths of up to 250mm. Thanks to the lubrication-free plastic sliders, it is quiet and very light. The axis is based on the tried-and-tested drylin® N system, size 27. It is available both mounted on plain bearings or on ball bearings in the shaft end supports. The drylin® SLN linear axis can be adjusted manually using the hand wheel or combined with the drylin® E stepper and DC motors.


- Ultra-compact design
- 3 carriage types (basic/adjustable/pre-load)
- Lubrication-free drylin® low-profile linear guide
- Modular design


Typical application areas

- Sensor technology
- Inspection technology
- Laboratory technology
- Medical technology

 **Available in 3-8 days**
Detailed information about delivery time online.

 **Price breaks online**
No minimum order value. No minimum order quantity

 **Carriage length: 35mm**
Stroke lengths: up to 250mm

 **Product finder**
▶ www.igus.eu/sln-productfinder

Shaft end supports made from corrosion-resistant, robust plastic

Lead screw mounted with plain or ball bearings

Cost-effective, robust plastic carriages (basic series 03)

Carriage with manual height clearance adjustment (standard series 04)

Metal thread inserts

Minimal backlash with pre-load (pre-load series 05)

Rail made from anodised aluminium

Lead screws made from stainless steel with pitch M5 (5x0.8mm) or high helix thread (5x5, 6x12.7)

Hand wheel available ▶ [Page 1691](#)


Configurable with motor as a ready-to-install linear drive



Miniature linear module, pre-load version

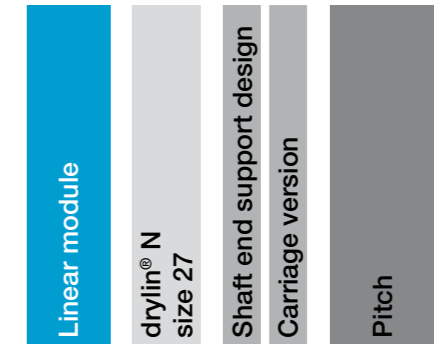


- Based on maintenance-free drylin® N low-profile linear guides size 27
- BB version (ball bearing) for minimal backlash run
- Manual and motorised operation possible
- Linear carriage with individual height clearance adjustment and pre-load (optional)
- Accessories available
▶ [Page 1683](#)
- Also see econ chapter
▶ [Page 1680](#)
- Available with motor

 **Order key**

Order example

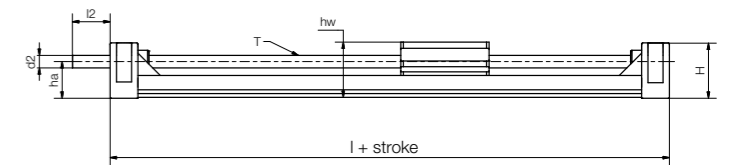
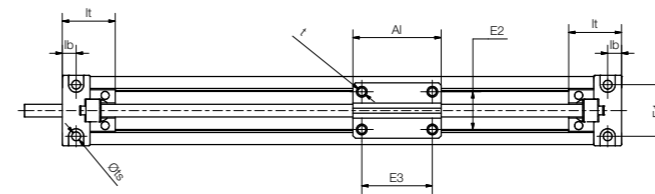
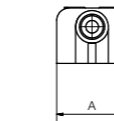
SLN- 27 - 1 4 - 0008



Options:

Shaft end support design Pitch

0: Plain bearing	0008: M5x0.8
1: Ball bearing	0050: Sg5x5
Carriage version	0008: Ds6.35x2.54
4: Standard, adjustable	0127: Sg6.35x12.7
5: Standard, pre-load	0254: Ds6.35x25,4



Technical data

Part No.	Max. stroke length ¹⁰¹⁾	Weight [kg]	addit. [kg] (per 100mm)	Max. static load capacity		Max. speed [rpm]	Max. drive torque [Nm]
	[mm]			axial [N]	radial [N]		
SLN-27-04	250	0.06	0.04	10	40	100	0.1
SLN-27-05	250	0.06	0.04	10	40	100	0.1
SLN-27-14	250	0.06	0.04	10	40	300	0.1
SLN-27-15	250	0.06	0.04	10	40	300	0.1

Dimensions [mm]

Part No.	A	A1	H	E1	E2	E3	E11 ¹⁰²⁾	I	hw	It	lb	ts	d2 ⁹⁸⁾	I2	ha
	±0.2	-0.1	±0.2	±0.15	±0.15	±0.15			±0.2	±0.2			Ø		
SLN-27-04	28	35	22	20.5	15	28	15	77	22.5	21	5	3.5	5 (4 h7)	15	14.5
SLN-27-05	28	35	22	20.5	15	28	15	77	22.5	21	5	3.5	5 (4 h7)	15	14.5
SLN-27-14	28	35	22	20.5	15	28	15	77	22.5	21	5	3.5	Ø4h9 ⁹⁸⁾	15	14.5
SLN-27-15	28	35	22	20.5	15	28	15	77	22.5	21	5	3.5	Ø4h9 ⁹⁸⁾	15	14.5

¹⁰¹⁾ Fixed stroke lengths for SLN option with ball bearings: 100/150/200/250mm

¹⁰²⁾ The dimension E11 can only be found in conjunction with the igus® motor connection ⁹⁸⁾Thread/ remaining thread visible

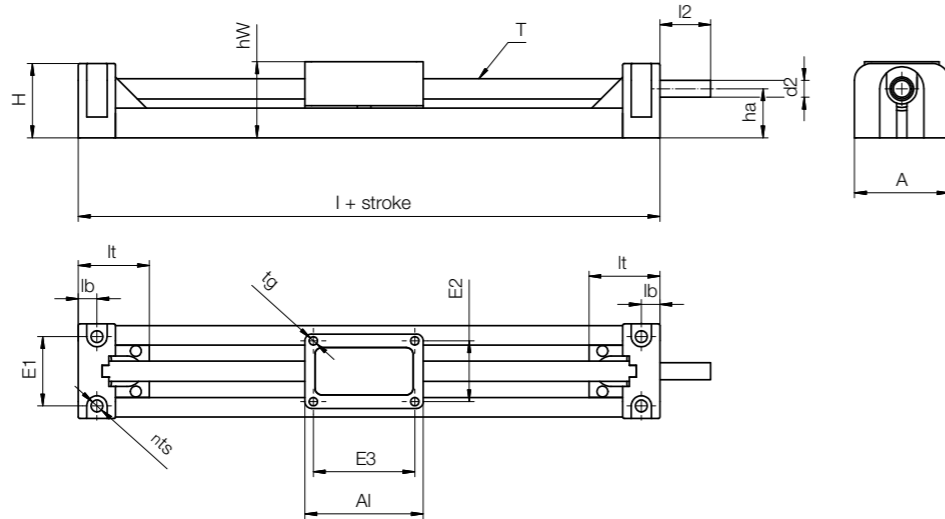




- SLNV linear module for the smallest installation spaces
- For stroke lengths up to 250mm
- High precision due to stop motion preload prism slide
- Clearance reduction in z and y directions due to pre-load
- Lead screw with plain or ball bearing
- Self-locking with trapezoidal thread Tr6x2
- Fast and efficient with pre-load
- Feed rate up to 25.4mm per rotation

Typical application areas:

- Medical technology
- Dental equipment
- Research and development
- Measuring technology



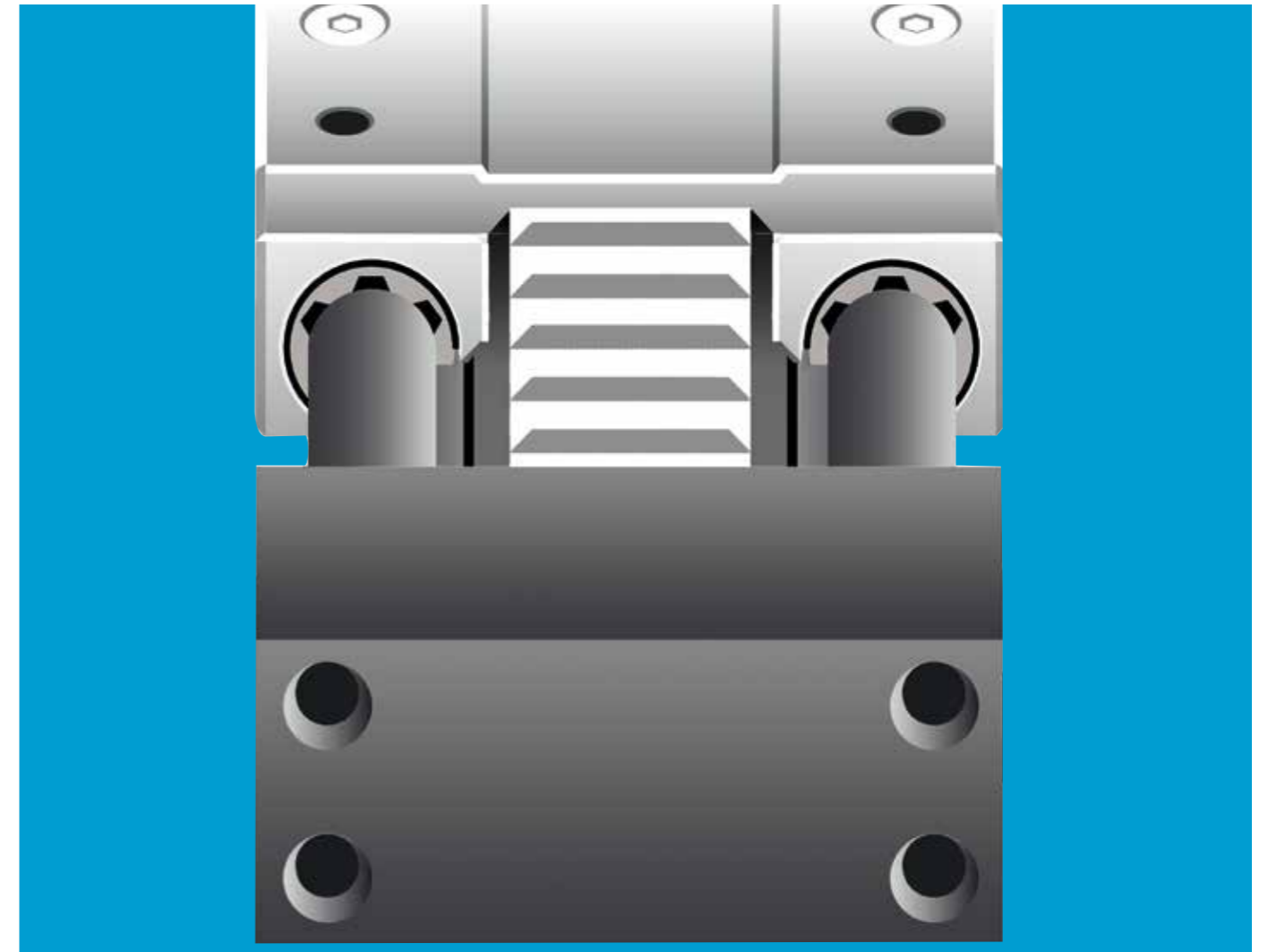
Technical data

Part No.	Max. stroke length [mm]	Weight		Max. static load capacity		Maximum rotational speed [rpm]	Maximum drive torque [Nm]
		addit. (per 100mm) [g]	[g]	axial	radial		
SLNV-27-0025	250	80	56	10	40	300	0.1
SLNV-27-0051	250	80	56	10	40	300	0.1
SLNV-27-0127	250	80	56	10	40	300	0.1
SLNV-27-0254	250	80	56	10	40	300	0.1

Dimensions [mm]

Part No.	A	A1	H	E1	E2	E3	I	hw	lt	lb	ts	tg	d2 ⁹⁸⁾	l2	ha
	±0.2	-0.1	±0.2	±0.15	±0.15	±0.15		±0.3	±0.2				4 h7		
SLNV-27-0025	28	35	22	20.5	18	30	77	22.5	21	5.5	3.5	6.35x2.54	5	15	14.5
SLNV-27-0051	28	35	22	20.5	18	30	77	22.5	21	5.5	3.5	6.35x5.08	5	15	14.5
SLNV-27-0127	28	35	22	20.5	18	30	77	22.5	21	5.5	3.5	6.35x12.7	5	15	14.5
SLNV-27-0254	28	35	22	20.5	18	30	77	22.5	21	5.5	3.5	6.35x25.4	5	15	14.5

⁹⁸⁾ Thread/remaining thread visible



drylin® general drive technology - toothed belt axes

Lubrication-free linear modules based on drylin® W guides

Drive: Toothed belt

For fast positioning

End supports with deep groove ball bearings

As single axis or for multi-axis linear robots



Fast and powerful

Shaft end supports made from robust plastic with integrated deep groove ball bearing

Deflection axis, square, with tooth rim made of dry-tech® high-performance polymer or single-section stainless steel shaft with drive pulley

The complete carriage consists of four lubrication-free drylin® W individual bearing housings and anodised aluminium assembly plates

Carriages available in 3 different lengths

High-profile, torsion-resistant drylin® W double shaft profile, made from hard anodised aluminium

Abrasion-resistant PU toothed belts with steel reinforcement or Neoprene with fibreglass

Profile grooves for mounting via the slot nuts or the clamping elements

Left or right-hand drive pin, also available as dual-sided pin for linear robot structures

Configurable with motor as a ready-to-install linear drive


Lubrication-free toothed belt axes - drylin® ZLW


The drylin® toothed belt axes in the ZLW series are suitable for many different positioning and adjustment tasks. The lubrication-free drylin® W profile guide acts as a linear guide and a toothed belt acts as a drive. The stroke is freely selectable. Thanks to the lightweight design using plastic and aluminium, drylin® ZLW toothed belt axes have a low mass inertia, making them highly efficient. Whether as an individual system or a linear robot structure, the ZLW series offers the ideal solution in both confined spaces and applications that require a high level of support. All drylin® ZLW toothed belt axes can be ordered ready for connection and configured with drylin® stepper and DC motors. It is also possible to integrate other motor components.


- Completely lubrication-free operation
- 3 types: econ/basic/standard
- Variable carriage lengths
- Many motor kits available

Typical application areas

- Medical and laboratory technology
- Handling
- Positioning tasks (pick & place)
- Camera/sensor adjustment
- Machine construction

 **Available in 3-8 days**
Detailed information about delivery time online.

 **Price breaks online**
No minimum order value. No minimum order quantity

 **Carriage lengths: 60-250mm**
Carriage widths: 54-107mm
Stroke length: up to 3,000mm

 **Product finder**
▶ www.igus.eu/zlw-productfinder

Positioning with lubrication-free toothed belt drive



ZLW econ series

- Cost-effective starter axis in 2 sizes
 - Lightweight
 - Carriage and deflection housing made of plastic
 - Anodised drylin® W aluminium profile section
- ▶ Page 1656



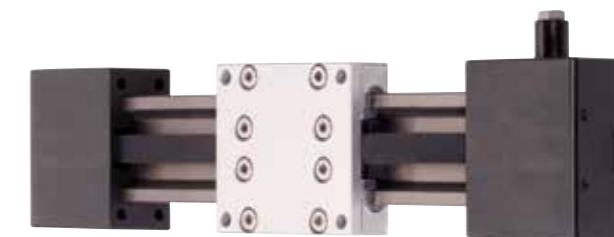
ZLW standard series

- Effective PU toothed belt with steel cables
 - Single-section deflection axis made of stainless steel (shaft and tooth rim)
 - Hard-anodised drylin® W aluminium profile
 - For installation sizes 0630/1040/1080/1660
- ▶ Page 1656



ZLW-OD reverse

- For quick reverse positioning
 - Fast right/left adjustment
 - Compact due to flat drylin® W double rails
 - With angle flange
- ▶ Page 1662



ZLW basic series

- Cost-effective deflection axis consisting of stainless-steel square section and high-performance polymer
 - Neoprene toothed belts with fibre glass reinforcement
 - Hard-anodised drylin® W aluminium profile
 - For installation sizes 0630 and 1040
- ▶ Page 1656



ZLW specialists

- Deep-freeze LT version for applications down to -30°C
 - UW version for underwater use
 - SW version for splash water applications
 - For installation size 1040
- ▶ Page 1656



ZAW - cantilever axis

- Secure mounting of the drive unit
 - Traversing of profile section and load
 - Fixed end block and floating shaft end support
 - Size 1040 for max. stroke up to 1,000mm
- ▶ Page 1669

ZLW - open design in installation size 20

- Variable shaft span of 120/160/200mm
 - Effective deflection axis and toothed belt
 - Lightweight aluminium version available
 - Corrosion-resistant stainless steel version
- ▶ Page 1658



Motors and mounting accessories
▶ Page 1683

drylin® ZLW | Toothed belt axes | Technical data

Toothed belt axis	Version	Shaft Ø [mm]	Weight		Max. stroke length ¹²⁰⁾ [mm]	Trans- mission [mm/rev]	Tooth profile	Carriage length [mm]
			without stroke [kg]	100mm stroke [kg]				
ZLN-40	-	40	0.24	0.05	750	60	T2.5	50
ZLW-0630-...								
...-02-E	econ	□6	0.30	0.08	500	54	HTD 3M	60
...-02-B	Basic	□6	0.38	0.08	1,000	54	HTD 3M	60/100
...-02-S	Standard	8	0.43	0.08	1,000	54	MTD3	60/100
...-OD-B	Reverse basic	□6	0.40	0.1	1,000	54	HTD 3M	60/100
...-OD-S	Reverse standard	8	0.45	0.1	1,000	54	HTD 3M	60/100
ZLW-0660-S-02-	Standard	10	0.88	0.15	1,000	54	HTD 3M	100/150/200
ZLW-1040-...								
...-02-E	econ	10	0.70	0.14	1,000	66	RPP 3M	100/150/200
...-02-B	Basic	10	0.90	0.14	2,000	66	RPP 3M	100/150/200
...-02-S	Standard	10	1.00	0.14	2,000	70	AT5	100/150/200
...-02-LT	Deep-freeze	10	1.00	0.14	2,000	70	AT5	100/150/200
...-02-UW	Underwater	10	1.00	0.14	1,000	70	AT5	100/150/200
...-02-SW	Splash water	10	1.00	0.14	2,000	70	AT5	100/150/200
...-OD-B	Reverse basic	10	1.00	0.17	1,500	66	RPP 3M	100/150/200
...-OD-S	Reverse standard	10	1.00	0.17	1,500	70	AT5	100/150/200
ZLW-1080-...								
...-02-S	Standard	10	1.30	0.21	2,000	70	AT5	100/150/200
ZLW-10120	Standard	10	2.03	0.16	2,000	75	3M	150/200/250
ZLW-10160	Standard	10	2,28	0.17	2,000	75	3M	151/200/250
ZLW-10200	Standard	10	2.54	0.19	2,000	75	3M	152/200/250
ZLW-1660-...								
...-02-S	Standard	16	4.00	0.5	3,000	120	AT5	100/150/200/250
ZLW-20...								
...120	Standard	20	5.36	0.386	3,000	144	20 RPP8	200/250/300
...120-HYD	Hygienic design	20	2.03	0.16	2,500	144	8M	200
...160	Standard	20	5.78	0.426	3,000	144	20 RPP8	200/250/300
...200	Standard	20	62	0.466	3,000	144	20 RPP8	200/250/300

¹²⁰⁾ When configuring your linear module, we ask that you note the igus® specifications for maximum stroke lengths. The performance and load specifications shown above for all drive units are based exclusively on stroke lengths within the recommended values. Exceeding these can result in undesirable effects to the function such as increased wear and noise. Belt or lead screw contact cannot be excluded, and the rated performance and load specifications may not be attainable.

Tightening torque for drylin® metallic screws

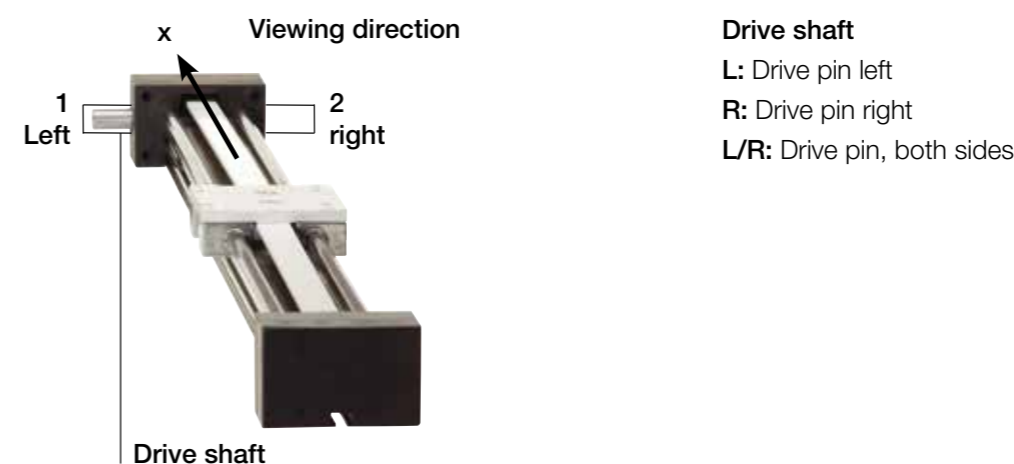
Metric thread (Da)	Tightening torque	Recommended tightening torque
	[Nm]	[Nm]
M3	0.5 - 1.1	0.7
M4	1.0 - 2.8	1.5
M5	2.0 - 5.5	3.0
M6	4.0 - 10.0	6.0
M8	8.0 - 23.0	15.0
M10	22.0 - 46.0	30.0

Please be aware of the minimal screw-in depth for aluminium and zinc die-casting parts: 1.5xDa

Max. radial load [N]	Toothed belt material	Toothed belt width [mm]	Toothed belt tension [N]	Guide bearing	Max.	Max.	Idle	Max.
					speed [m/s]	position accuracy [mm]	torque [Nm]	drive torque [Nm]
45	PU with steel	6	30	Deep groove ball bearings	2.0	± 0.30	0.15	0.4
30	Neoprene with GF	9	20	Deep groove ball bearings	1.0	± 0.40	0.10	0.30
100	Neoprene with GF	9	75	Deep groove ball bearings	2.0	± 0.35	0.10	0.75
150	PU with steel	9	100	Deep groove ball bearings	2.0	± 0.30	0.15	1.00
50	Neoprene with GF	9	75	Deep groove ball bearings	1.0	± 0.35	0.10	0.75
75	PU with steel	9	100	Deep groove ball bearings	1.0	± 0.30	0.15	1.00
150	PU with steel	15	100	Deep groove ball bearings	5.0	± 0.30	0.15	1.25
100	Neoprene with GF	15	50	Deep groove ball bearings	2.0	± 0.35	0.1	0.5
200	Neoprene with GF	16	150	Deep groove ball bearings	3.0	± 0.30	0.2	1.75
300	PU with steel	16	200	Deep groove ball bearings	5.0	± 0.20	0.3	2.40
300	TPOUKF2	16	200	Cold ball bearing	5.0	± 0.20	0.3	2.40
100	PU + Aramid	16	50	xiros® ball bearings	1.0	± 0.50	0.15	0.50
200	PU + stainless steel	16	200	Stainless steel ball bearing	5.0	± 0.20	0.30	2.40
100	Neoprene with GF	16	150	Deep groove ball bearings	1.5	± 0.30	0.15	1.75
150	PU with steel	16	200	Deep groove ball bearings	2.5	± 0.20	0.25	2.40
300	PU with steel	16	200	Deep groove ball bearings	5.0	± 0.20	0.25	2.40
300	Neoprene with GF	15	200	Deep groove ball bearings	5.0	± 0.20	0.35	2.50
300	Neoprene with GF	15	200	Deep groove ball bearings	5.0	± 0.20	0.35	2.50
300	Neoprene with GF	15	200	Deep groove ball bearings	5.0	± 0.20	0.35	2.50
2,000	PU with steel	32	500	Deep groove ball bearings	5.0	± 0.20	0.4	10.00
3,000	PU with stainless steel	20	750	Deep groove ball bearings	5.0	± 0.20	1.0	15.00
750	PU (FDA) with stainless steel	20	750	FDA-compliant deep groove ball bearings	5.0	± 0.20	1.0	15.00
3,000	PU with stainless steel	20	750	Deep groove ball bearings	5.0	± 0.20	1.0	15.00
3,000	PU with stainless steel	20	750	Deep groove ball bearings	5.0	± 0.20	1.0	15.00

The technical values in the specifications are maximum values for each criterion, e.g. speed, stroke length etc.; they are not cumulative values. Suitability under consideration of the individual parameters for usage can be checked online at www.igus.eu/linearmodule-finder.

Drive pin alignment for all ZLW toothed belt axis



drylin® ZLW-0630 | Technical data

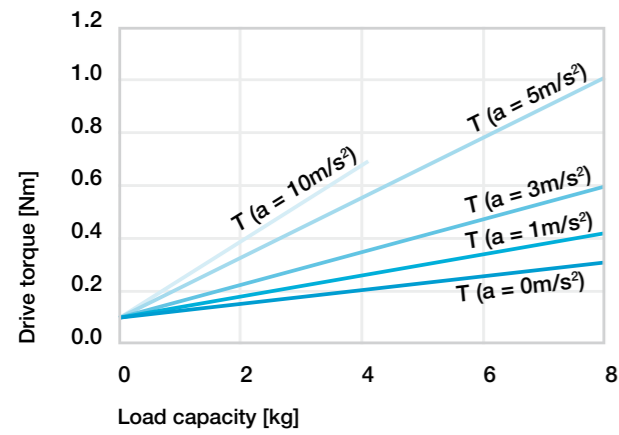


Diagram 01: Required drive torque¹³⁸⁾; horizontal orientation - ZLW-0630, version basic 02

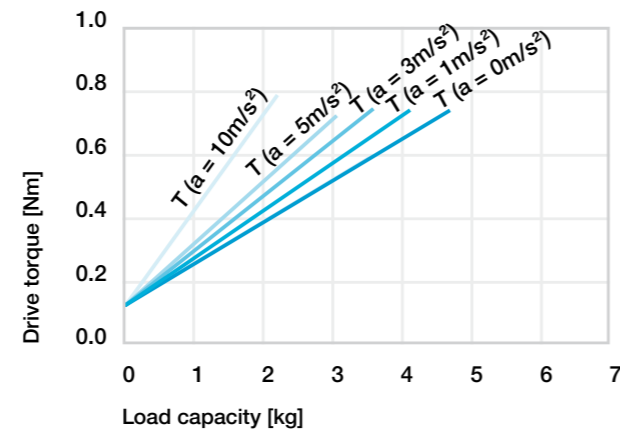


Diagram 02: Required drive torque¹³⁸⁾; vertical orientation - ZLW-0630, version basic 02

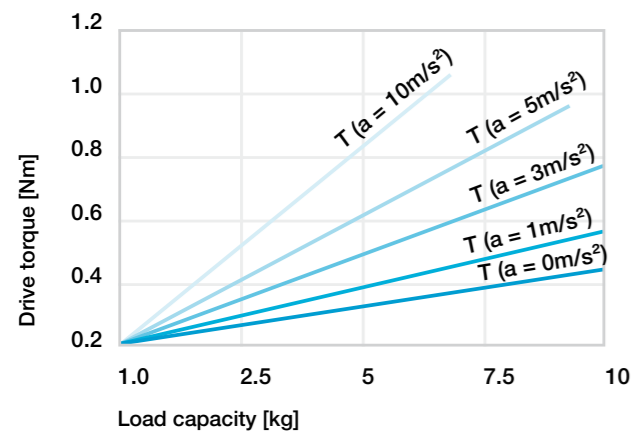


Diagram 03: Required drive torque¹³⁸⁾; horizontal orientation - ZLW-0630, version standard 02

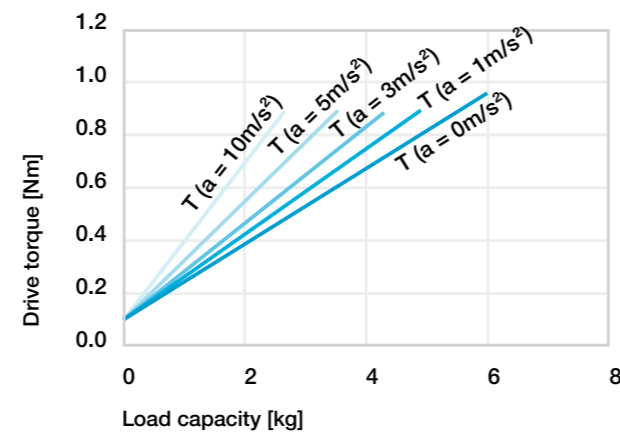


Diagram 04: Required drive torque¹³⁸⁾; vertical orientation - ZLW-0630, version standard 02

¹³⁸⁾ Assumption: The moving mass is located in a circumscribed circle with a max. R = 100mm to the middle of the guiding rail, max. permissible torque, ZLW-0630 basic 02: 0.75Nm, a = 0m/s², ZLW-0630 standard 02: 1Nm, a = 0m/s², constant drive without nominal acceleration value

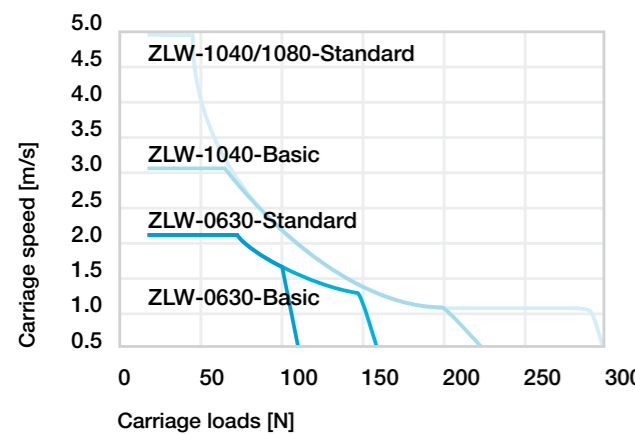


Diagram 05: Maximum load compared: ZLW-0630 and ZLW-1040/1080, 60% ED (duty cycle). The graph accounts for the sum of all forces active on the carriage.

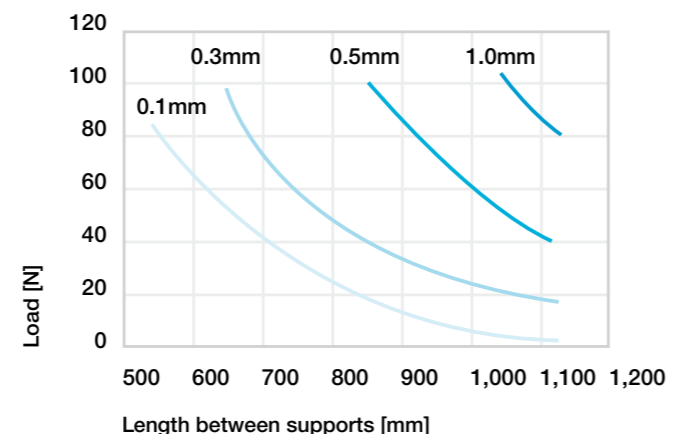


Diagram 06: Sag between unsupported end blocks ZLW-0630, basic 02 and standard 02 version. Sag permissible up to 2mm maximum.

drylin® ZLW-1040/1080 | Technical data

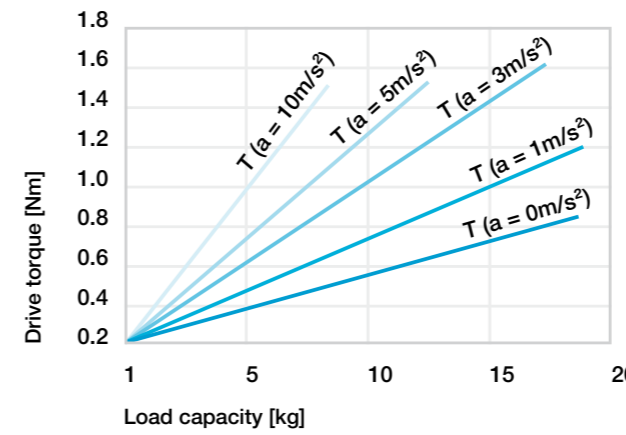


Diagram 07: Required drive torque¹³⁹⁾; horizontal orientation - ZLW-1040, version basic 02

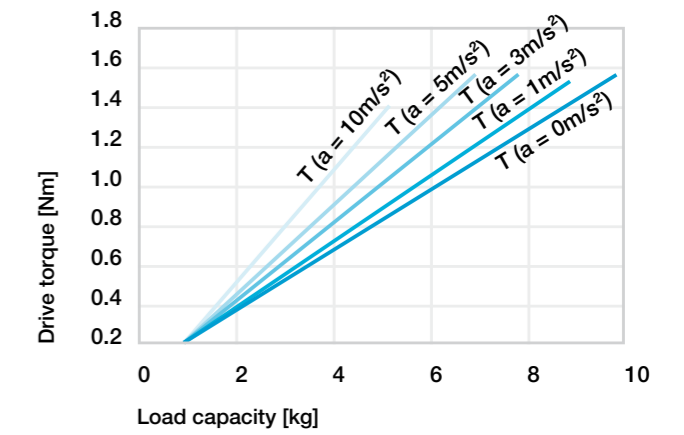


Diagram 08: Required drive torque¹³⁹⁾; vertical orientation - ZLW-1040, basic 02 version

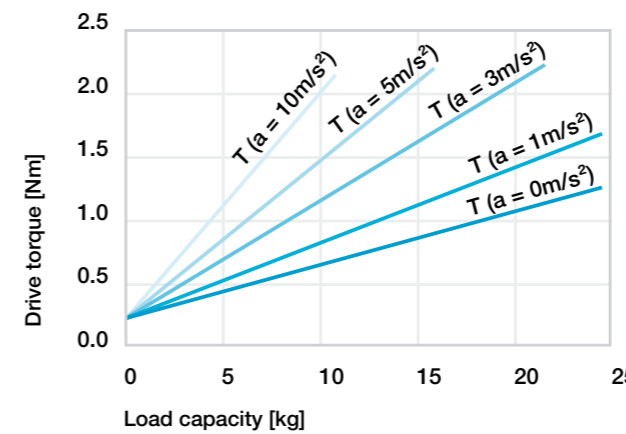


Diagram 09: Required drive torque¹³⁹⁾; horizontal orientation - ZLW-1040/1080, version standard 02

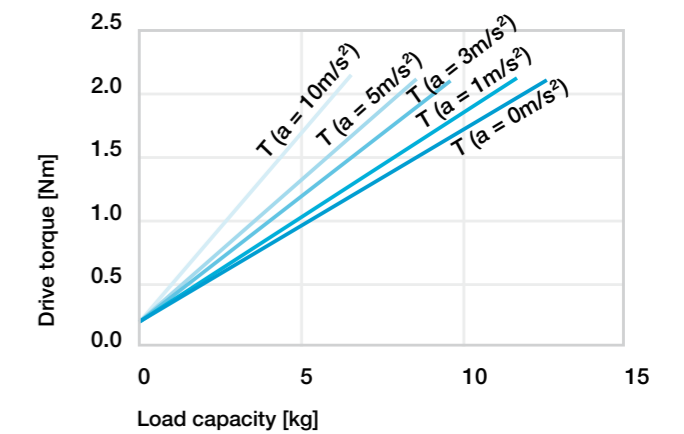


Diagram 10: Required drive torque¹³⁹⁾; vertical orientation - ZLW-1040/1080, version standard 02

¹³⁹⁾ Assumption: The moving mass is located in a circumscribed circle with a max. R = 100mm to the middle of the guiding rail, max. permissible torque ZLW-1040/1080 basic 02: 1.75Nm, a = 0m/s², ZLW-1040/1080 standard 02: 2.4Nm, a = 0m/s², constant drive without nominal acceleration value

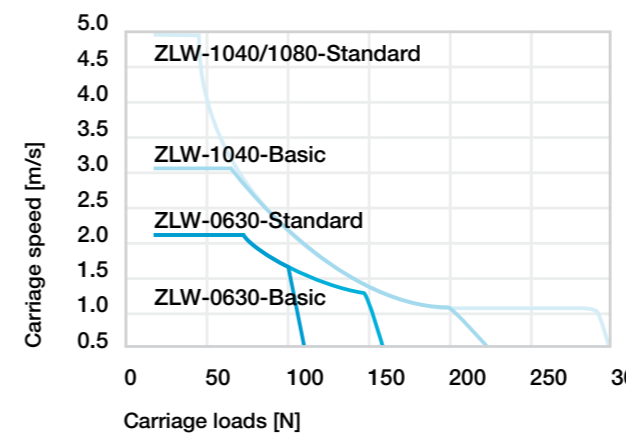


Diagram 11: Maximum load compared: ZLW-0630 and ZLW-1040/1080, 100% ED (duty cycle). The graph accounts for the sum of all forces active on the carriage.

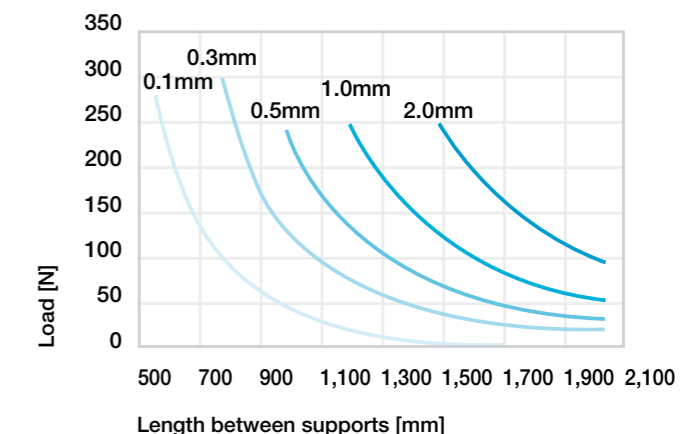


Diagram 12: Sag between unsupported end blocks ZLW-1040, basic version and ZLW-1040/1080 standard 02 version. Sag permissible up to 2mm maximum - horizontal orientation

drylin® ZLW-1660 | Technical data

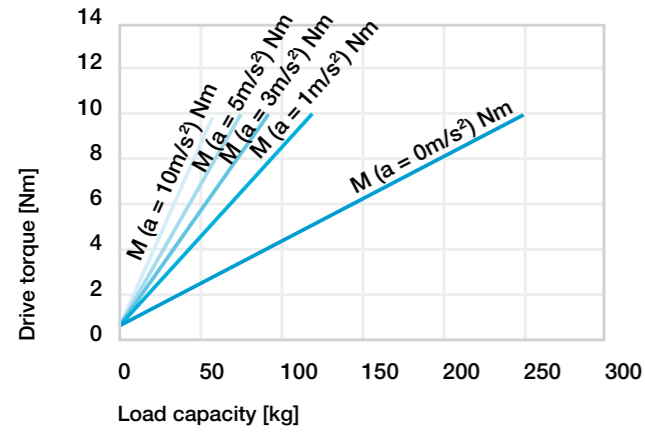


Diagram 13: Required drive torque¹⁴⁰⁾; horizontal orientation - ZLW-1660, standard 02 version

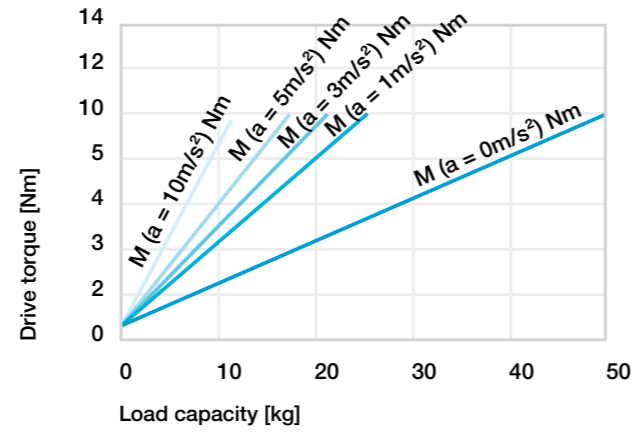


Diagram 14: Required drive torque¹⁴⁰⁾; vertical orientation - ZLW-1660, standard 02 version

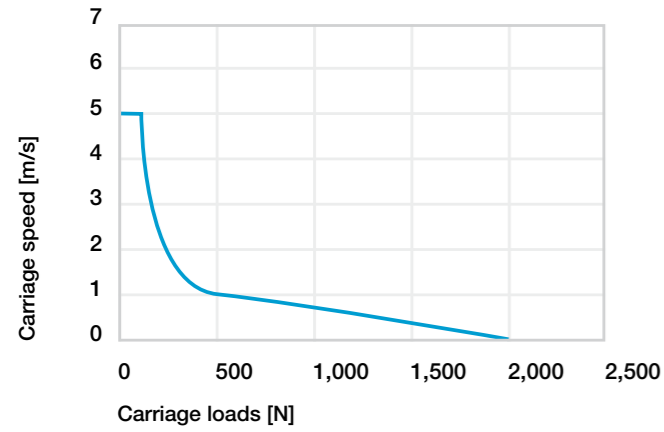


Diagram 15: Maximal load, horizontal installation; the graph accounts for the sum of all forces active on the carriage.

¹⁴⁰⁾ Assumption: The moving mass is located in a circumscribed circle with $R = 100\text{mm}$ to the middle of the guiding rail, max. permissible torque ZLW-1660 standard 02: 10Nm , $a = 0\text{m/s}^2$, constant drive without nominal acceleration value

drylin® ZLW-20120 | Technical data

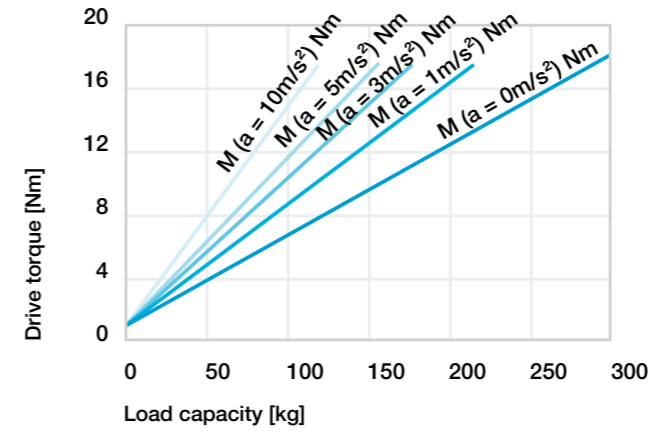


Diagram 17: Required drive torque¹⁴⁰⁾; horizontal orientation - ZLW-20120, version standard 02

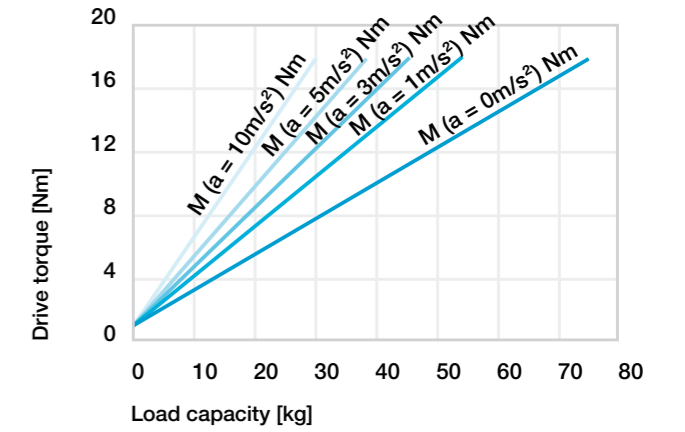


Diagram 16: Required drive torque¹⁴⁰⁾; vertical orientation - ZLW-20120, version standard 02

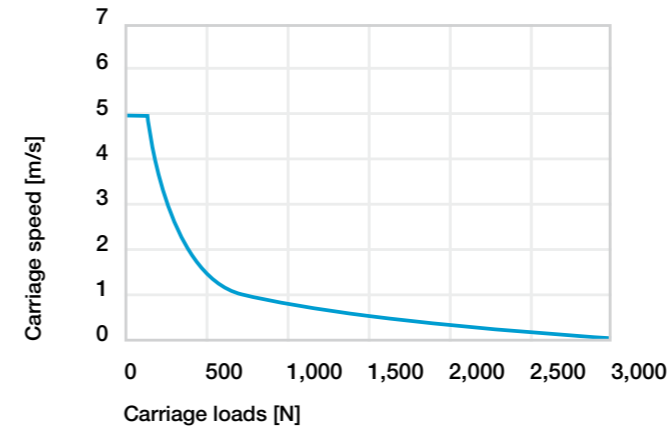


Diagram 18: Maximal load, horizontal installation; the graph accounts for the sum of all forces active on the carriage.

¹⁷⁴⁾ Assumption: The moving mass is located in a circumscribed circle with $R = 100\text{mm}$ to the middle of the guiding rail, max. permissible torque: 20Nm , $a = 0\text{m/s}^2$, constant drive without nominal acceleration value

Technical data

Part No.	Geometrical moment of inertia		Moment of resistance	
	I_y	I_z	W_{by}	W_{bz}
ZLW-0630	30,391	11,674	1,736	845
ZLW-0660	212,826	17,018	6,448	1,398
ZLW-1040	97,560	54,910	3,902	3,076
ZLW-1080	483,653	486,613	11,515	4,684
ZLW-1660	540,876	4,773,489	14,618	24,586



econ series

Many infeed movements require cost-effective linear axes that focus on pure adjustment tasks. This econ series with toothed belt was developed for the fast positioning of light loads. With its compact design and being lightweight due to aluminium and plastic, the ZLW econ is the perfect alternative to self-made solutions.



Basic series

Lubrication-free linear guide also driven by a toothed belt made from fibre-glass reinforced neoprene (black). The drive shaft, consisting of a square stainless steel and toothed pulley made of high-performance polymer, rests on 2 deep groove ball bearings. The drive pin is 6x6mm square and made of stainless steel. The scope of delivery includes a plastic adapter for a pin diameter of 10mm.



Standard series

The lubrication-free linear guide is also driven by a toothed belt made from steel reinforced polyurethane (white). Deflection shaft and drive pulley (single-piece) are made from plated steel or stainless steel. The pulley shafts are mounted in two deep groove ball bearings.

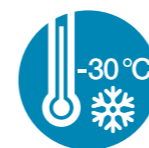


Modular kit series

A high degree of flexibility characterises the ZLW modular system series. A modular construction system based on individual rails from the drylin® W linear system. 3 widths up to 200mm, 8M PU with stainless steel reinforcement for smooth running, either in aluminium or stainless steel.



The ZLW specialists



LT

For use at temperatures down to -30°C, the drive and deflection shaft end supports are fitted with ball bearings. Drive is a toothed belt suitable for low temperatures.



UW

Maximum protection against corrosion is provided by the toothed belt axis; for underwater applications, among others. Linear carriages, drive and deflection shaft end supports made of anodised aluminium, incl. lubrication-free xiros® ball bearings. A flexible toothed belt with aramid reinforcing serves as the belt.



SW

The SW ZLW version is suitable for applications where there is contact with spray water. Corrosion-resistant due to PU toothed belt with stainless steel tie beams and stainless steel ball bearings, as well as shaft end support housing made of anodised aluminium.



ES

The ZLW modular axis made of stainless steel offers maximum corrosion protection. All components are manufactured in stainless steel, driven by 8M PU toothed belt with stainless steel reinforcing.

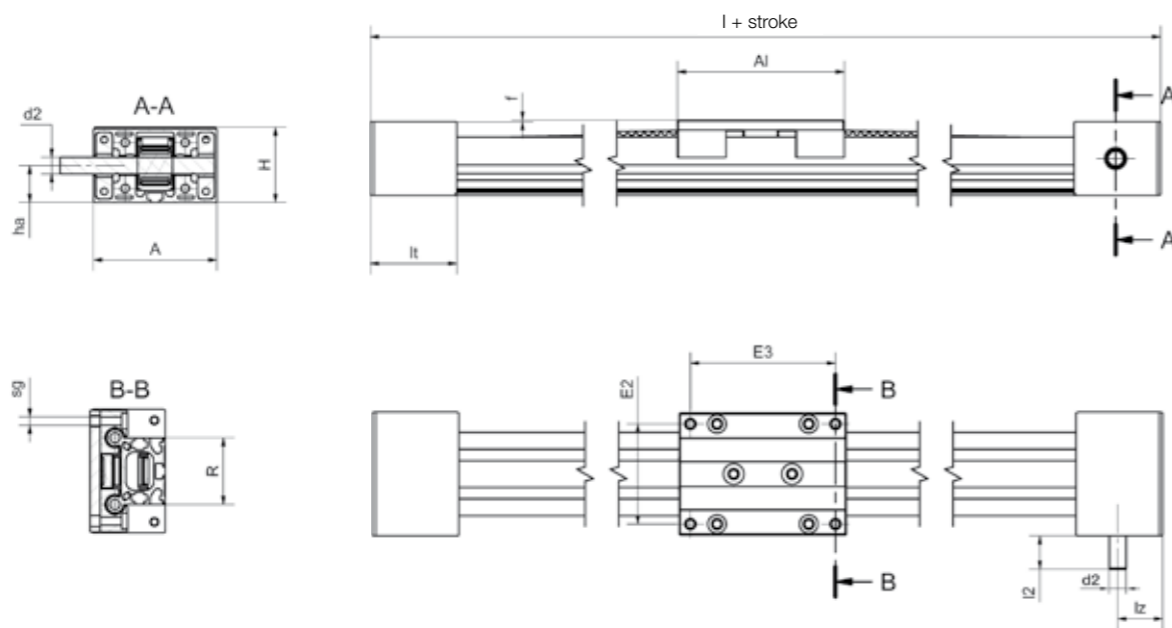


More Information online

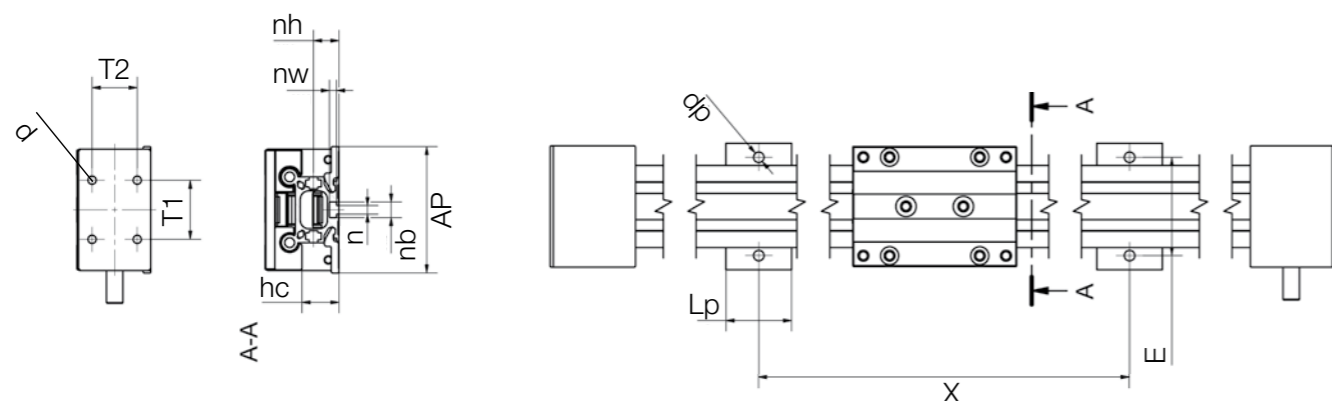
► www.igus.eu/ZLW



- Fast positioning of small loads
- Quiet operation and flat design
- Drive pin on one or both sides
- Linear carriages available in different lengths (except for econ version)
- Configurable with motor as a ready-to-install linear drive
- Specialist in deep-freeze, underwater and spray-water areas ► **Page 1655**



Connecting dimensions



Order key

Order example

ZLW-0630-02-B



Options:

Version

02: With deep groove ball bearings

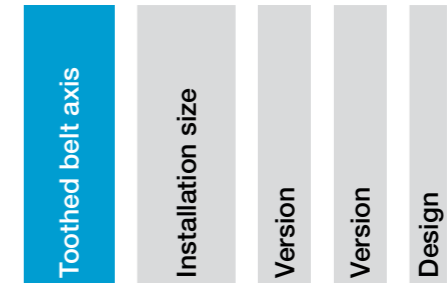
Design

E: econ series (630/1040)
B: basic series (0630/1040)
S: Standard series (all sizes)

Order key specialists

Order example

ZLW-1040-LT-02-S



Options:

Version

LT: For deep-freeze applications down to -30°C

UW: For underwater applications

SW: For spray-water applications

Version

02: With deep groove ball bearings

Design

S: Standard series

Dimensions [mm]

Part No.	A	AI	H	E2	E3	I	R	f	lt	sg	ha	hc	lz	l2	d2
	-0.3			±0.15	±0.15		±0.15		±0.3						h9
ZLW-0630-02	54	60	31	45	51	144	30	3	42	M4	14	22.5	20.5	20	8
ZLW-0660	85	100	31	76	91	184	61	3	42	M4	14	22.5	20.5	19.5	8
ZLW-1040-02	74	100	44	60	87	204	40	1	52	M6	22	22.5	27	20	10
ZLW-1040-LT-02-S	74	100	44	60	87	204	40	1	52	M6	22	22.5	27	20	10
ZLW-1040-UW-02-S	74	100	44	60	87	204	40	1	52	M6	22	22.5	27	20	10
ZLW-1040-SW-02-S	74	100	44	60	87	204	40	1	52	M6	22	22.5	27	20	10
ZLW-1080-02	90	100	44	94	87	204	74	1	52	M6	22	22.5	24.5	12	10
ZLW-1660-02	104	100	72	86	82	252	60	2	76	M8	43	22.5	38	20	14

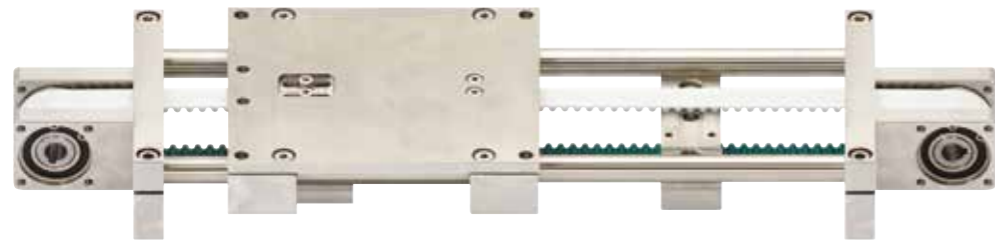
Connecting dimensions [mm]

Part No.	X	E	AP	Lp	dp	n	nb	nw	nh	T1	T2	d
		±0.2	-1.0							±0.25	±0.25	
ZLW-0630-02 ¹⁰⁹⁾	variable	40	52	15	5.5	-	-	4.3	7	20	21	3.2
ZLW-0660	variable	71	52	15	5.5	5.2	9.5	4.3	7	20	21	3.2
ZLW-1040-02	variable	60	78	40	6.4	5.2	9.5	4.3	15.5	36	26.5	5.0
ZLW-1040-LT-02-S	variable	60	78	40	6.4	5.2	9.5	4.3	15.5	36	26.5	5.0
ZLW-1040-UW-02-S	variable	60	78	40	6.4	5.2	9.5	4.3	15.5	36	26.5	5.0
ZLW-1040-SW-02-S	variable	60	78	40	6.4	5.2	9.5	4.3	15.5	36	26.5	5.0
ZLW-1080-02	variable	94	111	40	6.4	5.2	9.5	4.36	15.5	36	27	M6
ZLW-1660-02	variable	100	122	40	9	10	15.4	13	27.6	65	60	M5

¹⁰⁹⁾ Basic version: 6mm square, plastic adapter for pin diameter 10mm included



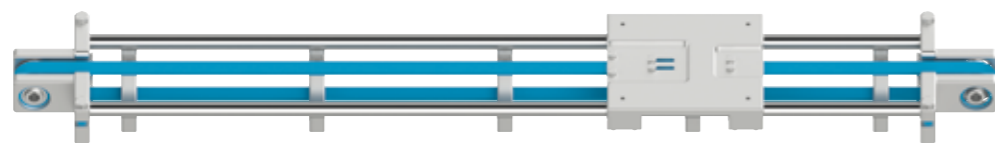
Aluminium version



Stainless steel version



ZLWA design with exchangeable liners



Hygienic design
► Page 1660



Tandem toothed belt axis
► Page 1661

Technical data

Part No.	Max. stroke length		Transmission [mm/rev]	Tooth profile	Toothed belt material	Toothed belt tension [N]
	-ES [mm]	-AL [mm]				
ZLW-10120 ¹⁶⁶⁾	2,000	2,000	75	3M	Neoprene with fibre glass	200
ZLW-10160 ¹⁶⁶⁾	2,000	2,000	75	3M	Neoprene with fibre glass	200
ZLW-10200 ¹⁶⁶⁾	2,000	2,000	75	3M	Neoprene with fibre glass	200
ZLW-20120	2,500	3,000	144	8M	PU with stainless steel reinforcement	750
ZLW-20160	2,500	3,000	144	8M	PU with stainless steel reinforcement	750
ZLW-20200	2,500	3,000	144	8M	PU with stainless steel reinforcement	750

¹⁶⁶⁾ Option for WJ200UMA pillow blocks with exchangeable liners, ZLWA-□

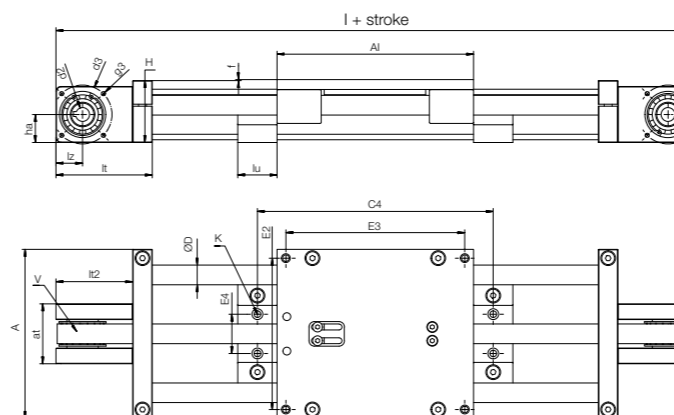


Order example

ZLW A -20120-AL

Toothed belt axis	Replaceable	Installation size	Axis distance	Design
-------------------	-------------	-------------------	---------------	--------

- High speed with ball bearing supported drive shaft
- Robust wide round belt
- Central belt adjustment on the carriage
- Based on lubrication-free drylin® W linear guide
- Variable motor connection due to solid and hollow shafts



Options:
Axis distance
120: 120mm
160: 160mm
200: 200mm

Design
AL: Aluminium
ES: Stainless steel
Carriage length
200: 200mm

Drive shaft
Hollow shaft
Stroke length
Max. 3,000mm (AL)
Max. 2,500mm (SS)

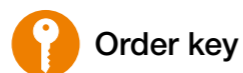
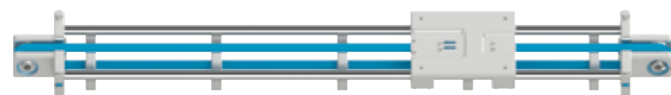
Dimensions [mm]

Part No.	A	AI	H	E2	E3	E4	C4	f	lt	ha	lz	l
ZLW-10120	153	150	40.0	140	137	40	240	1	74	18.0	18	198
ZLW-10160	193	150	40.0	180	177	90	240	1	74	18.0	18	198
ZLW-10200	233	150	40.0	220	217	120	240	1	74	18.0	18	198
ZLW-20120	172	200	63.0	154	182	40	240	-	98	28.5	27	396
ZLW-20160	212	200	63.0	194	182	80	240	-	98	28.5	27	396
ZLW-20200	252	200	63.0	234	182	120	240	-	98	28.5	27	396

Part No.	d2 H7	d3	g3	D	K For DIN912 - M6	at	lt2	lu	V [mm/rev]
ZLW-10120	10	38	M4	10	M6 ¹⁵⁸⁾	43	59	20	75
ZLW-10160	10	38	M4	10	M6 ¹⁵⁸⁾	43	59	20	75
ZLW-10200	10	38	M4	10	M6 ¹⁵⁸⁾	43	59	20	75
ZLW-20120	14	60	M5	20	M8	61	78	40	144
ZLW-20160	14	60	M5	20	M8	61	78	40	144
ZLW-20200	14	60	M5	20	M8	61	78	40	144

¹⁵⁸⁾ For DIN912 - M5

Linear axis with hygienic design

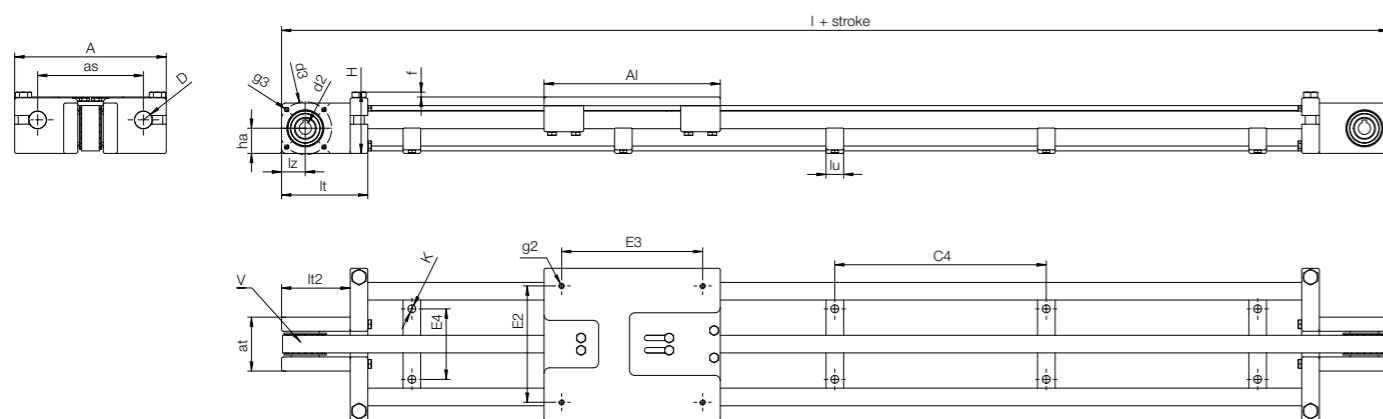


Order example

ZLW-20120-HYD



- Linear axis compliant with hygienic design
- Bearing points FDA-compliant through iglidur® A160
- Corrosion-resistant



Technical data

Part No.	Max. stroke length [mm]	Transmission [mm/rev]	Tooth profile	Toothed belt material	Toothed belt tension [N]	Weight [kg]	addit. (per 100mm) [kg]
ZLW-20120-HYD New	3,000	144	8M	PU (FDA) + stainless steel	750	2.03	0.16

Dimensions [mm]

Part No.	A	AI	H	E2	E3	E4	C4	f	lt	ha	lz	l
ZLW-20120-HYD New	172	200	69.4	132	AI-40	80	240	5.4	98	28.5	27	396

Part No.	d2 H7	d3	g3	D	K For DIN912 - M6	at	lt2	lu	V [mm/rev]
ZLW-20120-HYD New	14	60	M5	20	9	61	78	20	144

Tandem toothed belt axis

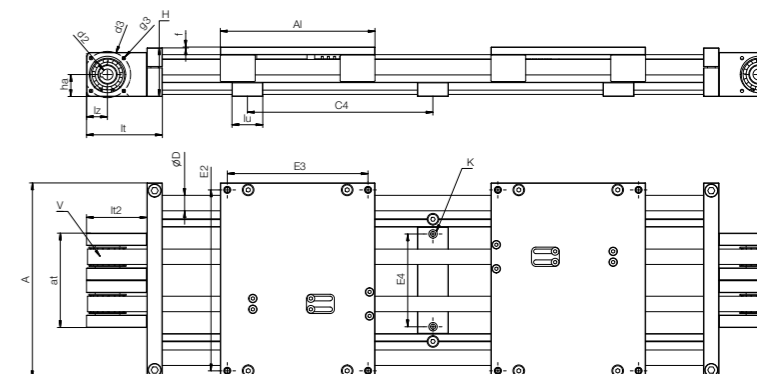


Order example

ZLWT-10160



- Addition to the tandem toothed belt axis installation size 10/20
- Compact tandem toothed belt axis with two drive belts in one unit
- Two carriages can be controlled synchronously or separately
- With drylin® W exchange bearings for fast bearing exchange on the rail
- Can be supplied ready-to-connect with igus® motors and drylin® D1 dryve motor control system



Technical data

Part No.	Max. stroke length [mm]	Transmission [mm/rev]	Tooth profile	Drive belt Material	Drive belt Tension [N]	Weight [kg]	addit. (per 100mm) [kg]
ZLWT-10160	2,000	75	3M	Neoprene with fibre glass	200	4.0	0.25
ZLWT-10200	2,000	75	3M	Neoprene with fibre glass	200	4.5	0.30
ZLWT-20200	3,000	144	8M	PU with stainless steel reinforcement	750	11.0	0.50
ZLWT-20300	3,000	144	8M	PU with stainless steel reinforcement	750	12.5	0.65

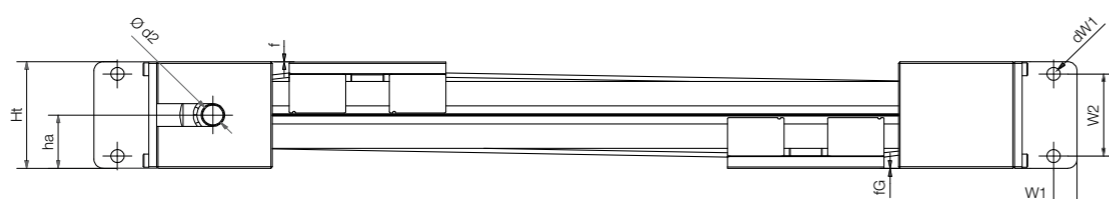
Dimensions [mm]

Part No.	A	AI	H	E2	E3	E4	C4	f	lt	ha	lz	l	d2 h7
ZLWT-10160	193	150/200/250	40	180	AI-13	90	240	1	74	18,0	18	448	10
ZLWT-10200	233	150/200/250	40	220	AI-13	120	240	1	74	18,0	18	448	10
ZLWT-20200	252	200/250/300/350	63	234	AI-18	120	240	1	98	28,5	27	596	14
ZLWT-20300	352	200/250/300/350	63	334	AI-18	200	240	1	98	28,5	27	596	14

Part No.	d3	g3	D	K For DIN912 - M6	at	lt2	lu	V [mm/rev]
ZLWT-10160	38	M4	10	M6	107	59	20	75
ZLWT-10200	38	M4	10	M6	107	59	20	75
ZLWT-20200	60	M5	20	M8	122	78	40	144
ZLWT-20300	60	M5	20	M8	122	78	40	144



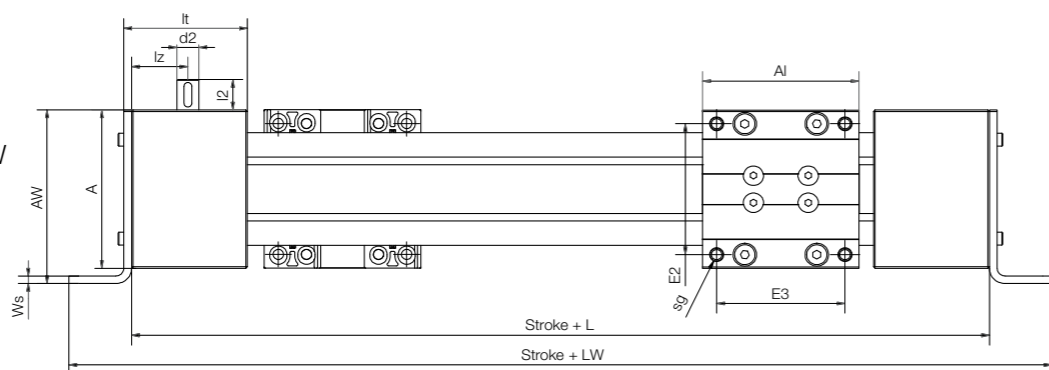
- Quick reverse positioning
- Fast right/left adjustment
- Available as standard and basic version
- Incl. angle flange for fixing
- Individual stroke lengths up to max. 3,000mm
- Radial loads up to 200N



Angle flange alignment:

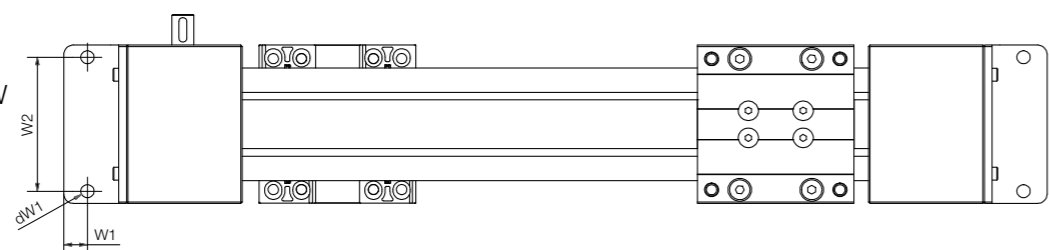
"02" version

mounted on the side, ZLW alignment on the edge



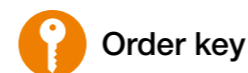
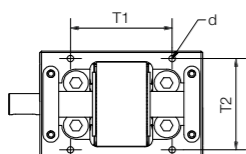
"04" version

mounted horizontally, ZLW alignment horizontal



"03" version

mounted on the front



Order key



Order example

ZLW-1040-OD-02



Options:

Design

OD: Right/left opposite drive

Version

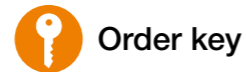
02: With deep groove ball bearings

Dimensions [mm]

Part No.	A	AI	H	Ht	E2	E3	L	R	f	fg	lt	sg	ha	lz	Max. stroke length [mm]
	-0.3				±0.15	±0.15		±0.15			±0.3				
ZLW-0630-OD ¹⁰⁹⁾	54	60	31	28	45	51	144	30	3	7	42	M4	14	20	1,000
ZLW-1040-OD	74	100	45	44	60	87	204	40	1	3	52	M6	22	27	1,500
ZLW-1660-OD-02	104	100	70	70	86	82	248	58	0	0	79	M8	35	36	3,000
ZLW-1660-OD-03	104	100	70	70	86	82	248	58	0	0	79	M8	35	36	3,000
ZLW-1660-OD-04	104	100	70	70	86	82	248	58	0	0	74	M8	35	36	3,000

Part No.	I2	d2 h9	d	T1 ±0.25	T2 ±0.25	Ws	W1	W2	dW1	LW	AW
ZLW-0630-OD ¹⁰⁹⁾	20	8	4	20	21	2	20	2	5.5	260	60
ZLW-1040-OD	20	10	5	36	26.5	3	25	3	6.6	296	80
ZLW-1660-OD-02	20	14	M5-10 deep	65	60	5	15	54	8.5	328	114
ZLW-1660-OD-03	20	14	M5-10 deep	65	60	5	15	88	8.5	328	75
ZLW-1660-OD-04	20	14	M5-10 deep	65	60	5	-	-	-	248	70

¹⁰⁹⁾ Basic version: 6mm square, plastic adapter for pin diameter 10mm included



Order key



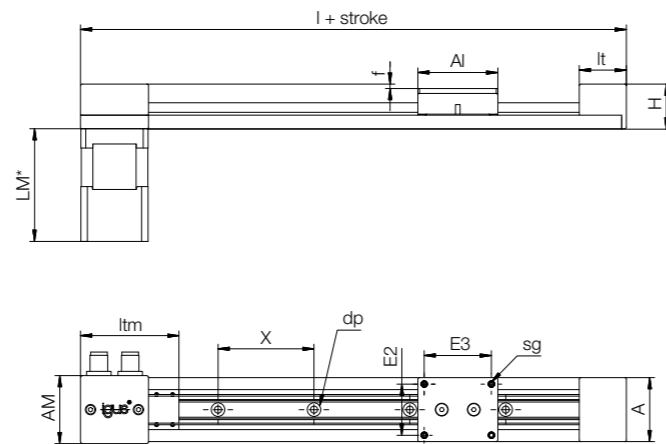
Order example

ZLN-40

Toothed belt axis

Installation size

- Motor can now be mounted on the bottom as well as on top
- Low-profile design, 27mm height
- Vertical load from 30N
- Ready-to-install with NEMA stepper motors or BLDC/DC motors
- Delivery from 24 hours

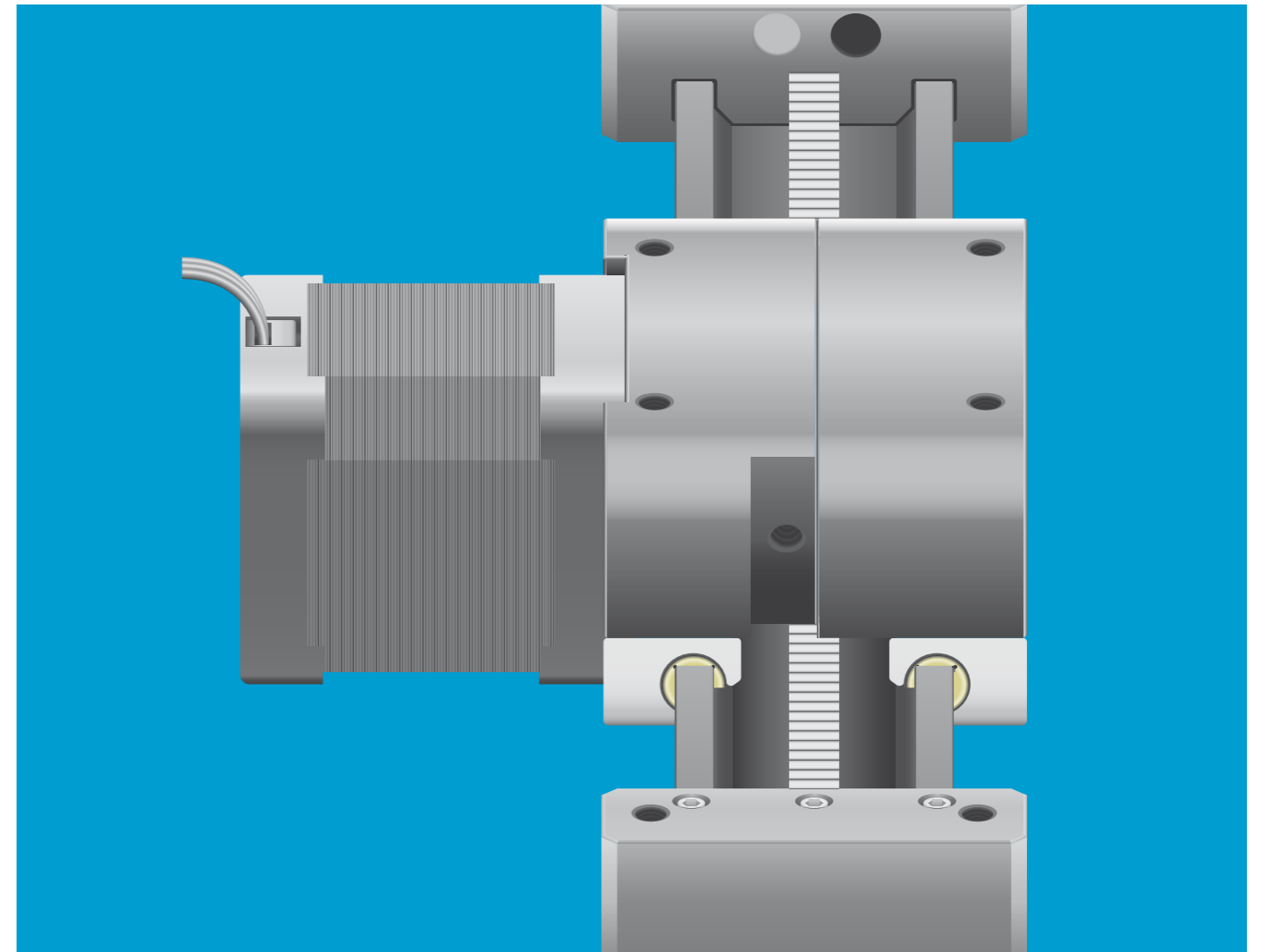


Technical data

Part No.	Max. stroke length [mm]	Weight [kg]	addit. [kg] (per 100mm)	Max. static load capacity		Shaft end support material [Nm]
				axial [N]	radial [N]	
ZLN-40	750	0.24	0.05	30	80	0.15

Dimensions [mm]

Part No.	A	AI	H	X	E2	E3	AM	LM	lt	ltm	dp	sg	l	v	f
ZLN-40	40	50	28	60	32	42	42.5	70	30	61.5	4.5	M3	141.5	60	2.8



drylin® electric drive technology - cantilever axes

High dynamics

Drive: Rack or toothed belt

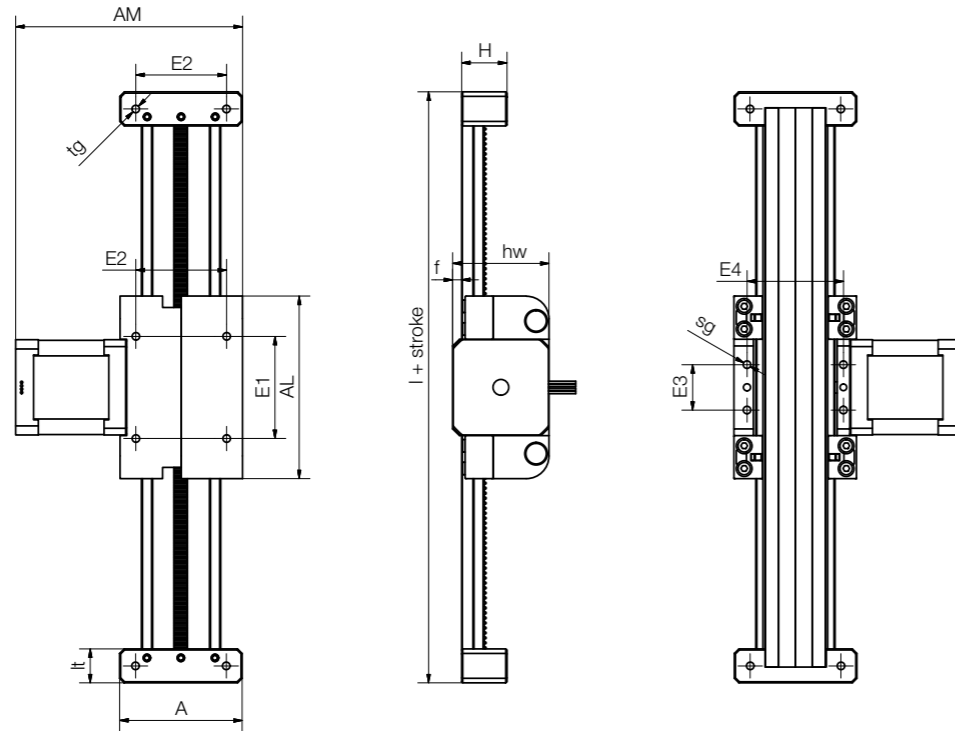
Lightweight design

For z-axis in multi-axis gantries

Lubrication and maintenance-free



- Direct force transfer via rack
- Compact structure
- Handling for loads up to 10N
- Accessories available ► **Page 1683**
- **Available with motor**



Technical data

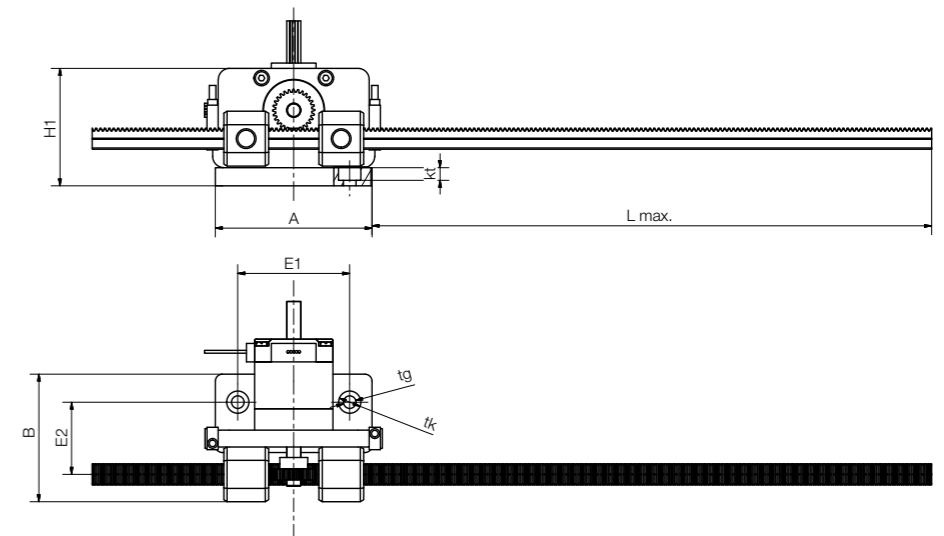
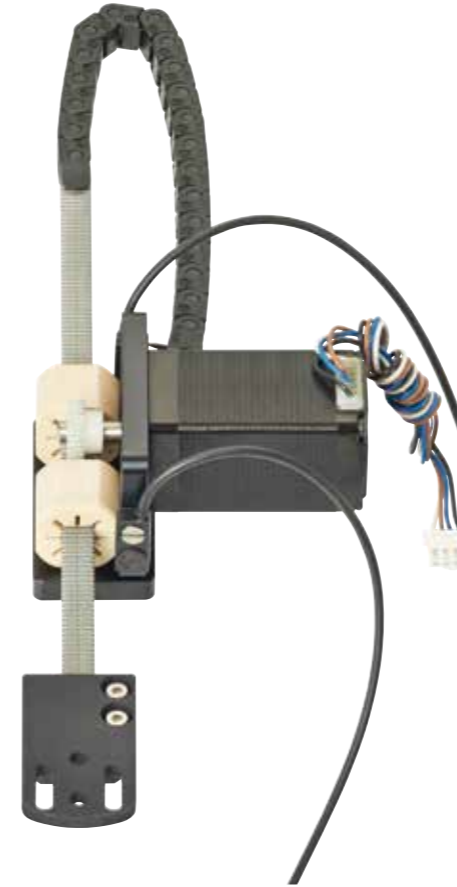
Part No.	Stroke length [mm]	Weight [kg]	Additional (per 100mm)	Max. Feed rate [mm/rev]	Max. Load axial [N]
GRW-0630-A	150	0.5	0.1	44	10
GRW-0630-B	300	0.5	0.1	44	10

Dimensions [mm]

Part No.	A	Al	H	E1	E2	E3	E4	I	lt	hw	f	AM ¹³¹⁾	tg	sg
	-0.3			+0.15	+0.15									
GRW-0630-A	54	80.5	20	45	40	20	42.5	110.5	15	42.5	4	100.0	M4	M4-8
GRW-0630-B	54	80.5	20	45	40	20	42.5	110.5	15	42.5	4	121.4	M4	M4-8

¹³¹⁾ Depending on the type of motor

- Toothed, hard-anodised, corrosion-resistant square hollow section
- Loads up to 500g with a speed of up to 0.7m/s
- iglidur® J plain bearings
- Drive: NEMA11 stepper motor with gear wheel



Dimensions [mm]

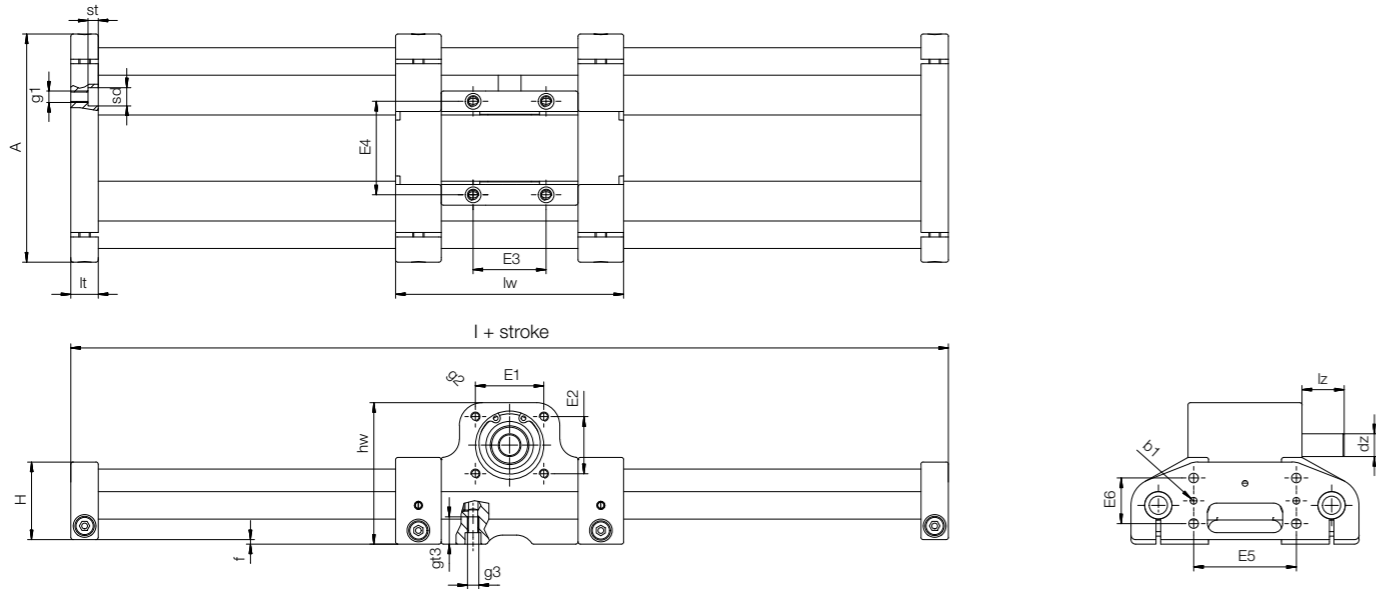
Part No.	F	v	L	A	H1	E1	E2	B	tg	tk	kt	Q	D2
	[N]	[m/s]	max.										
GRQ-10-A-56-120-11-L-01-000	5	0.7	200	56	42	40	26	46	4.5	8	4.5	7.5	22



- Made from aluminium and plastic
- Ideal for linear robots
- Direct rack drive
- Torsionally rigid due to drylin® AWMR aluminium hollow shafts
- Lubrication-free and maintenance-free due to drylin® R liners

Typical application areas:

- Handling
- Sprue pickers
- Room linear robots
- Lifting equipment
- Lab automation



Technical data

Part No.	Max. stroke length [mm]	Transmission [mm/rev]	Tooth profile	Weight without stroke [kg]	Max. static load capacity axial [N]
GRR-1280	750	72.26	Module 1	0.86	50
GRR-20120 New	1,000	72.26	Module 1	1.62	75

Dimensions [mm]

Part No.	L	A	H	lw	hw	lz	dz	f	lt	E1	E2	g2
GRR-1280	124	100	34	100	62	18	10	2	12	30	25	M4-10
GRR-20120 New	202	150	50	172	78	18	10	2	15	30	25	M4-10

Part No.	E3	E4	g3	gt3	E5	E6	g1	sd	st	b1	sd3	st3	D
GRR-1280	32	41	M5	12	45	20	M5	8	4.5	3	-	-	-
GRR-20120 New	147	80	M8	-	50	20	M5	8	4.5	3	11	6.6	20



- Fixed drive unit
- Hard-anodised aluminium axis profile
- Lightweight
- Max. stroke 1,000mm
- Max. axial load 50N
- Permissible load for carriage $M_{y\max}$: 15Nm



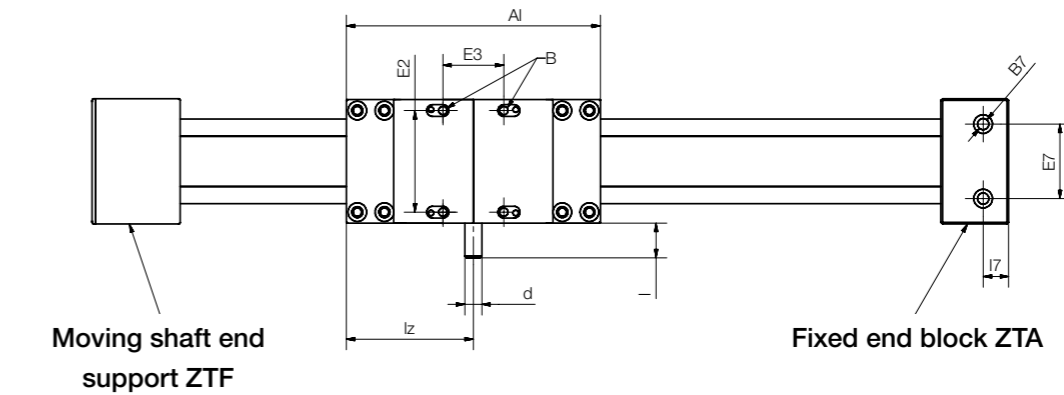
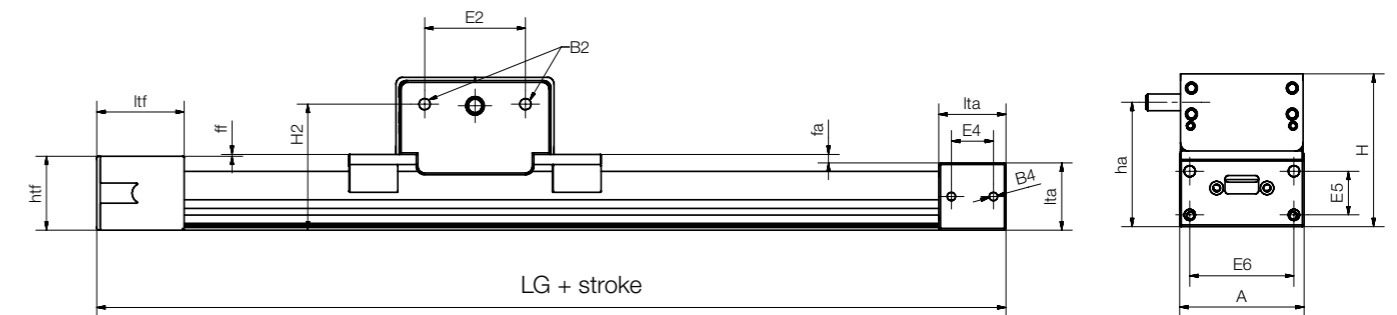
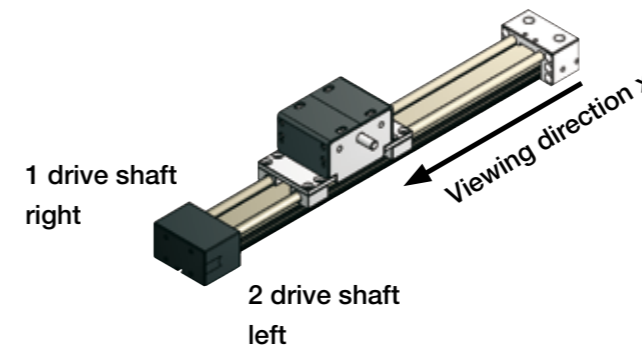
Cantilever axis with ball bearings

ZAW-1040-02-S-150-L-500

Cantilever axis	Installation size	Version	Design	Carriage length [mm]	Drive shaft	Stroke length

- Options:
- Design
S: Standard
- Drive shaft
L: Drive pin left
R: Drive pin right
L/R: Drive pin, both sides

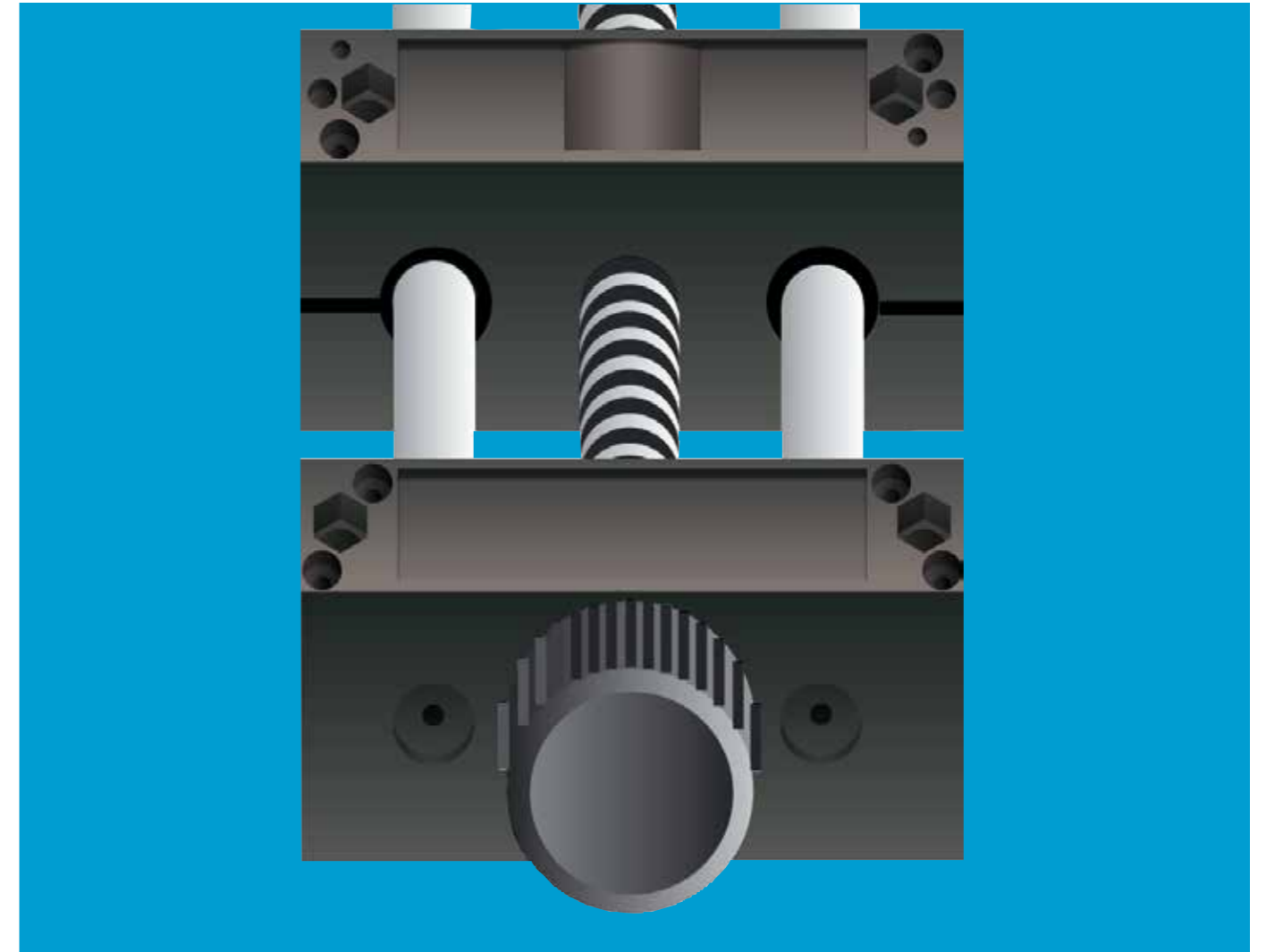
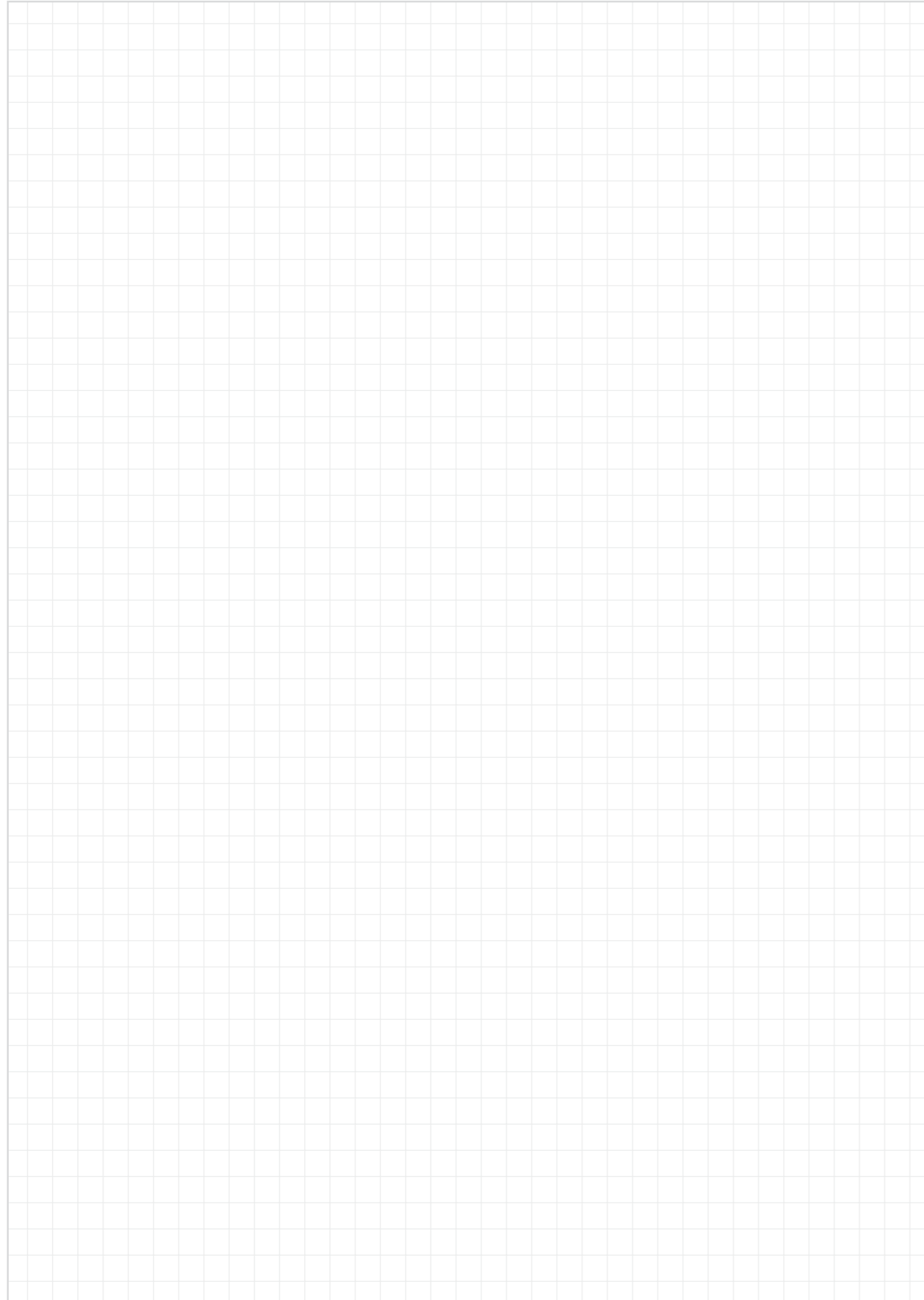
Stroke length
Max. 1,000mm



Dimensions [mm]

Part No.	A	H	H2	LG	Al	ha	d	l	l7	lz	E2	E3
ZAW-1040	-0.3	91	75	242	±0.3	±0.1	h9	+1	15	75	±0.15	±0.15

Part No.	B	B2	htf	ltf	ff	fa	lta	E4	B4	B7	E5	E6	E7
Connecting dimensions ZAW-1040	-0.3	M8	44	±0.3	±0.1	h9	±0.1	±0.15	±0.15	M6	26	62	44



drylin[®] general drive technology - econ entry-level series

Cost-effective linear modules

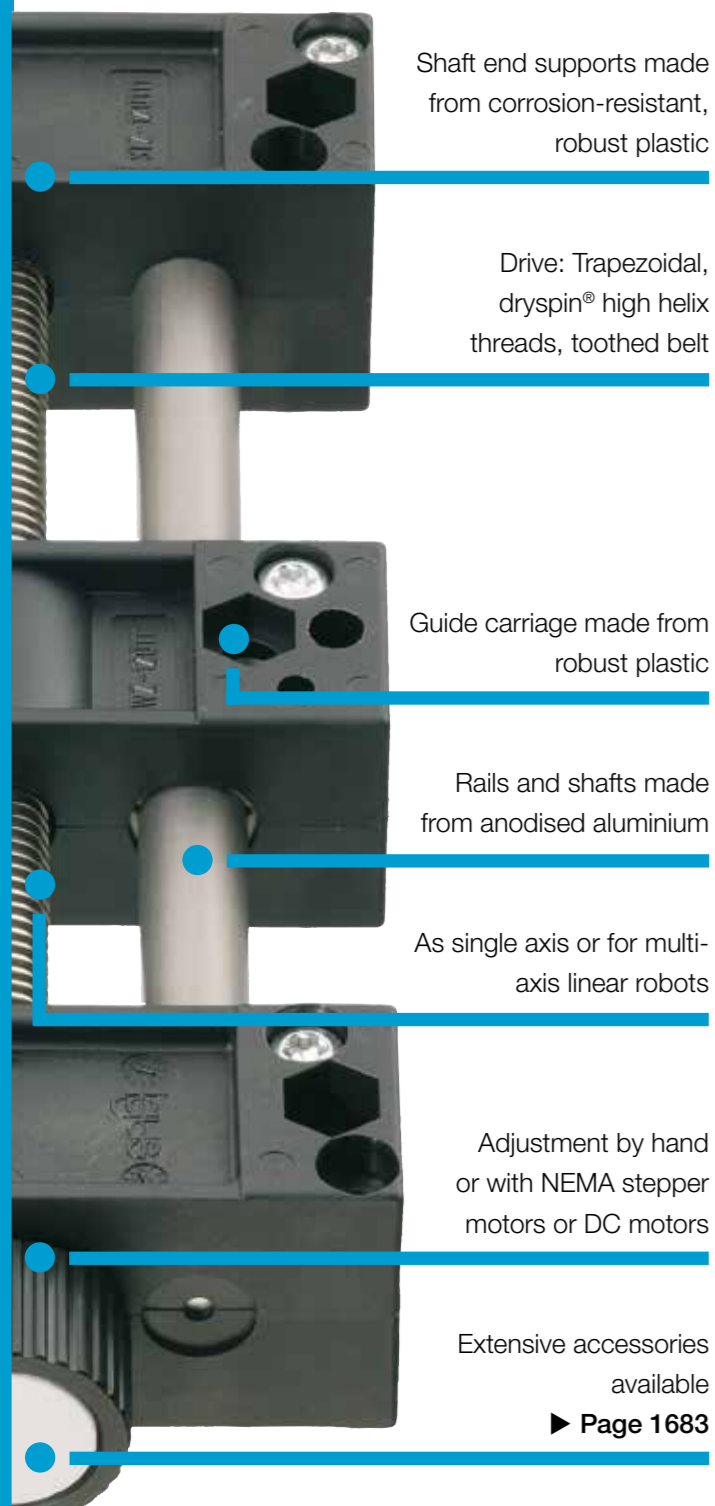
Drive: Trapezoidal and high helix lead screws,
toothed belt

Lightweight construction

Corrosion-resistant

For positioning and adjusting tasks





Shaft end supports made from corrosion-resistant, robust plastic

Drive: Trapezoidal, dryspin® high helix threads, toothed belt

Guide carriage made from robust plastic

Rails and shafts made from anodised aluminium

As single axis or for multi-axis linear robots

Adjustment by hand or with NEMA stepper motors or DC motors

Extensive accessories available
▶ Page 1683


Lubrication-free linear modules - drylin® econ

With econ, igus® defines the cost-effective maintenance-free entry-level models of the drylin® linear axes. There are suitable entry-level models in almost every product line and installation size, either with a lead screw or toothed belt. The econ series is characterised by cost-effective components produced via injection moulding, anodised aluminium profiles and fast assembly. drylin® econ models are configured and delivered so that they are ready to install and are thus the perfect alternative to complex in-house solutions for simple adjustment tasks.


- Lightweight construction thanks to plastic-aluminium combination
- Designed for a fast assembly
- Cost-effective thanks to injection moulding and clear anodising


Typical application areas

- Gripper technology
- Format adjustments
- Camera adjustment

 **Available in 3-8 days**
Detailed information about delivery time online.

 **Price breaks online**
No minimum order value. No minimum order quantity

 **Carriage lengths: 26-45mm**
Stroke length max. 500mm

 **Product finder**
▶ www.igus.eu/shtp-productfinder



drylin® econ SLWP linear module - robust in 2 sizes

- Flat and torsion-resistant due to drylin® W double shaft profiles
 - Lead screw with self-locking trapezoidal or metric thread
 - Fast adjustment due to dryspin® high helix thread
- ▶ Page 1674



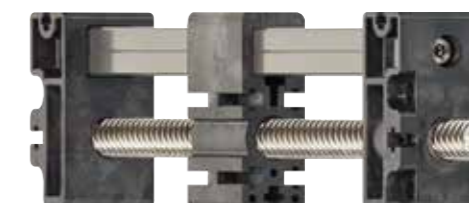
drylin® econ SHTP linear module - flexible in 3 sizes

- Lead screws made from aluminium, carbon, steel, stainless steel
 - Carriage with integrated lead screw nuts and drylin® R liner
 - With trapezoidal or high helix thread
- ▶ Page 1676



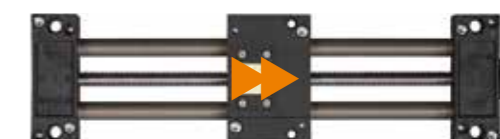
drylin® econ SLN miniature module - small and fast

- Slim, narrow design
 - Lead screw mounted on plain bearings with metric thread or dryspin® high helix thread
 - Feed rate of up to 25mm per rotation
- ▶ Page 1680



drylin® econ SLTP linear system - savings thanks to injection moulding

- Developed with 3D printing, produced cost-effectively thanks to injection moulding
 - Very fast assembly due to few components
 - Carriage with a lot of fastening options
- ▶ Page 1675



drylin® econ SHTP-FF linear module - Fast-Forward

- With quick-release mechanism
 - For fast adjustment
 - Self-locking
 - Variable stroke lengths
- ▶ Page 1679



drylin® econ ZLW toothed belt axis - light and fast

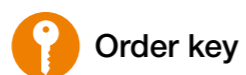
- Lightweight due to use of plastic and aluminium
 - Variable attachment by means of slot nuts and clamping elements
 - Individual stroke lengths (sizes 0630 to 500mm, 1040 to 1,000mm)
- ▶ Page 1681

The SLW entry-level model



- Based on drylin® W profile guides
- Clear anodised guide rails
- Torsion-resistant double shaft systems
- Self-locking due to metric or trapezoidal thread
- Fast operation without self-locking due to dryspin® high helix thread
- Accessories available

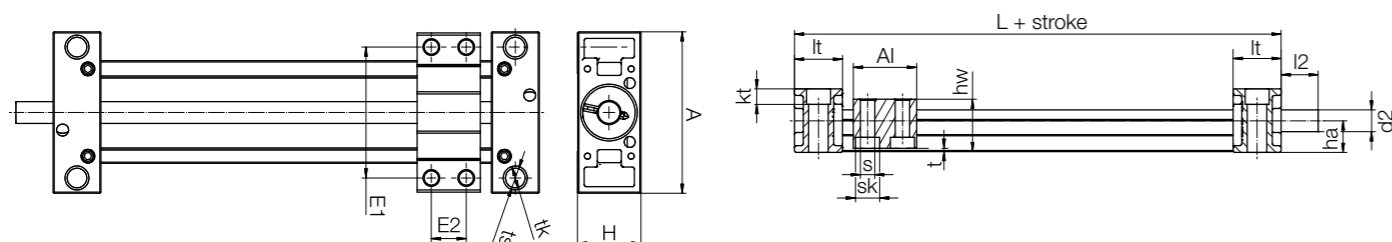
► Page 1683



Order key

Order example

SLWP-0630-E



Technical data

Part No.	Max. stroke length [mm]	Weight [kg]	additional (per 100mm) [kg]	Max. stat. load capacity	
				axial [N]	radial [N]
SLWP-0630-E	300	0.15	0.08	50	50
SLWP-1040-E	500	0.30	0.10	50	50

Dimensions [mm]

Part No.	A	Al	H	E1	E2	E3	l	hw	f	lt	tk	ts
	-0.3	-0.3		±0.2	±0.2	±0.15				±0.1		
SLWP-0630-E	54	60	20	40	45	51	100	18.0	1.5	20	11	6.6
SLWP-1040-E	74	29	29	60	16	-	73	23.5	1.5	22	11	6.8

Part No.	kt	Øs	sk	d	T	l2	d2	ha
	±0.1						Standard	
SLWP-0630-E	8.0	5.0	6Kt M4	5.0	Tr8x1.5	15	Tr8x1.5 ¹⁶⁰⁾	9.5
SLWP-1040-E	9.0	6.3	6Kt M6	7.5	Tr10x2	17	Tr10x2 ¹⁶¹⁾	14.5

¹⁶⁰⁾ Alternative: M8, Tr8x1,5, Ds8x10, Ds8x15

¹⁶¹⁾ Alternative: Tr10x2, Tr10x3, Ds10x12, Ds10x25, Ds10x50

The SLT entry-level model



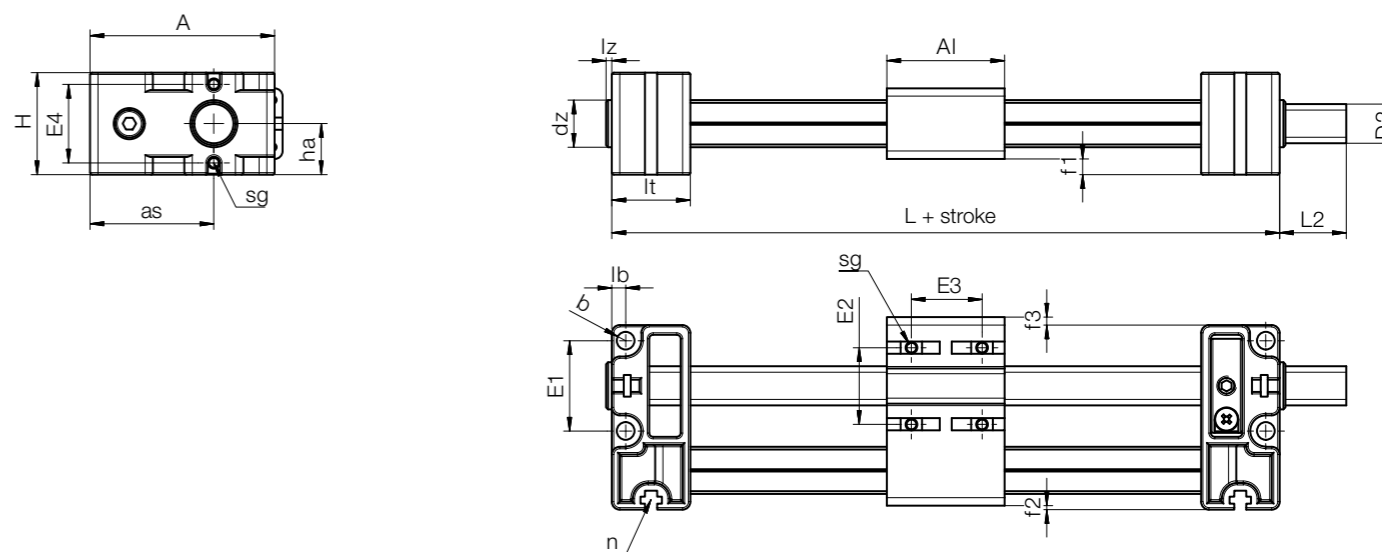
- Extremely cost-effective
- Torque-resistant due to AWMQ aluminium square profile
- Flexible design
- Left or right-hand lead screw option
- Carriage with many connection options



Order key

Order example

SLTP-1012-E



Technical data

Part No.	Max. stroke length [mm]	Weight [kg]	additional (per 100mm) [kg]	Max. stat. load capacity		Max. Rotational speed [rpm]	Max. Speed [m/min]
				axial [N]	radial [N]		
SLTP-1012-E	300	0.147	0.081	50	100	250	0.5

Dimensions [mm]

Part No.	A	H	L + stroke	Al	L2	D2	E1	E2	E3	E4	T ¹⁵²⁾
SLTP-1012-E	47	26	70	30	17	10	23	19.5	8.5-24.5	20	Tr10x2

Part No.	lt	dz	lz	b	lb	sg ¹⁵³⁾ (DIN562)	ha	as	n	f1	f2	f3
SLTP-1012-E	20	12	1.5	4.5	3.5	M3	13	31.5	M3	4	1	2

¹⁵²⁾ Alternative: Tr10x3, Tr10x4P2, Ds10x12, Ds10x25, Ds10x50

¹⁵³⁾ 6 pieces of M3-DIN562 screws included in delivery

The SHT miniature version



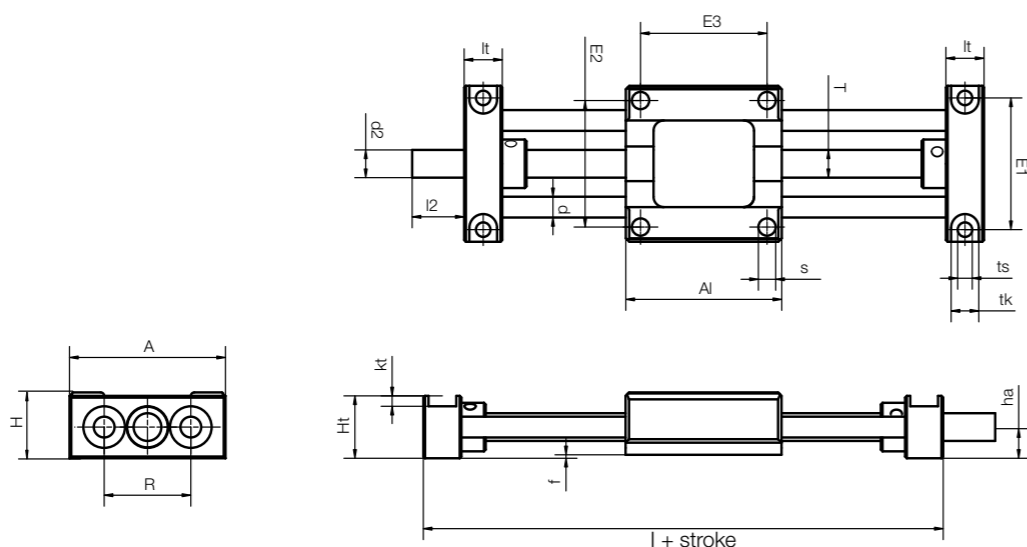
- Miniature version
 - Lightweight
 - Cost-effective
 - Corrosion-resistant
 - Carriages and shaft end supports made from high-performance polymers
 - Accessories available
- Page 1683



Order example

SHTP-01-06-AWM

SHT polymer	Design	Dimension	Shaft material
-------------	--------	-----------	----------------



Technical data

Part No.	Max. stroke length [mm]	Aluminium shaft		Max. static load capacity		More information
		Weight [kg]	additional [kg] (per 100mm)	axial [N]	radial [N]	
SHTP-01-06-AWM	300	0.11	0.06	50	50	Carriage, square, with 4 symmetrical mounting holes

Dimensions [mm]

Part No.	A	Al	H	Ht	E1	E2	E3	I	R	f	kt	lt	tk	ts
SHTP-01-06-AWM	45	45	19	18	38	36.5	36.5	67	25	1	3	11	8	4.2

Part No.	Øs	d	T	I2	d2 ⁹⁹⁾	ha
SHTP-01-06-AWM	5.1	6	M8	15	M8	9

⁹⁹⁾ Lead screw end unmachined (standard)

SHTP - the lightweight SHT entry-level model



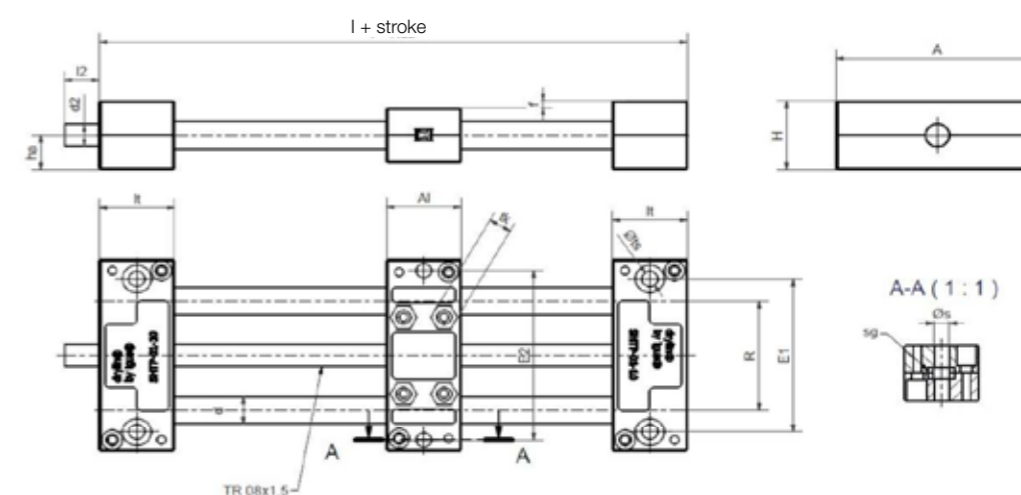
- Very light
 - Low-profile design
 - Ideal for multi-carriage solutions
 - Accessories available
- Page 1683



Order example

SHTP-01-10

SHT polymer	Design	Dimension
-------------	--------	-----------



Technical data

Part No.	Max. stroke length [mm]	Aluminium shaft		More information
		Weight [kg]	additional [kg] (per 100mm)	
SHTP-01-10	350	0.2	0.08	Drive nut and linear bearings made from iglidur® J

Dimensions [mm]

Part No.	A	Al	H	E1	E2	I	R	f	lt	tk	ts
SHTP-01-10	70	26	25	56	62	78	40	2.5	±0.1	8	+0.15

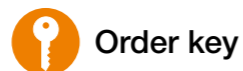
Part No.	Øs	sg	d	T	I2	d2 ⁹⁹⁾	ha	Max. static load capacity	
								axial [N]	radial [N]
SHTP-01-10	5.2	M5	10	Tr08x1.5	15	Tr08x1.5	12.5	100	400

⁹⁹⁾ Lead screw end unmachined (standard)

SHTP - the cost-effective SHT version

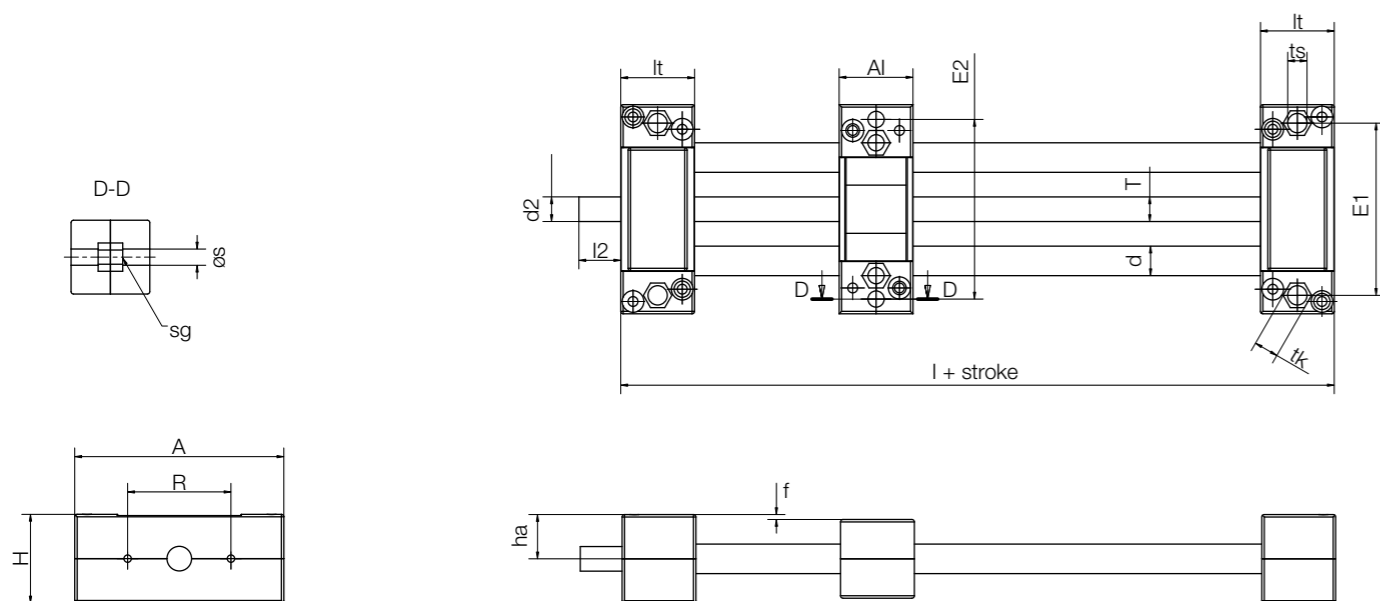
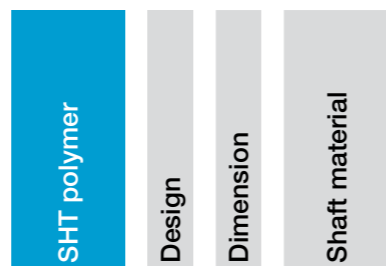


- Solid polymer design
- Lightweight
- Cost-effective
- Corrosion-resistant
- Accessories available
- ▶ Page 1683
- Available with motor



Order example

SHTP-01-12-AWM



Technical data

Part No.	Max. stroke length [mm]	Aluminium shaft		More information
		Weight [kg]	additional [kg] (per 100mm)	
SHTP-01-12	500	0.35	0.11	Drive nut and linear bearings made from iglidur® J
SHTP-02-12	500	0.35	0.11	Bearing and nut integrated into the carriage

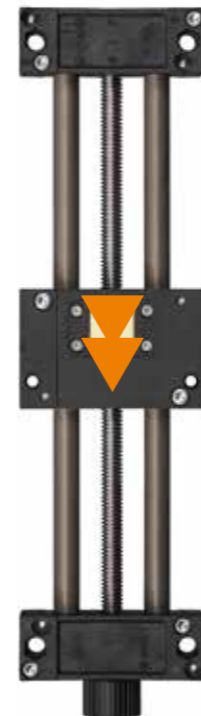
Dimensions [mm]

Part No.	A	Al	H	E1	E2	I	R	f	lt	tk	ts
SHTP-01-12	85	30	36	70	73	90	42	2	±0.1 30	10	+0.15 6.0
SHTP-02-12	85	30	36	70	73	90	42	2	30	10	6.0

Part No.	Øs	sg	d	T	l2	d2 ⁹⁹⁾	ha	Max. static load capacity	
								axial [N]	radial [N]
SHTP-01-12	6.3	M6	12	Tr10x2	17	Tr10x2	18	200	400
SHTP-02-12	6.3	M6	12	Tr10x2	17	Tr10x2	18	200	400

⁹⁹⁾ Lead screw end unmachined (standard)

With "Fast Forward" quick release mechanism

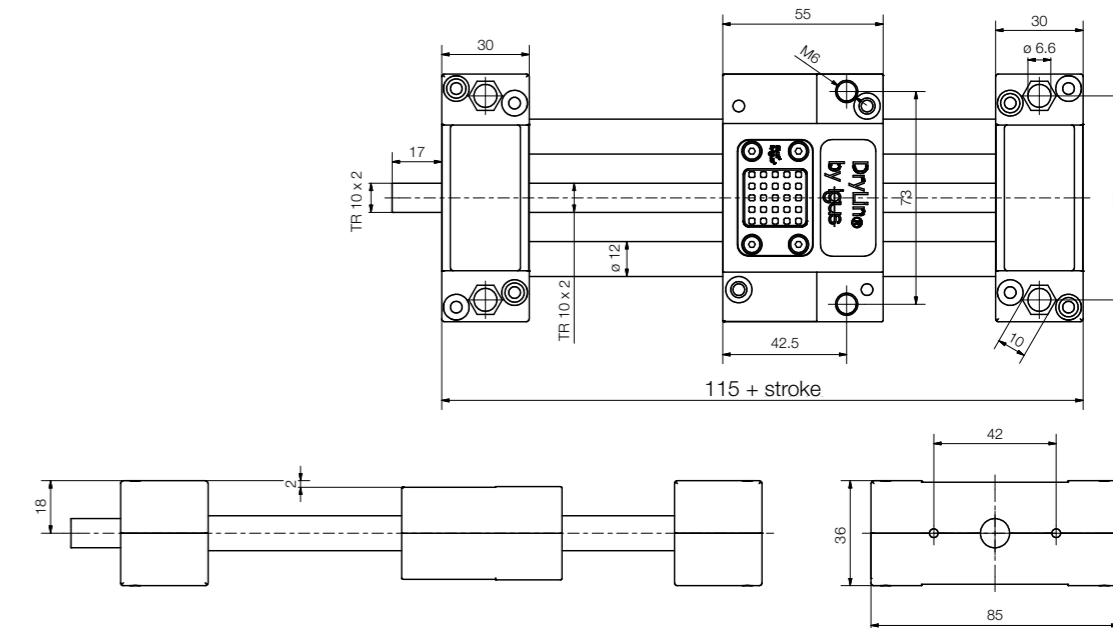


- Light solid polymer model
- For fast format adjustments
- Self-locking
- Variable stroke length
- Only recommended for horizontal applications
- Max. stat. axial load 200N
- Max. dynamic. axial load 50N
- Accessories available
- ▶ Page 1683



Order example

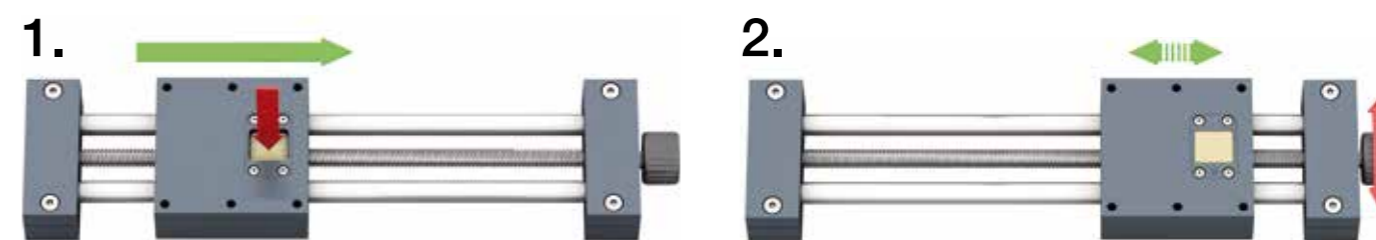
SHTP-01-12-AWM-FF



Technical data

Part No.	Max. stroke length [mm]	Weight [kg]	Additional weight (per 100mm)
SHTP-01-12-AWM-FF ¹⁰⁰⁾	500	0.35	0.11

¹⁰⁰⁾ Liners and lead screw nuts made from iglidur® J



press > disengage > move manually > click into place > fine-tuning

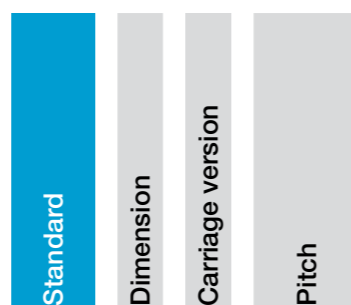
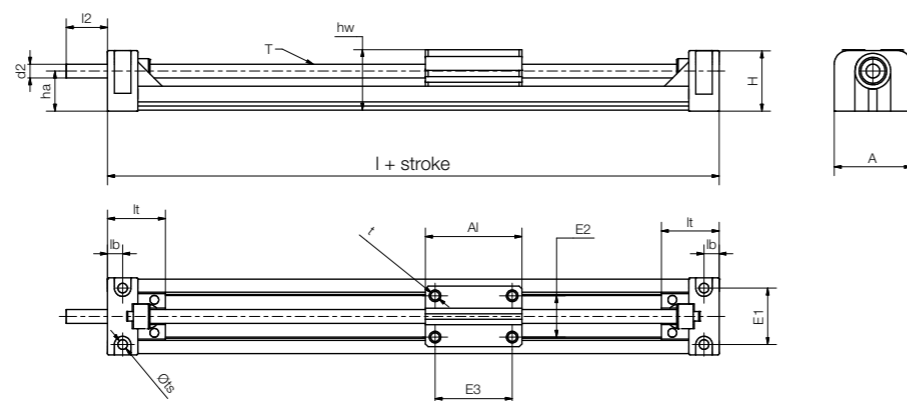
Miniature linear module, basic version



- Single parts made from aluminium and plastic
- Entry-level model
- Lead screw with plain bearing support
- Retrofitting possible
- Accessories available
- ▶ Page 1683
- Available with motor

Order key

Order example

SLN-27-03-0008Options:
Carriage version
03: Basic

Technical data

Part No.	Max. stroke length [mm]	Weight [kg]	addit. [kg] (per 100mm)	Max. static load capacity		Max. speed [rpm]	Max. drive torque [Nm]
				axial [N]	radial [N]		
SLN-27-03-0008	250	0.06	0.04	10	40	100	0.10
SLN-27-03-0025	250	0.06	0.04	10	40	100	0.15
SLN-27-03-0051	250	0.06	0.04	10	40	100	0.20
SLN-27-03-0127	250	0.06	0.04	10	40	100	0.30
SLN-27-03-0254	250	0.06	0.04	10	40	100	0.40

Dimensions [mm]

Part No.	A	AI	H	E1	E2	E3	E11 ¹⁰²⁾	I	hw	lt	lb	ts	t	T	d2 ⁹⁸⁾	I2	ha
	±0.2	-0.1	±0.2	±0.15	±0.15	±0.15			±0.2	±0.2							
SLN-27-03-0008	28	35	22	20.5	15	28	15	77	22	21	5.5	3.5	3.2	M5	4	15	14.5
SLN-27-03-0025	28	35	22	20.5	15	28	15	77	22	21	5.5	3.5	3.2	6.35x2.54	5	15	14.5
SLN-27-03-0051	28	35	22	20.5	15	28	15	77	22	21	5.5	3.5	3.2	6.35x5.08	5	15	14.5
SLN-27-03-0127	28	35	22	20.5	15	28	15	77	22	21	5.5	3.5	3.2	6.35x12.7	5	15	14.5
SLN-27-03-0254	28	35	22	20.5	15	28	15	77	22	21	5.5	3.5	3.2	6.35x25.4	5	15	14.5

¹⁰²⁾The dimension E11 can only be found in conjunction with the igus® motor connection⁹⁸⁾ Thread/remaining thread visible

With manual clamp (optional): Part No. SLN-27-HK-...

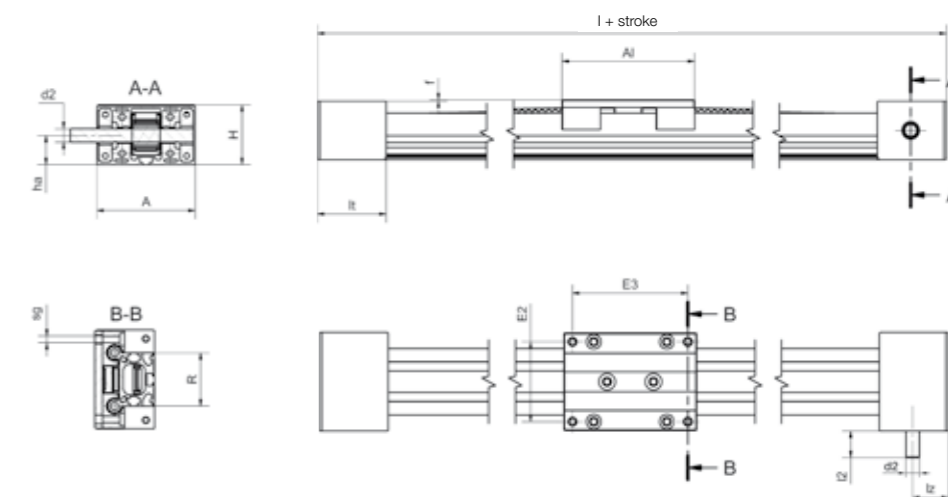
Linear axes with toothed belt



- Fast positioning of small loads
- Quiet operation and flat design
- Drive pin on one or both sides
- Plastic linear carriage
- Lightweight due to combination of plastic and aluminium
- Technical data
- ▶ Page 1648

Order key

Order example

ZLW-0630-02-EOptions:
Version
02: With deep groove ball bearings
Design
E: econ series
(0630/1040)

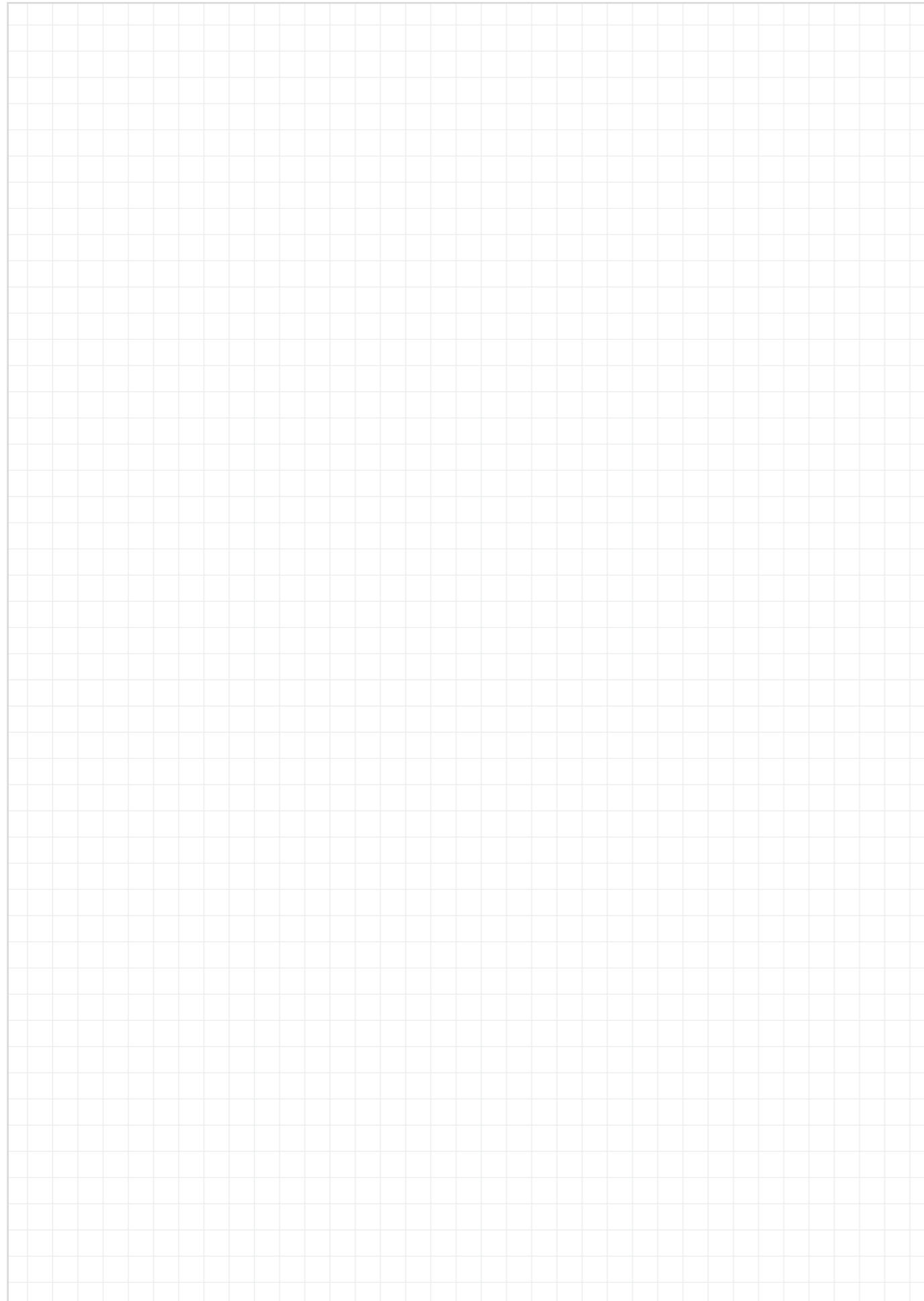
Dimensions [mm]

Part No.	A	AI	H	E2	E3	I	R	f	lt	sg	ha	hc	Iz	I2	d2
	-0.3			±0.15	±0.15		±0.15		±0.3						h9
ZLW-0630-02	54	60	31	45	51	144	30	3	42	M4	14	22.5	20.5	20	8
ZLW-1040-02	74	100	44	60	87	204	40	1	52	M6	22	22.5	27	20	10

Connecting dimensions [mm]

Part No.	X	E	AP	Lp	dp	n	nb	nw	nh	T1	T2	d
		±0.2	-1.0							±0.25	±0.25	
ZLW-0630-02 ¹⁰⁹⁾	variable	40	52	15	5.5	-	-	4.3	7	20	21	3.2
ZLW-1040-02	variable	60	78	40	6.4	5.2	9.5	4.3	15.5	36	26.5	5.0

¹⁰⁹⁾ Basic version: 6mm square, plastic adapter for pin diameter 10mm included



drylin® accessories - control elements

Accessories for manual positioning and format
adjustment

Angular drive

Position indicator

Hand wheels

Control units





Secure, reproduce and turn

Accessories for drylin® drive technology - manual positioning

An extensive range of accessories is available for many drylin® drive units to perform manual adjustments quickly and conveniently. When directly configuring the linear unit with the order, the units are shipped completely assembled. Any subsequent reconfiguration may result in the lead screw having to be exchanged because the lead screw ends may be too short.

- Fast and precise positioning
- Ergonomic operation
- Provides a mechanical brake

 **Available from stock**
Detailed information about delivery time online.

 **Price breaks online**
No minimum order value. No minimum order quantity



Manual operation, manual positioning



Angular drive

- 360° continuously adjustable
 - Fixing of setting angle with clamp
 - Small flange saves installation space
- Page 1686



Lead screw clamp

- For clamping of the lead screw
 - Provides a mechanical brake to the lead screw
 - Material: polymer housing with aluminium shaft clamp
- Page 1690



Hand wheels

- Rotary knob: Defined standard for complete units
 - Different outer diameters available
 - Different handles available
- Page 1691



Position indicator

- Direct read-out of the carriage position for the lead screw drive
 - Bore reducers included to enable fitting to the entire product
- Page 1688



Adapter plate

- Position indicator and/or lead screw clamp
 - Suitable for linear modules of SHT/SLW/SHTP series
 - Material: plastic igamid® G
- Page 1757



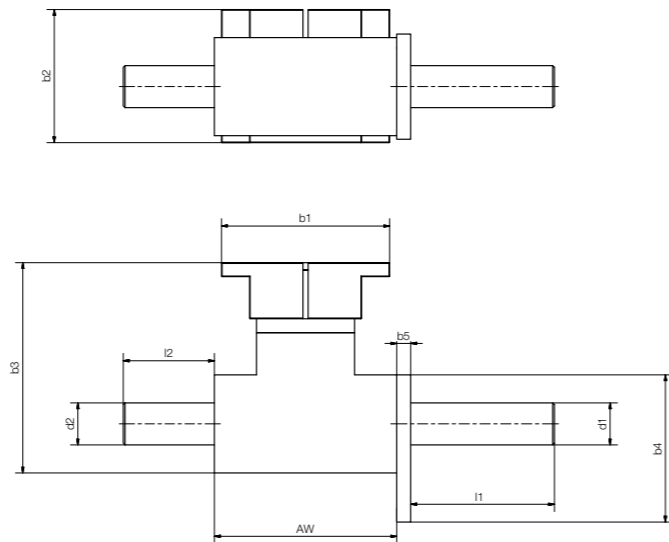
Flex shaft incl. remote control unit

- Optional offset operation of the drylin® linear modules
 - Controls can be positioned independently
 - Available in length 300, 500 and 1,000mm
 - Can be combined with other accessories
- Page 1693

In addition to safety technology aspects, limited operating space requires drylin® drives to be operated with flexibility and ease. We provide a product range of continuously adjustable angular drives for adjustment options from a defined direction. For manual adjustments, the angular drives can also be configured with position indicator, clamp and hand wheel, and are shipped pre-assembled. Angular drives with keyed/grooved shafts are available for motor interfaces with increased torque transfers.



- Double-side shaft output for angular drives WT-3 and WT-4
- For rotary transmissions of 90°
- Configuration with lead screw clamping/position indicator/hand wheel possible
- Position indicator, lead screw clamp and hand wheel available ► **Page 1688**



Dimensions [mm]

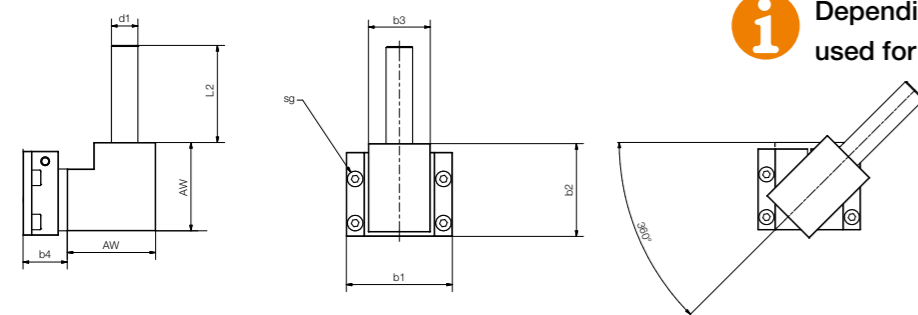
Part No.	M max. [N]	i ¹⁰⁵⁾	AW	d1	d2	l1	l2	b1	b2	b3	b4	b5
WT-3000-T	3	01:01	52	12	12	26 / 41 / 59 / 74	26	48	38	60	42	4
WT-4000-T	6	01:01	60	14	14	26 / 47 / 65 / 80	26	56	46	83	50	10

¹⁰⁵⁾ Gear ratio



- Flexible adjusting to your installation with continuously variable adjustment (can be oscillated 360°)
- Max. drive torque 3Nm
- Clamping using set screw
- Ø 12mm h7 output shaft

i Depending on the design, an adapter plate is used for connection to the linear system



Dimensions [mm]

Part No.	i ¹⁰⁵⁾	AW	b1	b2	b3	b4	L2	d1	sg
WT-3000 3100 3500	1:1	40	48	42	28	20	26	12	M4
WT-3600 3700	1:1	40	48	42	28	30	26	12	M4

¹⁰⁵⁾ Gear ratio



drylin® angular drives provide for a maximum of positioning flexibility. The form fitting connection can give a maximum torque of up to 6Nm.

- Flexible adjusting to your installation with continuously variable adjustment (can be oscillated 360°)
- Max. drive torque 6Nm through coupling
- Fixed using feather key groove
- Input shaft Ø 14mm h7 with size
- Compatible with drylin® SHT/SHTC/SLW (sizes 16, 20 and 30)
- Position indicator, lead screw clamp and hand wheel available ► **Page 1688**

Dimensions [mm]

Part No.	i ¹⁰⁵⁾	AW	b1	b2	b3	b4	L2	d1	sg
WT-4000 4100 4200 4700	1:1	60	52	51	40	23	26	14	M4
WT-4600	1:1	60	52	51	40	33	26	14	M4

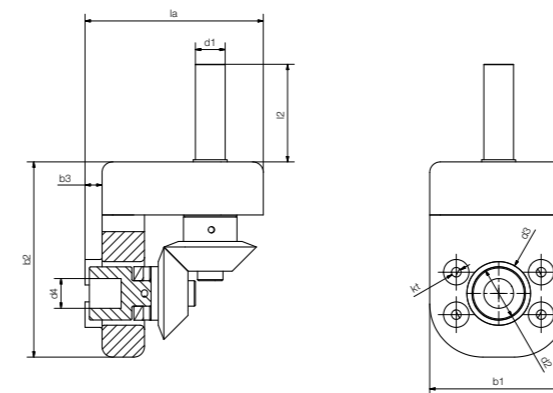
¹⁰⁵⁾ Gear ratio



Angular drive with hand wheel (optional)

Following the idea of "Hygienic Design" the angular drive is available as maintenance-free and washable stainless steel/polymer system.

- Max. drive torque 3Nm
- Single parts made of stainless steel
- Easy to clean/rinse with water
- Compatible with drylin® SHTC-20-EWM-HYD ► **Page 1601**
- Position indicator, lead screw clamp and hand wheel available ► **Page 1688**

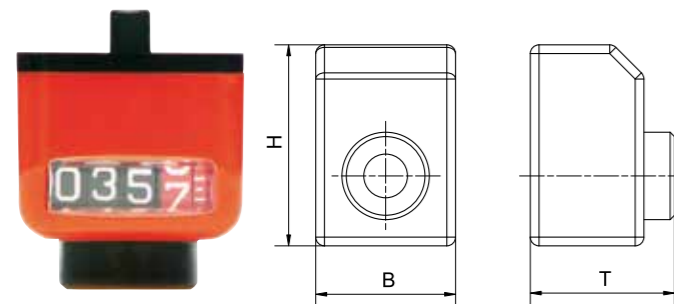


Dimensions [mm]

Part No.	i ¹⁰⁵⁾	la	kt	b1	b2	b3	d4	l2	d1	d2	d3	sg
WT-1100	1:1	84	4.5	65	92	8	12	26	14	25	30	M4

¹⁰⁵⁾ Gear ratio

To keep downtime to a minimum and make adjustments quickly, the indicator is used to create repeatable values. These can be shipped from stock for almost any linear units, in the required counting and viewing direction and in a variety of colours.



- Plastic analogue indicator for adjustment and direct reading of carriage position
- Counter with 3 (P1), 4 (P3) or 5 (P6) digits (red digit to indicate tenths)
- Can be combined with manual clamps and hand wheels
- Reduction sleeves included
- Suitable adapter plate available ► **Page 1757**

Installation options



0 degrees 90 degrees 180 degrees 270 degrees

Display orientation



A
Standard

B (optional)
for vertical fitting position:
display turned 180°

Technical data [mm]

Position indicator	Digits	Decimal places	ID hollow shaft ∅	Reduction sleeves ∅
SHT-P1	3	1	8	6 + 6.35
SHT-P3	4	1	14	10 + 12.00
SHT-P6	5	1	20	14 + 16.00

Dimensions [mm]

Position indicator	H	B	T
SHT-P1	33	22	26.0
SHT-P3	46	32	33.0
SHT-P6	66	48	50.5

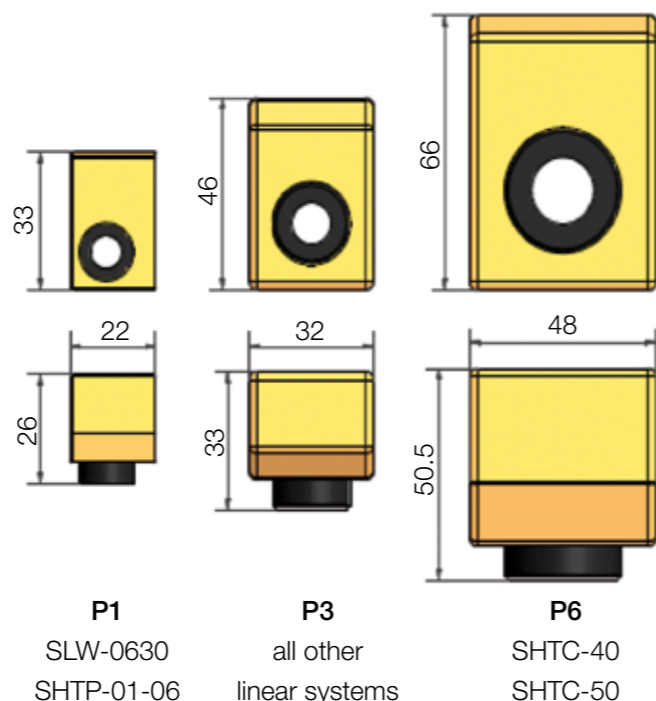
Order key

Order example
SHT-P3-A-1.50-1-DX-O-F-ES

Standard	Installation size	Display orientation	Pitch	Decimal places	Counting direction	Housing colour	Material	Material
----------	-------------------	---------------------	-------	----------------	--------------------	----------------	----------	----------

Options:

- Display orientation**
A: Display orientation 0°
B: Display orientation 180° (optional)
- Pitch**
< 10.00: One decimal place
> 10.00: No decimal place
- Decimal places**
1: One decimal place (red digit)
0: No decimal place (red digit)
- Counting direction**
DX: clockwise
SX: anti-clockwise
- Housing colour**
O: Orange
- Material**
ES: Hollow stainless steel shaft made from (optional)



Order key

Order example

SHT-P3-E02-2.00-1-DX-O-S

Standard	Installation size	Display orientation	Pitch	Decimal places	Counting direction	Housing colour	Material
----------	-------------------	---------------------	-------	----------------	--------------------	----------------	----------

Options:

Display orientation

- E02: Standard: Display orientation 0°
- E04: Display orientation rotated by 180°

The electronic position indicator (battery operated) for drylin® linear modules can be programmed by the factory for the individual thread pitch. Ideal for use with dryspin® high helix lead screws. LCD display with 5 digits and special characters, long battery life and easy battery change without removal of the device.

- Electronic digital display
- 5-digit LCD display
- Features such as incremental adjustment, offset and reset, operated via keys on the position indicator
- Battery life 8 years
- Battery change without any tools
- Increase counting in either direction, clockwise or anti-clockwise
- Display orientation standard or through 180°

Note: reduction sleeves included in delivery

Technical data

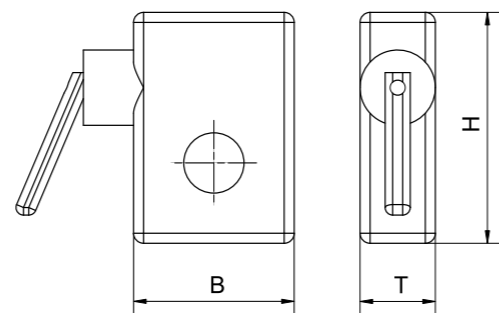
Part No.	Rotational speed [rpm]	Weight [g]	Temperature [°C]	Protection class
SHT-P3-E02-2.00-1-DX-O-S	600	60	-10 ... +60	IP51

Lead screw clamp

Linear modules with trapezoidal threads are equipped with a self-locking mechanism. Many applications call for an additional clamping option as an additional safeguard against unintentional movement.



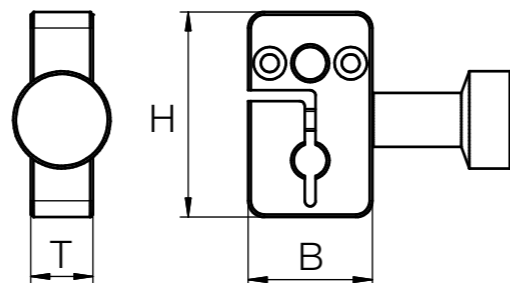
- Shaft clamp adapter for attaching to the position indicator and subsequent clamping of the lead screw.
- Provides a mechanical brake to the lead screw
- Material: plastic housing with aluminium shaft clamp
- Reduction sleeves for further diameters available



Assembly and positioning with adapter plate
▶ Page 1757

Dimensions [mm]

Part No.	SHT-HK-12	SHT-HK-16	SHT-HK-20	SHT-HK-30
Lead screw size	10	14	12	14
Dimensions (B x H x T)	32 x 46 x 15	32 x 46 x 15	32 x 46 x 15	32 x 46 x 15



Dimensions [mm]

Part No.	SHT-HK-06	SHT-HK-06.35	SHT-HK-08
Lead screw size	6	6.35	8
Dimensions (B x H x T)	23 x 38 x 11.5	23 x 38 x 11.5	23 x 38 x 11.5

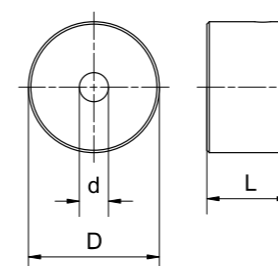
Hand wheels for drylin® linear modules

We have an extensive selection of hand wheels available to ship from stock for the most varied requirements. They range from small, compact sizes up to Ø125 with or without handles and in various configurations.



Standard With handle (optional)

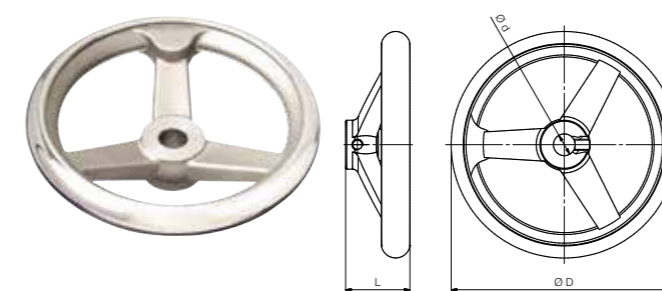
- Rotary knob: Defined standard for complete units
- Different outer diameters available
- Different handles available



Dimensions [mm]

d	D	L	OG	FG	UG	SG ¹⁰⁴⁾
4	22	15	●			
5	22	15	●			
8	27	17	●	-	-	-
10	27	17	●	-	-	-
12	42	23	●	-	-	-
14	42	23	●	-	-	-
6	50	52	-	●	-	-
8	80	75	-	●	●	●

¹⁰⁴⁾ The automatic panning will return on release



Dimensions [mm]

Part No.	d	D	L	OG	Weight [g]
SHT-HR-12-125-36-OG-ES	12	125	36	●	625

Order key

Order example

SHT-HR-8-27-17-OG



Options:

Handle (optional)
OG: Without handle
FG: Fixed handle
UG: Folding handle
SG: Security handle

d	D	L	OG	FG	UG	SG ¹⁰⁴⁾
10	80	75	-	●	●	●
12	80	75	-	●	●	●
12	125	109	-	●	●	●
14	125	109	-	●	●	●
16	125	109	-	●	●	●
20	198	141	-	●	-	-

Stainless steel hand wheel

- Designed for application in food and pharmaceutical industries
- Corrosion-free stainless steel

Flex shaft - separately located control of linear modules

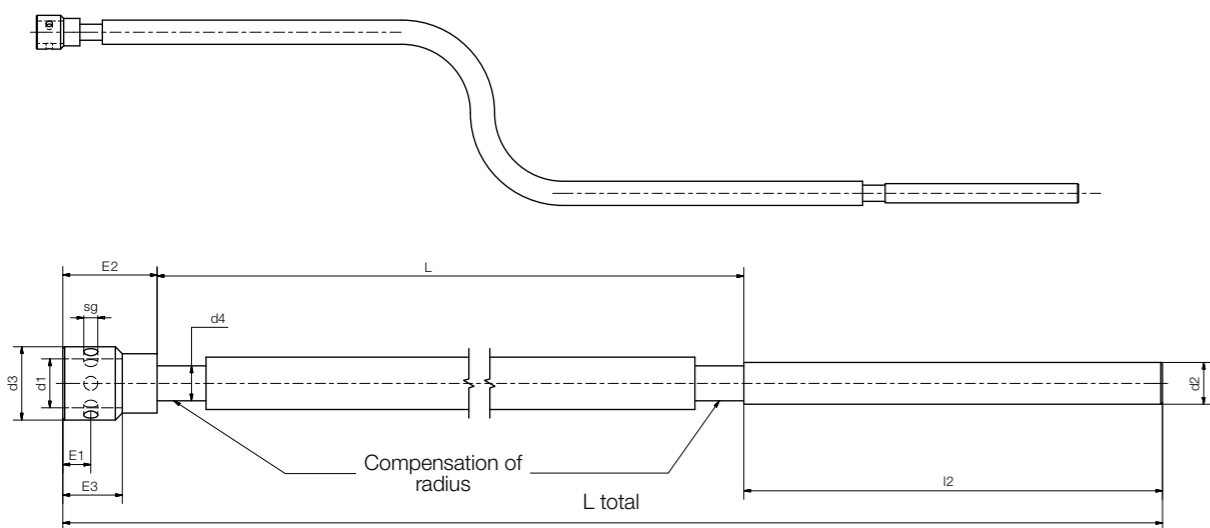


The ideal complement to drylin® linear modules. The flex shaft enables the positioning of the hand wheel independent of the installation position of the linear unit. Distance up to 500mm and offset by 85°.

- Lengths: 300mm, 500mm und 1,000mm (flexible area)
- Flexible shaft: Burnished steel
- Plastic coated: Rilsan
- Connection piece: Stainless steel AISI 303
- For all journal diameters (10, 12 and 14mm)
- Flexible installation
- Space-saving
- Can be combined with lead screw support block
- ▶ Page 1554
- Position indicator, lead screw clamp and hand wheel available ▶ Page 1688



Example of the function of an offset operating unit



Dimensions [mm]

Part No.	d1	d2	d3	d4	l2	sg	E1	E2	E3	L	L total	L max.	T max.	Min. Bend radius
FS-06-500-Z12X120-AA	14h7	12h7	21	6	120	M4	8.5	36.5	14.5	500	657	1,000	3	70
FS-08-1000-Z12X120-AA	14h7	12h7	21	8	120	M4	8.5	36.5	14.5	1,000	1,157	1,000	4.5	90

More dimensions upon request

With the drylin® Remote Operation Unit ROU, linear modules can be controlled remotely

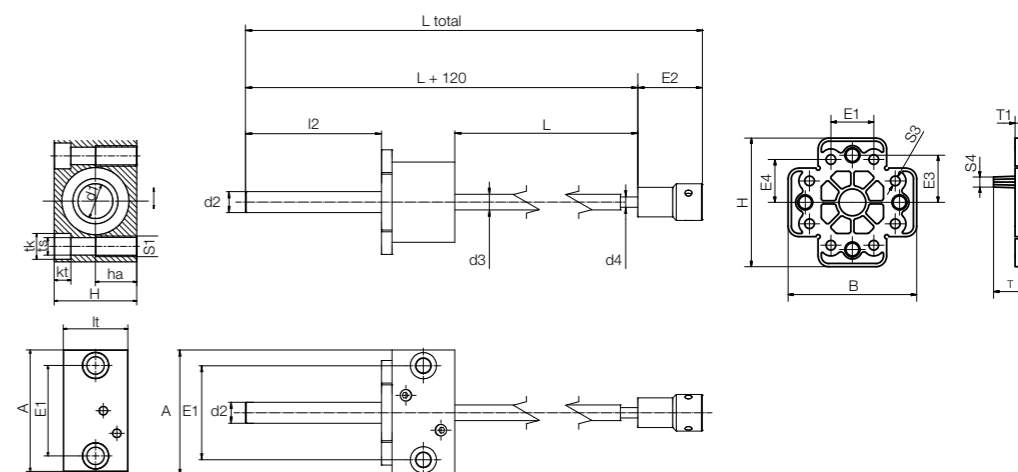
With the Remote Operation Unit, hazards such as chemicals or heat can be avoided. Thanks to the flex shaft, they can also be easily manipulated.

- Use e. g. of chemicals, heat, places that are hazardous for people working in them
- Enables manual remote control of linear modules
- Ergonomic operation via flex shaft
- Safe control of linear modules outside the work area
- Available with flex shaft with Ø 6 and 8mm in different lengths
- Thanks to the adapter plate, position indicators as well as lead screw clamps can be fitted in 4 operating directions (0°, 90°, 180°, 270°)
- Reduction sleeves for quick and simple connection to lead screw size Ø8/10/12 available AK-0047 (Ø14->8mm); AK-0048 (Ø14->10mm), AK-0049 (Ø14->12mm)



Typical application areas:

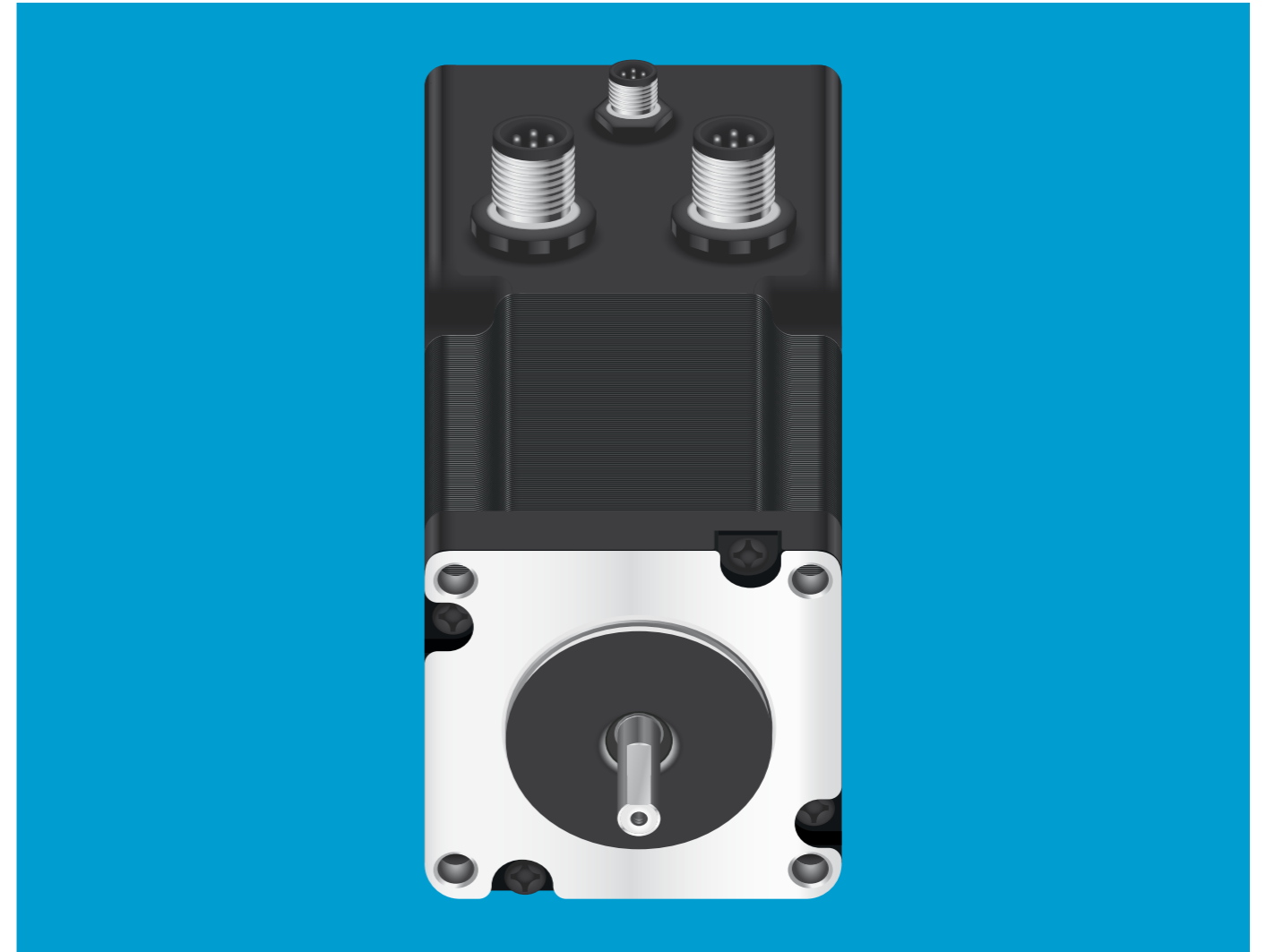
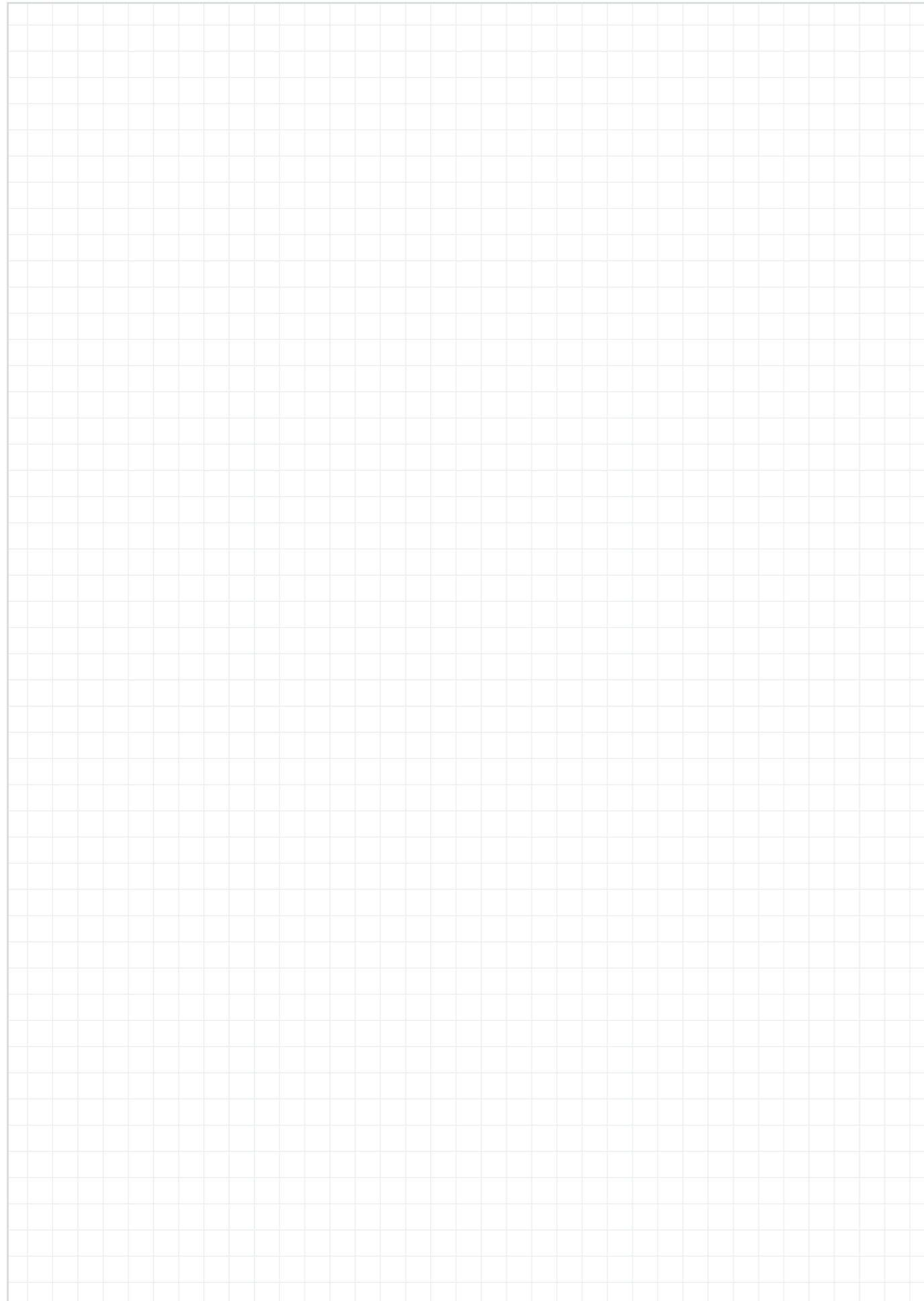
- Format adjustment
- Cabin construction
- Hazard areas



Dimensions [mm]

Part No.	L	L Total	l2	d2	d3	d4	E1	E2	E3	E4	S3	H
SHT-ROU-06-300	300	457	78	12	9	6	20	37	22	20	4.5	60
SHT-ROU-06-500	500	657	78	12	9	6	20	37	22	20	4.5	60
SHT-ROU-08-500	500	657	78	12	11	8	20	37	22	20	4.5	60
SHT-ROU-08-1000	1000	1157	78	12	11	8	20	37	22	20	4.5	60

Part No.	B	T1	A	E5	lt	tk	ts	kt	ha	S1	d1
SHT-ROU-06-300	60	6	72	54	36	15	9	8.6	23	M10	14H7
SHT-ROU-06-500	60	6	72	54	36	15	9	8.6	23	M11	14H7
SHT-ROU-08-500	60	6	72	54	36	15	9	8.6	23	M12	14H7
SHT-ROU-08-1000	60	6	72	54	36	15	9	8.6	23	M13	14H7



drylin[®] electric drive technology - motors

2-phase hybrid motor (bipolar)

Protection class up to IP68

Motor connection with metric connector/
stranded wire or cable

Optional, encoder / brake

Accessories for drive technology



Compatible with the most common motor controls

Positioning also possible without encoder

Available in several installation sizes

High torque

Available for higher plant reliability: encoder and brake

High protection class IP68

Extensive accessories


Efficient, precise and compact - drylin® E stepper motors


drylin® with the lead screw motor range is the optimum solution for systems that need a stepper motor and integrated lead screw. The stand-alone versions have a compact design and are available with NEMA stepper motors with or without an encoder. The lead screw is centred and, in combination with the dryspin® high helix thread technology, the system has a long service life.


- 5 stepper motor sizes
- Lubrication-free drylin® lead screw technology
- Available ready to connect

Typical application areas

- Medical technology
- Tool building
- Laboratory technology

 **Available from stock**
Detailed information about delivery time online.

 **Price breaks online**
No minimum order value. No minimum order quantity

 **Product finder**
▶ www.igus.eu/drylinE-finder

Stand-alone solution for customer requirements - with or without encoder



drylin® E - shaft stepper motors

- Compatible with the most common motor controls
- Positioning also possible without encoder
- Available with encoder, brake, encoder and brake as standard

▶ Page 1703



drylin® E - lead screw stepper motors

- Compatible with the most common motor controls
- Positioning also possible without encoder
- Available with encoder in short design as standard

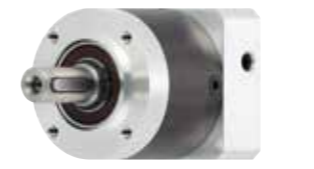
▶ Page 1714



drylin® - DC motors

- Planetary gearbox
- Spur gear
- Protect variants

▶ Page 1721



drylin® - motor drives

- For igus® stepper motors with flange sizes NEMA 23, 24, 34
- Available gear reductions: 3, 5, 10, 15, 20, 40
- Max. output torque for heavy loads

▶ Page 1736



drylin® E - specialist stepper motors

- For vacuum applications
- For splash water and underwater applications
- 1m cable

▶ Page 1710



drylin® - EC/BLCD motors

- Compatible with the most common motor controls
- Positioning also possible without encoder
- Available with hall, encoder, encoder and brake

▶ Page 1717



drylin® - motor control systems

- For DC, EC and stepper motors
- Simple and intuitive user interface
- Quick initial operation

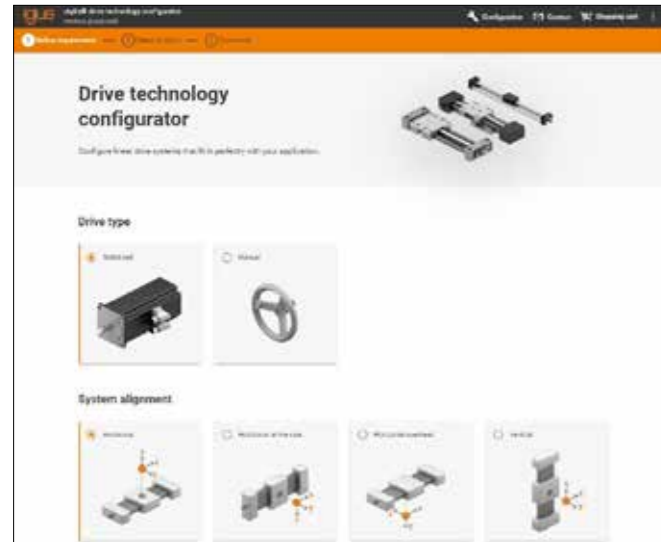
▶ Page 1732



drylin® - couplings

- More than 400 versions from stock
- Vibration dampening and pluggable

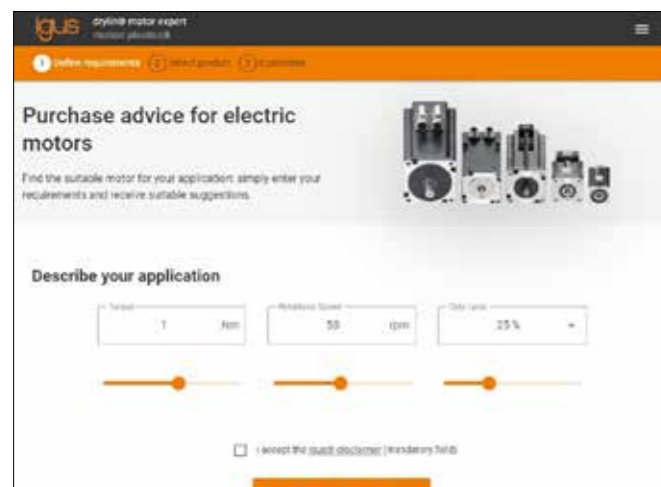
▶ Page 1739



Configurator for drive technology

Individually configured single axes with electrical drive can be generated with just a few clicks. After the parameters are set, connection cables, proximity switch kits, and control systems can be added.

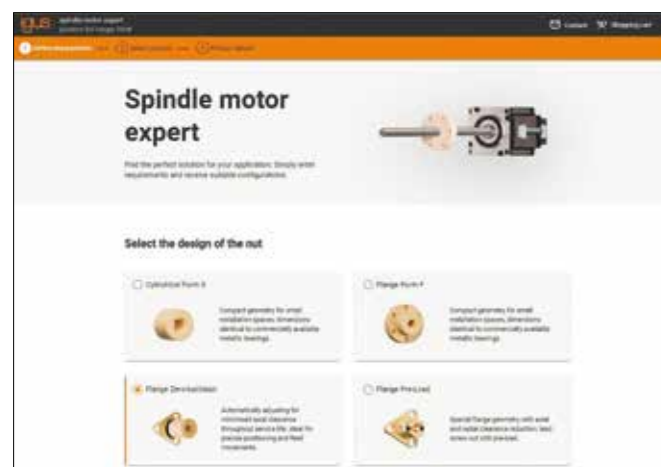
► www.igus.eu/DDX



Configurator for electric motors

After torque and speed is entered, the tool calculates the motor set that is right for you. Reduction gearboxes are included in the tool. You can also choose between encoder and brake.

► www.igus.eu/DMX



Configurator for lead screw motors

Our lead screw drive experts help you to find the right linear actuator quickly and determine predicted service life. You can choose among four nut categories and different lead screws.

► www.igus.eu/DSE

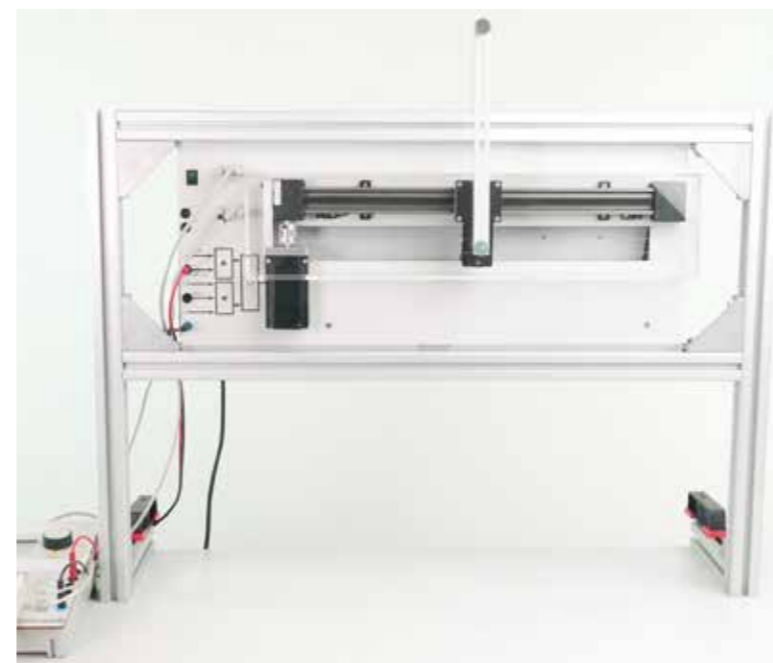


Winding machine

The requirement for this fabric unwinding system is that it be lubrication-free with adjustable speeds. igus® has the solution with two linear axes running in parallel and connected to a main shaft.

Cylindrical grinding machine

The customer needs two linear axes for his cylindrical grinding machine, which can move in the hundredth range and when wet. A maximum overall length is also stipulated. The SAW with side installation in conjunction with an IP65 stepper motor is the solution for achieving the desired protection class and maximum overall length.



Pendulum machine

The customer wants to be able to program the parameters for the school laboratory himself. A higher-level control system regulates the D1 drive analogue inputs with an angular encoder attached to the central pendulum pivot point and can thus stipulate the position specifications for erecting the pendulum with the motor.

Various NEMA stepper motor options



Motor with stranded wire

Motors with stranded wires are the least expensive and the most common stepper motors. The connecting wires (length 30cm) for this type exit from the housing and will be configured with a JST connector. They are usually installed in machines and equipment that have an additional housing or are used in clean environments.



Motor with connector

The connector interface provides a high IP65 protection level (IP: International Protection). The higher the IP rating, the better the motor is protected from the ingress of dirt and water.



Motor with connector and encoder

The encoder (for increased machine reliability) sends signals from the motor to the motor control. The encoder verifies that the required linear motion has occurred precisely as required.



Motor with connector, encoder and brake

The brake can hold the payload in position when the motor is not under power. This is used as a safety feature during power failures - recommended for vertically mounted systems.

i All motors are delivered with a machined flat motor shaft (D-cut) for increased torque resistance.

Installation sizes of NEMA stepper motors

NEMA11: tiny but with plenty of power

This motor has very compact dimensions. Even so, heavy loads can be moved with a suitable lead screw pitch. This motor is typically used on small test and analysis equipment and miniature adjustments.

NEMA17: small, but lots of power

This little motor has impressive torque and high RPMs. Reliable operation at fast travel with low loads.

NEMA23: the best known stepper motor size

Versatile choice due to the high torque and rotational speed. This motor is the best choice for most applications with medium loads.

NEMA24: power motor in medium installation size

A development extension of the typical NEMA23 with nearly twice the torque. The assembly dimensions are identical to the NEMA23, allowing many applications.

NEMA34: the power pack in large installation size

Applications with higher loads are implemented using the largest installation size. Heavy-duty format adjustments or parallel dual axis setups are among its primary duties.

NEMA dimensions

NEMA stands for "National Electrical Manufacturers Association", an American standardisation organisation comparable to the German DIN Institute or the ISO (International Standard Organization).

Since NEMA is an American association, its dimensions are imperial. The motors are divided into different sizes according to their edge dimensions (flange dimensions). Rounding errors occur during conversion from inches to millimetres.

Shaft stepper motors

Shaft stepper motors from igus® are maintenance-free and durable. They are available in various sizes and extendable with two connectors, brakes and encoders. The shaft stepper motors are available in installation sizes: NEMA11, 17, 23, 23, 24 and 34 - with flange dimensions 28mm, 42mm, 56mm, 60mm and 86mm. The motors work at temperatures between -10 and +50°C. Thanks to a standardised electrical connection, shaft stepper motors are not only compatible with igus® motor control systems, but also to most commonly available control systems of other manufacturers.

Lead screw stepper motors

Lead screw stepper motors from igus® are maintenance-free and durable. They are available in various sizes and extendable with encoders. The lead screw stepper motors are available in installation sizes: NEMA11, 17 and 23 - with flange dimensions 28mm, 42mm and 56mm. The motors work at temperatures between -10 and +50°C. Thanks to a standardised electrical connection, lead screw stepper motors are not only compatible with igus® motor control systems, but also to most commonly available control systems of other manufacturers.

EC/BLDC motors

igus® brushless DC motors are always delivered with three Hall sensors. Encoder and brake are also configured. Carbon brushes are eliminated, allowing up to 30,000 operating hours despite speeds of up to 3,000rpm.

DC spur gear

DC motors have the drive shaft below the centre of the motor because of the spur gear. The motors can be operated with batteries and the direction of rotation changed by simply reversing polarity.

DC planetary gearbox

DC motors have the drive shaft in the centre of the motor because of the planetary gearbox. The motors can be operated with batteries and the direction of rotation changed by simply reversing polarity.

DC protect

DC protect motors can have spur gears or planetary gearboxes as desired. The motors can be operated with batteries and the direction of rotation changed by simply reversing polarity. The protective housing achieves an IP41 protection class.

DC motors with spline

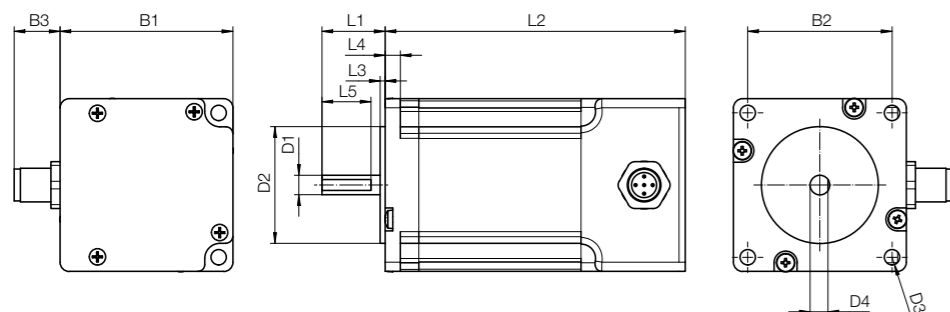
DC motors with spline are driven after the worm gear with two different plug-in shafts. The motors can be operated with batteries and the direction of rotation changed by simply reversing polarity. The protective housing achieves an IP41 protection class. The motors also have a Hall sensor that ensures greater machine reliability.

Linear actuator

Linear actuators are an interaction of lead screw stepper motor with lead screws and motors. In the igus® product range, they are available in installation sizes: NEMA11, 17 and 23 - with flange dimensions 28mm, 42mm and 56mm. Thanks to a standardised electrical connection, shaft stepper motors are not only compatible with igus® motor control systems, but also to most commonly available control systems of other manufacturers.



- Compatible with the most common motor controls
- Positioning also possible without encoder
- Available in several installation sizes
- Holding torque up to 3.6Nm
- Protection class: IP40



Technical data

Part No.	Distance over hubs [mm]	NEMA	Connection	Nominal current [A]	Holding torque [Nm]	Weight [kg]
MOT-AN-S-060-001-028-L-C-AAAO	28	NEMA11	JST stranded wire	0.7	0.06	0.11
MOT-AN-S-060-002-042-L-A-AAAO	42	NEMA17	JST stranded wire	1.4	0.20	0.17
MOT-AN-S-060-002-042-L-C-AAAO	42	NEMA17	JST stranded wire	1.4	0.20	0.17
MOT-AN-S-060-010-056-L-A-AAAO	56	NEMA23	JST stranded wire	2.8	1.00	0.61
MOT-AN-S-060-010-056-L-C-AAAO	56	NEMA23	JST stranded wire	2.8	1.00	0.61
MOT-AN-S-060-016-060-L-A-AAAO	60	NEMA24	JST stranded wire	4.3	1.70	0.75
MOT-AN-S-060-016-060-L-C-AAAO	60	NEMA24	JST stranded wire	4.3	1.70	0.75
MOT-AN-S-060-036-086-L-A-AAAO	86	NEMA34	Molex stranded wire	6.4	3.60	1.80
MOT-AN-S-060-036-086-L-C-AAAO	86	NEMA34	Molex stranded wire	6.4	3.60	1.80

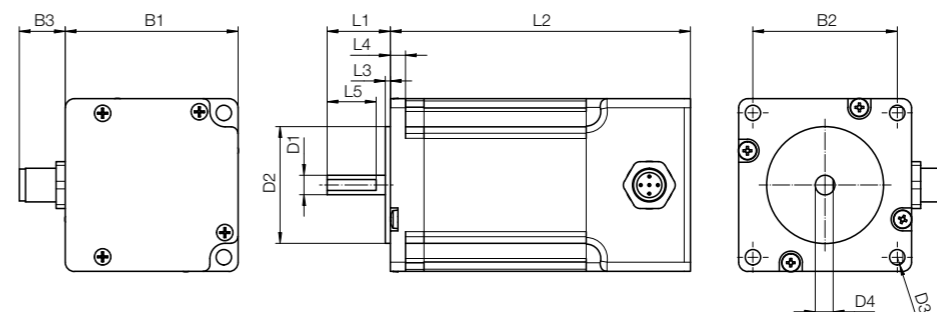
Dimensions [mm]

Part No.	L1	L2	L6	D1	D2	B1	B2
	±1.0	±1.0	±1.0	-0.013	±0.025	±0.2	±0.2
MOT-AN-S-060-001-028-L-A-AAAO	20.0	31.5	-	5.00	22.00	28.0	23.00
MOT-AN-S-060-001-028-L-C-AAAO	20.0	31.5	10.0	5.00	22.00	28.0	23.00
MOT-AN-S-060-002-042-L-A-AAAO	24.0	30.5	-	5.00	22.00	42.3	31.00
MOT-AN-S-060-002-042-L-C-AAAO	24.0	30.5	15.7	5.00	22.00	42.3	31.00
MOT-AN-S-060-010-056-L-A-AAAO	20.6	50.0	-	6.35	38.10	56.4	47.14
MOT-AN-S-060-010-056-L-C-AAAO	20.6	50.0	15.7	6.35	38.10	56.4	47.14
MOT-AN-S-060-016-060-L-A-AAAO	20.6	56.0	-	8.00	38.10	60.0	47.14
MOT-AN-S-060-016-060-L-C-AAAO	20.6	56.0	15.7	8.00	38.10	60.0	47.14
MOT-AN-S-060-036-086-L-A-AAAO	37.0	66.0	-	14.00	73.02	85.8	69.50
MOT-AN-S-060-036-086-L-C-AAAO	37.0	66.0	15.7	14.00	73.02	85.8	69.50

Further technical data, downloads and ordering options at ► www.igus.eu/motors



- Compatible with the most common motor controls
- Positioning also possible without encoder
- Available in several installation sizes
- Holding torque up to 5.9Nm
- Protection class: IP40 or IP52



Technical data

Part No.	Distance over hubs [mm]	NEMA	Connection	Nominal current [A]	Holding torque [Nm]	Weight [kg]
MOT-AN-S-060-001-028-M-A-AAAA	28	NEMA11	Metric	1.0	0.12	0.22
MOT-AN-S-060-005-042-L-A-AAAA	42	NEMA17	JST stranded wire	1.8	0.50	0.38
MOT-AN-S-060-005-042-M-A-AAAA	42	NEMA17	Metric	1.8	0.50	0.43
MOT-AN-S-060-020-056-L-A-AAAA	56	NEMA23	JST stranded wire	4.2	2.00	1.04
MOT-AN-S-060-020-056-M-A-AAAA	56	NEMA23	Metric	4.2	2.00	1.12
MOT-AN-S-060-035-060-L-A-AAAA	60	NEMA24	JST stranded wire	4.2	3.50	1.45
MOT-AN-S-060-035-060-M-A-AAAA	60	NEMA24	Metric	4.2	3.50	1.56
MOT-AN-S-060-059-086-L-A-AAAA	86	NEMA34	Molex stranded wire	6.4	5.90	2.90
MOT-AN-S-060-059-086-M-A-AAAA	86	NEMA34	Metric	6.4	5.90	3.20

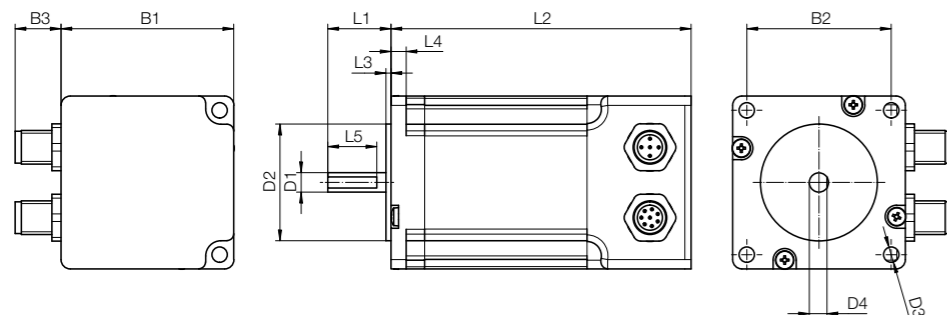
Dimensions [mm]

Part No.	L1	L2	D1	D2	B1	B2	B3
	±1.0	±1.0	-0.013	±0.025	±0.2	±0.2	
MOT-AN-S-060-001-028-L-A-AAAA	20.0	50	5.00	22.00	28.0	23.00	-
MOT-AN-S-060-001-028-M-A-AAAA	20.0	70	5.00	22.00	28.0	23.00	13.0
MOT-AN-S-060-005-042-L-A-AAAA	24.0	49	5.00	22.00	42.3	31.00	-
MOT-AN-S-060-005-042-M-A-AAAA	24.0	70	5.00	22.00	42.3	31.00	13.0
MOT-AN-S-060-020-056-L-A-AAAA	20.6	76	6.35	38.10	56.4	47.14	-
MOT-AN-S-060-020-056-M-A-AAAA	20.6	98	6.35	38.10	56.4	47.14	13.0
MOT-AN-S-060-035-060-L-A-AAAA	20.6	88	8.00	38.10	60.0	47.14	9.0
MOT-AN-S-060-035-060-M-A-AAAA	20.6	112	8.00	38.10	60.0	47.14	13.0
MOT-AN-S-060-059-086-L-A-AAAA	37.0	98	14.00	73.02	85.8	69.50	-
MOT-AN-S-060-059-086-M-A-AAAA	37.0	118	14.00	73.02	85.8	69.50	37.0

Further technical data, downloads and ordering options at ► www.igus.eu/motors



- Compatible with the most common motor controls
- Available in several installation sizes
- Holding torque up to 5.9Nm
- Protection class: IP40 or IP52
- Encoder with 500PPR




Technical data

Part No.	Distance over hubs [mm]	NEMA	Connection	Nominal current [A]	Holding torque [Nm]	Weight [kg]
MOT-AN-S-060-001-028-L-C-AAAC	28	NEMA11	JST stranded wire	1.0	0.12	0.27
MOT-AN-S-060-005-042-L-C-AAAC	42	NEMA17	JST stranded wire	1.8	0.50	0.40
MOT-AN-S-060-005-042-M-C-AAAC	42	NEMA17	Metric	1.8	0.50	0.45
MOT-AN-S-060-020-056-L-C-AAAC	56	NEMA23	JST stranded wire	4.2	2.00	1.05
MOT-AN-S-060-020-056-M-C-AAAC	56	NEMA23	Metric	4.2	2.00	1.14
MOT-AN-S-060-035-060-L-C-AAAC	60	NEMA24	JST stranded wire	4.2	3.50	1.35
MOT-AN-S-060-035-060-M-C-AAAC	60	NEMA24	Metric	4.2	3.50	1.58
MOT-AN-S-060-059-086-L-C-AAAC	86	NEMA34	Molex stranded wire	6.4	5.90	2.95
MOT-AN-S-060-059-086-M-C-AAAC	86	NEMA34	Metric	6.4	5.90	3.30

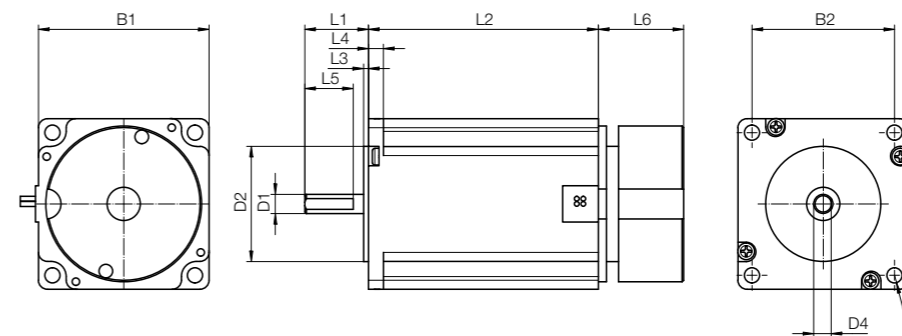
Dimensions [mm]

Part No.	L1	L2	L6	D1	D2	B1	B2	B3
	±1.0	±1.0		-0.013	±0.025	±0.2	±0.2	±0.2
MOT-AN-S-060-001-028-L-C-AAAC	20.0	50	10	5.00	22.00	28.0	23.00	-
MOT-AN-S-060-005-042-L-C-AAAC	24.0	49	14	5.00	22.00	42.3	31.00	-
MOT-AN-S-060-005-042-M-C-AAAC	24.0	70	-	5.00	22.00	42.3	31.00	13.0
MOT-AN-S-060-020-056-L-C-AAAC	20.6	76	15	6.35	38.10	56.4	47.14	-
MOT-AN-S-060-020-056-M-C-AAAC	20.6	98	-	6.35	38.10	56.4	47.14	13.0
MOT-AN-S-060-035-060-L-C-AAAC	20.6	88	17	8.00	38.10	60.0	47.14	9.0
MOT-AN-S-060-035-060-M-C-AAAC	20.6	112	-	8.00	38.10	60.0	47.14	13.0
MOT-AN-S-060-059-086-L-C-AAAC	37.0	98	15	14.00	73.02	85.8	69.50	-
MOT-AN-S-060-059-086-M-C-AAAC	37.0	118	-	14.00	73.02	85.8	69.50	37.0

 Further technical data, downloads and ordering options at ► www.igus.eu/motors



- Compatible with the most common motor controls
- Available in several installation sizes
- Holding torque up to 5.9Nm
- Protection class: IP40
- Brake up to 2Nm holding torque




Technical data

Part No.	Distance over hubs [mm]	NEMA	Connection	Nominal current [A]	Holding torque [Nm]	Brake holding torque [Nm]	Weight [kg]
MOT-AN-S-060-005-042-L-B-AAAA	42	NEMA17	JST stranded wire	1.8	0.5	0.5	0.5
MOT-AN-S-060-020-056-L-B-AAAA	56	NEMA23	JST stranded wire	4.2	2.0	1.0	1.3
MOT-AN-S-060-035-060-L-B-AAAA	60	NEMA24	JST stranded wire	4.2	3.5	1.0	1.7
MOT-AN-S-060-059-086-L-B-AAAA	86	NEMA34	Molex stranded wire	6.4	5.9	2.0	3.3

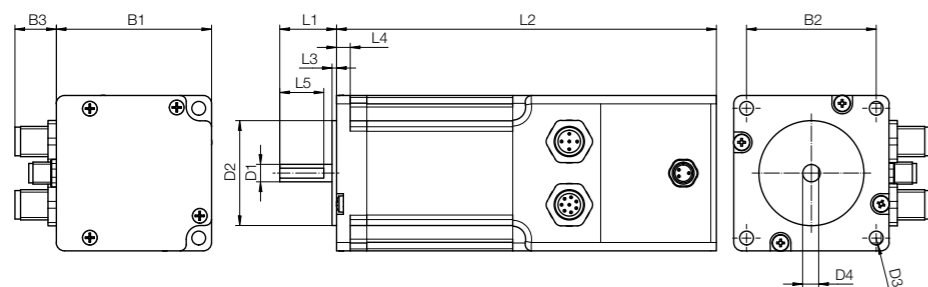
Dimensions [mm]

Part No.	L1	L2	L6	D1	D2	B1	B2
	±1.0	±1.0		-0.013	±0.025	±0.2	±0.2
MOT-AN-S-060-005-042-L-B-AAAA	24.0	49	29	5.00	22.0	42.3	31.0
MOT-AN-S-060-020-056-L-B-AAAA	20.6	76	29	6.35	38.1	56.4	47.14
MOT-AN-S-060-035-060-L-B-AAAA	20.6	88	30	8.00	38.1	60.0	47.14
MOT-AN-S-060-059-086-L-B-AAAA	37.0	98	32	14.00	73.02	85.8	69.5

 Further technical data, downloads and ordering options at ► www.igus.eu/motors



- Compatible with the most common motor controls
- Available in several installation sizes
- Holding torque up to 5.9Nm
- Protection class: IP52
- Encoder with 500PPR
- Brake up to 2Nm holding torque




Technical data

Part No.	Flange dimension [mm]	NEMA	Connection	Nominal current [A]	Holding torque [Nm]	Brake holding torque [Nm]	Weight [kg]
MOT-AN-S-060-005-042-M-D-AAAD	42	NEMA17	Metric	1.8	0.5	0.4	0.58
MOT-AN-S-060-020-056-M-D-AAAD	56	NEMA23	Metric	4.2	2.0	1.0	1.36
MOT-AN-S-060-035-060-M-D-AAAD	60	NEMA24	Metric	4.2	3.5	1.0	1.82
MOT-AN-S-060-059-086-M-D-AAAD	86	NEMA34	Metric	6.4	5.9	2.0	3.60

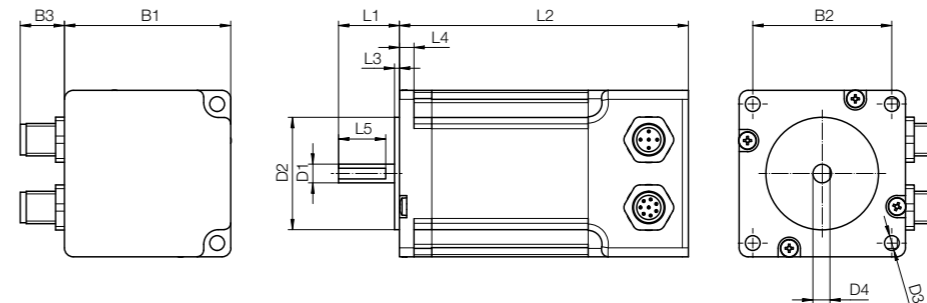
Dimensions [mm]

Part No.	L1	L2	D1	D2	B1	B2	B3
	±1.0	±1.0	-0.013	±0.025	±0.2	±0.2	
MOT-AN-S-060-005-042-M-D-AAAD	24.0	115	5.00	22.00	42.3	31.00	13.0
MOT-AN-S-060-020-056-M-D-AAAD	20.6	138	6.35	38.10	56.4	47.14	13.0
MOT-AN-S-060-035-060-M-D-AAAD	20.6	150	8.00	38.10	60.0	47.14	13.0
MOT-AN-S-060-059-086-M-D-AAAD	37.0	188	14.00	73.02	85.8	69.50	37.0

 Further technical data, downloads and ordering options at ► www.igus.eu/motors



- Compatible with the most common motor controls
- Available in several installation sizes
- Holding torque up to 3.5Nm
- Protection class IP65 thanks to the shaft seal
- Encoder with 500PPR




Technical data

Part No.	Distance over hubs [mm]	NEMA	Connection	Nominal current [A]	Holding torque [Nm]	Weight [kg]
MOT-AN-S-060-005-042-M-C-AAAS	42	NEMA17	Metric	1.8	0.5	0.45
MOT-AN-S-060-020-056-M-C-AAAS	56	NEMA23	Metric	4.2	2.0	1.14
MOT-AN-S-060-035-060-M-C-AAAS	60	NEMA24	Metric	4.2	3.5	1.58

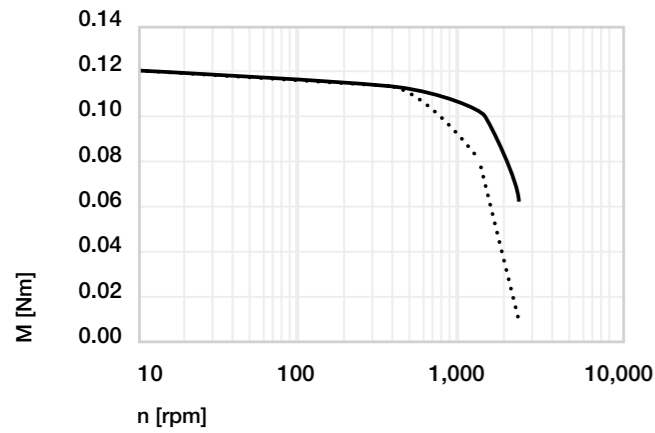
Dimensions [mm]

Part No.	L1	L2	D1	D2	B1	B2	B3
	±1.0	±1.0	-0.013	±0.025	±0.2	±0.2	
MOT-AN-S-060-005-042-M-C-AAAS	24.0	73	5.00	22.0	42.3	31.00	13.0
MOT-AN-S-060-020-056-M-C-AAAS	20.6	99	6.35	38.1	56.4	47.14	13.0
MOT-AN-S-060-035-060-M-C-AAAS	20.6	112	8.00	38.1	60.0	47.14	13.0

 Further technical data, downloads and ordering options at ► www.igus.eu/motors

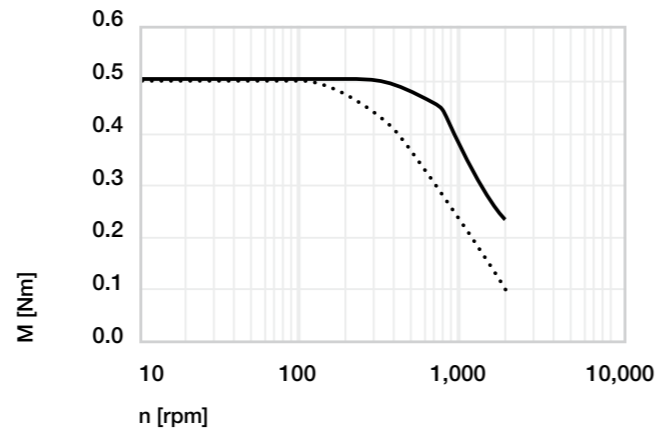
Flange size 28 (NEMA11)

MOT-AN-S-060-001-028-...



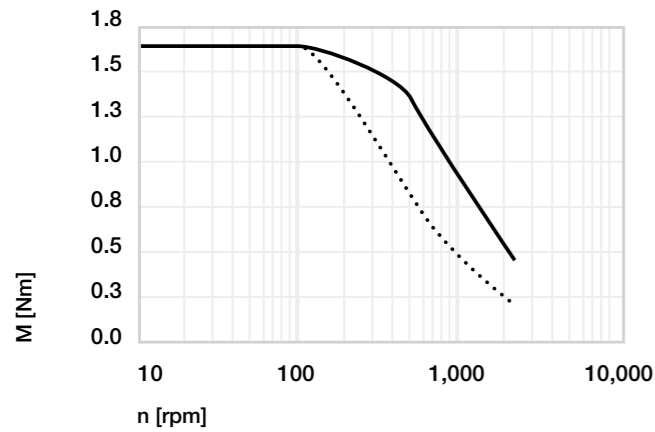
Flange size 42 (NEMA17)

MOT-AN-S-060-005-042-...



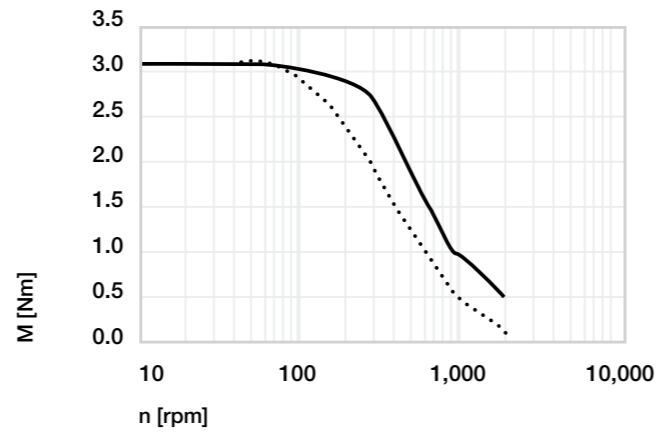
Flange size 56 (NEMA23)

MOT-AN-S-060-020-056-...



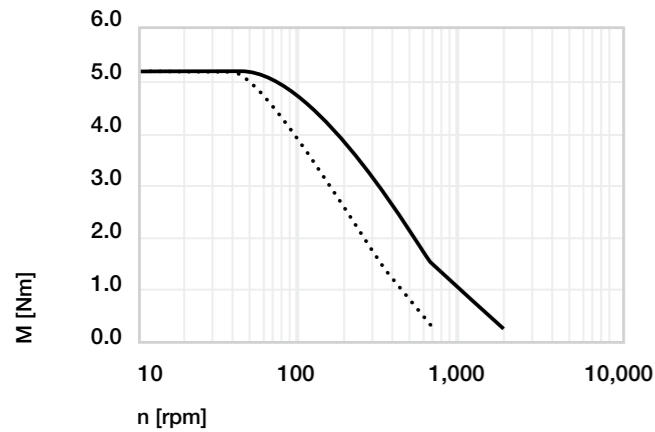
Flange size 60 (NEMA24)

MOT-AN-S-060-035-060-...



Flange size 86 (NEMA34)

MOT-AN-S-060-059-086-...

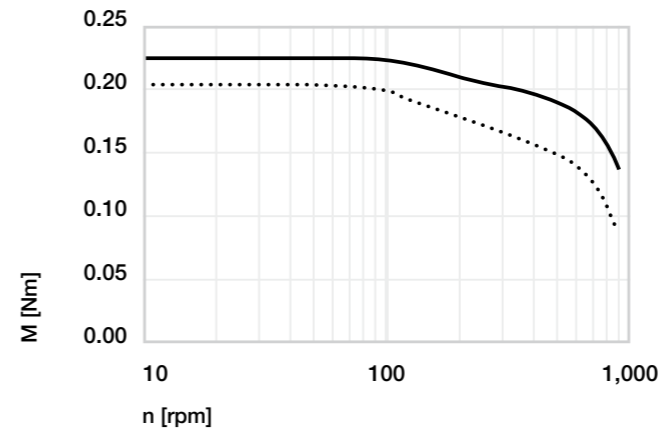


----- 24VDC ——— 48VDC

The characteristic curves are determined in quarter step mode

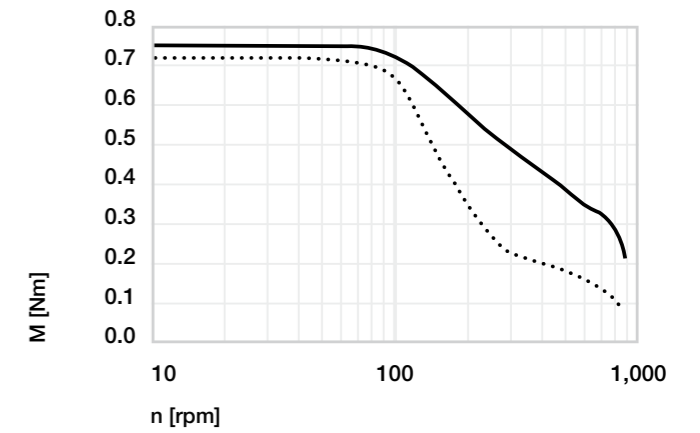
Flange size 42 (NEMA17)

MOT-AN-S-060-002-042-...-AAAO



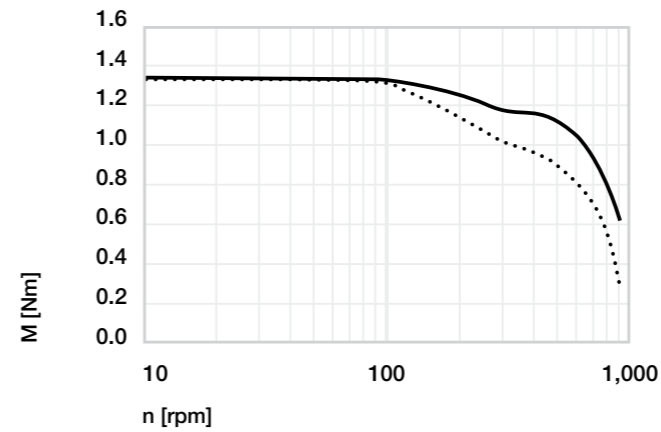
Flange size 56 (NEMA23)

MOT-AN-S-060-010-056-...-AAAO



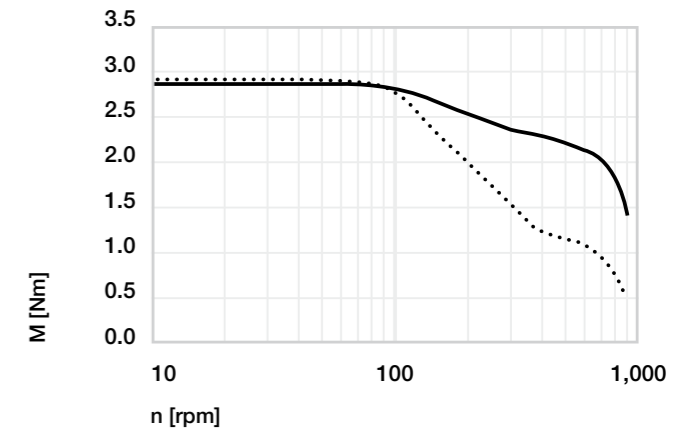
Flange size 60 (NEMA24)

MOT-AN-S-060-016-060-...-AAAO



Flange size 86 (NEMA34)

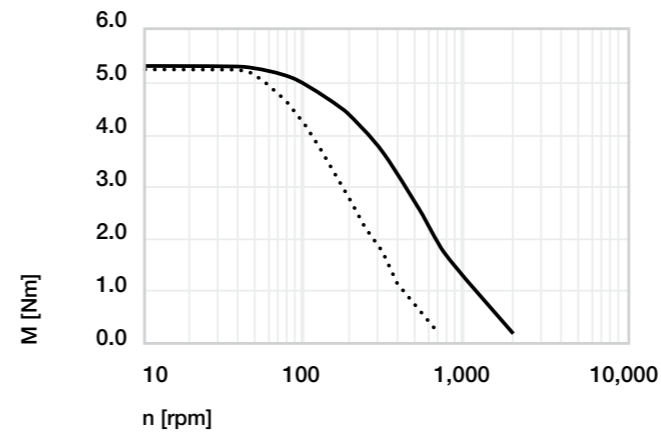
MOT-AN-S-060-036-086-...-AAAO



Characteristic curves for specialist stepper motors

Flange size 86 (NEMA34)

MOT-ST-086-C-A-C

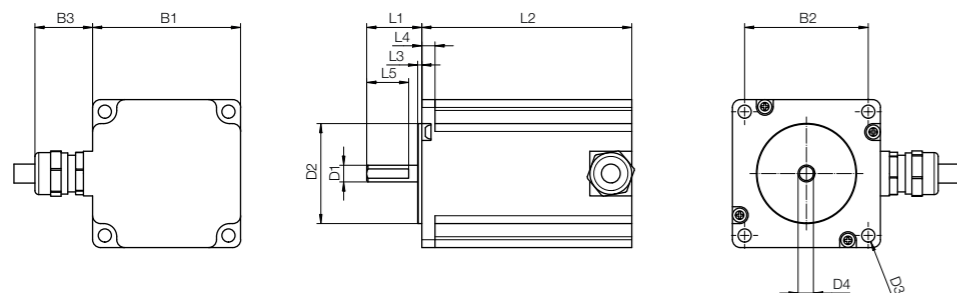


----- 24VDC ——— 48VDC

The characteristic curves are determined in quarter step mode



- Compatible with the most common motor controls
- Available in several installation sizes
- Holding torque up to 5.9Nm
- Protection class from IP00 up to IP68



Technical data

Part No.	Distance over hubs [mm]	NEMA	Connection	Nominal current [A]	Holding torque [Nm]	Weight [kg]
MOT-AD-S-060-017-056-M-A-AAAK New	56	NEMA23	Metric	3.0	1.7	1.20
MOT-AD-S-060-017-056-M-C-AAAL New	56	NEMA23	Metric	3.0	1.7	1.25
MOT-AP-S-060-013-056-K-A-AAAI New	56	NEMA23	Terminal box	4.2	1.3	1.47
MOT-AP-S-060-013-056-K-C-AAAM New	56	NEMA23	Terminal box	4.2	1.3	1.51
MOT-AP-S-060-007-056-L-A-AAAJ New	56	NEMA23	Stranded wire	2.5	0.7	1.00
MOT-ST-42-C-A-C New	42	NEMA17	Molex cable	1.8	0.5	0.40
MOT-ST-56-C-A-C New	56	NEMA23	Molex cable	4.2	2.0	1.04
MOT-ST-60-C-A-C New	60	NEMA24	Molex cable	4.2	3.5	1.50
MOT-ST-86-C-A-C New	86	NEMA34	Molex cable	6.4	5.9	3.10

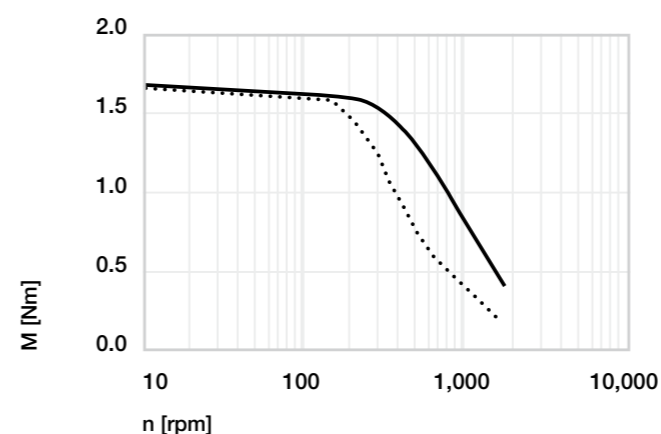
Dimensions [mm]

Part No.	L1	L2	L3	L5	D1	D2	B1	B2
	±1.0	±1.0	±0.25	±1.0	-0.015	±0.05	±0.2	±0.2
MOT-AD-S-060-017-056-M-A-AAAK New	20.6	106	–	16	6.35	38.10	56.40	47.14
MOT-AD-S-060-017-056-M-C-AAAL New	20.6	106	–	16	6.35	38.10	56.40	47.14
MOT-AP-S-060-013-056-K-A-AAAI New	17.0	134	–	–	6.35	38.10	56.80	47.10
MOT-AP-S-060-013-056-K-C-AAAM New	17.0	154	–	–	6.35	38.10	56.80	47.10
MOT-AP-S-060-007-056-L-A-AAAJ New	22.0	74.0	–	–	6.35	38.10	59.95	47.00
MOT-ST-42-C-A-C New	24.0	53.0	2.0	–	–	22.00	42.3	31.00
MOT-ST-56-C-A-C New	21.0	80.0	1.6	–	–	38.10	56.4	47.10
MOT-ST-60-C-A-C New	21.0	94.5	1.6	–	–	38.10	60.0	47.10
MOT-ST-86-C-A-C New	37.0	110.0	1.6	–	–	73.00	86.0	69.60

Further technical data, downloads and ordering options at ► www.igus.eu/motors

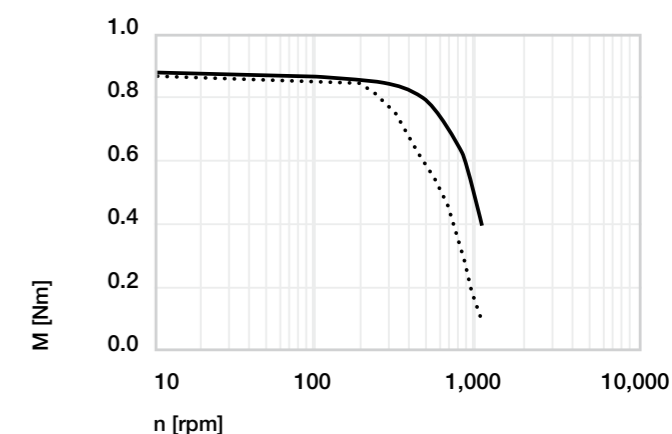
Flange size 56 (NEMA23)

MOT-AD-S-060-017-056-M-... (IP65 splash water)



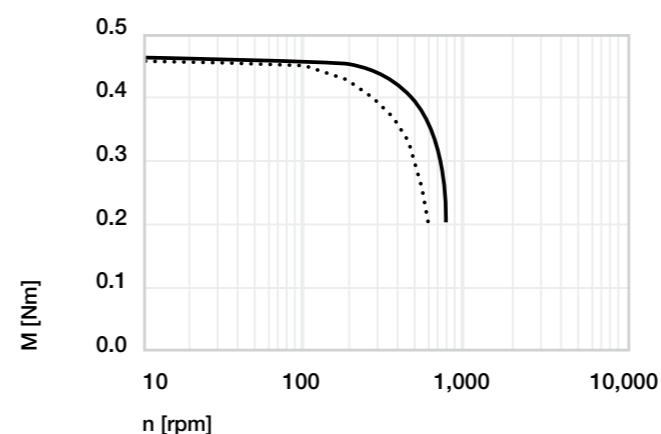
Flange size 56 (NEMA23)

MOT-AP-S-060-013-056-K-... (IP68 underwater)



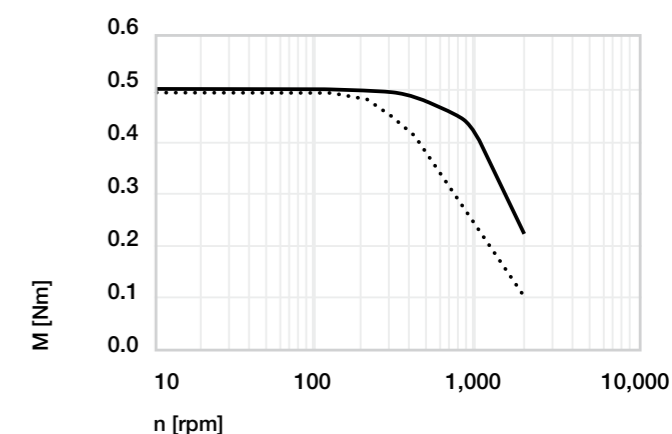
Flange size 56 (NEMA23)

MOT-AP-S-060-007-056-L-A-AAAJ (IP00 vacuum)



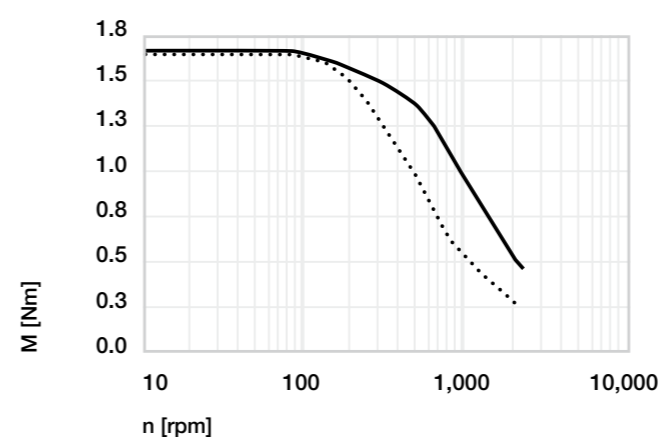
Flange size 42 (NEMA17)

MOT-ST-042-C-A-C



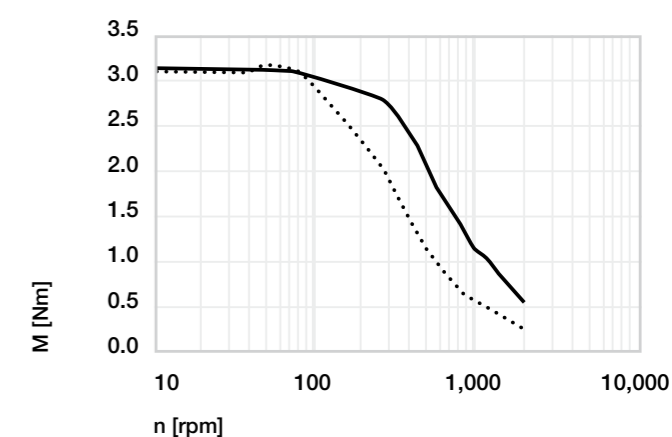
Flange size 56 (NEMA23)

MOT-ST-056-C-A-C



Flange size 60 (NEMA24)

MOT-ST-060-C-A-C



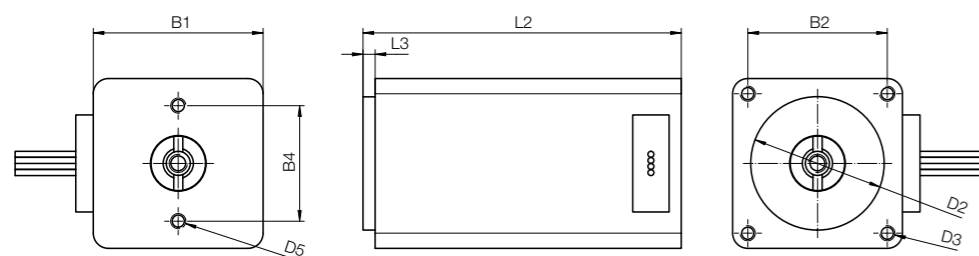
Flange size 86 (NEMA17) ► Page 1709

----- 24VDC ——— 48VDC

The characteristic curves are determined in quarter step mode



- Compatible with the most common motor controls
- Available in several installation sizes
- Short design
- Holding torque up to 1Nm
- Protection class: IP42
- Axial load up to 500N



Technical data

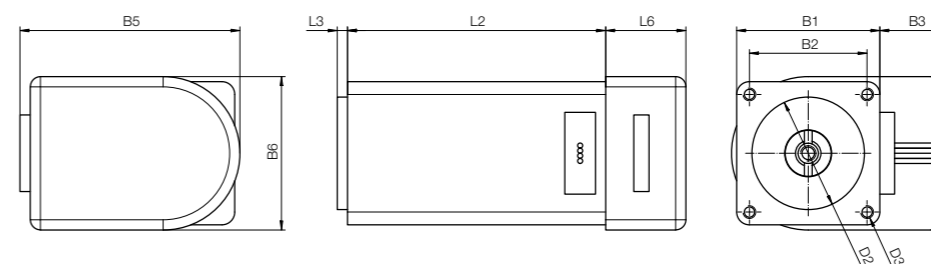
Part No.	Distance over hubs [mm]	NEMA	Connection	Nominal current [A]	Holding torque [Nm]	Weight [kg]
MOT-ST-28-L-A-B	28	NEMA11	JST stranded wire	0.67	0.06	0.11
MOT-ST-42-L-A-B	42	NEMA17	JST stranded wire	1.40	0.20	0.21
MOT-ST-56-L-A-B	56	NEMA23	JST stranded wire	2.80	1.00	0.63

Dimensions [mm]

Part No.	L2	L3	D2	B1	B2
	±1.0		±0.025		±0.2
MOT-ST-28-L-A-B	31.5	2.0	22.0	28.2	23.0
MOT-ST-42-L-A-B	30.5	2.0	22.0	42.3	31.0
MOT-ST-56-L-A-B	50.0	1.6	38.1	56.4	47.14



- Compatible with the most common motor controls
- Available in several installation sizes
- Short design
- Holding torque up to 1Nm
- Protection class: IP42
- Axial load up to 500N
- Encoder with 500PPR



Technical data

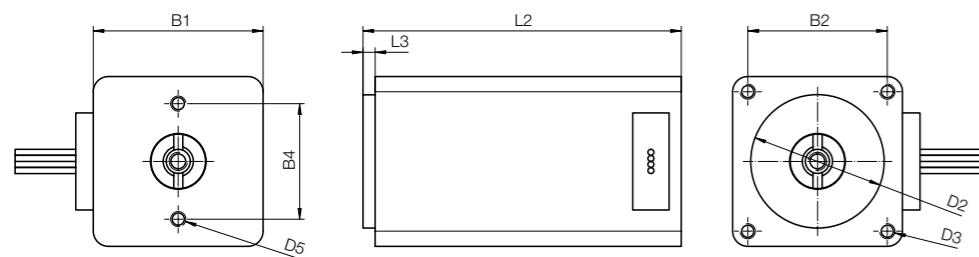
Part No.	Distance over hubs [mm]	NEMA	Connection	Nominal current [A]	Holding torque [Nm]	Weight [kg]
MOT-ST-28-L-C-B	28	NEMA11	JST stranded wire	0.67	0.06	0.13
MOT-ST-42-L-C-B	42	NEMA17	JST stranded wire	1.40	0.20	0.23
MOT-ST-56-L-C-B	56	NEMA23	JST stranded wire	2.80	1.00	0.65

Dimensions [mm]

Part No.	L2	L3	L6	D2	B1	B2	B3
	±1.0					±0.2	±0.2
MOT-ST-28-L-C-B	31.5	2.0	15.7	22.0	28.2	23.00	12.5
MOT-ST-42-L-C-B	30.5	2.0	15.7	22.0	42.3	31.00	6.0
MOT-ST-56-L-C-B	50.0	1.6	15.7	38.1	56.4	47.14	–



- Compatible with the most common motor controls
- Available in several installation sizes
- Holding torque up to 2Nm
- Protection class: IP42
- Axial load up to 500N



Technical data

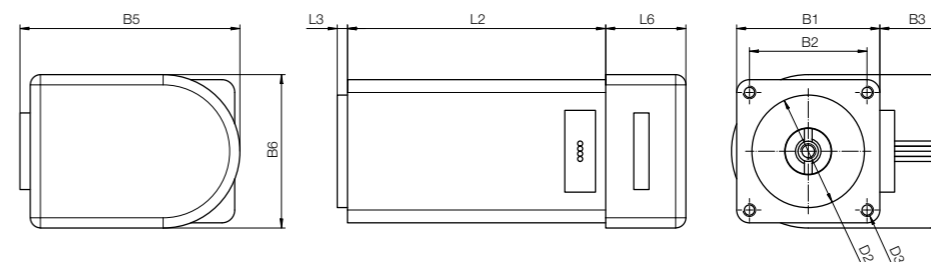
Part No.	Distance over hubs [mm]	NEMA	Connection	Nominal current [A]	Holding torque [Nm]	Weight [kg]
MOT-ST-28-L-A-A	28	NEMA11	JST stranded wire	1.0	0.12	0.25
MOT-ST-42-L-A-A	42	NEMA17	JST stranded wire	1.8	0.50	0.34
MOT-ST-56-L-A-A	56	NEMA23	JST stranded wire	4.2	2.00	1.00

Dimensions [mm]

Part No.	L2 ±1.0	L3	D2 ±0.025	B1	B2 ±0.2
MOT-ST-28-L-A-A	51	2.0	22.0	28.2	23.00
MOT-ST-42-L-A-A	49	2.0	22.0	42.3	31.00
MOT-ST-56-L-A-A	76	1.6	38.1	56.4	47.14



- Compatible with the most common motor controls
- Available in several installation sizes
- Holding torque up to 2Nm
- Protection class: IP42
- Axial load up to 500N
- Encoder with 500PPR



Technical data

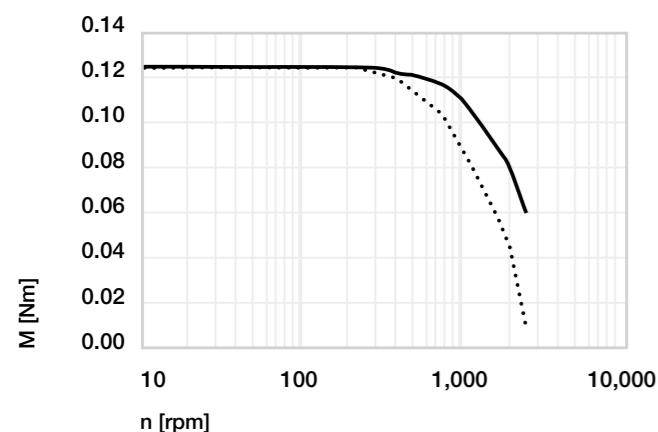
Part No.	Distance over hubs [mm]	NEMA	Connection	Nominal current [A]	Holding torque [Nm]	Weight [kg]
MOT-ST-28-L-C-A	28	NEMA11	JST stranded wire	1.0	0.12	0.27
MOT-ST-42-L-C-A	42	NEMA17	JST stranded wire	1.8	0.50	0.36
MOT-ST-56-L-C-A	56	NEMA23	JST stranded wire	4.2	2.00	1.02

Dimensions [mm]

Part No.	L2 ±1.0	L3	L6	D2	B1	B2 ±0.2	B3 ±0.2
MOT-ST-28-L-C-A	51	2.0	15.2	22.0	28.2	23.00	12.5
MOT-ST-42-L-C-A	49	2.0	16.0	22.0	42.3	31.00	6.0
MOT-ST-56-L-C-A	76	1.6	16.0	38.1	56.4	47.14	-

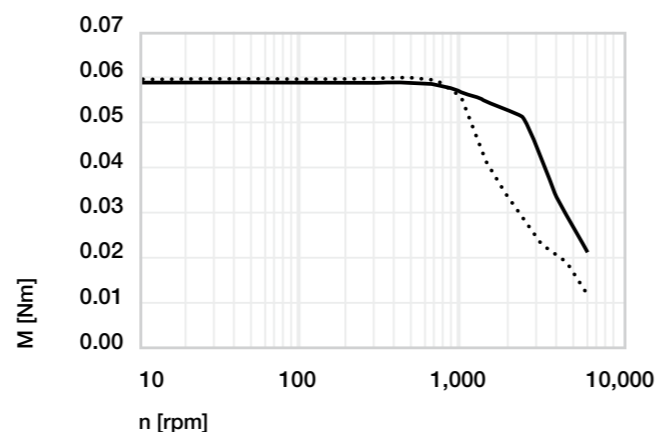
Flange size 28 (NEMA11)

MOT-ST-28-...



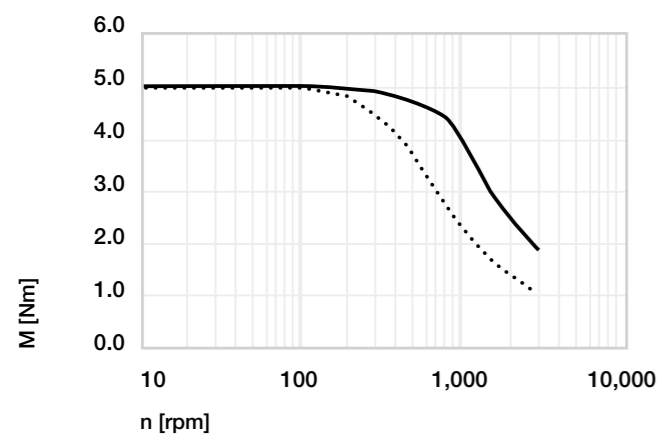
Flange size 28 (NEMA11)

MOT-ST-28-...



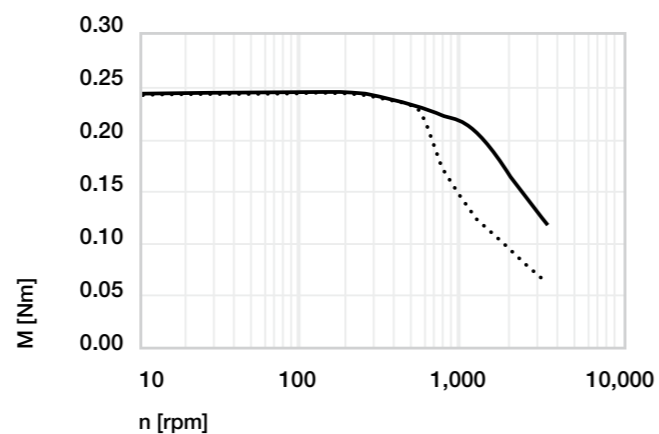
Flange size 42 (NEMA17)

MOT-ST-42-...



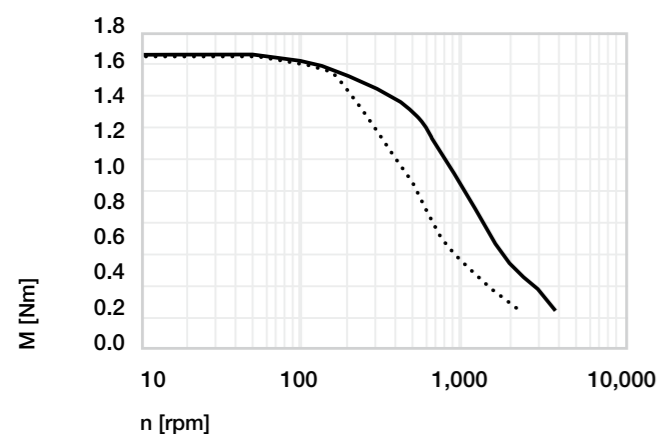
Flange size 42 (NEMA17)

MOT-ST-42-...



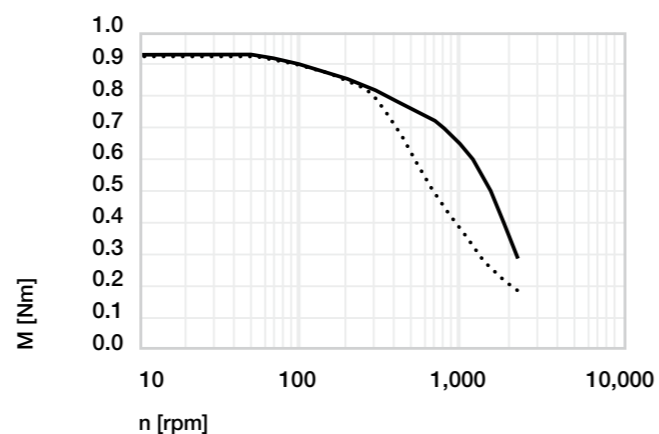
Flange size 56 (NEMA23)

MOT-ST-56-...



Flange size 56 (NEMA23)

MOT-ST-56-...

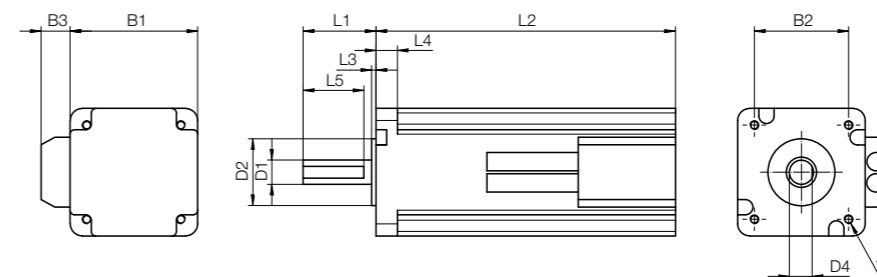


----- 24VDC ——— 48VDC

The characteristic curves are determined in quarter step mode



- Compatible with the most common motor controls
- Available in several installation sizes
- Motor winding: 48 VDC
- Protection class: IP40
- Constant torque over the entire speed range



Technical data

Part No.	Distance over hubs [mm]	NEMA	Connection	Poles (pole pairs)	Nominal current [A]	Rated torque [Nm]	Weight [kg]
MOT-EC-42-C-H-A	42	NEMA17	Molex cable	8 (4)	2.6	0.3	0.75
MOT-EC-56-C-H-A	56	NEMA23	Molex cable	8 (4)	5.0	0.6	1.30
MOT-EC-60-C-H-A	60	NEMA24	Molex cable	8 (4)	7.5	0.8	1.35
MOT-EC-86-C-H-A	86	NEMA34	Molex cable	8 (4)	8.7	1.0	2.30

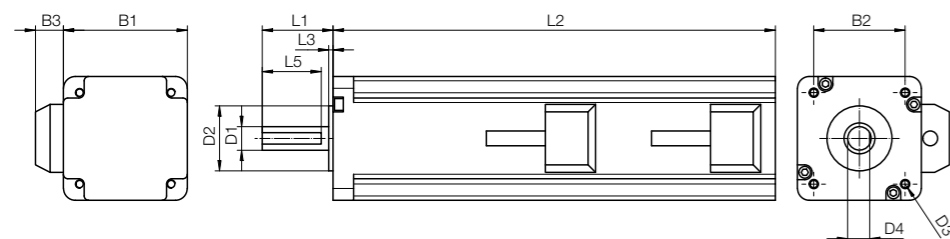
Dimensions [mm]

Part No.	L1	L2	D1	D2	B1	B2	B3
	±1.0	±1.0	-0.013	±0.025		±0.2	
MOT-EC-42-C-H-A	24	99.0	8	22.0	42.0	31.00	9
MOT-EC-56-C-H-A	21	98.0	8	38.1	56.4	47.14	9
MOT-EC-60-C-H-A	21	87.7	8	38.1	60.5	47.15	9
MOT-EC-86-C-H-A	35	80.5	14	73.0	86.0	69.60	9

Further technical data, downloads and ordering options at ► www.igus.eu/motors



- Compatible with the most common motor controls
- Available in several installation sizes
- Encoder with 1,000PPR
- Motor winding: 48 VDC
- Protection class: IP40
- Constant torque over the entire speed range



Technical data

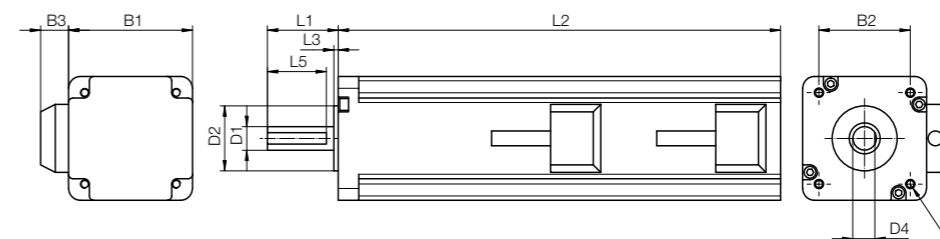
Part No.	Distance over hubs [mm]	NEMA	Connection	Poles (pole pairs)	Nominal current [A]	Rated torque [Nm]	Weight [kg]
MOT-EC-42-C-I-A	42	NEMA17	Molex cable	8 (4)	2.6	0.3	0.8
MOT-EC-56-C-I-A	56	NEMA23	Molex cable	8 (4)	5.0	0.6	1.4
MOT-EC-60-C-I-A	60	NEMA24	Molex cable	8 (4)	7.5	0.8	1.4
MOT-EC-86-C-I-A	86	NEMA34	Molex cable	8 (4)	8.7	1.0	2.5

Dimensions [mm]

Part No.	L1 ±1.0	L2 ±1.0	D1 -0.013	D2 ±0.025	B1	B2 ±0.2	B3
MOT-EC-42-C-I-A	24	115.0	8	22.0	42.0	31.00	9
MOT-EC-56-C-I-A	21	115.0	8	38.1	56.4	47.14	9
MOT-EC-60-C-I-A	21	97.0	8	38.1	60.5	47.15	9
MOT-EC-86-C-I-A	35	110.5	14	73.0	86.0	69.60	9



- Compatible with the most common motor controls
- Available in several installation sizes
- Encoder with 1,000PPR
- Brake up to 1.5Nm holding torque
- Motor winding: 48 VDC
- Protection class: IP40
- Constant torque over the entire speed range



Technical data

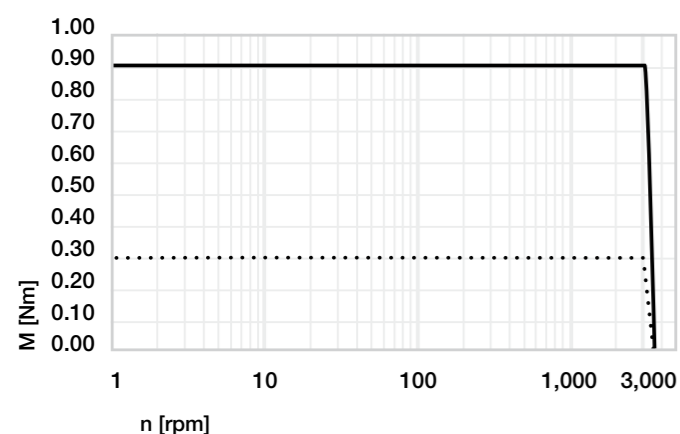
Part No.	Distance over hubs [mm]	NEMA	Connection	Poles (pole pairs)	Nominal current [A]	Rated torque [Nm]	Brake holding torque [Nm]	Weight [kg]
MOT-EC-42-C-K-A	42	NEMA17	Molex cable	8 (4)	2.6	0.3	0.5	0.95
MOT-EC-56-C-K-A	56	NEMA23	Molex cable	8 (4)	5.0	0.6	1.5	1.70
MOT-EC-60-C-K-A	60	NEMA24	Molex cable	8 (4)	7.5	0.8	1.5	1.50
MOT-EC-86-C-K-A	86	NEMA34	Molex cable	8 (4)	8.7	1.0	1.5	3.10

Dimensions [mm]

Part No.	L1 ±1.0	L2 ±1.0	D1 -0.013	D2 ±0.025	B1	B2 ±0.2	B3
MOT-EC-42-C-K-A	24	149	8	22.0	42.0	31.00	9
MOT-EC-56-C-K-A	21	149	8	38.1	56.4	47.14	9
MOT-EC-60-C-K-A	21	130	8	38.1	60.5	47.15	9
MOT-EC-86-C-K-A	35	151	14	73.0	86.0	69.60	9

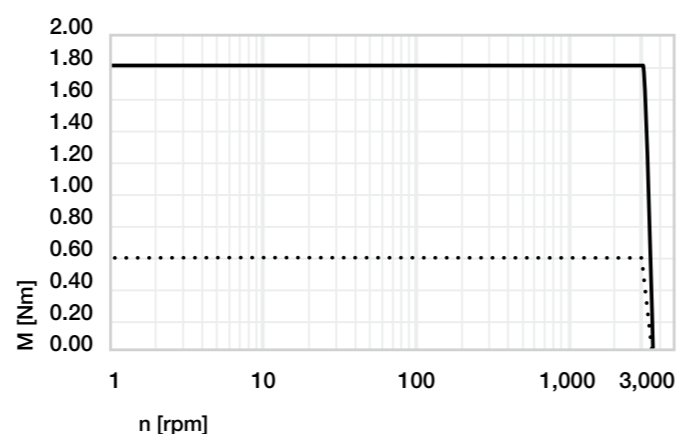
Flange size 42 (NEMA17)

MOT-EC-42-...



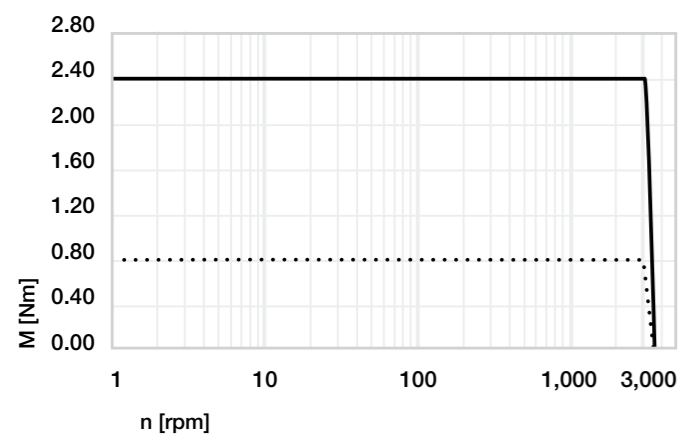
Flange size 56 (NEMA23)

MOT-EC-56-...



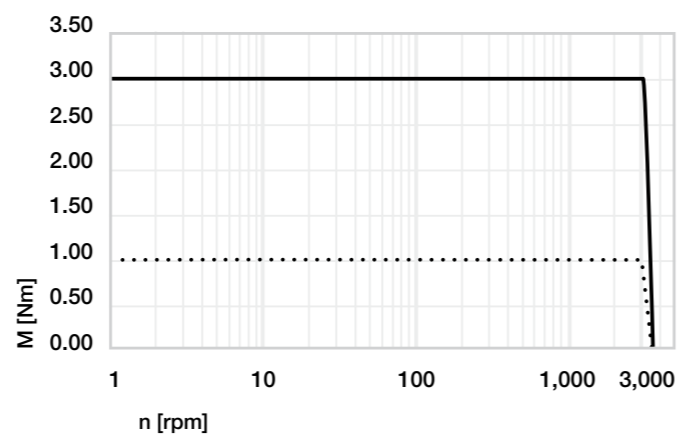
Flange size 60 (NEMA24)

MOT-EC-60-...



Flange size 86 (NEMA34)

MOT-EC-86-...

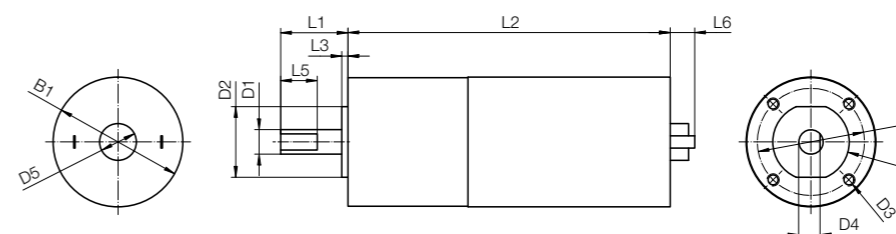


----- 48VDC nominal ——— 48VDC peak

The characteristic curves are determined in quarter step mode



- Compatible with the most common motor controls
- Available in several installation sizes
- Rated torque up to 1.8Nm
- Protection class: IP40 to IP52



Technical data

Part No.	Distance over hubs [mm]	Connection	Nominal current [A]	Rated torque [Nm]	Start up torque [Nm]	Weight [kg]
MOT-DC-22-F-A-D	22	Flat connector	0.15	0.025	0.13	0.062
MOT-DC-22-F-A-E	22	Flat connector	0.15	0.060	0.35	0.067
MOT-DC-22-F-A-J	22	Flat connector	0.15	0.210	1.18	0.092
MOT-AE-B-024-005-036-F-A-AAAA	36	Flat connector	0.90	0.500	1.00	0.450
MOT-AE-B-024-010-042-F-A-AAAA	42	Flat connector	2.30	1.000	3.00	0.650
MOT-AE-B-024-018-042-F-A-AAAA	42	Flat connector	2.00	1.800	6.00	0.690

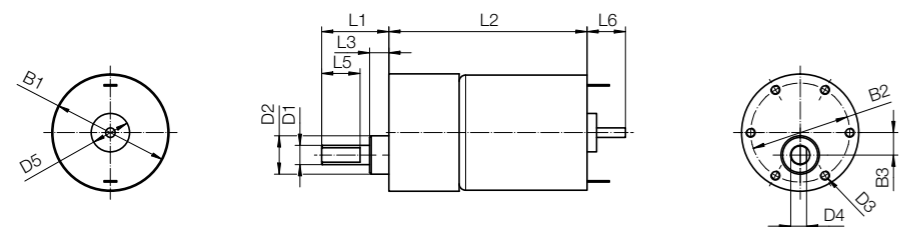
Dimensions [mm]

Part No.	L1	L2	L6	D1	D2	B1	B2
		±1.0		-0.013	±0.025	±0.3	±0.2
MOT-DC-22-F-A-D	14.0	50.1	4.5	4	14	22.0	18
MOT-DC-22-F-A-E	14.0	53.8	4.5	4	14	22.0	18
MOT-DC-22-F-A-J	14.0	57.4	4.6	4	14	22.0	18
MOT-AE-B-024-005-036-F-A-AAAA	19.3	85.6	13.5	6	20	36.0	26
MOT-AE-B-024-010-042-F-A-AAAA	22.0	105.2	13.5	8	25	42.4	35
MOT-AE-B-024-018-042-F-A-AAAA	22.0	111.9	13.5	8	25	42.4	35

Further technical data, downloads and ordering options at ► www.igus.eu/motors



- Compatible with the most common motor controls
- Available in several installation sizes
- Rated torque up to 1.5Nm
- Protection class: IP30



Technical data

Part No.	Distance over hubs [mm]	Connection	Nominal current [A]	Rated torque [Nm]	Start up torque [Nm]	Weight [kg]
MOT-AE-B-024-001-037-F-A-AAAA	37	Flat connector	0.5	0.1	0.3	0.207
MOT-AE-B-024-003-037-F-A-AAAA	37	Flat connector	0.5	0.3	0.5	0.213
MOT-AE-B-024-007-037-F-A-AAAA	37	Flat connector	0.5	0.7	1.0	0.221
MOT-AE-B-024-015-037-F-A-AAAA	37	Flat connector	0.5	1.5	1.8	0.270

Dimensions [mm]

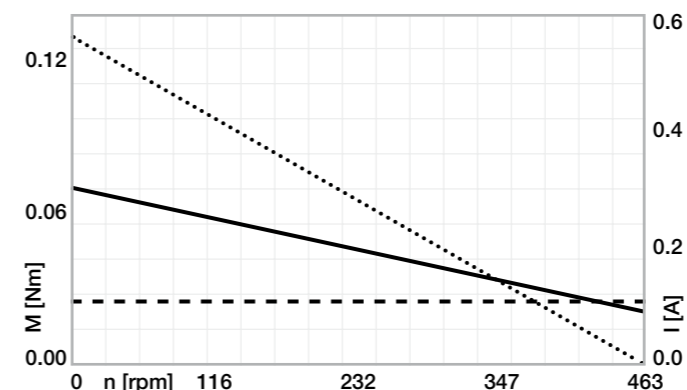
Part No.	L1	L2	L6	D1	D2	B1	B2
		±1.0		-0.013	±0.025	±0.3	±0.3
MOT-AE-B-024-001-037-F-A-AAAA	21	59.5	12	6	12	37	31
MOT-AE-B-024-003-037-F-A-AAAA	21	62.0	12	6	12	37	31
MOT-AE-B-024-007-037-F-A-AAAA	21	64.5	12	6	12	37	31
MOT-AE-B-024-015-037-F-A-AAAA	21	67.0	12	6	12	37	31

Further technical data, downloads and ordering options at ► www.igus.eu/motors

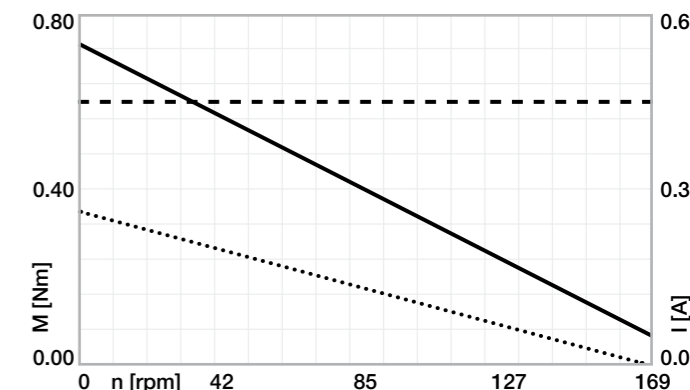
1722 Online tools and more information ► www.igus.eu/drylinE

Characteristic curves 24VDC

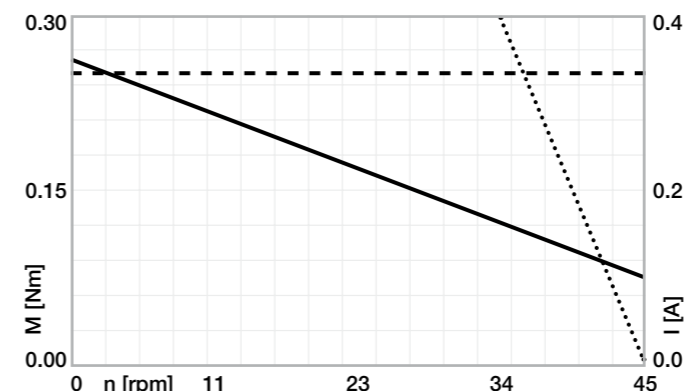
MOT-DC-22-F-A-D



MOT-DC-22-F-A-E

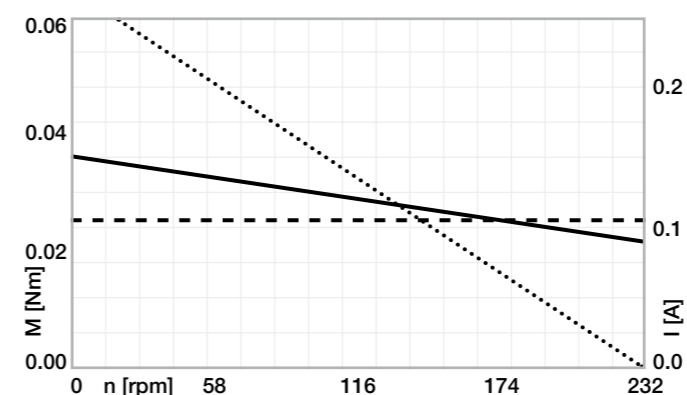


MOT-DC-22-F-A-J

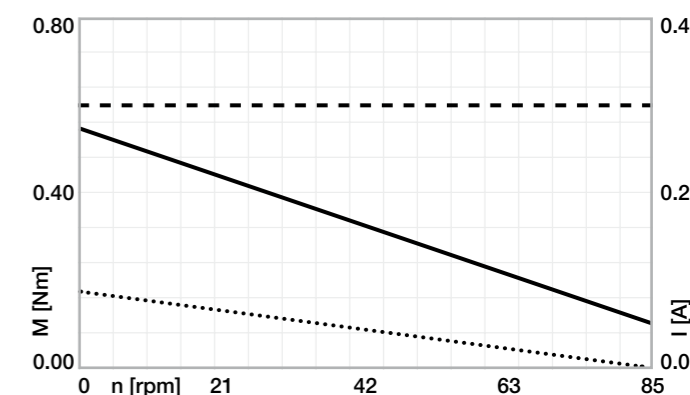


Characteristic curves 12VDC

MOT-DC-22-F-A-D



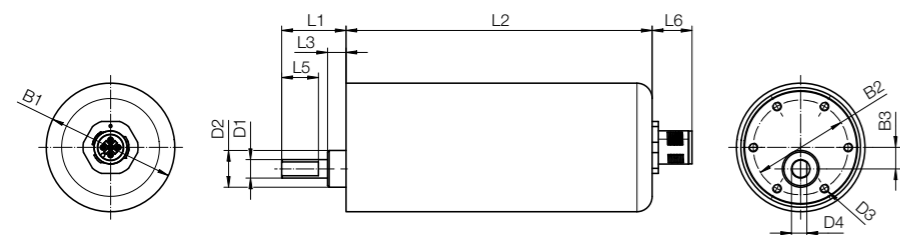
MOT-DC-22-F-A-E



----- Torque ----- Max. continuous torque ——— Motor current



- Compatible with the most common motor controls
- Available in several installation sizes
- Rated torque up to 1.5Nm
- Protection class: IP41



Technical data

Part No.	Distance over hubs [mm]	Connection	Nominal current [A]	Rated torque [Nm]	Start up torque [Nm]	Weight [kg]
MOT-DC-37-M-A-A	37	Metric	0.5	0.1	0.3	0.28
MOT-DC-37-M-A-B	37	Metric	0.5	0.3	0.5	0.28
MOT-DC-37-M-A-D	37	Metric	0.5	0.7	1.0	0.28
MOT-DC-37-M-A-H	37	Metric	0.5	1.5	1.8	0.28

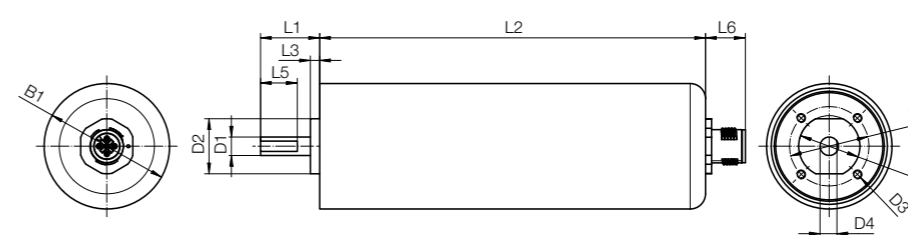
Dimensions [mm]

Part No.	L1	L2	L6	D1	D2	B1	B2
		±1.0		-0.013	±0.025	±0.3	±0.2
MOT-DC-37-M-A-A	21	100	13	6.0	12.0	42.0	31.0
MOT-DC-37-M-A-B	21	100	13	6.0	12.0	42.0	31.0
MOT-DC-37-M-A-D	21	100	13	6.0	12.0	42.0	31.0
MOT-DC-37-M-A-H	21	100	13	6.0	12.0	42.0	31.0

Further technical data, downloads and ordering options at ► www.igus.eu/motors



- Compatible with the most common motor controls
- Available in several installation sizes
- Rated torque up to 1.8Nm
- Protection class: IP41



Technical data

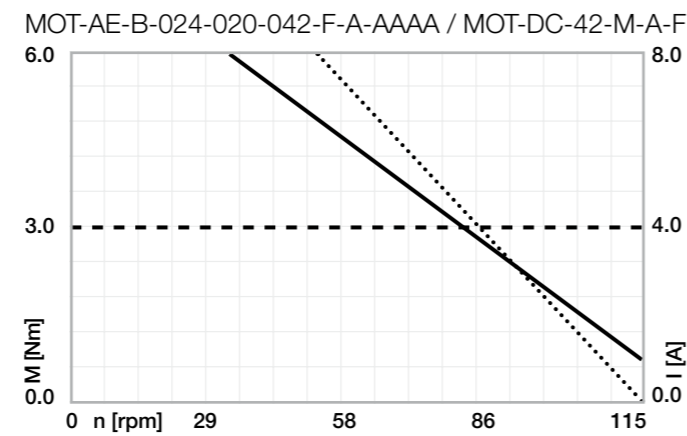
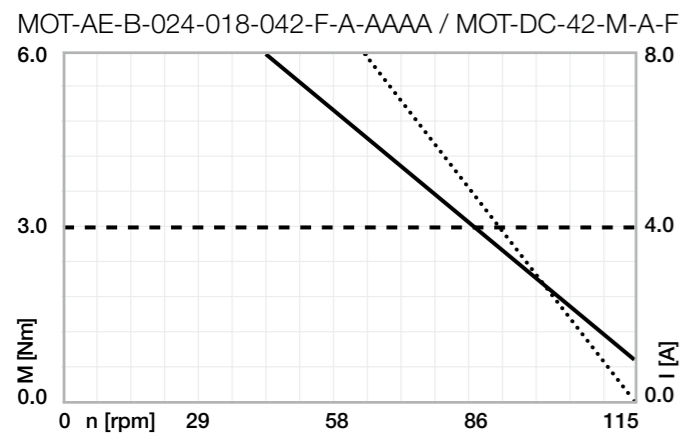
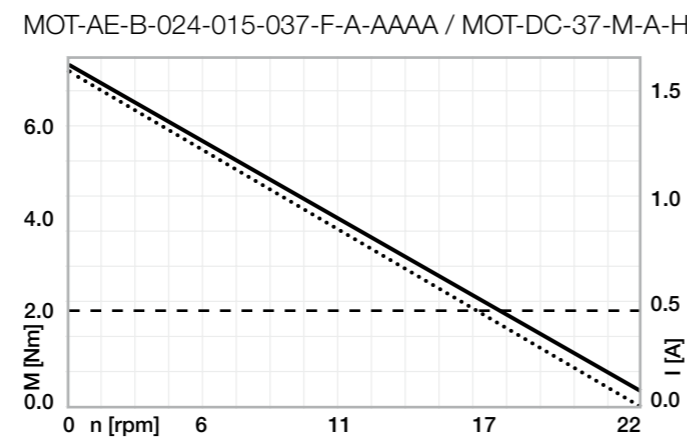
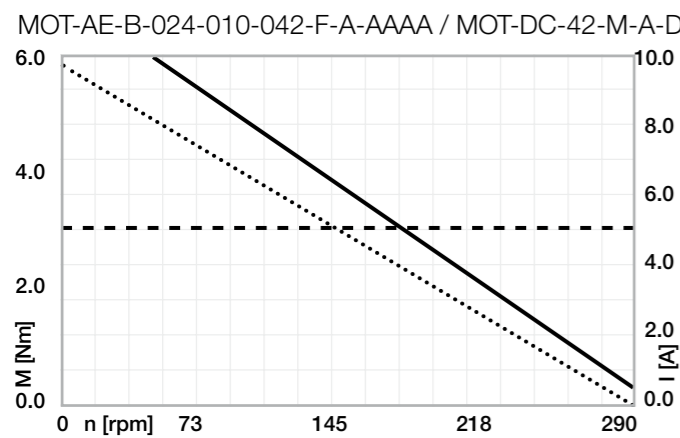
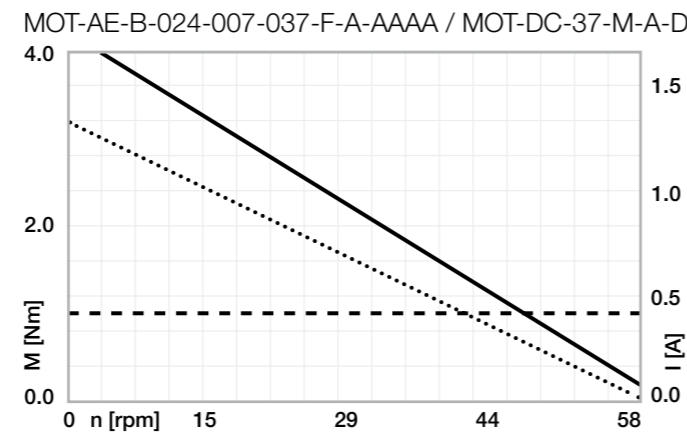
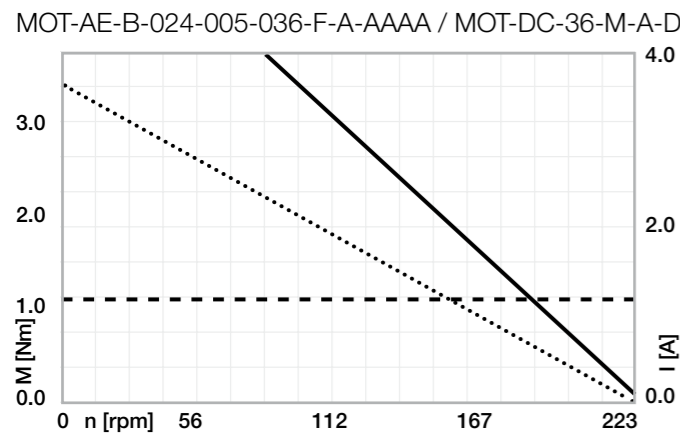
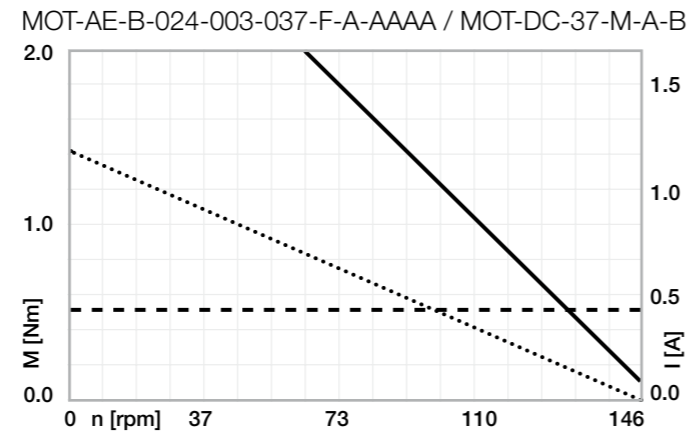
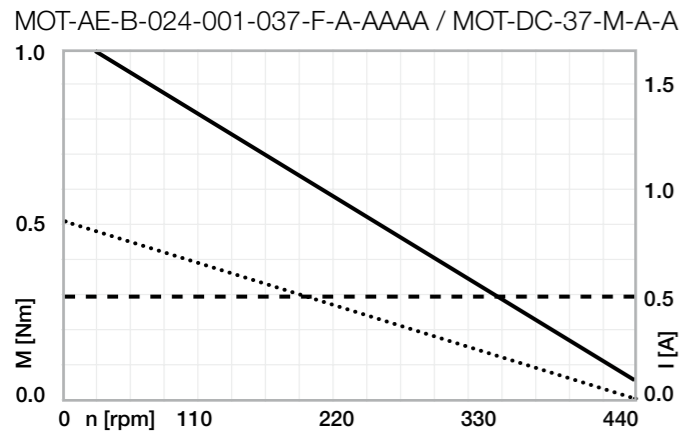
Part No.	Distance over hubs [mm]	Connection	Nominal current [A]	Rated torque [Nm]	Start up torque [Nm]	Weight [kg]
MOT-DC-36-M-A-D	36	Metric	0.9	0.5	1.0	0.42
MOT-DC-42-M-A-D	42	Metric	2.3	1.0	3.0	0.58
MOT-DC-42-M-A-F	42	Metric	2.0	1.8	6.0	0.58

Dimensions [mm]

Part No.	L1	L2	L6	D1	D2	B1	B2
		±1.0		-0.013	±0.025	±0.3	±0.2
MOT-DC-36-M-A-D	19.3	126	13	6.0	20.0	41.0	26
MOT-DC-42-M-A-D	22.0	146	13	8.0	25.0	47.3	35
MOT-DC-42-M-A-F	22.0	146	13	8.0	25.0	47.3	35

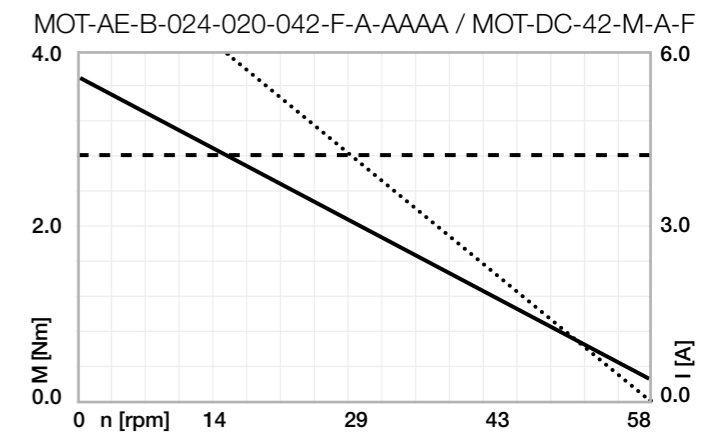
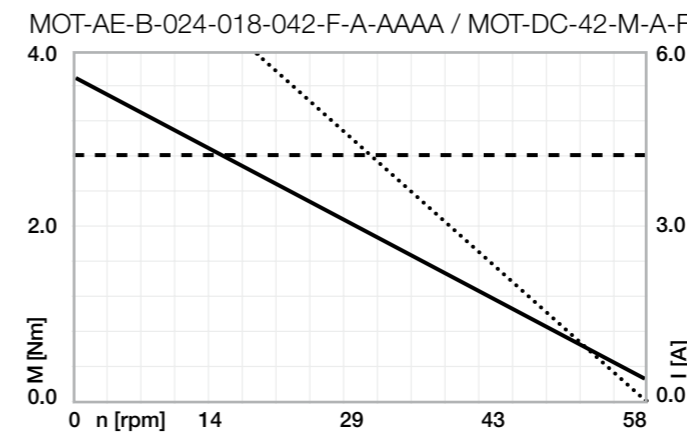
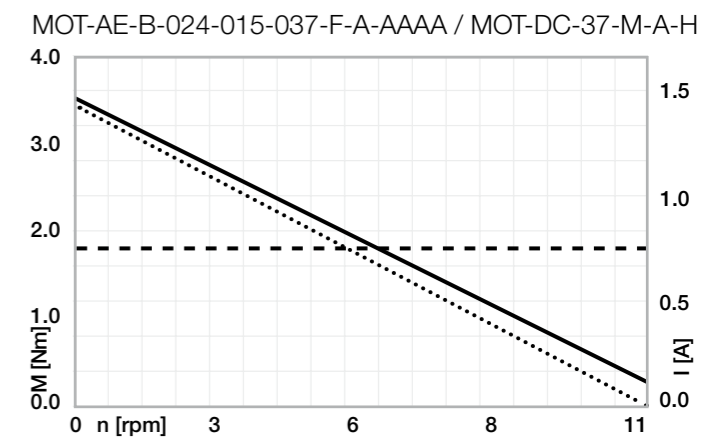
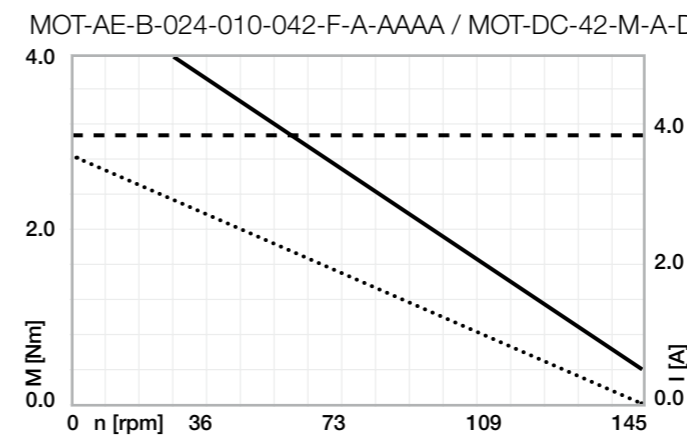
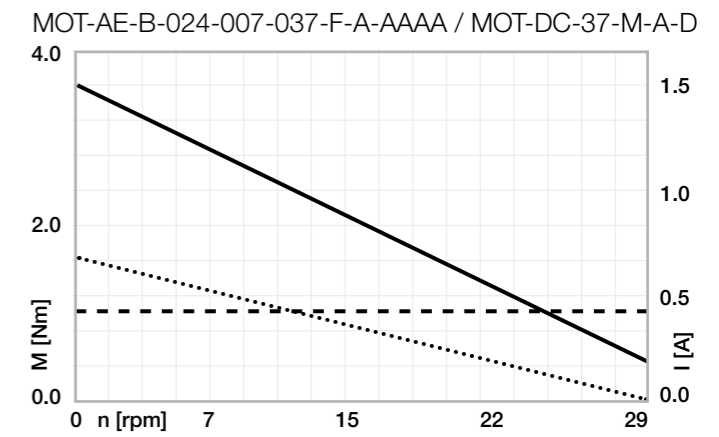
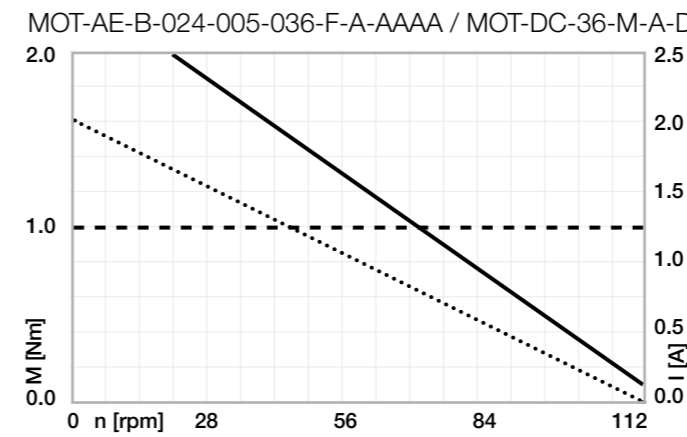
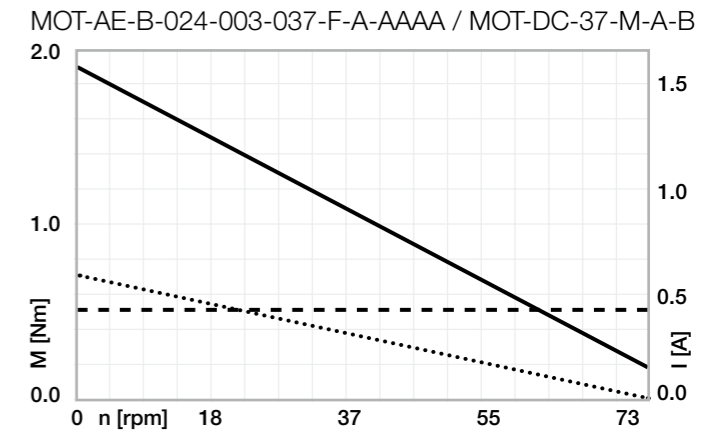
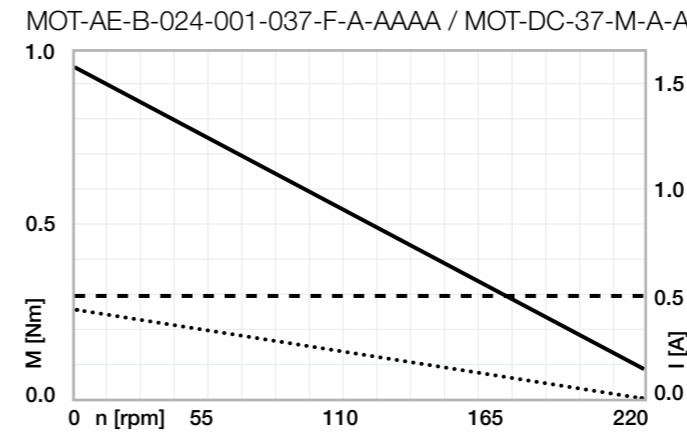
Further technical data, downloads and ordering options at ► www.igus.eu/motors

Characteristic curves 24VDC



----- Torque ----- Max. continuous torque —— Motor current

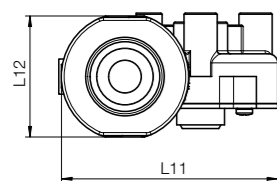
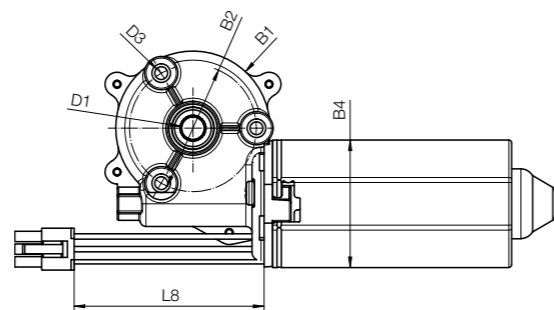
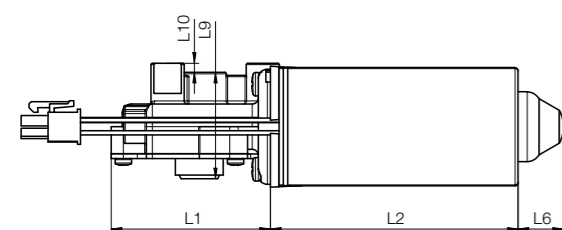
Characteristic curves 12VDC



----- Torque ----- Max. continuous torque —— Motor current



- Compatible with the most common motor controls
- Available in several installation sizes
- High torque with small motors
- Protection class: IP41
- Space-saving in conjunction with drive technology



Technical data

Part No.	Distance over hubs [mm]	Connection	Nominal current [A]	Rated torque [Nm]	Start up torque [Nm]	Weight [kg]
MOT-DC-42-J-H-B New	42	Molex stranded wire	1.5	2.00	10.0	0.7
MOT-DC-42-J-H-D New	42	Molex stranded wire	2.8	1.75	8.0	0.7
MOT-DC-42-J-H-F New	42	Molex stranded wire	1.9	1.25	7.5	0.7
MOT-DC-42-J-H-H New	42	Molex stranded wire	1.9	0.75	5.0	0.7
MOT-DC-42-J-H-J New	42	Molex stranded wire	4.0	3.00	18.0	0.7
MOT-DC-42-J-H-L New	42	Molex stranded wire	4.0	2.50	13.0	0.7
MOT-DC-42-J-H-N New	42	Molex stranded wire	5.0	1.60	7.0	0.7
MOT-DC-42-J-H-P New	42	Molex stranded wire	4.0	1.40	9.0	0.7

Dimensions [mm]

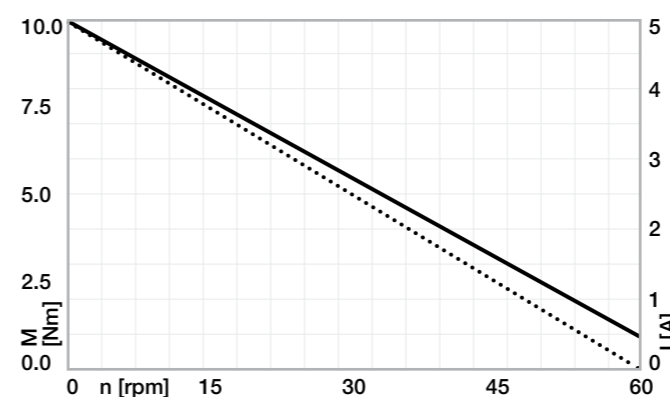
Part No.	L1	L2	L6	L8	D1	D2	B1	B2
MOT-DC-42-J-H-□ New	55	81.65	15.97	42	7x8	M5	51	42 (3x120°)

i dryspin® motor lead screw with spline
▶ Page 1462

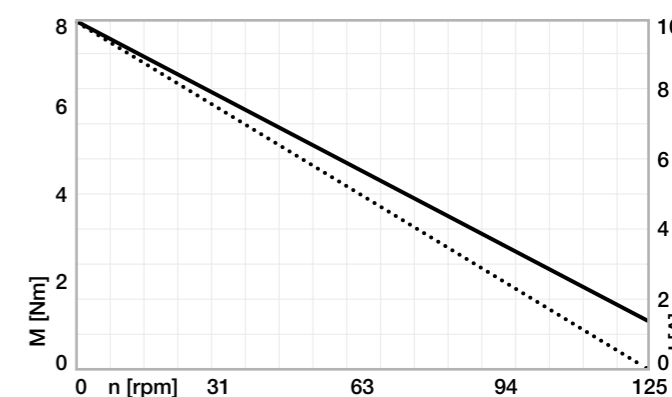
m Further technical data, downloads and ordering options at ▶ www.igus.eu/motors

Characteristic curves 24VDC

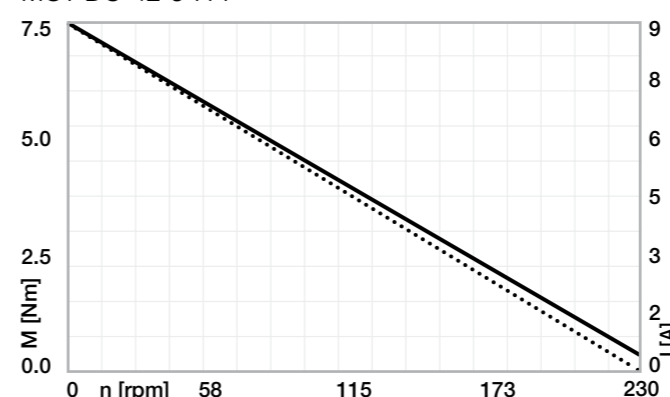
MOT-DC-42-J-H-B



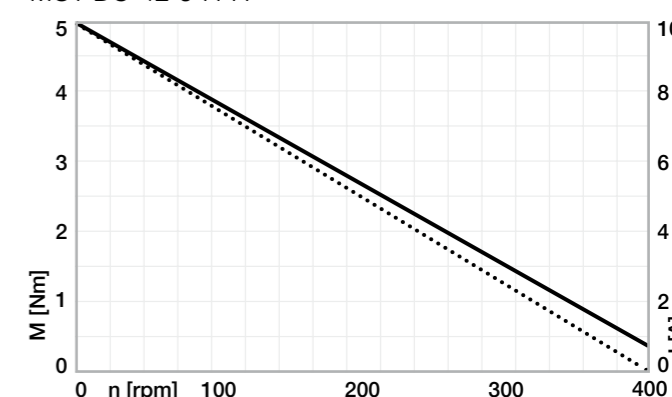
MOT-DC-42-J-H-D



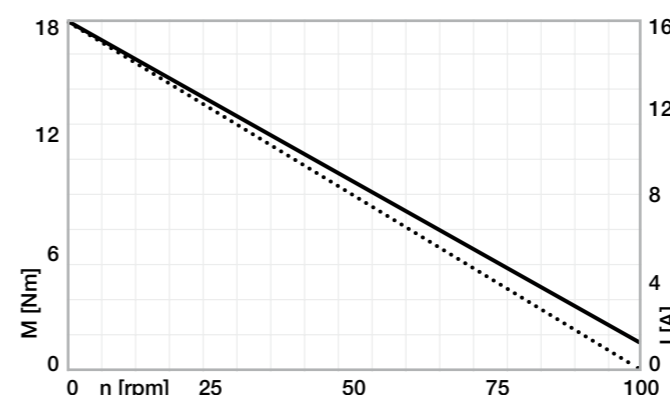
MOT-DC-42-J-H-F



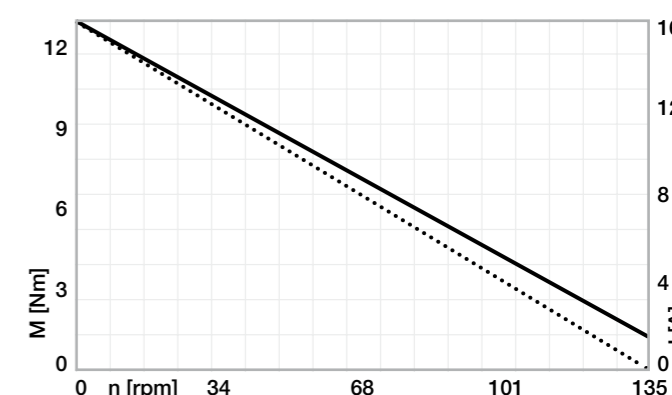
MOT-DC-42-J-H-H



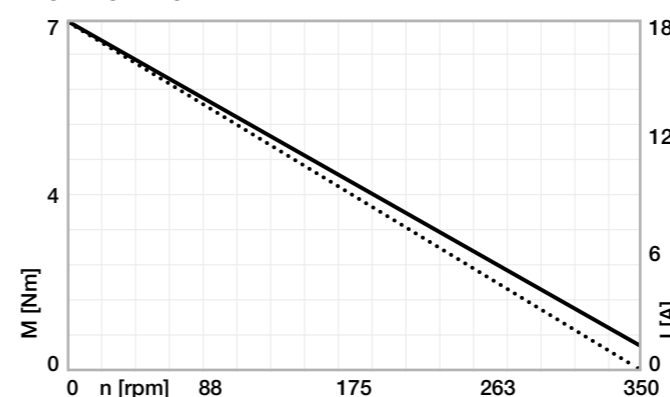
MOT-DC-42-J-H-J



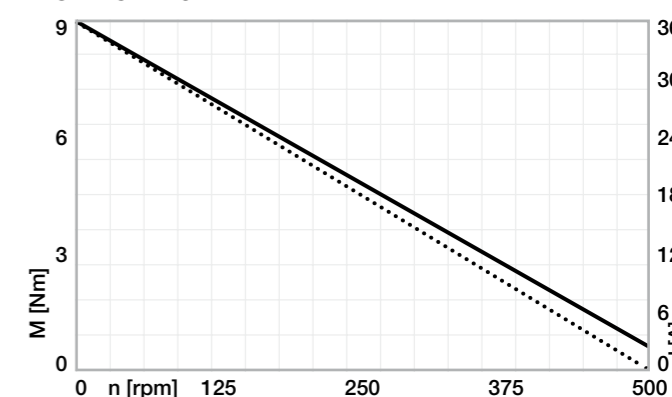
MOT-DC-42-J-H-L



MOT-DC-42-J-H-N



MOT-DC-42-J-H-P

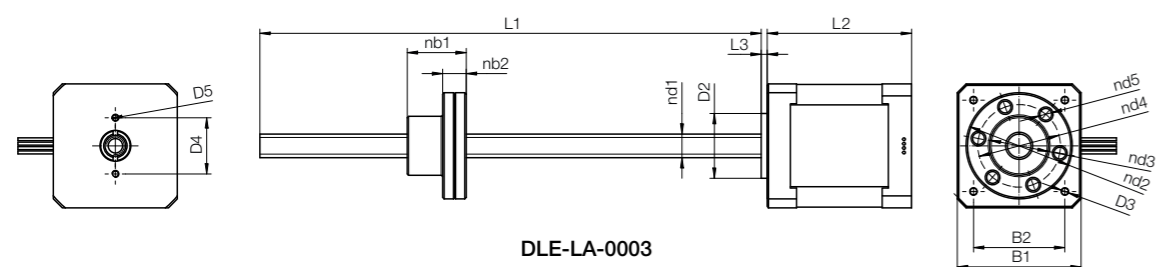


----- Torque ——— Motor current

Linear actuator



- Compatible with the most common motor controls
- Available in three installation sizes
- Holding torque up to 2Nm
- Protection class: IP40
- Axial load up to 500N
- Integrated lead screw and nut




DLE-LA-0003


Technical data

Part No.	Distance over hubs [mm]	NEMA	Connection	Nominal current [A]	Holding torque [Nm]	Max. Axial force [N]	dryspin® technology	Weight [kg]
DLE-LA-0001	28	NEMA11	Stranded wire	1.0	0.12	50	Ds6.35x5.08	0.225
DLE-LA-0003	42	NEMA17	Stranded wire	1.8	0.50	100	Ds8x15	0.44
DLE-LA-0005	56	NEMA23	Stranded wire	4.2	2.00	500	Ds10x12	1.18

Dimensions [mm]

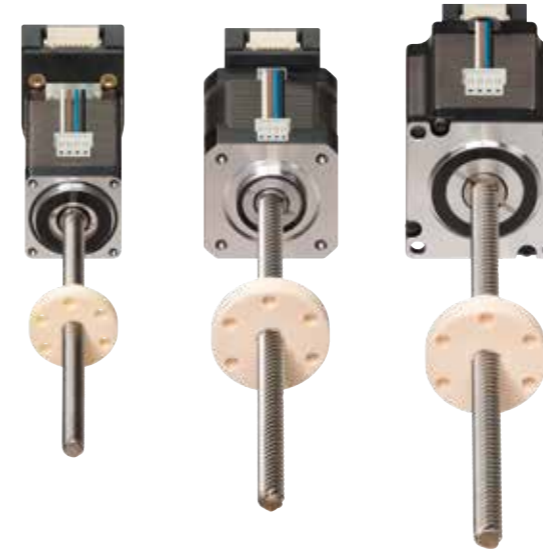
Part No.	L2 ±1.0	L3	D2 ±0.025	B1	B2 ±0.2	Usable stroke
DLE-LA-0001	51	2.0	22.0	28.2	23.00	100
DLE-LA-0003	49	2.0	22.0	42.3	31.00	150
DLE-LA-0005	76	1.6	38.1	56.4	47.14	200

 dryspin® lead screws with precision machined ends ► Page 1461

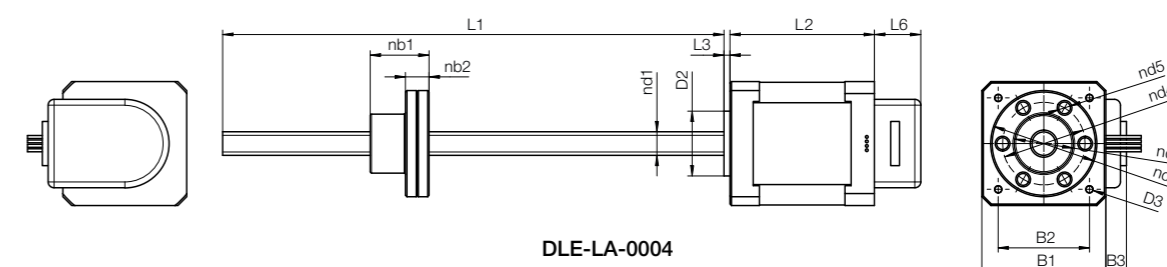
 Further technical data, downloads and ordering options at ► www.igus.eu/motors

1730 Online tools and more information ► www.igus.eu/drylinE

Linear actuator with encoder



- Compatible with the most common motor controls
- Available in several installation sizes
- Holding torque up to 2Nm
- Protection class: IP40
- Axial load up to 500N
- Integrated lead screw and nut




DLE-LA-0004


Technical data

Part No.	Distance over hubs [mm]	NEMA	Connection	Nominal current [A]	Holding torque [Nm]	Max. Axial force [N]	dryspin® technology	Weight [kg]
DLE-LA-0002	28	NEMA11	Stranded wire	1.0	0.12	50	Ds6.35x5.08	0.245
DLE-LA-0004	42	NEMA17	Stranded wire	1.8	0.50	100	Ds8x15	0.46
DLE-LA-0006	56	NEMA23	Stranded wire	4.2	2.00	500	Ds10x12	1.20

Dimensions [mm]

Part No.	L2 ±1.0	L3	L6	D2 ±0.025	B1	B2 ±0.2	Usable stroke
DLE-LA-0002	51	2.0	15.2	22.0	28.2	23.00	100
DLE-LA-0004	49	2.0	16.0	22.0	42.3	31.00	150
DLE-LA-0006	76	1.6	16.0	38.1	56.4	47.14	200

 dryspin® lead screws with precision machined ends ► Page 1461

 Further technical data, downloads and ordering options at ► www.igus.eu/motors

For DC, EC/BLDC and stepper motors



Travel distances, positions, speeds, operating times - easily defined in the new web-based control system from igus®.

A simple and intuitive browser-based user interface, extensive functionality with the option of "remote control" via Ethernet (Intranet) or bus system - "dryve" is the simple motor control method from igus® for your linear guide system.


New: The drylin® D2 is a drylin® D1 (without housing) for small installation spaces, such as in desktop devices


- Control via laptop, tablet or smartphone possible
- Suitable for all drylin® axes
- For DC, EC and stepper motors
- Communication by means of CANopen, Ethernet and digital inputs and outputs
- Compatible with many industrial control systems
- Cost-effective



Connections and displays

- 1 Voltage supply
- 2 Digital inputs
- 3 Digital outputs
- 4 Analogue inputs
- 5 Motor & brake connection
- 6 Angular encoder
- 7 CANopen
- 8 Ethernet
- 9 Advertisement

 Available from stock
Detailed information about delivery time online.

 Technical data and further options
► www.igus.eu/dryve

1732 Online tools and more information ► www.igus.eu/drylinE

For DC motors

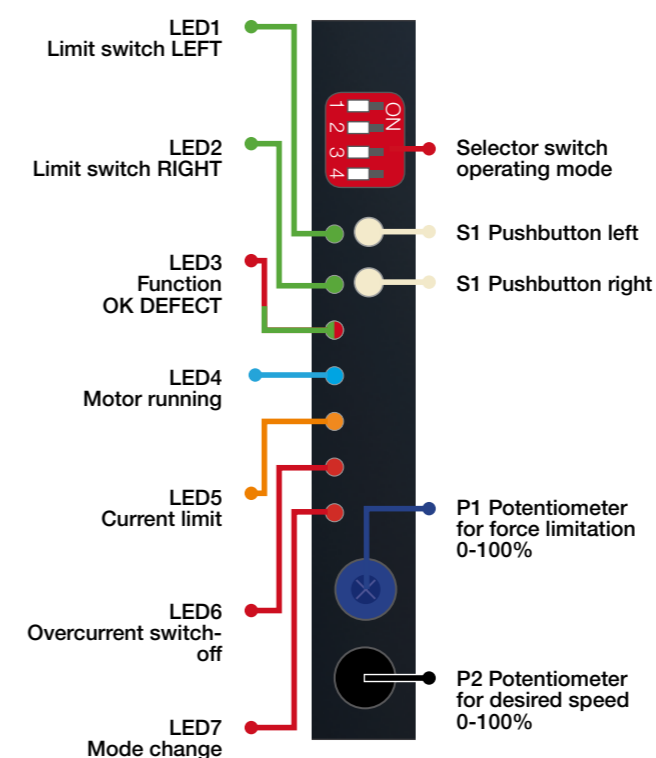



D3 dryve motor control unit makes it possible to easily control linear systems


The D3 dryve is a cost-effective control system for direct-current motors and is ready to use immediately. It can be connected quickly and is very easy to use – without any additional connection work. Buttons and rotary controls on the housing make it possible to control linear carriages without a PC, laptop or tablet. Different speeds as well as starting modes can be set.

- Easy to use, quick to connect
- Controls on the device make it possible to activate linear carriages, for example (anticlockwise/clockwise operation, speed, step mode or continuous operation)
- Different speeds and starting modes possible
- Can be combined with switches or joysticks
- Cost-effective, everything necessary and immediately ready for use for e.g. control on a camera slider

D3 dryve motor control system for all igus® DC motors



 Available from stock
Detailed information about delivery time online.

 Technical data and further options
► www.igus.eu/dryve

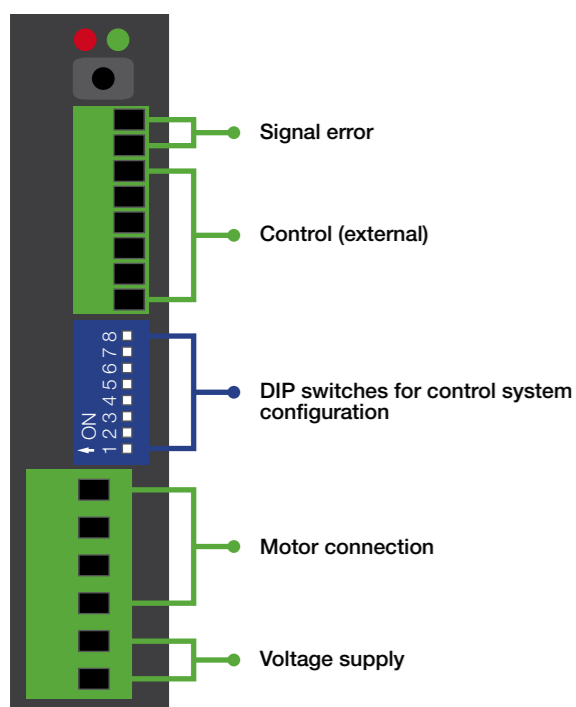
3D CAD files, prices and delivery time online ► www.igus.eu/dryve 1733

For stepper motors



Example image


dryve D7/8/9 motor control systems for all igus® stepper motors




D7/8/9 dryve motor control units make it possible to easily control linear systems

The D7/8/9 control systems are low-cost, ready-to-use stepper motor controllers. They are quick and easy to connect. You can use the DIP switches to set the motor control system according to your needs.

- No software or app installation is necessary
- Quick initial operation
- Compatible with numerous industrial control systems (e.g. the Siemens S7 / Beckhoff)
- For stepper motors
- Cost-effective

 Available from stock
Detailed information about delivery time online.

 Technical data and further options
▶ www.igus.eu/dryve

1734 Online tools and more information ▶ www.igus.eu/D3

Drives for DC motors

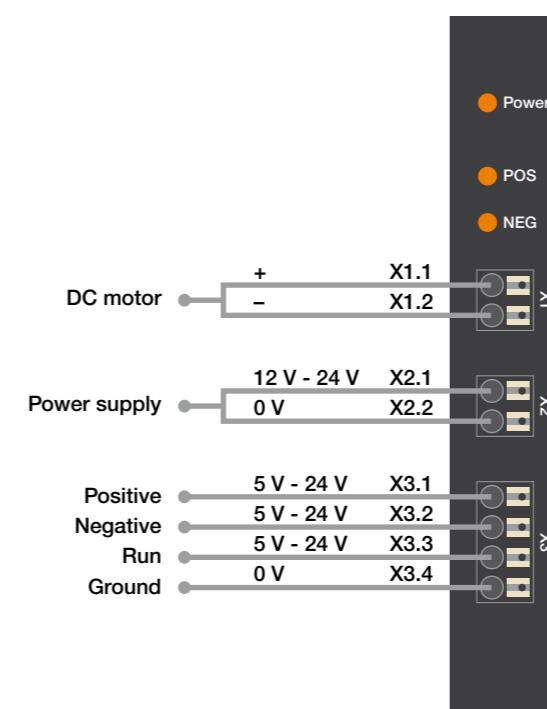


D5 dryve



D6 dryve


Terminal assignments




- Control DC motors
- Suitable for all igus® DC motors
- Motor speed can be controlled via PWM
- Easy installation of switch cabinet on TS35 rail

Technical data [mm]

Part No.	Type	Motor current (duration/peak)		Nominal voltage [V]	Protection class	Weight [g]
		[A]	[V]			
D5 New	Cased version	10/30	12-24	IP20	130	
D6 New	Printed circuit board version	10/30	12-24	IP00	20	

 Available from stock
Detailed information about delivery time online.

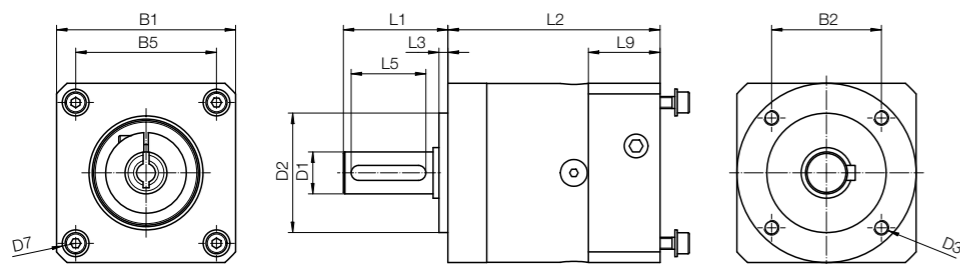
 Technical data and further options
▶ www.igus.eu/dryve

3D CAD files, prices and delivery time online ▶ www.igus.eu/dryve 1735

Planetary gear for stepper motors



- Planetary gearbox for EC/BLDC and stepper motors
- Increased torque
- Higher holding torque
- Various reduction ratios
- Compatible with motors with flange 42 / NEMA17



Technical data and dimensions [mm]

Part No.	Gear reduction	Suitable for motor size	Motor diameter	Length	Nominal output torque	Drive shaft diameter	Weight
					[Nm]		[kg]
GEA-40-3-40-ST-050	New 3	NEMA17	5	66.5	11	50	0.35
GEA-40-3-40-ST-080	New 3	NEMA17	8	66.5	11	80	0.35
GEA-40-5-40-ST-050	New 5	NEMA17	5	66.5	14	50	0.35
GEA-40-5-40-ST-080	New 5	NEMA17	8	66.5	14	80	0.35
GEA-40-10-40-ST-050	New 10	NEMA17	5	66.5	5	50	0.35
GEA-40-10-40-ST-080	New 10	NEMA17	8	66.5	5	80	0.35
GEA-40-15-40-ST-050	New 15	NEMA17	5	79.5	18	50	0.45
GEA-40-15-40-ST-080	New 15	NEMA17	8	79.5	18	80	0.45
GEA-40-20-40-ST-050	New 20	NEMA17	5	79.5	20	50	0.45
GEA-40-20-40-ST-080	New 20	NEMA17	8	79.5	20	80	0.45
GEA-40-40-40-ST-050	New 40	NEMA17	5	79.5	18	50	0.45
GEA-40-40-40-ST-080	New 40	NEMA17	8	79.5	18	80	0.45

Part No.	B1	B2	D1	D2	L1	L2
GEA-40-3-40-ST-050	New 40	24	12	26	26	67.5
GEA-40-3-40-ST-080	New 40	24	12	26	26	67.5
GEA-40-5-40-ST-050	New 40	24	12	26	26	67.5
GEA-40-5-40-ST-080	New 40	24	12	26	26	67.5
GEA-40-10-40-ST-050	New 40	24	12	26	26	67.5
GEA-40-10-40-ST-080	New 40	24	12	26	26	67.5
GEA-40-15-40-ST-050	New 40	24	12	26	26	80.5
GEA-40-15-40-ST-080	New 40	24	12	26	26	80.5
GEA-40-20-40-ST-050	New 40	24	12	26	26	80.5
GEA-40-20-40-ST-080	New 40	24	12	26	26	80.5
GEA-40-40-40-ST-050	New 40	24	12	26	26	80.5
GEA-40-40-40-ST-080	New 40	24	12	26	26	80.5



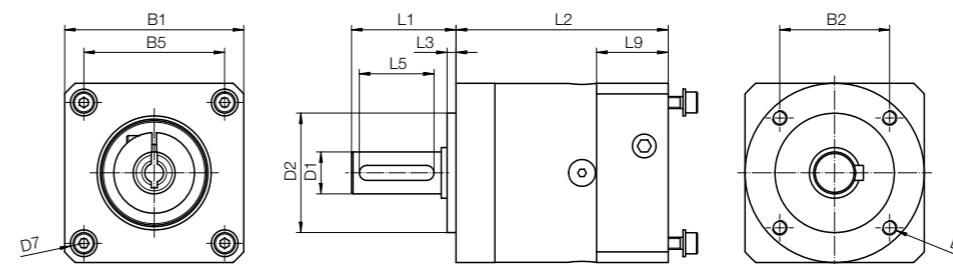
Available from stock

Detailed information about delivery time online.

Planetary gear for stepper motors



- Planetary gearbox for EC/BLDC and stepper motors
- Increased torque
- Higher holding torque
- Various reduction ratios
- Compatible with motors with flange 56 / NEMA23 and with flange 60 / NEMA24



Technical data and dimensions [mm]

Part No.	Gear reduction	Suitable for motor size	Nominal output torque	Drive shaft diameter	Weight
			[Nm]		[kg]
GEA-60-3-60-ST-063	3	NEMA23	28	63	0.88
GEA-60-3-60-ST-080	3	NEMA24/23	28	80	0.88
GEA-60-5-60-ST-063	5	NEMA23	40	63	0.89
GEA-60-5-60-ST-080	5	NEMA24/23	40	80	0.89
GEA-60-10-60-ST-063	10	NEMA23	15	63	0.90
GEA-60-10-60-ST-080	10	NEMA24/23	15	80	0.90
GEA-60-15-60-ST-063	15	NEMA23	44	63	1.05
GEA-60-15-60-ST-080	15	NEMA24/23	44	80	1.05
GEA-60-20-60-ST-063	20	NEMA23	44	63	1.10
GEA-60-20-60-ST-080	20	NEMA24/23	44	80	1.10
GEA-60-40-60-ST-063	40	NEMA23	40	63	1.10
GEA-60-40-60-ST-080	40	NEMA24	40	80	1.10

Part No.	B1	B2	D1	D2	L1	L2
GEA-60-3-60-ST-063	60	36.7	14	40	35	71
GEA-60-3-60-ST-080	60	36.7	14	40	35	71
GEA-60-5-60-ST-063	60	36.7	14	40	35	71
GEA-60-5-60-ST-080	60	36.7	14	40	35	71
GEA-60-10-60-ST-063	60	36.7	14	40	35	71
GEA-60-10-60-ST-080	60	36.7	14	40	35	71
GEA-60-15-60-ST-063	60	36.7	14	40	35	84
GEA-60-15-60-ST-080	60	36.7	14	40	35	84
GEA-60-20-60-ST-063	60	36.7	14	40	35	84
GEA-60-20-60-ST-080	60	36.7	14	40	35	84
GEA-60-40-60-ST-063	60	36.7	14	40	35	84
GEA-60-40-60-ST-080	60	36.7	14	40	35	84



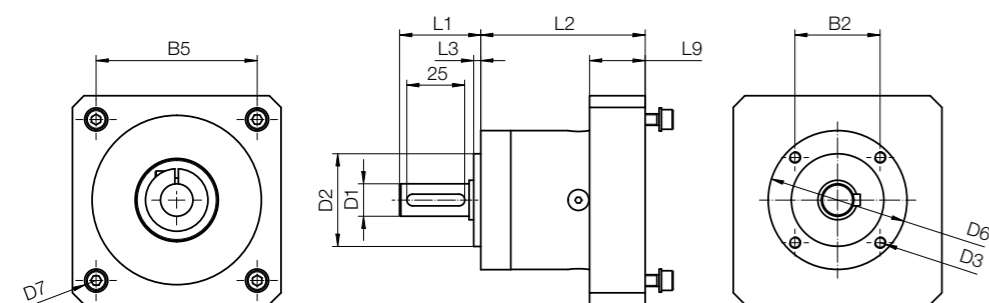
Available from stock

Detailed information about delivery time online.

Planetary gear for stepper motors



- Planetary gearbox for EC/BLDC and stepper motors
- Increased torque
- Higher holding torque
- Various reduction ratios
- Compatible with motors with flange 86 / NEMA34

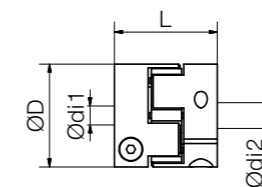


Technical data and dimensions [mm]

Part No.	Gear reduction	Suitable for motor size	Nominal output torque [Nm]	Drive shaft diameter	Weight [kg]
GEA-60-3-90-ST-140	3	NEMA34	28	140	1.35
GEA-60-5-90-ST-140	5	NEMA34	28	140	1.37
GEA-60-10-90-ST-140	10	NEMA34	40	140	1.40
GEA-60-15-90-ST-140	15	NEMA34	40	140	1.55
GEA-60-20-90-ST-140	20	NEMA34	15	140	1.65
GEA-60-40-90-ST-140	40	NEMA34	15	140	1.65

Part No.	B1	B2	D1	D2	L1	L2
GEA-60-3-90-ST-140	60	36.7	14	40	35	86
GEA-60-5-90-ST-140	60	36.7	14	40	35	86
GEA-60-10-90-ST-140	60	36.7	14	40	35	86
GEA-60-15-90-ST-140	60	36.7	14	40	35	99
GEA-60-20-90-ST-140	60	36.7	14	40	35	99
GEA-60-40-90-ST-140	60	36.7	14	40	35	99

Coupling - vibration dampening and easy fitting

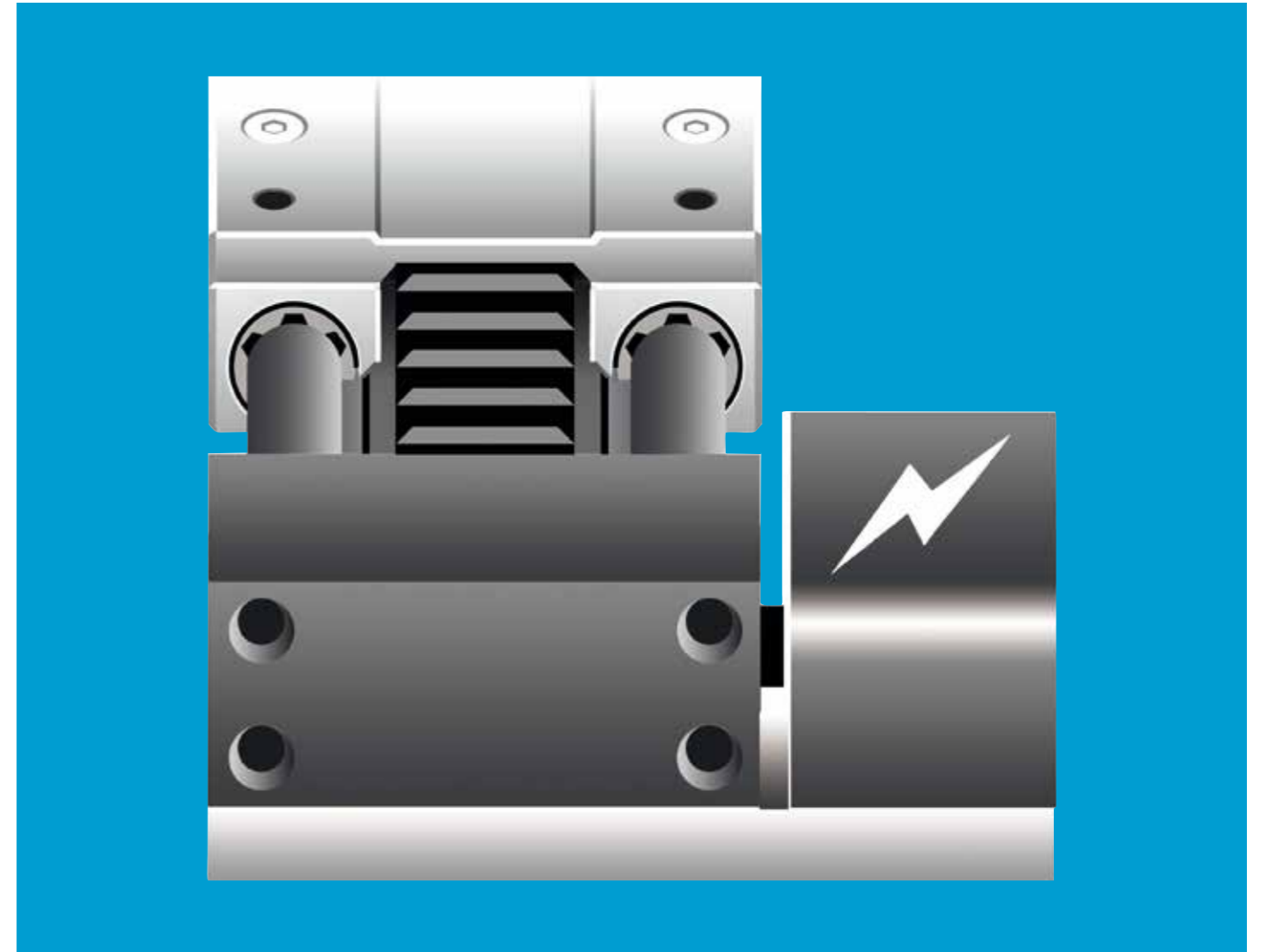
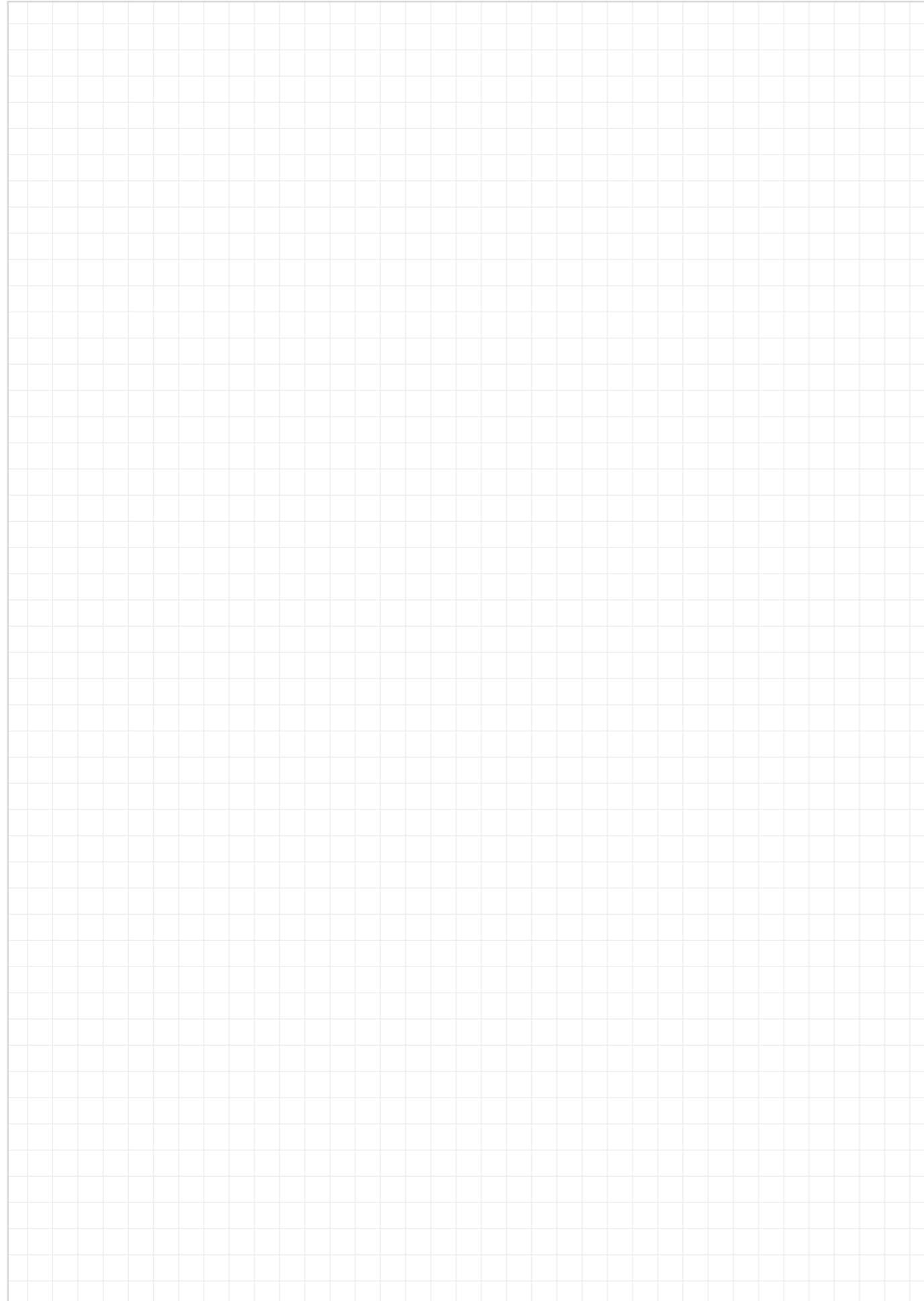


The coupling connects the drive pin of the axis to the motor. An elastic polymer insert in the centre of the coupling transfers the motor torque. This damping element compensates for radial and axial clearance.

- 20 versions from stock
- Vibration dampening and pluggable

Coupling material: Aluminium. TPU elastomeric centre. Shore hardness: 98 Sh A. Temperature range -30°C to +100°C.

Toothed belt axis	Motor type	Coupling	Techn. data - coupling				
			D	di1 [mm]	di2 [mm]	L [mm]	Weight [kg]
ZLW-0630-B	NEMA17	COU-AR-K-050-000-25-26-B-AAAB	25.00	5.00	□6.00	26.00	0.02
	NEMA23	COU-AR-K-063-000-25-26-B-AAAB	25.00	6.35	□6.00	26.00	0.02
	DC motor31	COU-AR-K-060-000-25-26-B-AAAB	25.00	6.00	□6.00	26.00	0.02
ZLW-0630-S	NEMA17	COU-AR-K-050-080-25-26-B-AAAA	25.00	5.00	8.00	26.00	0.02
	NEMA23	COU-AR-K-063-080-25-26-B-AAAA	25.00	6.35	8.00	26.00	0.02
	DC motor31	COU-AR-K-060-080-25-26-B-AAAA	25.00	6.00	8.00	26.00	0.02
ZLW-1040-B / ZAW	NEMA17	COU-AR-K-050-000-25-26-B-AAAB	25.00	5.00	□6.00	26.00	0.02
	NEMA23	COU-AR-K-063-000-25-26-B-AAAB	25.00	6.35	□6.00	26.00	0.02
	NEMA23XL	COU-AR-K-080-000-25-26-B-AAAB	25.00	8.00	□6.00	26.00	0.02
	DC motor31	COU-AR-K-060-000-25-26-B-AAAB	25.00	6.00	□6.00	26.00	0.02
ZLW-1040-S / ZAW	NEMA23	COU-AR-K-063-100-32-32-B-AAAA	32.00	6.35	10.00	32.00	0.05
	NEMA23XL	COU-AR-K-080-100-32-32-B-AAAA	32.00	8.00	10.00	32.00	0.05
	NEMA34	COU-AR-K-140-100-32-32-B-AAAA	32.00	14.00	10.00	32.00	0.05
	DC motor31	COU-AR-K-060-100-32-32-B-AAAA	32.00	6.00	10.00	32.00	0.05
ZLW-1660-S	NEMA34	COU-AR-K-140-140-32-32-B-AAAA	32.00	14.00	14.00	32.00	0.05
Lead screw axis	Motor type	Coupling	Techn. data - coupling				
			D	di1 [mm]	di2 [mm]	L [mm]	Weight [kg]
SAW-0630 / SLW-BB-0630	NEMA17	COU-AR-K-050-080-25-26-B-AAAA	25.00	5.00	8.00	26.00	0.02
	DC motor31	COU-AR-K-060-080-25-26-B-AAAA	25.00	6.00	8.00	26.00	0.02
SAW-1040 / SLW-(BB)-1040	NEMA17	COU-AR-K-050-100-32-32-B-AAAA	32.00	5.00	10.00	32.00	0.05
	NEMA23	COU-AR-K-063-100-32-32-B-AAAA	32.00	6.35	10.00	32.00	0.05
	NEMA23XL	COU-AR-K-080-100-32-32-B-AAAA	32.00	8.00	10.00	32.00	0.05
	DC motor31	COU-AR-K-060-100-32-32-B-AAAA	32.00	6.00	10.00	32.00	0.05
SLW-(BB)-1660	NEMA23	COU-AR-K-063-140-32-32-B-AAAA	32.00	6.35	14.00	32.00	0.05
	NEMA23XL	COU-AR-K-080-140-32-32-B-AAAA	32.00	8.00	14.00	32.00	0.05
SLW-(BB)-2080	NEMA23	COU-AR-K-063-120-32-32-B-AAAA	32.00	6.35	12.00	32.00	0.05
	NEMA23XL	COU-AR-K-080-120-32-32-B-AAAA	32.00	8.00	12.00	32.00	0.05
	NEMA34	COU-AR-K-140-120-32-32-B-AAAA	32.00	14.00	12.00	32.00	0.05
SHT-(BB)-12	NEMA17	COU-AR-K-050-100-32-32-B-AAAA	32.00	5.00	10.00	32.00	0.05
	NEMA23	COU-AR-K-063-100-32-32-B-AAAA	32.00	6.35	10.00	32.00	0.05
	NEMA23XL	COU-AR-K-080-100-32-32-B-AAAA	32.00	8.00	10.00	32.00	0.05
	DC motor31	COU-AR-K-060-100-32-32-B-AAAA	32.00	6.00	10.00	32.00	0.05
SHT-(BB)-20	NEMA23	COU-AR-K-063-120-32-32-B-AAAA	32.00	6.35	12.00	32.00	0.05
	NEMA23XL	COU-AR-K-080-120-32-32-B-AAAA	32.00	8.00	12.00	32.00	0.05
	NEMA34	COU-AR-K-140-120-32-32-B-AAAA	32.00	14.00	12.00	32.00	0.05
SHT-(BB)-30	NEMA34	COU-AR-K-140-140-32-32-B-AAAA	32.00	14.00	14.00	32.00	0.05



drylin® E - accessories

Cables and proximity switches

Brake resistors

Motor flange

Mounting accessories

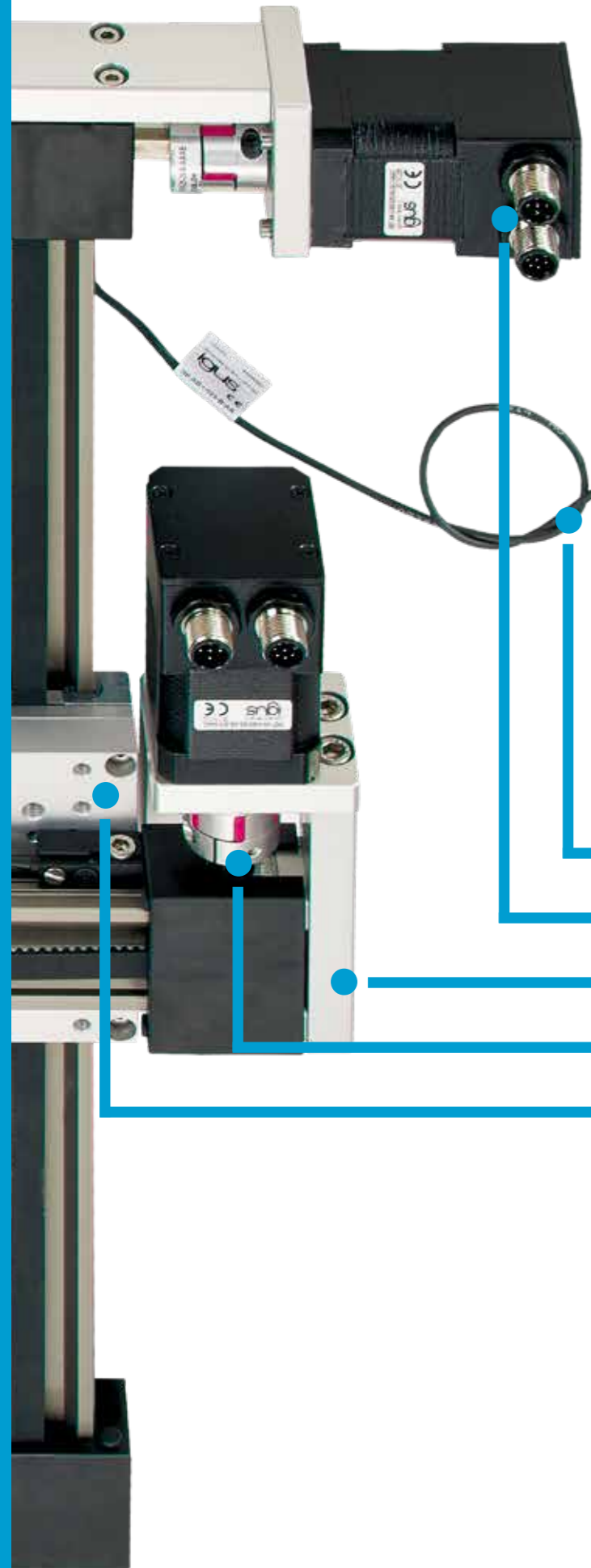
Fasteners



Accessories for drylin® linear axes

Almost every drylin® linear axis can be retrofitted with a corresponding motor and accessories such as initiators (proximity switches). igus® offers a large modular system of motors, matching couplings and motor flanges plus many practical components for the combination of linear axes as well as fastening material.

- Connection of stepper motors and DC motors
- Linear robot structures
- Numerous fastening options



chainflex® motor and encoder cables

drylin® stepper and DC motors

Motor flange made of aluminium

Couplings for motor and shaft connection

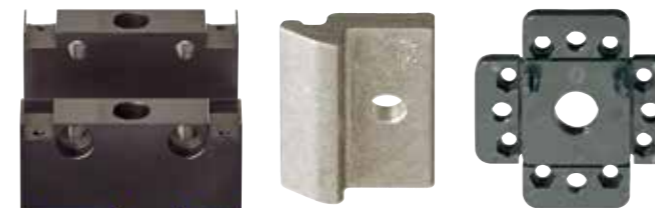
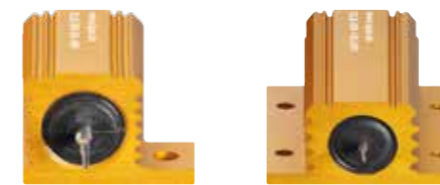
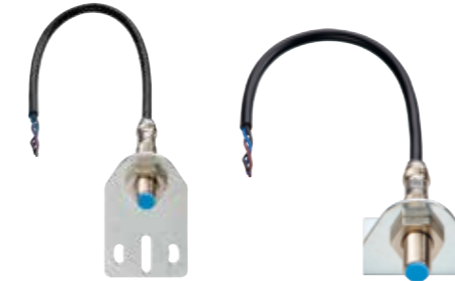
Adapter plates for linear robot structures



Available from stock

Detailed information about delivery time online.

EN 06/2023



Cables and proximity switches

- chainflex® connection cables with straight or angled connectors
 - Proximity switches: limit and reference switches
 - For drylin® linear modules and toothed belt axes
- Page 1744

Motor flange

- Motor connection for drylin® linear axes
 - For stepper and DC motors
 - Suitable for igus® couplings
- Page 1750

Mounting accessories

- Adapter plates for linear robot structures
 - Spacer for height adjustment of SHT/SLW linear modules
 - Mounting material
- Page 1751

EN 06/2023





The ideal complement to the drylin® product range provides chainflex® connection cables.

- Suitable for energy chains
- Shielded and oil-resistant
- Straight and angled connectors

Flange size 28 (NEMA11), 42 (NEMA17), 56 (NEMA23), 60 (NEMA24)

Part No.	Jacket	Cable type	Cable length [m]	Connector
Motor cable M12				
DLE904121451-3	TPE	CF9.03.05.INI	3.0	straight
DLE904121451-5	TPE	CF9.03.05.INI	5.0	straight
DLE904121451-10	TPE	CF9.03.05.INI	10.0	straight
DLE904121452-3	TPE	CF9.03.05.INI	3.0	angled
DLE904121452-5	TPE	CF9.03.05.INI	5.0	angled
DLE904121452-10	TPE	CF9.03.05.INI	10.0	angled
Motor cable JST				
DLE904121461-3 New	TPE	CF9.03.05.INI	3.0	straight
DLE904121461-5 New	TPE	CF9.03.05.INI	5.0	straight
DLE904121461-10 New	TPE	CF9.03.05.INI	10.0	straight
Encoder M12				
DLE904121455-3	PVC	CF240.02.08	3.0	straight
DLE904121455-5	PVC	CF240.02.08	5.0	straight
DLE904121455-10	PVC	CF240.02.08	10.0	straight
DLE904121456-3	PVC	CF240.02.08	3.0	angled
DLE904121456-5	PVC	CF240.02.08	5.0	angled
DLE904121456-10	PVC	CF240.02.08	10.0	angled
Encoder JST NEMA11				
DLE904121459-3 New	TPE	CF11.01.04.02	3.0	straight
DLE904121459-5 New	TPE	CF11.01.04.02	5.0	straight
DLE904121459-10 New	TPE	CF11.01.04.02	10.0	straight

Flange size 86 (NEMA34)

Part No.	Jacket	Cable type	Cable length [m]	Connector
Motor cable with brake M17				
DLE904121457-3	PUR	CF78.UL.07.07	3.0	straight
DLE904121457-5	PUR	CF78.UL.07.07	5.0	straight
DLE904121457-10	PUR	CF78.UL.07.07	10.0	straight
Molex motor cable				
DLE904161278-3 New	TPE	CF880.07.05	3.0	straight
DLE904161278-5 New	TPE	CF880.07.05	5.0	straight
DLE904161278-10 New	TPE	CF880.07.05	10.0	straight
Encoder M17				
DLE904121458-3	PVC	CF211.009	3.0	straight
DLE904121458-5	PVC	CF211.009	5.0	straight
DLE904121458-10	PVC	CF211.009	10.0	straight
Encoder for NEMA17, 23, 24, 34				
DLE904121460-3 New	TPE	CF11.01.04.02	3.0	straight
DLE904121460-5 New	TPE	CF11.01.04.02	5.0	straight
DLE904121460-10 New	TPE	CF11.01.04.02	10.0	straight

Flange size 42 (NEMA17), 56 (NEMA23), 60 (NEMA24)

Part No.	Jacket	Cable type	Cable length [m]	Connector
Brake cable with M8 sensor cable				
DLE904121453-3	TPE	CF9.02.03.INI	3.0	straight
DLE904121453-5	TPE	CF9.02.03.INI	5.0	straight
DLE904121453-10	TPE	CF9.02.03.INI	10.0	straight
DLE904121454-3	TPE	CF9.02.03.INI	3.0	angled
DLE904121454-5	TPE	CF9.02.03.INI	5.0	angled
DLE904121454-10	TPE	CF9.02.03.INI	10.0	angled

DC motors

Part No.	Jacket	Cable type	Cable length [m]	Connector
Motor cable with flat connector				
DLE904137923-3 New	PVC	CF130.05.02.UL	3.0	flat
DLE904137923-5 New	PVC	CF130.05.02.UL	5.0	flat
DLE904137923-10 New	PVC	CF130.05.02.UL	10.0	flat
DLE904137924-3 New	PVC	CF130.05.02.UL	3.0	flat
DLE904137924-5 New	PVC	CF130.05.02.UL	5.0	flat
DLE904137924-10 New	PVC	CF130.05.02.UL	10.0	flat

DC motors with spline

Part No.	Jacket	Cable type	Cable length [m]	Connector
Motor and angular encoder cable				
DLE904121462-3 New	PVC	CF211.033	3.0	straight
DLE904121462-5 New	PVC	CF211.033	5.0	straight
DLE904121462-10 New	PVC	CF211.033	10.0	straight
DLE904121463-3 New	PVC	CF130.05.07.UL	3.0	straight
DLE904121463-5 New	PVC	CF130.05.07.UL	5.0	straight
DLE904121463-10 New	PVC	CF130.05.07.UL	10.0	straight

Proximity switches - limit and reference switches



Technical data

Sensor/actuator	Unit	
Operating voltage	[VDC]	10...30
Max. trigger current	[mA]	100
Ambient temperature	[°C]	-25...+70
Trigger distance	[SN]	2.5
Protection class		IP67
Connector		M8

20-30mm of extra stroke length is required for each limit reference switch.

axis	Part No.	
	Opener	Closer
SAW-0630	IK-0001	IK-0002
SAW-1040	IK-0001	IK-0002
SAW-1660	IK-0003	IK-0004
SLW-BB-0630	-	-
SLW-BB-1040	IK-0006	IK-0017
SLW-BB-1080	IK-0007	IK-0018
SLW-BB-1660	IK-0008	IK-0019
SLW-BB-2080	IK-0009	IK-0020
SHT-BB-12	IK-0011	IK-0022
SHT-BB-20	IK-0012	IK-0023
SHT-BB-30	-	-
SLW-1040-AL	IK-0006	IK-0017
SLW-1080	IK-0007	IK-0018
SLW-1660	IK-0008	IK-0019
SLW-2080	IK-0009	IK-0020
SHT-12	IK-0011	IK-0022
SHT-20	IK-0012	IK-0023
SHT-30	-	-
ZLW-0630-B	IK-0001	IK-0002
ZLW-0630-S	IK-0001	IK-0002
ZLW-1040-B	IK-0001	IK-0002
ZLW-1040-S	IK-0001	IK-0002
ZAW-1040-B	IK-0001	IK-0002
ZAW-1040-S	IK-0001	IK-0002
ZLW-1660-S	IK-0003	IK-0004

The compact and easy assembly of the proximity switches represent a logical extension of the kit approach for the drylin® range. The plastic housing makes the proximity switches, which can be used as limit, position or reference switches, particularly light and tough.

Pin assignment

Proximity switch	M8 3-pin	Proximity switch cable	
PIN	Signal	PIN	Colour
1	+	1	brown
3	-	3	blue
4	load	4	black



Matching cables are added by including the following attachments:




A proximity switch kit for SAW & ZLW includes a proximity switch, a bracket and mounting screws



A proximity switch kit for SLW & SHT includes a proximity switch, two spacers and mounting screws.

Proximity switches - kit with support



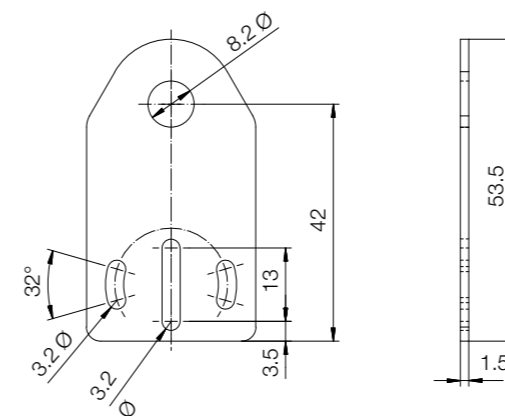
 **Part No.**
IK-0201-2
Proximity PNP NC kit with straight support

 **Part No.**
IK-0200-2
Proximity PNP NC kit with angled support

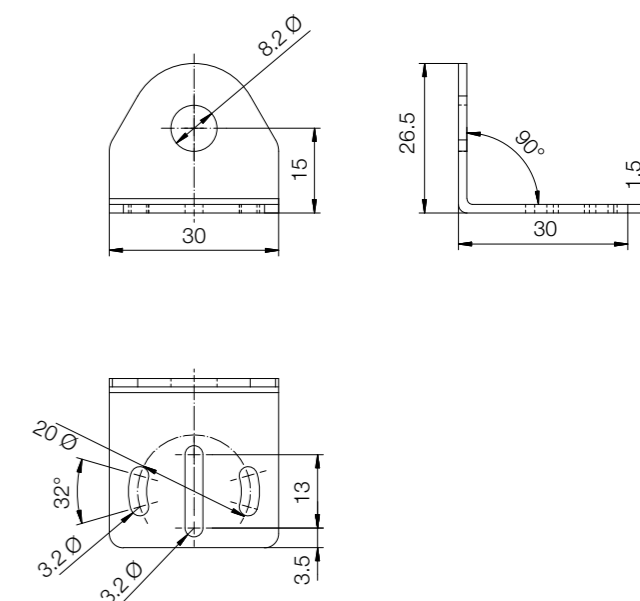
Reposition and adjustment is possible using a bracket with the proximity switch

- Cable length: 2m
- Material holder: steel

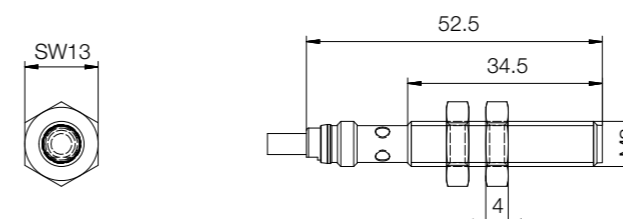
ZSY-INI-AS-B



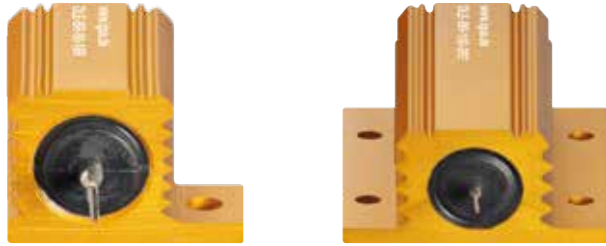
ZSY-INI-AS-A



INI-AS-I-015-B-AA

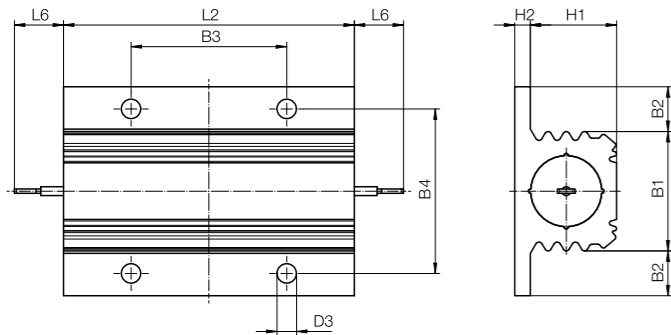


Brake resistors



Example image

- Braking resistors for safety at high speeds
- Compact
- Easy to connect



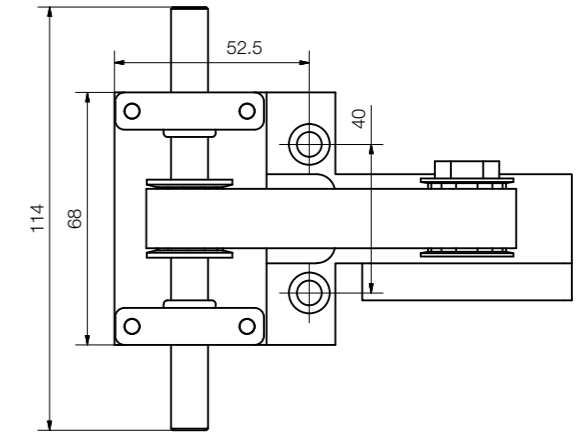
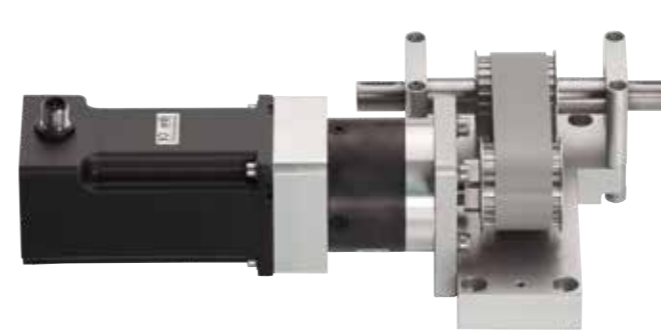
Technical data

Part No.	Installation size	Performance class	Resistance value	Weight
		[W]	[Ω]	[kg]
DLE-BR-50-18R	NEMA17	50	18.0	0.030
DLE-BR-75-4R7	NEMA23	75	4.7	0.085
DLE-BR-100-3R3	NEMA24	100	3.3	0.115
DLE-BR-100-2R7	NEMA34	100	2.7	0.115

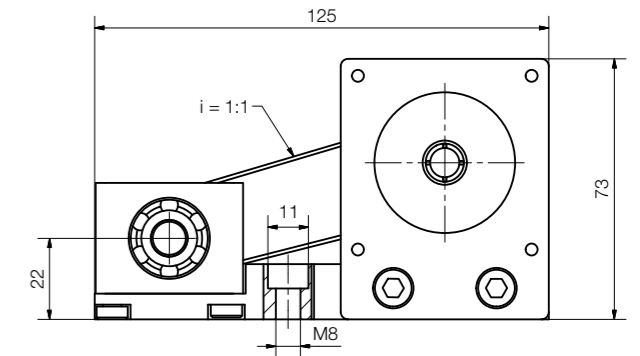
Dimensions [mm]

Part No.	L	A max.	H	C max.	L2	L6	B1 max.	B2 max.	H1	H2
DLE-BR-50-18R	50.1	72.5	30	17	50.1	11.2	12.8	8.6	14.0	3
DLE-BR-75-4R7	48.9	71.0	48	26	48.9	11.1	26.0	11.0	22.0	4
DLE-BR-100-3R3	65.4	87.5	48	26	65.4	11.1	26.0	11.0	4.0	4
DLE-BR-100-2R7	65.4	87.5	48	26	65.4	11.1	26.0	11.0	4.0	4

Linear robot drives



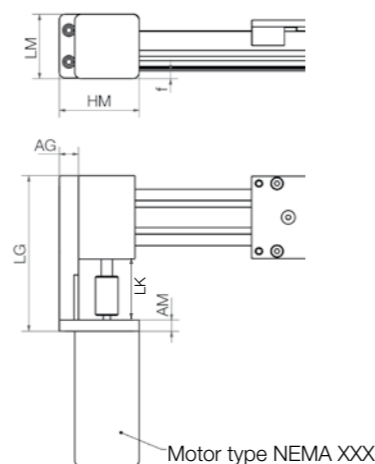
- Connection of NEMA stepper motors in linear robot structures
- Space-saving
- More safety due to encoder and brake



Dimensions [mm]

Part No.	Installation size	Motor	Design
GD-0001	1	NEMA23	Stranded wire
GD-0002	1	NEMA23	Connector
GD-0003	1	NEMA23	Encoder
GD-0004	1	NEMA23	Encoder and brake
GD-0005	1	NEMA23XL	Stranded wire
GD-0006	1	NEMA23XL	Connector
GD-0007	1	NEMA23XL	Encoder
GD-0008	1	NEMA23XL	Encoder and brake

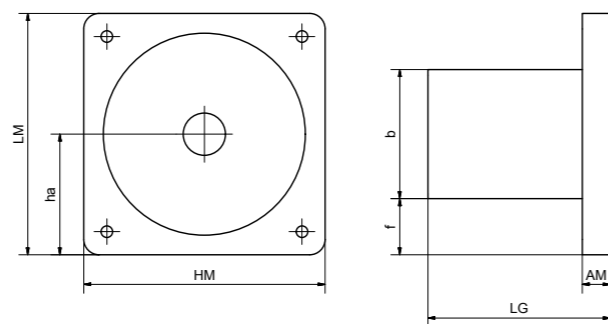
Using motor flange for stepper and DC motors



- 2 base plate lengths for each NEMA motor flange; others upon request
- Suitable for drylin® coupling ► Page 1739

Dimensions [mm]

Part No.	Matching linear modules	Base plate				Motor flange		
		AG	LG	LK	AM	HM	LM	f
MF-0630-NEMA17-S	ZLW-0630	12	99.5	35.5	10	53	42	7
MF-0630-NEMA23-S	ZLW-0630	12	99.5	35.5	10	59	56	14
MF-1040-NEMA17-S	ZLW-1040	17	119	35	10	63	44	-
MF-1040-NEMA23-S	ZLW-1040	17	119	35	10	70.7	56.4	7
MF-1040-NEMA34-L	ZLW-1040	17	138	54	10	85	85	20.5
MF-1660-NEMA34-S	ZLW-1660	15	166	52	10	86	86	-
MF-2260-NEMA23-S	ZAW-1040	10	108	35	10	70.7	56.4	-
MF-0630-DC0310	ZLW-0630	12	99.5	35.5	10	53	42	7
MF-1040-DC0310	ZLW-1040	17	119	35	10	63	44	-
MF-1040-DC0350	ZLW-1040	17	119	35	10	63	44	-



The motor flange, sometimes called motor enclosure, encloses and protects the coupling and provides the matching mounting dimensions for your NEMA motor.

- Suitable for drylin® coupling ► Page 1739

Dimensions [mm]

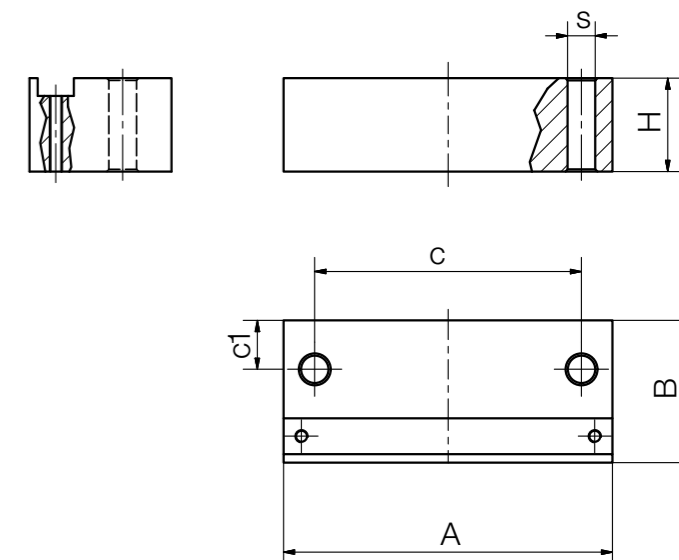
Part No.	Matching linear modules	LG	AM	HM	LM	b	f	ha
MF-1123-NEMA17	SAW/SLW-BB-0630	45	-	43	43	43	-	21.5
MF-2040-NEMA17	SAW/SLW-1040-AL, SHT-12	47	12	56	56	56	-	21.5
MF-2040-NEMA23-S	SAW/SLW-1040-AL, SHT-12/20	48	13	56	56	56	-	28
MF-3648-NEMA23	SHT-20, SHT-BB-20	56	13	56	56	56	-	28
MF-3648-NEMA34	SLW-1660/2080, SLW-BB-1660/2080	65	10	86	86	46	20	43
MF-3648-NEMA34-XL	SHT-30, SHT-BB-30	76	10	86	86	56	15	43
MF-1123-DC0310	SAW/SLW-BB-0630	45	-	43	43	43	-	21.5
MF-2040-DC0310	SAW/SLW-1040-AL, SHT12	47	12	43	43	43	-	21.5
MF-2040-DC0350	SAW/SLW-1040-AL, SHT12	47	12	43	43	43	-	21.5

Spacer - height compensation for SLW/SHT linear modules



The spacer is an aluminium standoff that brings the selected drylin® linear unit to a height that matches your NEMA stepper motor. An attachment feature for proximity switches is already integrated. Retro-fitting is also possible.

- Adapter kit contains two spacers for connection of a linear module

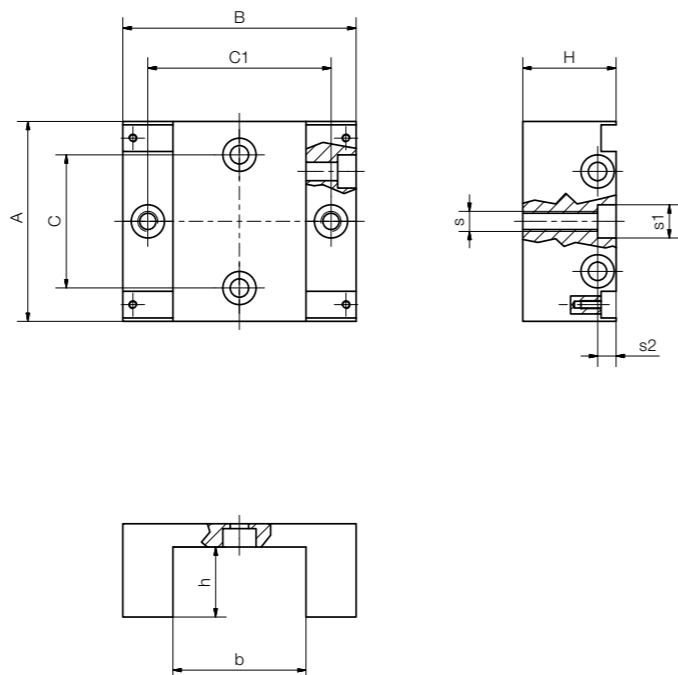


Part No.	Suitable for linear module
AK-0001	SLW-1040
AK-0002	SLW-1080
AK-0003	SLW-1660
AK-0004	SLW-2080
AK-0027	SHT-08
AK-0006	SHT-12
AK-0007	SHT-20
AK-0008	SHT-30
AK-0009	SLW-25120

Dimensions [mm]

Part No.	A	B	H	c	c1	Ø s
				±0.1		+0.2
AK-0001	74	32.0	21.0	60	11.0	6.2
AK-0002	108	32.0	21.0	94	11.0	6.2
AK-0003	104 -0.2	35.0	24.5	84	12.5	8.1
AK-0004	134	38.0	20.0	116	14.0	9.0
AK-0027	65	25.5	13.0	52	7.75	5.5
AK-0006	85	40.0	17.5	70	15.0	6.2
AK-0007	130	46.0	22.0	108	18.0	10.5
AK-0008	180	60.0	10.0	150 ±0.2	25.0	13.5
AK-0009	200	45.0	16.0	173 ±0.2	17.5	13.5

Mounting bracket for SAW linear modules and ZLW toothed belt axes



For the assembly of drylin® ZLW toothed belt axes

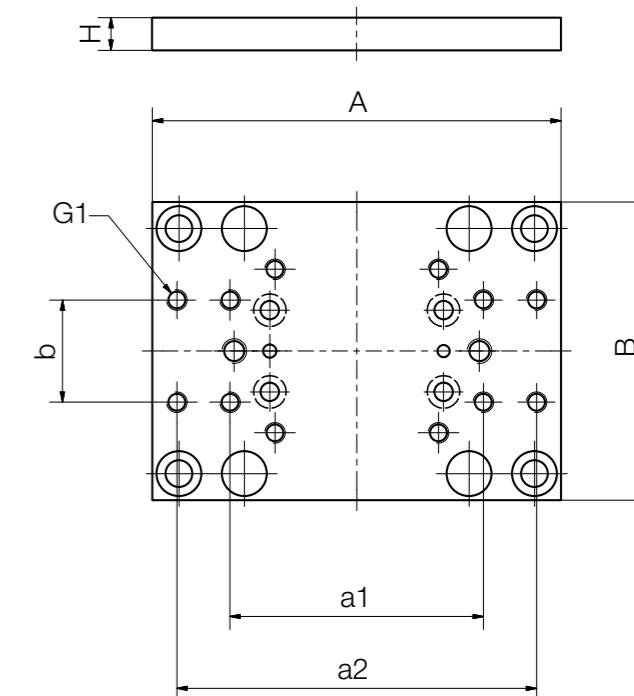
- Available for drylin® WSX/SAW(C)/ZLW
Sizes 0630/1040/1080/1660
- Material: anodised aluminium
- Connection options: T-slots profile, linear axis/
proximity switches
- Multiple positions
- Quick mounting without drilling
- Including swivel-in slot nuts and screws for fastening

Part No.	Suitable for		
	Rail profile	Linear module	Toothed belt axis
AK-0037	WSX-06-30	SAW(C)-0630	ZLW-0630
AK-0038	WSX-10-40	SAW(C)-1040	ZLW-1040
AK-0039	WSX-10-80	SAW-1080	ZLW-1080
AK-0040	WSX-16-60	SAW-1660	ZLW-1660

Dimensions [mm]

Part No.	A	B	H	h	b	C	C1	Øs	s1	s2
AK-0037	60	70	20	12	30	40	50	M6	Ø10	5.5
AK-0038	60	70	28	21	40	40	55	M6	Ø10	5.5
AK-0039	60	104	28	21	74	40	90	M6	Ø10	5.5
AK-0040	60	98	47	37	62	40	80	M8	Ø11	27

Adapter kit for linear robot setup



- Simple and fast multi-axes linear robot setup
- For lead screw and toothed belt axes
- Energy chain assembly preparation
- Anodised aluminium
- Space and weight-saving
- Mounting of y-axis on 2 x-axes

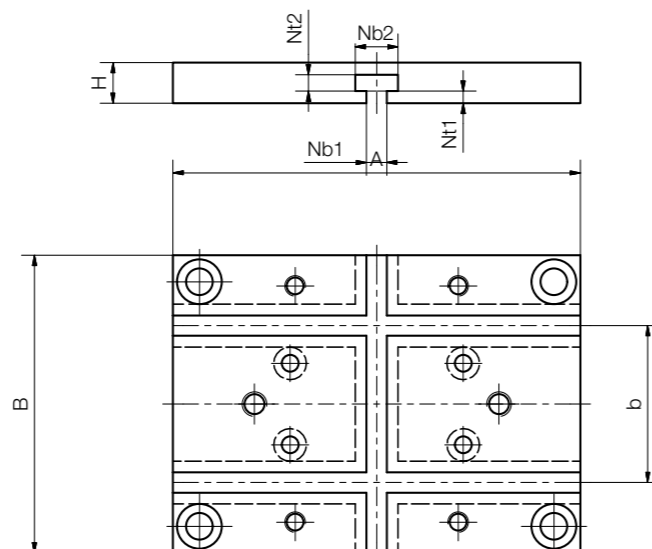
Mounting of y-axis on two x-axes

Part No.	x-axis	y-axis	Function linear robot setup
AK-0011	ZLW-0630, 100mm carriage	ZLW-0630, ZLW-1040	Assembly y-axis
AK-0012	ZLW-1040, 100mm carriage	ZLW-0630, ZLW-1040	Assembly y-axis
AK-0013	ZLW-1040, 150mm carriage	ZLW-0630, ZLW-1040, ZLW-1080	Assembly y-axis
AK-0014	ZLW-1660, 250mm carriage	ZLW-1040, ZLW-1080	Assembly y-axis
AK-0024	ZLW-1040, 200mm carriage	ZLW-0630, ZLW-1040, ZLW-1080	Assembly y-axis
AK-0025	ZLW-1080, 150mm carriage	ZLW-0630, ZLW-1040, GRW-0630	Assembly y-axis

Dimensions [mm]

Part No.	A	B	G1	H	a1	a2	b
	-0.3	-0.3				+0.2	
AK-0011	100	54	M5	13	62	88	25
AK-0012	100	73	M5	8	62	88	25
AK-0013	150	73	M5	8	112	138	25
AK-0014	250	104	M5	10	-	232	35
AK-0024	200	73	M5	8	162	188	25
AK-0025	150	107	M5	8	112	138	25

T-slot plates



- Anodised aluminium
- Various fixing options
- Can be retrofitted
- For XY linear robot structures
- Suitable igus® slot nuts available ► Page 1755

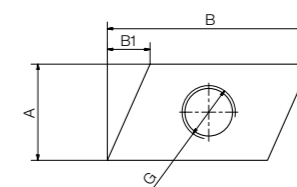
Variable T-slot mounting plates

Part No.	Base axis	Axis to be mounted
AK-0021	SAW-1080, 100mm carriage	ZLW/SAW-0630, ZLW/SAW-1040, GRW-0630
AK-0022	SAW-1040, 100mm carriage	ZLW/SAW-0630, ZLW/SAW-1040, GRW-0630
AK-0023	SAW-1660, 150mm carriage	ZLW/SAW-1040, ZLW/SAW-1080, ZLW/SAW-1660

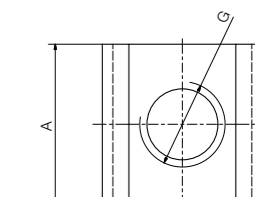
Dimensions [mm]

Part No.	A	B	H	b	Nb1	Nb2	Nt1	Nt2
	-0.3	-0.3			+0.2			+0.2
AK-0021	100	107	10	42.5	5	10.5	3	4
AK-0022	100	73	10	38.5	5	10.5	3	4
AK-0023	150	104	10	42.5	5	10.5	3	4

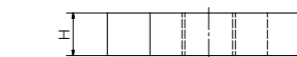
Slot nuts for mounting



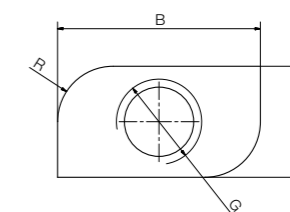
NOR-20602



NOR-20605



NOR-20613



For the drylin® W high-profile rail, slot nuts offer variable ways of fastening sensors and proximity switches, for example. The robust profile rail is the basis of SAW linear modules as well as ZLW toothed belt axes and has up to 5 T-slots for mounting slot nuts. Moreover, slot nuts are used as a fastening option in the case of drylin® Q linear carriages. Roll-in slot nuts are available for retrofitting in closed T-slots.

- Fully adjustable
- Ideal for drylin® limit and reference switches
- Suitable for T-slots of the drylin® WSX high-profile rail
- Secure retention
- Can be retrofitted

Part No.	Suitable for rail profile	Linear module
NOR-20602	WSX-06-30	SAW-0630, SAWC-0630, ZLW-0630
NOR-20602	WSX-10-40	SAW-1040, SAWC-1040, ZLW-1040
NOR-20602	WSX-10-80	SAW-1080, ZLW-1080
NOR-20602	AWMQ-20	QWE-01-20
NOR-20602	WSX-16-60	SAW-1660, ZLW-1660 (lateral grooves)
NOR-20605	WSX-16-60	SAW-1660, ZLW-1660 (lower groove)
NOR-20615	AWMQ-12	QWE-01-12

Dimensions [mm]

Part No.	A	B	B1	H	H1	G	R
NOR-20602	9.0	19.0	4	4	–	M5	–
NOR-20605	15.0	15.0	10	12	6	M8	–
NOR-20613 ¹³²⁾	5.2	9.5	–	4	–	M4	2.5

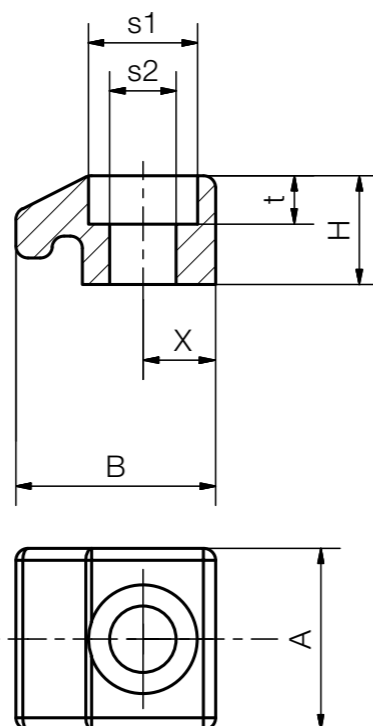
¹³²⁾ Optionally available: roll-in slot nut for retrofitting

Clamping elements for linear modules and toothed belt axes



Fixing clamps offer a safe fastening of the drylin® linear axes on aluminium profiles. Designed for the drylin® W high-profile rail, the clamps can be inserted into the slots of the rail and used to fix the axis in place.

- Secure mounting
- Fully adjustable
- For drylin® SAW linear modules and ZLW toothed belt axes
- For drylin® WSX high-profile rails



Part No.	Suitable for toothed belt axis
ZTZ-063006	ZLW-0630
75.40-ZLW	ZLW-1040
75.40-ZLW	ZLW-1080
75.50-ZLW	ZLW-1660


Dimensions [mm]

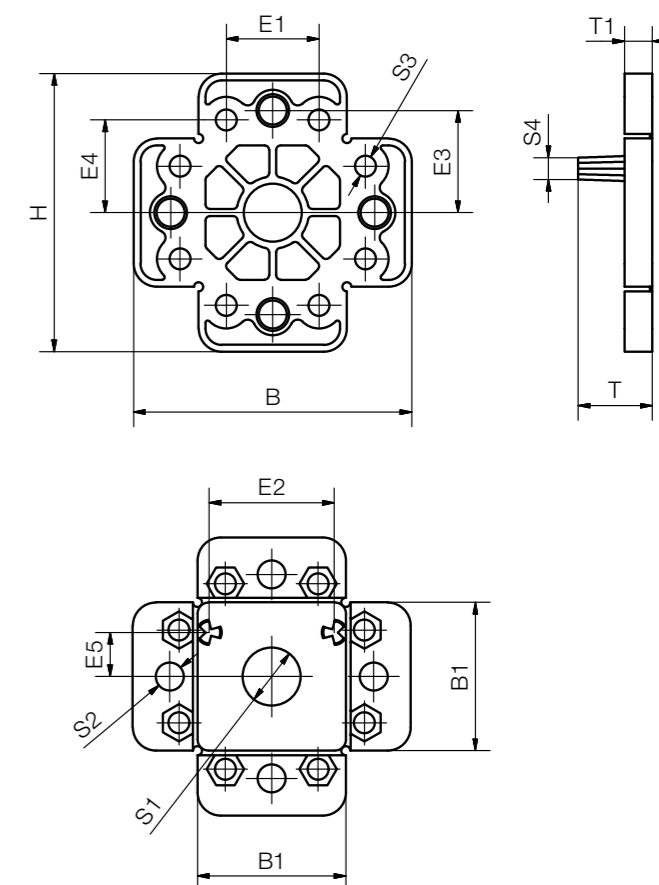
Part No.	B	A	H	X	s1	s2	t
ZTZ-063006	16.5	15	9.0	6.0	9	5.5	4
75.40-ZLW	27.65	40	8.7	8.6	-	6.4	-
75.50-ZLW	37.25	40	14.4	11.0	-	9.0	-

Adapter plate - variable arrangement of accessories



- Adapter plate for manual orientation of position indicators and manual clamps
- Suitable for drylin® linear modules of the SLW/SHT/SHTP series
- Material: Plastic

 **Installation note: Unused sections can be easily separated.**

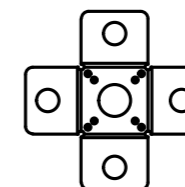


Part No.	Suitable for linear module
STZ-063008	SLW-0630/SHTP-06
STZ-104001	SLW-1040/SHT-12 SHT-20, SHTP-01/02-12
STZ-166001	SLW-1660
STZ-208001	SLW-2080, SLW-25120
STZ-302403	SHT-30

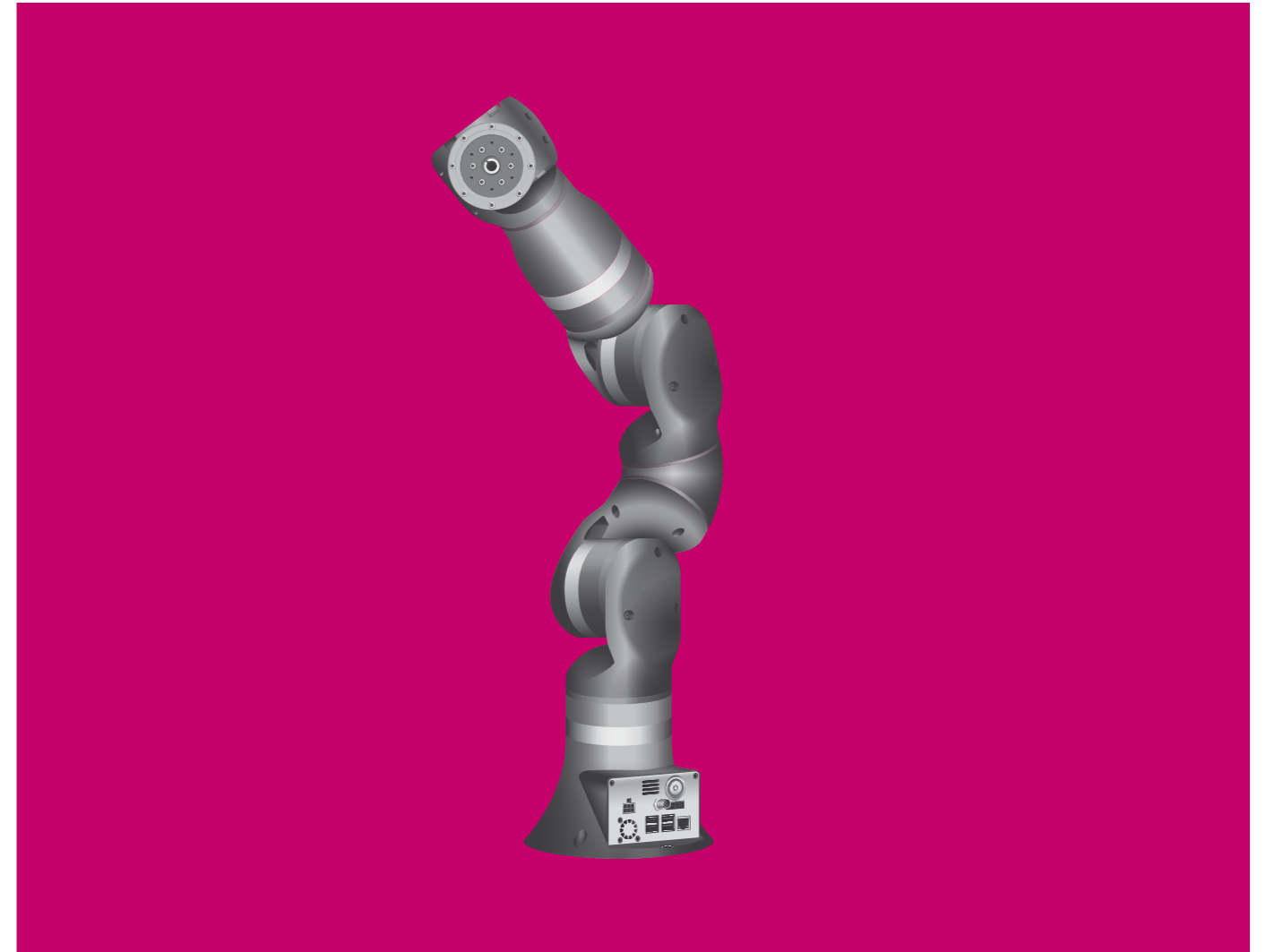
Dimensions [mm]

Part No.	H	B	B1	T	T1	E1	E2	E3	E4	E5	S1	S2	S3	S4
STZ-063008	48	48	18	8	5	-	14.4/11 ¹⁰⁶⁾	18	-	7.2/5.5	8.5	6	-	Ø1.5
STZ-104001	60	60	32	16	6	20	27	22	20	9.5	12.5	6	4.5	M6
STZ-166001	60	71	32	20	6	20	58	22	20	4.5	14.5	6	4.5	Ø11
STZ-208001	60	71	32	16	6	20	58	22	20	13.0	14.5	6	4.5	M10
STZ-302403	60	60	32	16	6	20	27	22	20	9.5	14.5	6	4.5	M6

¹⁰⁶⁾ Adapter plate with 8 pins



Position indicators and lead screw clamps available ► Page 1688



Low Cost Automation

Cobots

Articulated arm robot

Linear robots

Delta robot

SCARA robot

Control system/software

Accessories

Robot modular gearbox system



Cobots and articulated arm robots



New

Robot arm for service robots:
 robotlink® ReBeL®
 ▶ Page 1768



New

Fully integrated strain wave gear for cobots:
 robotlink® ReBeL®
 ▶ Page 1769



Robot arm - small option:
 robotlink® RL-DC
 ▶ Page 1770



Robot arm - large option:
 robotlink® RL-DP
 ▶ Page 1771



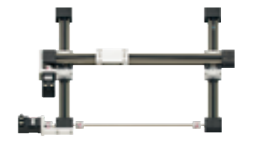
New

Splash-proof 5-axis robots:
 robotlink® RL-DP-SW
 ▶ Page 1772

Linear robots

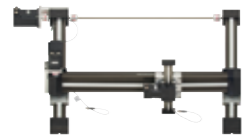


Line robot:
 for vertical working planes
 DLE-LG
 ▶ Page 1774

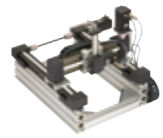


Flat linear robot:
 for predefined surfaces
 DLE-FG
 ▶ Page 1775

Linear robots



Room linear robot:
 for three dimensional applications - DLE-RG
 ▶ Page 1776



Individual linear robots:
 custom linear robots with no minimum order quantity
 ▶ Page 1777



Delta robot
 with 3-axis kinematics
 ▶ Page 1778



New

Delta robot
 with 2-axis kinematics
 ▶ Page 1780



Lift/turn unit,
 linear and rotating:
 drylin® HSQ
 ▶ Page 1782



Torque-resistant linear module, controlled separately:
 drylin® SLQ
 ▶ Page 1783

SCARA robot



New

Robot with three degrees of freedom:
 drylin® SCARA
 ▶ Page 1785



New

Robot with four degrees of freedom:
 drylin® SCARA
 ▶ Page 1786

SCARA robot



New

4 DOF with cladding:
 drylin® SCARA
 ▶ Page 1787



Modular control and software
 igus® Robot Control
 ▶ Page 1788



New

Adapter kits:
 seventh axis for robots
 ▶ Page 1790



New

Adapter kits:
 rotary axis for robots
 ▶ Page 1791



New

Robot cells for all igus® robots
 ▶ Page 1792

Robot modular gearbox system



Worm gear with two PRT slewing rings, with plain bearings:
 robotlink® D
 ▶ Page 1794



Worm gear with one PRT slewing rings, with plain bearings:
 robotlink® D
 ▶ Page 1795

Robot modular gearbox system



Worm gear, ball bearing:
 robotlink® D
 ▶ Page 1796



Worm gear, ball bearing:
 robotlink® D
 ▶ Page 1797



Robot joint with direct drive:
 robotlink® D
 ▶ Page 1798



Components with DC motor:
 robotlink® D
 ▶ Page 1799



Worm gear joints:
 drygear® Apiro®
 ▶ Page 1800



New

Connection to linear units:
 drygear® Apiro®
 ▶ Page 1804



New

Robot gear set for eight systems:
 Apiro® robotics kit
 ▶ Page 1808



Cantilever axis:
 robotlink® Apiro®
 ▶ Page 1806

Robot modular gearbox system and ...

...further kinematics



New

Planetary gearbox:
 robotlink® Apiro®
 ▶ Page 1807



New

Strain wave gear output shaft:
 drygear® strain wave gear
 ▶ Page 1809



New

Planetary gearbox:
 drygear® planetary gearbox RL-P
 ▶ Page 1810

Online tools



ReBeL® configurator
 ▶ Page 1764



robotlink® designer
 ▶ Page 1764



Linear robot configurator
 ▶ Page 1764



Online marketplace for Low Cost Robotics
 RBTX
 ▶ www.rbtix.com

Low Cost Automation


Low Cost Automation stands for significant increase in productivity processes with the help of a simple and affordable automation in the form of robotics components. Depending on the application, automation processes can be automated in whole or in part. At igus® you have everything you need for cost-effective process automation from a single source: complete robot arms, individual components for customised solutions or to expand existing applications, and a control system suited to robolink® with intuitive software.

- Maintenance-free dry operation
- Quiet
- Resistance to dust and dirt
- Corrosion-free
- Standard product range available in within 24hrs
- Free consultation and installation at your premises
- Feasibility check in the Customer Testing Area (CTA)

Typical application areas

- Pick & place
- Measurement and testing
- Labelling technology
- Component marking
- Assembly cells
- Sorting machines
- Safety systems

 **Available from stock**
Detailed information about delivery time online.

 **Price breaks online**
No minimum order value. No minimum order quantity

Fully integrated single joints

Lightweight construction with plastic components

Gearbox modular system for service robotics

Maintenance-free

Can be controlled with igus® Robot Control

Toolmakers and their suppliers are facing major global challenges. The competition is becoming more intense, the price pressure is becoming greater, including the demand for local production. We offer complete cost-effective systems that automate tasks in order to produce faster and more effectively.



Cobots

- For service tasks
 - With fully integrated strain wave gear
- Page 1768



Articulated arm robot

- Up to 5 DOF (degrees of freedom)
 - Modular and cost-effective
- Page 1770



Linear robots

- Pre-configured assembly kits available from stock
 - 3 different linear robot structures: line/flat/room
- Page 1774



Parallel kinematics

- Kit or pre-installed kinematics
- Page 1778



SCARA robot

- 4 DOF (degrees of freedom)
 - IP44 version possible
- Page 1786



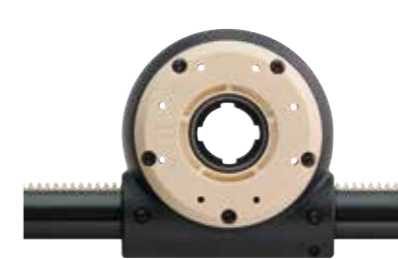
Workspace extension

- Axis 7 for linear movements
 - Rotary axes
- Page 1790



drygear® worm gear

- With PRT or slewing rings with ball bearings
- Page 1794



drygear® Apiro® modular gearbox system

- Tribologically optimised worm gears
 - Motor drive or manual drive
- Page 1800



drygear® strain wave gear and planetary gearbox

- Small compact design
 - Available transmission: 28:1
- Page 1809



igus® Robot Control

- Control system for linear robots, delta robots and robolink® robot arms
- From page 1788



Motor control systems

► From page 1732

Low Cost Automation | Online tools

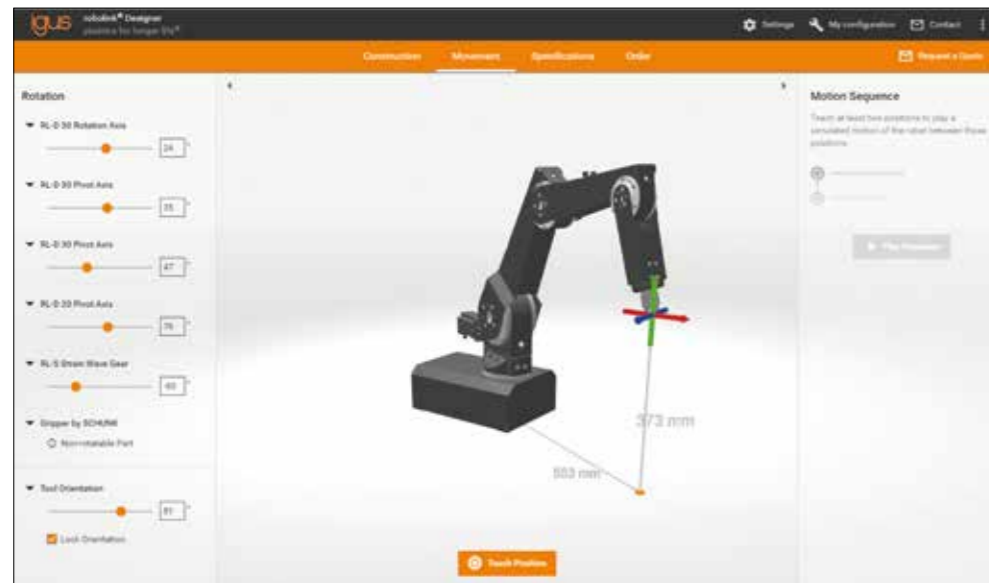
Calculate and configure robot arms

Configure your cobot



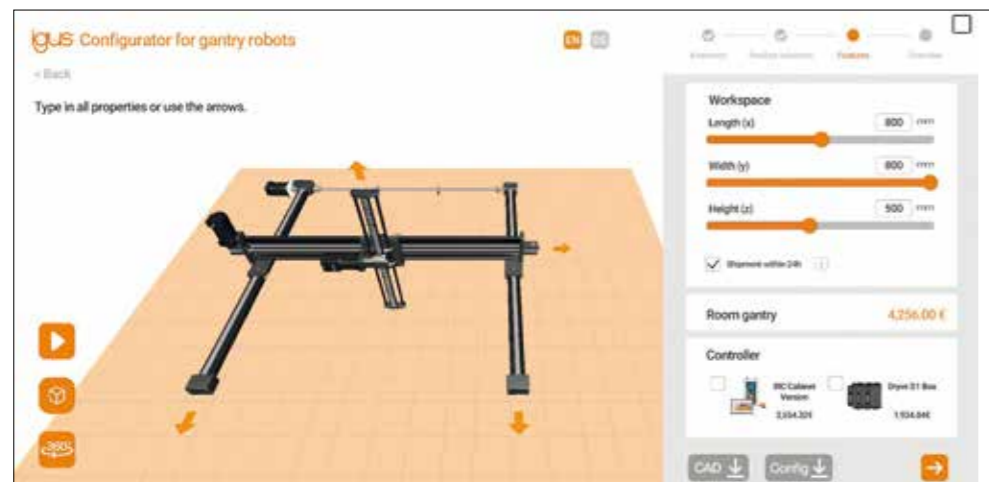
- Configure the igus® ReBeLi® so that it is ready to connect
- Select axes, tools, accessories, and services
- ▶ www.igus.eu/rebel-configurator

robolink® designer



- Configure ready-to-connect units directly in the online tool
- Create your individual robolink® D robot arm quickly and easily
- Configurations for individual axes to tools
- Simulates the solution with maximum range and payload
- ▶ www.igus.eu/robolink-designer

Configure individual gantries in no time



- Quick selection of the appropriate linear robot system
- Configure ready-to-connect units directly in the online tool
- Selection of various control techniques
- All igus® standard linear robots available
- ▶ www.igus.eu/linear-robot-configurator

Low Cost Automation

Test in the Customer Testing Area



You want to be sure about your application's feasibility?

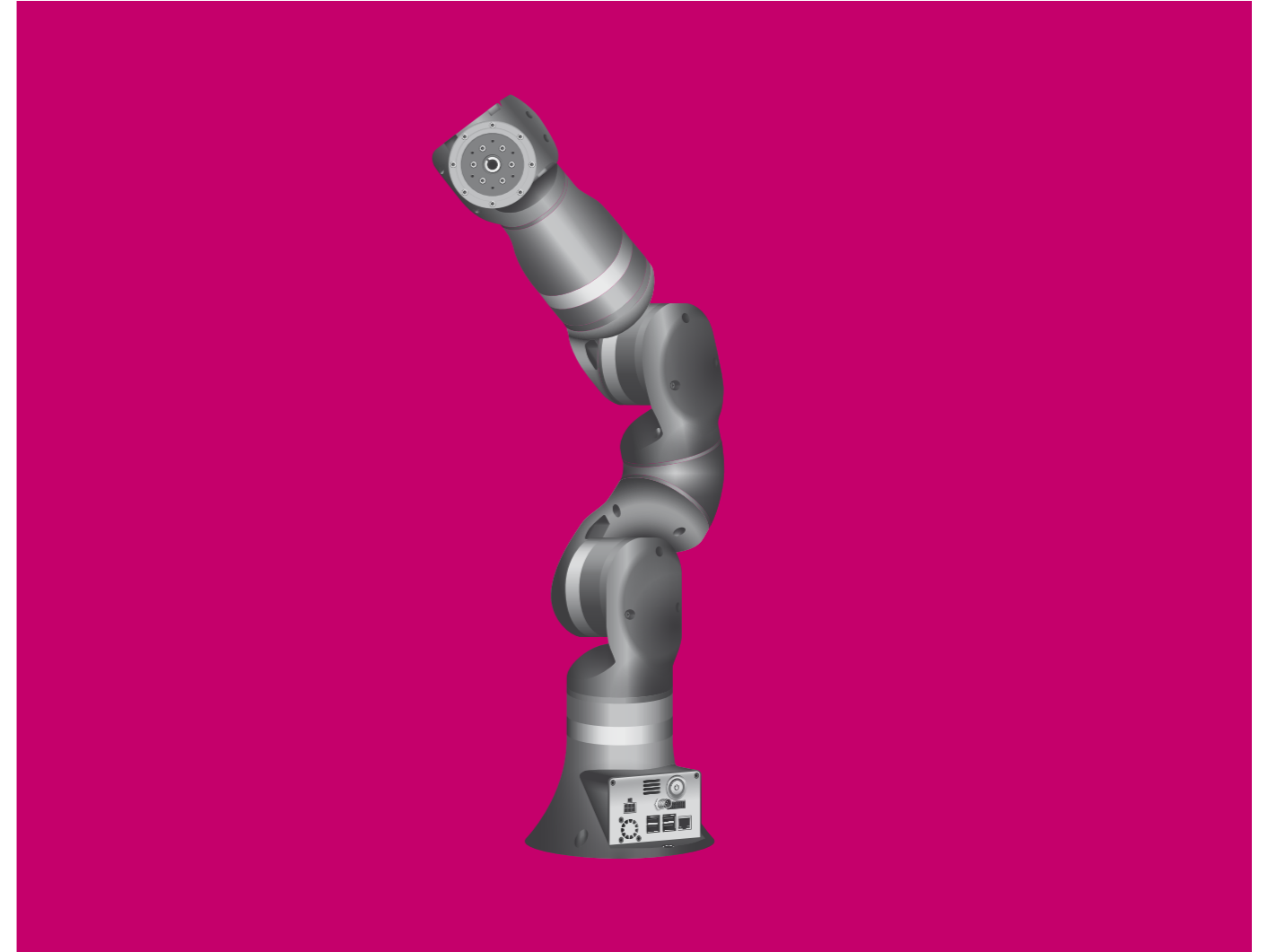
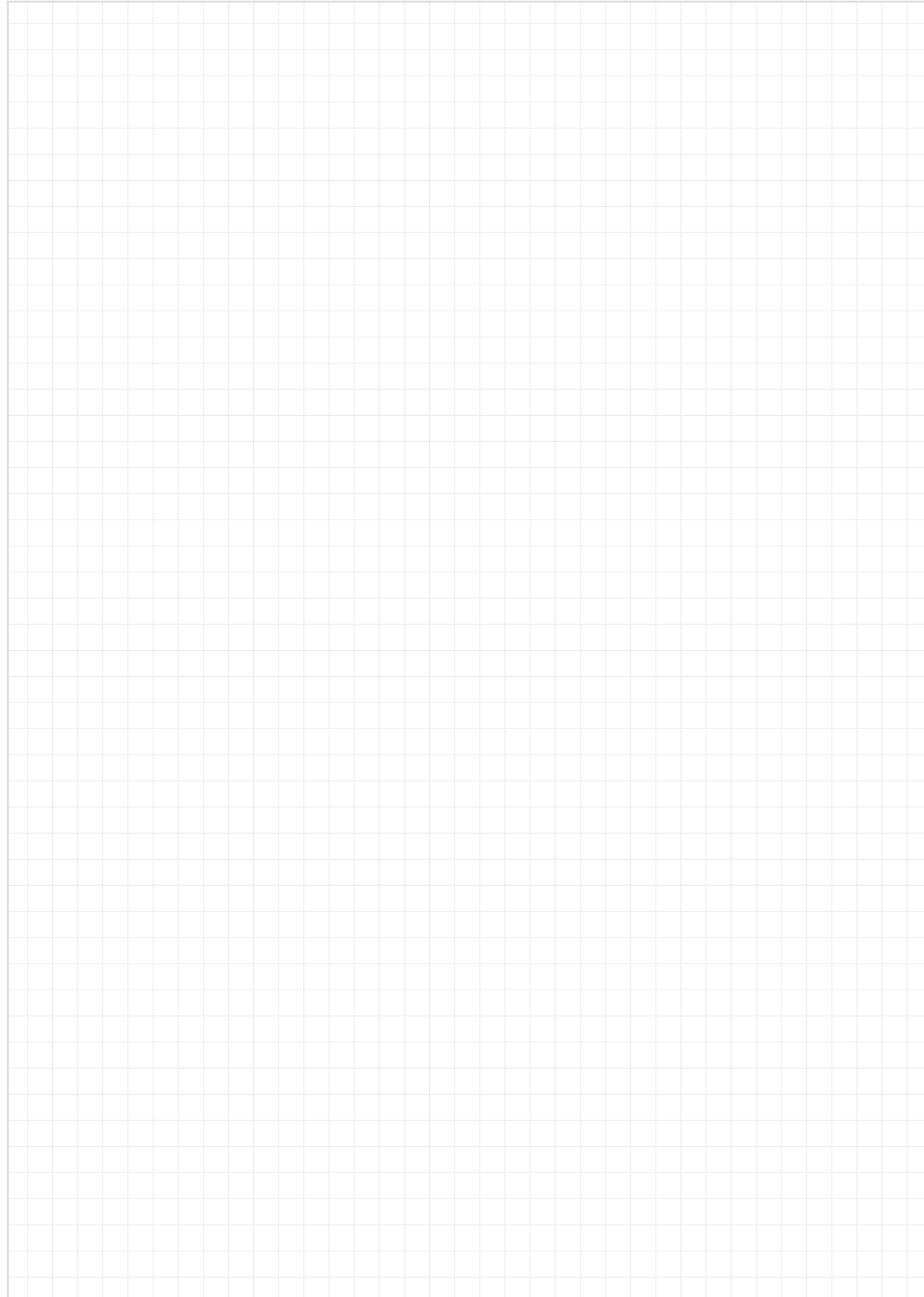
We offer a handling test. Just send us your workpiece/object and we will provide you with a video of our test or show you the feasibility live.

- With accessories such as grippers or vision
- Test directly in the robot cells
- Over 1,000 customer tests
- 400m² Customer Testing Area
- Typical applications are pick & place, end of the line quality control or gluing and joining applications.



More information and prices online

▶ www.igus.eu/customer-testing-area



Articulated arm robot

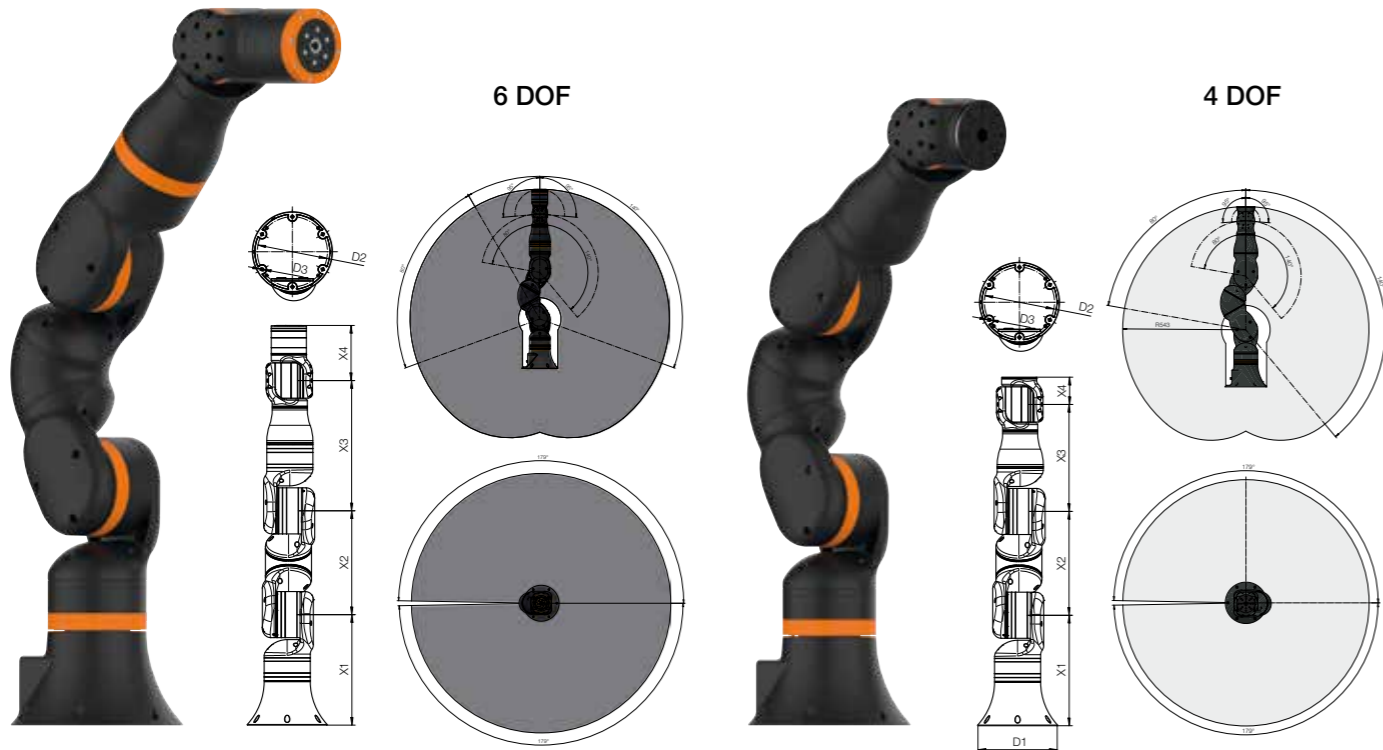
ReBeL[®] cobot

roboLink[®] DC

roboLink[®] DP

Splash water roboLink[®] DP





- Prepared for cobot function
- Plug-and-play and open-source variants available
- Assembling aid ► Page 1788

Available in 4-6 weeks

Technical data - ReBeL® robot arm

	6 DOF ¹⁶⁸⁾	4 DOF ¹⁶⁸⁾
Kinematics/type	Articulated arm robot	Articulated arm robot
Application area	Service robotics	Service robotics
Number of axes	6	4
Total reach [mm]	664	495
Nominal reach [mm]	400	400
Joint rotation for axes 1, 4 and 6 [°]	360	360
Angular speed [°/s]	45	45
Final speed TCP (full load) [mm/s]	200	200
Floor space [mm]	180	180
Ambient temperature [°C]	0-50	0-50
Dynamics with 500g load capacity [Picks/min]	7	7
Payload incl. tool [kg]	2	3
Repetition accuracy [mm]	±1	±1
Weight [kg]	< 8	< 7
Plug & play solution with iRC		
Part No.	REBEL-6DOF-00	REBEL-4DOF-00
Open source variant		
Part No.	REBEL-6DOF-OS	REBEL-4DOF-OS

Dimensions [mm]

Part No.	L1	X1	X2	X3	X4	a2	b2	D1	D2	D3	D4	D5	D6	D7
ReBeL-6DOF-00 New	660	252	237	297	126	80	138.6	180	160	6.5	43	M3	-	-
ReBeL-4DOF-00 New	543	252	237	244	62	80	138.6	180	160	6.5	43	M3	62	M4

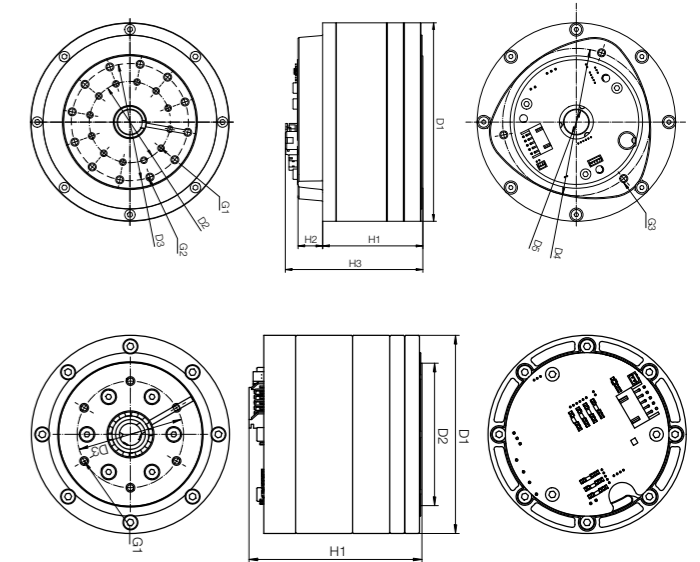
¹⁶⁸⁾ DOF: degree of freedom



RL-SE-105-1-50-AL

RL-SE-80-1-50-AL

- 25% lighter than conventional strain wave gears thanks to igus® high-performance polymers
- Strain wave gear incl. power electronics, driver and encoder
- Minimum service life 1,000,000 cycles
- Direct connections of grippers to flange plate



Technical data

Part No.	Outer Ø [mm]	Height [mm]	Max. drive torque [Nm]	Rated torque [Nm]	Output speed [1/min]	Transmission	Weight [g]
RL-SE-80-1-50-AL New	80	60	2.5	2	6.0	50:1	330
RL-SE-105-1-50-AL New	105	62	20.5	10	6.0	50:1	900

Control data

Part No.	Nominal voltage		Nominal current [A]	Peak current [A]	Communication
	Logic [V]	Motor [V]			
RL-SE-80-1-50-AL New	5	24	3	9	CAN500k with CPR-CANV2 protocol
RL-SE-105-1-50-AL New	5	24	3	9	

Dimensions [mm]

Part No.	D1 Ø	D2 Ø	D3 Ø	D4 Ø	D5 Ø	D6 Ø	H1	H2	H3	G1	G2	G3
RL-SE-80-1-50-AL New	80	57.5	43	71	-	-	58.8	-	-	M3	M3	-
RL-SE-105-1-50-AL New	105	43.0	62	78	17	13	49.0	52	13	M3	M4	M3

Available in 1-2 weeks

Robot arm - small option



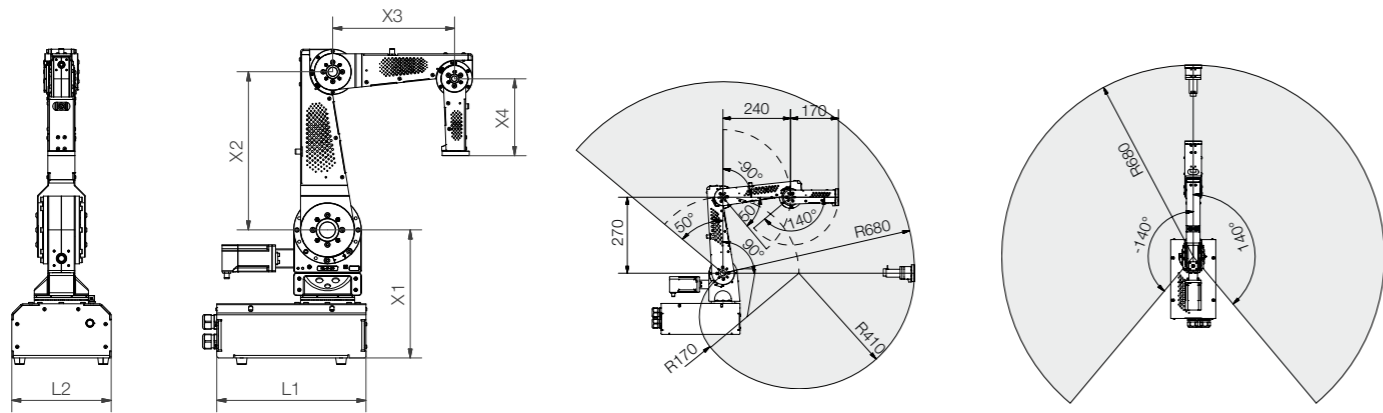
With integrated control system

Small option

Test the software free of charge

- Payload up to 10N
- Cycle times > 6s
- Reach up to 680mm
- Integrated gearbox
- With motor encoder
- Available as 4 DOF or 5 DOF¹⁶⁸⁾
- Optimised bearing of the single axes for minimal backlash
- Black standard colour, individual colour and logo possible
- Available as a plug-and-play solution with igus® Robot Control
- More configuration options online

► www.igus.eu/DC



Technical data - small option (RL-DC)

Part No.	4 DOF ¹⁶⁸⁾		5 DOF ¹⁶⁸⁾	
	RL-D-RBT-3322-BF		RL-D-RBT-3322S-BF	
Operating voltage	[VDC]	24	24	
Nominal power (at full load)	[W]	120	120	
Weight (without power supply unit, ext. display)	[kg]	11	12	
Precision (WDH precision)	[mm]	±0.5	±0.5	
Max. speed (TCP)	[mm/s]	100	100	
Reach	[mm]	600	680	
Payload	[N]	10	5	
With integrated control system				
Part No.		RL-DCi-4S-M-B	RL-DCi-5S-M-B	

Articulated arm dimensions [mm]

Part No.	L1	L2	X1	X2	X3	X4
RL-D-RBT-3322-BF	280	160	217.5	270	240	170
RL-D-RBT-3322-BF-AE	280	160	227.5	270	240	170
RL-D-RBT-3322S-BF	330	220	273.5	350	270	170
RL-D-RBT-3322S-BF-AE	330	220	283.5	350	270	170

For more information, see the technical data sheet ► www.igus.eu/DC

¹⁶⁸⁾ DOF: degree of freedom

Robot arm - large option



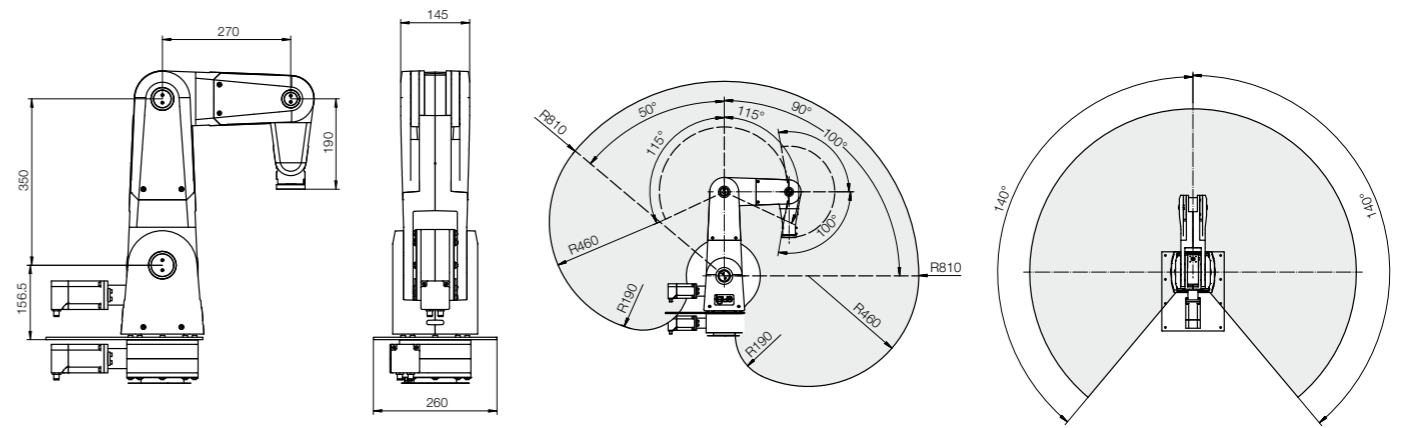
With integrated control system

Large option

Test the software free of charge

- Payload up to 30N
- Cycle times > 6s
- Up to 790mm of reach
- Integrated gearbox
- With motor encoder
- Available as 4 DOF or 5 DOF¹⁶⁸⁾
- Optimised bearing of the single axes for minimal backlash
- Black standard colour, individual colour and logo possible
- Available as a plug-and-play solution with igus® Robot Control
- More configuration options online

► www.igus.eu/DP



Technical data - large option (RL-DP)

Part No.	4 DOF ¹⁶⁸⁾		5 DOF ¹⁶⁸⁾	
	RL-DP-4		RL-DP-5	
Operating voltage	[VDC]	24	24	
Nominal power (at full load)	[W]	120	120	
Weight (without power supply unit, ext. display)	[kg]	22	23	
Precision (WDH precision)	[mm]	±0.5	±0.5	
Max. speed (TCP)	[mm/s]	100	100	
Reach	[mm]	790	790	
Payload	[N]	30	30	
With integrated control system				
With top hat (DIN) rail		RL-DP-4-24-0002-00-0	RL-DP-5-24-0002-00-0	
With control cabinet		RL-DP-4-24-0004-00-0	RL-DP-5-24-0004-00-0	



Small and large options:
Black standard colour, individual colour and logo possible

¹⁶⁸⁾ DOF: degree of freedom

For more information, see the technical data sheet ► www.igus.eu/DP



- Splash-proof thanks to protection class IP 44
- Tribologically optimised robot joints
- Joining links made of stainless steel
- Software available free of charge
- igus® Robot Control ▶ Page 1788

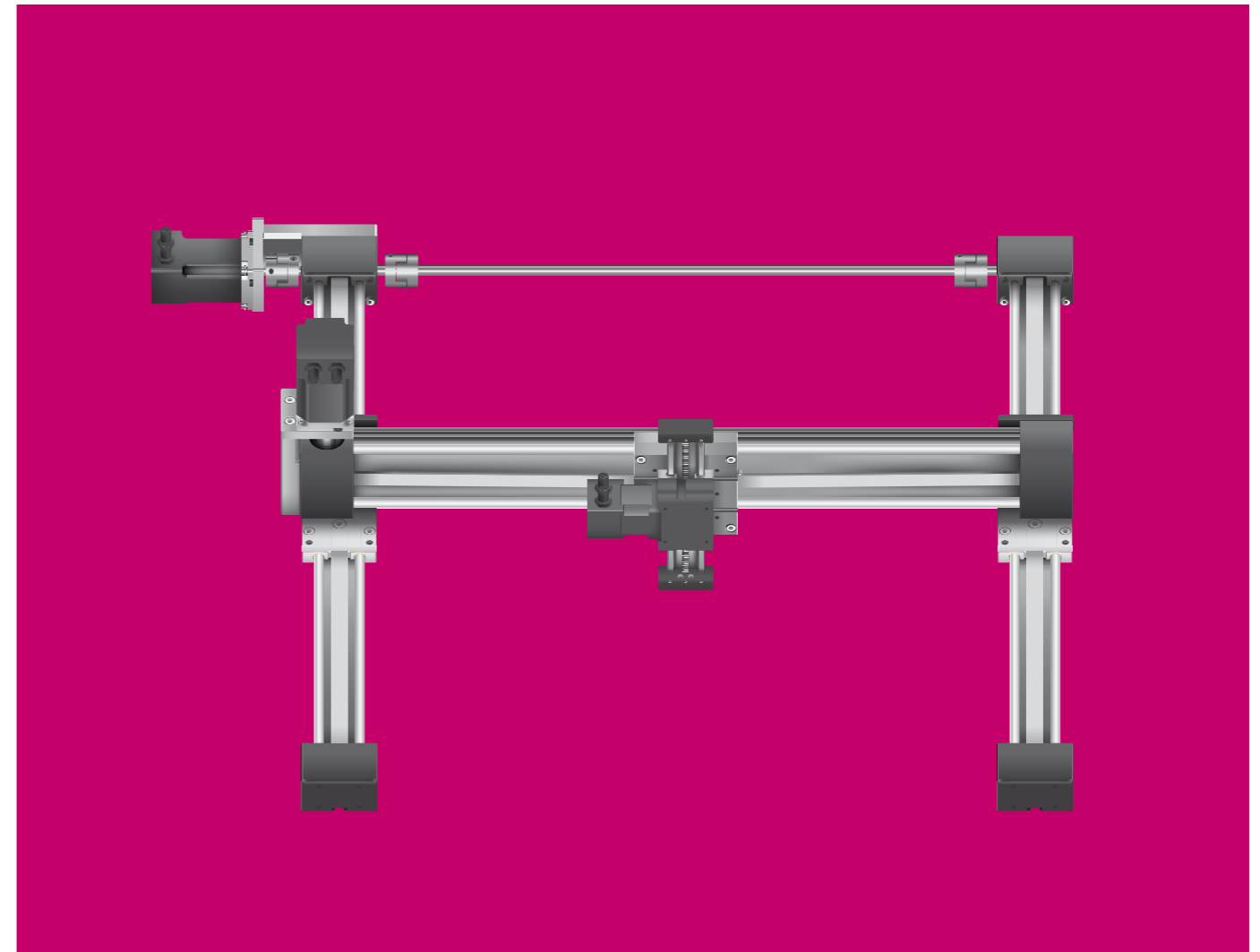


Test the software free of charge

Technical data

		4 DOF ¹⁶⁸⁾	5 DOF ¹⁶⁸⁾
Part No.		RL-DP-4-SW-24	RL-DP-5-SW-24
Payload	[N]	20	20
Speed	[Picks/min]	7	7
Workspace	[mm]	790	790
Nominal reach	[mm]	450	450
Weight	[kg]	23.6	23.6
Payload	[kg]	2	3
Precision (repeatability)	[mm]	±0.5	±0.5
Max. speed (TCP)	[m/s]	0.2	0.2
Ambient temperature	[°C]	0 to +50	0 to +50
With top hat (DIN) rail		RL-DP-4-SW-24-0002-00-0	RL-DP-5-SW-24-0002-00-0
With control cabinet		RL-DP-4-SW-24-0004-00-0	RL-DP-5-SW-24-0004-00-0

 For more information, see the technical data sheet
▶ www.igus.eu/DP



Linear robots and other kinematics

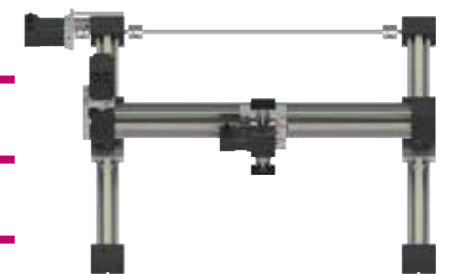
Linear robots

Delta robot

SCARA robot

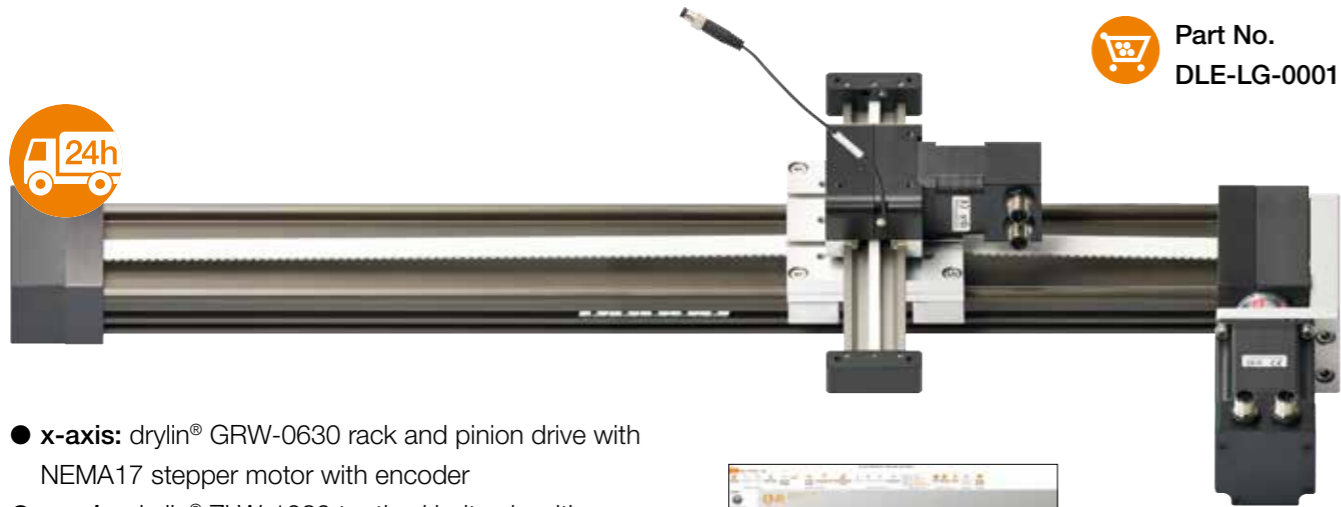
Further kinematics

Accessories



¹⁶⁸⁾ DOF: degree of freedom

Linear robot - for vertical working planes

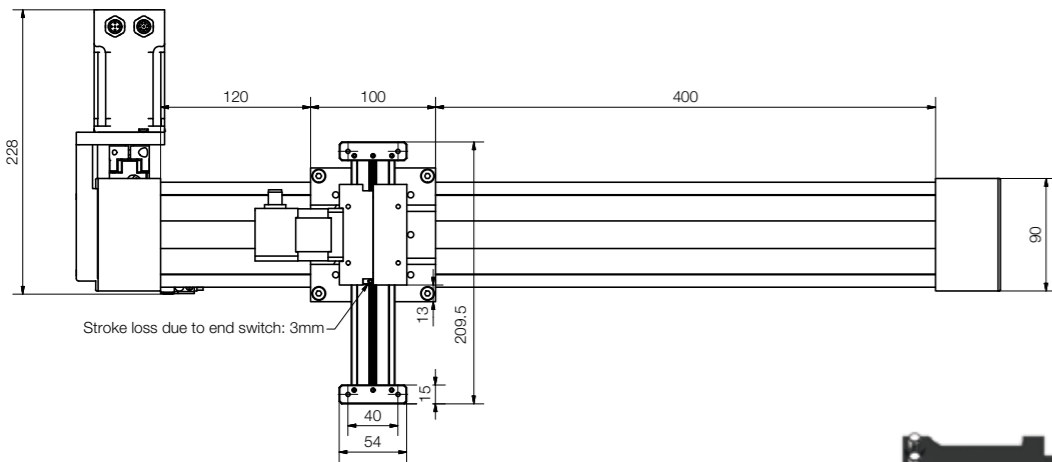


Part No.
DLE-LG-0001

- **x-axis:** drylin® GRW-0630 rack and pinion drive with NEMA17 stepper motor with encoder
- **y-axis:** drylin® ZLW-1080 toothed belt axis with NEMA23 stepper motor with encoder
- Proximity switches, connection cables, control systems and other installation sizes upon request



igus® Robot Control
► From page 1788



Part No.
DLE-LG-0002

- **y-axis:** drylin® ZLW-10120 toothed belt axis with NEMA 23 XL stepper motor with encoder
- **z-axis:** GRR-1280 rack axis with NEMA23 XL stepper motor with encoder
- Proximity switches and motor cables available

Technical data

		DLE-LG-0001	DLE-LG-0002
Workspace ¹⁸¹⁾	[mm]	500 x 100	800 x 500
Max. speed	[m/s]	1.0	1.0
Max. acceleration	[m/s ²]	3.0	2.0
Repeatability	[mm]	0.2	0.3
Max. load capacity	[N]	25.0	50.0

¹⁸¹⁾ Customised stroke length upon request

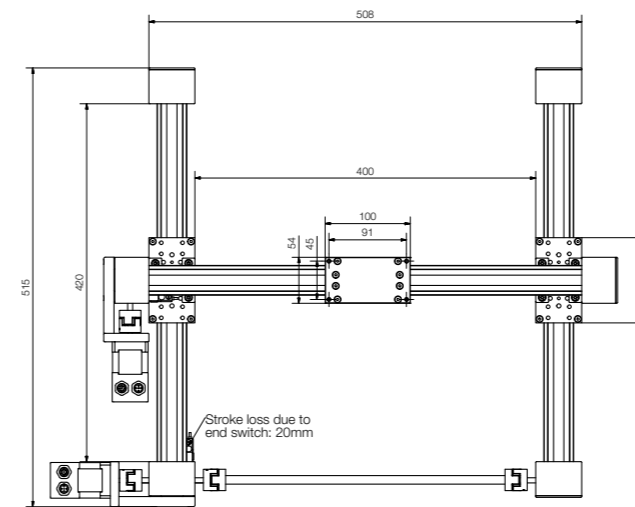
Flat linear robot - for predefined surfaces



Part No.
DLE-FG-0001 version with encoder
DLE-FG-0002 version with stranded wire
DLE-FG-0003 econ version
DLE-FG-0005 version with encoder
DLE-FG-0006 version with encoder



igus® Robot Control
► From page 1788



DLE-FG-0001

- **x-axis:** drylin® ZLW-0630 toothed belt axis with NEMA17 stepper motor with encoder
- **y-axis:** drylin® ZLW-0630 toothed belt axis with NEMA17 stepper motor with encoder
- Proximity switches, connection cables, control systems and other installation sizes upon request

DLE-FG-0002

- **x-axis:** drylin® ZLW-0630 toothed belt axis with NEMA17 stepper motor with stranded wire
- **y-axis:** drylin® ZLW-0630 toothed belt axis with NEMA17 stepper motor with stranded wire
- Proximity switches, connection cables, control systems and other installation sizes upon request

DLE-FG-0003

- **x-axis:** drylin® ZLW-1040 econ toothed belt axis with NEMA23 stepper motor with stranded wire
- **y-axis:** drylin® ZLW-1040 econ toothed belt axis with NEMA17 stepper motor
- Proximity switches, connection cables, control systems and other installation sizes upon request

DLE-FG-0005

- **x-axis:** drylin® ZLW-1040-B toothed belt axis, NEMA23 stepper motor with encoder
- **y-axis:** drylin® ZLW-1040-B toothed belt axis, NEMA23 stepper motor with encoder
- **Accessories (supplied loose):** mounting plates, connecting shaft, couplings, clamps
- Proximity switches, connection cables, control systems and other installation sizes upon request

DLE-FG-0006

- **x-axis:** drylin® ZLW-1040S toothed belt axis, NEMA23 XL stepper motor with encoder
- **y-axis:** drylin® ZLW-1080S toothed belt axis, NEMA23 stepper motor with encoder
- With proximity switches and connecting cables
- Control systems and other installation sizes available

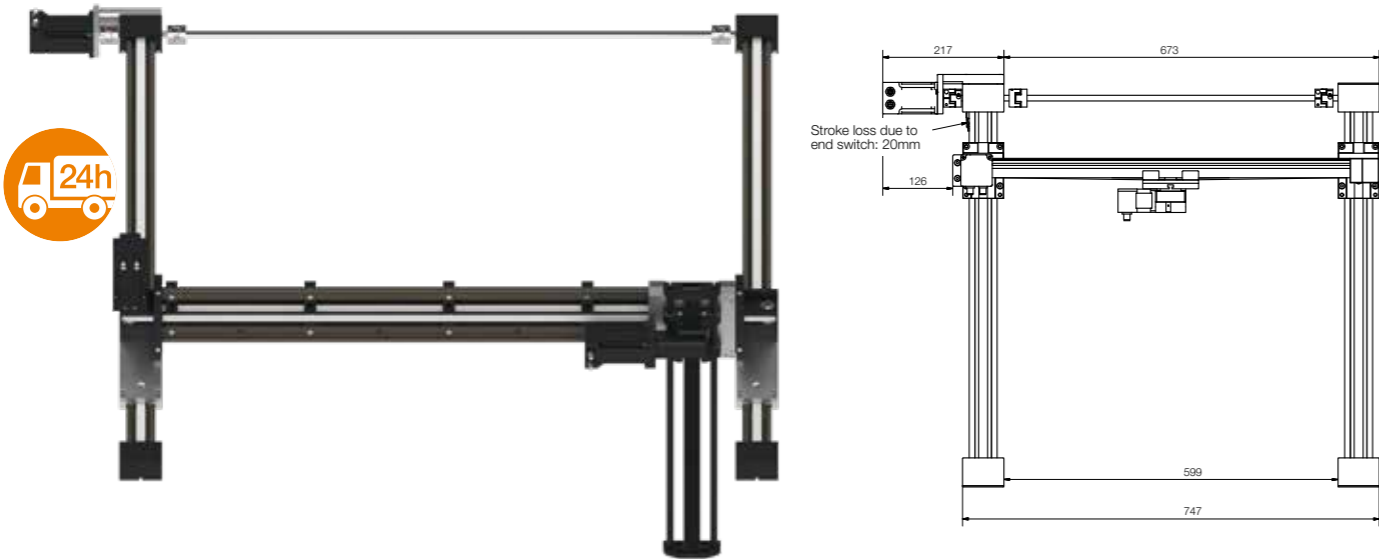
Technical data

		DLE-FG-0001	DLE-FG-0002	DLE-FG-0003	DLE-FG-0005	DLE-FG-0006
Workspace ¹⁸¹⁾	[mm]	300 x 300	300 x 300	500 x 500	500 x 500	650 x 650
Max. speed	[m/s]	1.5	1.5	0.5	1.0	1.0
Max. acceleration	[m/s ²]	10.0	10.0	1.0	1.0	1.0
Repeatability	[mm]	0.3	0.3	1.0	0.5	0.5
Max. load capacity	[N]	80.0	80.0	10.0	80.0	100.0

¹⁸¹⁾ Customised stroke length upon request

Low Cost Automation | Product range

Room linear robot - for three dimensional applications



- Part No.**
- DLE-RG-0001
 - DLE-RG-0002
 - DLE-RG-0003
 - DLE-RG-0004



igus® Robot Control
► From page 1788

DLE-RG-0001

- **x-axis:** drylin® ZLW-1040 toothed belt axis with NEMA23 stepper motor with encoder
- **y-axis:** drylin® ZLW-1080 toothed belt axis with NEMA23 stepper motor with encoder
- **z-axis:** drylin® GRW cantilever axis with rack and pinion drive and NEMA17 stepper motor with encoder
- Proximity switches, connection cables, control systems and other installation sizes upon request

DLE-RG-0002

- **x-axis:** drylin® ZLW-0630 toothed belt axis with NEMA23 XL stepper motor with encoder
- **y-axis:** drylin® ZLW-0660 toothed belt axis with NEMA23 stepper motor with encoder
- **z-axis:** drylin® GRW-0630 cantilever axis with NEMA17 stepper motor with encoder
- Proximity switches, connection cables, control systems and other installation sizes upon request

DLE-RG-0003

- **x-axis:** drylin® ZLW-1040 toothed belt axis with NEMA23 XL stepper motor with encoder
- **y-axis:** drylin® ZLW-10120 toothed belt axis with NEMA23 XL stepper motor with encoder
- **z-axis:** GRR-1280 rack axis with NEMA23 XL stepper motor with encoder
- Proximity switches, connection cables, control systems and other installation sizes upon request

DLE-RG-0004

- **x-axis:** drylin® ZLW-20120S with NEMA24 stepper motor and 3:1 gearbox
- **y-axis:** drylin® ZLW-20200S with NEMA24 stepper motor and 3:1 gearbox
- **z-axis:** 1 x GRR-20120 rack axis with NEMA24 stepper motor
- Proximity switches, connection cables, control systems and other installation sizes upon request

Technical data

		DLE-RG-0001	DLE-RG-0002	DLE-RG-0003	DLE-RG-0004
Workspace ¹⁸¹⁾	[mm]	500 x 500 x 100	400 x 400 x 150	800 x 800 x 500	2,000 x 2,000 x 1,000
Max. speed	[m/s]	0.5	0.5	0.5	0.5
Max. acceleration	[m/s²]	1.5	1.5	1.5	1.0
Repeatability	[mm]	0.8	0.8	0.8	0.8
load capacity	[N]	25.0	25.0	50.0	100.0

¹⁸¹⁾ Customised stroke length upon request

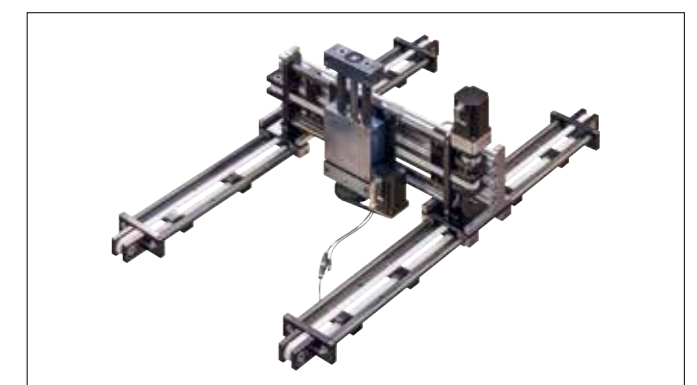
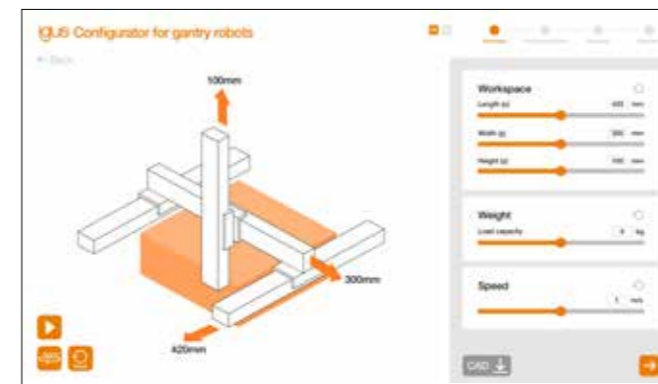
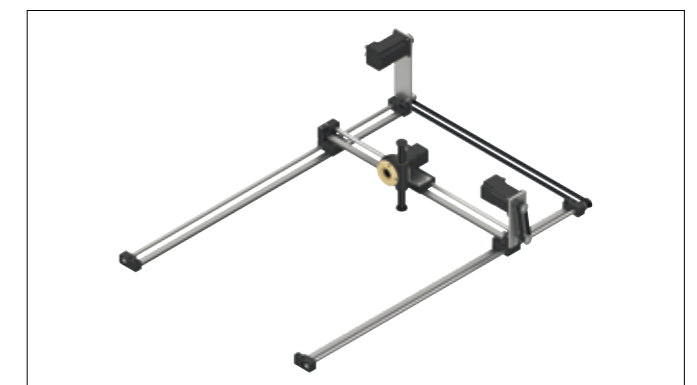
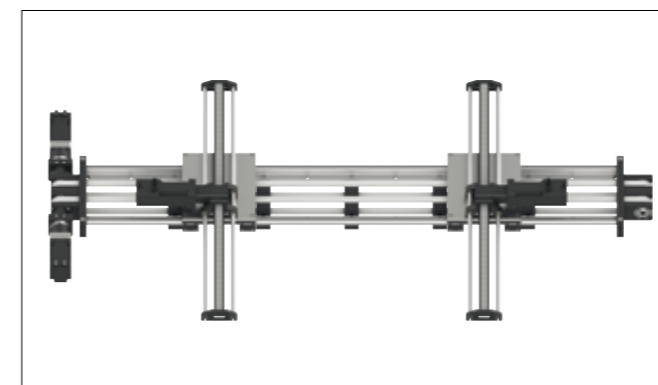
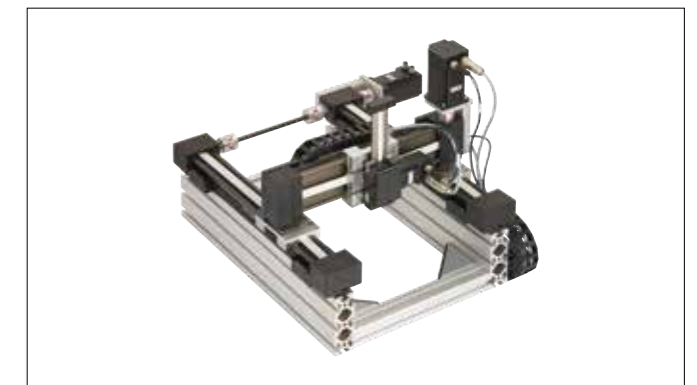
Low Cost Automation | Product range

Individual linear robots

Customised linear robots from 1 piece

In addition to the two standard sizes in the online shop, special linear robots can be tailored to individual customer requirements. Contact us!

► www.igus.eu/special-linear-robot



► www.igus.eu/linear-robot-configurator

Delta robot

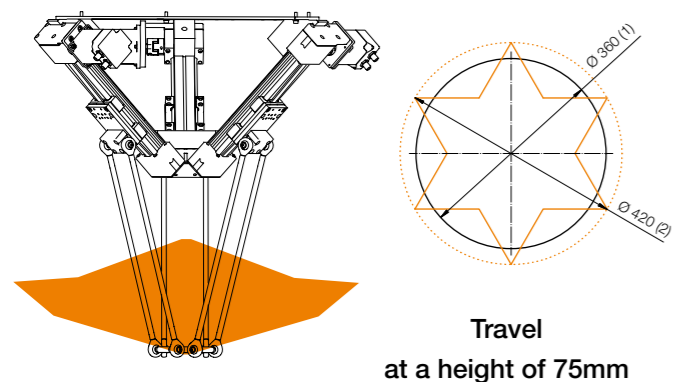
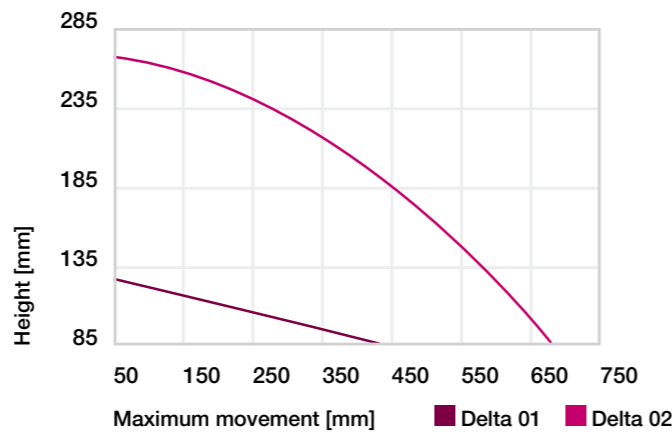
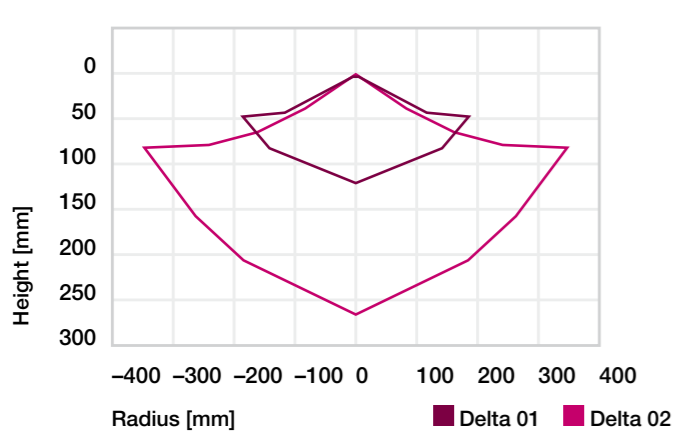


Delta robot consisting of:

- 3 drylin® toothed belt axis with NEMA23 XL stepper motor with encoder
- Lightweight igubal® delta kinematics
- Mounting brackets for mounting in a frame and possibilities of adaptation for grippers/motor
- As a construction kit or completely pre-assembled in a transport rack
- Optional accessories: initiator kits, motor encoders and sensor cables
- Ready for connection with stepper motors for dryve D1 motor control system or as plug & play with the igus® Robot Control

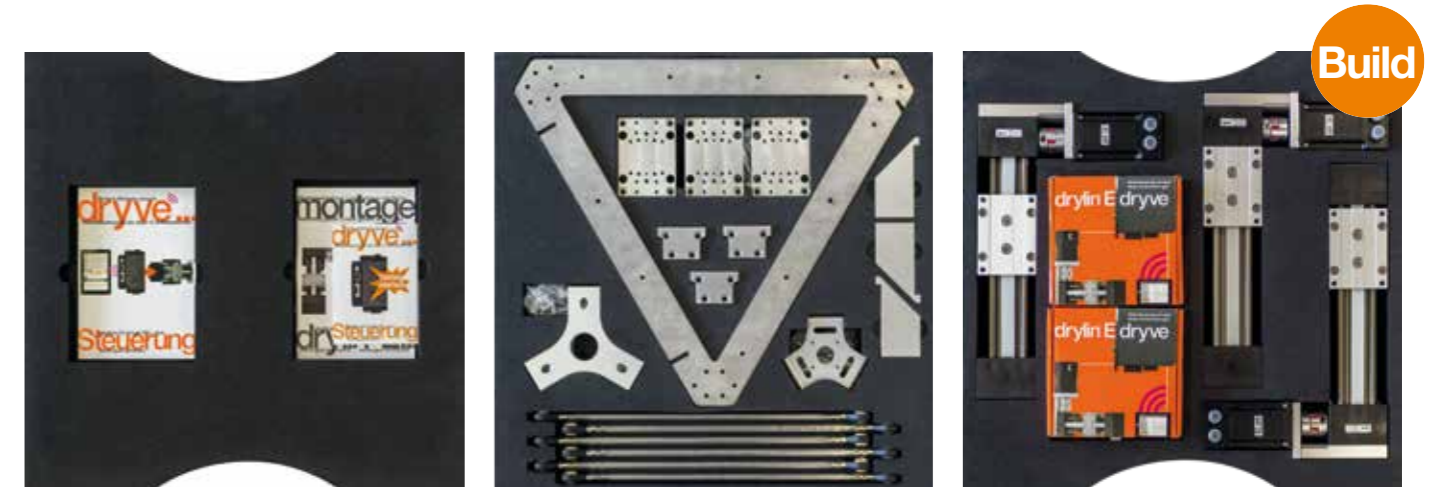
Technical data

Part No.		Delta 01	Delta 02
		DLE-DR-0001	DLE-DR-0050
Positioning accuracy	[mm]	± 0.5	± 0.5
Working area diameter at 75mm	[mm]	360	660
Max. payload	[kg]	5	5
Max. process force at radius 0mm	[N]	100	100
Dynamics at 500g	[Picks/min]	Min. 60	Max. 30
Weight	[kg]	15	16
Track speed	[m/s]	3	0.7
Max. acceleration	[m/s²]	60	2



igus® Robot Control ▶ From page 1788

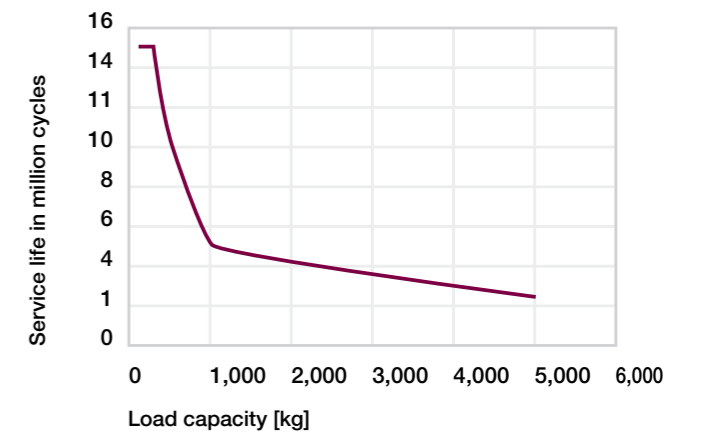
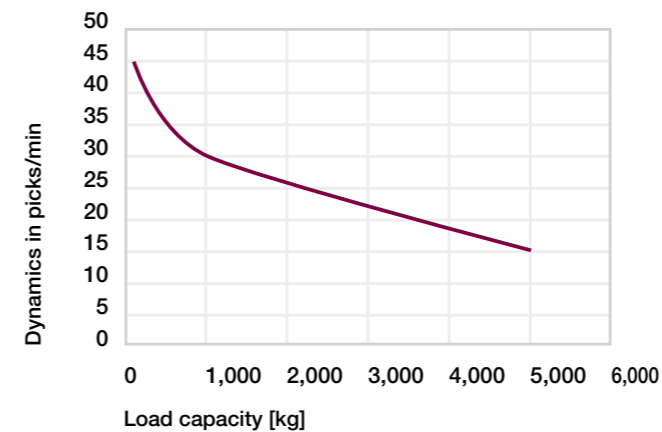
Delta robot kit



Optional accessories: initiator kits, motor encoders and sensor cables, calibrating pin, cable clip

▶ www.igus.eu/delta-robot

Part No.	Description	
	Delta 01	Delta 02
DLE-DR-0001	DLE-DR-0050	Delta robot, kit in compact transport box
DLE-DR-0002	DLE-DR-0051	Delta robot, pre-installed kinematics, in transport rack made of profiled rails
DLE-DR-0003	DLE-DR-0052	Delta robot, kit in compact transport box, incl. 3x D1 dryve stepper motor control units
DLE-DR-0004	DLE-DR-0053	Delta robot, pre-installed kinematics, in transport box made of profiled rails, incl. 3x D1 dryve stepper motor control units

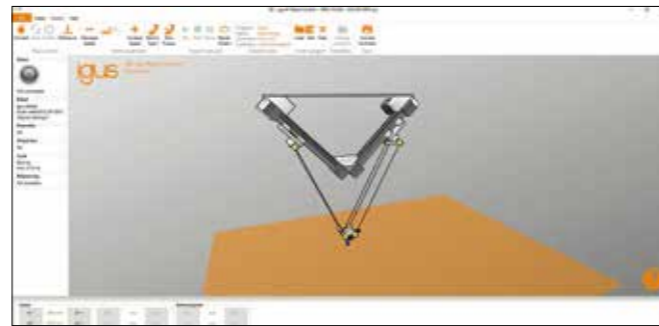


You can get the highest (picks/min) by using a master control system with path planning function. (e.g. Sinus acceleration ramp and optimised motor control parameters). Graph as shown applies to a load motor voltage of 48 [V] mounted in a stable and vibration-free frame.

Delta robot as 2-axis kinematics



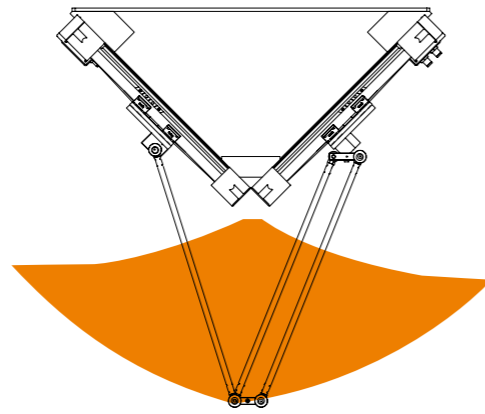
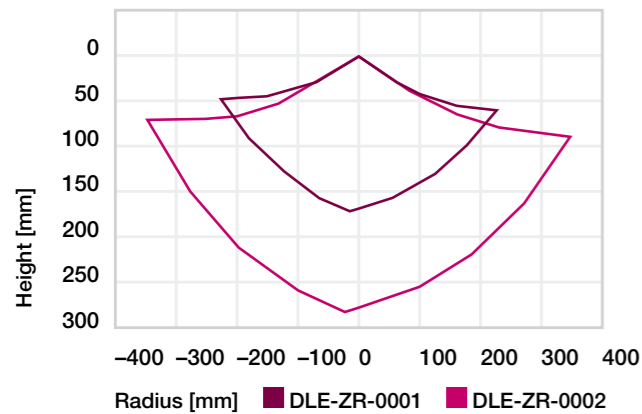
- Delta robot consisting of:
- 2 drylin® toothed belt axis with NEMA23 XL stepper motor with encoder
 - Lightweight igubal® delta kinematics
 - For simple, fast and automated assembly tasks
 - Ready for connection with stepper motors for dryve D1 motor control system or as plug & play with the igus® Robot Control
- Page 1788



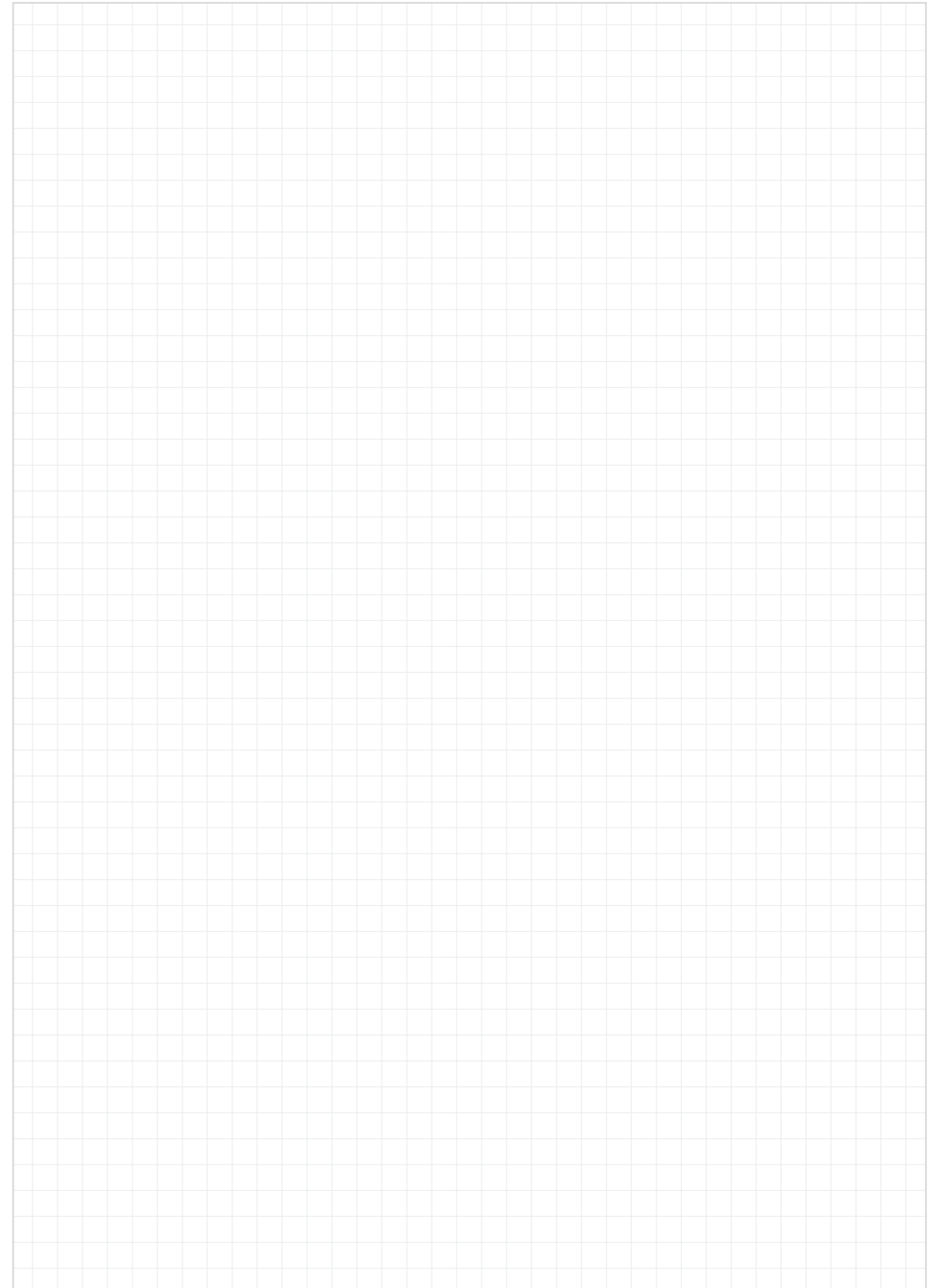
igus® Robot Control ► From page 1788

Technical data

Part No.		DLE-ZR-0001	DLE-ZR-0002
Positioning accuracy	[mm]	± 0.5	± 0.5
Working area diameter at 75mm	[mm]	400	700
Max. payload	[kg]	5	5
Max. process force at radius 0mm	[N]	100	100
Dynamics at 500g	[Picks/min]	Min. 80	Max. 45
Weight	[kg]	15	16
Track speed	[m/s]	3	0.7
Max. acceleration	[m/s²]	60	2
Stroke -20mm for initiator	[mm]	200	315
Centre distance articulated rods	[mm]	450	550



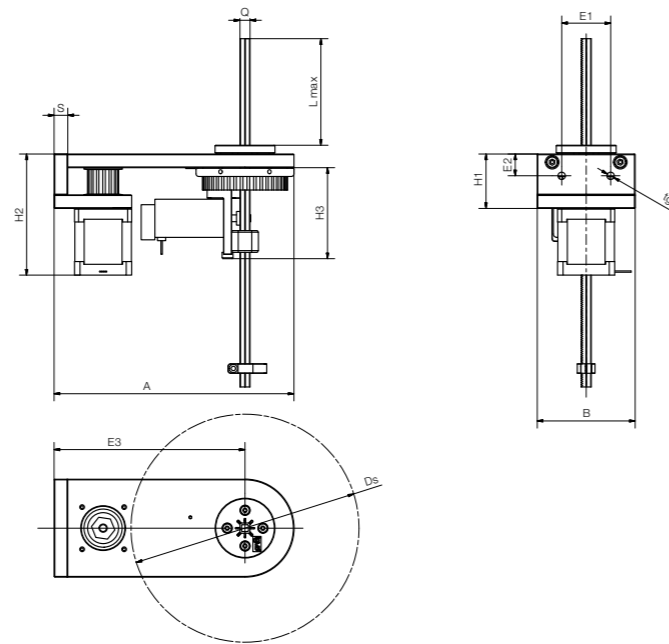
Notes



Compact, modular and lubrication-free



- Toothed, hard-anodised, corrosion-resistant square hollow section
- Combination with iglidur® J low friction element
- Modular design
- Drive: NEMA11 stepper motor



i Further motors upon request/suitable initiators available

Dimensions [mm]

Part No.	F	vL	vR	Lmax.	(Ds)	A	B	H1	(H2)	(H3)	E1	E2	E3	Q	tg	S
	[g]			±0.15	±0.15		±0.15		±0.3						h9	
HSQ-10-1440-...	300	0.5	0.4	200	168	177	72	40	89	67	36	16	140	7.5	5.3	10

🛒 Order example

HSQ-10-1440-A-xxx-17-L-11-L

(incl. stepper motor NEMA17/11 with stranded wire)

HSQ-10-1440-A-xxx-17-E-11-E

(incl. stepper motor NEMA17/11 with encoder)

Torque-resistant, controlled separately



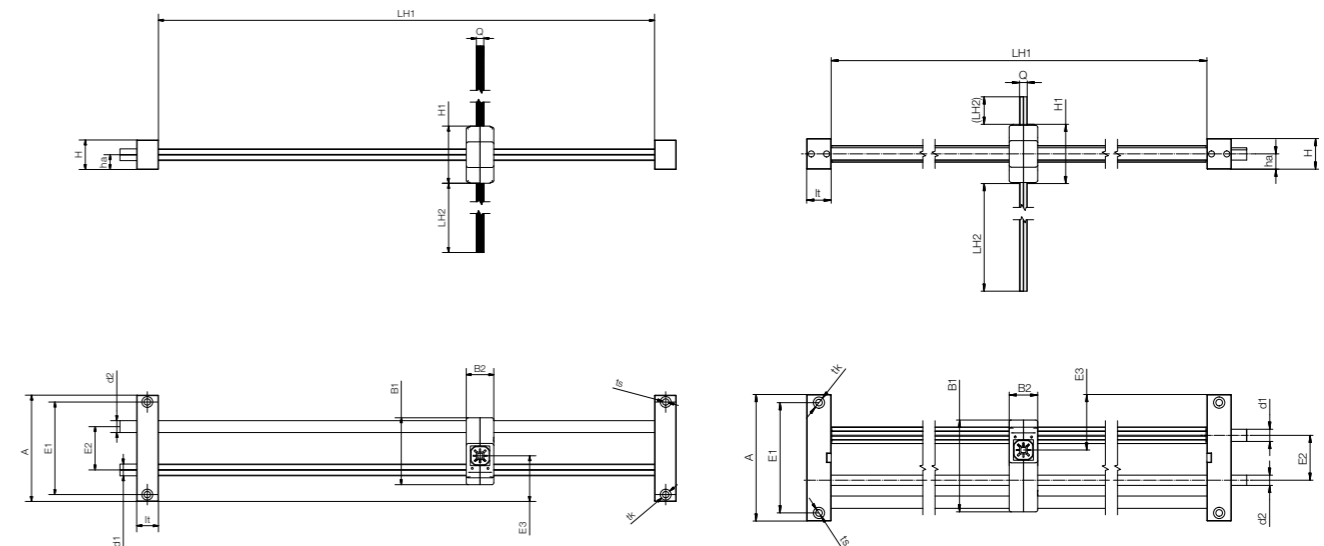
Torque-resistant, lubrication-free linear module. Low mass and compact in the working area.

One linear module with two directions of motion which can be controlled separately. This way, both drives are located outside the working area. This saves space and no unnecessary motor weight is moved. The linear guide is torque-resistant and thanks to the compact modular construction, high speeds can be reached with low power.

- Quiet and lightweight
- No electronics in the working area
- Compact structure
- Corrosion-resistant

Typical application areas:

- Medical technology
- Pick & place
- Gripper technology

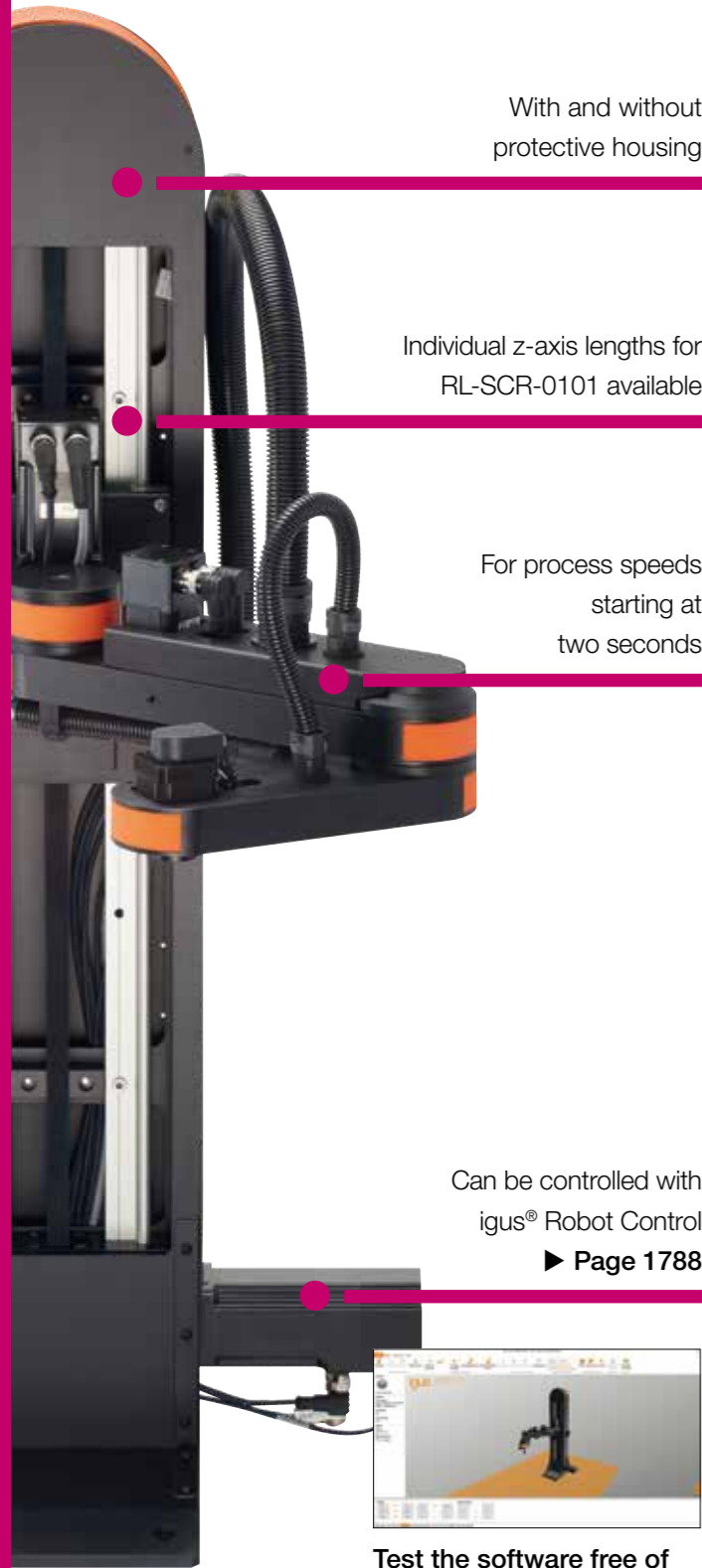


Dimensions [mm]

Part No.	Max. axial F	LH1	LH2	H	H1	ha	A	E1	E2
	[N]								
SLQ-1210-...	200	500	200	30	58	15	108	94	44
SLQ-121012-...	2	500	200	30	58	15	124	108	44

Part No.	E3	B1	B2	lt	d1	d2	ts	tk
SLQ-1210-...	46.5	68	28	22	12	12	6.6	-
SLQ-121012-...	30.0	90	28	22	12	10	6.6	11

Fast and flexible



With and without protective housing

Individual z-axis lengths for RL-SCR-0101 available

For process speeds starting at two seconds

Can be controlled with igus® Robot Control
▶ Page 1788



Test the software free of charge

Fast, flexible and configurable: SCARA robots

Our SCARA robots can be used individually and flexibly. The SCARA can be used for applications with precision requirements of 0.5mm with a load of up to 2kg. This type of robot is typically used at cycle times of > 30 picks/minute. The suitable igus® Robot Control software can be downloaded free of charge in advance and is available as a version with control system in the control cabinet or as a top-hat (DIN) rail version. Our SCARA robots consist largely of our tribologically optimised plastics and enable significant cost savings. They also ensure a long service life and require no maintenance.

- For process speeds starting at two seconds
- With and without protective housing
- Individual z-axis lengths for RL-SCR-0101 available
- Can be controlled with igus® Robot Control
▶ Page 1788



Available in 3-8 days

Detailed information about delivery time online.



Price breaks online

No minimum order value. No minimum order quantity

SCARA robot with three degrees of freedom



- Splash-proof thanks to protection class IP 44
- Tribologically optimised robot joints
- Joining links made of stainless steel
- Software available free of charge
- igus® Robot Control ▶ Page 1788



Test the software free of charge

Technical data

		3 DOF ¹⁶⁸⁾
Part No.		RL-SCR-0102 New
Payload	[N]	20
Reach	[mm]	560
Speed	[Picks/min]	30
Min. service life	[Cycles]	10 million
IP protection class		IP44 splash water
Weight	[kg]	4.8
Workspace	[mm]	560
Precision (repeatability)	[mm]	±0.5
Max. acceleration	[m/s ²]	1.5
Max. speed (TCP)	[m/s]	1.0
Ambient temperature	[°C]	0 to +50
Control system as a top-hat (DIN) rail version		RL-SCR-0102-48-0002-00-0
Control system as a switch cabinet version		RL-SCR-0102-48-0004-00-0



For more information, see the technical data sheet

▶ www.igus.eu/SCARA

Robot with four degrees of freedom



- Splash-proof thanks to protection class IP 45
- Tribologically optimised robot joints
- Joining links made of stainless steel
- Software available free of charge
- igus® Robot Control ► **Page 1788**



Test the software free of charge

Technical data

4 DOF ¹⁶⁸⁾		
Part No.		RL-SCR-0101 New
Payload	[N]	20
Reach	[mm]	560
Reach along the z-axis	[mm]	500, can be customised upon request
Speed	[Picks/min]	30
Min. service life	[Cycles]	10 million
IP protection class		IP45 splash water
Weight	[kg]	8.7
Workspace	[mm]	560 x 500
Precision (repeatability)	[mm]	±0.5
Max. acceleration	[m/s ²]	1.5
Max. speed (TCP)	[m/s]	1.0
Ambient temperature	[°C]	0 to +50
Control system as a top-hat (DIN) rail version		RL-SCR-0101-48-0002-00-0
Control system as a switch cabinet version		RL-SCR-0101-48-0004-00-0



For more information, see the technical data sheet

► www.igus.eu/SCARA

¹⁶⁸⁾ DOF: degree of freedom

SCARA robot with four degrees of freedom, with cladding



- Splash-proof thanks to protection class IP 45
- Tribologically optimised robot joints
- Joining links made of stainless steel
- Software available free of charge
- igus® Robot Control ► **Page 1788**



Test the software free of charge

Technical data

4 DOF ¹⁶⁸⁾		
Part No.		RL-SCR-0100 New
Payload	[N]	20
Reach	[mm]	560
Reach along the z-axis	[mm]	500
Speed	[Picks/min]	30
Min. service life	[Cycles]	10 million
IP protection class		IP45 splash water
Weight	[kg]	20.3
Workspace	[mm]	560 x 500
Precision (repeatability)	[mm]	±0.5
Max. acceleration	[m/s ²]	1.5
Max. speed (TCP)	[m/s]	1.0
Ambient temperature	[°C]	0 to +50
Control system as a top-hat (DIN) rail version		RL-SCR-0100-48-0002-00-0
Control system as a switch cabinet version		RL-SCR-0100-48-0004-00-0



For more information, see the technical data sheet

► www.igus.eu/SCARA

¹⁶⁸⁾ DOF: degree of freedom



Option A, control cabinet
Part No.
RL-IRC-SJ-003-48-02-00-0

First robotics control software by igus®

- Diverse automation tasks with simple programming software
- For single axes, linear, flat linear, room linear, and delta robots
- Easy software installation for Windows 10
- Use with a PC or tablet
- Seven digital inputs/outputs, CRI interface, ModbusTCP (gateway from CANopen) for connection to master control systems, e.g. Siemens or Beckhoff
- 1m cable length

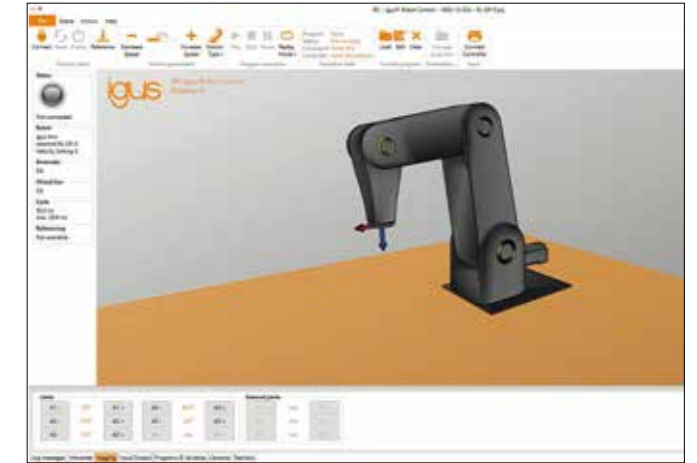
Other functions:

- Teach-in: handheld control functions for linear robot systems and delta robots
- Interfaces: ModBus, digital I/Os, Ethernet CRI, ROS, etc
- Communication: Ethernet or Wi-Fi
- Sample programs: over 100 sample programs for igus® linear robots, delta robots, articulated arm robots, Scara, etc.
- Motion sequences: circular movement, velocity commands, if-then-else, matrix calculation, etc.

- i** Option A/B
Control cabinet/top-hat (DIN) rail
Scope of delivery: top-hat (DIN) rail module support, top-hat (DIN) rail module stepper, top-hat (DIN) rail module digital IO, mounting brackets and cables (CAN, supply, motor connection, 24V power supply, etc.), igus® Robot Control software for Windows, documentation



Option B, top-hat (DIN) rail
Part No.
RL-IRC-SJ-003-48-01-00-0



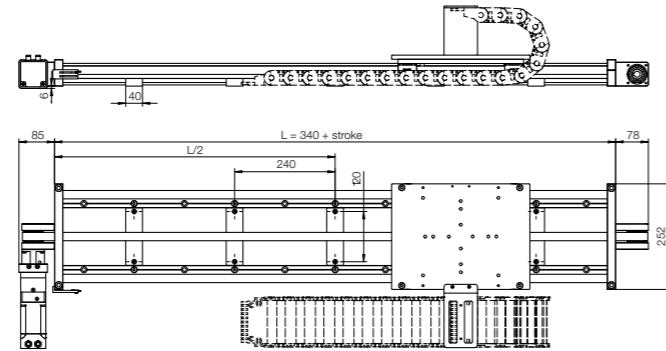
- 🛒 On request**
- ▶ www.igus.eu/linear-robots
 - ▶ www.igus.eu/DP
 - ▶ www.igus.eu/ReBel
 - ▶ www.igus.eu/robolink/scara-robots

- 🖱 Software download**
- ▶ www.igus.eu/irc-enquiry

Technical data

Protection class		IP30
Ambient temperature	[°C]	0 to +45
Length	[mm]	600
Width	[mm]	300
Height	[mm]	155
Logic voltage	[V/A]	24/5
Output voltage	[V DC]	48
Output current	[A]	10
Power	[W]	480
Signal indicators		LED status indicators on the modules
EC approval		EN 61000-6-2, EN 61000-6-3

Adapter kits: seventh axis for robots

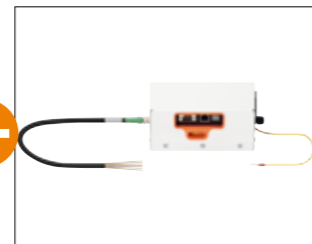


- Up to four times more workspace for robots
- Ready-to-install linear axis 7 in robotics
- Flexible stroke length of up to 3,000mm; longer stroke lengths available upon request
- Suitable adapter kits for robolink® RL-DP, Epson Scara T3 and T6; articulated arm VT6; Universal Robots UR3e, UR5e, UR10e, UR16e; and many more
- 7th axis: ZLW-20 ▶ Page 1416

Adapter kit for 7th axis

Part No.	Suitable for
ZLW-20200S-7TH-DCUR-01-1 New	Universal Robots UR3, UR5, UR10, robolink® DC
ZLW-20200S-7TH-DP-01-xxxx New	robolink® DP
ZLW-20200S-7TH-EPS-01-xxxx New	Epson T3, T6, VT6
ZLW-20200S-7TH-IO-01-xxxx New	ReBeL®

Complete system consisting of ZLW-20200 and adapter kit - Part No.: ZLW-20200S-7TH-DP-01-XXX.
There is a specific part number with the right adapter kit for the robot in question.



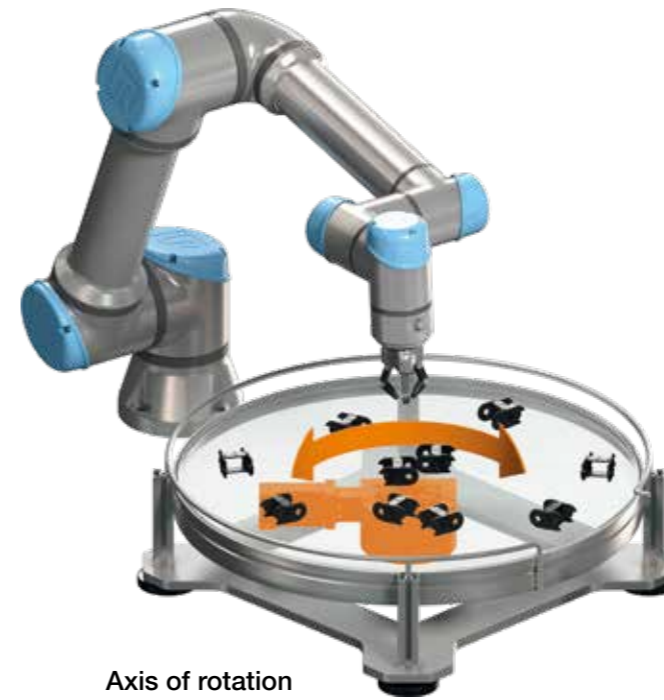
Adapter plates for Omron, Franka Emika, Doosan, Yuanda Robotics, igus® robots and much more. Please contact us.

Switch cabinet integration for 7th axis

i Adapter kit for UR3/UR5/UR7 is delivered in an unassembled condition. Energy chain not included in the scope of delivery. More information and ordering at: ▶ www.igus.eu/7th-axis

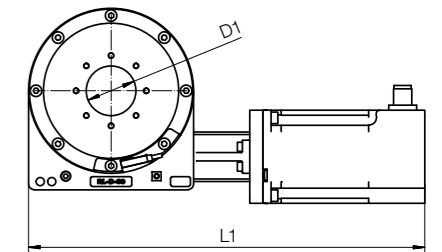
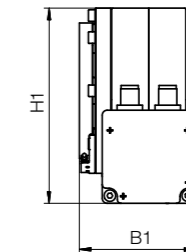
🚚 Delivery time from 4 weeks

Rotary axis for robots



Axis of rotation

- Allows circular workpiece movements and continuous transport to various stations in a single work step
- Consists of the following components: worm gear, installation size 50, 48:1, and NEMA23XL stepper motor with connector, encoder, and proximity switch
- Worm gears with robolink® RL-D-A0210 are also possible for UR



Rotary axis for robots [mm]

Part No.	Max. tightening torque [Nm]	Rated speed [1/min]	Rated torque [Nm]	Installation size	Motor type	Mechanical service life [Cycles]
RL-D-50-A0210 New	50	6	15	50	Stepper motor	Min. 1,000,000


Dimensions

Part No.	D1	B1	H1	L1
RL-D-50-A0210 New	50	6	15.0	50

Robot cells for all igus® robots



- Suitable for igus® articulated arm, SCARA delta, and linear robots
- Robot frame made of aluminium profiles
- One module, 50 robot types, and endless applications
- With emergency stop, start, and stop display and CE documentation
- The robot and control cabinet are installed by igus®
- Energy chains not included in the price

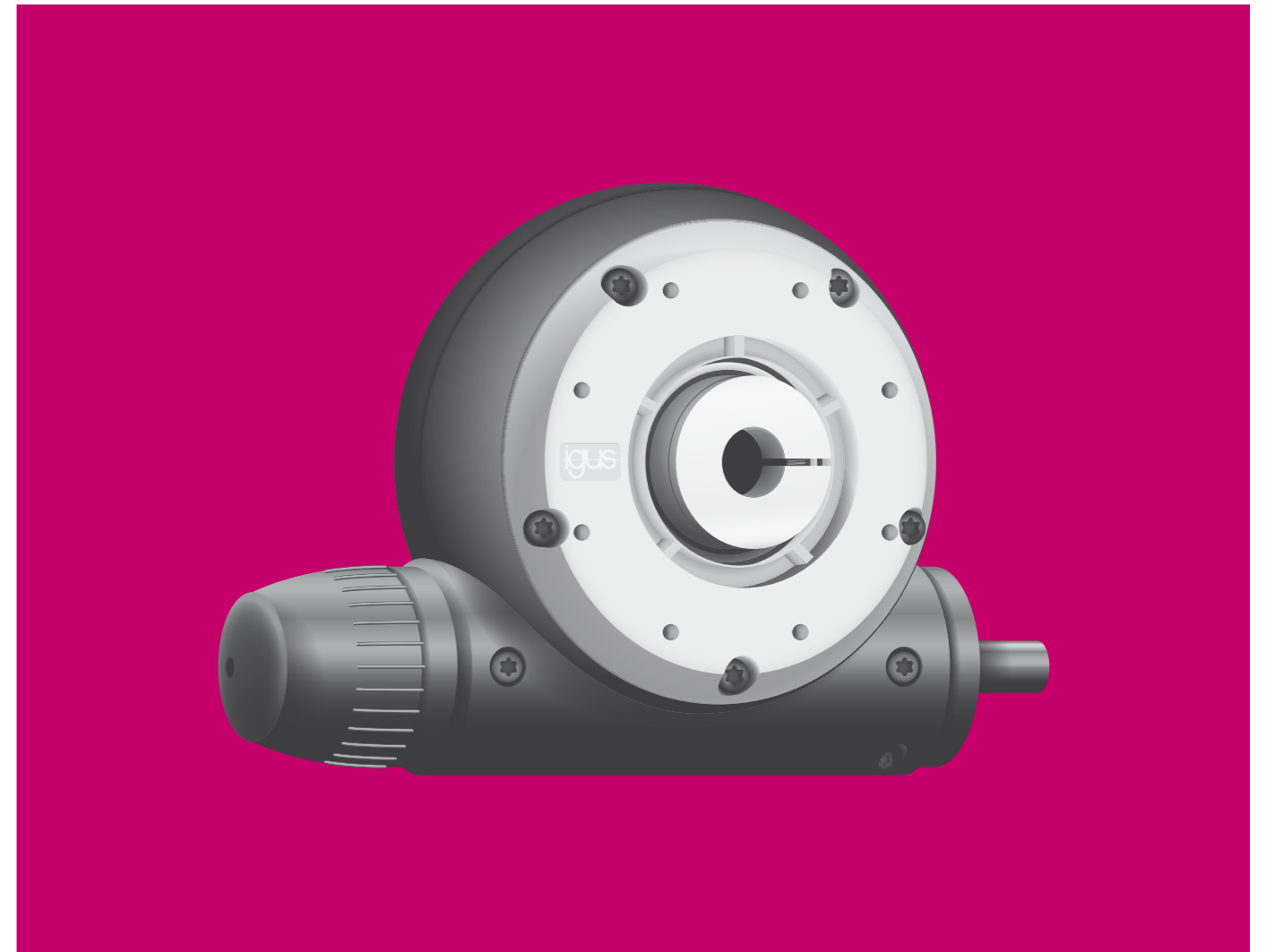
 For more information, see the technical data sheet
 ▶ www.igus.eu/lca-robocube

Technical data

Part No.	Length [mm]	Width [mm]	Height [mm]	Weight [kg]	EC guideline	Design
ROBOCUBE-0100 New	1,000	937.23	2,030	80	EMC guideline	With attachment openings
ROBOCUBE-0101 New	1,000	937.23	2,030	80	EMC guideline	With doors



Example image



Modular gearbox system

Worm gears

Planetary gearbox

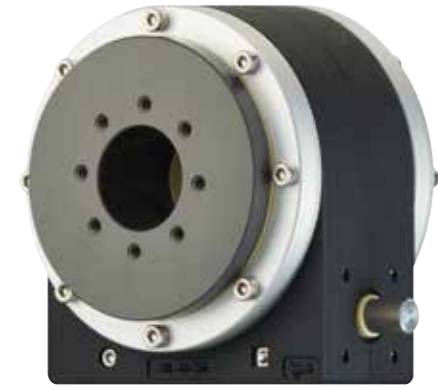
Cantilever axis

Strain wave gear



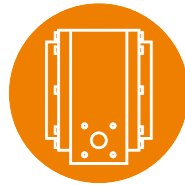
roboLink® D | Worm gears | Technical data

Worm gear with two PRT slewing rings, with plain bearings



Order key

Type	Options				
RL-D-20-101-38-01033					
roboLink®	Direct drive	Installation size	Design	Transmission ratio	Version



Lateral view



Gearbox technology

● Available with motor or hand wheel

Technical data

Part No.	Size (H x W x D)	Shaft Ø	Trans- mission	Axis distance	Backlash	Breakaway torque	Max. axial dyn. load on output
	[mm]	[mm]	[mm/rev]	[mm]	[°]	[cNm]	[N]
RL-D-20-101-38-01033	90 x 80 x 67	8	1:38	31	<0.5°	< 5	> 500
RL-D-20-101-70-01033	90 x 80 x 67	8	1:70	31	<0.5°	< 5	> 500
RL-D-30-101-5-01033	110 x 100 x 94	10	1:5	40	<0.5°	< 7	> 700
RL-D-30-101-50-01033	110 x 100 x 94	10	1:50	40	<0.5°	< 7	> 700
RL-D-30-101-70-01033	110 x 100 x 94	10	1:70	40	<0.5°	< 7	> 700
RL-D-50-101-48-01033	170 x 150 x 103	15	1:48	63	<0.5°	< 10	> 1,200
RL-D-50-101-70-01033	170 x 150 x 103	15	1:70	63	<0.5°	< 10	> 1,200

Part No.	Speed at max. load	Weight	Efficiency	Breaking moment (static)	Max. output dynamic torque 12rpm	
					Periodic use (<30%)	Continuous use
	[rpm]	[g]		[Nm]	[Nm]	[Nm]
RL-D-20-101-38-01033	20	610	0.45	30	7.5	5
RL-D-20-101-70-01033	20	610	0.35	20	3.8	2.5 (9rpm)
RL-D-30-101-5-01033	12	1,180	0.65	40	7.5	5
RL-D-30-101-50-01033	12	1,180	0.40	60	15.0	10
RL-D-30-101-70-01033	12	1,180	0.30	30	11.3	7.5 (6rpm)
RL-D-50-101-48-01033	8	3,050	0.40	180	37.5	25
RL-D-50-101-70-01033	8	3,050	0.30	140	30.0	20

Delivery time
2-3 days

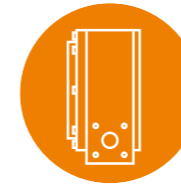
roboLink® D | Worm gears | Technical data

Worm gear with one PRT slewing rings, with plain bearings



Order key

Type	Options				
RL-D-20-102-38-01035					
roboLink®	Direct drive	Installation size	Design	Transmission ratio	Version



Lateral view



Gearbox technology

● Available with motor or hand wheel

Technical data

Part No.	Size (H x W x D)	Shaft Ø	Trans- mission	Axis distance	Backlash	Breakaway torque	Max. axial dyn. load on output
	[mm]	[mm]	[mm/rev]	[mm]	[°]	[cNm]	[N]
RL-D-20-102-38-01035	90 x 80 x 67	8	1:38	31	<0.5°	< 5	> 500
RL-D-20-102-70-01035	90 x 80 x 67	8	1:70	31	<0.5°	< 5	> 500
RL-D-30-102-5-01035	110 x 100 x 94	10	1:5	40	<0.5°	< 7	> 700
RL-D-30-102-50-01035	110 x 100 x 94	10	1:50	40	<0.5°	< 7	> 700
RL-D-30-102-70-01035	110 x 100 x 94	10	1:70	40	<0.5°	< 7	> 700
RL-D-50-102-48-01035	170 x 150 x 103	15	1:48	63	<0.5°	< 10	> 1,200
RL-D-50-102-70-01035	170 x 150 x 103	15	1:70	63	<0.5°	< 10	> 1,200

Part No.	Speed at max. load	Weight	Efficiency	Breaking moment (static)	Max. output dynamic torque 12rpm	
					Periodic use (<30%)	Continuous use
	[rpm]	[g]		[Nm]	[Nm]	[Nm]
RL-D-20-102-38-01035	20	470	0.45	30	7.5	5
RL-D-20-102-70-01035	20	470	0.35	20	3.8	2.5 (9rpm)
RL-D-30-102-5-01035	12	890	0.65	40	7.5	5
RL-D-30-102-50-01035	12	890	0.40	60	15.0	10
RL-D-30-102-70-01035	12	890	0.30	30	11.3	7.5 (6rpm)
RL-D-50-102-48-01035	8	2,300	0.40	180	37.5	25
RL-D-50-102-70-01035	8	2,300	0.30	140	30.0	20

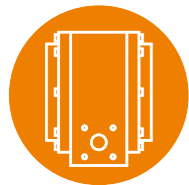
Delivery time
2-3 days



Type Options

RL-D-20-105-38-010BB

roboLink® Direct drive Installation size Design Transmission ratio Version



Lateral view



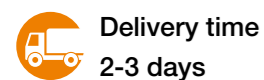
Gearbox technology

● Available with motor or hand wheel

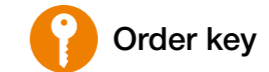
Technical data

Part No.	Size (H x W x D)	Shaft Ø	Transmission	Axis distance	Backlash	Breakaway torque	Max. axial dyn. load on output
	[mm]	[mm]	[mm/rev]	[mm]	[°]	[cNm]	[N]
RL-D-20-105-38-010BB	90 x 80 x 67	8	1:38	31	<0.5°	< 5	> 250
RL-D-20-105-70-010BB	90 x 80 x 67	8	1:70	31	<0.5°	< 5	> 250
RL-D-30-105-5-010BB	110 x 100 x 94	10	1:5	40	<0.5°	< 7	> 450
RL-D-30-105-50-010BB	110 x 100 x 94	10	1:50	40	<0.5°	< 7	> 450
RL-D-30-105-70-010BB	110 x 100 x 94	10	1:70	40	<0.5°	< 7	> 450
RL-D-50-105-48-010BB	170 x 150 x 103	15	1:48	63	<0.5°	< 10	> 1,000
RL-D-50-105-70-010BB	170 x 150 x 103	15	1:70	63	<0.5°	< 10	> 1,000

Part No.	Speed at max. load	Weight	Efficiency	Breaking moment (static)	Max. output dynamic torque 12rpm	
					Periodic use (<30%)	Continuous use
	[rpm]	[g]		[Nm]	[Nm]	[Nm]
RL-D-20-105-38-010BB	20	320	0.45	30	7.5	5
RL-D-20-105-70-010BB	20	320	0.35	20	3.8	2.5 (9rpm)
RL-D-30-105-5-010BB	12	620	0.65	40	7.5	5
RL-D-30-105-50-010BB	12	620	0.40	60	15.0	10
RL-D-30-105-70-010BB	12	620	0.30	30	11.3	7.5 (6rpm)
RL-D-50-105-48-010BB	8	2,730	0.40	180	37.5	25
RL-D-50-105-70-010BB	8	2,730	0.30	140	30.0	20



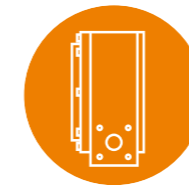
Delivery time 2-3 days



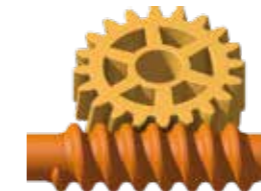
Type Options

RL-D-20-106-38-010B5

roboLink® Direct drive Installation size Design Transmission ratio Version



Lateral view



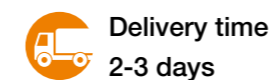
Gearbox technology

● Available with motor or hand wheel

Technical data

Part No.	Size (H x W x D)	Shaft Ø	Transmission	Axis distance	Backlash	Breakaway torque	Max. axial dyn. load on output
	[mm]	[mm]	[mm/rev]	[mm]	[°]	[cNm]	[N]
RL-D-20-106-38-010B5	90 x 80 x 67	8	1:38	31	<0.5°	< 5	> 250
RL-D-20-106-70-010B5	90 x 80 x 67	8	1:70	31	<0.5°	< 5	> 250
RL-D-30-106-5-010B5	110 x 100 x 94	10	1:5	40	<0.5°	< 7	> 450
RL-D-30-106-50-010B5	110 x 100 x 94	10	1:50	40	<0.5°	< 7	> 450
RL-D-30-106-70-010B5	110 x 100 x 94	10	1:70	40	<0.5°	< 7	> 450
RL-D-50-106-48-010B5	170 x 150 x 103	15	1:48	63	<0.5°	< 10	> 1,000
RL-D-50-106-70-010B5	170 x 150 x 103	15	1:70	63	<0.5°	< 10	> 1,000

Part No.	Speed at max. load	Weight	Efficiency	Breaking moment (static)	Max. output dynamic torque 12rpm	
					Periodic use (<30%)	Continuous use
	[rpm]	[g]		[Nm]	[Nm]	[Nm]
RL-D-20-106-38-010B5	20	280	0.45	30	7.5	5
RL-D-20-106-70-010B5	20	280	0.35	20	3.8	2.5 (9rpm)
RL-D-30-106-5-010B5	12	520	0.65	40	7.5	5
RL-D-30-106-50-010B5	12	520	0.40	60	15.0	10
RL-D-30-106-70-010B5	12	520	0.30	30	11.3	7.5 (6rpm)
RL-D-50-106-48-010B5	8	2,140	0.40	180	37.5	25
RL-D-50-106-70-010B5	8	2,140	0.30	140	30.0	20



Delivery time 2-3 days



RL-D-20-A0206



RL-D-30-A0207



RL-D-50-A0129

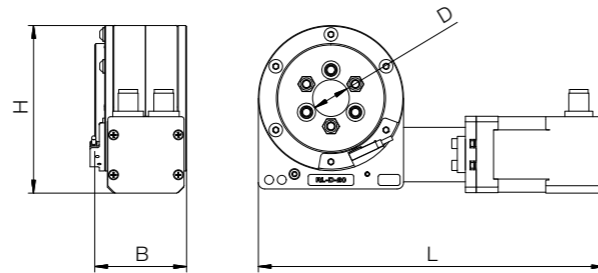


RL-D-30-A0171



Gearbox technology

- Adaptable to various motors, standard option: NEMA17 / 23 / 23XL stepper motor
- INI kit for zero position optionally adaptable
- Motor kits available online



Motor kit

Motor type	Distance over hubs [mm]	Versions
igus® stepper motor		
NEMA17, NEMA23, NEMA23XL	42, 56, 60	-00: with strand wires -01: with stepper motor without encoder -02: with motor encoder -NM: version without motor

Technical data

Joint	Installation size 20		Installation size 30		Installation size 50	
	RL-D-20-101-38-xxxxx		RL-D-30-101-50-xxxxx		RL-D-50-101-48-xxxxx	
Motor	+ NEMA17		+ NEMA17	+ NEMA23	+ NEMA23	+ NEMA23XL
Motor type	Stepper motor					
Weight (with standard joint)	[g]	890	1,140	1,860	2,540	2,970
Max. radial torque strength (short-term)	[Nm]	5	6	12	21	38
Max. radial torque strength (long-term)	[Nm]	4	5	8	18	33
Max. speed (at max. load)	[rpm]	5	4	4	4	4
Max. axial dynamic load (horizontal installation)	[N]	> 500	> 700	> 700	> 1,200	> 1,200

Delivery time
2-3 days



RL-D-20-A0202



RL-D-30-A0203



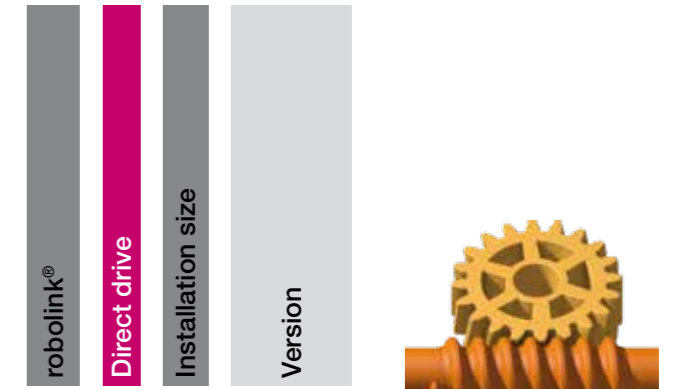
RL-D-50-A0204

- Assembly of robot joint, motor kit, INI kit
- Optionally with cables ► Page 1744 and motor control systems ► Page 1732
- Motor kits available online

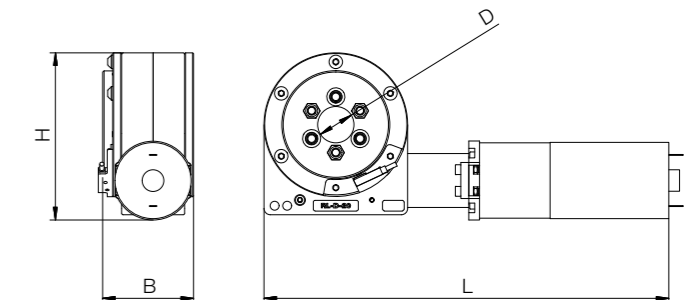
Order key

Type	Options
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RL-D-20-A0202



Gearbox technology



Technical data

	Weight	Max. output torque	Max. speed (at max. load)	Service life gearbox
	[kg]	[Nm]	[rpm]	
Installation size 20				
RL-D-20-A0202	1.06	7.0	6	Min. 1,000,000 cycles ¹⁶⁹⁾
Installation size 30				
RL-D-30-A0203	1.50	15.0	3	Min. 1,000,000 cycles ¹⁶⁹⁾
Installation size 50				
RL-D-50-A0204	4.80	37.5	3	Min. 1,000,000 cycles ¹⁶⁹⁾

¹⁶⁹⁾ At a rated torque of 2.5Nm and a rated speed of 30rpm

Dimensions [mm]

Part No.	D	B	L	H
Installation size 20				
RL-D-20-A0202	20	50.5	233.7	90.0
Installation size 30				
RL-D-30-A0203	30	63.5	253.7	110.0
Installation size 50				
RL-D-50-A0204	50	87.5	303.77	170.5

Delivery time
2-3 days



Joint



Joint with coupling



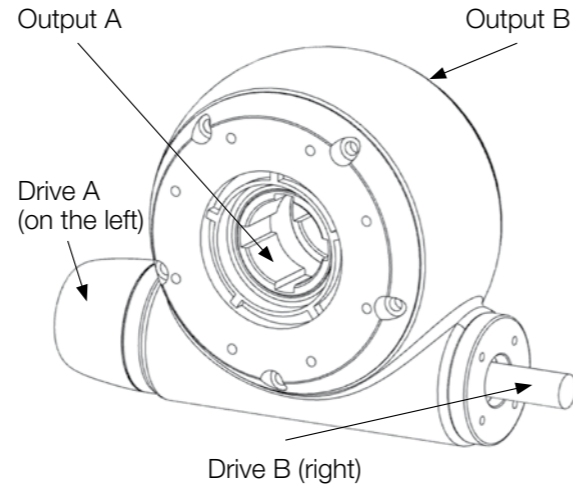
Joint with turntable



Joint with turntable on both sides



Gearbox technology



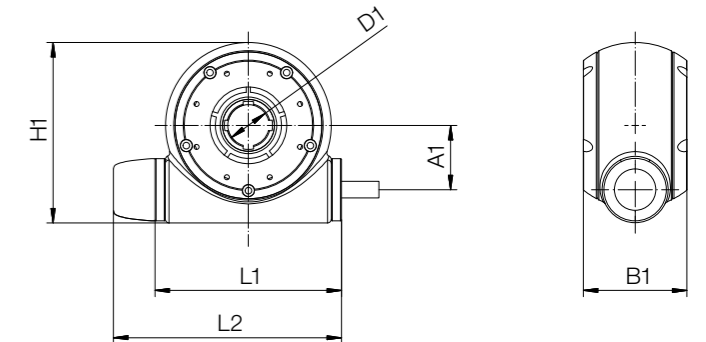
Technical data

Designation	Transmission	Self-locking	Max. speed [rpm]	Max. output torque [Nm]	Breaking moment [Nm]	F stat. axial [N]	Backlash [°]
Joint	4:1	-	160	2.5	20	250	< 0.5
	8:1	-	80	2.5	20	250	< 0.5
	32:1	-	20	2.5	20	250	< 0.5
	64:1	Yes	10	1.5	10	250	< 0.5

Apiro® iDeas

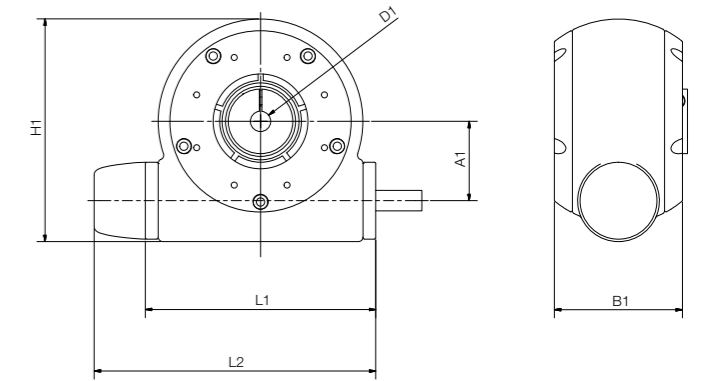


- Simply recreate ideas for automation systems
- With connection to dryspin®
- Select automation solution - download parts lists and CAD files
- ▶ igus.eu/apiro-ideas



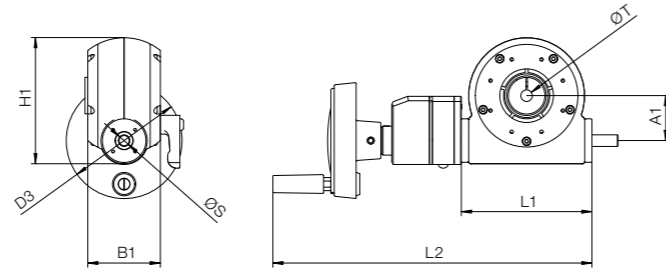
Technical data and dimensions [mm] - standard version

Part No.	Transmission	L1	L2	H1	B1	D1	D2 ØT	A1	Weight [g]
RL-A10.0105	4:1	90	110	87	50	8	20	31	230
RL-A10.0104	8:1	90	110	87	50	8	20	31	230
RL-A10.0106	32:1	90	110	87	50	8	20	31	230
RL-A10.0107	64:1	90	110	87	50	8	20	31	230



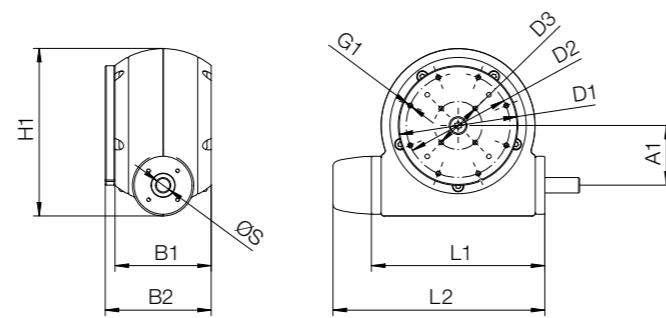
Technical data and dimensions [mm] - with coupling

Part No.	Transmission	L1	L2	H1	B1	D1	D2 ØT	A1	Weight [g]
RL-A10.0117	4:1	90	110	87	50	8	8	31	240
RL-A10.0200	8:1	90	110	87	50	8	8	31	240
RL-A10.0118	32:1	90	110	87	50	8	8	31	240
RL-A10.0119	64:1	90	110	87	50	8	8	31	240
RL-A10.0220	4:1	90	110	87	50	8	12	31	240
RL-A10.0207	8:1	90	110	87	50	8	12	31	240
RL-A10.0204	32:1	90	110	87	50	8	12	31	240
RL-A10.0203	64:1	90	110	87	50	8	12	31	240



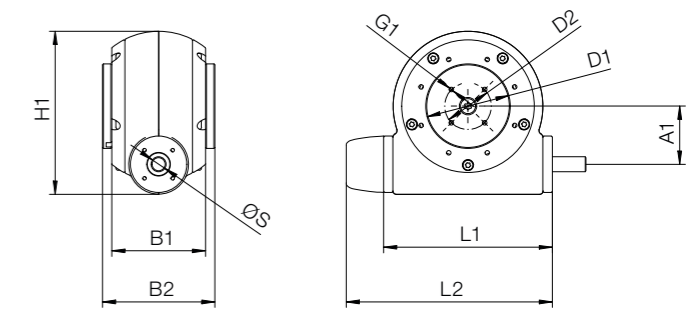
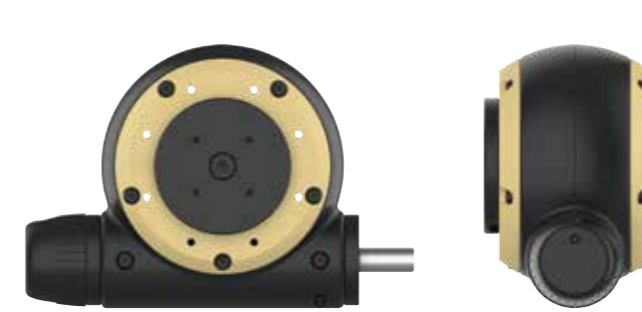
Technical data and dimensions [mm] - with coupling, manual clamp, position indicator and hand wheel

Part No.	Transmission	L1	L2	H1	B1	D1 ØS	D2 ØT	D3	A1	Weight [g]
RL-A10.0129 New	4:1	90	220	87	50	8	8	80	31	495
RL-A10.0208 New	8:1	90	220	87	50	8	8	80	31	495
RL-A10.0130 New	32:1	90	220	87	50	8	8	80	31	495
RL-A10.0131 New	64:1	90	220	87	50	8	8	80	31	495
RL-A10.0221 New	4:1	90	220	87	50	8	12	80	31	495
RL-A10.0222 New	8:1	90	220	87	50	8	12	80	31	495
RL-A10.0213 New	32:1	90	220	87	50	8	12	80	31	495
RL-A10.0219 New	64:1	90	220	87	50	8	12	80	31	495



Technical data and dimensions [mm] - with turntable

Part No.	Transmission	L1	L2	H1	B1	B2	D1	D2	D3	S Ø	A1	G1	Weight [g]
RL-A10.0138 New	4:1	90	110	87	50	55	62	54	25	8	31	M3x0.5	250
RL-A10.0170 New	8:1	90	110	87	50	55	62	54	25	8	31	M3x0.5	250
RL-A10.0114 New	32:1	90	110	87	50	55	62	54	25	8	31	M3x0.5	250
RL-A10.0139 New	64:1	90	110	87	50	55	62	54	25	8	31	M3x0.5	250



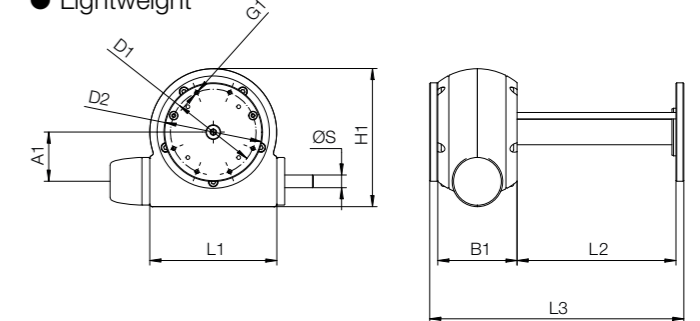
Technical data and dimensions [mm] - with turntable on both sides

Part No.	Transmission	L1	L2	H1	B1	B2	D1	D2	S Ø	A1	G1	Weight [g]
RL-A10.0209 New	4:1	90	110	87	50	55	45	25	8	31	M3x0.5	280
RL-A10.0206 New	8:1	90	110	87	50	55	45	25	8	31	M3x0.5	280
RL-A10.0210 New	32:1	90	110	87	50	55	45	25	8	31	M3x0.5	280
RL-A10.0211 New	64:1	90	110	87	50	55	45	25	8	31	M3x0.5	280

Apiro® lift/push drive



- Dry operation thanks to tribologically optimised plastics
- Adjustment can be motorised or manual
- Suitable for splash water applications
- Lightweight



Technical data and dimensions [mm]

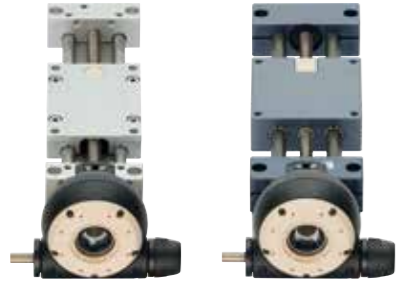
Part No.	load [N]	Feed rate [mm/rev]	Stroke [mm]	Speed [mm/s]	L1	L2	H1	B1	D1	D2	S Ø	A1	G1
RL-A18.0101.□ New	250	0.5	10-250	5	80	10-250	87	50	27	62	8	31	M3

Stroke freely configurable from 10-250mm

Connection to linear units



Apiro® worm gear with adapter plate



Direct connection to drylin® drive technology

An adapter allows Apiro® gearboxes can be mounted directly on the output journal of drylin® SHT and SLW linear modules. Thanks to this structure, drylin® systems can be synchronized and several Apiro® gearboxes connected in series.

The right adapter plate is also required for connecting a linear unit.

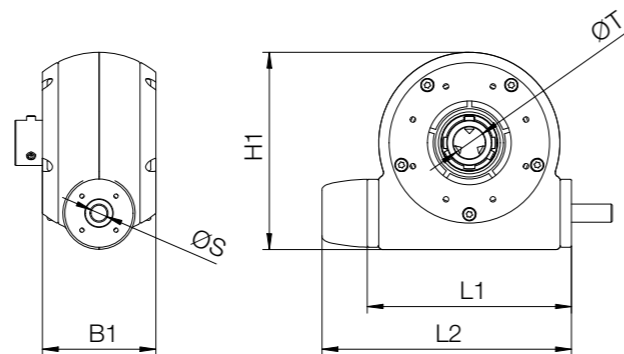
- Combination and synchronisation with the drylin® drive technology modular system
- Set-up instructions including parts list

An Apiro® worm gear with connection to drylin® is also needed.

► www.igus.eu/apiro-format-adjustment

Technical data - adapter plate

Part No.	Available options
RL-A54.0114 New	SHT-12 / SLW-10xx
RL-A54.0113 New	SLW-1660
RL-A54.0115 New	SHT-20
RL-A54.0117 New	SHT-BB-20 / SLW-BB-2080
RL-A54.0116 New	SHT-30
RL-A54.0118 New	SHT-BB-30 / SLW-BB-25120
RL-A54.0121 New	SLW-10xx (zinc shaft end support)



Technical data and dimensions [mm] - with connection to drylin®

Part No.	Transmission	L1	L2	H1	B1	D1	D2 ØT	A1	Weight [g]
RL-A10.0182 New	4:1	90	110	87	50	8	14	31	240
RL-A10.0183 New	8:1	90	110	87	50	8	14	31	240
RL-A10.0184 New	32:1	90	110	87	50	8	14	31	240
RL-A10.0185 New	64:1	90	110	87	50	8	14	31	240

Also available with a hand wheel and other accessories ► www.igus.eu/apiro-drylin

Connection to linear units



Direct connection to dryspin® lead screw technology

Lead screws with diameters of 10, 12, and 16mm can be connected directly to Apiro® gearboxes with the output journal. Depending on the thread pitch, the lead screw can be moved.

You will find the igus® lead screw shop online:

► igus.eu/apiro-format-adjustment

Technical data

Part No.	Transmission	Available options
RL-A10.0190 New	4:1	TR16x2
RL-A10.0191 New	32:1	TR16x2
RL-A10.0192 New	64:1	TR16x2
RL-A10.0193 New	4:1	DS10x25
RL-A10.0194 New	32:1	DS10x25
RL-A10.0195 New	64:1	DS10x25
RL-A10.0196 New	4:1	DS12x5
RL-A10.0197 New	32:1	DS12x5
RL-A10.0198 New	64:1	DS12x5

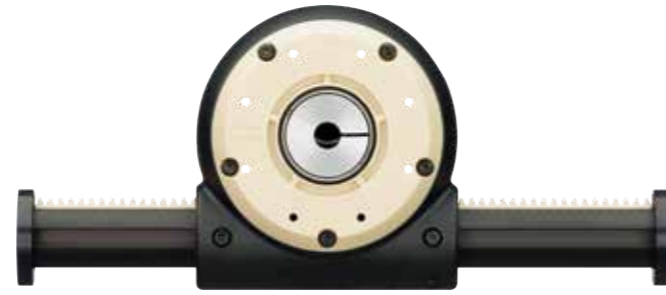


Synchronising drylin® linear axes with Apiro® worm gears allows automated format adjustment for the packaging and beverage industry

Rack gears



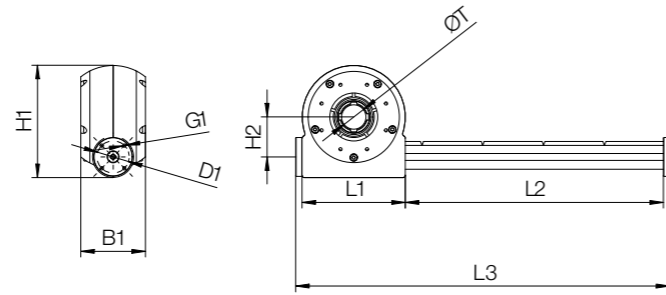
RL-A14.0107



RL-A14.0109

The rack gears allow different strokes in the application and include rack and pinion elements. They are configurable in different lengths - for pusher applications, for example. The version with coupling makes it easy to synchronise several rack and pinion gears.

- Motor drive or manual drive
- Modules can be connected in series or in parallel
- INI kit available for all options
- Application temperature: +5°C to +50°C



Order example
RL-A14.0107.3
 (rack gear, 60mm stroke)

Technical data

Part No.	Feed rate per rotation [mm]	Backlash [°]	Max. load [N]	Weight [g]
RL-A14.0107. <input type="checkbox"/> New	125.66	< 0.5	25	ab 330
RL-A14.0109. <input type="checkbox"/> New	125.66	< 0.5	25	ab 330
RL-A14.0114. <input type="checkbox"/> New	125.66	< 0.5	25	ab 330

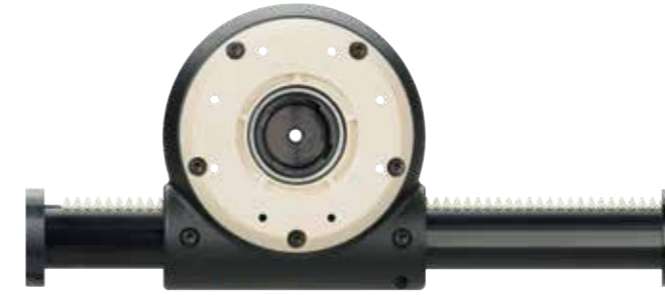
Dimensions [mm]

Part No.	T	L1	H1	H2	B1	D1	G1
RL-A14.0107. <input type="checkbox"/> New	20	80	87	31	50	25	M3
RL-A14.0109. <input type="checkbox"/> New	8	80	87	31	50	25	M3
RL-A14.0114. <input type="checkbox"/> New	12	80	87	31	50	25	M3

Part No. add-on <input type="checkbox"/>	L2 Stroke	L3 Total system length
... 3	60	150
... 4	110	200
... 5	155	245
... 6	200	290
... 7	250	340
... 8	295	385
... 9	345	435
... 10	390	480
... 11	440	530
... 12	485	575
... 13	530	620

Part No. add-on <input type="checkbox"/>	L2 Stroke	L3 Total system length
... 14	580	670
... 15	625	715
... 16	675	765
... 17	720	810
... 18	770	860
... 19	815	905
... 20	860	950
... 21	910	1000
... 22	955	1045
... 23	1005	1095
... 24	1,050	1140

Rack gears with integrated planetary gearbox



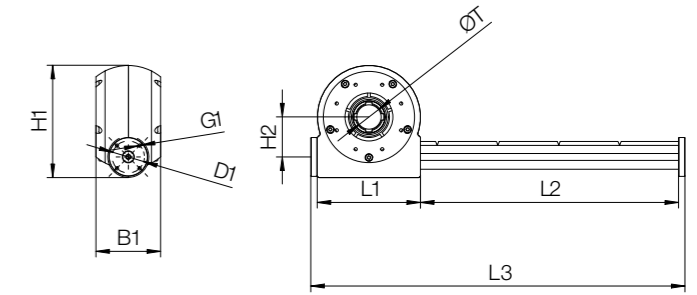
RL-A16.0102.XX



Gearbox technology

The Apiro® rack and pinion gear with integrated planetary gearbox allows direct connection of NEMA stepper motors or DC motors, creating a very compact unit.

- Lubrication and maintenance-free
- Greater forces possible with the same installation space
- High efficiency
- High positioning accuracy
- Transmission: 4:1



Technical data

Part No.	Profile diameter [mm]	Axis distance [mm]	Backlash [°]	Max. load [N]	Feed rate per rotation [mm]	Weight [g]
RL-A16.0102. <input type="checkbox"/> New	20	31	< 0.5	25	31.42	ab 280

Stroke lengths according to the additional table on the left

Dimensions [mm]

Part No.	L1	L2	L3	H1	H2	B1	D1	G1	T
RL-A16.0102. <input type="checkbox"/> New	80	60 - 1,050	150 - 1,140	87	31	50	25	M3	20

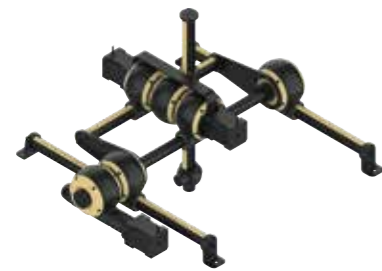
Delivery time
 2-3 days

One robot gear set for eight systems

Apiro® robot modular gearbox systems now available as a starter kit. Assemble your own robot - includes instructions.

- Lightweight due to igus® high-performance polymers
- Infinite combination options
- Individual kinematics can be implemented
- Easy assembly with the help of instructions
- Motor and magnet picker included in delivery, control system available upon request

 Part No. RL-A9.0200



Apiro® room linear robot



Apiro® flat linear robot



Apiro® mini articulated robot



Apiro® pusher



Apiro® 2-axis picker



Apiro® 3-axis picker



Apiro® 360° picker



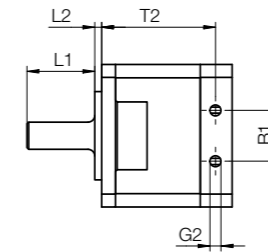
Apiro® SCARA

Example image

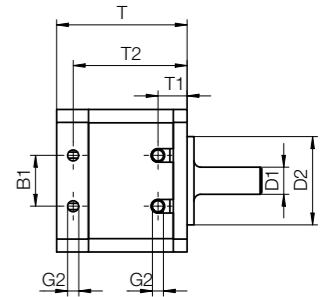
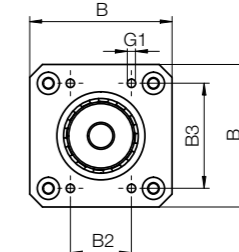
drygear® strain wave gear output shaft



Gearbox technology

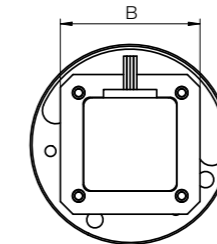
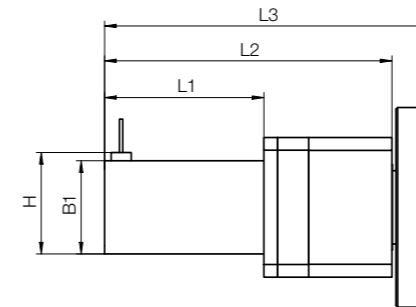


- Lightweight due to igus® high-performance polymers
- Extremely compact for integration into robotics
- All-round improved performance and running performance
- A direct output shaft enables the connection of various couplings such as shaft couplings, elastomer couplings, metal ball couplings

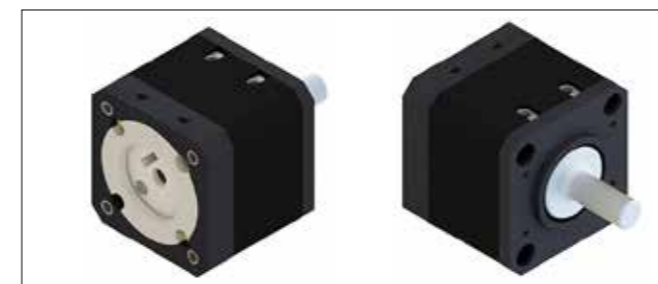


Dimensions [mm]

Part No.	B	B1	B2	B3	D1 Ø	D2 Ø	G1	G2	L1	T	T1	T2
RL-S-17-28-AA-02 New	42	15	18	31	8 h7	26 h7	M3x4	M4x4	20	38.5	8.6	33.6



Part No.	Design	B	B1	L1	L2	L3	H	Weight [g]
RL-S-17-28-AA-N11-00 New	With stranded wire	42.0	28.0	47.5	87.4	98.6	30.5	352
RL-S-17-28-AA-N11-01 New	With connector	42.0	-	67.5	107.4	118.6	41.0	375
RL-S-17-28-AA-N11-02 New	With stranded wire and encoder	42.0	28.0	57.5	97.4	108.6	30.5	361
RL-S-17-28-AA-N17-00 New	With stranded wire	42.0	-	49.0	83.4	94.6	46.0	553
RL-S-17-28-AA-N17-01 New	With connector	42.0	60.0	70.4	104.8	116.0	55.0	602
RL-S-17-28-AA-N17-02 New	With stranded wire and encoder	42.0	60.0	70.4	104.8	116.0	55.0	629
RL-S-17-28-AA-N17-03 New	With connector, encoder and brake	42.0	60.0	106.4	140.8	152.0	55.0	759



Optional couplings:

All drylin® E couplings for Ø8 shaft

Standard motor option:

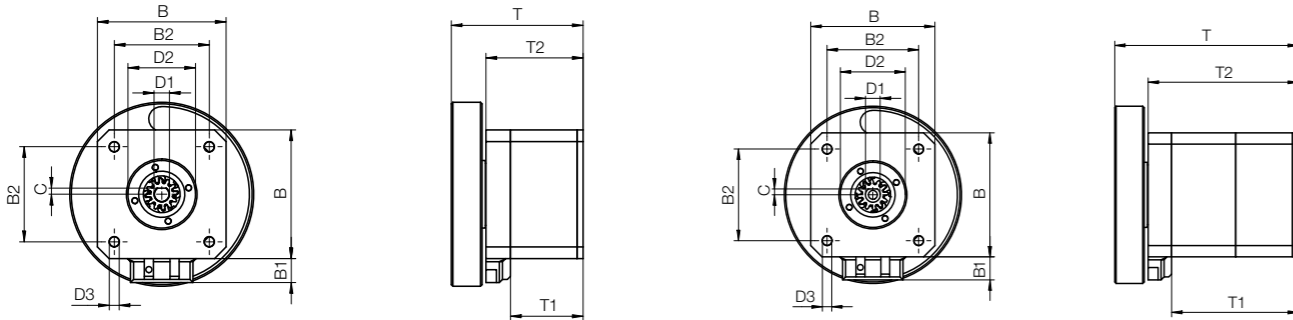
Stepper motor, DC motor, BLDC motor

 Delivery time
2-3 days

drygear® planetary gearbox RL-P



- Tribologically optimised high-performance polymers
- Flexible use of motors from the drylin® E product range
- Without lubrication for the planetary gears in the gearbox
- Lightweight construction (149.1g with a transmission of 4:1)



Gearbox technology

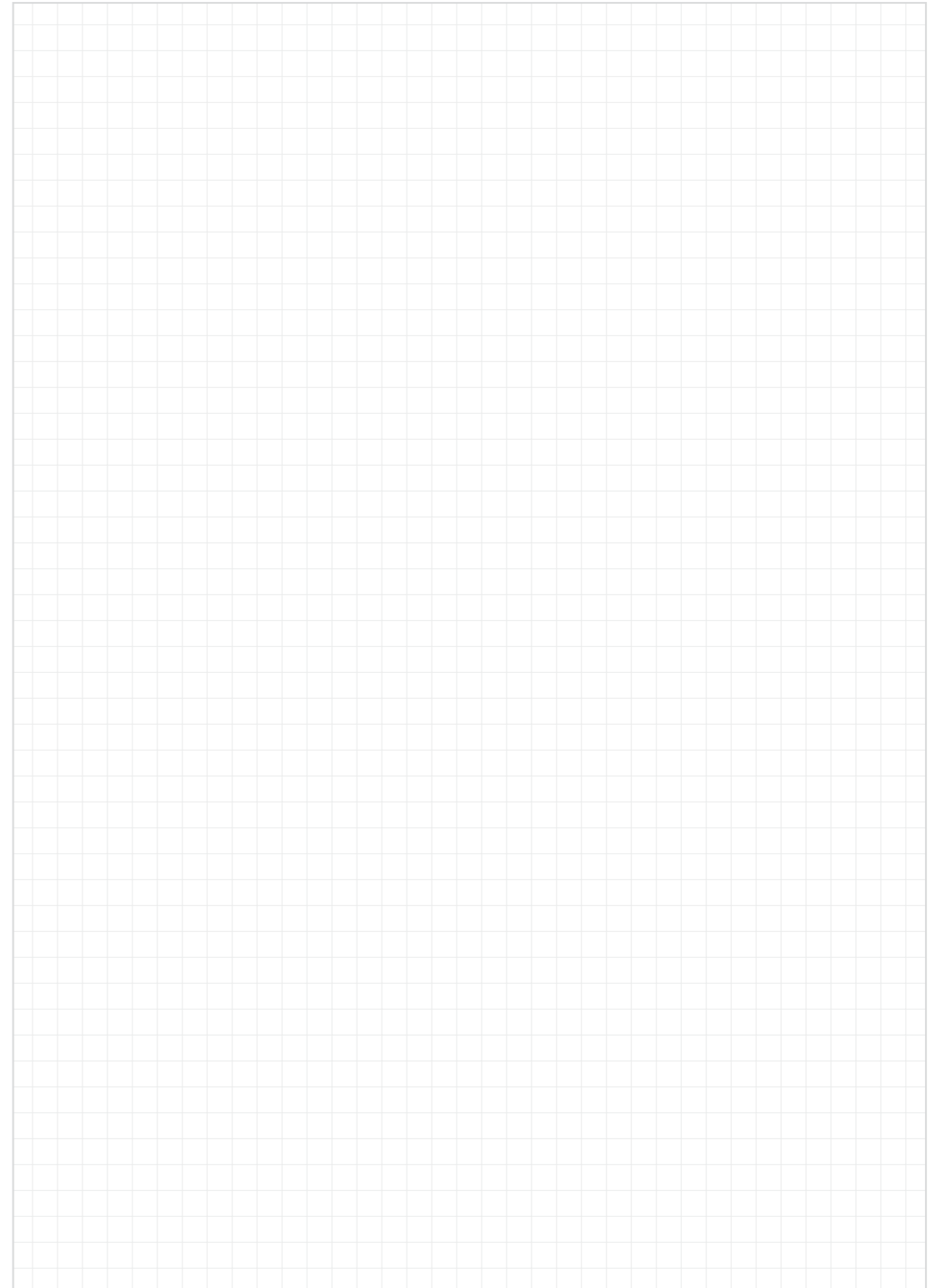
Technical data

Part No.	Number of gearbox stages	Max. drive speed [rpm]	Efficiency [%]	Backlash [°]	Mechanical service life [1/min]	Weight [g]
RL-P-17-4-AA New	1	>700	90	>7	1,000,000 cycles at 1Nm and 25rpm	149.1
RL-P-17-16-AA New	2	>700	80	>7	1,000,000 cycles at 3Nm and 25rpm	191.3

Dimensions [mm]

Part No.	B	B1	B2	D1	D2	D3	C	T	T1	T2
	∅	∅	∅	∅	∅	∅				
RL-P-17-4-AA New	42	7.8	31	5x24	22x2	3.2	2	43.0	23.7	31.7
RL-P-17-16-AA New	42	7.8	31	5x24	22x2	3.2	2	62.2	42.9	50.9

Notes

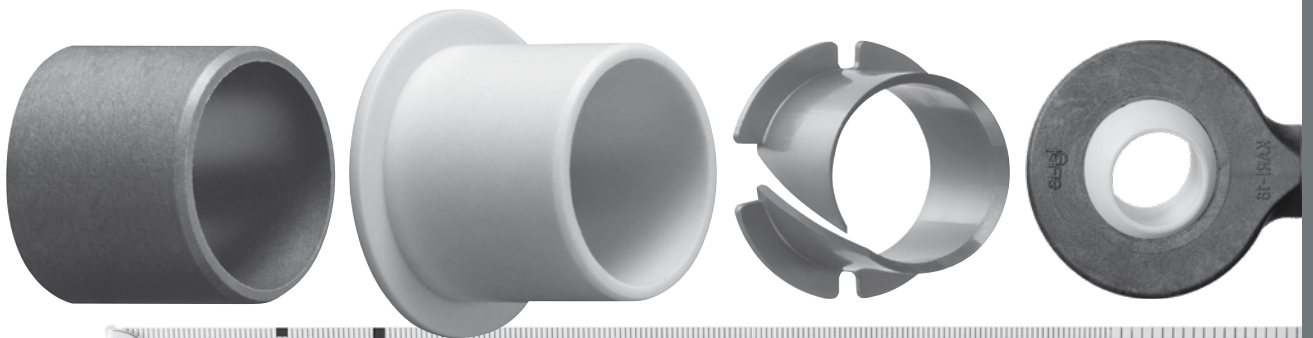


Delivery time
2-3 days

inch



Catalogue products in
imperial sizes



plastics

iglidur® plain bearings

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iglidur® A181, the universal bearing for food contact	► Page 1820
iglidur® A200, the "food-classic" for low duty	► Page 1821
iglidur® A350, the endurance runner at higher temperatures in the food sector	► Page 1822
iglidur® A500, the media and temperature specialist in the food sector	► Page 1823
iglidur® G, the classic all-rounder	► Page 1824
iglidur® H1, endurance runner with high media resistance	► Page 1826
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iglidur® P210, specialist for pivoting, rolling applications and more	► Page 1837
iglidur® Q, the peak of stability	► Page 1839
iglidur® Q2, the durable heavy-duty bearing	► Page 1839
iglidur® W300, the classic endurance runner up to 30MPa	► Page 1841
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iglidur® A181, the universal bearing for food contact	► Page 1847
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MYI, split bearings	► Page 1870
MYI-K, split bearings with anti-rotation feature	► Page 1870
JVSI, clearance-free, pre-loaded bearings	► Page 1871
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igubal® - spherical bearings

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REI, iglidur® R	► Page 1882
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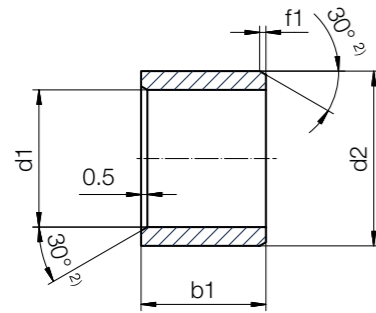
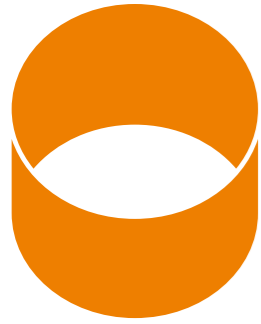
xiros® - polymer ball bearings

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drylin® R - shaft guides

Liners	
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TJUI-03, split adapters with floating bearings	► Page 1889

Sleeve bearings (form S)



Order key

Type Dimensions [inch]

S I -0203-03

iglidur® material	Form S
	Inch
	Inner Ø d1
	Outer Ø d2
	Length b1

Choose the suitable material and dimensions for your application

i Dimensions according to ISO 3547-1

²⁾ Thickness < 1mm: chamfer = 20°

Chamfer in relation to d1

d1 [inch]	f [inch]
Ø .040 - .236	.012
Ø .236 - .472	.019
Ø .472 - 1.18	.031
Ø > 1.18	.047

Dimensions [inch]

d1	d2	b1	Part No.
1/8	3/16	3/16	<input type="checkbox"/> SI-0203-03
3/16	1/4	1/4	<input type="checkbox"/> SI-0304-04
3/16	1/4	3/8	<input type="checkbox"/> SI-0304-06
1/4	5/16	3/8	<input type="checkbox"/> SI-0405-06
1/4	5/16	1/2	<input type="checkbox"/> SI-0405-08
5/16	3/8	1/4	<input type="checkbox"/> SI-0506-04
5/16	3/8	3/8	<input type="checkbox"/> SI-0506-06
5/16	3/8	1/2	<input type="checkbox"/> SI-0506-08
3/8	15/32	1/4	<input type="checkbox"/> SI-0607-04
3/8	15/32	3/8	<input type="checkbox"/> SI-0607-06
3/8	15/32	1/2	<input type="checkbox"/> SI-0607-08
3/8	15/32	5/8	<input type="checkbox"/> SI-0607-10
3/8	15/32	3/4	<input type="checkbox"/> SI-0607-12

d1	d2	b1	Part No.
7/16	17/32	1/2	<input type="checkbox"/> SI-0708-08
7/16	17/32	3/7	<input type="checkbox"/> SI-0708-12
1/2	19/32	1/4	<input type="checkbox"/> SI-0809-04
1/2	19/32	3/8	<input type="checkbox"/> SI-0809-06
1/2	19/32	1/2	<input type="checkbox"/> SI-0809-08
1/2	19/32	5/8	<input type="checkbox"/> SI-0809-10
1/2	19/32	3/4	<input type="checkbox"/> SI-0809-12
1/2	19/32	1	<input type="checkbox"/> SI-0809-16
9/16	21/32	1/2	<input type="checkbox"/> SI-0910-08
9/16	21/32	5/8	<input type="checkbox"/> SI-0910-10
9/16	21/32	3/4	<input type="checkbox"/> SI-0910-12
5/8	23/32	1/2	<input type="checkbox"/> SI-1011-08
5/8	23/32	3/4	<input type="checkbox"/> SI-1011-12

Absolute flexibility: all iglidur® standard sizes available from stock

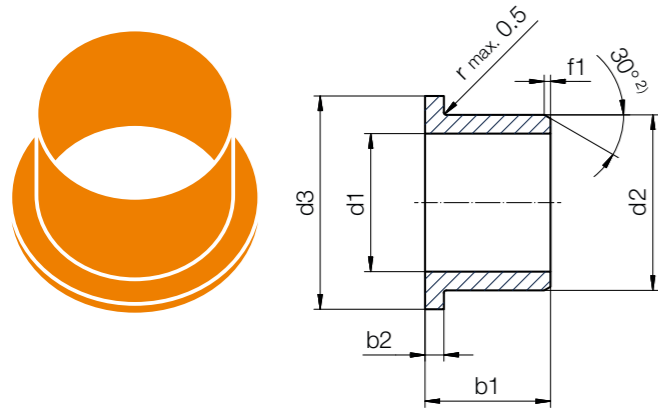
G	The classic all-rounder
P210	Specialist for pivoting, rolling applications and more
P	The cost-effective outdoor all-rounder
J	The versatile endurance runner
W(300)	The classic endurance runner up to 30MPa
J3	The new endurance runner: specialist for pivoting applications and pulsating loads
J350	Endurance runner with high dimensional stability at high temperature
X	The chemical and temperature specialist
Z	Long service life under extreme conditions
H1	Endurance runner with high media resistance
H370	Long service life under water
A181	The universal bearing for food contact
A350	The endurance runner at higher temperatures in the food sector
A500	The media and temperature specialist in the food sector
Q2	The durable heavy-duty bearing

Dimensions [inch]

d1	d2	b1	Part No.
5/8	23/32	1	<input type="checkbox"/> SI-1011-16
3/4	7/8	1/2	<input type="checkbox"/> SI-1214-08
3/4	7/8	3/4	<input type="checkbox"/> SI-1214-12
3/4	7/8	1	<input type="checkbox"/> SI-1214-16
7/8	1	1/2	<input type="checkbox"/> SI-1416-08
7/8	1	3/4	<input type="checkbox"/> SI-1416-12
7/8	1	1	<input type="checkbox"/> SI-1416-16
1	1 1/8	1/2	<input type="checkbox"/> SI-1618-08
1	1 1/8	3/4	<input type="checkbox"/> SI-1618-12
1	1 1/8	1	<input type="checkbox"/> SI-1618-16
1 1/8	1 9/32	3/4	<input type="checkbox"/> SI-1820-12
1 1/8	1 9/32	1	<input type="checkbox"/> SI-1820-16
1 1/8	1 9/32	1 1/4	<input type="checkbox"/> SI-1820-20

d1	d2	b1	Part No.
1 1/4	1 13/32	3/4	<input type="checkbox"/> SI-2022-12
1 1/4	1 13/32	1	<input type="checkbox"/> SI-2022-16
1 1/4	1 13/32	1 1/4	<input type="checkbox"/> SI-2022-20
1 1/2	1 21/32	1	<input type="checkbox"/> SI-2426-16
1 1/2	1 21/32	1 1/2	<input type="checkbox"/> SI-2426-24
1 5/8	1 25/32	1	<input type="checkbox"/> SI-2629-16
1 5/8	1 25/32	1 1/2	<input type="checkbox"/> SI-2629-24
1 3/4	1 15/16	1	<input type="checkbox"/> SI-2831-16
1 3/4	1 15/16	2	<input type="checkbox"/> SI-2831-32
1 7/8	2 1/16	1	<input type="checkbox"/> SI-3033-16
1 7/8	2 1/16	2	<input type="checkbox"/> SI-3033-32
2	2 3/16	1	<input type="checkbox"/> SI-3235-16
2	2 3/16	2	<input type="checkbox"/> SI-3235-32

Flange bearings (form F)



Order key

Type: **F** | Dimensions [inch]: **I -0203-03**

iglidur® material: **Form F**, **Inch**, **Inner Ø d1**, **Outer Ø d2**, **Length b1**

Choose the suitable material and dimensions for your application

Dimensions according to ISO 3547-1

2) Thickness < 1mm: chamfer = 20°

Chamfer in relation to d1

d1 [inch]	f [inch]
Ø .040 - .236	.012
Ø .236 - .472	.019
Ø .472 - 1.18	.031
Ø > 1.18	.047

Dimensions [inch]

d1	d2	b1	d3	b2 h13	Part No.
1/8	3/16	3/16	.312	.0320	FI-0203-03
3/16	1/4	1/4	.375	.0320	FI-0304-04
1/4	5/16	3/8	.430	.0320	FI-0405-06
1/4	5/16	1/2	.500	.0320	FI-0405-08
5/16	3/8	1/4	.500	.0320	FI-0506-04
5/16	3/8	3/8	.500	.0320	FI-0506-06
5/16	3/8	1/2	.500	.0320	FI-0506-08
3/8	15/32	1/4	.687	.0460	FI-0607-04
3/8	15/32	3/8	.687	.0460	FI-0607-06
3/8	15/32	1/2	.687	.0460	FI-0607-08
3/8	15/32	3/4	.687	.0460	FI-0607-12
7/16	17/32	1/2	.750	.0460	FI-0708-08
1/2	19/32	1/4	.875	.0460	FI-0809-04
1/2	19/32	3/8	.875	.0460	FI-0809-06
1/2	19/32	1/2	.875	.0460	FI-0809-08
1/2	19/32	3/4	.875	.0460	FI-0809-12
1/2	19/32	1	.875	.0460	FI-0809-16
5/8	23/32	1/2	.937	.0460	FI-1011-08

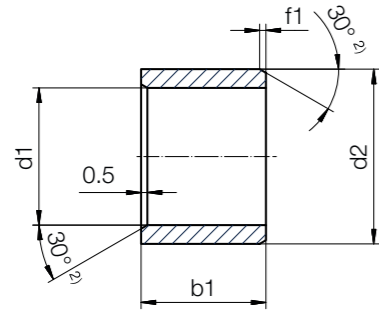
Absolute flexibility: all iglidur® standard sizes available from stock

G	The classic all-rounder
P210	Specialist for pivoting, rolling applications and more
P	The cost-effective outdoor all-rounder
J	The versatile endurance runner
W(300)	The classic endurance runner up to 30MPa
J3	The new endurance runner: specialist for pivoting applications and pulsating loads
J350	Endurance runner with high dimensional stability at high temperature
X	The chemical and temperature specialist
Z	Long service life under extreme conditions
H1	Endurance runner with high media resistance
H370	Long service life under water
A181	The universal bearing for food contact
A350	The endurance runner at higher temperatures in the food sector
A500	The media and temperature specialist in the food sector
Q2	The durable heavy-duty bearing

Dimensions [inch]

d1	d2	b1	d3	b2 h13	Part No.
5/8	23/32	3/4	.937	.0460	FI-1011-12
5/8	23/32	1	.937	.0460	FI-1011-16
3/4	7/8	1/2	1,125	.0620	FI-1214-08
3/4	7/8	3/4	1,125	.0620	FI-1214-12
3/4	7/8	1	1,125	.0620	FI-1214-16
7/8	1	1/2	1,250	.0620	FI-1416-08
7/8	1	3/4	1,250	.0620	FI-1416-12
7/8	1	1	1,250	.0620	FI-1416-16
1	1 1/8	1/2	1,375	.0620	FI-1618-08
1	1 1/8	3/4	1,375	.0620	FI-1618-12
1	1 1/8	1	1,375	.0620	FI-1618-16
1 1/4	1 13/32	1	1,687	.0780	FI-2022-16
1 1/4	1 13/32	1 1/4	1,687	.0780	FI-2022-20
1 1/2	1 21/32	1	2,000	.0780	FI-2426-16
1 1/2	1 21/32	1 1/2	2,000	.0780	FI-2426-24
1 3/4	1 15/16	2	2,375	.0930	FI-2831-32
2	2 3/16	2	2,625	.0930	FI-3235-32

Sleeve bearings (form S)



Chamfer in relation to d1

d1 [inch]	f [inch]
Ø 0.040 - 0.236	0.012
Ø 0.236 - 0.472	0.019
Ø 0.472 - 1.18	0.031
Ø > 1.18	0.047

Image exemplary

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d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1/8	3/16	3/16	.1269	.1251	.1878	.1873	.1243	.1236	A181SI-0203-03
3/16	1/4	1/4	.1892	.1873	.2503	.2497	.1865	.1858	A181SI-0304-04
3/16	1/4	3/8	.1892	.1873	.2503	.2497	.1865	.1858	A181SI-0304-06
1/4	5/16	3/8	.2521	.2498	.3128	.3122	.2490	.2481	A181SI-0405-06
1/4	5/16	1/2	.2521	.2498	.3128	.3122	.2490	.2481	A181SI-0405-08
5/16	3/8	1/4	.3148	.3125	.3753	.3747	.3115	.3106	A181SI-0506-04
5/16	3/8	3/8	.3148	.3125	.3753	.3747	.3115	.3106	A181SI-0506-06
5/16	3/8	1/2	.3148	.3125	.3753	.3747	.3115	.3106	A181SI-0506-08
3/8	15/32	1/4	.3773	.3750	.4691	.4684	.3740	.3731	A181SI-0607-04
3/8	15/32	3/8	.3773	.3750	.4691	.4684	.3740	.3731	A181SI-0607-06
3/8	15/32	1/2	.3773	.3750	.4691	.4684	.3740	.3731	A181SI-0607-08
3/8	15/32	5/8	.3773	.3750	.4691	.4684	.3740	.3731	A181SI-0607-10
3/8	15/32	3/4	.3773	.3750	.4691	.4684	.3740	.3731	A181SI-0607-12
7/16	17/32	1/2	.4406	.4379	.5316	.5309	.4365	.4355	A181SI-0708-08
7/16	17/32	3/4	.4406	.4379	.5316	.5309	.4365	.4355	A181SI-0708-12
1/2	19/32	1/4	.5030	.5003	.5941	.5934	.4990	.4980	A181SI-0809-04
1/2	19/32	3/8	.5030	.5003	.5941	.5934	.4990	.4980	A181SI-0809-06
1/2	19/32	1/2	.5030	.5003	.5941	.5934	.4990	.4980	A181SI-0809-08
1/2	19/32	5/8	.5030	.5003	.5941	.5934	.4990	.4980	A181SI-0809-10
1/2	19/32	3/4	.5030	.5003	.5941	.5934	.4990	.4980	A181SI-0809-12
1/2	19/32	1	.5030	.5003	.5941	.5934	.4990	.4980	A181SI-0809-16
9/16	21/32	1/2	.5655	.5627	.6566	.6559	.5615	.5605	A181SI-0910-08
9/16	21/32	5/8	.5655	.5627	.6566	.6559	.5615	.5605	A181SI-0910-10
9/16	21/32	3/4	.5655	.5627	.6566	.6559	.5615	.5605	A181SI-0910-12
5/8	23/32	1/2	.6280	.6253	.7192	.7184	.6240	.6230	A181SI-1011-08
5/8	23/32	3/4	.6280	.6253	.7192	.7184	.6240	.6230	A181SI-1011-12
5/8	23/32	1	.6280	.6253	.7192	.7184	.6240	.6230	A181SI-1011-16
3/4	7/8	1/2	.7541	.7505	.8755	.8747	.7491	.7479	A181SI-1214-08
3/4	7/8	3/4	.7541	.7505	.8755	.8747	.7491	.7479	A181SI-1214-12
3/4	7/8	1	.7541	.7505	.8755	.8747	.7491	.7479	A181SI-1214-16
7/8	1	1/2	.8791	.8757	1.0005	.9997	.8741	.8729	A181SI-1416-08

3) After press-fit. Testing methods ▶ Page 61

d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
7/8	1	3/4	.8791	.8757	1.0005	.9997	.8741	.8729	A181SI-1416-12
7/8	1	1	.8791	.8757	1.0005	.9997	.8741	.8729	A181SI-1416-16
1	1 1/8	1/2	1.0041	1.0007	1.1255	1.1247	.9991	.9979	A181SI-1618-08
1	1 1/8	3/4	1.0041	1.0007	1.1255	1.1247	.9991	.9979	A181SI-1618-12
1	1 1/8	1	1.0041	1.0007	1.1255	1.1247	.9991	.9979	A181SI-1618-16
1 1/8	1 9/32	3/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	A181SI-1820-12
1 1/8	1 9/32	1	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	A181SI-1820-16
1 1/8	1 9/32	1 1/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	A181SI-1820-20
1 1/4	1 13/32	3/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	A181SI-2022-12
1 1/4	1 13/32	1	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	A181SI-2022-16
1 1/4	1 13/32	1 1/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	A181SI-2022-20
1 1/2	1 21/32	1	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	A181SI-2426-16
1 1/2	1 21/32	1 1/2	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	A181SI-2426-24
1 5/8	1 25/32	1	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	A181SI-2629-16
1 5/8	1 25/32	1 1/2	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	A181SI-2629-24
1 3/4	1 15/16	1	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	A181SI-2831-16
1 3/4	1 15/16	2	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	A181SI-2831-32
1 7/8	2 1/16	1	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	A181SI-3033-16
1 7/8	2 1/16	2	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	A181SI-3033-32
2	2 3/16	1	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	A181SI-3235-16
2	2 3/16	2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	A181SI-3235-32

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d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1/8	1/4	1/4	.1280	.1262	.2515	.2510	.1250	.1241	ASI-0204-04
3/16	5/16	1/4	.1905	.1887	.3140	.3135	.1875	.1866	ASI-0305-04
1/4	3/8	1/4	.2539	.2516	.3765	.3760	.2500	.2491	ASI-0406-04
1/4	3/8	3/8	.2539	.2516	.3765	.3760	.2500	.2491	ASI-0406-06
1/4	3/8	1/2	.2539	.2516	.3765	.3760	.2500	.2491	ASI-0406-08
5/16	15/32	1/2	.3164	.3141	.4390	.4385	.3125	.3116	ASI-0507-08
3/8	1/2	1/4	.3789	.3766	.5015	.5010	.3750	.3741	ASI-0608-04
3/8	1/2	1/2	.3789	.3766	.5015	.5010	.3750	.3741	ASI-0608-08
1/2	5/8	1/2	.5047	.5020	.6260	.6250	.5000	.4990	ASI-0810-08
1/2	5/8	3/4	.5047	.5020	.6260	.6250	.5000	.4990	ASI-0810-12
5/8	13/16	5/16	.6297	.6270	.8135	.8125	.6250	.6240	ASI-1013-05
5/8	13/16	3/4	.6297	.6270	.8135	.8125	.6250	.6240	ASI-1013-12
3/4	1	3/4	.7559	.7525	1.0010	1.0000	.7500	.7490	ASI-1216-12
3/4	1	1	.7559	.7525	1.0010	1.0000	.7500	.7490	ASI-1216-16
7/8	1 1/8	1	.8809	.8775	1.1260	1.1250	.8750	.8740	ASI-1418-16
1	1 9/32	3/4	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	ASI-1620-12
1	1 9/32	1	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	ASI-1620-16
1 1/4	1 17/32	1	1.2600	1.2531	1.5005	1.4995	1.2500	1.249	ASI-2024-16
1 1/2	1 3/4	1 1/2	1.5100	1.5032	1.7505	1.7495	1.5000	1.499	ASI-2428-24

3) After press-fit. Testing methods ▶ Page 61

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d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1/8	3/16	3/16	.1266	.1247	.1878	.1873	.1243	.1236	A350SI-0203-03
3/16	1/4	1/4	.1888	.1869	.2503	.2497	.1865	.1858	A350SI-0304-04
3/16	1/4	3/8	.1888	.1869	.2503	.2497	.1865	.1858	A350SI-0304-06
1/4	5/16	3/8	.2518	.2495	.3128	.3122	.2490	.2481	A350SI-0405-06
1/4	5/16	1/2	.2518	.2495	.3128	.3122	.2490	.2481	A350SI-0405-08
5/16	3/8	1/4	.3143	.3120	.3753	.3747	.3115	.3106	A350SI-0506-04
5/16	3/8	3/8	.3143	.3120	.3753	.3747	.3115	.3106	A350SI-0506-06
5/16	3/8	1/2	.3143	.3120	.3753	.3747	.3115	.3106	A350SI-0506-08
3/8	15/32	1/4	.3768	.3745	.4691	.4684	.3740	.3731	A350SI-0607-04
3/8	15/32	3/8	.3768	.3745	.4691	.4684	.3740	.3731	A350SI-0607-06
3/8	15/32	1/2	.3768	.3745	.4691	.4684	.3740	.3731	A350SI-0607-08
3/8	15/32	5/8	.3768	.3745	.4691	.4684	.3740	.3731	A350SI-0607-10
3/8	15/32	3/4	.3768	.3745	.4691	.4684	.3740	.3731	A350SI-0607-12
7/16	17/32	1/2	.4399	.4371	.5316	.5309	.4365	.4355	A350SI-0708-08
7/16	17/32	3/4	.4399	.4371	.5316	.5309	.4365	.4355	A350SI-0708-12
1/2	19/32	1/4	.5024	.4996	.5941	.5934	.4990	.4980	A350SI-0809-04
1/2	19/32	3/8	.5024	.4996	.5941	.5934	.4990	.4980	A350SI-0809-06
1/2	19/32	1/2	.5024	.4996	.5941	.5934	.4990	.4980	A350SI-0809-08
1/2	19/32	5/8	.5024	.4996	.5941	.5934	.4990	.4980	A350SI-0809-10
1/2	19/32	3/4	.5024	.4996	.5941	.5934	.4990	.4980	A350SI-0809-12
1/2	19/32	1	.5024	.4996	.5941	.5934	.4990	.4980	A350SI-0809-16
9/16	21/32	1/2	.5649	.5620	.6566	.6559	.5615	.5605	A350SI-0910-08
9/16	21/32	5/8	.5649	.5620	.6566	.6559	.5615	.5605	A350SI-0910-10
9/16	21/32	3/4	.5649	.5620	.6566	.6559	.5615	.5605	A350SI-0910-12
5/8	23/32	1/2	.6274	.6246	.7192	.7184	.6240	.6230	A350SI-1011-08
5/8	23/32	3/4	.6274	.6246	.7192	.7184	.6240	.6230	A350SI-1011-12
5/8	23/32	1	.6274	.6246	.7192	.7184	.6240	.6230	A350SI-1011-16
3/4	7/8	1/2	.7532	.7499	.8755	.8747	.7491	.7479	A350SI-1214-08
3/4	7/8	3/4	.7532	.7499	.8755	.8747	.7491	.7479	A350SI-1214-12
3/4	7/8	1	.7532	.7499	.8755	.8747	.7491	.7479	A350SI-1214-16
7/8	1	1/2	.8782	.8749	1.0005	.9997	.8741	.8729	A350SI-1416-08
7/8	1	3/4	.8782	.8749	1.0005	.9997	.8741	.8729	A350SI-1416-12
7/8	1	1	.8782	.8749	1.0005	.9997	.8741	.8729	A350SI-1416-16
1	1 1/8	1/2	1.0032	.9999	1.1255	1.1247	.9991	.9979	A350SI-1618-08
1	1 1/8	3/4	1.0032	.9999	1.1255	1.1247	.9991	.9979	A350SI-1618-12
1	1 1/8	1	1.0032	.9999	1.1255	1.1247	.9991	.9979	A350SI-1618-16
1 1/8	1 9/32	3/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	A350SI-1820-12
1 1/8	1 9/32	1	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	A350SI-1820-16
1 1/8	1 9/32	1 1/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	A350SI-1820-20
1 1/4	1 13/32	3/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	A350SI-2022-12
1 1/4	1 13/32	1	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	A350SI-2022-16
1 1/4	1 13/32	1 1/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	A350SI-2022-20
1 1/2	1 21/32	1	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	A350SI-2426-16
1 1/2	1 21/32	1 1/2	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	A350SI-2426-24

3) After press-fit. Testing methods ▶ Page 61

d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1 5/8	1 25/32	1	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	A350SI-2629-16
1 5/8	1 25/32	1 1/2	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	A350SI-2629-24
1 3/4	1 15/16	1	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	A350SI-2831-16
1 3/4	1 15/16	2	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	A350SI-2831-32
1 7/8	2 1/16	1	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	A350SI-3033-16
1 7/8	2 1/16	2	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	A350SI-3033-32
2	2 3/16	1	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	A350SI-3235-16
2	2 3/16	2	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	A350SI-3235-32

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d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1/8	3/16	3/16	.1266	.1247	.1878	.1873	.1243	.1236	A500SI-0203-03
3/16	1/4	1/4	.1888	.1869	.2503	.2497	.1865	.1858	A500SI-0304-04
3/16	1/4	3/8	.1888	.1869	.2503	.2497	.1865	.1858	A500SI-0304-06
1/4	5/16	3/8	.2518	.2495	.3128	.3122	.2490	.2481	A500SI-0405-06
1/4	5/16	1/2	.2518	.2495	.3128	.3122	.2490	.2481	A500SI-0405-08
5/16	3/8	1/4	.3143	.3120	.3753	.3747	.3115	.3106	A500SI-0506-04
5/16	3/8	3/8	.3143	.3120	.3753	.3747	.3115	.3106	A500SI-0506-06
5/16	3/8	1/2	.3143	.3120	.3753	.3747	.3115	.3106	A500SI-0506-08
3/8	15/32	1/4	.3768	.3745	.4691	.4684	.3740	.3731	A500SI-0607-04
3/8	15/32	3/8	.3768	.3745	.4691	.4684	.3740	.3731	A500SI-0607-06
3/8	15/32	1/2	.3768	.3745	.4691	.4684	.3740	.3731	A500SI-0607-08
3/8	15/32	5/8	.3768	.3745	.4691	.4684	.3740	.3731	A500SI-0607-10
3/8	15/32	3/4	.3768	.3745	.4691	.4684	.3740	.3731	A500SI-0607-12
7/16	17/32	1/2	.4399	.4371	.5316	.5309	.4365	.4355	A500SI-0708-08
7/16	17/32	3/4	.4399	.4371	.5316	.5309	.4365	.4355	A500SI-0708-12
1/2	19/32	1/4	.5024	.4996	.5941	.5934	.4990	.4980	A500SI-0809-04
1/2	19/32	3/8	.5024	.4996	.5941	.5934	.4990	.4980	A500SI-0809-06
1/2	19/32	1/2	.5024	.4996	.5941	.5934	.4990	.4980	A500SI-0809-08
1/2	19/32	5/8	.5024	.4996	.5941	.5934	.4990	.4980	A500SI-0809-10
1/2	19/32	3/4	.5024	.4996	.5941	.5934	.4990	.4980	A500SI-0809-12
1/2	19/32	1	.5024	.4996	.5941	.5934	.4990	.4980	A500SI-0809-16
9/16	21/32	1/2	.5649	.5620	.6566	.6559	.5615	.5605	A500SI-0910-08
9/16	21/32	5/8	.5649	.5620	.6566	.6559	.5615	.5605	A500SI-0910-10
9/16	21/32	3/4	.5649	.5620	.6566	.6559	.5615	.5605	A500SI-0910-12
5/8	23/32	1/2	.6274	.6246	.7192	.7184	.6240	.6230	A500SI-1011-08
5/8	23/32	3/4	.6274	.6246	.7192	.7184	.6240	.6230	A500SI-1011-12
5/8	23/32	1	.6274	.6246	.7192	.7184	.6240	.6230	A500SI-1011-16
3/4	7/8	1/2	.7532	.7499	.8755	.8747	.7491	.7479	A500SI-1214-08
3/4	7/8	3/4	.7532	.7499	.8755	.8747	.7491	.7479	A500SI-1214-12
3/4	7/8	1	.7532	.7499	.8755	.8747	.7491	.7479	A500SI-1214-16
7/8	1	1/2	.8782	.8749	1.0005	.9997	.8741	.8729	A500SI-1416-08
7/8	1	3/4	.8782	.8749	1.0005	.9997	.8741	.8729	A500SI-1416-12
7/8	1	1	.8782	.8749	1.0005	.9997	.8741	.8729	A500SI-1416-16
1	1 1/8	1/2	1.0032	.9999	1.1255	1.1247	.9991	.9979	A500SI-1618-08
1	1 1/8	3/4	1.0032	.9999	1.1255	1.1247	.9991	.9979	A500SI-1618-12
1	1 1/8	1	1.0032	.9999	1.1255	1.1247	.9991	.9979	A500SI-1618-16
1 1/8	1 9/32	3/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	A500SI-1820-12
1 1/8	1 9/32	1	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	A500SI-1820-16
1 1/8	1 9/32	1 1/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	A500SI-1820-20
1 1/4	1 13/32	3/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	A500SI-2022-12
1 1/4	1 13/32	1	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	A500SI-2022-16
1 1/4	1 13/32	1 1/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	A500SI-2022-20
1 1/2	1 21/32	1	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	A500SI-2426-16
1 1/2	1 21/32	1 1/2	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	A500SI-2426-24

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d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1	1 1/8	1/2	1.0032	.9999	1.1255	1.1247	.9991	.9979	A500SI-1618-08
1	1 1/8	3/4	1.0032	.9999	1.1255	1.1247	.9991	.9979	A500SI-1618-12
1	1 1/8	1	1.0032	.9999	1.1255	1.1247	.9991	.9979	A500SI-1618-16
1 1/8	1 9/32	3/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	A500SI-1820-12
1 1/8	1 9/32	1	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	A500SI-1820-16
1 1/8	1 9/32	1 1/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	A500SI-1820-20
1 1/4	1 13/32	3/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	A500SI-2022-12
1 1/4	1 13/32	1	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	A500SI-2022-16
1 1/4	1 13/32	1 1/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	A500SI-2022-20
1 1/2	1 21/32	1	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	A500SI-2426-16
1 1/2	1 21/32	1 1/2	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	A500SI-2426-24
1 5/8	1 25/32	1	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	A500SI-2629-16
1 5/8	1 25/32	1 1/2	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	A500SI-2629-24
1 3/4	1 15/16	1	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	A500SI-2831-16
1 3/4	1 15/16	2	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	A500SI-2831-32
1 7/8	2 1/16	1	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	A500SI-3033-16
1 7/8	2 1/16	2	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	A500SI-3033-32
2	2 3/16	1	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	A500SI-3235-16
2	2 3/16	2	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	A500SI-3235-32

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d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1/8	3/16	3/16	.1269	.1251	.1878	.1873	.1243	.1236	GSI-0203-03
1/8	3/16	1/4	.1269	.1251	.1878	.1873	.1243	.1236	GSI-0203-04
1/8	3/16	3/8	.1269	.1251	.1878	.1873	.1243	.1236	GSI-0203-06
3/16	1/4	1/4	.1892	.1873	.2503	.2497	.1865	.1858	GSI-0304-04
3/16	1/4	3/8	.1892	.1873	.2503	.2497	.1865	.1858	GSI-0304-06
3/16	1/4	1/2	.1892	.1873	.2503	.2497	.1865	.1858	GSI-0304-08
1/4	5/16	1/4	.2521	.2498	.3128	.3122	.2490	.2481	GSI-0405-04
1/4	5/16	5/16	.2521	.2498	.3128	.3122	.2490	.2481	GSI-0405-05
1/4	5/16	3/8	.2521	.2498	.3128	.3122	.2490	.2481	GSI-0405-06
1/4	5/16	1/2	.2521	.2498	.3128	.3122	.2490	.2481	GSI-0405-08
1/4	5/16	5/8	.2521	.2498	.3128	.3122	.2490	.2481	GSI-0405-10
1/4	5/16	3/4	.2521	.2498	.3128	.3122	.2490	.2481	GSI-0405-12
5/16	3/8	1/4	.3148	.3125	.3753	.3747	.3115	.3106	GSI-0506-04
5/16	3/8	3/8	.3148	.3125	.3753	.3747	.3115	.3106	GSI-0506-06
5/16	3/8	1/2	.3148	.3125	.3753	.3747	.3115	.3106	GSI-0506-08
5/16	3/8	3/4	.3148	.3125	.3753	.3747	.3115	.3106	GSI-0506-12
3/8	15/32	1/4	.3773	.3750	.4691	.4684	.3740	.3731	GSI-0607-04
3/8	15/32	3/8	.3773	.3750	.4691	.4684	.3740	.3731	GSI-0607-06
3/8	15/32	1/2	.3773	.3750	.4691	.4684	.3740	.3731	GSI-0607-08
3/8	15/32	5/8	.3773	.3750	.4691	.4684	.3740	.3731	GSI-0607-10
3/8	15/32	3/4	.3773	.3750	.4691	.4684	.3740	.3731	GSI-0607-12
3/8	8/16	1/2	.3783	.3760	.5015	.5010	.3750	.3741	GSI-0608-08

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d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
3/8	8/16	3/4	.3773	.3750	.5015	.5010	.3750	.3741	GSI-0608-12
7/16	17/32	1/4	.4406	.4379	.5316	.5309	.4365	.4355	GSI-0708-04
7/16	17/32	1/2	.4406	.4379	.5316	.5309	.4365	.4355	GSI-0708-08
7/16	17/32	3/4	.4406	.4379	.5316	.5309	.4365	.4355	GSI-0708-12
1/2	19/32	3/16	.5030	.5003	.5941	.5934	.4990	.4980	GSI-0809-03
1/2	19/32	1/4	.5030	.5003	.5941	.5934	.4990	.4980	GSI-0809-04
1/2	19/32	3/8	.5030	.5003	.5941	.5934	.4990	.4980	GSI-0809-06
1/2	19/32	1/2	.5030	.5003	.5941	.5934	.4990	.4980	GSI-0809-08
1/2	19/32	5/8	.5030	.5003	.5941	.5934	.4990	.4980	GSI-0809-10
1/2	19/32	3/4	.5030	.5003	.5941	.5934	.4990	.4980	GSI-0809-12
1/2	19/32	1	.5030	.5003	.5941	.5934	.4990	.4980	GSI-0809-16
1/2	5/8	3/4	.5040	.5013	.6260	.6250	.5000	.4990	GSI-0810-12
9/16	21/32	3/8	.5655	.5627	.6566	.6559	.5615	.5605	GSI-0910-06
9/16	21/32	1/2	.5655	.5627	.6566	.6559	.5615	.5605	GSI-0910-08
9/16	21/32	5/8	.5655	.5627	.6566	.6559	.5615	.5605	GSI-0910-10
9/16	21/32	3/4	.5655	.5627	.6566	.6559	.5615	.5605	GSI-0910-12
5/8	23/32	3/8	.6280	.6253	.7192	.7184	.6240	.6230	GSI-1011-06
5/8	23/32	1/2	.6280	.6253	.7192	.7184	.6240	.6230	GSI-1011-08
5/8	23/32	5/8	.6280	.6253	.7192	.7184	.6240	.6230	GSI-1011-10
5/8	23/32	3/4	.6280	.6253	.7192	.7184	.6240	.6230	GSI-1011-12
5/8	23/32	1	.6280	.6253	.7192	.7184	.6240	.6230	GSI-1011-16
5/8	23/32	1 1/4	.6280	.6253	.7192	.7184	.6240	.6230	GSI-1011-20
5/8	23/32	1 7/8	.6280	.6253	.7192	.7184	.6240	.6230	GSI-1011-30
5/8	3/4	1/2	.6290	.6263	.7510	.7500	.6250	.6240	GSI-1012-08
5/8	3/4	1	.6290	.6263	.7510	.7500	.6250	.6240	GSI-1012-16
11/16	25/32	7/8	.6906	.6879	.7817	.7809	.6865	.6855	GSI-1112-14
3/4	7/8	1/8	.7541	.7505	.8755	.8747	.7491	.7479	GSI-1214-02
3/4	7/8	3/8	.7541	.7505	.8755	.8747	.7491	.7479	GSI-1214-06
3/4	7/8	1/2	.7541	.7505	.8755	.8747	.7491	.7479	GSI-1214-08
3/4	7/8	3/4	.7541	.7505	.8755	.8747	.7491	.7479	GSI-1214-12
3/4	7/8	1	.7541	.7505	.8755	.8747	.7491	.7479	GSI-1214-16
3/4	7/8	1 1/4	.7541	.7505	.8755	.8747	.7491	.7479	GSI-1214-20
3/4	7/8	1 1/2	.7541	.7505	.8755	.8747	.7491	.7479	GSI-1214-24
7/8	1	3/8	.8791	.8757	1.0005	.9997	.8741	.8729	GSI-1416-06
7/8	1	1/2	.8791	.8757	1.0005	.9997	.8741	.8729	GSI-1416-08
7/8	1	5/8	.8791	.8757	1.0005	.9997	.8741	.8729	GSI-1416-10
7/8	1	3/4	.8791	.8757	1.0005	.9997	.8741	.8729	GSI-1416-12
7/8	1	1	.8791	.8757	1.0005	.9997	.8741	.8729	GSI-1416-16
7/8	1	1 1/2	.8791	.8757	1.0005	.9997	.8741	.8729	GSI-1416-24
1	1 1/8	1/2	1.0041	1.0007	1.1255	1.1247	.9991	.9979	GSI-1618-08
1	1 1/8	3/4	1.0041	1.0007	1.1255	1.1247	.9991	.9979	GSI-1618-12
1	1 1/8	1	1.0041	1.0007	1.1255	1.1247	.9991	.9979	GSI-1618-16
1	1 1/8	1 1/4	1.0041	1.0007	1.1255	1.1247	.9991	.9979	GSI-1618-20
1	1 1/8	1 1/2	1.0041	1.0007	1.1255	1.1247	.9991	.9979	GSI-1618-24
1	1 1/8	2 1/16	1.0041	1.0007	1.1255	1.1247	.9991	.9979	GSI-1618-33
1 1/8	1 9/32	3/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	GSI-1820-12

3) After press-fit. Testing methods ▶ Page 61

d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1 1/8	1 9/32	1	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	GSI-1820-16
1 1/8	1 9/32	1 1/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	GSI-1820-20
1 1/8	1 9/32	1 1/2	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	GSI-1820-24
1 1/4	1 13/32	3/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	GSI-2022-12
1 1/4	1 13/32	7/8	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	GSI-2022-14
1 1/4	1 13/32	1	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	GSI-2022-16
1 1/4	1 13/32	1 1/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	GSI-2022-20
1 1/4	1 13/32	1 1/2	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	GSI-2022-24
1 3/8	1 17/32	1	1.3798	1.3758	1.5318	1.5308	1.3738	1.3722	GSI-2224-16
1 3/8	1 17/32	1 1/2	1.3798	1.3758	1.5318	1.5308	1.3738	1.3722	GSI-2224-24
1 3/8	1 17/32	1 5/8	1.3798	1.3758	1.5318	1.5308	1.3738	1.3722	GSI-2224-26
1 1/2	1 21/32	3/8	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	GSI-2426-06
1 1/2	1 21/32	7/16	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	GSI-2426-07
1 1/2	1 21/32	1/2	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	GSI-2426-08
1 1/2	1 21/32	3/4	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	GSI-2426-12
1 1/2	1 21/32	1	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	GSI-2426-16
1 1/2	1 21/32	1 1/2	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	GSI-2426-24
1 5/8	1 25/32	1	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	GSI-2629-16
1 5/8	1 25/32	1 1/4	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	GSI-2629-20
1 5/8	1 25/32	1 1/2	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	GSI-2629-24
1 3/4	1 15/16	1	1.7547	1.7505	1.9381	1.9371	1.7487	1.7471	GSI-2831-16
1 3/4	1 15/16	1 1/2	1.7547	1.7505	1.9381	1.9371	1.7487	1.7471	GSI-2831-24
1 3/4	1 15/16	2	1.7547	1.7505	1.9381	1.9371	1.7487	1.7471	GSI-2831-32
1 3/4	1 15/16	2 1/2	1.7547	1.7505	1.9381	1.9371	1.7487	1.7471	GSI-2831-40
1 3/4	1 15/16	3	1.7547	1.7505	1.9381	1.9371	1.7487	1.7471	GSI-2831-48
1 7/8	2 1/16	1	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	GSI-3033-16
1 7/8	2 1/16	2	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	GSI-3033-32
2	2 3/16	1	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	GSI-3235-16
2	2 3/16	1 1/2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	GSI-3235-24
2	2 3/16	2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	GSI-3235-32
2 1/4	2 7/16	2	2.2577	2.2531	2.4377	2.4365	2.2507	2.2489	GSI-3639-32
2 2/4	2 11/16	2	2.5082	2.5035	2.6881	2.6869	2.5000	2.4999	GSI-4043-32
2 3/4	2 15/16	2	2.7570	2.7523	2.9370	2.9358	2.7500	2.7490	GSI-4447-32
3	3 3/16	2	3.0070	3.0023	3.1870	3.1858	3.0000	2.9990	GSI-4851-32

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d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			h13	max.	min.	max.	min.	max.	
1/8	3/16	3/16	.1266	.1247	.1878	.1873	.1243	.1236	H1SI-0203-03
3/16	1/4	1/4	.1888	.1869	.2503	.2497	.1865	.1858	H1SI-0304-04
3/16	1/4	3/8	.1888	.1869	.2503	.2497	.1865	.1858	H1SI-0304-06
1/4	5/16	3/8	.2518	.2495	.3128	.3122	.2490	.2481	H1SI-0405-06
1/4	5/16	1/2	.2518	.2495	.3128	.3122	.2490	.2481	H1SI-0405-08
5/16	3/8	1/4	.3143	.3120	.3753	.3747	.3115	.3106	H1SI-0506-04

³⁾ After press-fit. Testing methods ▶ Page 61

d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			h13	max.	min.	max.	min.	max.	
5/16	3/8	3/8	.3143	.3120	.3753	.3747	.3115	.3106	H1SI-0506-06
5/16	3/8	1/2	.3143	.3120	.3753	.3747	.3115	.3106	H1SI-0506-08
3/8	15/32	1/4	.3768	.3745	.4691	.4684	.3740	.3731	H1SI-0607-04
3/8	15/32	3/8	.3768	.3745	.4691	.4684	.3740	.3731	H1SI-0607-06
3/8	15/32	1/2	.3768	.3745	.4691	.4684	.3740	.3731	H1SI-0607-08
3/8	15/32	5/8	.3768	.3745	.4691	.4684	.3740	.3731	H1SI-0607-10
3/8	15/32	3/4	.3768	.3745	.4691	.4684	.3740	.3731	H1SI-0607-12
7/16	17/32	1/2	.4399	.4371	.5316	.5309	.4365	.4355	H1SI-0708-08
7/16	17/32	3/4	.4399	.4371	.5316	.5309	.4365	.4355	H1SI-0708-12
1/2	19/32	1/4	.5024	.4996	.5941	.5934	.4990	.4980	H1SI-0809-04
1/2	19/32	3/8	.5024	.4996	.5941	.5934	.4990	.4980	H1SI-0809-06
1/2	19/32	1/2	.5024	.4996	.5941	.5934	.4990	.4980	H1SI-0809-08
1/2	19/32	5/8	.5024	.4996	.5941	.5934	.4990	.4980	H1SI-0809-10
1/2	19/32	3/4	.5024	.4996	.5941	.5934	.4990	.4980	H1SI-0809-12
1/2	19/32	1	.5024	.4996	.5941	.5934	.4990	.4980	H1SI-0809-16
9/16	21/32	1/2	.5649	.5620	.6566	.6559	.5615	.5605	H1SI-0910-08
9/16	21/32	5/8	.5649	.5620	.6566	.6559	.5615	.5605	H1SI-0910-10
9/16	21/32	3/4	.5649	.5620	.6566	.6559	.5615	.5605	H1SI-0910-12
5/8	23/32	1/2	.6274	.6246	.7192	.7184	.6240	.6230	H1SI-1011-08
5/8	23/32	3/4	.6274	.6246	.7192	.7184	.6240	.6230	H1SI-1011-12
5/8	23/32	1	.6274	.6246	.7192	.7184	.6240	.6230	H1SI-1011-16
3/4	7/8	1/2	.7532	.7499	.8755	.8747	.7491	.7479	H1SI-1214-08
3/4	7/8	3/4	.7532	.7499	.8755	.8747	.7491	.7479	H1SI-1214-12
3/4	7/8	1	.7532	.7499	.8755	.8747	.7491	.7479	H1SI-1214-16
7/8	1	1/2	.8782	.8749	1.0005	.9997	.8741	.8729	H1SI-1416-08
7/8	1	3/4	.8782	.8749	1.0005	.9997	.8741	.8729	H1SI-1416-12
7/8	1	1	.8782	.8749	1.0005	.9997	.8741	.8729	H1SI-1416-16
1	1 1/8	1/2	1.0032	.9999	1.1255	1.1247	.9991	.9979	H1SI-1618-08
1	1 1/8	3/4	1.0032	.9999	1.1255	1.1247	.9991	.9979	H1SI-1618-12
1	1 1/8	1	1.0032	.9999	1.1255	1.1247	.9991	.9979	H1SI-1618-16
1 1/8	1 9/32	3/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	H1SI-1820-12
1 1/8	1 9/32	1	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	H1SI-1820-16
1 1/8	1 9/32	1 1/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	H1SI-1820-20
1 1/4	1 13/32	3/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	H1SI-2022-12
1 1/4	1 13/32	1	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	H1SI-2022-16
1 1/4	1 13/32	1 1/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	H1SI-2022-20
1 1/2	1 21/32	1	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	H1SI-2426-16
1 1/2	1 21/32	1 1/2	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	H1SI-2426-24
1 5/8	1 25/32	1	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	H1SI-2629-16
1 5/8	1 25/32	1 1/2	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	H1SI-2629-24
1 3/4	1 15/16	1	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	H1SI-2831-16
1 3/4	1 15/16	2	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	H1SI-2831-32
1 7/8	2 1/16	1	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	H1SI-3033-16
1 7/8	2 1/16	2	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	H1SI-3033-32
2	2 3/16	1	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	H1SI-3235-16
2	2 3/16	2	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	H1SI-3235-32

³⁾ After press-fit. Testing methods ▶ Page 61

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d1	d2	b1 h13	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1/8	3/16	3/16	.1266	.1247	.1878	.1873	.1243	.1236	H370SI-0203-03
3/16	1/4	1/4	.1888	.1869	.2503	.2497	.1865	.1858	H370SI-0304-04
3/16	1/4	3/8	.1888	.1869	.2503	.2497	.1865	.1858	H370SI-0304-06
1/4	5/16	1/4	.2521	.2498	.3128	.3122	.2490	.2481	H370SI-0405-04
1/4	5/16	3/8	.2518	.2495	.3128	.3122	.2490	.2481	H370SI-0405-06
1/4	5/16	1/2	.2518	.2495	.3128	.3122	.2490	.2481	H370SI-0405-08
5/16	3/8	1/4	.3143	.3120	.3753	.3747	.3115	.3106	H370SI-0506-04
5/16	3/8	3/8	.3143	.3120	.3753	.3747	.3115	.3106	H370SI-0506-06
5/16	3/8	1/2	.3143	.3120	.3753	.3747	.3115	.3106	H370SI-0506-08
3/8	15/32	1/4	.3768	.3745	.4691	.4684	.3740	.3731	H370SI-0607-04
3/8	15/32	3/8	.3768	.3745	.4691	.4684	.3740	.3731	H370SI-0607-06
3/8	15/32	1/2	.3768	.3745	.4691	.4684	.3740	.3731	H370SI-0607-08
3/8	15/32	5/8	.3768	.3745	.4691	.4684	.3740	.3731	H370SI-0607-10
3/8	15/32	3/4	.3768	.3745	.4691	.4684	.3740	.3731	H370SI-0607-12
7/16	17/32	1/2	.4399	.4371	.5316	.5309	.4365	.4355	H370SI-0708-08
7/16	17/32	3/4	.4399	.4371	.5316	.5309	.4365	.4355	H370SI-0708-12
1/2	19/32	1/4	.5024	.4996	.5941	.5934	.4990	.4980	H370SI-0809-04
1/2	19/32	3/8	.5024	.4996	.5941	.5934	.4990	.4980	H370SI-0809-06
1/2	19/32	1/2	.5024	.4996	.5941	.5934	.4990	.4980	H370SI-0809-08
1/2	19/32	5/8	.5024	.4996	.5941	.5934	.4990	.4980	H370SI-0809-10
1/2	19/32	3/4	.5024	.4996	.5941	.5934	.4990	.4980	H370SI-0809-12
1/2	19/32	1	.5024	.4996	.5941	.5934	.4990	.4980	H370SI-0809-16
9/16	21/32	1/2	.5649	.5620	.6566	.6559	.5615	.5605	H370SI-0910-08
9/16	21/32	5/8	.5649	.5620	.6566	.6559	.5615	.5605	H370SI-0910-10
9/16	21/32	3/4	.5649	.5620	.6566	.6559	.5615	.5605	H370SI-0910-12
5/8	23/32	1/2	.6274	.6246	.7192	.7184	.6240	.6230	H370SI-1011-08
5/8	23/32	3/4	.6274	.6246	.7192	.7184	.6240	.6230	H370SI-1011-12
5/8	23/32	1	.6274	.6246	.7192	.7184	.6240	.6230	H370SI-1011-16
3/4	7/8	1/2	.7532	.7499	.8755	.8747	.7491	.7479	H370SI-1214-08
3/4	7/8	3/4	.7532	.7499	.8755	.8747	.7491	.7479	H370SI-1214-12
3/4	7/8	1	.7532	.7499	.8755	.8747	.7491	.7479	H370SI-1214-16
7/8	1	1/2	.8782	.8749	1.0005	.9997	.8741	.8729	H370SI-1416-08
7/8	1	3/4	.8782	.8749	1.0005	.9997	.8741	.8729	H370SI-1416-12
7/8	1	1	.8782	.8749	1.0005	.9997	.8741	.8729	H370SI-1416-16
1	1 1/8	1/2	1.0032	.9999	1.1255	1.1247	.9991	.9979	H370SI-1618-08
1	1 1/8	3/4	1.0032	.9999	1.1255	1.1247	.9991	.9979	H370SI-1618-12
1	1 1/8	1	1.0032	.9999	1.1255	1.1247	.9991	.9979	H370SI-1618-16
1 1/8	1 9/32	3/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	H370SI-1820-12
1 1/8	1 9/32	1	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	H370SI-1820-16
1 1/8	1 9/32	1 1/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	H370SI-1820-20
1 1/4	1 13/32	3/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	H370SI-2022-12
1 1/4	1 13/32	1	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	H370SI-2022-16
1 1/4	1 13/32	1 1/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	H370SI-2022-20
1 1/2	1 21/32	1	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	H370SI-2426-16

³⁾ After press-fit. Testing methods ▶ Page 61

d1	d2	b1 h13	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1 1/2	1 21/32	1 1/2	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	H370SI-2426-24
1 5/8	1 25/32	1	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	H370SI-2629-16
1 5/8	1 25/32	1 1/2	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	H370SI-2629-24
1 3/4	1 15/16	1	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	H370SI-2831-16
1 3/4	1 15/16	2	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	H370SI-2831-32
1 7/8	2 1/16	1	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	H370SI-3033-16
1 7/8	2 1/16	2	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	H370SI-3033-32
2	2 3/16	1	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	H370SI-3235-16
2	2 3/16	2	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	H370SI-3235-32

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d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1/8	3/16	3/16	.1269	.1251	.1878	.1873	.1243	.1236	JSI-0203-03
1/8	1/4	1/4	.1280	.1262	.2515	.2510	.1250	.1241	JSI-0204-04
1/8	1/4	3/8	.1280	.1262	.2515	.2510	.1250	.1241	JSI-0204-06
3/16	1/4	1/4	.1892	.1873	.2503	.2497	.1865	.1858	JSI-0304-04
3/16	1/4	3/8	.1892	.1873	.2503	.2497	.1865	.1858	JSI-0304-06
3/16	1/4	1/2	.1892	.1873	.2503	.2497	.1865	.1858	JSI-0304-08
3/16	5/16	5/16	.1905	.1887	.3140	.3135	.1875	.1866	JSI-0305-05
3/16	5/16	3/8	.1905	.1887	.3140	.3135	.1875	.1866	JSI-0305-06
3/16	5/16	1/2	.1905	.1887	.3140	.3135	.1875	.1866	JSI-0305-08
1/4	5/16	1/4	.2521	.2498	.3140	.3135	.2490	.2481	JSI-0405-04
1/4	5/16	3/8	.2521	.2498	.3128	.3122	.2490	.2481	JSI-0405-06
1/4	5/16	1/2	.2521	.2498	.3128	.3122	.2490	.2481	JSI-0405-08
1/4	3/8	1/4	.2539	.2516	.3765	.3760	.2500	.2491	JSI-0406-04
1/4	3/8	1/2	.2539	.2516	.3765	.3760	.2500	.2491	JSI-0406-08
1/4	3/8	3/4	.2539	.2516	.3765	.3760	.2500	.2491	JSI-0406-12
1/4	3/8	1	.2539	.2516	.3765	.3760	.2500	.2491	JSI-0406-16
5/16	3/8	1/4	.3148	.3125	.3753	.3747	.3115	.3106	JSI-0506-04
5/16	3/8	3/8	.3148	.3125	.3753	.3747	.3115	.3106	JSI-0506-06
5/16	3/8	1/2	.3148	.3125	.3753	.3747	.3115	.3106	JSI-0506-08
5/16	3/8	3/4	.3148	.3125	.3753	.3747	.3115	.3106	JSI-0506-12
5/16	7/16	3/8	.3164	.3141	.4390	.4385	.3125	.3116	JSI-0507-06
5/16	7/16	1/2	.3164	.3141	.4390	.4385	.3125	.3116	JSI-0507-08
5/16	7/16	5/8	.3164	.3141	.4390	.4385	.3125	.3116	JSI-0507-10
3/8	15/32	1/4	.3773	.3750	.4691	.4684	.3740	.3731	JSI-0607-04
3/8	15/32	3/8	.3773	.3750	.4691	.4684	.3740	.3731	JSI-0607-06
3/8	15/32	1/2	.3773	.3750	.4691	.4684	.3740	.3731	JSI-0607-08
3/8	15/32	5/8	.3773	.3750	.4691	.4684	.3740	.3731	JSI-0607-10
3/8	15/32	3/4	.3773	.3750	.4691	.4684	.3740	.3731	JSI-0607-12
3/8	1/2	3/16	.3773	.3750	.4691	.4684	.3740	.3731	JSI-0608-03
3/8	1/2	3/8	.3773	.3750	.4691	.4684	.3740	.3731	JSI-0608-06
3/8	1/2	1/2	.3773	.3750	.4691	.4684	.3740	.3731	JSI-0608-08
3/8	1/2	5/8	.3773	.3750	.4691	.4684	.3740	.3731	JSI-0608-10

³⁾ After press-fit. Testing methods ▶ Page 61

d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
7/16	17/32	1/2	.4406	.4379	.5316	.5309	.4365	.4355	JSI-0708-08
7/16	17/32	3/4	.4406	.4379	.5316	.5309	.4365	.4355	JSI-0708-12
1/2	19/32	1/4	.5030	.5003	.5941	.5934	.4990	.4980	JSI-0809-04
1/2	19/32	3/8	.5030	.5003	.5941	.5934	.4990	.4980	JSI-0809-06
1/2	19/32	1/2	.5030	.5003	.5941	.5934	.4990	.4980	JSI-0809-08
1/2	19/32	5/8	.5030	.5003	.5941	.5934	.4990	.4980	JSI-0809-10
1/2	19/32	3/4	.5030	.5003	.5941	.5934	.4990	.4980	JSI-0809-12
1/2	19/32	1	.5030	.5003	.5941	.5934	.4990	.4980	JSI-0809-16
1/2	5/8	1/2	.5040	.5013	.6260	.6250	.5000	.4990	JSI-0810-08
1/2	5/8	3/4	.5040	.5013	.6260	.6250	.5000	.4990	JSI-0810-12
9/16	21/32	1/2	.5655	.5627	.6566	.6559	.5615	.5605	JSI-0910-08
9/16	21/32	5/8	.5655	.5627	.6566	.6559	.5615	.5605	JSI-0910-10
9/16	21/32	3/4	.5655	.5627	.6566	.6559	.5615	.5605	JSI-0910-12
5/8	23/32	1/2	.6280	.6253	.7192	.7184	.6240	.6230	JSI-1011-08
5/8	23/32	3/4	.6280	.6253	.7192	.7184	.6240	.6230	JSI-1011-12
5/8	23/32	1	.6280	.6253	.7192	.7184	.6240	.6230	JSI-1011-16
5/8	3/4	1/4	.6297	.6270	.7510	.7500	.6250	.6240	JSI-1012-04
5/8	3/4	3/8	.6297	.6270	.7510	.7500	.6250	.6240	JSI-1012-06
5/8	3/4	1/2	.6297	.6270	.7510	.7500	.6250	.6240	JSI-1012-08
5/8	3/4	3/4	.6297	.6270	.7510	.7500	.6250	.6240	JSI-1012-12
5/8	3/4	1	.6297	.6270	.7510	.7500	.6250	.6240	JSI-1012-16
3/4	7/8	1/2	.7541	.7505	.8755	.8747	.7491	.7479	JSI-1214-08
3/4	7/8	3/4	.7541	.7505	.8755	.8747	.7491	.7479	JSI-1214-12
3/4	7/8	1	.7541	.7505	.8755	.8747	.7491	.7479	JSI-1214-16
3/4	1	3/4	.7559	.7525	1.0010	1.0000	.7500	.7490	JSI-1216-12
3/4	1	1	.7559	.7525	1.0010	1.0000	.7500	.7490	JSI-1216-16
7/8	1	1/2	.8791	.8757	1.0005	.9997	.8741	.8729	JSI-1416-08
7/8	1	3/4	.8791	.8757	1.0005	.9997	.8741	.8729	JSI-1416-12
7/8	1	1	.8791	.8757	1.0005	.9997	.8741	.8729	JSI-1416-16
7/8	1 1/8	3/4	.8809	.8775	1.1260	1.1250	.8750	.8740	JSI-1418-12
7/8	1 1/8	1 1/2	.8809	.8775	1.1260	1.1250	.8750	.8740	JSI-1418-24
1	1 1/8	1/2	1.0041	1.0007	1.1255	1.1247	.9991	.9979	JSI-1618-08
1	1 1/8	3/4	1.0041	1.0007	1.1255	1.1247	.9991	.9979	JSI-1618-12
1	1 1/8	1	1.0041	1.0007	1.1255	1.1247	.9991	.9979	JSI-1618-16
1	1 1/4	1	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	JSI-1620-16
1	1 1/4	1 1/2	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	JSI-1620-24
1 1/8	1 9/32	3/4	1.1288	1.2808	1.2818	1.2808	1.1238	1.1226	JSI-1820-12
1 1/8	1 9/32	1	1.1288	1.2808	1.2818	1.2808	1.1238	1.1226	JSI-1820-16
1 1/8	1 9/32	1 1/4	1.1288	1.2808	1.2818	1.2808	1.1238	1.1226	JSI-1820-20
1 1/8	1 13/8	1	1.1327	1.1276	1.3760	1.3750	1.1250	1.1240	JSI-1822-16
1 1/4	1 13/32	3/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	JSI-2022-12
1 1/4	1 13/32	7/8	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	JSI-2022-14
1 1/4	1 13/32	1	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	JSI-2022-16
1 1/4	1 13/32	1 1/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	JSI-2022-20
1 1/4	1 1/2	1 1/2	1.2600	1.2532	1.5005	1.4995	1.2500	1.2490	JSI-2024-24
1 1/2	1 21/32	1	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	JSI-2426-16

³⁾ After press-fit. Testing methods ▶ Page 61

d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1 1/2	1 21/32	1 1/2	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	JSI-2426-24
1 1/2	1 3/4	1 1/2	1.5100	1.5032	1.7505	1.7495	1.50	1.499	JSI-2428-24
1 5/8	1 25/32	1	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	JSI-2629-16
1 5/8	1 25/32	1 1/2	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	JSI-2629-24
1 5/8	1 25/32	1 1/2	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	JSI-2629-24
1 3/4	1 15/16	1	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	JSI-2831-16
1 3/4	1 15/16	2	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	JSI-2831-32
1 7/8	2 1/16	1	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	JSI-3033-16
1 7/8	2 1/16	2	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	JSI-3033-32
2	2 3/16	1	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	JSI-3235-16
2	2 3/16	2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	JSI-3235-32

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d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1/8	3/16	3/16	0.1269	0.1251	0.1878	0.1873	0.1243	0.1236	J3SI-0203-03
3/16	1/4	1/4	0.1892	0.1873	0.2503	0.2497	0.1865	0.1858	J3SI-0304-04
3/16	1/4	3/8	0.1892	0.1873	0.2503	0.2497	0.1865	0.1858	J3SI-0304-06
1/4	5/16	3/8	0.2521	0.2498	0.3128	0.3122	0.2490	0.2481	J3SI-0405-06
1/4	5/16	1/2	0.2521	0.2498	0.3128	0.3122	0.2490	0.2481	J3SI-0405-08
5/16	3/8	1/4	0.3148	0.3125	0.3753	0.3747	0.3115	0.3106	J3SI-0506-04
5/16	3/8	3/8	0.3148	0.3125	0.3753	0.3747	0.3115	0.3106	J3SI-0506-06
5/16	3/8	1/2	0.3148	0.3125	0.3753	0.3747	0.3115	0.3106	J3SI-0506-08
3/8	15/32	1/4	0.3773	0.3750	0.4691	0.4684	0.3740	0.3731	J3SI-0607-04
3/8	15/32	3/8	0.3773	0.3750	0.4691	0.4684	0.3740	0.3731	J3SI-0607-06
3/8	15/32	1/2	0.3773	0.3750	0.4691	0.4684	0.3740	0.3731	J3SI-0607-08
3/8	15/32	5/8	0.3773	0.3750	0.4691	0.4684	0.3740	0.3731	J3SI-0607-10
3/8	15/32	3/4	0.3773	0.3750	0.4691	0.4684	0.3740	0.3731	J3SI-0607-12
7/16	17/32	1/2	0.4406	0.4379	0.5316	0.5309	0.4365	0.4355	J3SI-0708-08
7/16	17/32	3/4	0.4406	0.4379	0.5316	0.5309	0.4365	0.4355	J3SI-0708-12
1/2	19/32	1/4	0.5030	0.5003	0.5941	0.5934	0.4990	0.4980	J3SI-0809-04
1/2	19/32	3/8	0.5030	0.5003	0.5941	0.5934	0.4990	0.4980	J3SI-0809-06
1/2	19/32	1/2	0.5030	0.5003	0.5941	0.5934	0.4990	0.4980	J3SI-0809-08
1/2	19/32	5/8	0.5030	0.5003	0.5941	0.5934	0.4990	0.4980	J3SI-0809-10
1/2	19/32	3/4	0.5030	0.5003	0.5941	0.5934	0.4990	0.4980	J3SI-0809-12
1/2	19/32	1	0.5030	0.5003	0.5941	0.5934	0.4990	0.4980	J3SI-0809-16
9/16	21/32	1/2	0.5655	0.5627	0.6566	0.6559	0.5615	0.5605	J3SI-0910-08
9/16	21/32	5/8	0.5655	0.5627	0.6566	0.6559	0.5615	0.5605	J3SI-0910-10
9/16	21/32	3/4	0.5655	0.5627	0.6566	0.6559	0.5615	0.5605	J3SI-0910-12
5/8	23/32	1/2	0.6280	0.6253	0.7192	0.7184	0.6240	0.6230	J3SI-1011-08
5/8	23/32	3/4	0.6280	0.6253	0.7192	0.7184	0.6240	0.6230	J3SI-1011-12
5/8	23/32	1	0.6280	0.6253	0.7192	0.7184	0.6240	0.6230	J3SI-1011-16
3/4	7/8	1/2	0.7541	0.7505	0.8755	0.8747	0.7491	0.7479	J3SI-1214-08
3/4	7/8	3/4	0.7541	0.7505	0.8755	0.8747	0.7491	0.7479	J3SI-1214-12
3/4	7/8	1	0.7541	0.7505	0.8755	0.8747	0.7491	0.7479	J3SI-1214-16

³⁾ After press-fit. Testing methods ▶ Page 61

d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
7/8	1	1/2	0.8791	0.8757	1.0005	0.9997	0.8741	0.8729	J35SI-1416-08
7/8	1	3/4	0.8791	0.8757	1.0005	0.9997	0.8741	0.8729	J35SI-1416-12
7/8	1	1	0.8791	0.8757	1.0005	0.9997	0.8741	0.8729	J35SI-1416-16
1	1 1/8	1/2	1.0041	1.0007	1.1255	1.1247	0.9991	0.9979	J35SI-1618-08
1	1 1/8	3/4	1.0041	1.0007	1.1255	1.1247	0.9991	0.9979	J35SI-1618-12
1	1 1/8	1	1.0041	1.0007	1.1255	1.1247	0.9991	0.9979	J35SI-1618-16
1 1/8	1 9/32	3/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	J35SI-1820-12
1 1/8	1 9/32	1	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	J35SI-1820-16
1 1/8	1 9/32	1 1/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	J35SI-1820-20
1 1/4	1 13/32	3/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	J35SI-2022-12
1 1/4	1 13/32	1	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	J35SI-2022-16
1 1/4	1 13/32	1 1/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	J35SI-2022-20
1 1/2	1 21/32	1	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	J35SI-2426-16
1 1/2	1 21/32	1 1/2	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	J35SI-2426-24
1 5/8	1 25/32	1	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	J35SI-2629-16
1 5/8	1 25/32	1 1/2	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	J35SI-2629-24
1 3/4	1 15/16	1	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	J35SI-2831-16
1 3/4	1 15/16	2	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	J35SI-2831-32
1 7/8	2 1/16	1	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	J35SI-3033-16
1 7/8	2 1/16	2	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	J35SI-3033-32
2	2 3/16	1	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	J35SI-3235-16
2	2 3/16	2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	J35SI-3235-32

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d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1/8	3/16	3/16	.1266	.1247	.1878	.1873	.1243	.1236	J350SI-0203-03
3/16	1/4	1/4	.1888	.1869	.2503	.2497	.1865	.1858	J350SI-0304-04
3/16	1/4	3/8	.1888	.1869	.2503	.2497	.1865	.1858	J350SI-0304-06
1/4	5/16	3/8	.2518	.2495	.3128	.3122	.2490	.2481	J350SI-0405-06
1/4	5/16	1/2	.2518	.2495	.3128	.3122	.2490	.2481	J350SI-0405-08
5/16	3/8	1/4	.3143	.3120	.3753	.3747	.3115	.3106	J350SI-0506-04
5/16	3/8	3/8	.3143	.3120	.3753	.3747	.3115	.3106	J350SI-0506-06
5/16	3/8	1/2	.3143	.3120	.3753	.3747	.3115	.3106	J350SI-0506-08
3/8	15/32	1/4	.3768	.3745	.4691	.4684	.3740	.3731	J350SI-0607-04
3/8	15/32	3/8	.3768	.3745	.4691	.4684	.3740	.3731	J350SI-0607-06
3/8	15/32	1/2	.3768	.3745	.4691	.4684	.3740	.3731	J350SI-0607-08
3/8	15/32	5/8	.3768	.3745	.4691	.4684	.3740	.3731	J350SI-0607-10
3/8	15/32	3/4	.3768	.3745	.4691	.4684	.3740	.3731	J350SI-0607-12
7/16	17/32	1/2	.4399	.4371	.5316	.5309	.4365	.4355	J350SI-0708-08
7/16	17/32	3/4	.4399	.4371	.5316	.5309	.4365	.4355	J350SI-0708-12
1/2	19/32	1/4	.5024	.4996	.5941	.5934	.4990	.4980	J350SI-0809-04
1/2	19/32	3/8	.5024	.4996	.5941	.5934	.4990	.4980	J350SI-0809-06
1/2	19/32	1/2	.5024	.4996	.5941	.5934	.4990	.4980	J350SI-0809-08
1/2	19/32	5/8	.5024	.4996	.5941	.5934	.4990	.4980	J350SI-0809-10

³⁾ After press-fit. Testing methods ▶ Page 61

d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1/2	19/32	3/4	.5024	.4996	.5941	.5934	.4990	.4980	J350SI-0809-12
1/2	19/32	1	.5024	.4996	.5941	.5934	.4990	.4980	J350SI-0809-16
9/16	21/32	1/2	.5649	.5620	.6566	.6559	.5615	.5605	J350SI-0910-08
9/16	21/32	5/8	.5649	.5620	.6566	.6559	.5615	.5605	J350SI-0910-10
9/16	21/32	3/4	.5649	.5620	.6566	.6559	.5615	.5605	J350SI-0910-12
5/8	23/32	1/2	.6274	.6246	.7192	.7184	.6240	.6230	J350SI-1011-08
5/8	23/32	3/4	.6274	.6246	.7192	.7184	.6240	.6230	J350SI-1011-12
5/8	23/32	1	.6274	.6246	.7192	.7184	.6240	.6230	J350SI-1011-16
3/4	7/8	1/2	.7532	.7499	.8755	.8747	.7491	.7479	J350SI-1214-08
3/4	7/8	3/4	.7532	.7499	.8755	.8747	.7491	.7479	J350SI-1214-12
3/4	7/8	1	.7532	.7499	.8755	.8747	.7491	.7479	J350SI-1214-16
7/8	1	1/2	.8782	.8749	1.0005	.9997	.8741	.8729	J350SI-1416-08
7/8	1	3/4	.8782	.8749	1.0005	.9997	.8741	.8729	J350SI-1416-12
7/8	1	1	.8782	.8749	1.0005	.9997	.8741	.8729	J350SI-1416-16
1	1 1/8	1/2	1.0032	.9999	1.1255	1.1247	.9991	.9979	J350SI-1618-08
1	1 1/8	3/4	1.0032	.9999	1.1255	1.1247	.9991	.9979	J350SI-1618-12
1	1 1/8	1	1.0032	.9999	1.1255	1.1247	.9991	.9979	J350SI-1618-16
1 1/8	1 9/32	3/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	J350SI-1820-12
1 1/8	1 9/32	1	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	J350SI-1820-16
1 1/8	1 9/32	1 1/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	J350SI-1820-20
1 1/4	1 13/32	3/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	J350SI-2022-12
1 1/4	1 13/32	1	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	J350SI-2022-16
1 1/4	1 13/32	1 1/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	J350SI-2022-20
1 1/2	1 21/32	1	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	J350SI-2426-16
1 1/2	1 21/32	1 1/2	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	J350SI-2426-24
1 5/8	1 25/32	1	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	J350SI-2629-16
1 5/8	1 25/32	1 1/2	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	J350SI-2629-24
1 3/4	1 15/16	1	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	J350SI-2831-16
1 3/4	1 15/16	2	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	J350SI-2831-32
1 7/8	2 1/16	1	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	J350SI-3033-16
1 7/8	2 1/16	2	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	J350SI-3033-32
2	2 3/16	1	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	J350SI-3235-16
2	2 3/16	2	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	J350SI-3235-32

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d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1/8	3/16	1/8	.1280	.1262	.1990	.1985	.1250	.1241	MSI-0203-02
1/8	3/16	1/4	.1280	.1262	.1990	.1985	.1250	.1241	MSI-0203-04
1/8	1/4	1/8	.1280	.1262	.2515	.2510	.1250	.1241	MSI-0204-02
1/8	1/4	3/16	.1280	.1262	.2515	.2510	.1250	.1241	MSI-0204-03
1/8	1/4	1/4	.1280	.1262	.2515	.2510	.1250	.1241	MSI-0204-04
1/8	1/4	3/8	.1280	.1262	.2515	.2510	.1250	.1241	MSI-0204-06
3/16	1/4	1/4	.1905	.1887	.2515	.2510	.1875	.1866	MSI-0304-04
3/16	1/4	3/8	.1905	.1887	.2515	.2510	.1875	.1866	MSI-0304-06

³⁾ After press-fit. Testing methods ▶ Page 61

d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
3/16	1/4	1/2	.1905	.1887	.2515	.2510	.1875	.1866	MSI-0304-08
3/16	5/16	1/8	.1905	.1887	.3140	.3135	.1875	.1866	MSI-0305-02
3/16	5/16	3/16	.1905	.1887	.3140	.3135	.1875	.1866	MSI-0305-03
3/16	5/16	1/4	.1905	.1887	.3140	.3135	.1875	.1866	MSI-0305-04
3/16	5/16	5/16	.1905	.1887	.3140	.3135	.1875	.1866	MSI-0305-05
3/16	5/16	3/8	.1905	.1887	.3140	.3135	.1875	.1866	MSI-0305-06
3/16	5/16	1/2	.1905	.1887	.3140	.3135	.1875	.1866	MSI-0305-08
1/4	5/16	3/16	.2539	.2516	.3140	.3135	.2500	.2491	MSI-0405-03
1/4	5/16	3/8	.2539	.2516	.3140	.3135	.2500	.2491	MSI-0405-06
1/4	5/16	1/2	.2539	.2516	.3140	.3135	.2500	.2491	MSI-0405-08
1/4	3/8	1/8	.2539	.2516	.3765	.3760	.2500	.2491	MSI-0406-02
1/4	3/8	3/16	.2539	.2516	.3765	.3760	.2500	.2491	MSI-0406-03
1/4	3/8	1/4	.2539	.2516	.3765	.3760	.2500	.2491	MSI-0406-04
1/4	3/8	5/16	.2539	.2516	.3765	.3760	.2500	.2491	MSI-0406-05
1/4	3/8	3/8	.2539	.2516	.3765	.3760	.2500	.2491	MSI-0406-06
1/4	3/8	1/2	.2539	.2516	.3765	.3760	.2500	.2491	MSI-0406-08
1/4	3/8	5/8	.2539	.2516	.3765	.3760	.2500	.2491	MSI-0406-10
1/4	3/8	3/4	.2539	.2516	.3765	.3760	.2500	.2491	MSI-0406-12
5/16	3/8	1/4	.3164	.3141	.3765	.3760	.3125	.3116	MSI-0506-04
5/16	3/8	3/8	.3164	.3141	.3765	.3760	.3125	.3116	MSI-0506-06
5/16	3/8	1/2	.3164	.3141	.3765	.3760	.3125	.3116	MSI-0506-08
5/16	7/16	3/16	.3164	.3141	.4390	.4385	.3125	.3116	MSI-0507-03
5/16	7/16	1/4	.3164	.3141	.4390	.4385	.3125	.3116	MSI-0507-04
5/16	7/16	5/16	.3164	.3141	.4390	.4385	.3125	.3116	MSI-0507-05
5/16	7/16	3/8	.3164	.3141	.4390	.4385	.3125	.3116	MSI-0507-06
5/16	7/16	1/2	.3164	.3141	.4390	.4385	.3125	.3116	MSI-0507-08
5/16	7/16	5/8	.3164	.3141	.4390	.4385	.3125	.3116	MSI-0507-10
5/16	7/16	3/4	.3164	.3141	.4390	.4385	.3125	.3116	MSI-0507-12
3/8	7/16	1/4	.3789	.3766	.4390	.4385	.3750	.3741	MSI-0607-04
3/8	7/16	3/8	.3789	.3766	.4390	.4385	.3750	.3741	MSI-0607-06
3/8	7/16	1/2	.3789	.3766	.4390	.4385	.3750	.3741	MSI-0607-08
3/8	1/2	1/4	.3789	.3766	.5015	.5010	.3750	.3741	MSI-0608-04
3/8	1/2	5/16	.3789	.3766	.5015	.5010	.3750	.3741	MSI-0608-05
3/8	1/2	3/8	.3789	.3766	.5015	.5010	.3750	.3741	MSI-0608-06
3/8	1/2	1/2	.3789	.3766	.5015	.5010	.3750	.3741	MSI-0608-08
3/8	1/2	5/8	.3789	.3766	.5015	.5010	.3750	.3741	MSI-0608-10
3/8	1/2	3/4	.3789	.3766	.5015	.5010	.3750	.3741	MSI-0608-12
3/8	1/2	1	.3789	.3766	.5015	.5010	.3750	.3741	MSI-0608-16
7/16	9/16	3/8	.4422	.4395	.5941	.5934	.4375	.4365	MSI-0709-06
7/16	9/16	1/2	.4422	.4395	.5941	.5934	.4375	.4365	MSI-0709-08
1/2	5/8	1/4	.5047	.5020	.6260	.6250	.5000	.4990	MSI-0810-04
1/2	5/8	5/16	.5047	.5020	.6260	.6250	.5000	.4990	MSI-0810-05
1/2	5/8	3/8	.5047	.5020	.6260	.6250	.5000	.4990	MSI-0810-06
1/2	5/8	1/2	.5047	.5020	.6260	.6250	.5000	.4990	MSI-0810-08
1/2	5/8	5/8	.5047	.5020	.6260	.6250	.5000	.4990	MSI-0810-10
1/2	5/8	3/4	.5047	.5020	.6260	.6250	.5000	.4990	MSI-0810-12

³⁾ After press-fit. Testing methods ► Page 61

d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1/2	5/8	1	.5047	.5020	.6260	.6250	.5000	.4990	MSI-0810-16
5/8	3/4	1/4	.6297	.6270	.7510	.7500	.6250	.6240	MSI-1012-04
5/8	3/4	3/8	.6297	.6270	.7510	.7500	.6250	.6240	MSI-1012-06
5/8	3/4	1/2	.6297	.6270	.7510	.7500	.6250	.6240	MSI-1012-08
5/8	3/4	5/8	.6297	.6270	.7510	.7500	.6250	.6240	MSI-1012-10
5/8	3/4	3/4	.6297	.6270	.7510	.7500	.6250	.6240	MSI-1012-12
5/8	3/4	1	.6297	.6270	.7510	.7500	.6250	.6240	MSI-1012-16
5/8	3/4	1 5/8	.6297	.6270	.7510	.7500	.6250	.6240	MSI-1012-26
5/8	13/16	3/8	.6297	.6270	.8135	.8125	.6250	.6240	MSI-1013-06
5/8	13/16	1/2	.6297	.6270	.8135	.8125	.6250	.6240	MSI-1013-08
5/8	13/16	5/8	.6297	.6270	.8135	.8125	.6250	.6240	MSI-1013-10
5/8	13/16	3/4	.6297	.6270	.8135	.8125	.6250	.6240	MSI-1013-12
5/8	13/16	1	.6297	.6270	.8135	.8125	.6250	.6240	MSI-1013-16
11/16	13/16	3/4	.6921	.6893	.8135	.8125	.6875	.6865	MSI-1113-12
11/16	13/16	7/8	.6921	.6893	.8135	.8125	.6875	.6865	MSI-1113-14
11/16	13/16	1	.6922	.6900	.8135	.8125	.6875	.6865	MSI-1113-16
3/4	7/8	3/8	.7559	.7525	.8760	.8750	.7500	.7490	MSI-1214-06
3/4	7/8	3/4	.7559	.7525	.8760	.8750	.7500	.7490	MSI-1214-12
3/4	7/8	1	.7559	.7525	.8760	.8750	.7500	.7490	MSI-1214-16
3/4	7/8	11/2	.7559	.7525	.8760	.8750	.7500	.7490	MSI-1214-24
3/4	1	3/8	.7559	.7525	1.0010	1.0000	.7500	.7490	MSI-1216-06
3/4	1	1/2	.7559	.7525	1.0010	1.0000	.7500	.7490	MSI-1216-08
3/4	1	5/8	.7559	.7525	1.0010	1.0000	.7500	.7490	MSI-1216-10
3/4	1	3/4	.7559	.7525	1.0010	1.0000	.7500	.7490	MSI-1216-12
3/4	1	1	.7559	.7525	1.0010	1.0000	.7500	.7490	MSI-1216-16
3/4	1	1 1/4	.7559	.7525	1.0010	1.0000	.7500	.7490	MSI-1216-20
3/4	1	1 1/2	.7559	.7525	1.0010	1.0000	.7500	.7490	MSI-1216-24
13/16	1	1/2	.8184	.8151	1.0010	1.0000	.8126	.8116	MSI-1316-08
7/8	1	3/4	.8809	.8775	1.0010	1.0000	.8750	.8740	MSI-1416-12
7/8	1	1	.8809	.8775	1.0010	1.0000	.8750	.8740	MSI-1416-16
7/8	1	1 1/2	.8809	.8775	1.0010	1.0000	.8750	.8740	MSI-1416-24
7/8	1 1/8	1/2	.8809	.8775	1.1260	1.1250	.8750	.8740	MSI-1418-08
7/8	1 1/8	3/4	.8809	.8775	1.1260	1.1250	.8750	.8740	MSI-1418-12
7/8	1 1/8	1	.8809	.8775	1.1260	1.1250	.8750	.8740	MSI-1418-16
7/8	1 1/8	1 1/2	.8809	.8775	1.1260	1.1250	.8750	.8740	MSI-1418-24
1	1 1/8	3/4	1.0059	1.0025	1.1260	1.1250	1.0000	.9990	MSI-1618-12
1	1 1/8	1	1.0059	1.0025	1.1260	1.1250	1.0000	.9990	MSI-1618-16
1	1 1/8	1 1/2	1.0059	1.0025	1.1260	1.1250	1.0000	.9990	MSI-1618-24
1	1 1/4	1/2	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	MSI-1620-08
1	1 1/4	5/8	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	MSI-1620-10
1	1 1/4	3/4	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	MSI-1620-12
1	1 1/4	1	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	MSI-1620-16
1	1 1/4	1 1/2	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	MSI-1620-24
1	1 1/4	2	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	MSI-1620-32
1 1/8	1 3/8	1	1.1309	1.1275	1.3760	1.3750	1.1250	1.1240	MSI-1822-16
1 1/8	1 3/8	1 1/2	1.1309	1.1275	1.3760	1.3750	1.1250	1.1240	MSI-1822-24

³⁾ After press-fit. Testing methods ► Page 61

d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1 1/4	1 1/2	3/4	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	MSI-2024-12
1 1/4	1 1/2	1	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	MSI-2024-16
1 1/4	1 1/2	1 3/8	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	MSI-2024-22
1 1/4	1 1/2	1 1/2	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	MSI-2024-24
1 1/4	1 1/2	2 1/2	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	MSI-2024-40
1 3/8	1 5/8	1	1.3850	1.3182	1.6255	1.6245	1.3750	1.3740	MSI-2226-16
1 1/2	1 3/4	3/4	1.5100	1.5032	1.7505	1.7495	1.5000	1.4990	MSI-2428-12
1 1/2	1 3/4	1	1.5100	1.5032	1.7505	1.7495	1.5000	1.4990	MSI-2428-16
1 1/2	1 3/4	1 1/2	1.5100	1.5032	1.7505	1.7495	1.5000	1.4990	MSI-2428-24
1 1/2	1 3/4	2 /2	1.5100	1.5032	1.7505	1.7495	1.5000	1.4990	MSI-2428-40
1 5/8	1 7/8	1	1.6350	1.6282	1.8755	1.8745	1.6250	1.6240	MSI-2630-16
1 3/4	2	1/2	1.7560	1.7532	2.0005	1.9995	1.7500	1.7490	MSI-2832-08
1 3/4	2	3/4	1.7560	1.7532	2.0005	1.9995	1.7500	1.7490	MSI-2832-12
1 3/4	2	1	1.7560	1.7532	2.0005	1.9995	1.7500	1.7490	MSI-2832-16
1 3/4	2	1 1/2	1.7560	1.7532	2.0005	1.9995	1.7500	1.7490	MSI-2832-24
1 3/4	2	2 1/2	1.7560	1.7532	2.0005	1.9995	1.7500	1.7490	MSI-2832-40
2	2 1/4	1	2.0100	2.0032	2.2505	2.2495	2.0000	1.9990	MSI-3236-16
2	2 1/4	1 1/2	2.0100	2.0032	2.2505	2.2495	2.0000	1.9990	MSI-3236-24
2	2 1/4	2	2.0100	2.0032	2.2505	2.2495	2.0000	1.9990	MSI-3236-32
2	2 1/4	2 1/2	2.0100	2.0032	2.2505	2.2495	2.0000	1.9990	MSI-3236-40
3	3 1/4	1	3.0114	3.0039	3.2505	3.2495	3.0000	2.9990	MSI-4852-16

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d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1/8	3/16	3/16	.1269	.1251	.1878	.1873	.1243	.1236	PSI-0203-03
3/16	1/4	1/4	.1892	.1873	.2503	.2497	.1865	.1858	PSI-0304-04
3/16	1/4	3/8	.1892	.1873	.2503	.2497	.1865	.1858	PSI-0304-06
1/4	5/16	3/8	.2521	.2498	.3128	.3122	.2490	.2481	PSI-0405-06
1/4	5/16	1/2	.2521	.2498	.3128	.3122	.2490	.2481	PSI-0405-08
5/16	3/8	1/4	.3148	.3125	.3753	.3747	.3115	.3106	PSI-0506-04
5/16	3/8	3/8	.3148	.3125	.3753	.3747	.3115	.3106	PSI-0506-06
5/16	3/8	1/2	.3148	.3125	.3753	.3747	.3115	.3106	PSI-0506-08
3/8	15/32	1/4	.3773	.3750	.4691	.4684	.3740	.3731	PSI-0607-04
3/8	15/32	3/8	.3773	.3750	.4691	.4684	.3740	.3731	PSI-0607-06
3/8	15/32	1/2	.3773	.3750	.4691	.4684	.3740	.3731	PSI-0607-08
3/8	15/32	5/8	.3773	.3750	.4691	.4684	.3740	.3731	PSI-0607-10
3/8	15/32	3/4	.3773	.3750	.4691	.4684	.3740	.3731	PSI-0607-12
7/16	17/32	1/2	.4406	.4379	.5316	.5309	.4365	.4355	PSI-0708-08
7/16	17/32	3/4	.4406	.4379	.5316	.5309	.4365	.4355	PSI-0708-12
1/2	19/32	1/4	.5030	.5003	.5941	.5934	.4990	.4980	PSI-0809-04
1/2	19/32	3/8	.5030	.5003	.5941	.5934	.4990	.4980	PSI-0809-06
1/2	19/32	1/2	.5030	.5003	.5941	.5934	.4990	.4980	PSI-0809-08
1/2	19/32	5/8	.5030	.5003	.5941	.5934	.4990	.4980	PSI-0809-10
1/2	19/32	3/4	.5030	.5003	.5941	.5934	.4990	.4980	PSI-0809-12

³⁾ After press-fit. Testing methods ▶ Page 61

d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1/2	19/32	1	.5030	.5003	.5941	.5934	.4990	.4980	PSI-0809-16
9/16	21/32	1/2	.5655	.5627	.6566	.6559	.5615	.5605	PSI-0910-08
9/16	21/32	5/8	.5655	.5627	.6566	.6559	.5615	.5605	PSI-0910-10
9/16	21/32	3/4	.5655	.5627	.6566	.6559	.5615	.5605	PSI-0910-12
5/8	23/32	1/2	.6280	.6253	.7192	.7184	.6240	.6230	PSI-1011-08
5/8	23/32	3/4	.6280	.6253	.7192	.7184	.6240	.6230	PSI-1011-12
5/8	23/32	1	.6280	.6253	.7192	.7184	.6240	.6230	PSI-1011-16
3/4	7/8	1/2	.7541	.7505	.8755	.8747	.7491	.7479	PSI-1214-08
3/4	7/8	3/4	.7541	.7505	.8755	.8747	.7491	.7479	PSI-1214-12
3/4	7/8	1	.7541	.7505	.8755	.8747	.7491	.7479	PSI-1214-16
7/8	1	1/2	.8791	.8757	1.0005	.9997	.8741	.8729	PSI-1416-08
7/8	1	3/4	.8791	.8757	1.0005	.9997	.8741	.8729	PSI-1416-12
7/8	1	1	.8791	.8757	1.0005	.9997	.8741	.8729	PSI-1416-16
1	1 1/8	1/2	1.0041	1.0007	1.1255	1.1247	.9991	.9979	PSI-1618-08
1	1 1/8	3/4	1.0041	1.0007	1.1255	1.1247	.9991	.9979	PSI-1618-12
1	1 1/8	1	1.0041	1.0007	1.1255	1.1247	.9991	.9979	PSI-1618-16
1 1/8	1 9/32	3/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	PSI-1820-12
1 1/8	1 9/32	1	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	PSI-1820-16
1 1/8	1 9/32	1 1/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	PSI-1820-20
1 1/4	1 13/32	3/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	PSI-2022-12
1 1/4	1 13/32	1	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	PSI-2022-16
1 1/4	1 13/32	1 1/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	PSI-2022-20
1 1/2	1 21/32	1	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	PSI-2426-16
1 1/2	1 21/32	1 1/2	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	PSI-2426-24
1 5/8	1 25/32	1	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	PSI-2629-16
1 5/8	1 25/32	1 1/2	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	PSI-2629-24
1 3/4	1 15/16	1	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	PSI-2831-16
1 3/4	1 15/16	2	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	PSI-2831-32
1 7/8	2 1/16	1	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	PSI-3033-16
1 7/8	2 1/16	2	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	PSI-3033-32
2	2 3/16	1	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	PSI-3235-16
2	2 3/16	2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	PSI-3235-32

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d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1/8	3/16	3/16	.1269	.1251	.1878	.1873	.1243	.1236	P210SI-0203-03
3/16	1/4	1/4	.1892	.1873	.2503	.2497	.1865	.1858	P210SI-0304-04
3/16	1/4	3/8	.1892	.1873	.2503	.2497	.1865	.1858	P210SI-0304-06
1/4	5/16	3/8	.2521	.2498	.3128	.3122	.2490	.2481	P210SI-0405-06
1/4	5/16	1/2	.2521	.2498	.3128	.3122	.2490	.2481	P210SI-0405-08
5/16	3/8	1/4	.3148	.3125	.3753	.3747	.3115	.3106	P210SI-0506-04
5/16	3/8	3/8	.3148	.3125	.3753	.3747	.3115	.3106	P210SI-0506-06
5/16	3/8	1/2	.3148	.3125	.3753	.3747	.3115	.3106	P210SI-0506-08
3/8	15/32	1/4	.3773	.3750	.4691	.4684	.3740	.3731	P210SI-0607-04

³⁾ After press-fit. Testing methods ▶ Page 61

d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
3/8	15/32	3/8	.3773	.3750	.4691	.4684	.3740	.3731	P210SI-0607-06
3/8	15/32	1/2	.3773	.3750	.4691	.4684	.3740	.3731	P210SI-0607-08
3/8	15/32	5/8	.3773	.3750	.4691	.4684	.3740	.3731	P210SI-0607-10
3/8	15/32	3/4	.3773	.3750	.4691	.4684	.3740	.3731	P210SI-0607-12
7/16	17/32	1/2	.4406	.4379	.5316	.5309	.4365	.4355	P210SI-0708-08
7/16	17/32	3/4	.4406	.4379	.5316	.5309	.4365	.4355	P210SI-0708-12
1/2	19/32	1/4	.5030	.5003	.5941	.5934	.4990	.4980	P210SI-0809-04
1/2	19/32	3/8	.5030	.5003	.5941	.5934	.4990	.4980	P210SI-0809-06
1/2	19/32	1/2	.5030	.5003	.5941	.5934	.4990	.4980	P210SI-0809-08
1/2	19/32	5/8	.5030	.5003	.5941	.5934	.4990	.4980	P210SI-0809-10
1/2	19/32	3/4	.5030	.5003	.5941	.5934	.4990	.4980	P210SI-0809-12
1/2	19/32	1	.5030	.5003	.5941	.5934	.4990	.4980	P210SI-0809-16
9/16	21/32	1/2	.5655	.5627	.6566	.6559	.5615	.5605	P210SI-0910-08
9/16	21/32	5/8	.5655	.5627	.6566	.6559	.5615	.5605	P210SI-0910-10
9/16	21/32	3/4	.5655	.5627	.6566	.6559	.5615	.5605	P210SI-0910-12
5/8	23/32	1/2	.6280	.6253	.7192	.7184	.6240	.6230	P210SI-1011-08
5/8	23/32	3/4	.6280	.6253	.7192	.7184	.6240	.6230	P210SI-1011-12
5/8	23/32	1	.6280	.6253	.7192	.7184	.6240	.6230	P210SI-1011-16
3/4	7/8	1/2	.7541	.7505	.8755	.8747	.7491	.7479	P210SI-1214-08
3/4	7/8	3/4	.7541	.7505	.8755	.8747	.7491	.7479	P210SI-1214-12
3/4	7/8	1	.7541	.7505	.8755	.8747	.7491	.7479	P210SI-1214-16
7/8	1	1/2	.8791	.8757	1.0005	.9997	.8741	.8729	P210SI-1416-08
7/8	1	3/4	.8791	.8757	1.0005	.9997	.8741	.8729	P210SI-1416-12
7/8	1	1	.8791	.8757	1.0005	.9997	.8741	.8729	P210SI-1416-16
1	1 1/8	1/2	1.0041	1.0007	1.1255	1.1247	.9991	.9979	P210SI-1618-08
1	1 1/8	3/4	1.0041	1.0007	1.1255	1.1247	.9991	.9979	P210SI-1618-12
1	1 1/8	1	1.0041	1.0007	1.1255	1.1247	.9991	.9979	P210SI-1618-16
1 1/8	1 9/32	3/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	P210SI-1820-12
1 1/8	1 9/32	1	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	P210SI-1820-16
1 1/8	1 9/32	1 1/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	P210SI-1820-20
1 1/4	1 13/32	3/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	P210SI-2022-12
1 1/4	1 13/32	1	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	P210SI-2022-16
1 1/4	1 13/32	1 1/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	P210SI-2022-20
1 1/2	1 21/32	1	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	P210SI-2426-16
1 1/2	1 21/32	1 1/2	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	P210SI-2426-24
1 5/8	1 25/32	1	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	P210SI-2629-16
1 5/8	1 25/32	1 1/2	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	P210SI-2629-24
1 3/4	1 15/16	1	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	P210SI-2831-16
1 3/4	1 15/16	2	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	P210SI-2831-32
1 7/8	2 1/16	1	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	P210SI-3033-16
1 7/8	2 1/16	2	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	P210SI-3033-32
2	2 3/16	1	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	P210SI-3235-16
2	2 3/16	2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	P210SI-3235-32

³⁾ After press-fit. Testing methods ► Page 61

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d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
3/8	15/32	1/4	.3773	.3750	.4691	.4684	.3740	.3731	QSI-0607-04
3/8	15/32	3/8	.3773	.3750	.4691	.4684	.3740	.3731	QSI-0607-06
3/8	15/32	1/2	.3773	.3750	.4691	.4684	.3740	.3731	QSI-0607-08
7/16	17/32	1/2	.4406	.4379	.5316	.5309	.4365	.4355	QSI-0708-08
1/2	19/32	3/4	.5030	.5003	.5941	.5934	.4990	.4980	QSI-0809-12
5/8	23/32	3/4	.6280	.6253	.7192	.7184	.6240	.6230	QSI-1011-12
3/4	7/8	1/2	.7541	.7507	.8755	.8747	.7491	.7479	QSI-1214-08
3/4	7/8	3/4	.7541	.7507	.8755	.8747	.7491	.7479	QSI-1214-12
3/4	7/8	1	.7541	.7507	.8755	.8747	.7491	.7479	QSI-1214-16
7/8	1	1	.8791	.8757	1.0005	.9997	.8741	.8729	QSI-1416-16
1	1 1/8	1	1.0041	1.0007	1.1255	1.1247	.9991	.9979	QSI-1618-16
1	1 1/8	1 1/2	1.0041	1.0007	1.1255	1.1247	.9991	.9979	QSI-1618-24
1 1/8	1 9/32	1 1/2	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	QSI-1820-24
1 1/4	1 13/32	1 1/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	QSI-2022-20
1 1/4	1 13/32	1 1/2	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	QSI-2022-24
1 1/2	1 21/32	1 1/2	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	QSI-2426-24
1 5/8	1 25/32	1 1/4	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	QSI-2629-20
1 3/4	1 15/16	2	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	QSI-2831-32
2	2 3/16	3/4	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	QSI-3235-12
2	2 3/16	1	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	QSI-3235-16
2	2 3/16	1 1/2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	QSI-3235-24
2	2 3/16	2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	QSI-3235-32
2	2 3/16	2 1/2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	QSI-3235-40
2 1/4	2 7/16	2	2.2577	2.2531	2.4377	2.4365	2.2507	2.2489	QSI-3639-32

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d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1/8	3/16	3/16	.1269	.1251	.1878	.1873	.1243	.1236	Q2SI-0203-03
3/16	1/4	1/4	.1892	.1873	.2503	.2497	.1865	.1858	Q2SI-0304-04
3/16	1/4	3/8	.1892	.1873	.2503	.2497	.1865	.1858	Q2SI-0304-06
1/4	5/16	3/8	.2521	.2498	.3128	.3122	.2490	.2481	Q2SI-0405-06
1/4	5/16	1/2	.2521	.2498	.3128	.3122	.2490	.2481	Q2SI-0405-08
5/16	3/8	1/4	.3148	.3125	.3753	.3747	.3115	.3106	Q2SI-0506-04
5/16	3/8	3/8	.3148	.3125	.3753	.3747	.3115	.3106	Q2SI-0506-06
5/16	3/8	1/2	.3148	.3125	.3753	.3747	.3115	.3106	Q2SI-0506-08
3/8	15/32	1/4	.3773	.3750	.4691	.4684	.3740	.3731	Q2SI-0607-04
3/8	15/32	3/8	.3773	.3750	.4691	.4684	.3740	.3731	Q2SI-0607-06
3/8	15/32	1/2	.3773	.3750	.4691	.4684	.3740	.3731	Q2SI-0607-08
3/8	15/32	5/8	.3773	.3750	.4691	.4684	.3740	.3731	Q2SI-0607-10
3/8	15/32	3/4	.3773	.3750	.4691	.4684	.3740	.3731	Q2SI-0607-12
7/16	17/32	1/2	.4406	.4379	.5316	.5309	.4365	.4355	Q2SI-0708-08
7/16	17/32	3/4	.4406	.4379	.5316	.5309	.4365	.4355	Q2SI-0708-12

³⁾ After press-fit. Testing methods ► Page 61

d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1/2	19/32	1/4	.5030	.5003	.5941	.5934	.4990	.4980	Q2SI-0809-04
1/2	19/32	3/8	.5030	.5003	.5941	.5934	.4990	.4980	Q2SI-0809-06
1/2	19/32	1/2	.5030	.5003	.5941	.5934	.4990	.4980	Q2SI-0809-08
1/2	19/32	5/8	.5030	.5003	.5941	.5934	.4990	.4980	Q2SI-0809-10
1/2	19/32	3/4	.5030	.5003	.5941	.5934	.4990	.4980	Q2SI-0809-12
1/2	19/32	1	.5030	.5003	.5941	.5934	.4990	.4980	Q2SI-0809-16
9/16	21/32	1/2	.5655	.5627	.6566	.6559	.5615	.5605	Q2SI-0910-08
9/16	21/32	5/8	.5655	.5627	.6566	.6559	.5615	.5605	Q2SI-0910-10
9/16	21/32	3/4	.5655	.5627	.6566	.6559	.5615	.5605	Q2SI-0910-12
5/8	23/32	1/2	.6280	.6253	.7192	.7184	.6240	.6230	Q2SI-1011-08
5/8	23/32	3/4	.6280	.6253	.7192	.7184	.6240	.6230	Q2SI-1011-12
5/8	23/32	1	.6280	.6253	.7192	.7184	.6240	.6230	Q2SI-1011-16
3/4	7/8	1/2	.7541	.7505	.8755	.8747	.7491	.7479	Q2SI-1214-08
3/4	7/8	3/4	.7541	.7505	.8755	.8747	.7491	.7479	Q2SI-1214-12
3/4	7/8	1	.7541	.7505	.8755	.8747	.7491	.7479	Q2SI-1214-16
3/4	1	3/4	.7541	.7508	1.0010	1.0000	.7491	.7479	Q2SI-1216-16
7/8	1	1/2	.8791	.8757	1.0005	.9997	.8741	.8729	Q2SI-1416-08
7/8	1	3/4	.8791	.8757	1.0005	.9997	.8741	.8729	Q2SI-1416-12
7/8	1	1	.8791	.8757	1.0005	.9997	.8741	.8729	Q2SI-1416-16
1	1 1/8	1/2	1.0041	1.0007	1.1255	1.1247	.9991	.9979	Q2SI-1618-08
1	1 1/8	3/4	1.0041	1.0007	1.1255	1.1247	.9991	.9979	Q2SI-1618-12
1	1 1/8	1	1.0041	1.0007	1.1255	1.1247	.9991	.9979	Q2SI-1618-16
1	1 1/4	1 1/2	1.0041	1.0007	1.2510	1.2500	.9991	.9979	Q2SI-1620-24
1 1/8	1 9/32	3/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	Q2SI-1820-12
1 1/8	1 9/32	1	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	Q2SI-1820-16
1 1/8	1 9/32	1 1/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	Q2SI-1820-20
1 1/4	1 13/32	3/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	Q2SI-2022-12
1 1/4	1 13/32	1	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	Q2SI-2022-16
1 1/4	1 13/32	1 1/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	Q2SI-2022-20
1 1/4	1 13/32	1 1/2	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	Q2SI-2022-24
1 1/4	1 1/2	1 1/2	1.2548	1.2508	1.501	1.500	1.2488	1.2472	Q2SI-2024-24
1 1/2	1 21/32	1	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	Q2SI-2426-16
1 1/2	1 21/32	1 1/2	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	Q2SI-2426-24
1 1/2	1 3/4	1 1/2	1.5048	1.5008	1.7505	1.7495	1.4988	1.4972	Q2SI-2428-24
1 5/8	1 25/32	1	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	Q2SI-2629-16
1 5/8	1 25/32	1 1/2	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	Q2SI-2629-24
1 3/4	1 15/16	1	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	Q2SI-2831-16
1 3/4	1 15/16	2	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	Q2SI-2831-32
1 7/8	2 1/16	1	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	Q2SI-3033-16
1 7/8	2 1/16	2	1.8796	1.8757	2.0633	2.0621	1.8737	1.8721	Q2SI-3033-32
2	2 3/16	1	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	Q2SI-3235-16
2	2 3/16	2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	Q2SI-3235-32
2	2 1/4	2 1/4	2.0059	2.0012	2.2505	2.2495	1.9981	1.9969	Q2SI-3236-36

³⁾ After press-fit. Testing methods ► Page 61

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d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1/8	3/16	3/16	.1269	.1251	.1878	.1873	.1243	.1236	WSI-0203-03
1/8	3/16	1/4	.1269	.1251	.1878	.1873	.1243	.1236	WSI-0203-04
1/8	3/16	3/8	.1269	.1251	.1878	.1873	.1243	.1236	WSI-0203-06
3/16	1/4	1/4	.1892	.1873	.2503	.2497	.1865	.1858	WSI-0304-04
3/16	1/4	3/8	.1892	.1873	.2503	.2497	.1865	.1858	WSI-0304-06
3/16	1/4	1/2	.1892	.1873	.2503	.2497	.1865	.1858	WSI-0304-08
1/4	5/16	3/16	.2521	.2498	.3128	.3122	.2490	.2481	WSI-0405-03
1/4	5/16	1/4	.2521	.2498	.3128	.3122	.2490	.2481	WSI-0405-04
1/4	5/16	5/16	.2521	.2498	.3128	.3122	.2490	.2481	WSI-0405-05
1/4	5/16	3/8	.2521	.2498	.3128	.3122	.2490	.2481	WSI-0405-06
1/4	5/16	1/2	.2521	.2498	.3128	.3122	.2490	.2481	WSI-0405-08
5/16	3/8	1/4	.3148	.3125	.3753	.3747	.3115	.3106	WSI-0506-04
5/16	3/8	3/8	.3148	.3125	.3753	.3747	.3115	.3106	WSI-0506-06
5/16	3/8	1/2	.3148	.3125	.3753	.3747	.3115	.3106	WSI-0506-08
5/16	3/8	3/4	.3148	.3125	.3753	.3747	.3115	.3106	WSI-0506-12
3/8	15/32	1/4	.3773	.3750	.4691	.4684	.3740	.3731	WSI-0607-04
3/8	15/32	3/8	.3773	.3750	.4691	.4684	.3740	.3731	WSI-0607-06
3/8	15/32	7/16	.3773	.3750	.4691	.4684	.3740	.3731	WSI-0607-07
3/8	15/32	1/2	.3773	.3750	.4691	.4684	.3740	.3731	WSI-0607-08
3/8	15/32	5/8	.3773	.3750	.4691	.4684	.3740	.3731	WSI-0607-10
3/8	15/32	3/4	.3773	.3750	.4691	.4684	.3740	.3731	WSI-0607-12
3/8	17/32	3/4	.3773	.3750	.5316	.5309	.3740	.3731	WSI-0608-12
7/16	17/32	1/4	.4406	.4379	.5316	.5309	.4365	.4355	WSI-0708-04
7/16	17/32	1/2	.4406	.4379	.5316	.5309	.4365	.4355	WSI-0708-08
7/16	17/32	3/4	.4406	.4379	.5316	.5309	.4365	.4355	WSI-0708-12
1/2	19/32	3/16	.5030	.5003	.5941	.5934	.4990	.4980	WSI-0809-03
1/2	19/32	1/4	.5030	.5003	.5941	.5934	.4990	.4980	WSI-0809-04
1/2	19/32	3/8	.5030	.5003	.5941	.5934	.4990	.4980	WSI-0809-06
1/2	19/32	1/2	.5030	.5003	.5941	.5934	.4990	.4980	WSI-0809-08
1/2	19/32	5/8	.5030	.5003	.5941	.5934	.4990	.4980	WSI-0809-10
1/2	19/32	3/4	.5030	.5003	.5941	.5934	.4990	.4980	WSI-0809-12
1/2	19/32	1	.5030	.5003	.5941	.5934	.4990	.4980	WSI-0809-16
1/2	5/8	1/2	.5040	.5013	.6260	.6250	.5000	.4990	WSI-0810-08
1/2	5/8	5/8	.5040	.5013	.6260	.6250	.5000	.4990	WSI-0810-10
1/2	5/8	3/4	.5040	.5013	.6260	.6250	.5000	.4990	WSI-0810-12
1/2	5/8	1	.5040	.5013	.6260	.6250	.5000	.4990	WSI-0810-16
9/16	21/32	1/2	.5655	.5627	.6566	.6559	.5615	.5605	WSI-0910-08
9/16	21/32	5/8	.5655	.5627	.6566	.6559	.5615	.5605	WSI-0910-10
9/16	21/32	3/4	.5655	.5627	.6566	.6559	.5615	.5605	WSI-0910-12
5/8	23/32	1/4	.6280	.6253	.7192	.7184	.6240	.6230	WSI-1011-04
5/8	23/32	3/8	.6280	.6253	.7192	.7184	.6240	.6230	WSI-1011-06
5/8	23/32	1/2	.6280	.6253	.7192	.7184	.6240	.6230	WSI-1011-08
5/8	23/32	5/8	.6280	.6253	.7192	.7184	.6240	.6230	WSI-1011-10
5/8	23/32	3/4	.6280	.6253	.7192	.7184	.6240	.6230	WSI-1011-12

³⁾ After press-fit. Testing methods ► Page 61

d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
5/8	23/32	1	.6280	.6253	.7192	.7184	.6240	.6230	WSI-1011-16
11/16	25/32	3/4	.6906	.6879	.7817	.7809	.6865	.6855	WSI-1112-12
3/4	7/8	1/2	.7541	.7507	.8755	.8747	.7491	.7479	WSI-1214-08
3/4	7/8	3/4	.7541	.7507	.8755	.8747	.7491	.7479	WSI-1214-12
3/4	7/8	1	.7541	.7507	.8755	.8747	.7491	.7479	WSI-1214-16
3/4	7/8	1 1/2	.7541	.7507	.8755	.8747	.7491	.7479	WSI-1214-24
7/8	1	1/4	.8791	.8757	1.0005	.9997	.8741	.8729	WSI-1416-04
7/8	1	3/8	.8791	.8757	1.0005	.9997	.8741	.8729	WSI-1416-06
7/8	1	1/2	.8791	.8757	1.0005	.9997	.8741	.8729	WSI-1416-08
7/8	1	5/8	.8791	.8757	1.0005	.9997	.8741	.8729	WSI-1416-10
7/8	1	3/4	.8791	.8757	1.0005	.9997	.8741	.8729	WSI-1416-12
7/8	1	1	.8791	.8757	1.0005	.9997	.8741	.8729	WSI-1416-16
7/8	1	1 1/2	.8791	.8757	1.0005	.9997	.8741	.8729	WSI-1416-24
1	1 1/8	3/8	1.0041	1.0007	1.1255	1.1247	.9991	.9979	WSI-1618-06
1	1 1/8	1/2	1.0041	1.0007	1.1255	1.1247	.9991	.9979	WSI-1618-08
1	1 1/8	3/4	1.0041	1.0007	1.1255	1.1247	.9991	.9979	WSI-1618-12
1	1 1/8	1	1.0041	1.0007	1.1255	1.1247	.9991	.9979	WSI-1618-16
1	1 1/8	1 5/16	1.0041	1.0007	1.1255	1.1247	.9991	.9979	WSI-1618-20
1	1 1/8	1 3/8	1.0041	1.0007	1.1255	1.1247	.9991	.9979	WSI-1618-22
1	1 1/8	1 1/2	1.0041	1.0007	1.1255	1.1247	.9991	.9979	WSI-1618-24
1 1/8	1 9/32	3/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	WSI-1820-12
1 1/8	1 9/32	1	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	WSI-1820-16
1 1/8	1 9/32	1 1/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	WSI-1820-20
1 1/4	1 13/32	3/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	WSI-2022-12
1 1/4	1 13/32	7/8	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	WSI-2022-14
1 1/4	1 13/32	1	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	WSI-2022-16
1 1/4	1 13/32	1 1/4	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	WSI-2022-20
1 1/4	1 13/32	1 1/2	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	WSI-2022-24
1 3/8	1 17/32	1	1.3798	1.3758	1.5318	1.5308	1.3738	1.3722	WSI-2224-16
1 3/8	1 17/32	1 1/2	1.3798	1.3758	1.5318	1.5308	1.3738	1.3722	WSI-2224-24
1 1/2	1 21/32	3/4	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	WSI-2426-12
1 1/2	1 21/32	1	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	WSI-2426-16
1 1/2	1 21/32	1 1/2	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	WSI-2426-24
1 1/2	1 21/32	2 3/4	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	WSI-2426-44
1 5/8	1 25/32	1	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	WSI-2629-16
1 5/8	1 25/32	1 1/4	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	WSI-2629-20
1 5/8	1 25/32	1 1/2	1.6297	1.6258	1.7818	1.7808	1.6238	1.6222	WSI-2629-24
1 3/4	1 15/16	1	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	WSI-2831-16
1 3/4	1 15/16	1 1/2	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	WSI-2831-24
1 3/4	1 15/16	2	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	WSI-2831-32
1 3/4	1 15/16	3	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	WSI-2831-48
1 7/8	2 1/16	1	1.8796	1.8757	2.0621	2.0633	1.8721	1.8737	WSI-3033-16
1 7/8	2 1/16	2	1.8796	1.8757	2.0621	2.0633	1.8721	1.8737	WSI-3033-32
2	2 3/16	1	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	WSI-3235-16
2	2 3/16	1 1/2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	WSI-3235-24
2	2 3/16	2	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	WSI-3235-32

³⁾ After press-fit. Testing methods ► Page 61

d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
2 1/4	2 7/16	2	2.2577	2.2531	2.4377	2.4365	2.2507	2.2489	WSI-3639-32

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d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1/8	3/16	3/16	.1266	.1247	.1878	.1873	.1243	.1236	XSI-0203-03
1/8	3/16	5/16	.1266	.1247	.1878	.1873	.1243	.1236	XSI-0203-05
1/8	3/16	3/8	.1266	.1247	.1878	.1873	.1243	.1236	XSI-0203-06
3/16	1/4	3/16	.1888	.1869	.2503	.2497	.1865	.1858	XSI-0304-03
3/16	1/4	1/4	.1888	.1869	.2503	.2497	.1865	.1858	XSI-0304-04
3/16	1/4	3/8	.1888	.1869	.2503	.2497	.1865	.1858	XSI-0304-06
3/16	1/4	1/2	.1888	.1869	.2503	.2497	.1865	.1858	XSI-0304-08
1/4	5/16	1/4	.2518	.2495	.3128	.3122	.2490	.2481	XSI-0405-04
1/4	5/16	3/8	.2518	.2495	.3128	.3122	.2490	.2481	XSI-0405-06
1/4	5/16	1/2	.2518	.2495	.3128	.3122	.2490	.2481	XSI-0405-08
5/16	3/8	1/4	.3143	.3120	.3753	.3747	.3115	.3106	XSI-0506-04
5/16	3/8	3/8	.3143	.3120	.3753	.3747	.3115	.3106	XSI-0506-06
5/16	3/8	1/2	.3143	.3120	.3753	.3747	.3115	.3106	XSI-0506-08
3/8	15/32	1/4	.3768	.3745	.4691	.4684	.3740	.3731	XSI-0607-04
3/8	15/32	5/16	.3768	.3745	.4691	.4684	.3740	.3731	XSI-0607-05
3/8	15/32	3/8	.3768	.3745	.4691	.4684	.3740	.3731	XSI-0607-06
3/8	15/32	1/2	.3768	.3745	.4691	.4684	.3740	.3731	XSI-0607-08
3/8	15/32	5/8	.3768	.3745	.4691	.4684	.3740	.3731	XSI-0607-10
3/8	15/32	3/4	.3768	.3745	.4691	.4684	.3740	.3731	XSI-0607-12
7/16	17/32	1/4	.4399	.4371	.5316	.5309	.4365	.4355	XSI-0708-04
7/16	17/32	1/2	.4399	.4371	.5316	.5309	.4365	.4355	XSI-0708-08
7/16	17/32	5/8	.4399	.4371	.5316	.5309	.4365	.4355	XSI-0708-10
7/16	17/32	3/4	.4399	.4371	.5316	.5309	.4365	.4355	XSI-0708-12
1/2	19/32	1/4	.5030	.5003	.5941	.5934	.4990	.4980	XSI-0809-04
1/2	19/32	3/8	.5024	.4996	.5941	.5934	.4990	.4980	XSI-0809-06
1/2	19/32	1/2	.5024	.4996	.5941	.5934	.4990	.4980	XSI-0809-08
1/2	19/32	5/8	.5024	.4996	.5941	.5934	.4990	.4980	XSI-0809-10
1/2	19/32	3/4	.5024	.4996	.5941	.5934	.4990	.4980	XSI-0809-12
1/2	19/32	1	.5024	.4996	.5941	.5934	.4990	.4980	XSI-0809-16
9/16	21/32	1/2	.5649	.5620	.6566	.6559	.5615	.5605	XSI-0910-08
9/16	21/32	5/8	.5649	.5620	.6566	.6559	.5615	.5605	XSI-0910-10
9/16	21/32	3/4	.5649	.5620	.6566	.6559	.5615	.5605	XSI-0910-12
5/8	23/32	1/4	.6274	.6246	.7192	.7184	.6240	.6230	XSI-1011-04
5/8	23/32	3/8	.6274	.6246	.7192	.7184	.6240	.6230	XSI-1011-06
5/8	23/32	1/2	.6274	.6246	.7192	.7184	.6240	.6230	XSI-1011-08
5/8	23/32	5/8	.6274	.6246	.7192	.7184	.6240	.6230	XSI-1011-10
5/8	23/32	3/4	.6274	.6246	.7192	.7184	.6240	.6230	XSI-1011-12
5/8	23/32	1	.6274	.6246	.7192	.7184	.6240	.6230	XSI-1011-16
11/16	25/32	7/8	.6906	.6879	.7817	.7809	.6865	.6855	XSI-1112-14
3/4	7/8	3/8	.7532	.7499	.8755	.8747	.7491	.7479	XSI-1214-06

³⁾ After press-fit. Testing methods ► Page 61

d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
3/4	7/8	1/2	.7532	.7499	.8755	.8747	.7491	.7479	XSI-1214-08
3/4	7/8	3/4	.7532	.7499	.8755	.8747	.7491	.7479	XSI-1214-12
3/4	7/8	1	.7532	.7499	.8755	.8747	.7491	.7479	XSI-1214-16
7/8	1	1/2	.8782	.8749	1.0005	.9997	.8741	.8729	XSI-1416-08
7/8	1	3/4	.8782	.8749	1.0005	.9997	.8741	.8729	XSI-1416-12
7/8	1	1	.8782	.8749	1.0005	.9997	.8741	.8729	XSI-1416-16
1	1 1/8	1/2	1.0032	.9999	1.1255	1.1247	.9991	.9979	XSI-1618-08
1	1 1/8	3/4	1.0032	.9999	1.1255	1.1247	.9991	.9979	XSI-1618-12
1	1 1/8	1	1.0032	.9999	1.1255	1.1247	.9991	.9979	XSI-1618-16
1	1 1/8	1 1/2	1.0032	.9999	1.1255	1.1247	.9991	.9979	XSI-1618-24
1 1/8	1 9/32	3/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	XSI-1820-12
1 1/8	1 9/32	1	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	XSI-1820-16
1 1/8	1 9/32	1 1/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	XSI-1820-20
1 1/4	1 13/32	5/8	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	XSI-2022-10
1 1/4	1 13/32	3/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	XSI-2022-12
1 1/4	1 13/32	1	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	XSI-2022-16
1 1/4	1 13/32	1 1/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	XSI-2022-20
1 1/2	1 21/32	3/4	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	XSI-2426-12
1 1/2	1 21/32	1	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	XSI-2426-16
1 1/2	1 21/32	1 1/2	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	XSI-2426-24
1 5/8	1 25/32	1	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	XSI-2629-16
1 5/8	1 25/32	1 1/4	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	XSI-2629-20
1 5/8	1 25/32	1 1/2	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	XSI-2629-24
1 3/4	1 15/16	1	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	XSI-2831-16
1 3/4	1 15/16	2	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	XSI-2831-32
1 7/8	2 1/16	1	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	XSI-3033-16
1 7/8	2 1/16	2	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	XSI-3033-32
2	2 3/16	1	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	XSI-3235-16
2	2 3/16	1 1/2	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	XSI-3235-24
2	2 3/16	2	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	XSI-3235-32
2 1/4	2 7/16	2	2.2577	2.2531	2.4377	2.4365	2.2507	2.2489	XSI-3639-32
2 3/4	2 15/16	2	2.7570	2.7523	2.9370	2.9358	2.7500	2.7490	XSI-4447-32

³⁾ After press-fit. Testing methods ► Page 61

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d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1/8	3/16	3/16	.1266	.1247	.1878	.1873	.1243	.1236	ZSI-0203-03
3/16	1/4	1/4	.1888	.1869	.2503	.2497	.1865	.1858	ZSI-0304-04
3/16	1/4	3/8	.1888	.1869	.2503	.2497	.1865	.1858	ZSI-0304-06
1/4	5/16	3/8	.2518	.2495	.3128	.3122	.2490	.2481	ZSI-0405-06
1/4	5/16	1/2	.2518	.2495	.3128	.3122	.2490	.2481	ZSI-0405-08
5/16	3/8	1/4	.3143	.3120	.3753	.3747	.3115	.3106	ZSI-0506-04
5/16	3/8	3/8	.3143	.3120	.3753	.3747	.3115	.3106	ZSI-0506-06
5/16	3/8	1/2	.3143	.3120	.3753	.3747	.3115	.3106	ZSI-0506-08
3/8	15/32	1/4	.3768	.3745	.4691	.4684	.3740	.3731	ZSI-0607-04
3/8	15/32	3/8	.3768	.3745	.4691	.4684	.3740	.3731	ZSI-0607-06
3/8	15/32	1/2	.3768	.3745	.4691	.4684	.3740	.3731	ZSI-0607-08
3/8	15/32	5/8	.3768	.3745	.4691	.4684	.3740	.3731	ZSI-0607-10
3/8	15/32	3/4	.3768	.3745	.4691	.4684	.3740	.3731	ZSI-0607-12
7/16	17/32	1/2	.4399	.4371	.5316	.5309	.4365	.4355	ZSI-0708-08
7/16	17/32	3/4	.4399	.4371	.5316	.5309	.4365	.4355	ZSI-0708-12
1/2	19/32	1/4	.5024	.4996	.5941	.5934	.4990	.4980	ZSI-0809-04
1/2	19/32	3/8	.5024	.4996	.5941	.5934	.4990	.4980	ZSI-0809-06
1/2	19/32	1/2	.5024	.4996	.5941	.5934	.4990	.4980	ZSI-0809-08
1/2	19/32	5/8	.5024	.4996	.5941	.5934	.4990	.4980	ZSI-0809-10
1/2	19/32	3/4	.5024	.4996	.5941	.5934	.4990	.4980	ZSI-0809-12
1/2	19/32	1	.5024	.4996	.5941	.5934	.4990	.4980	ZSI-0809-16
1/2	5/8	3/4	.5034	.5006	.6260	.6250	.5000	.4990	ZSI-0810-12
9/16	21/32	1/2	.5649	.5620	.6566	.6559	.5615	.5605	ZSI-0910-08
9/16	21/32	5/8	.5649	.5620	.6566	.6559	.5615	.5605	ZSI-0910-10
9/16	21/32	3/4	.5649	.5620	.6566	.6559	.5615	.5605	ZSI-0910-12
5/8	23/32	1/2	.6274	.6246	.7192	.7184	.6240	.6230	ZSI-1011-08
5/8	23/32	3/4	.6274	.6246	.7192	.7184	.6240	.6230	ZSI-1011-12
5/8	23/32	1	.6274	.6246	.7192	.7184	.6240	.6230	ZSI-1011-16
3/4	7/8	1/2	.7532	.7499	.8755	.8747	.7491	.7479	ZSI-1214-08
3/4	7/8	3/4	.7532	.7499	.8755	.8747	.7491	.7479	ZSI-1214-12
3/4	7/8	1	.7532	.7499	.8755	.8747	.7491	.7479	ZSI-1214-16
7/8	1	1/2	.8782	.8749	1.0005	.9997	.8741	.8729	ZSI-1416-08
7/8	1	3/4	.8782	.8749	1.0005	.9997	.8741	.8729	ZSI-1416-12
7/8	1	1	.8782	.8749	1.0005	.9997	.8741	.8729	ZSI-1416-16
1	1 1/8	1/2	1.0032	.9999	1.1255	1.1247	.9991	.9979	ZSI-1618-08
1	1 1/8	3/4	1.0032	.9999	1.1255	1.1247	.9991	.9979	ZSI-1618-12
1	1 1/8	1	1.0032	.9999	1.1255	1.1247	.9991	.9979	ZSI-1618-16
1	1 1/8	1 1/2	1.0032	.9999	1.1255	1.1247	.9991	.9979	ZSI-1618-24
1 1/8	1 9/32	3/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	ZSI-1820-12
1 1/8	1 9/32	1	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	ZSI-1820-16
1 1/8	1 9/32	1 1/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	ZSI-1820-20
1 1/8	1 9/32	1 1/2	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	ZSI-1820-24
1 1/4	1 13/32	3/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	ZSI-2022-12
1 1/4	1 13/32	1	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	ZSI-2022-16

³⁾ After press-fit. Testing methods ► Page 61

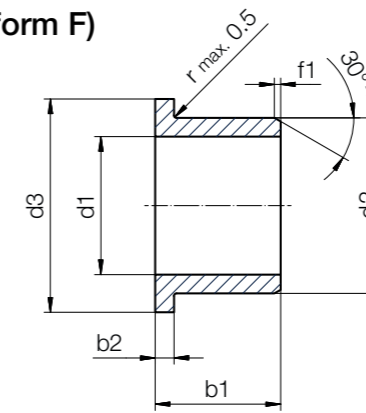
d1	d2	b1	d1 ³⁾		Housing hole		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1 1/4	1 13/32	1 1/4	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	ZSI-2022-20
1 1/2	1 21/32	1	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	ZSI-2426-16
1 1/2	1 21/32	1 1/2	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	ZSI-2426-24
1 5/8	1 25/32	1	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	ZSI-2629-16
1 5/8	1 25/32	1 1/2	1.6287	1.6248	1.7818	1.7808	1.6238	1.6222	ZSI-2629-24
1 3/4	1 15/16	1	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	ZSI-2831-16
1 3/4	1 15/16	2	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	ZSI-2831-32
1 7/8	2 1/16	1	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	ZSI-3033-16
1 7/8	2 1/16	2	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	ZSI-3033-32
2	2 3/16	1	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	ZSI-3235-16
2	2 3/16	2	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	ZSI-3235-32
2 1/4	27/16	2	2.2556	2.2519	2.4377	2.4365	2.2507	2.2489	ZSI-3639-32

³⁾ After press-fit. Testing methods ► Page 61

Flange bearings (form F)



Image exemplary



Chamfer in relation to d1

d1 [inch]	f [inch]
Ø 0.040 - 0.236	0.012
Ø 0.236 - 0.472	0.019
Ø 0.472 - 1.18	0.031
Ø > 1.18	0.047

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d1	d2	b1	d3	b2	d1 ³⁾		Housing hole		Shaft size		Part No.
					h13	max.	min.	max.	min.	max.	
1/8	3/16	3/16	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	A181FI-0203-03
3/16	1/4	1/4	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	A181FI-0304-04
1/4	5/16	3/8	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	A181FI-0405-06
1/4	5/16	1/2	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	A181FI-0405-08
5/16	3/8	1/4	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	A181FI-0506-04
5/16	3/8	3/8	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	A181FI-0506-06
5/16	3/8	1/2	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	A181FI-0506-08
3/8	15/32	1/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	A181FI-0607-04
3/8	15/32	3/8	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	A181FI-0607-06
3/8	15/32	1/2	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	A181FI-0607-08
3/8	15/32	3/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	A181FI-0607-12
7/16	17/32	1/2	.7500	.0460	.4406	.4379	.5316	.5309	.4365	.4355	A181FI-0708-08
1/2	19/32	1/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	A181FI-0809-04
1/2	19/32	3/8	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	A181FI-0809-06
1/2	19/32	1/2	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	A181FI-0809-08
1/2	19/32	3/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	A181FI-0809-12
1/2	19/32	1	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	A181FI-0809-16
5/8	23/32	1/2	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	A181FI-1011-08
5/8	23/32	3/4	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	A181FI-1011-12
5/8	23/32	1	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	A181FI-1011-16
3/4	7/8	1/2	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	A181FI-1214-08
3/4	7/8	3/4	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	A181FI-1214-12
3/4	7/8	1	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	A181FI-1214-16
7/8	1	1/2	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	A181FI-1416-08
7/8	1	3/4	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	A181FI-1416-12
7/8	1	1	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	A181FI-1416-16
1	1 1/8	1/2	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	A181FI-1618-08
1	1 1/8	3/4	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	A181FI-1618-12
1	1 1/8	1	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	A181FI-1618-16
1 1/4	1 13/32	1	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	A181FI-2022-16
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	A181FI-2022-20
1 1/2	1 21/32	1	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	A181FI-2426-16
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	A181FI-2426-24

³⁾ After press-fit. Testing methods ► Page 61

d1	d2	b1	d3	b2 h13	d1 ³⁾		Housing hole		Shaft size		Part No.
					max.	min.	max.	min.	max.	min.	
1 3/4	1 15/16	2	2.3750	.0930	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	A181FI-2831-32
2	2 3/16	2	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	A181FI-3235-32

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d1	d2	b1	d3	b2 h13	d1 ³⁾		Housing hole		Shaft size		Part No.
					max.	min.	max.	min.	max.	min.	
1/8	1/4	1/4	.3600	.0470	.1280	.1262	.2515	.2510	.1250	.1241	AFI-0204-04
3/16	5/16	1/4	.3700	.0470	.1905	.1887	.3140	.3135	.1875	.1866	AFI-0305-04
1/4	3/8	1/4	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	AFI-0406-04
1/4	3/8	3/8	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	AFI-0406-06
5/16	7/16	1/2	.5600	.0620	.3164	.3141	.4390	.4385	.3125	.3116	AFI-0507-08
3/8	1/2	1/4	.6250	.0620	.3164	.3141	.4390	.4385	.3125	.3116	AFI-0608-04
3/8	1/2	1/2	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	AFI-0608-08
1/2	5/8	1/2	.8750	.0620	.5047	.5020	.6257	.6250	.5000	.4983	AFI-0810-08
1/2	5/8	3/4	.8750	.0620	.5047	.5020	.6257	.6250	.5000	.4983	AFI-0810-12
5/8	13/16	1	1.0630	.1560	.6297	.6270	.8135	.8125	.6250	.6240	AFI-1013-16
3/4	1	3/4	1.2500	.1560	.7559	.7525	1.0010	1.0000	.7500	.7490	AFI-1216-12
3/4	1	1	1.2500	.1560	.7559	.7525	1.0010	1.0000	.7500	.7490	AFI-1216-16
7/8	1 1/8	1 1/2	1.3750	.1560	.8809	.8775	1.1260	1.1250	.8750	.8740	AFI-1418-24
1	1 9/32	1	1.5000	.1880	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	AFI-1620-16
1	1 9/32	1 1/2	1.5000	.1880	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	AFI-1620-24
1 1/4	1 17/32	1	1.7500	.2000	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	AFI-2024-16
1 1/4	1 17/32	1 1/2	1.7500	.2000	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	AFI-2024-24
1 1/2	1 3/4	1	2.0000	.1250	1.5100	1.5032	1.7505	1.7495	1.5000	1.4990	AFI-2428-16
1 1/2	1 3/4	1 1/2	2.0000	.1250	1.5100	1.5032	1.7505	1.7495	1.5000	1.4990	AFI-2428-24
1 3/4	2	1	2.2500	.1250	1.7560	1.7532	2.0005	1.9995	1.7500	1.7490	AFI-2832-16

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d1	d2	b1	d3	b2 h13	d1 ³⁾		Housing hole		Shaft size		Part No.
					max.	min.	max.	min.	max.	min.	
1/8	3/16	3/16	.3120	.0320	.1266	.1247	.1878	.1873	.1243	.1236	A350FI-0203-03
3/16	1/4	1/4	.3750	.0320	.1888	.1869	.2503	.2497	.1865	.1858	A350FI-0304-04
1/4	5/16	3/8	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	A350FI-0405-06
1/4	5/16	1/2	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	A350FI-0405-08
5/16	3/8	1/4	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	A350FI-0506-04
5/16	3/8	3/8	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	A350FI-0506-06
5/16	3/8	1/2	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	A350FI-0506-08
3/8	15/32	1/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	A350FI-0607-04
3/8	15/32	3/8	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	A350FI-0607-06
3/8	15/32	1/2	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	A350FI-0607-08
3/8	15/32	3/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	A350FI-0607-12
7/16	17/32	1/2	.7500	.0460	.4399	.4371	.5316	.5309	.4365	.4355	A350FI-0708-08
1/2	19/32	1/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	A350FI-0809-04
1/2	19/32	3/8	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	A350FI-0809-06
1/2	19/32	1/2	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	A350FI-0809-08
1/2	19/32	3/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	A350FI-0809-12
1/2	19/32	1	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	A350FI-0809-16
5/8	23/32	1/2	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	A350FI-1011-08
5/8	23/32	3/4	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	A350FI-1011-12
5/8	23/32	1	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	A350FI-1011-16

3) After press-fit. Testing methods ► Page 61

d1	d2	b1	d3	b2 h13	d1 ³⁾		Housing hole		Shaft size		Part No.
					max.	min.	max.	min.	max.	min.	
1/2	19/32	1/2	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	A350FI-0809-08
1/2	19/32	3/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	A350FI-0809-12
1/2	19/32	1	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	A350FI-0809-16
5/8	23/32	1/2	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	A350FI-1011-08
5/8	23/32	3/4	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	A350FI-1011-12
5/8	23/32	1	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	A350FI-1011-16
3/4	7/8	1/2	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	A350FI-1214-08
3/4	7/8	3/4	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	A350FI-1214-12
3/4	7/8	1	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	A350FI-1214-16
7/8	1	1/2	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	A350FI-1416-08
7/8	1	3/4	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	A350FI-1416-12
7/8	1	1	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	A350FI-1416-16
1	1 1/8	1/2	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	A350FI-1618-08
1	1 1/8	3/4	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	A350FI-1618-12
1	1 1/8	1	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	A350FI-1618-16
1 1/4	1 13/32	1	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	A350FI-2022-16
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	A350FI-2022-20
1 1/2	1 21/32	1	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	A350FI-2426-16
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	A350FI-2426-24
1 3/4	1 15/16	2	2.3750	.0930	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	A350FI-2831-32
2	2 3/16	2	2.6250	.0930	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	A350FI-3235-32

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d1	d2	b1	d3	b2 h13	d1 ³⁾		Housing hole		Shaft size		Part No.
					max.	min.	max.	min.	max.	min.	
1/8	3/16	3/16	.3120	.0320	.1266	.1247	.1878	.1873	.1243	.1236	A500FI-0203-03
3/16	1/4	1/4	.3750	.0320	.1888	.1869	.2503	.2497	.1865	.1858	A500FI-0304-04
1/4	5/16	3/8	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	A500FI-0405-06
1/4	5/16	1/2	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	A500FI-0405-08
5/16	3/8	1/4	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	A500FI-0506-04
5/16	3/8	3/8	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	A500FI-0506-06
5/16	3/8	1/2	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	A500FI-0506-08
3/8	15/32	1/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	A500FI-0607-04
3/8	15/32	3/8	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	A500FI-0607-06
3/8	15/32	1/2	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	A500FI-0607-08
3/8	15/32	3/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	A500FI-0607-12
7/16	17/32	1/2	.7500	.0460	.4399	.4371	.5316	.5309	.4365	.4355	A500FI-0708-08
1/2	19/32	1/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	A500FI-0809-04
1/2	19/32	3/8	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	A500FI-0809-06
1/2	19/32	1/2	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	A500FI-0809-08
1/2	19/32	3/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	A500FI-0809-12
1/2	19/32	1	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	A500FI-0809-16
5/8	23/32	1/2	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	A500FI-1011-08
5/8	23/32	3/4	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	A500FI-1011-12
5/8	23/32	1	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	A500FI-1011-16

3) After press-fit. Testing methods ► Page 61

d1	d2	b1	d3	b2	d1 ³⁾		Housing hole		Shaft size		Part No.
					h13	max.	min.	max.	min.	max.	
3/4	7/8	1/2	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	A500FI-1214-08
3/4	7/8	3/4	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	A500FI-1214-12
3/4	7/8	1	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	A500FI-1214-16
7/8	1	1/2	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	A500FI-1416-08
7/8	1	3/4	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	A500FI-1416-12
7/8	1	1	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	A500FI-1416-16
1	1 1/8	1/2	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	A500FI-1618-08
1	1 1/8	3/4	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	A500FI-1618-12
1	1 1/8	1	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	A500FI-1618-16
1 1/4	1 13/32	1	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	A500FI-2022-16
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	A500FI-2022-20
1 1/2	1 21/32	1	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	A500FI-2426-16
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	A500FI-2426-24
1 3/4	1 15/16	2	2.3750	.0930	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	A500FI-2831-32
2	2 3/16	2	2.6250	.0930	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	A500FI-3235-32

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d1	d2	b1	d3	b2	d1 ³⁾		Housing hole		Shaft size		Part No.
					h13	max.	min.	max.	min.	max.	
1/8	3/16	1/8	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	GFI-0203-02
1/8	3/16	3/16	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	GFI-0203-03
1/8	3/16	1/4	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	GFI-0203-04
1/8	3/16	3/8	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	GFI-0203-06
3/16	1/4	1/4	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	GFI-0304-04
3/16	1/4	3/8	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	GFI-0304-06
3/16	1/4	1/2	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	GFI-0304-08
1/4	5/16	1/4	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	GFI-0405-04
1/4	5/16	5/16	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	GFI-0405-05
1/4	5/16	3/8	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	GFI-0405-06
1/4	5/16	1/2	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	GFI-0405-08
1/4	5/16	3/4	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	GFI-0405-12
5/16	3/8	1/4	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	GFI-0506-04
5/16	3/8	3/8	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	GFI-0506-06
5/16	3/8	1/2	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	GFI-0506-08
5/16	3/8	3/4	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	GFI-0506-12
3/8	15/32	1/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	GFI-0607-04
3/8	15/32	5/16	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	GFI-0607-05
3/8	15/32	3/8	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	GFI-0607-06
3/8	15/32	1/2	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	GFI-0607-08
3/8	15/32	3/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	GFI-0607-12
3/8	15/32	7/8	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	GFI-0607-14
7/16	17/32	1/4	.7500	.0460	.4406	.4379	.5316	.5309	.4365	.4355	GFI-0708-04
7/16	17/32	1/2	.7500	.0460	.4406	.4379	.5316	.5309	.4365	.4355	GFI-0708-08
1/2	19/32	1/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	GFI-0809-04
1/2	19/32	5/16	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	GFI-0809-05

³⁾ After press-fit. Testing methods ▶ Page 61

d1	d2	b1	d3	b2	d1 ³⁾		Housing hole		Shaft size		Part No.
					h13	max.	min.	max.	min.	max.	
1/2	19/32	3/8	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	GFI-0809-06
1/2	19/32	1/2	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	GFI-0809-08
1/2	19/32	3/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	GFI-0809-12
1/2	19/32	1	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	GFI-0809-16
5/8	23/32	3/8	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	GFI-1011-06
5/8	23/32	1/2	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	GFI-1011-08
5/8	23/32	3/4	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	GFI-1011-12
5/8	23/32	7/8	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	GFI-1011-14
5/8	23/32	1	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	GFI-1011-16
5/8	23/32	1 1/2	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	GFI-1011-24
3/4	7/8	1/8	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	GFI-1214-02
3/4	7/8	3/8	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	GFI-1214-06
3/4	7/8	1/2	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	GFI-1214-08
3/4	7/8	5/8	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	GFI-1214-10
3/4	7/8	3/4	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	GFI-1214-12
3/4	7/8	1	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	GFI-1214-16
3/4	7/8	1 1/2	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	GFI-1214-24
7/8	1	1/2	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	GFI-1416-08
7/8	1	3/4	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	GFI-1416-12
7/8	1	1	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	GFI-1416-16
7/8	1	1 1/4	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	GFI-1416-20
7/8	1	1 1/2	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	GFI-1416-24
1	1 1/8	1/2	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	GFI-1618-08
1	1 1/8	3/4	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	GFI-1618-12
1	1 1/8	1	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	GFI-1618-16
1	1 1/8	1 1/4	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	GFI-1618-20
1	1 1/8	1 1/2	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	GFI-1618-24
1 1/8	1 9/32	3/4	1.5620	.0780	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	GFI-1820-12
1 1/8	1 9/32	1 1/2	1.5620	.0780	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	GFI-1820-24
1 1/4	1 13/32	3/8	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	GFI-2022-06
1 1/4	1 13/32	3/4	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	GFI-2022-12
1 1/4	1 13/32	7/8	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	GFI-2022-14
1 1/4	1 13/32	1	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	GFI-2022-16
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	GFI-2022-20
1 1/4	1 13/32	1 1/2	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	GFI-2022-24
1 3/8	1 17/32	1	1.8750	.0780	1.3798	1.3758	1.5318	1.5308	1.3738	1.3722	GFI-2224-16
1 1/2	1 21/32	3/4	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	GFI-2426-12
1 1/2	1 21/32	1	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	GFI-2426-16
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	GFI-2426-24
1 3/4	1 15/16	1	2.3750	.0930	1.7547	1.7505	1.9381	1.9371	1.7487	1.7471	GFI-2831-16
1 3/4	1 15/16	1 1/2	2.3750	.0930	1.7547	1.7505	1.9381	1.9371	1.7487	1.7471	GFI-2831-24
1 3/4	1 15/16	2	2.3750	.0930	1.7547	1.7505	1.9381	1.9371	1.7487	1.7471	GFI-2831-32
2	2 3/16	1	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	GFI-3235-16
2	2 3/16	1 1/2	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	GFI-3235-24
2	2 3/16	2	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	GFI-3235-32
2 1/4	2 7/16	2	2.7500	.0930	2.2577	2.2531	2.4377	2.4365	2.2507	2.2489	GFI-3639-32

³⁾ After press-fit. Testing methods ▶ Page 61

d1	d2	b1	d3	b2	d1 ³⁾		Housing hole		Shaft size		Part No.
					max.	min.	max.	min.	max.	min.	
2 1/2	2 11/16	2	3.1250	.0930	2.5082	2.5035	2.6881	2.6869	2.5000	2.4999	GFI-4043-32
2 3/4	2 15/16	2	3.3750	.0930	2.7570	2.7523	2.9370	2.9358	2.7500	2.7490	GFI-4447-32

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d1	d2	b1	d3	b2	d1 ³⁾		Housing hole		Shaft size		Part No.
					h13	h13	max.	min.	max.	min.	
1/8	3/16	3/16	.3120	.0320	.1266	.1247	.1878	.1873	.1243	.1236	H1FI-0203-03
3/16	1/4	1/4	.3750	.0320	.1888	.1869	.2503	.2497	.1865	.1858	H1FI-0304-04
1/4	5/16	3/8	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	H1FI-0405-06
1/4	5/16	1/2	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	H1FI-0405-08
5/16	3/8	1/4	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	H1FI-0506-04
5/16	3/8	3/8	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	H1FI-0506-06
5/16	3/8	1/2	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	H1FI-0506-08
3/8	15/32	1/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	H1FI-0607-04
3/8	15/32	3/8	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	H1FI-0607-06
3/8	15/32	1/2	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	H1FI-0607-08
3/8	15/32	3/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	H1FI-0607-12
7/16	17/32	1/2	.7500	.0460	.4399	.4371	.5316	.5309	.4365	.4355	H1FI-0708-08
1/2	19/32	1/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	H1FI-0809-04
1/2	19/32	3/8	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	H1FI-0809-06
1/2	19/32	1/2	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	H1FI-0809-08
1/2	19/32	3/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	H1FI-0809-12
1/2	19/32	1	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	H1FI-0809-16
5/8	23/32	1/2	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	H1FI-1011-08
5/8	23/32	3/4	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	H1FI-1011-12
5/8	23/32	1	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	H1FI-1011-16
3/4	7/8	1/2	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	H1FI-1214-08
3/4	7/8	3/4	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	H1FI-1214-12
3/4	7/8	1	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	H1FI-1214-16
7/8	1	1/2	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	H1FI-1416-08
7/8	1	3/4	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	H1FI-1416-12
7/8	1	1	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	H1FI-1416-16
1	1 1/8	1/2	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	H1FI-1618-08
1	1 1/8	3/4	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	H1FI-1618-12
1	1 1/8	1	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	H1FI-1618-16
1 1/4	1 13/32	1	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	H1FI-2022-16
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	H1FI-2022-20
1 1/2	1 21/32	1	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	H1FI-2426-16
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	H1FI-2426-24
1 3/4	1 15/16	2	2.3750	.0930	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	H1FI-2831-32
2	2 3/16	2	2.6250	.0930	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	H1FI-3235-32

³⁾ After press-fit. Testing methods ▶ Page 61

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d1	d2	b1	d3	b2	d1 ³⁾		Housing hole		Shaft size		Part No.
					h13	h13	max.	min.	max.	min.	
1/8	3/16	3/16	.3120	.0320	.1266	.1247	.1878	.1873	.1243	.1236	H370FI-0203-03
3/16	1/4	1/4	.3750	.0320	.1888	.1869	.2503	.2497	.1865	.1858	H370FI-0304-04
1/4	5/16	1/4	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	H370FI-0405-04
1/4	5/16	3/8	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	H370FI-0405-06
1/4	5/16	1/2	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	H370FI-0405-08
5/16	3/8	1/4	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	H370FI-0506-04
5/16	3/8	3/8	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	H370FI-0506-06
5/16	3/8	1/2	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	H370FI-0506-08
3/8	15/32	1/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	H370FI-0607-04
3/8	15/32	3/8	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	H370FI-0607-06
3/8	15/32	1/2	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	H370FI-0607-08
3/8	15/32	3/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	H370FI-0607-12
7/16	17/32	1/2	.7500	.0460	.4399	.4371	.5316	.5309	.4365	.4355	H370FI-0708-08
1/2	19/32	1/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	H370FI-0809-04
1/2	19/32	3/8	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	H370FI-0809-06
1/2	19/32	1/2	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	H370FI-0809-08
1/2	19/32	3/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	H370FI-0809-12
1/2	19/32	1	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	H370FI-0809-16
5/8	23/32	1/2	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	H370FI-1011-08
5/8	23/32	3/4	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	H370FI-1011-12
5/8	23/32	1	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	H370FI-1011-16
3/4	7/8	1/2	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	H370FI-1214-08
3/4	7/8	3/4	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	H370FI-1214-12
3/4	7/8	1	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	H370FI-1214-16
7/8	1	1/2	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	H370FI-1416-08
7/8	1	3/4	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	H370FI-1416-12
7/8	1	1	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	H370FI-1416-16
1	1 1/8	1/2	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	H370FI-1618-08
1	1 1/8	3/4	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	H370FI-1618-12
1	1 1/8	1	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	H370FI-1618-16
1 1/4	1 13/32	1	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	H370FI-2022-16
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	H370FI-2022-20
1 1/2	1 21/32	1	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	H370FI-2426-16
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	H370FI-2426-24
1 3/4	1 15/16	2	2.3750	.0930	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	H370FI-2831-32
2	2 3/16	2	2.6250	.0930	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	H370FI-3235-32

³⁾ After press-fit. Testing methods ▶ Page 61

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d1	d2	b1	d3	b2		d1 ³⁾		Housing hole		Shaft size		Part No.
				h13	max.	min.	max.	min.	max.	min.		
1/8	3/16	3/16	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	JFI-0203-03	
1/8	1/4	3/8	.3600	.0470	.1280	.1262	.2515	.2510	.1250	.1241	JFI-0204-06	
3/16	1/4	1/8	.3750	.0320	.1905	.1887	.2515	.2510	.1875	.1866	JFI-0304-02	
3/16	1/4	1/4	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	JFI-0304-04	
3/16	1/4	3/8	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	JFI-0304-06	
3/16	1/4	1/2	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	JFI-0304-08	
3/16	5/16	3/8	.3700	.0470	.1905	.1887	.3140	.3135	.1875	.1866	JFI-0305-06	
3/16	5/16	1/2	.3700	.0470	.1905	.1887	.3140	.3135	.1875	.1866	JFI-0305-08	
1/4	5/16	1/4	.4370	.0320	.2521	.2498	.3140	.3135	.2490	.2481	JFI-0405-04	
1/4	5/16	1/2	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	JFI-0405-06	
1/4	5/16	3/8	.4370	.0320	.2521	.2498	.3128	.3122	.2490	.2481	JFI-0405-08	
1/4	5/16	3/4	.4370	.0320	.2521	.2498	.3128	.3122	.2490	.2481	JFI-0405-12	
1/4	3/8	3/16	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	JFI-0406-03	
1/4	3/8	1/4	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	JFI-0406-04	
1/4	3/8	1/2	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	JFI-0406-08	
5/16	3/8	1/4	.5000	.0320	.3148	.3125	.3753	.3747	.3115	.3106	JFI-0506-04	
5/16	3/8	3/8	.5000	.0320	.3148	.3125	.3753	.3747	.3115	.3106	JFI-0506-06	
5/16	3/8	1/2	.5000	.0320	.3148	.3125	.3753	.3747	.3115	.3106	JFI-0506-08	
5/16	7/16	1/2	.5600	.0620	.3164	.3141	.4390	.4385	.3125	.3116	JFI-0507-08	
3/8	15/32	1/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	JFI-0607-04	
3/8	15/32	3/8	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	JFI-0607-06	
3/8	15/32	1/2	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	JFI-0607-08	
3/8	15/32	3/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	JFI-0607-12	
3/8	1/2	3/16	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	JFI-0608-03	
3/8	1/2	3/8	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	JFI-0608-06	
3/8	1/2	1/2	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	JFI-0608-08	
7/16	17/32	1/2	.7500	.0460	.4406	.4379	.5316	.5309	.4365	.4355	JFI-0708-08	
1/2	19/32	1/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	JFI-0809-04	
1/2	19/32	3/8	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	JFI-0809-06	
1/2	19/32	1/2	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	JFI-0809-08	
1/2	19/32	3/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	JFI-0809-12	
1/2	19/32	1	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	JFI-0809-16	
1/2	5/8	1/4	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	JFI-0810-04	
1/2	5/8	1/2	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	JFI-0810-08	
1/2	5/8	5/8	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	JFI-0810-10	
1/2	5/8	3/4	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	JFI-0810-12	
5/8	23/32	1/2	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	JFI-1011-08	
5/8	23/32	3/4	.9370	.0460	.6280	.6253	.7192	.7184	.6250	.6240	JFI-1011-12	
5/8	23/32	1	.9370	.0460	.6280	.6253	.7192	.7184	.6250	.6240	JFI-1011-16	
5/8	3/4	1/2	1.0000	.0620	.6297	.6270	.7510	.7500	.6250	.6240	JFI-1012-08	
5/8	3/4	3/4	1.0000	.0620	.6297	.6270	.7510	.7500	.6250	.6240	JFI-1012-12	
5/8	3/4	1	1.0000	.0620	.6297	.6270	.7510	.7500	.6250	.6240	JFI-1012-16	
3/4	7/8	1/2	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	JFI-1214-08	
3/4	7/8	5/8	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	JFI-1214-10	

³⁾ After press-fit. Testing methods ▶ Page 61

d1	d2	b1	d3	b2		d1 ³⁾		Housing hole		Shaft size		Part No.
				h13	max.	min.	max.	min.	max.	min.		
3/4	7/8	3/4	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	JFI-1214-12	
3/4	7/8	1	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	JFI-1214-16	
3/4	1	3/4	1.2500	.1560	.7559	.7525	1.0010	1.00	.7500	.7490	JFI-1216-12	
3/4	1	1	1.2500	.1560	.7559	.7525	1.0010	1.00	.7500	.7490	JFI-1216-16	
7/8	1	1/2	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	JFI-1416-08	
7/8	1	3/4	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	JFI-1416-12	
7/8	1	1	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	JFI-1416-16	
7/8	1	1 1/16	1.1250	.0620	.8809	.8776	1.0010	1.00	.8750	.8740	JFI-141618-11	
1	1 1/8	1/2	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	JFI-1618-08	
1	1 1/8	3/4	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	JFI-1618-12	
1	1 1/8	1	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	JFI-1618-16	
1	1 1/4	3/4	1.5000	.1880	1.0059	1.0025	1.2510	1,250	1.0000	.9990	JFI-1620-12	
1	1 1/4	1	1.5000	.1880	1.0059	1.0025	1.2510	1,250	1.0000	.9990	JFI-1620-16	
1	1 1/4	1 1/2	1.5000	.1880	1.0059	1.0025	1.2510	1,250	1.0000	.9990	JFI-1620-24	
1 1/4	1 13/32	1	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	JFI-2022-16	
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	JFI-2022-20	
1 1/4	1 1/2	1	1.7500	.1880	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	JFI-2024-16	
1 1/4	1 1/2	1 1/2	1.7500	.1880	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	JFI-2024-24	
1 1/2	1 21/32	1	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	JFI-2426-16	
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	JFI-2426-24	
1 1/2	1 3/4	1	2.0000	.1250	1.5100	1.5032	1.7505	1.7495	1.5000	1.4990	JFI-2428-16	
1 1/2	1 3/4	1 1/2	2.0000	.1250	1.5100	1.5032	1.7505	1.7495	1.5000	1.4990	JFI-2428-24	
1 5/8	1 7/8	1	2.1250	.1250	1.6350	1.6882	1.8755	1.8745	1.6250	1.6240	JFI-2630-16	
1 3/4	1 15/16	2	2.3750	.0930	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	JFI-2831-32	
2	2 3/16	2	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	JFI-3235-32	

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d1	d2	b1	d3	b2		d1 ³⁾		Housing hole		Shaft size		Part No.
				h13	max.	min.	max.	min.	max.	min.		
1/8	3/16	3/16	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	J3FI-0203-03	
3/16	1/4	1/4	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	J3FI-0304-04	
1/4	5/16	3/8	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	J3FI-0405-06	
1/4	5/16	1/2	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	J3FI-0405-08	
5/16	3/8	1/4	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	J3FI-0506-04	
5/16	3/8	3/8	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	J3FI-0506-06	
5/16	3/8	1/2	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	J3FI-0506-08	
3/8	15/32	1/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	J3FI-0607-04	
3/8	15/32	3/8	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	J3FI-0607-06	
3/8	15/32	1/2	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	J3FI-0607-08	
3/8	15/32	3/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	J3FI-0607-12	
7/16	17/32	1/2	.7500	.0460	.4406	.4379	.5316	.5309	.4365	.4355	J3FI-0708-08	
1/2	19/32	1/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	J3FI-0809-04	
1/2	19/32	3/8	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	J3FI-0809-06	
1/2	19/32	1/2	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	J3FI-0809-08	
1/2	19/32	3/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	J3FI-0809-12	

³⁾ After press-fit. Testing methods ▶ Page 61

d1	d2	b1	d3	b2		d1 ³⁾		Housing hole		Shaft size		Part No.
				h13	max.	min.	max.	min.	max.	min.		
1/2	19/32	1	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	J3FI-0809-16	
5/8	23/32	1/2	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	J3FI-1011-08	
5/8	23/32	3/4	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	J3FI-1011-12	
5/8	23/32	1	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	J3FI-1011-16	
3/4	7/8	1/2	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	J3FI-1214-08	
3/4	7/8	3/4	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	J3FI-1214-12	
3/4	7/8	1	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	J3FI-1214-16	
7/8	1	1/2	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	J3FI-1416-08	
7/8	1	3/4	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	J3FI-1416-12	
7/8	1	1	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	J3FI-1416-16	
1	1 1/8	1/2	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	J3FI-1618-08	
1	1 1/8	3/4	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	J3FI-1618-12	
1	1 1/8	1	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	J3FI-1618-16	
1 1/4	1 13/32	1	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	J3FI-2022-16	
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	J3FI-2022-20	
1 1/2	1 21/32	1	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	J3FI-2426-16	
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	J3FI-2426-24	
1 3/4	1 15/16	2	2.3750	.0930	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	J3FI-2831-32	
2	2 3/16	2	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	J3FI-3235-32	

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d1	d2	b1	d3	b2		d1 ³⁾		Housing hole		Shaft size		Part No.
				h13	max.	min.	max.	min.	max.	min.		
1/8	3/16	3/16	.3120	.0320	.1266	.1247	.1878	.1873	.1243	.1236	J350FI-0203-03	
3/16	1/4	1/4	.3750	.0320	.1888	.1869	.2503	.2497	.1865	.1858	J350FI-0304-04	
1/4	5/16	3/8	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	J350FI-0405-06	
1/4	5/16	1/2	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	J350FI-0405-08	
5/16	3/8	1/4	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	J350FI-0506-04	
5/16	3/8	3/8	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	J350FI-0506-06	
5/16	3/8	1/2	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	J350FI-0506-08	
3/8	15/32	1/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	J350FI-0607-04	
3/8	15/32	3/8	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	J350FI-0607-06	
3/8	15/32	1/2	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	J350FI-0607-08	
3/8	15/32	3/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	J350FI-0607-12	
7/16	17/32	1/2	.7500	.0460	.4399	.4371	.5316	.5309	.4365	.4355	J350FI-0708-08	
1/2	19/32	1/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	J350FI-0809-04	
1/2	19/32	3/8	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	J350FI-0809-06	
1/2	19/32	1/2	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	J350FI-0809-08	
1/2	19/32	3/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	J350FI-0809-12	
1/2	19/32	1	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	J350FI-0809-16	
5/8	23/32	1/2	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	J350FI-1011-08	
5/8	23/32	3/4	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	J350FI-1011-12	
5/8	23/32	1	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	J350FI-1011-16	
3/4	7/8	1/2	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	J350FI-1214-08	
3/4	7/8	3/4	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	J350FI-1214-12	

3) After press-fit. Testing methods ▶ Page 61

d1	d2	b1	d3	b2		d1 ³⁾		Housing hole		Shaft size		Part No.
				h13	max.	min.	max.	min.	max.	min.		
3/4	7/8	1	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	J350FI-1214-16	
7/8	1	1/2	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	J350FI-1416-08	
7/8	1	3/4	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	J350FI-1416-12	
7/8	1	1	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	J350FI-1416-16	
1	1 1/8	1/2	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	J350FI-1618-08	
1	1 1/8	3/4	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	J350FI-1618-12	
1	1 1/8	1	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	J350FI-1618-16	
1 1/4	1 13/32	1	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	J350FI-2022-16	
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	J350FI-2022-20	
1 1/2	1 21/32	1	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	J350FI-2426-16	
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	J350FI-2426-24	
1 3/4	1 15/16	2	2.3750	.0930	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	J350FI-2831-32	
2	2 3/16	2	2.6250	.0930	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	J350FI-3235-32	

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d1	d2	b1	d3	b2		d1 ³⁾		Housing hole		Shaft size		Part No.
				h13	max.	min.	max.	min.	max.	min.		
1/8	3/16	1/8	.3125	.0320	.1280	.1262	.1885	.1880	.1250	.1241	MFI-0203-02	
1/8	3/16	1/4	.3125	.0320	.1280	.1262	.1885	.1880	.1250	.1241	MFI-0203-04	
1/8	1/4	1/8	.3600	.0470	.1280	.1262	.2515	.2510	.1250	.1241	MFI-0204-02	
1/8	1/4	3/16	.3600	.0470	.1280	.1262	.2515	.2510	.1250	.1241	MFI-0204-03	
1/8	1/4	1/4	.3600	.0470	.1280	.1262	.2515	.2510	.1250	.1241	MFI-0204-04	
1/8	1/4	3/8	.3600	.0470	.1280	.1262	.2515	.2510	.1250	.1241	MFI-0204-06	
1/8	1/4	3/4	.3600	.0470	.1280	.1262	.2515	.2510	.1250	.1241	MFI-0204-12	
3/16	1/4	1/4	.3750	.0320	.1905	.1887	.2515	.2510	.1875	.1866	MFI-0304-04	
3/16	1/4	3/8	.3750	.0320	.1905	.1887	.2515	.2510	.1875	.1866	MFI-0304-06	
3/16	1/4	1/2	.3750	.0320	.1905	.1887	.2515	.2510	.1875	.1866	MFI-0304-08	
3/16	5/16	3/16	.3700	.0470	.1905	.1887	.3140	.3135	.1875	.1866	MFI-0305-03	
3/16	5/16	1/4	.3700	.0470	.1905	.1887	.3140	.3135	.1875	.1866	MFI-0305-04	
3/16	5/16	5/16	.3700	.0470	.1905	.1887	.3140	.3135	.1875	.1866	MFI-0305-05	
3/16	5/16	3/8	.3700	.0470	.1905	.1887	.3140	.3135	.1875	.1866	MFI-0305-06	
3/16	5/16	1/2	.3700	.0470	.1905	.1887	.3140	.3135	.1875	.1866	MFI-0305-08	
1/4	5/16	3/16	.4375	.0470	.2539	.2516	.3140	.3135	.2500	.2491	MFI-0405-03	
1/4	5/16	1/4	.4375	.0320	.2539	.2516	.3140	.3135	.2500	.2491	MFI-0405-04	
1/4	5/16	3/8	.4375	.0320	.2539	.2516	.3140	.3135	.2500	.2491	MFI-0405-06	
1/4	5/16	7/16	.4375	.0470	.2539	.2516	.3140	.3135	.2500	.2491	MFI-0405-07	
1/4	5/16	1/2	.4375	.0320	.2539	.2516	.3140	.3135	.2500	.2491	MFI-0405-08	
1/4	5/16	3/4	.4375	.0470	.2539	.2516	.3140	.3135	.2500	.2491	MFI-0405-12	
1/4	3/8	1/8	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	MFI-0406-02	
1/4	3/8	3/16	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	MFI-0406-03	
1/4	3/8	1/4	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	MFI-0406-04	
1/4	3/8	3/8	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	MFI-0406-06	
1/4	3/8	1/2	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	MFI-0406-08	
1/4	3/8	5/8	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	MFI-0406-10	
1/4	3/8	3/4	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	MFI-0406-12	

3) After press-fit. Testing methods ▶ Page 61

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d1	d2	b1	d3	b2	d1 ³⁾		Housing hole		Shaft size		Part No.
					max.	min.	max.	min.	max.	min.	
5/16	3/8	1/4	.5000	.0320	.3164	.3141	.3765	.3760	.3125	.3116	MFI-0506-04
5/16	3/8	3/8	.5000	.0320	.3164	.3141	.3765	.3760	.3125	.3116	MFI-0506-06
5/16	3/8	1/2	.5000	.0320	.3164	.3141	.3765	.3760	.3125	.3116	MFI-0506-08
5/16	3/8	15/16	.5000	.0320	.3164	.3141	.3765	.3760	.3125	.3116	MFI-0506-15
5/16	7/16	3/16	.5600	.0620	.3164	.3141	.4390	.4385	.3125	.3116	MFI-0507-03
5/16	7/16	1/4	.5600	.0620	.3164	.3141	.4390	.4385	.3125	.3116	MFI-0507-04
5/16	7/16	5/16	.5600	.0620	.3164	.3141	.4390	.4385	.3125	.3116	MFI-0507-05
5/16	7/16	3/8	.5600	.0620	.3164	.3141	.4390	.4385	.3125	.3116	MFI-0507-06
5/16	7/16	1/2	.5600	.0620	.3164	.3141	.4390	.4385	.3125	.3116	MFI-0507-08
5/16	7/16	5/8	.5600	.0620	.3164	.3141	.4390	.4385	.3125	.3116	MFI-0507-10
5/16	7/16	3/4	.5600	.0620	.3164	.3141	.4390	.4385	.3125	.3116	MFI-0507-12
3/8	7/16	1/4	.5625	.0320	.3789	.3766	.4390	.4385	.3750	.3741	MFI-0607-04
3/8	7/16	3/8	.5625	.0320	.3789	.3766	.4390	.4385	.3750	.3741	MFI-0607-06
3/8	7/16	1/2	.5625	.0320	.3789	.3766	.4390	.4385	.3750	.3741	MFI-0607-08
3/8	1/2	1/8	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	MFI-0608-02
3/8	1/2	3/16	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	MFI-0608-03
3/8	1/2	1/4	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	MFI-0608-04
3/8	1/2	5/16	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	MFI-0608-05
3/8	1/2	3/8	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	MFI-0608-06
3/8	1/2	1/2	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	MFI-0608-08
3/8	1/2	5/8	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	MFI-0608-10
3/8	1/2	3/4	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	MFI-0608-12
3/8	1/2	1	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	MFI-0608-16
7/16	9/16	3/8	.6870	.0620	.4422	.4395	.5941	.5934	.4375	.4365	MFI-0709-06
7/16	9/16	1/2	.6870	.0620	.4422	.4395	.5941	.5934	.4375	.4365	MFI-0709-08
1/2	5/8	1/8	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	MFI-0810-02
1/2	5/8	1/4	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	MFI-0810-04
1/2	5/8	5/16	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	MFI-0810-05
1/2	5/8	3/8	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	MFI-0810-06
1/2	5/8	1/2	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	MFI-0810-08
1/2	5/8	5/8	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	MFI-0810-10
1/2	5/8	3/4	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	MFI-0810-12
1/2	5/8	1	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	MFI-0810-16
5/8	3/4	3/8	1.0000	.0620	.6297	.6270	.7510	.7500	.6250	.6240	MFI-1012-06
5/8	3/4	1/2	1.0000	.0620	.6297	.6270	.7510	.7500	.6250	.6240	MFI-1012-08
5/8	3/4	5/8	1.0000	.0620	.6297	.6270	.7510	.7500	.6250	.6240	MFI-1012-10
5/8	3/4	3/4	1.0000	.0620	.6297	.6270	.7510	.7500	.6250	.6240	MFI-1012-12
5/8	3/4	1	1.0000	.0620	.6297	.6270	.7510	.7500	.6250	.6240	MFI-1012-16
5/8	3/4	1 1/2	1.0000	.0620	.6297	.6270	.7510	.7500	.6250	.6240	MFI-1012-24
5/8	13/16	1/2	1.0630	.0620	.6297	.6270	.8135	.8125	.6250	.6240	MFI-1013-08
5/8	13/16	5/8	1.0630	.0620	.6297	.6270	.8135	.8125	.6250	.6240	MFI-1013-10
5/8	13/16	3/4	1.0630	.0620	.6297	.6270	.8135	.8125	.6250	.6240	MFI-1013-12
5/8	13/16	1	1.0630	.0620	.6297	.6270	.8135	.8125	.6250	.6240	MFI-1013-16
3/4	7/8	3/8	1.1250	.0620	.7559	.7525	.8760	.8750	.6250	.6240	MFI-1214-06
3/4	7/8	1/2	1.1250	.0620	.7559	.7525	.8760	.8750	.6250	.6240	MFI-1214-08
3/4	7/8	3/4	1.1250	.0620	.7559	.7525	.8760	.8750	.7500	.7490	MFI-1214-12

³⁾ After press-fit. Testing methods ► Page 61

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d1	d2	b1	d3	b2	d1 ³⁾		Housing hole		Shaft size		Part No.
					max.	min.	max.	min.	max.	min.	
3/4	7/8	1	1.1250	.0620	.7559	.7525	.8760	.8750	.7500	.7490	MFI-1214-16
3/4	7/8	1 1/2	1.1250	.0620	.7559	.7525	.8760	.8750	.7500	.7490	MFI-1214-24
3/4	1	1/2	1.2500	.1560	.7559	.7525	1.0010	1.0000	.7500	.7490	MFI-1216-08
3/4	1	5/8	1.2500	.1560	.7559	.7525	1.0010	1.0000	.7500	.7490	MFI-1216-10
3/4	1	3/4	1.2500	.1560	.7559	.7525	1.0010	1.0000	.7500	.7490	MFI-1216-12
3/4	1	1	1.2500	.1560	.7559	.7525	1.0010	1.0000	.7500	.7490	MFI-1216-16
3/4	1	1 1/2	1.2500	.1560	.7559	.7525	1.0010	1.0000	.7500	.7490	MFI-1216-24
7/8	1	3/4	1.2500	.0620	.8809	.8775	1.0010	1.0000	.8750	.8740	MFI-1416-12
7/8	1	1	1.2500	.0620	.8809	.8775	1.0010	1.0000	.8750	.8740	MFI-1416-16
7/8	1	1 1/2	1.2500	.0620	.8809	.8775	1.0010	1.0000	.8750	.8740	MFI-1416-24
7/8	1 1/8	1/2	1.3750	.1560	.8809	.8775	1.1260	1.1250	.8750	.8740	MFI-1418-08
7/8	1 1/8	3/4	1.3750	.1560	.8809	.8775	1.1260	1.1250	.8750	.8740	MFI-1418-12
7/8	1 1/8	1	1.3750	.1560	.8809	.8775	1.1260	1.1250	.8750	.8740	MFI-1418-16
7/8	1 1/8	1 1/2	1.3750	.1560	.8809	.8775	1.1260	1.1250	.8750	.8740	MFI-1418-24
1	1 1/8	3/16	1.3750	.0620	1.0059	1.0025	1.1260	1.1250	1.0000	.9990	MFI-1618-03
1	1 1/8	3/4	1.3750	.0620	1.0059	1.0025	1.1260	1.1250	1.0000	.9990	MFI-1618-12
1	1 1/8	1	1.3750	.0620	1.0059	1.0025	1.1260	1.1250	1.0000	.9990	MFI-1618-16
1	1 1/8	1 1/2	1.3750	.0620	1.0059	1.0025	1.1260	1.1250	1.0000	.9990	MFI-1618-24
1	1 1/4	1/2	1.5000	.1880	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	MFI-1620-08
1	1 1/4	5/8	1.5000	.1880	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	MFI-1620-10
1	1 1/4	3/4	1.5000	.1880	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	MFI-1620-12
1	1 1/4	1	1.5000	.1880	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	MFI-1620-16
1	1 1/4	1 1/2	1.5000	.1880	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	MFI-1620-24
1 1/4	1 1/2	7/16	1.7500	.2000	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	MFI-2024-07
1 1/4	1 1/2	3/4	1.7500	.2000	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	MFI-2024-12
1 1/4	1 1/2	1	1.7500	.2000	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	MFI-2024-16
1 1/4	1 1/2	1 1/2	1.7500	.2000	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	MFI-2024-24
1 3/8	1 5/8	3/4	1.8750	.1250	1.3850	1.3182	1.6255	1.6245	1.3750	1.3740	MFI-2226-12
1 3/8	1 5/8	1	1.8750	.1250	1.3850	1.3182	1.6255	1.6245	1.3750	1.3740	MFI-2226-16
1 1/2	1 3/4	3/4	2.0000	.1250	1.5100	1.5032	1.7505	1.7495	1.5000	1.4990	MFI-2428-12
1 1/2	1 3/4	1	2.0000	.1250	1.5100	1.5032	1.7505	1.7495	1.5000	1.4990	MFI-2428-16
1 1/2	1 3/4	1 1/2	2.0000	.1250	1.5100	1.5032	1.7505	1.7495	1.5000	1.4990	MFI-2428-24
1 5/8	1 7/8	1	2.1250	.1250	1.6350	1.6282	1.8755	1.8745	1.6250	1.6240	MFI-2630-16
1 3/4	2	3/4	2.2500	.1250	1.7560	1.7532	2.0005	1.9995	1.7500	1.7490	MFI-2832-12
1 3/4	2	1	2.2500	.1250	1.7560	1.7532	2.0005	1.9995	1.7500	1.7490	MFI-2832-16
1 3/4	2	1 1/2	2.2500	.1250	1.7560	1.7532	2.0005	1.9995	1.7500	1.7490	MFI-2832-24
2	2 1/4	1	2.5000	.1250	2.0100	2.0032	2.2550	2.2540	2.0000	1.9990	MFI-3236-16
2	2 1/4	1 1/2	2.5000	.1250	2.0100	2.0032	2.2550	2.2540	2.0000	1.9990	MFI-3236-24
2	2 1/4	2	2.5000	.1250	2.0100	2.0032	2.2550	2.2540	2.0000	1.9990	MFI-3236-32

³⁾ After press-fit. Testing methods ► Page 61

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d1	d2	b1	d3	b2	d1 ³⁾		Housing hole		Shaft size		Part No.
					h13	max.	min.	max.	min.	max.	
1/8	3/16	3/16	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	PFI-0203-03
3/16	1/4	1/4	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	PFI-0304-04
1/4	5/16	3/8	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	PFI-0405-06
1/4	5/16	1/2	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	PFI-0405-08
5/16	3/8	1/4	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	PFI-0506-04
5/16	3/8	3/8	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	PFI-0506-06
5/16	3/8	1/2	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	PFI-0506-08
3/8	15/32	1/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	PFI-0607-04
3/8	15/32	3/8	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	PFI-0607-06
3/8	15/32	1/2	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	PFI-0607-08
3/8	15/32	3/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	PFI-0607-12
7/16	17/32	1/2	.7500	.0460	.4406	.4379	.5316	.5309	.4365	.4355	PFI-0708-08
1/2	19/32	1/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	PFI-0809-04
1/2	19/32	3/8	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	PFI-0809-06
1/2	19/32	1/2	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	PFI-0809-08
1/2	19/32	3/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	PFI-0809-12
1/2	19/32	1	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	PFI-0809-16
5/8	23/32	1/2	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	PFI-1011-08
5/8	23/32	3/4	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	PFI-1011-12
5/8	23/32	1	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	PFI-1011-16
3/4	7/8	1/2	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	PFI-1214-08
3/4	7/8	3/4	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	PFI-1214-12
3/4	7/8	1	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	PFI-1214-16
7/8	1	1/2	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	PFI-1416-08
7/8	1	3/4	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	PFI-1416-12
7/8	1	1	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	PFI-1416-16
1	1 1/8	1/2	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	PFI-1618-08
1	1 1/8	3/4	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	PFI-1618-12
1	1 1/8	1	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	PFI-1618-16
1 1/4	1 13/32	1	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	PFI-2022-16
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	PFI-2022-20
1 1/2	1 21/32	1	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	PFI-2426-16
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	PFI-2426-24
1 3/4	1 15/16	2	2.3750	.0930	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	PFI-2831-32
2	2 3/16	2	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	PFI-3235-32

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d1	d2	b1	d3	b2	d1 ³⁾		Housing hole		Shaft size		Part No.
					h13	max.	min.	max.	min.	max.	
1/8	3/16	3/16	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	P210FI-0203-03
3/16	1/4	1/4	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	P210FI-0304-04
1/4	5/16	3/8	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	P210FI-0405-06
1/4	5/16	1/2	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	P210FI-0405-08

³⁾ After press-fit. Testing methods ► Page 61

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d1	d2	b1	d3	b2	d1 ³⁾		Housing hole		Shaft size		Part No.
					h13	max.	min.	max.	min.	max.	
5/16	3/8	1/4	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	P210FI-0506-04
5/16	3/8	3/8	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	P210FI-0506-06
5/16	3/8	1/2	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	P210FI-0506-08
3/8	15/32	1/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	P210FI-0607-04
3/8	15/32	3/8	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	P210FI-0607-06
3/8	15/32	1/2	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	P210FI-0607-08
3/8	15/32	3/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	P210FI-0607-12
7/16	17/32	1/2	.7500	.0460	.4406	.4379	.5316	.5309	.4365	.4355	P210FI-0708-08
1/2	19/32	1/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	P210FI-0809-04
1/2	19/32	3/8	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	P210FI-0809-06
1/2	19/32	1/2	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	P210FI-0809-08
1/2	19/32	3/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	P210FI-0809-12
1/2	19/32	1	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	P210FI-0809-16
5/8	23/32	1/2	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	P210FI-1011-08
5/8	23/32	3/4	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	P210FI-1011-12
5/8	23/32	1	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	P210FI-1011-16
3/4	7/8	1/2	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	P210FI-1214-08
3/4	7/8	3/4	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	P210FI-1214-12
3/4	7/8	1	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	P210FI-1214-16
7/8	1	1/2	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	P210FI-1416-08
7/8	1	3/4	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	P210FI-1416-12
7/8	1	1	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	P210FI-1416-16
1	1 1/8	1/2	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	P210FI-1618-08
1	1 1/8	3/4	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	P210FI-1618-12
1	1 1/8	1	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	P210FI-1618-16
1 1/4	1 13/32	1	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	P210FI-2022-16
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	P210FI-2022-20
1 1/2	1 21/32	1	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	P210FI-2426-16
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	P210FI-2426-24
1 3/4	1 15/16	2	2.3750	.0930	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	P210FI-2831-32
2	2 3/16	2	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	P210FI-3235-32

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d1	d2	b1	d3	b2	d1 ³⁾		Housing hole		Shaft size		Part No.
					h13	max.	min.	max.	min.	max.	
3/8	15/32	1/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	QFI-0607-04
3/8	15/32	1/2	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	QFI-0607-08
1/2	19/32	1/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	QFI-0809-04
1/2	19/32	1/2	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	QFI-0809-08
1/2	19/32	3/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	QFI-0809-12
5/8	23/32	3/4	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	QFI-1011-12
5/8	3/4	1/2	1.0000	.0620	.6290	.6263	.7510	.7500	.6250	.6240	QFI-1012-08
3/4	7/8	1/2	1.1250	.0620	.7541	.7507	.8755	.8747	.7491	.7479	QFI-1214-08
3/4	7/8	3/4	1.1250	.0620	.7541	.7507	.8755	.8747	.7491	.7479	QFI-1214-12
3/4	7/8	1	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	QFI-1214-16

³⁾ After press-fit. Testing methods ► Page 61

d1	d2	b1	d3	b2	d1 ³⁾		Housing hole		Shaft size		Part No.
					h13	max.	min.	max.	min.	max.	
7/8	1	3/4	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	QFI-1416-12
7/8	1	1	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	QFI-1416-16
1	1 1/8	1/2	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	QFI-1618-08
1	1 1/8	1	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	QFI-1618-16
1	1 1/8	1 1/2	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	QFI-1618-24
1 1/8	1 9/32	3/4	1.5620	.0780	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	QFI-1820-12
1 1/8	1 9/32	1 1/2	1.5620	.0780	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	QFI-1820-24
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	QFI-2022-20
1 1/4	1 13/32	1 1/2	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	QFI-2022-24
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	QFI-2426-24
1 3/4	1 15/16	2	2.3750	.0930	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	QFI-2831-32
2	2 3/16	2	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	QFI-3235-32
2 1/4	2 7/16	2	2.7500	.0930	2.2577	2.2531	2.4377	2.4365	2.2507	2.2489	QFI-3639-32

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d1	d2	b1	d3	b2	d1 ³⁾		Housing hole		Shaft size		Part No.
					h13	max.	min.	max.	min.	max.	
1/8	3/16	3/16	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	WFI-0203-03
3/16	1/4	1/4	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	WFI-0203-04
1/4	5/16	3/8	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	WFI-0203-06
1/4	5/16	1/2	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	WFI-0203-08
5/16	3/8	1/4	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	WFI-0304-04
5/16	3/8	3/8	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	WFI-0304-06
5/16	3/8	1/2	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	WFI-0304-08
3/8	15/32	1/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	WFI-0304-04
3/8	15/32	3/8	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	WFI-0304-06
3/8	15/32	1/2	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	WFI-0304-08
3/8	15/32	3/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	WFI-0304-12
7/16	17/32	1/2	.7500	.0460	.4406	.4379	.5316	.5309	.4365	.4355	WFI-0405-08
1/2	19/32	1/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	WFI-0405-04
1/2	19/32	3/8	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	WFI-0405-06
1/2	19/32	1/2	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	WFI-0405-08
1/2	19/32	3/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	WFI-0405-12
1/2	19/32	1	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	WFI-0405-16
5/8	23/32	1/2	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	WFI-0405-04
5/8	23/32	3/4	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	WFI-0405-06
5/8	23/32	1	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	WFI-0405-08
3/4	7/8	1/2	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	WFI-0405-12
3/4	7/8	3/4	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	WFI-0405-16
3/4	7/8	1	1.1250	.0620	.7541	.7505	.8755	.8747	.7491	.7479	WFI-0405-24
7/8	1	1/2	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	WFI-0405-08
7/8	1	3/4	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	WFI-0405-12
7/8	1	1	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	WFI-0405-16
1	1 1/8	1/2	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	WFI-0405-24
1	1 1/8	3/4	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	WFI-0405-32

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d1	d2	b1	d3	b2	d1 ³⁾		Housing hole		Shaft size		Part No.
					h13	max.	min.	max.	min.	max.	
1	1 1/8	1	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	Q2FI-1618-16
1 1/4	1 13/32	1	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	Q2FI-2022-16
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	Q2FI-2022-20
1 1/2	1 21/32	1	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	Q2FI-2426-16
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	Q2FI-2426-24
1 3/4	1 15/16	2	2.3750	.0930	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	Q2FI-2831-32
2	2 3/16	2	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	Q2FI-3235-32

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d1	d2	b1	d3	b2	d1 ³⁾		Housing hole		Shaft size		Part No.
					h13	max.	min.	max.	min.	max.	
1/8	3/16	3/16	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	WFI-0203-03
1/8	3/16	1/4	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	WFI-0203-04
1/8	3/16	3/8	.3120	.0320	.1269	.1251	.1878	.1873	.1243	.1236	WFI-0203-06
3/16	1/4	1/8	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	WFI-0304-02
3/16	1/4	1/4	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	WFI-0304-04
3/16	1/4	3/8	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	WFI-0304-06
3/16	1/4	1/2	.3750	.0320	.1892	.1873	.2503	.2497	.1865	.1858	WFI-0304-08
1/4	5/16	1/4	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	WFI-0405-04
1/4	5/16	5/16	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	WFI-0405-05
1/4	5/16	3/8	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	WFI-0405-06
1/4	5/16	1/2	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	WFI-0405-08
1/4	5/16	3/4	.5000	.0320	.2521	.2498	.3128	.3122	.2490	.2481	WFI-0405-12
5/16	3/8	1/4	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	WFI-0506-04
5/16	3/8	3/8	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	WFI-0506-06
5/16	3/8	1/2	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	WFI-0506-08
5/16	3/8	3/4	.5620	.0320	.3148	.3125	.3753	.3747	.3115	.3106	WFI-0506-12
3/8	15/32	1/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	WFI-0607-04
3/8	15/32	3/8	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	WFI-0607-06
3/8	15/32	1/2	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	WFI-0607-08
3/8	15/32	3/4	.6870	.0460	.3773	.3750	.4691	.4684	.3740	.3731	WFI-0607-12
7/16	17/32	1/2	.7500	.0460	.4406	.4379	.5316	.5309	.4365	.4355	WFI-0708-08
1/2	19/32	1/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	WFI-0809-04
1/2	19/32	3/8	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	WFI-0809-06
1/2	19/32	1/2	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	WFI-0809-08
1/2	19/32	3/4	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	WFI-0809-12
1/2	19/32	1	.8750	.0460	.5030	.5003	.5941	.5934	.4990	.4980	WFI-0809-16
5/8	23/32	9/32	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	WFI-1011-045
5/8	23/32	1/2	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	WFI-1011-08
5/8	23/32	3/4	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	WFI-1011-12
5/8	23/32	1	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	WFI-1011-16
5/8	23/32	1 1/2	.9370	.0460	.6280	.6253	.7192	.7184	.6240	.6230	WFI-1011-24
3/4	7/8	1/2	1.1250	.0620	.7541	.7507	.8755	.8747	.7491	.7479	WFI-1214-08
3/4	7/8	5/8	1.1250	.0620	.7541	.7507	.8755	.8747	.7491	.7479	WFI-1214-10
3/4	7/8	3/4	1.1250	.0620	.7541	.7507	.8755	.8747	.7491	.7479	WFI-1214-12

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d1	d2	b1	d3	b2	d1 ³⁾		Housing hole		Shaft size		Part No.
					h13	max.	min.	max.	min.	max.	
3/4	7/8	1	1.1250	.0620	.7541	.7507	.8755	.8747	.7491	.7479	WFI-1214-16
3/4	7/8	1 1/2	1.1250	.0620	.7541	.7507	.8755	.8747	.7491	.7479	WFI-1214-24
7/8	1	1/4	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	WFI-1416-04
7/8	1	15/32	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	WFI-1416-075
7/8	1	1/2	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	WFI-1416-08
7/8	1	23/32	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	WFI-1416-115
7/8	1	3/4	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	WFI-1416-12
7/8	1	1	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	WFI-1416-16
7/8	1	1 1/4	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	WFI-1416-20
7/8	1	1 1/2	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	WFI-1416-24
7/8	1	5/8	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	WFI-141618-10
7/8	1	11/16	1.2500	.0620	.8791	.8757	1.0005	.9997	.8741	.8729	WFI-141620-11
1	1 1/8	1/2	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	WFI-1618-08
1	1 1/8	3/4	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	WFI-1618-12
1	1 1/8	1	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	WFI-1618-16
1	1 1/8	1 1/4	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	WFI-1618-20
1	1 1/8	1 1/2	1.3750	.0620	1.0041	1.0007	1.1255	1.1247	.9991	.9979	WFI-1618-24
1 1/8	1 9/32	1/2	1.5620	.0780	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	WFI-1820-08
1 1/8	1 9/32	3/4	1.5620	.0780	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	WFI-1820-12
1 1/8	1 9/32	1 1/2	1.5620	.0780	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	WFI-1820-24
1 1/4	1 13/32	3/4	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	WFI-2022-12
1 1/4	1 13/32	1	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	WFI-2022-16
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	WFI-2022-20
1 1/4	1 13/32	1 1/2	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	WFI-2022-24
1 3/8	1 17/32	1	1.8750	.0780	1.3798	1.3758	1.5318	1.5308	1.3738	1.3722	WFI-2224-16
1 1/2	1 21/32	3/4	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	WFI-2426-12
1 1/2	1 21/32	1	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	WFI-2426-16
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	WFI-2426-24
1 3/4	1 15/16	1	2.3750	.0930	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	WFI-2831-16
1 3/4	1 15/16	1 1/2	2.3750	.0930	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	WFI-2831-24
1 3/4	1 15/16	2	2.3750	.0930	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	WFI-2831-32
2	2 3/16	1	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	WFI-3235-16
2	2 3/16	1 1/2	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	WFI-3235-24
2	2 3/16	2	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	WFI-3235-32

d1	d2	b1	d3	b2	d1 ³⁾		Housing hole		Shaft size		Part No.
					h13	max.	min.	max.	min.	max.	
1/8	3/16	3/16	.3120	.0320	.1266	.1247	.1878	.1873	.1243	.1236	XFI-0203-03
1/8	3/16	3/8	.3120	.0320	.1266	.1247	.1878	.1873	.1243	.1236	XFI-0203-06
3/16	1/4	1/4	.3750	.0320	.1888	.1869	.2503	.2497	.1865	.1858	XFI-0304-04
3/16	1/4	3/8	.3750	.0320	.1888	.1869	.2503	.2497	.1865	.1858	XFI-0304-06
3/16	1/4	1/2	.3750	.0320	.1888	.1869	.2503	.2497	.1865	.1858	XFI-0304-08
1/4	5/16	3/16	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	XFI-0405-03
1/4	5/16	1/4	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	XFI-0405-04

³⁾ After press-fit. Testing methods ▶ Page 61

d1	d2	b1	d3	b2	d1 ³⁾		Housing hole		Shaft size		Part No.
					h13	max.	min.	max.	min.	max.	
1/4	5/16	3/8	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	XFI-0405-06
1/4	5/16	1/2	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	XFI-0405-08
1/4	5/16	3/4	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	XFI-0405-12
5/16	3/8	1/4	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	XFI-0506-04
5/16	3/8	3/8	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	XFI-0506-06
5/16	3/8	1/2	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	XFI-0506-08
3/8	15/32	1/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	XFI-0607-04
3/8	15/32	3/8	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	XFI-0607-06
3/8	15/32	1/2	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	XFI-0607-08
3/8	15/32	3/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	XFI-0607-12
7/16	17/32	1/2	.7500	.0460	.4399	.4371	.5316	.5309	.4365	.4355	XFI-0708-08
1/2	19/32	1/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	XFI-0809-04
1/2	19/32	3/8	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	XFI-0809-06
1/2	19/32	1/2	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	XFI-0809-08
1/2	19/32	3/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	XFI-0809-12
1/2	19/32	1	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	XFI-0809-16
5/8	23/32	1/2	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	XFI-1011-08
5/8	23/32	3/4	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	XFI-1011-12
5/8	23/32	1	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	XFI-1011-16
5/8	23/32	1 1/2	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	XFI-1011-24
3/4	7/8	1/2	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	XFI-1214-08
3/4	7/8	3/4	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	XFI-1214-12
3/4	7/8	1	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	XFI-1214-16
3/4	7/8	1 3/4	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	XFI-1214-28
7/8	1	1/2	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	XFI-1416-08
7/8	1	3/4	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	XFI-1416-12
7/8	1	1	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	XFI-1416-16
1	1 1/8	1/2	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	XFI-1618-08
1	1 1/8	3/4	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	XFI-1618-12
1	1 1/8	1	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	XFI-1618-16
1	1 1/8	1 1/2	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	XFI-1618-24
1 1/8	1 9/32	3/4	1.5620	.0780	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	XFI-1820-12
1 1/4	1 13/32	1	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	XFI-2022-16
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	XFI-2022-20
1 1/4	1 13/32	2	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	XFI-2022-32
1 1/2	1 21/32	3/4	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	XFI-2426-12
1 1/2	1 21/32	1	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	XFI-2426-16
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	XFI-2426-24
1 1/2	1 21/32	1 5/8	2.0000	.0780	1.5048	1.5008	1.6568	1.6558	1.4988	1.4972	XFI-2426-26
1 3/4	1 15/16	1	2.3750	.0930	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	XFI-2831-16
1 3/4	1 15/16	2	2.3750	.0930	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	XFI-2831-32
2	2 3/16	2	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	XFI-3235-32
2 3/4	2 15/16	2	3.3750	.0930	2.7570	2.7523	2.9370	2.9358	2.7500	2.7490	XFI-4447-32

³⁾ After press-fit. Testing methods ▶ Page 61

iglidur® Z Chapter ▶ Page 301

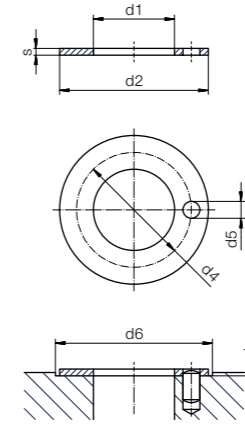
d1	d2	b1	d3	b2	d1 ³⁾		Housing hole		Shaft size		Part No.
					h13	max.	min.	max.	min.	max.	
1/8	3/16	3/16	.3120	.0320	.1266	.1247	.1878	.1873	.1243	.1236	ZFI-0203-03
3/16	1/4	1/4	.3750	.0320	.1888	.1869	.2503	.2497	.1865	.1858	ZFI-0304-04
1/4	5/16	3/8	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	ZFI-0405-06
1/4	5/16	1/2	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	ZFI-0405-08
5/16	3/8	1/4	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	ZFI-0506-04
5/16	3/8	3/8	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	ZFI-0506-06
5/16	3/8	1/2	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	ZFI-0506-08
3/8	15/32	1/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	ZFI-0607-04
3/8	15/32	3/8	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	ZFI-0607-06
3/8	15/32	1/2	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	ZFI-0607-08
3/8	15/32	3/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	ZFI-0607-12
7/16	17/32	1/2	.7500	.0460	.4399	.4371	.5316	.5309	.4365	.4355	ZFI-0708-08
1/2	19/32	1/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	ZFI-0809-04
1/2	19/32	3/8	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	ZFI-0809-06
1/2	19/32	1/2	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	ZFI-0809-08
1/2	19/32	3/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	ZFI-0809-12
1/2	19/32	1	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	ZFI-0809-16
5/8	23/32	1/2	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	ZFI-1011-08
5/8	23/32	3/4	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	ZFI-1011-12
5/8	23/32	1	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	ZFI-1011-16
5/8	3/4	3/4	1.0000	.0460	.6284	.6256	.7510	.7500	.6250	.6240	ZFI-1012-08
3/4	7/8	1/2	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	ZFI-1214-08
3/4	7/8	3/4	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	ZFI-1214-12
3/4	7/8	1	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	ZFI-1214-16
7/8	1	1/2	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	ZFI-1416-08
7/8	1	3/4	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	ZFI-1416-12
7/8	1	1	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	ZFI-1416-16
1	1 1/8	1/2	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	ZFI-1618-08
1	1 1/8	3/4	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	ZFI-1618-12
1	1 1/8	1	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	ZFI-1618-16
1 1/8	1 9/32	11/2	1.5620	.0780	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	ZFI-1820-12
1 1/8	1 9/32	11/2	1.5620	.0780	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	ZFI-1820-24
1 1/4	1 13/32	1	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	ZFI-2022-16
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	ZFI-2022-20
1 1/4	1 13/32	11/4	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	ZFI-2022-24
1 1/2	1 21/32	1	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	ZFI-2426-16
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	ZFI-2426-24
1 3/4	1 15/16	2	2.3750	.0930	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	ZFI-2831-32
2	2 3/16	2	2.6250	.0930	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	ZFI-3235-32

³⁾ After press-fit. Testing methods ▶ Page 61

Thrust washer (form T)



Image exemplary



iglidur® A200 Chapter ▶ Page 433

d1 (nominal)	d1 ³⁾		d2		Øs	Part No.
	max.	min.	max.	min.		
1/4	.2610	.2551	.6201	.6094	.0902	ATI-04
3/8	.3943	.3813	.7500	.7370	.0902	ATI-06
1/2	.5102	.5031	.8201	.8071	.0902	ATI-08
3/4	.7673	.7598	1.0654	1.0500	.0941	ATI-12
1	1.0268	1.0197	1.5000	1.4843	.1252	ATI-16

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d1	d2	s	d4	d5	h	d6	Part No.
+010	-010	-0020	±005	.015 + .005	+008	+005	
.5000	.8750	.0585	.6920	.0670	.0400	.8750	GTI-0814-01
.6250	1.1250	.0585	.8800	.0990	.0400	1,125	GTI-1018-01
.7500	1.2500	.0585	1,005	.0990	.0400	1,250	GTI-1220-01
.8750	1.5000	.0585	1.192	.1300	.0400	1,500	GTI-1424-01
1.0000	1.7500	.0585	1.380	.1300	.0400	1,750	GTI-1628-01
1.2500	2.1250	.0585	1.692	.1610	.0400	2.125	GTI-2034-01
1.5000	2.5000	.0585	2.005	.1920	.0400	2,500	GTI-2440-01
1.7500	2.7500	.0585	2.255	.1920	.0400	2,750	GTI-2844-01
2.0000	3.0000	.0895	2.505	.1920	.0700	3,000	GTI-3248-01

iglidur® M250 Chapter ▶ Page 111

d1 (nominal)	d1 ³⁾		d2		Øs	Part No.
	max.	min.	max.	min.		
1/4	.2609	.2550	.6200	.6094	.0900	MTI-04
5/16	.3271	.3189	.6874	.6767	.0900	MTI-05
3/8	.3940	.3810	.7409	.7394	.0900	MTI-06
1/2	.5101	.5030	.8200	.8070	.0900	MTI-08
5/8	.6371	.6300	1.0000	.9870	.0940	MTI-10
3/4	.7675	.7600	1.0630	1.0500	.0940	MTI-12
1	1.0200	1.0100	1.5000	1.4843	.1250	MTI-16
1 1/4	1.2998	1.2900	2.1400	2.1220	.0980	MTI-20
1 1/2	1.6000	1.5500	2.6000	2.5500	.1250	MTI-24

³⁾ After press-fit. Testing methods ▶ Page 61

iglidur® W300 Chapter ▶ Page 175

d1 +.010	d2 -.010	s -.0020	d4 ±.005	d5 .015 + .005	h +.008	d6 +.005	Part No.
.500	.8750	.0585	.6920	.0670	.0400	.8750	WTI-0814-01
.625	1.1250	.0585	.8800	.0990	.0400	1.1250	WTI-1018-01
.750	1.2500	.0585	1.0050	.0990	.0400	1.2500	WTI-1220-01
.875	1.5000	.0585	1.1920	.1300	.0400	1.5000	WTI-1424-01
1.00	1.7500	.0585	1.3800	.1300	.0400	1.7500	WTI-1628-01
1.25	2.1250	.0585	1.6920	.1610	.0400	2.1250	WTI-2034-01
1.50	2.5000	.0585	2.0050	.1920	.0400	2.5000	WTI-2440-01
1.75	2.7500	.0585	2.2550	.1920	.0400	2.7500	WTI-2844-01
2.00	3.0000	.0895	2.5050	.1920	.0700	3.0000	WTI-3248-01

iglidur® X Chapter ▶ Page 291

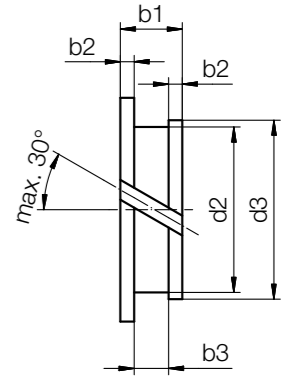
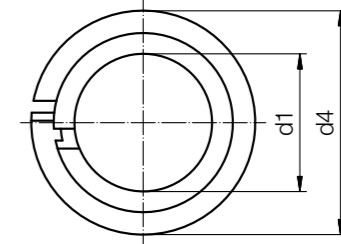
d1 +.010	d2 -.010	s -.0020	d4 ±.005	d5 .015 + .005	h +.008	d6 +.005	Part No.
.500	.8750	.0585	.6920	.0670	.0400	.8750	XTI-0814-01
.625	1.1250	.0585	.8800	.0990	.0400	1.1250	XTI-1018-01
.750	1.2500	.0585	1.0050	.0990	.0400	1.2500	XTI-1220-01
.875	1.5000	.0585	1.1920	.1300	.0400	1.5000	XTI-1424-01
1.00	1.7500	.0585	1.3800	.1300	.0400	1.7500	XTI-1628-01
1,125	1.6250	.0585	-	-	.0400	1.6250	XTI-1826-01
1.25	2.1250	.0585	1.6920	.1610	.0400	2.1250	XTI-2034-01
1.50	2.5000	.0585	2.0050	.1920	.0400	2.5000	XTI-2440-01
1.75	2.7500	.0585	2.2550	.1920	.0400	2.7500	XTI-2844-01
2.00	3.0000	.0895	2.5050	.1920	.0700	3.0000	XTI-3248-01

3) After press-fit. Testing methods ▶ Page 61

Clip bearings



Image exemplary



Clip bearings Chapter ▶ Page 652

d1	d2	d3	d4	b1 +.020	b2 -.10	b3	Part No.
D11 ⁷⁾							
3/16	0.2343	1/4	5/16	0.138	0.032	0.074	MCI-03-01
3/16	0.2343	1/4	5/16	0.200	0.032	0.136	MCI-03-02
1/4	0.3125	11/32	7/16	0.138	0.032	0.074	MCI-04-01
1/4	0.3125	11/32	7/16	0.200	0.032	0.136	MCI-04-02
5/16	0.3750	13/32	1/2	0.138	0.032	0.074	MCI-05-01
5/16	0.3750	13/32	1/2	0.200	0.032	0.136	MCI-05-02
3/8	0.4375	15/32	9/16	0.138	0.032	0.074	MCI-06-01
3/8	0.4375	15/32	9/16	0.200	0.032	0.136	MCI-06-02
7/16	0.5000	17/32	5/8	0.138	0.032	0.074	MCI-07-01
7/16	0.5000	17/32	5/8	0.200	0.032	0.136	MCI-07-02
1/2	0.5625	19/32	11/16	0.138	0.032	0.074	MCI-08-01
1/2	0.5625	19/32	11/16	0.200	0.032	0.136	MCI-08-02

⁷⁾ d1 value is measured with a plug gauge after fitting into a reference housing d2 (+0.005).

Please see D11 tolerances table ▶ Page 62

Split bearings,
low bearing clearance

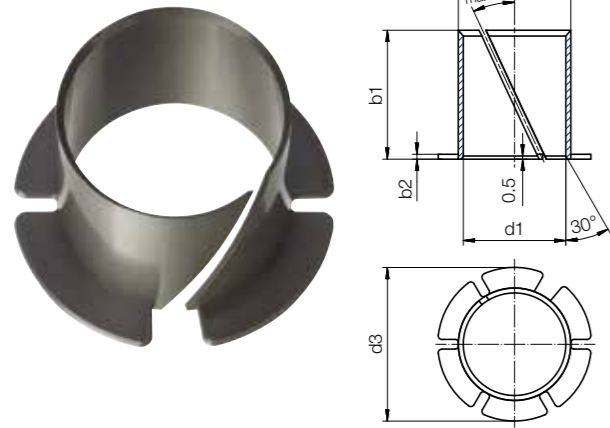


Image exemplary

Split bearings with
anti-rotation feature

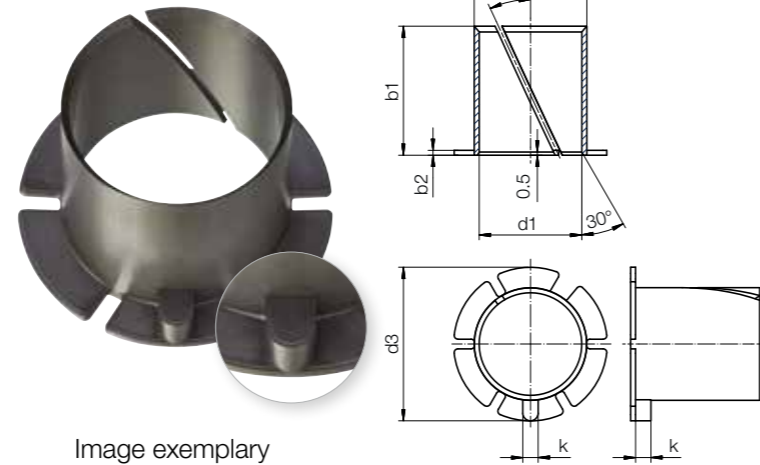


Image exemplary

Split bearings, low bearing clearance

Chapter ▶ Page 656

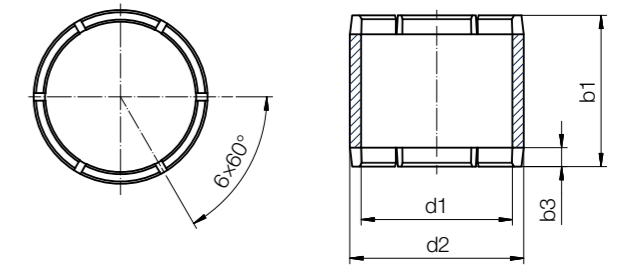
d1	Shaft diameter		d2	Housing hole		d3	b1	b1 tolerance	b2	Part No.
	min.	max.		min.	max.					
3/16	.1875	.1865	0.2339	.2351	.2339	19/61	3/16	-0.016	0.0252	MYI-03-03
1/4	.0025	.2490	0.2965	.2979	.2965	13/32	1/4	-0.016	0.0252	MYI-04-04
5/16	.3125	.3115	0.3744	.3758	.3744	1/2	5/16	-0.017	0.0299	MYI-05-05
3/8	.3750	.3740	0.4370	.4387	.4370	19/32	3/8	-0.017	0.0299	MYI-06-06
7/16	.4375	.4365	0.4996	.5013	.4996	21/32	7/16	-0.017	0.0299	MYI-07-07
1/2	.5000	.4990	0.5618	.5635	.5618	3/4	3/8	-0.018	0.0299	MYI-08-06
1/2	.5000	.4990	0.5618	.5635	.5618	3/4	1/2	-0.018	0.0299	MYI-08-08
5/8	.6250	.6240	0.6870	.6887	.6870	15/16	7/16	-0.018	0.0299	MYI-10-07
5/8	.6250	.6240	0.6870	.6887	.6870	15/16	5/8	-0.018	0.0299	MYI-10-10
5/8	.6250	.6240	0.6870	.6887	.6870	15/16	1 1/8	-0.018	0.0299	MYI-10-18
3/4	.7500	.7490	0.8118	.8139	.8118	1 1/8	3/4	-0.019	0.0299	MYI-12-12
3/4	.7500	.7490	0.8118	.8139	.8118	1 1/8	1 1/8	-0.019	0.0299	MYI-12-18
7/8	.8750	.8740	0.9370	.9391	.9370	1 5/16	15/32	-0.019	0.0299	MYI-14-7.5
7/8	.8750	.8740	0.9370	.9391	.9370	1 5/16	7/8	-0.019	0.0299	MYI-14-14
1	1.00	.9985	1.0933	1.0954	1.0933	1 1/2	7/8	-0.020	0.0449	MYI-16-14
1	1.00	.9985	1.0933	1.0954	1.0933	1 1/2	1	-0.020	0.0449	MYI-16-16

Split bearings with anti-rotation feature

Chapter ▶ Page 657

d1	Shaft diameter		d2	Housing hole		d3	b1	b1 tolerance	b2	k	Part No.
	min.	max.		min.	max.						
1/4	.0025	.2490	0.2965	.2979	.2965	13/32	1/4	-0.016	0.0252	1/16	MYI-04-04-K
5/16	.3125	.3115	0.3744	.3758	.3744	1/2	5/16	-0.017	0.0299	3/32	MYI-05-05-K
1/2	.5000	.4990	0.5618	.5635	.5618	3/4	1/2	-0.018	0.0299	3/32	MYI-08-08-K
5/8	.6250	.6240	0.6870	.6887	.6870	15/16	7/16	-0.018	0.0299	1/8	MYI-10-07-K
5/8	.6250	.6240	0.6870	.6887	.6870	15/16	5/8	-0.018	0.0299	1/8	MYI-10-10-K
3/4	.7500	.7490	0.8118	.8139	.8118	1 1/8	3/4	-0.019	0.0299	1/8	MYI-12-12-K
1	1.00	.9985	1.0933	1.0954	1.0933	1 1/2	1	-0.020	0.0449	5/32	MYI-16-16-K

Clearance-free, pre-loaded sleeve plain bearings

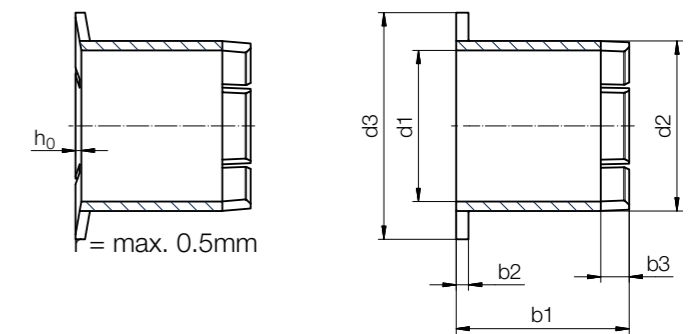


JVSI - clearance-free pre-loaded plain bearings Chapter ▶ Page 671

d1	d1 ¹⁴⁾		d2	b1	b1 tolerance	Part No.
	max.	min.				
3/8	.3773	.3750	1/2	3/8	0.075	JVSI-0608-06
1/2	.5040	.5013	5/8	1/2	0.075	JVSI-0810-08
5/8	.6297	.6270	3/4	5/8	0.075	JVSI-1012-10
3/4	.7541	.7505	1 1/8	3/4	0.075	JVSI-1214-12
1	1.0041	1.0007	28.58	1	0.100	JVSI-1618-16

¹⁴⁾ d1 measured after press-fit in housing hole. d2 H7 within the measurement plane

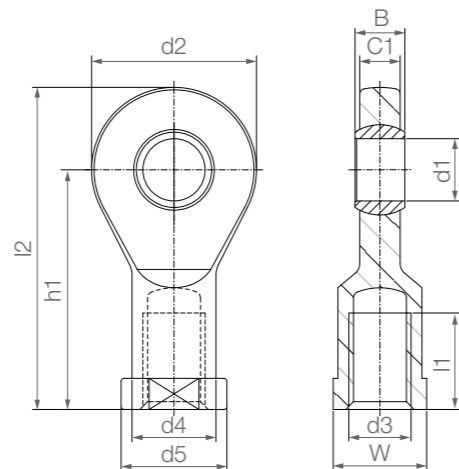
Sleeve bearings for all shaft surfaces



PEPSI - for all shaft surfaces Chapter ▶ Page 679

d1	d2	b1	Part No.
1/4	3/8	3/8	PEPSI-0406-06
3/8	1/2	1/2	PEPSI-0608-08
1/2	5/8	1/2	PEPSI-0810-08
5/8	3/4	3/4	PEPSI-1012-12
3/4	7/8	3/4	PEPSI-1214-12
1	1 1/8	1	PEPSI-1618-16

Rod ends with female thread: EBRI and EBLI



EBRI/EBLI Chapter ▶ Page 888

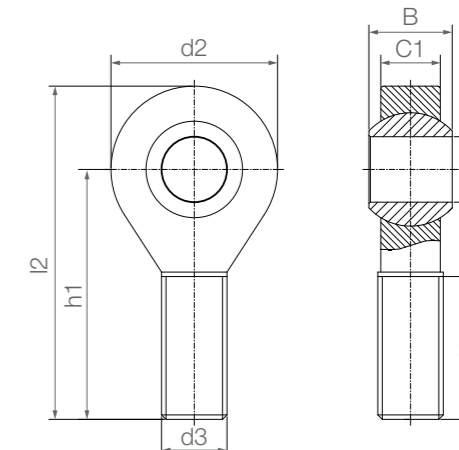
Part No.	d1	d2	d3	d4	d5	C1	B	
Right-hand thread	Left-hand thread		E10					
EBRI-03	EBLI-03	.1900	.748	10-32	.3543	.4331	.1732	.1900
EBRI-04	EBLI-04	.2500	.827	1/4-28	.4331	.5118	.1732	.2500
EBRI-05	EBLI-05	.3125	.945	5/16-24	.5118	.6299	.2362	.3125
EBRI-06	EBLI-06	.3750	1.142	3/8-24	.5906	.7480	.2756	.3750
EBRI-07	EBLI-07	.4375	1.339	7/16-20	.7087	.8661	.3150	.4063
EBRI-08	EBLI-08	.5000	1.339	1/2-20	.7087	.8661	.3150	.4063
EBRI-10 ¹⁷⁾	EBLI-10 ¹⁷⁾	.6250	1.693	5/8-18	-	-	.4134	.5000
EBRI-12	EBLI-12	.7500	2.087	3/4-16	1.0630	1.3386	.5118	.6250

Part No.	h1	l1	l2	W	Max. pivot angle	
Right-hand thread	Left-hand thread		E10			
EBRI-03	EBLI-03	1.1811	.4724	1.5551	0.35	30°
EBRI-04	EBLI-04	1.1811	.4724	1.5945	0.43	25°
EBRI-05	EBLI-05	1.4173	.6299	1.8898	0.55	22°
EBRI-06	EBLI-06	1.6929	.7087	2.2638	0.67	22°
EBRI-07	EBLI-07	1.9685	.7874	2.6378	0.75	18°
EBRI-08	EBLI-08	1.9685	.7874	2.6378	0.75	18°
EBRI-10 ¹⁷⁾	EBLI-10 ¹⁷⁾	2.5394	1.0433	3.3858	0.87	16°
EBRI-12	EBLI-12	3.0315	1.2205	4.0748	1.18	14°

¹⁷⁾ EBRI-10/EBLI-10 special form with hexagonal foot

Part No.	Max. static tensile strain	Max. axial force		Min. thread depth	Max. tightening torque	Max. tightening torque through ball	Weight		
		Short-term	Long-term						
		[N]	[N]						
EBRI-03	EBLI-03	1,300	650	150	75	.315	2	2.0	3.1
EBRI-04	EBLI-04	1,500	750	200	100	.315	5	2.5	3.8
EBRI-05	EBLI-05	2,000	1,000	450	225	.433	6	7.0	6.9
EBRI-06	EBLI-06	2,300	1,150	500	250	.512	7	14.0	11.5
EBRI-07	EBLI-07	3,300	1,650	550	275	.551	18	25.0	17.6
EBRI-08	EBLI-08	3,300	1,650	550	275	.551	23	25.0	18.1
EBRI-10	EBLI-10	5,000	2,500	850	425	.709	30	32.0	31.9
EBRI-12	EBLI-12	7,200	3,600	1,800	900	.866	40	40.0	61.5

Rod ends with male thread: KARI and KALI

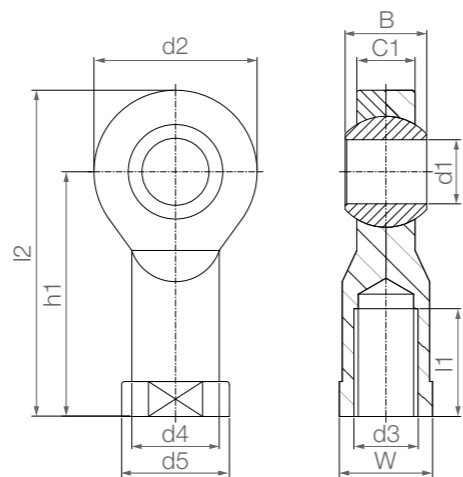


KARI/KALI Chapter ▶ Page 886

Part No.	d1	d2	d3	C1	B	h1	l1	l2	Max. pivot angle	
Right-hand thread	Left-hand thread		E10							
KARI-03	KALI-03	.1900	.625	10-32	.234	.312	1.25	.750	1.563	25°
KARI-04	KALI-04	.2500	.750	1/4-28	.250	.365	1.562	1.00	1.937	25°
KARI-05	KALI-05	.3125	.875	5/16-24	.312	.437	1.875	1.25	2.313	25°
KARI-06	KALI-06	.3750	1.00	3/8-24	.359	.500	1.938	1.25	2.438	22°
KARI-07	KALI-07	.4375	1.125	7/16-20	.406	.562	2.125	1.375	2.688	22°
KARI-08	KALI-08	.5000	1.312	1/2-20	.453	.625	2.428	1.50	2.094	22°
KARI-10	KALI-10	.6250	1.50	5/8-18	.484	.750	2.625	1.625	3.375	22°
KARI-12	KALI-12	.7500	1.75	3/4-16	.593	.875	2.875	1.75	3.75	22°
KARI-16	KALI-16	1.00	2.75	1-12	1.00	1.375	4.125	2.35	5.50	20°

Part No.	Max. static tensile strain	Max. axial force		Min. thread depth	Max. tightening torque	Max. tightening torque through ball	Weight		
		Short-term	Long-term						
		[N]	[N]						
KARI-03	KALI-03	390	200	70	35	.525	0.5	3	2.1
KARI-04	KALI-04	900	450	100	50	.700	1.0	4	3.5
KARI-05	KALI-05	1,100	550	150	75	.875	2.0	10	6
KARI-06	KALI-06	1,500	750	350	175	.875	3.0	15	8.8
KARI-07	KALI-07	2,000	1,000	400	200	.962	6.0	25	12.4
KARI-08	KALI-08	2,500	1,250	450	225	1.050	9.0	35	18.5
KARI-10	KALI-10	3,500	1,750	600	300	1.137	12.0	50	27.6
KARI-12	KALI-12	3,900	1,950	1,000	500	1.226	25.0	70	42.8
KARI-16	KALI-16	4,400	2,200	1,300	650	1.488	45.0	85	143.3

Rod ends with female thread:
KBRI and KBLI



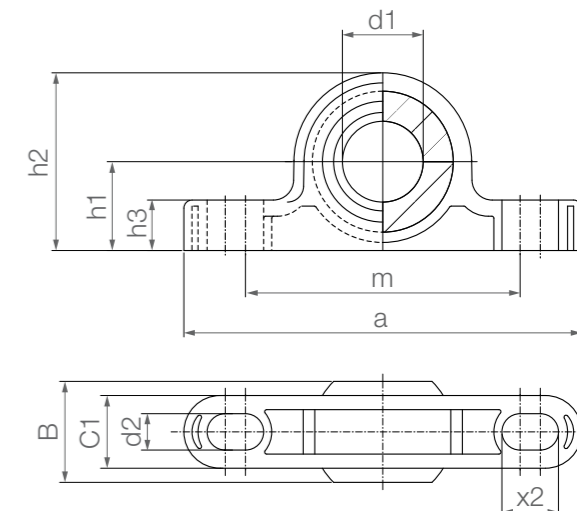
KBRI/KBLI Chapter ▶ Page 882

Part No.	d1 E10	d2	d3	d4	C1	B	h1	l1	l2	W	Max. pivot angle	
Right-hand thread	Left-hand thread											
KBRI-03	KBLI-03	.1900	.625	10-32	.406	.246	.312	1.062	.500	1.374	.312	25°
KBRI-04	KBLI-04	.2500	.750	1/4-28	.469	.272	.365	1.312	.687	1.687	.375	25°
KBRI-05	KBLI-05	.3125	.875	5/16-24	.500	.340	.437	1.375	.687	1.813	.437	25°
KBRI-06	KBLI-06	.3750	1.00	3/8-24	.687	.394	.500	1.625	.812	2.125	.562	22°
KBRI-07	KBLI-07	.4375	1,125	7/16-20	.750	.456	.562	1.812	.937	2.374	.625	22°
KBRI-08	KBLI-08	.5000	1.312	1/2-20	.875	.487	.625	2.125	1.062	2.781	.750	22°
KBRI-10	KBLI-10	.6250	1.50	5/8-18	1.00	.545	.750	2.50	1.375	3.25	.875	22°
KBRI-12	KBLI-12	.7500	1.75	3/4-16	1,125	.676	.875	2.875	1.562	3.75	1.00	22°
KBRI-16	KBLI-16	1.00	2.75	1-12	1.625	1.00	1.375	4.125	2.125	5.50	1.500 ¹⁸⁾	20°

¹⁸⁾ Spanner flat design

Part No.	Max. static tensile strain		Max. axial force		Min. thread depth	Max. tightening torque	Max. tightening torque through ball	Weight	
	Short-term	Long-term	Short-term	Long-term					
Right-hand thread	Left-hand thread	[N]	[N]	[N]	[N]	Thread [inch]	Female thread [Nm]	[Nm]	[g]
KBRI-03	KBLI-03	900	450	300	150	.350	2	3	3.3
KBRI-04	KBLI-04	1,100	550	400	200	.480	5	4	5.1
KBRI-05	KBLI-05	1,700	850	500	250	.480	6	10	7.1
KBRI-06	KBLI-06	2,000	1,000	1,000	500	.568	7	15	12.6
KBRI-07	KBLI-07	2,300	1,150	1,200	600	.655	18	25	16.1
KBRI-08	KBLI-08	2,600	1,300	1,500	750	.743	23	35	26.5
KBRI-10	KBLI-10	4,900	2,450	1,700	850	.962	30	50	38.7
KBRI-12	KBLI-12	5,600	2,800	2,300	1,150	1,093	40	70	54.4
KBRI-16	KBLI-16	6,000	3,000	2,600	1,300	1.488	46	85	197.5

Pillow block bearings: KSTI



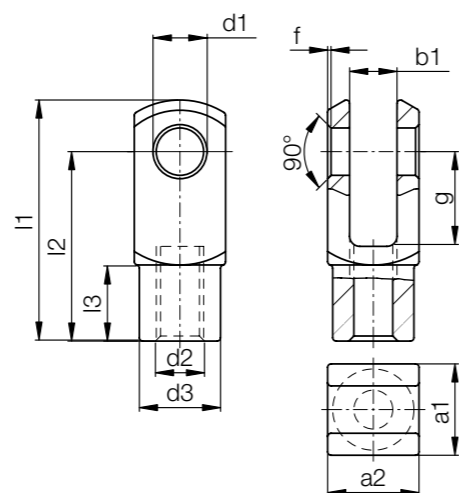
KSTI Chapter ▶ Page 928

Part No.	d1 E10	B	C1	h1	h2	m	a	h3	d2	X2	Max. pivot angle
KSTI-03	.1900	.312	.234	.290	.566	1.00	1.40	.165	.137	.200	25°
KSTI-04	.2500	.375	.250	.390	.705	1.25	1.75	.205	.137	.250	25°
KSTI-05	.3125	.437	.312	.430	.824	1.35	1.95	.236	.150	.280	25°
KSTI-06	.3750	.500	.359	.550	1.022	1.80	2.40	.376	.180	.300	22°
KSTI-07	.4375	.562	.406	.570	1,082	1.85	2.50	.315	.205	.330	22°
KSTI-08	.5000	.625	.453	.600	1.191	2.00	2.80	.354	.205	.380	22°
KSTI-10	.6250	.750	.484	.700	1.409	2.30	3.35	.413	.205	.470	22°
KSTI-12	.7500	.875	.593	.860	1.687	2.70	3.75	.472	.270	.530	22°
KSTI-16	1.00	1.375	1,005	1.10	2.163	3.50	5.00	.630	.520	.680	20°

Part No.	Max. static tensile strain		Max. axial static compressive force	Max. tightening torque for longitudinal holes	Weight
	Short-term	Long-term			
	[N]	[N]	[N]	[Nm]	[g]
KSTI-03	550	275	300	0.6	1.7
KSTI-04	600	300	300	0.6	2.8
KSTI-05	800	400	400	0.8	4.5
KSTI-06	1,000	500	500	1.3	7.5
KSTI-07	1,100	550	600	2.5	9.7
KSTI-08	1,200	600	600	2.5	13.5
KSTI-10	2,100	1,050	800	2.5	21.5
KSTI-12	3,100	1,550	1,200	4.5	33.4
KSTI-16	5,400	2,700	1,600	10.5	85.8

The maximum tightening torques for elongated holes correspond to the permissible tightening torque of the fixing screws (fixing category 5.8).

Clevis joints: GERI and GELI



GERI/GELI Chapter ▶ Page 908

Part No.	d1	g	a1	a2	b1	d2	d3	f	l1	l2	h1
	H9	h11		+0.3 -0.16		2B	±0.3	±0.3	±0.5	±0.3	±0.2
GE□I-03 New	.1875	.394	.394	.394	.197	10-32	.354	.02	1,024	.787	.295
GE□I-04 New	.2500	.472	.472	.472	.236	1/4-28	.394	.02	1,205	.945	.354
GE□I-05 New	.3125	.630	.630	.630	.315	5/16-24	.551	.02	1,638	1,260	.472
GE□I-06 New	.3750	.787	.787	.787	.394	3/8-24	.709	.02	2,020	1,575	.591
GE□I-07 New	.4375	.945	.945	.945	.472	7/16-20	.787	.02	2,413	1,890	.709
GE□I-08 New	.5000	1.102	1.063	1.063	.551	1/2-20	.945	.02	2,807	2,205	.886

Part No.	Max. static tensile strain		Weight [g]
	Short-term [lbf]	Long-term [lbf]	
GE□I-03 New	225	112	1.6
GE□I-04 New	270	135	2.9
GE□I-05 New	607	303	6.1
GE□I-06 New	1056	528	13.0
GE□I-07 New	1281	640	16.5
GE□I-08 New	719	360	20.8

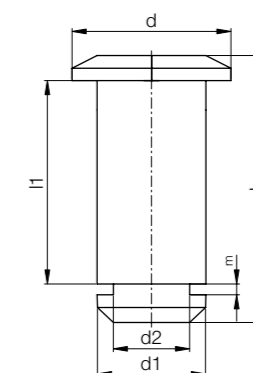
Clevis joints: GERIK and GELIK



GERIK/GELIK Chapter ▶ Page 912

Part No.	Max. static tensile strain		Weight [g]
	Short-term [lbf]	Long-term [lbf]	
GE□IK-03 New	180	90	2.0
GE□IK-04 New	202	101	3.5
GE□IK-05 New	472	236	7.7
GE□IK-06 New	674	404	16.0
GE□IK-07 New	787	393	21.4
GE□IK-08 New	629	315	26.3

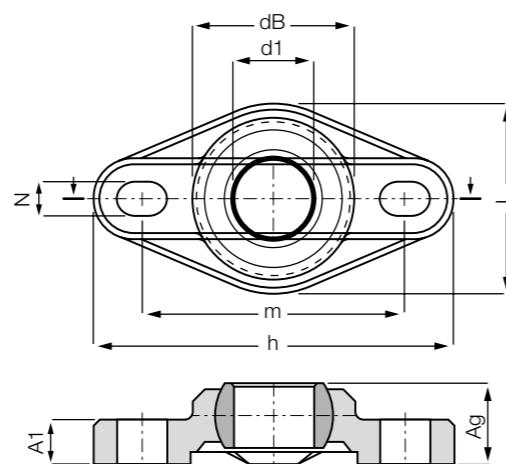
Clevis pins: GBI



GBI Chapter ▶ Page 917

Part No.	d1	d2	d	l	l1	m	Clip	Weight [g]
GBI-03 New	.1875	.1260	.3125	.55	.3975	.0472	GSR-04	0.4
GBI-04 New	.2500	.1969	.3750	.65	.4764	.0512	GSR-08	0.5
GBI-05 New	.3125	.1969	.4375	.85	.6339	.0512	GSR-08	1.5
GBI-06 New	.3750	.2756	.5000	1.05	.7953	.0591	GSR-10	2.8
GBI-07 New	.4375	.3543	.6250	1.25	.9528	.0669	GSR-12	4.6
GBI-08 New	.5000	.3543	.7500	1.40	1.0709	.0669	GSR-12	5.2

Fixed flange bearings with 2 mounting holes: EFOI

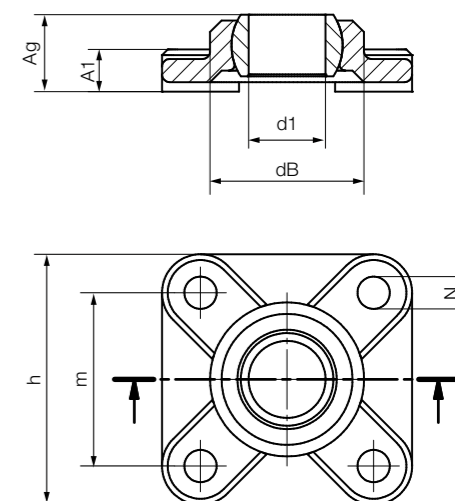


EFOI Chapter ▶ Page 946

Part No.	d1	dB	H	L	J	A1	Ag	N
	E10							
EFOI-03 New	.1875	.551	1.331	.630	.945	.177	.312	.126 x .197
EFOI-04 New	.2500	.551	1.331	.630	.945	.177	.342	.126 x .197
EFOI-05 New	.3125	.709	1.740	.866	1.220	.217	.412	.169 x .256
EFOI-06 New	.3750	.866	2.047	1.024	1.417	.256	.483	.210 x .315
EFOI-07 New	.4375	.984	2.232	1.220	1.614	.276	.518	.210 x .315
EFOI-08 New	.5000	.984	2.232	1.220	1.614	.276	.518	.210 x .315
EFOI-10 New	.6250	1.260	2.858	1.496	2.087	.394	.683	.212 x .315
EFOI-12 New	.7500	1.575	3.504	1.850	2.559	.433	.785	.331 x .492
EFOI-16 New	1.0000	1.909	3.976	2.303	2.953	.551	.966	.331 x .492

Part No.	Max. permissible axial load		Max. permissible radial load		Max. tightening torque Holes [ft*lbs]	Max. pivot angle	Weight [g]
	Short-term	Long-term	Short-term	Long-term			
	[lbf]	[lbf]	[lbf]	[lbf]			
EFOI-03 New	56	28	168	84	0.44	33°	2.3
EFOI-04 New	56	28	180	90	0.96	27°	2.0
EFOI-05 New	156	78	248	124	1.84	24°	4.0
EFOI-06 New	192	96	450	225	1.84	24°	6.5
EFOI-07 New	248	124	494	247	1.84	21°	7.5
EFOI-08 New	248	124	494	247	3.32	21°	12.0
EFOI-10 New	314	157	630	315	3.32	24°	17.2
EFOI-12 New	404	202	1236	618	3.32	17°	33.7
EFOI-16 New	674	337	1348	674	7.74	14°	59.0

Fixed flange bearings with 4 mounting holes: EFSI

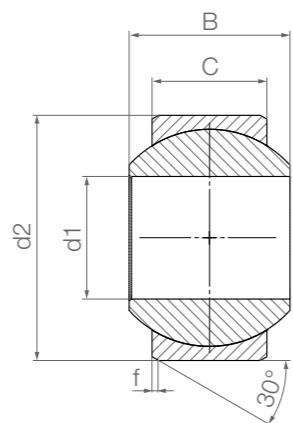


EFSI Chapter ▶ Page 948

Part No.	d1	dB	L	J	A1	Ag	N
	E10						
EFSI-03 New	.1875	.551	.984	.669	.177	.311	.126
EFSI-04 New	.2500	.551	.984	.669	.177	.343	.126
EFSI-05 New	.3125	.709	1.299	.866	.217	.413	.169
EFSI-06 New	.3750	.866	1.496	1.024	.256	.484	.209
EFSI-07 New	.4375	.984	1.575	1.102	.276	.520	.209
EFSI-08 New	.5000	.984	1.575	1.102	.276	.520	.209
EFSI-10 New	.6250	1.260	2.047	1.417	.354	.654	.252
EFSI-12 New	.7500	1.575	2.559	1.772	.433	.787	.331
EFSI-16 New	1.0000	1.909	2.913	2.047	.551	.965	.331

Part No.	Max. permissible axial load		Max. permissible radial load		Max. tightening torque Holes [ft*lbs]	Max. pivot angle	Weight [g]
	Short-term	Long-term	Short-term	Long-term			
	[lbf]	[lbf]	[lbf]	[lbf]			
EFSI-03 New	50	25	224	112	0.44	33°	2.3
EFSI-04 New	56	28	224	112	0.96	27°	2.0
EFSI-05 New	90	45	314	157	1.84	24°	4.0
EFSI-06 New	112	56	448	224	1.84	24°	6.5
EFSI-07 New	134	67	562	281	1.84	21°	7.5
EFSI-08 New	134	67	562	281	3.32	21°	12.0
EFSI-10 New	282	141	720	360	3.32	24°	17.2
EFSI-12 New	428	214	900	450	3.32	17°	31.5
EFSI-16 New	584	292	1258	629	7.74	14°	77.0

Spherical bearings: KGLI

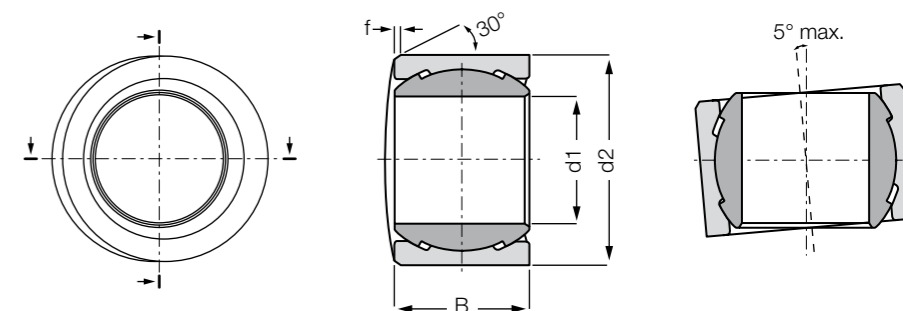


KGLI Chapter ► Page 970

Part No.	Max. static load		Max. tightening torque through ball [Nm]	d1 E10	d2	B	C	f	Max. pivot angle	Weight [g]
	radial [N]	axial ²⁹⁾ [N]								
KGLI-03	1,000	150	5	.1900	.5625	.312	.218	0.3	34°	1.2
KGLI-04	1,500	250	10	.2500	.6562	.375	.250	0.3	30°	1.7
KGLI-05	2,000	350	12	.3125	.7500	.437	.281	0.3	29°	2.6
KGLI-06	2,800	400	20	.3750	.8125	.500	.312	0.5	25°	3.3
KGLI-07	3,750	450	30	.4375	.9375	.562	.343	0.5	25°	4.9
KGLI-08	4,250	500	35	.5000	1.0625	.625	.390	0.5	25°	7.1
KGLI-10	5,300	750	40	.6250	1.1875	.750	.500	0.5	23°	10.2
KGLI-12	8,500	850	55	.7500	1.4375	.875	.593	0.5	23°	17.5
KGLI-16	13,600	2,500	65	1.00	2.125	1.375	1,005	0.5	23°	62.7

²⁹⁾ The maximum static axial load is determined when fitted into a blind housing.

Spherical bearings: KGLI Slim Line

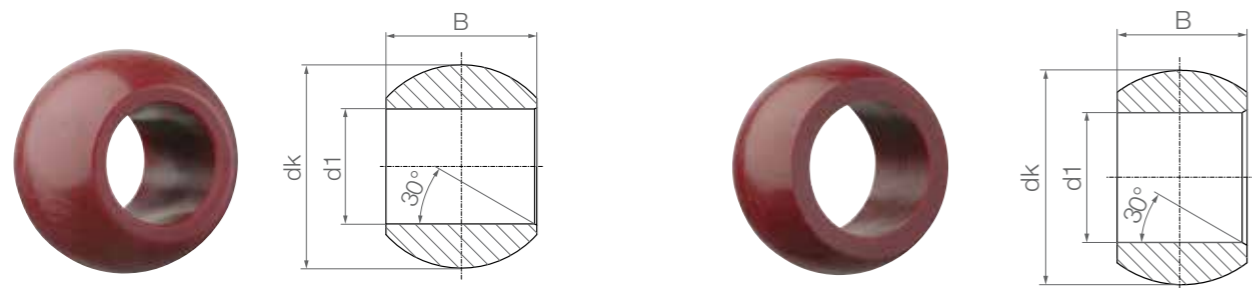


KGLI-SL Chapter ► Page 969

Part No.	d1 E10	d2	B	f	Max. pivot angle	Weight [g]
KGLI-04-SL New	.2500	.5000	.2500	.0200	5°	0.75
KGLI-05-SL New	.3125	.5000	.3125	.0200	5°	1.0
KGLI-06-SL New	.3750	.6250	.3750	.0200	5°	1.3
KGLI-08-SL New	.5000	.8125	.5000	.0200	5°	2.5

Part No.	Max. permissible axial load		Max. permissible radial load	
	Short-term [lbf]	Long-term [lbf]	Short-term [lbf]	Long-term [lbf]
KGLI-03-SL New	34	17	225	112
KGLI-04-SL New	56	28	337	168
KGLI-05-SL New	79	39	450	225
KGLI-06-SL New	112	56	630	315
KGLI-08-SL New	135	67	955	478

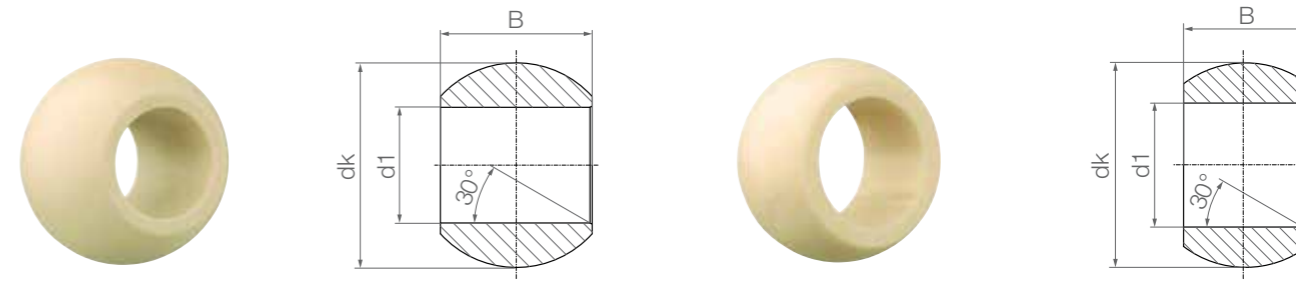
Low-cost spherical balls: REI



REI Chapter ▶ Page 998

Part No.	d1 E10	dK	B	Weight [g]
REI-03 New	.1875	.402	.1900	0.3
REI-04 New	.2500	.402	.2500	0.3
REI-05 New	.3125	.520	.3125	0.7
REI-06 New	.3750	.630	.3750	1.3
REI-07 New	.4275	.709	.4063	1.6
REI-08 New	.5000	.709	.4063	2.6
REI-10 New	.6250	.945	.5000	3.1
REI-12 New	.7500	1.138	.6250	5.9
REI-16 New	1.0000	1,398	.7500	9.2

Standard spherical balls: WKI and WEI



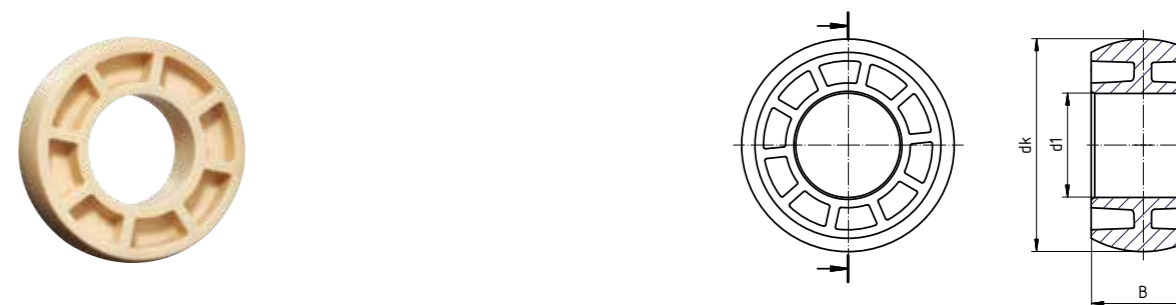
WKI Chapter ▶ Page 997

Part No.	d1 E10	dK	B	Weight [g]
WKI-03	.1900	.444	.312	0.6
WKI-04	.2500	.516	.375	1.0
WKI-05	.3125	.625	.437	1.7
WKI-06	.3750	.718	.500	2.3
WKI-07	.4375	.828	.562	3.5
WKI-08	.5000	.938	.625	5.0
WKI-10	.6250	1,125	.750	8.2
WKI-12	.7500	1.312	.875	12.5
WKI-16	1.00	1.75	1.375	31.7

WEI Chapter ▶ Page 997

Part No.	d1	dK	B	Weight [g]
WEI-03	.1900 H10	.402	.1900	0.3
WEI-04	.2500 H10	.402	.2500	0.3
WEI-05	.3125 H10	.520	.3125	0.7
WEI-06	.3750 H10	.630	.3750	1.3
WEI-07	.4375 H10	.709	.4063	1.6
WEI-08	.5000 H10	.709	.4063	2.6
WEI-10	.6250 E10	.945	.5000	3.1
WEI-12	.7500 E10	1.138	.6250	5.9
WEI-16	1.00 E10	1,398	.7500	9.2

Cost-effective spherical insert bearings for various metallic bearing housings: JEI

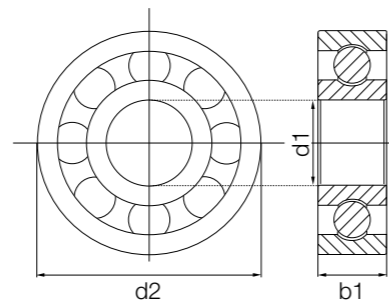


JEI Chapter ▶ Page 1000

Part No.	Housing No.	d1 E10	dk	B	Max. static compressive force	
					radial [N]	axial [N]
JEI-16-17-SP New	205	1	2.0472	.6692	9,000	3,500
JEI-24-21-SP New	208	1 1/2	3.1496	.8267	21,000	6,000
JEI-32-25-SP New	211	2	3.9370	.9842	25,000	5,500

The bearing inserts can be combined with our plastic housings, e.g. B. P205-xx-KS/P208-xx-KS. Contact us!
KS housing ▶ Page 938

Radial deep groove ball bearings, up to +80°C



xirodu® B180 Chapter ▶ Page 886

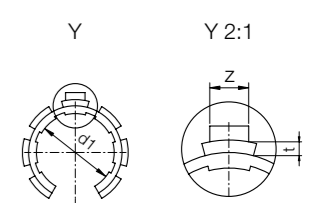
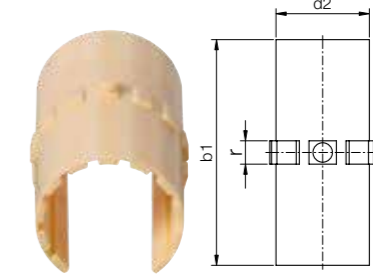
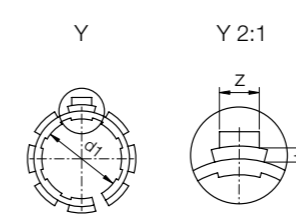
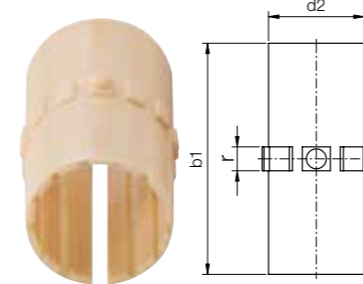
Part No.	Race	Cage	Balls		Inner Ø d1	Outer Ø d2	Width b1
			ES	GL			
BB-I-0620-06-B180-10-□ ¹⁴²⁾	B180	PA	1,4401	Glas	3/16	5/8	10/51
BB-I-0820-06-B180-10-ES	B180	PA	1,4401	-	1/4	5/8	10/51
BB-I-0824-07-B180-10-□ ¹⁴²⁾	B180	PA	1,4401	Glas	1/4	3/4	7/32
BB-I-1228-09-B180-10-ES	B180	PA	1,4401	-	3/8	7/8	5/16
BB-I-1236-12-B180-10-□ ¹⁴²⁾	B180	PA	1,4401	Glas	3/8	1 1/8	3/8
BB-I-1636-12-B180-10-□ ¹⁴²⁾	B180	PA	1,4401	Glas	1/2	1 1/8	3/8
BB-I-2044-12-B180-10-□ ¹⁴²⁾	B180	PA	1,4401	Glas	5/8	1 3/8	3/8
BB-I-2452-16-B180-10-□ ¹⁴²⁾	B180	PA	1,4401	Glas	3/4	1 5/8	1/2
BB-I-3264-12-B180-10-□ ¹⁴²⁾	B180	PA	1,4401	Glas	1	2	1/2

¹⁴²⁾ For ball bearings with stainless steel balls please add suffix "-ES", for glass balls please add suffix "-GL".

Part No.	Max. static axial load capacity [N]	Load capacity		Limit speed [rpm]	Weight	
		stat. [N]	dyn. [N]		ES [g]	GL [g]
BB-I-0620-06-B180-ES/-GL	35	45	49	3,700	1.6	1.0
BB-I-0820-06-B180-ES	40	47	51	3,500	1.3	-
BB-I-0824-07-B180-ES/-GL	50	60	75	3,200	1.6	1.0
BB-I-1228-09-B180-ES	55	70	89	2,200	3.9	-
BB-I-1236-12-B180-ES/-GL	75	134	150	1,050	4.9	2.9
BB-I-1636-12-B180-ES/-GL	75	134	150	2,000	7.6	5.2
BB-I-2044-12-B180-ES/-GL	78	170	193	1,600	11.0	7.9
BB-I-2452-16-B180-ES/-GL	81	260	290	1,400	20.1	13.6
BB-I-3264-12-B180-ES/-GL	85	275	320	1,050	27.3	21.3

Closed, long design: JUI

Open, long design: JUIO



JUI-01/JUIO-01 Chapter ▶ Page 1258

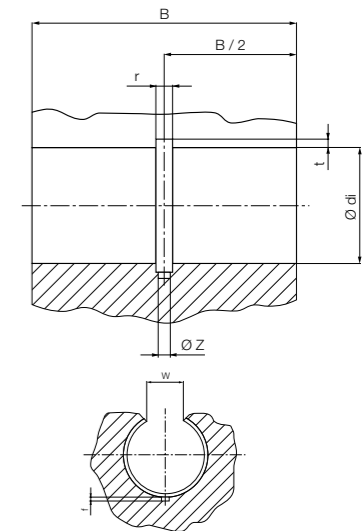
Part No.	Shaft Ø	Tolerance ⁷⁸⁾	d2	b1	r	t	z	
								closed
JUI-01-06	-	3/8	+0.0016 +0.0024	0.4684	0.846	0.1250	0.024	0.0866
JUI-01-08	JUIO-01-08	1/2	+0.0016 +0.0024	0.5934	1,220	0.1250	0.032	0.1024
JUI-01-10	JUIO-01-10	5/8	+0.0016 +0.0024	0.7184	1.460	0.1406	0.032	0.1181
JUI-01-12	JUIO-01-12	3/4	+0.0016 +0.0024	0.8747	1.575	0.1875	0.032	0.1339
JUI-01-16	JUIO-01-16	1	+0.0016 +0.0024	1.1247	2.205	0.1875	0.032	0.1496
JUI-01-20	JUIO-01-20	1 1/4	+0.0020 +0.0032	1.4058	2.579	0.1875	0.032	0.1496
JUI-01-24	JUIO-01-24	1 1/2	+0.0020 +0.0032	1.6558	2.953	0.2500	0.052	0.1811
JUI-01-32	JUIO-01-32	2	+0.0024 +0.0040	2.1871	3.937	0.2813	0.052	0.2280

Housing hole for liner JUI-01/JUIO-01

Part No.	di H7	B h10	W +0.008	r 0.002	t 0.004	f 0.002	z 0.008		
								closed	Open
JUI-01-06	-	.4680	.4684	.875	-	.1250	0.0311	.039	.102
JUI-01-08	JUIO-01-08	.5940	.5934	1.25	0.394	.1250	0.0391	.059	.122
JUI-01-10	JUIO-01-10	.7190	.7184	1.5	0.433	.1406	0.0391	.067	.142
JUI-01-12	JUIO-01-12	.8755	.8747	1.625	0.492	.1875	0.0391	.079	.142
JUI-01-16	JUIO-01-16	1.1255	1.1247	2.25	0.63	.1875	0.0391	.079	.161
JUI-01-20	JUIO-01-20	1.4068	1.4058	2.625	0.709	.1875	0.0391	.079	.161
JUI-01-24	JUIO-01-24	1.6568	1.6558	3	0.866	.2500	0.0652	.089	.200
JUI-01-32	JUIO-01-32	2.1881	2.1871	4	1.181	.2813	0.0652	.098	.240

⁷⁸⁾ According to igus® testing method ▶ Page 1330

Please note: Installation instructions ▶ Page 1257



Part No.	d1	d2	b1	r	t	z
E7UI-01-08	1/2	0.5934	1.22	0.125	0.0391	0.1024
E7UI-01-10	5/8	0.7184	1.46	0.146	0.0391	0.1181
E7UI-01-12	3/4	0.8747	1.575	1.575	0.0391	0.1339
E7UI-01-16	1	1.1247	2.205	2.205	0.0391	0.1496
E7UI-01-20	1 1/4	1.4058	2.579	2.579	0.0391	0.1496
E7UI-01-24	1 1/2	1.6558	2.953	2.953	0.0625	0.1811
E7UI-01-32	2	2.1871	3.937	3.937	0.0625	0.228

JUI can be combined with:



RJUI-01, RJUI-03,
TJUI-01, TJUI-03

▶ Page 1888 and 1889

JUIO can be combined with:

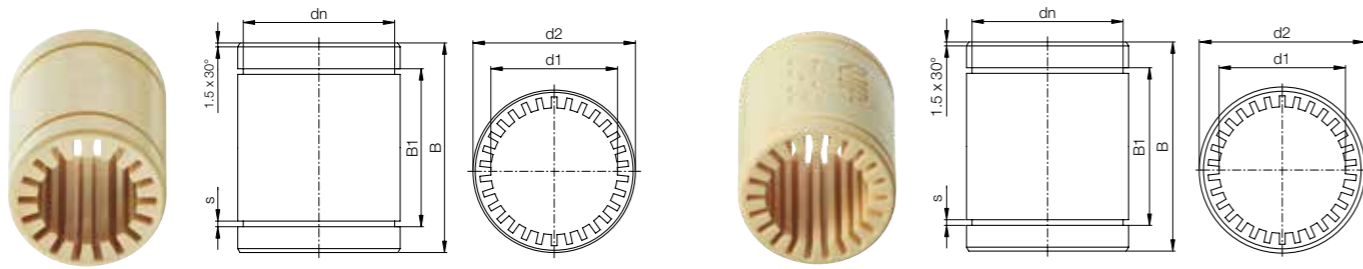


OJUI-01, OJUI-03

▶ Page 1887

Standard design: RJI

Precise: RJIP



RJI-01/RJIP-01 Chapter ▶ Page 1280

Part No.	Shaft Ø	Tolerance ⁷⁸⁾ Bearing inner diameter - RJI	Tolerance ⁷⁸⁾ Bearing inner diameter - RJIP	F max. dynamic ⁸²⁾ P = 2.5MPa	F max. static ⁸²⁾ P = 17.5MPa
Standard	Precise				
–	RJIP-01-04	1/4	–	180	1.267
RJI-01-06	RJIP-01-06	3/8	+0.0010 +0.0024	265	1.855
RJI-01-08	RJIP-01-08	1/2	+0.0013 +0.0030	505	3.535
RJI-01-10	RJIP-01-10	5/8	+0.0013 +0.0030	755	5.285
RJI-01-12	RJIP-01-12	3/4	+0.0016 +0.0036	982	6.877
RJI-01-16	RJIP-01-16	1	+0.0016 +0.0036	1,815	12.705

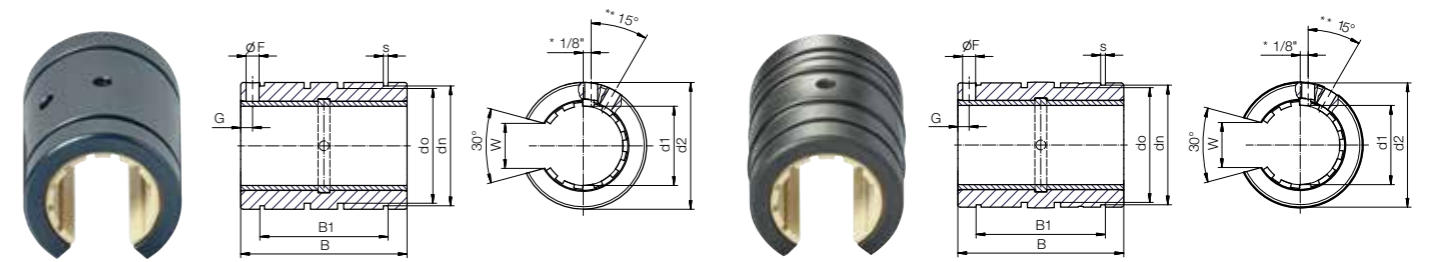
Part No.	d1	d2	B	B1	Øs	dn	
Standard	Precise						
–	RJIP-01-04	1/4	0.4999	0.74803	0.5188	0.0409	0.4669
RJI-01-06	RJIP-01-06	3/8	0.6250	0.87500	0.6890	0.0410	0.5870
RJI-01-08	RJIP-01-08	1/2	0.8750	1.25000	1.0125	0.0480	0.8200
RJI-01-10	RJIP-01-10	5/8	1.1250	1.50000	1.0950	0.0580	1.0600
RJI-01-12	RJIP-01-12	3/4	1.2500	1.62500	1.2500	0.0580	1.1770
RJI-01-16	RJIP-01-16	1	1.5625	2.25000	1.8640	0.0700	1.4710
RJI-01-20	RJIP-01-20	1 1/4	2.0000	2.62500	1.9840	0.0700	1.8890

⁷⁸⁾According to igus® testing method ▶ Page 1330, ⁸²⁾ Design tips ▶ Page 1256

Please note: Installation instructions ▶ Page 1257

Open, anodised aluminium adapters - 01 version (standard)

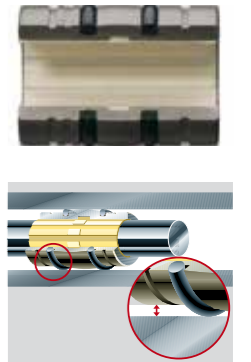
Open, anodised aluminium adapters - 03 version (floating bearing)



OJUI-01/OJUI-03 Chapter ▶ Page 1297

Part No.	Shaft Ø	Tolerance ⁷⁸⁾	d2	B	W
					±0.012
OJUI-01-08/-03-08	1/2	+0.0016 +0.0032	.8750/.8673	1.25/1.2461	.3940
OJUI-01-10/-03-10	5/8	+0.0016 +0.0032	1.125/1.1173	1.50/1.4961	.4330
OJUI-01-12/-03-12	3/4	+0.0016 +0.0032	1.25/1.2421	1.625/1.6173	.4920
OJUI-01-16/-03-16	1	+0.0016 +0.0032	1.5625/1.5547	2.25/2.2421	.6300
OJUI-01-20/-03-20	1 1/4	+0.0020 +0.0041	2.00/1.9881	2.625/2.6173	.7090
OJUI-01-24/-03-24	1 1/2	+0.0020 +0.0041	2.375/2.3634	3.00/2.9921	.8660
OJUI-01-32/-03-32	2	+0.0024 +0.0051	3.00/2.988	4.00/3.9921	1.181

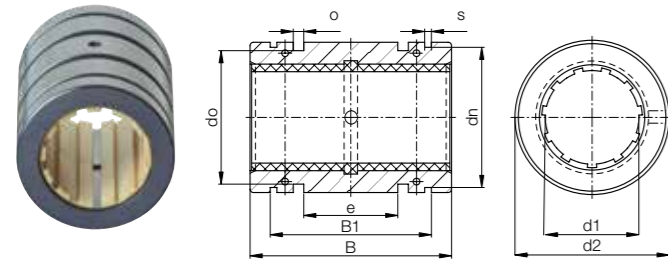
Part No.	Øs	dn	B1	F	G	do
		h10		+0.004	+0.004	
OJUI-01-08/-03-08	.0520	.8200	.9790/.9870	.1360	.6250	.6846
OJUI-01-10/-03-10	.0620	1.0600	1.124/1.136	.1360	.1250	.9346
OJUI-01-12/-03-12	.0620	1.177	1.186/1.198	.1360	.1250	1.0590
OJUI-01-16/-03-16	.0740	1.471	1.773/1.789	.1360	.1250	1.372
OJUI-01-20/-03-20	.0740	1.889	2.0230/2.0390	.2010	.1875	1.8094
OJUI-01-24/-03-24	.0950	2.241	2.44/2.463	.2010	.1875	2.113
OJUI-01-32/-03-32	.1110	2.839	3.222/3.249	.2650	.3125	2.7378



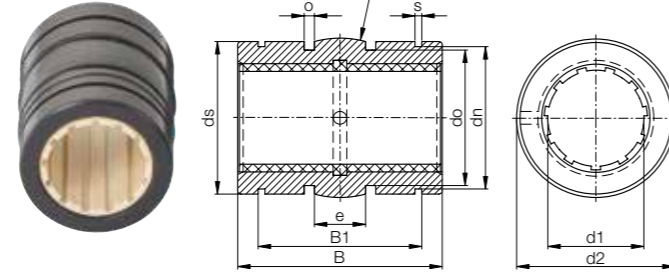
⁷⁸⁾ According to igus® testing method ▶ Page 1330

Please note: Installation instructions ▶ Page 1257

Closed, anodised aluminium adapters - 01 version (standard)



Closed, anodised aluminium adapters - 03 version (floating bearing)

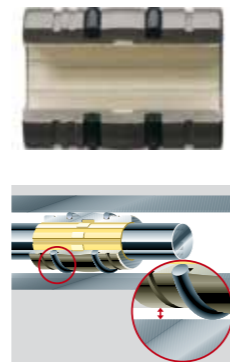


RJUI-01/RJUI-03

Chapter ▶ Page 1286

Part No.	Shaft Ø	Tolerance ⁷⁸⁾	d2	B	B1
RJZI-01-04 ¹¹⁰⁾ /-03-04 ¹¹⁰⁾	1/4	+0.0016 +0.0032	.5000/.4921	.7500/.7460	.5190/.5270
RJUI-01-06/-03-06	3/8	+0.0016 +0.0032	.6250/.6173	.8750/.8713	.6440/.6520
RJUI-01-08/-03-08	1/2	+0.0016 +0.0032	.8750/.8673	1.25/1.2461	.9790/.9870
RJUI-01-10/-03-10	5/8	+0.0016 +0.0032	1.125/1.1173	1.50/1.4961	1.124/1.136
RJUI-01-12/-03-12	3/4	+0.0016 +0.0032	1.25/1.2421	1.625/1.6173	1.186/1.198
RJUI-01-16/-03-16	1	+0.0016 +0.0032	1.5625/1.5547	2.25/2.2421	1.773/1.789
RJUI-01-20/-03-20	1 1/4	+0.0020 +0.0041	2.00/1.9881	2.625/2.6173	2.0230/2.0390
RJUI-01-24/-03-24	1 1/2	+0.0020 +0.0041	2.375/2.3634	3.00/2.9921	2.44/2.463
RJUI-01-32/-03-32	2	+0.0024 +0.0051	3.00/2.9881	4.00/3.9921	3.222/3.249

Part No.	Øs H10	dn h10	ds h10	do	e	o -0.004
RJZI-01-04 ¹¹⁰⁾ /-03-04 ¹¹⁰⁾	.0410	.4670	.4803	.3990	.125	.0800
RJUI-01-06/-03-06	.0410	.5870	.6055	.5240	.243	.0800
RJUI-01-08/-03-08	.0520	.8200	.8556	.7120	.281	.1250
RJUI-01-10/-03-10	.0620	1.0600	1.1055	.9620	.312	.1250
RJUI-01-12/-03-12	.0620	1.177	1.23	1.0870	.312	.1250
RJUI-01-16/-03-16	.0740	1.471	1.5271	1.399	.500	.1250
RJUI-01-20/-03-20	.0740	1.889	1.9606	1.837	.625	.1250
RJUI-01-24/-03-24	.0950	2.241	2.3358	2.152	.650	.1620
RJUI-01-32/-03-32	.1110	2.839	2.9606	2.775	1.00	.1890

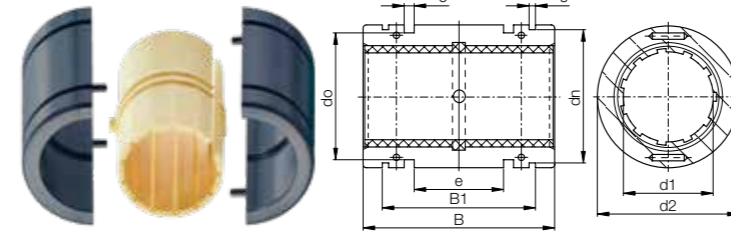


⁷⁸⁾ According to igus® testing method ▶ Page 1330

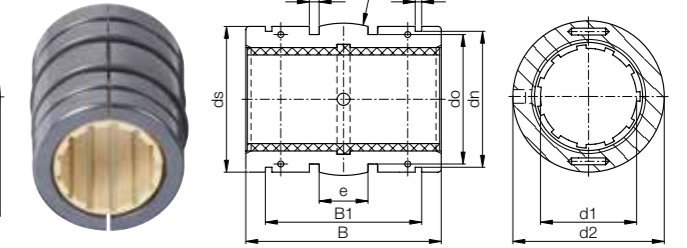
¹¹⁰⁾ Nominal width smaller than 3/8" are delivered with sleeve bearings

Please note: Installation instructions ▶ Page 1257

Split aluminium adapters - 01 version (standard)



Split aluminium adapters - 03 version (floating bearing)

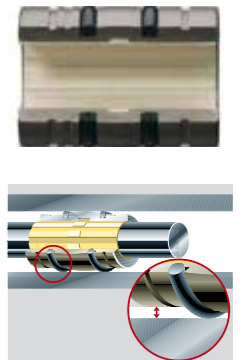


TJUI-01/TJUI-03

Chapter ▶ Page 1295

Part No.	Shaft Ø	Tolerance ⁷⁸⁾	d2	d2 Tolerance ⁷⁸⁾	B	B1 H10
TJUI-01-08/-03-08	1/2	+0.0016 +0.0036	.8750	-0.0008 -0.0016	1.25/1.242	.9790
TJUI-01-10/-03-10	5/8	+0.0016 +0.0036	1.125	-0.0008 -0.0016	1.50/1.492	1.124
TJUI-01-12/-03-12	3/4	+0.0016 +0.0036	1.25	-0.0008 -0.0018	1.625/1.617	1.186
TJUI-01-16/-03-16	1	+0.0016 +0.0036	1.5625	-0.0012 -0.0022	2.25/2.2382	1.773
TJUI-01-20/-03-20	1 1/4	+0.0020 +0.0039	2.00	-0.0012 -0.0022	2.625/2.6134	2.0230
TJUI-01-24/-03-24	1 1/2	+0.0020 +0.0047	2.375	-0.0012 -0.0024	3.00/2.9843	2.44
TJUI-01-32/-03-32	2	+0.0024 +0.0057	3.00	-0.0012 -0.0024	4.00/3.9803	3.222

Part No.	Øs H10	dn h10	ds h10	do	e	o +0.008
TJUI-01-08/-03-08	.0520	.8200	0.8563	.7120	.281	.1250
TJUI-01-10/-03-10	.0620	1.0600	1.1039	.9620	.312	.1250
TJUI-01-12/-03-12	.0620	1.177	1.2276	1.0870	.312	.1250
TJUI-01-16/-03-16	.0740	1.471	1.535	1.399	.500	.1250
TJUI-01-20/-03-20	.0740	1.889	1.9654	1.837	.625	.1250
TJUI-01-24/-03-24	.0950	2.241	2.337	2.152	.650	.1620
TJUI-01-32/-03-32	.1110	2.839	2.9531	2.775	1.00	.1890



⁷⁸⁾ According to igus® testing method ▶ Page 1330

Please note: Installation instructions ▶ Page 1257

Service

Online tools, chemicals table,
material data, forms, addresses



...plastics



Online tools

Online expert tools

Quickly find the right lead screw technology part and an estimated service life for your application with igus® finder and expert online tools. You can also order your parts or request more information from us.

Online configurator tools

With the online configurators, you can assemble your individual product in just a few steps.

► www.igus.eu/online

igus® CAD

Our CAD application gives you access to 2D/3D CAD files in various formats. Alternatively, you can transfer CAD files directly to your CAD system using our Click2CAD toolbox. For 3D printing, you can configure individual 3D printing models online.



iglidur® product finder
Expert for plain bearings
Service life calculation
► www.igus.eu/IBD



iglidur® expert
Expert for slewing rings
Find the right solution quickly
► www.igus.eu/PRT-expert



iglidur® bar stock finder
Product finder for bar stock
Material finder and required dimensions
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igus® gear configurator
Gear configurator
Wear-resistant gears in 60 seconds using the new igus® gear configurator
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igubal® expert
Expert for spherical bearings
Service life calculation
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igus® CAD configurator
CAD configurator
Quickly generate complete 3D models
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xiros® expert
Service life calculator for plastic ball bearings
Service life calculation of polymer ball bearings
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Conveyor roller expert
Expert for conveyor rollers
Find the right conveyor roller quickly
► www.igus.eu/guide-roller-expert



drylin® expert
Expert for linear guides
System selection & service life calculation with CAD
► www.igus.eu/drylin-expert



Online services

FastLine service in the iglidur® bearing designer

With the igus® FastLine service, you receive customised injection-moulded plain bearings and thrust washers in a maximum of seven days. Apart from the immediate price indication, the iglidur® bearing designer shows you the manufacturing costs of our other production methods.

3D printing service

In the online 3D printing calculation, you not only receive 3D printing, but also analyse feasibility and prices of injection-moulded parts made with 3D-printed moulds (print2mold).

CNC service

Online CNC service for individually machined parts. Upload the 3D models of your machined parts in our online CNC tool, configure your requirements and get direct price feedback.

Coating service

iglidur® coating is a tribologically optimised polymer in powder form that can be applied to electrically conductive components using powder coating. With our iglidur® coating service, you will get your configuration at the push of a button.



drylin® shaft configurator
Shaft configurator
Configure shafts
► www.igus.eu/DEK



drylin® lead screw drives configurator
Expert for lead screw drives
Find and calculate suitable lead screw drives
► www.igus.eu/DGE



drylin® lead screw drives configurator
Lead screw configurator
Configure required dimensions
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drylin® drive technology configurator
Configurator for drive technology
Complete drive technology configurable with or without motor
► www.igus.eu/linearmodule-configurator



drylin® linear system configurator
Configurator for SHT drive technology
Configure the complete drylin® SHT lead screw linear system
► www.igus.eu/sht-configurator



roboLink® designer
Configurator for robot arms
Calculate and configure robot arms
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iglidur® slewing rings expert
3D printing service
For wear-resistant parts made of tribo-plastics
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iglidur® special parts
Special parts according to customer request
igus® production service for customer-specific parts
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Download area:
igus® download
Free download of all product catalogues, brochures, instructions, videos, etc.
► www.igus.eu/downloads



Chemical resistance

Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available

Chemicals, iglidur®	A180	A200, G	A350	A500	A290	J	J260	J350	H	F2	Q
	A181	GLW		C500	F	J2	M260		H1	K	
	J200	G V0		UW500	Q290	J3			H2	P	
	R	M250		X	W360	J4			H370	P210	
	UW	N54, Q2		X6	G1	JB			H4	P4	
	xirodur® B180	W300, C		xirodur® A500		E			HLW	M210	
	xirodur® S180	L250, L100		L500					iguton G		
	xirodur® F180	igumid® G		AX500					H3, H5		
	xirodur® M180	xirodur® G220									
	FC180	igumid® FC									
Acetaldehyde (aqueous), 40%	+	o	x	+	o	+	-	x	x	-	o
Acetaldehyde (aqueous), 40%	+	o	x	x	o	o	x	x	x	o	o
Acetamide (aqueous), 50%	+	4	x	+	4	+	-	x	x	x	4
Acetic acid, 10%	+	-	+	+	-	+	+	+	+	+	+
Acetic acid, 2%	+	-	+	+	-	+	+	+	+	+	o
Acetic acid, 90%	-	-	+	o	-	-	-	x	+	-	-
Acetone	+	+	-	+	o	+	-	-	+	-	+
Acetyl chloride	-	-	x	x	-	-	x	x	x	x	-
Acrylnitrile	o	+	x	+	+	o	-	x	x	-	+
Air, liquid	o	o	x	x	o	o	x	x	x	o	o
Allyl alcohol	+	o	x	+	o	+	x	x	+	+	+
Aluminium chloride (aqueous), 10%	o	o	x	+	o	o	o	x	+	o	o
Aluminium cleaner	-	-	x	o	-	-	x	x	o	x	-
Aluminium salts of mineral acids, 20%	o	o	x	x	o	o	x	x	x	o	o
Aluminium sulphate (aqueous), 10%	o	o	x	+	o	o	+	x	+	o	o
Ammonium carbonate (aqueous), 10%	+	4	x	+	4	+	o	x	+	+	4
Ammonium carbonate (aqueous), 10%	+	+	x	+	+	+	x	x	+	x	x
Ammonium chloride (aqueous), 10%	+	4	x	+	4	+	+	x	+	+	4
Amyl acetate, 100%	-	-	x	+	-	-	-	x	+	o	+
Amyl alcohol	+	+	x	+	+	+	+	x	+	o	+
Aniline (aqueous), saturated solution	o	o	x	+	o	o	-	x	+	o	o
Anodic solutions (HNO3 -30%/H2SO4 -10%)	-	o	x	x	o	-	x	x	x	o	o
Aqua regia HCl/HNO3 (75/50 vol.)	o	+	x	+	+	o	-	x	x	-	+
Aromatic compounds	+	+	+	x	+	+	x	x	x	o	x
Barium chloride (aqueous), 10%	+	o	x	+	o	+	+	x	+	+	4
Barium salts from mineral acids	+	o	x	x	o	o	x	x	x	o	o
Barium sulphate (aqueous), 10%	+	o	x	+	o	+	o	x	+	+	4
Benzaldehyde	+	o	x	+	o	o	-	x	o	-	o
Benzoic acid (aqueous), 20%	o	o	x	+	o	o	-	x	x	+	o
Benzyl alcohol	+	+	+	+	+	o	-	+	x	x	o
Biphenyl	+	+	x	x	+	+	x	x	x	-	x
Bitumen, DIN 51567	+	o	-	+	o	o	+	x	x	o	o
Bleaching lye	-	-	x	+	-	-	x	x	x	-	o
Bleaching lye (aqueous), 10%	-	-	x	+	-	-	x	x	+	o	o
Boric acid (aqueous), 10%	+	o	+	+	o	+	+	x	x	-	4
Brandy vinegar	o	o	x	+	o	o	x	x	+	o	o
Bromine (aqueous), 25%	-	-	x	+	-	-	-	x	-	-	-
Bromine vapours	-	-	x	x	-	-	x	x	x	-	-

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Chemical resistance

"4" swelling, softening due to the water

V400	Z	B	D	T220	K230	PEP	A160	E7	I170	I180	xirodur®	xiros® ball bearings with	I150	C210	I3		
							B160			I180-BL	D180	PEEK cage	PP cage	PA cage	P230	I6	
							UW160									AB	
							xirodur® C160						PE cage				
x	x	o	+	-	x	o	+	x	x	-	x	+	+	o	-	x	+
x	x	x	o	o	x	x	o	x	x	x	x	o	+	-	-	x	o
x	x	x	+	x	x	4	x	x	+	-	x	+	x	+	x	x	+
+	+	-	+	+	x	o	+	x	+	+	x	+	+	-	+	+	+
+	+	-	+	+	o	o	+	x	+	+	-	x	x	o	+	+	+
+	+	-	-	-	x	-	+	x	-	-	x	+	+	-	-	-	-
+	+	o	o	-	o	+	+	o	-	-	x	+	+	+	-	+	+
x	x	x	-	x	x	-	x	x	x	x	x	x	x	-	-	x	-
x	x	-	o	-	x	+	+	x	x	-	x	+	+	+	-	x	+
x	x	x	o	o	x	x	x	x	x	x	x	x	x	-	x	o	o
x	+	o	+	+	x	+	+	x	-	-	x	+	+	o	+	+	+
x	x	o	o	o	x	o	+	x	+	o	x	+	+	o	+	x	o
x	x	-	-	x	x	-	x	x	x	x	x	o	x	-	x	x	-
x	+	o	+	+	x	4	+	+	+	o	x	+	+	+	+	x	x
x	+	x	+	x	x	+	x	x	x	x	x	+	+	+	x	x	+
x	+	o	+	+	x	4	+	+	x	+	o	+	+	+	+	x	-
x	+	-	o	o	x	o	o	x	-	-	x	+	o	-	+	+	-
x	o	o	+	+	x	+	+	x	+	+	x	+	+	+	+	+	+
x	x	-	o	o	x	o	+	o	-	-	x	+	+	o	x	x	o
x	x	-	o	o	x	o	+	o	-	-	x	+	+	o	x	x	o
x	x	x	-	-	x	-	-	x	-	-	x	+	-	-	x	x	-
x	x	x	-	-	x	-	o	x	x	x	x	x	o	-	-	-	-

EN 06/2023



Chemical resistance

Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available

Chemicals, iglidur®	A180	A200, G	A350	A500	A290	J	J260	J350	H	F2	Q
	A181	GLW		C500	F	J2	M260		H1	K	
	J200	G V0		UW500	Q290	J3			H2	P	
	R	M250		X	W360	J4			H370	P210	
	UW	N54, Q2		X6	G1	JB			H4	P4	
	xirodur® B180	W300, C		xirodur® A500		E			HLW	M210	
	xirodur® S180	L250, L100		L500					iguton G		
	xirodur® F180	igumid® G		AX500					H3, H5		
	xirodur® M180	xirodur® G220									
	FC180	igumid® FC									
Bromochloromethane, 98%	x	o	x	+	o	x	x	x	x	o	o
Butanol	+	+	+	+	+	+	o	x	+	+	+
Butter	+	+	x	+	+	+	+	x	+	+	+
Butyl acetate	+	+	o	+	o	o	x	x	+	o	o
Butyl glycol	+	+	-	+	+	+	o	x	+	+	+
Butyl glycolate	+	+	x	x	+	+	x	x	x	+	x
Butyl phthalate	+	+	x	x	+	+	x	x	x	+	x
Butyric acid	o	o	x	+	o	-	-	x	+	o	-
Calcium chloride, saturated solution	+	4	x	+	4	+	+	x	+	+	4
Calcium hydroxide, aqueous	+	+	+	x	+	+	x	x	x	+	x
Calcium hypochlorite	+	+	x	x	+	+	x	x	x	o	x
Camphor	+	+	x	+	+	+	o	x	+	x	+
Carbon bisulphide	+	+	x	+	+	+	x	x	+	x	+
Carbon dioxide gas	+	+	x	+	+	+	+	x	+	+	x
Casein	+	+	x	x	+	+	x	x	x	+	x
Caustic potash lye (aqueous), 40%	+	+	x	+	+	+	x	x	x	x	x
Caustic potash, 10%	o	4	+	x	4	o	x	x	x	-	x
Caustic potash, 20%	-	o	+	+	o	-	-	x	+	-	x
Caustic potash, 50%	-	o	+	x	o	-	x	x	x	-	o
Caustic sodium bicarbonate (aqueous), 50%	o	o	x	+	o	o	x	x	x	x	x
Cellulose lacquer	+	+	x	x	x	+	x	x	x	x	x
Chloramine	x	-	x	x	-	-	x	x	x	-	-
Chlorinated water, saturated solution	-	-	x	+	-	-	o	x	x	-	o
Chlorine	-	-	x	x	-	-	x	x	x	-	-
Chlorine gas	-	-	x	-	-	-	-	x	-	-	-
Chloroacetic acid (aqueous), 10%	-	-	x	+	-	-	-	x	x	-	-
Chloroethanol	-	-	x	x	-	-	x	x	x	-	-
Chloroform	-	-	-	+	o	-	-	-	o	-	-
Chlorsulphonic acid (aq.)	-	-	x	-	o	-	-	x	-	-	-
Chromic acid (aq.), 10%	-	-	x	+	-	-	-	x	-	-	-
Chromic acid (aqueous), 1%	o	-	x	+	-	o	o	x	-	o	o
Citric acid (aqueous), 10%	+	4	+	+	4	+	+	x	+	+	o
Citric acid, concentrated solution	o	o	x	+	o	o	+	x	o	x	-
Citrus fruits	+	+	x	x	+	+	x	x	x	+	x
Cobalt salts (aqueous)	+	+	x	x	+	+	x	x	x	+	x
Copper sulphate, 0.5%	+	o	+	+	o	+	x	x	+	x	o
Copper sulphate, saturated solution	o	o	+	+	o	o	x	x	+	x	o
Cresol	-	-	x	+	-	-	-	x	+	-	-

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Chemical resistance

"4" swelling, softening due to the water

V400	Z	B	D	T220	K230	PEP	A160	E7	I170	I180	xirodur®	xiros® ball bearings with	I150	C210	I3
							B160			I180-BL	D180	PEEK cage	PP cage	PA cage	P230
							UW160								I6
							xirodur® C160						PE cage		AB
x	x	o	x	o	x	x	-	x	x	x	x	+	-	o	+
x	o	-	o	+	x	+	+	+	+	o	x	+	+	+	o
x	+	o	+	+	x	+	+	x	+	+	x	+	+	+	+
x	+	x	o	o	+	o	+	o	-	-	x	+	+	+	x
x	+	o	+	+	x	+	+	x	x	o	x	+	+	+	+
x	x	x	x	x	x	x	x	x	x	x	x	x	x	+	x
x	x	x	x	x	x	x	+	x	x	x	x	x	+	+	x
x	+	-	-	o	x	-	+	+	-	-	x	+	+	o	x
x	+	+	+	+	x	4	+	x	+	+	o	+	+	+	x
x	x	x	x	x	x	x	+	+	x	x	x	x	+	+	+
x	x	x	x	o	x	x	o	+	+	+	x	x	o	+	x
x	+	o	+	x	x	+	+	x	+	o	x	+	+	+	x
x	x	x	+	x	x	+	x	x	x	x	x	+	x	+	x
x	x	-	+	+	x	x	+	x	+	+	x	x	x	+	x
x	x	x	x	x	x	x	x	x	x	x	x	+	+	+	x
x	+	x	+	x	x	+	x	x	x	x	x	x	x	+	x
x	x	x	o	-	x	x	+	x	+	+	x	+	+	-	-
x	+	o	-	-	x	-	+	x	x	-	x	x	+	+	o
x	+	o	o	x	x	o	x	x	x	x	x	+	x	+	x
x	x	x	+	+	x	x	x	x	x	x	x	x	x	+	x
x	x	x	-	-	x	-	+	+	x	x	x	x	+	+	-
+	o	-	-	-	x	-	o	x	o	o	x	+	o	-	x
x	x	x	-	-	x	-	-	-	-	-	x	x	-	-	-
o	-	-	-	-	x	-	-	-	x	-	-	-	-	-	x
x	-	-	-	-	x	-	+	+	o	-	x	+	+	-	-
x	x	x	-	-	x	-	x	x	x	x	x	x	x	-	x
x	o	-	-	-	x	-	o	x	-	-	x	+	o	-	-
x	+	-	-	-	x	-	-	-	x	-	-	-	-	-	-
+	o	-	-	-	x	-	+	x	o	-	x	+	+	-	o
+	o	-	o	o	x	o	+	x	o	o	x	+	+	-	x
x	+	x	+	+	x	o	+	+	+	+	o	+	+	+	+
x	+	o	o	x	x	-	+	x	x	+	x	+	+	+	x
x	x	x	x	x	x	x	+	x	x	x	x	x	+	+	o
x	+	o	+	x	x	o	x	x	x	x	x	+	x	o	x
x	+	o	o	x	x	o	x	+	+	+	x	+	+	-	x
x	+	-	-	-	x	-	+	+	o	-	x	x	-	-	-

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Chemical resistance

Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available

Chemicals, iglidur®	A180	A200, G	A350	A500	A290	J	J260	J350	H	F2	Q
	A181	GLW		C500	F	J2	M260		H1	K	
	J200	G V0		UW500	Q290	J3			H2	P	
	R	M250		X	W360	J4			H370	P210	
	UW	N54, Q2		X6	G1	JB			H4	P4	
	xirodur® B180	W300, C		xirodur® A500		E			HLW	M210	
	xirodur® S180	L250, L100		L500					iguton G		
	xirodur® F180	igumid® G		AX500					H3, H5		
	xirodur® M180	xirodur® G220									
	FC180	igumid® FC									
Cyclohexane	+	+	+	+	+	+	o	x	+	-	+
Decahydronaphthalene = decalin	+	+	-	+	+	+	x	x	+	-	+
Dibutyl ether	+	+	x	x	+	+	x	x	x	+	x
Dibutylphthalate	+	+	x	+	+	+	-	x	+	+	+
Dichlorethylene	-	-	x	+	-	-	-	x	+	-	-
Dichlorobenzene	-	+	x	+	+	-	x	x	+	-	+
Dichloroethene	-	+	x	+	+	-	x	x	+	-	+
Diethyl ether	o	o	+	+	+	+	-	x	x	+	+
Dimethylformamide	o	+	+	+	+	+	-	x	+	+	+
Diocetylphthalate	+	+	+	+	+	+	x	x	+	o	+
Dioxane	o	+	x	+	+	o	-	x	+	+	+
Drilling oils	+	+	+	x	+	+	x	x	x	+	x
Edible fats, 100%	+	+	+	+	+	+	x	x	+	+	+
Edible oils	+	+	+	+	+	+	x	x	+	+	+
Ethanol (aqueous), 96%	+	o	+	+	o	o	+	x	+	-	o
Ethyl acetate	+	+	-	+	+	+	-	x	+	-	+
Ethylene	+	+	x	x	+	+	x	x	x	+	x
Ethylene chloride	+	+	-	+	+	+	-	x	+	-	+
Ethylene glycol (aqueous), 95%	+	o	x	+	o	+	o	x	+	+	o
Ethylene oxide (1.2 epoxyethane)	+	o	+	x	o	o	x	x	x	o	o
Ethylenediamine (1.2 ethanediamine)	+	+	x	+	+	+	o	x	o	+	+
Ferric chloride, 2.5%	+	o	x	x	o	+	x	x	+	x	o
Ferric chloride, 5%	-	o	x	o	o	-	o	x	+	x	o
Ferric chloride, saturated solution	+	o	x	x	o	+	x	x	+	x	o
Fluorinated hydrocarbons	o	+	x	+	o	+	o	x	+	o	+
Fluorine	-	-	+	x	-	-	x	x	x	-	-
Formaldehyde (aqueous), 30%	+	o	+	+	o	+	+	+	+	+	4
Formamide	+	o	-	+	o	+	o	x	x	x	o
Formic acid (aqueous), 2%	o	-	x	o	-	-	+	x	+	o	-
Formic acid, 10%	-	-	x	-	-	-	-	x	o	-	-
Formic acid, 90%	-	-	x	-	-	-	-	x	o	-	-
Fruit juices	+	+	-	x	+	+	x	x	x	+	x
Furfural	+	o	x	+	o	+	o	x	+	+	+
Glycerine	-	+	+	+	+	+	o	x	+	+	+
Glycol	+	o	+	+	o	o	x	x	+	+	o
Greases, cooking fat	+	+	x	+	+	+	o	x	+	+	+
Heptane	+	+	+	+	+	+	+	x	+	o	+
Hexachlorobenzene	+	-	x	+	-	-	x	x	x	x	-
Hexachloroethane	+	+	x	+	+	+	x	x	x	x	+

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Chemical resistance

"4" swelling, softening due to the water

V400	Z	B	D	T220	K230	PEP	A160	E7	I170	I180	xirodur®	xiros® ball bearings with	I150	C210	I3
							B160			I180-BL	D180	PEEK cage	PP cage	PA cage	P230
							UW160								I6
							xirodur® C160						PE cage		AB
x	+	-	-	-	x	+	+	+	+	o	x	x	+	+	+
x	+	-	-	-	x	+	-	x	+	+	x	+	+	+	o
x	x	x	x	x	x	x	o	o	x	x	x	+	-	+	+
x	+	o	+	+	x	+	+	x	x	-	x	x	o	+	+
x	+	-	-	-	x	-	x	x	x	-	x	+	+	+	-
x	o	x	-	-	x	-	o	o	-	-	x	+	+	+	x
x	o	x	-	-	x	-	+	x	x	x	x	+	o	+	-
x	+	o	o	+	x	+	o	o	-	-	x	+	x	-	+
+	+	o	+	+	o	+	+	+	-	-	x	+	o	o	+
x	+	x	o	o	x	+	+	-	x	x	x	+	+	+	+
x	x	x	x	x	x	x	x	x	x	x	x	x	x	+	+
x	+	o	+	+	x	+	+	x	x	x	x	+	+	+	x
+	o	o	+	-	o	o	+	x	x	+	o	x	o	o	+
+	+	o	+	-	x	+	+	+	-	-	o	+	+	o	-
x	x	x	x	x	x	-	x	x	x	x	x	+	+	+	x
x	+	o	+	-	x	+	+	o	x	-	x	x	x	+	-
+	+	-	+	+	+	o	+	+	x	o	x	+	+	+	+
x	x	x	x	x	x	x	-	x	x	x	x	+	+	+	-
x	+	o	+	+	x	+	+	+	+	+	x	+	+	-	+
x	+	-	o	x	x	o	+	x	x	o	x	+	+	o	x
x	o	-	-	o	x	-	+	x	+	+	x	o	+	-	+
x	-	-	-	-	x	-	+	x	+	+	x	-	+	-	x
x	x	x	x	x	x	x	+	x	x	x	x	+	+	o	+
x	+	o	+	+	x	+	o	+	-	-	x	x	+	+	+
x	+	x	+	+	x	+	+	x	+	o	x	+	+	o	+
x	+	o	o	+	x	o	+	x	+	+	x	+	o	o	+
x	+	o	+	+	x	+	+	x	x	o	x	x	-	o	+
x	+	-	-	o	+	+	+	+	+	+	x	+	+	+	+
x	o	x	-	-	x	-	x	+	+	+	x	+	+	+	x
x	o	x	-	-	x	-	-	x	x	x	x	+	x	-	x

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Chemical resistance

Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available

Chemicals, iglidur®	A180	A200, G	A350	A500	A290	J	J260	J350	H	F2	Q
	A181	GLW		C500	F	J2	M260		H1	K	
	J200	G V0		UW500	Q290	J3			H2	P	
	R	M250		X	W360	J4			H370	P210	
	UW	N54, Q2		X6	G1	JB			H4	P4	
	xirodur® B180	W300, C		xirodur® A500		E			HLW	M210	
	xirodur® S180	L250, L100		L500					iguton G		
	xirodur® F180	igumid® G		AX500					H3, H5		
	xirodur® M180	xirodur® G220									
	FC180	igumid® FC									
Hexafluorosilicic acid (aqueous), 30%	x	-	x	x	-	-	x	x	x	-	-
Hexamethylphosphoramide	+	-	x	x	-	-	x	x	x	-	-
Hexane	+	+	+	+	+	+	+	x	+	-	+
Humic acids	o	o	x	x	o	o	x	x	x	o	o
Hydrobromic acid (aqueous), 10%	-	-	x	+	-	-	-	x	o	-	-
Hydrochloric acid, 10%	-	-	+	+	-	-	-	o	-	-	-
Hydrochloric acid, 2%	-	-	+	+	-	-	+	x	-	-	o
Hydrochloric gas	-	-	x	x	-	-	x	x	x	-	-
Hydrofluoric acid (aqueous), 4%	-	-	-	+	-	-	-	x	-	-	-
Hydrogen peroxide, 0.5%	+	+	-	+	+	+	+	o	+	+	+
Hydrogen peroxide, 30%	-	-	-	+	-	-	-	-	-	-	-
Hydrogen sulphide (aqueous)	+	o	x	x	o	+	x	x	x	o	o
Hydrogen sulphide (dry)	+	+	+	+	o	x	+	x	+	+	+
Hydroquinone (aqueous), 5%	o	-	x	+	-	o	o	x	x	o	-
Ink, printing ink	+	4	-	+	4	+	+	x	+	+	4
Inks	+	4	x	+	4	+	+	x	+	x	4
Iron (III) chloride (aqueous), acidic, 10%	-	-	x	+	+	-	-	x	+	-	o
Iron (III) chloride (aqueous), neutral, 10%	o	4	x	o	o	o	+	x	+	x	o
Isooctane, 80%	+	+	+	+	+	+	+	x	+	o	+
Isopropyl alcohol = isopropanol	+	+	+	+	+	+	+	x	+	+	o
Isopropylether	+	+	x	+	+	+	-	x	x	o	+
Ketones (aliphatic)	+	o	+	x	o	o	x	x	x	-	o
Lactic acid, 10%	+	+	+	+	+	+	+	x	+	+	o
Lactic acid, 90%	+	o	o	+	o	o	+	x	+	o	o
Lead acetate (aqueous), 10%	+	o	x	+	o	+	+	x	x	o	o
Lead stearate	+	+	x	+	+	+	+	x	+	+	+
Linseed oil	+	+	+	+	+	+	+	x	+	+	+
Lithium bromide/chloride/salts (aqueous), 50%	+	o	x	+	o	+	+	x	x	o	o
Lithium chloride in alcohol, 20%	+	-	x	x	-	-	x	x	x	x	-
Lubricating oil, mineral	+	+	+	+	+	+	+	x	+	o	+
Lubricating oil, synthetic	o	o	x	+	o	o	o	x	+	-	+
Magnesium chloride (aqueous), 10%	+	4	x	+	4	+	+	x	+	+	4
Magnesium hydroxide (aq.)	+	4	x	+	4	+	+	x	+	+	+
Maleic acid (aqueous), 10%	-	o	x	x	o	-	x	x	x	-	o
Maleic acid, concentrated solution	o	-	x	+	-	o	o	x	+	x	o
Malt	+	+	x	x	+	+	x	x	x	+	x
Manganese sulphate (aqueous), 10%	+	o	x	+	o	+	x	x	+	x	+
Mercury	+	+	x	+	+	+	+	x	+	+	+

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Chemical resistance

"4" swelling, softening due to the water

V400	Z	B	D	T220	K230	PEP	A160	E7	I170	I180	xirodur®	xiros® ball bearings with	I150	C210	I3		
							B160			I180-BL	D180	PEEK cage	PP cage	PA cage	P230		
							UW160								I6		
							xirodur® C160						PE cage		AB		
x	x	x	-	-	x	-	+	+	x	x	x	x	x	o	-	-	-
x	x	x	-	-	x	-	x	x	x	x	x	+	-	+	x	+	-
+	+	-	-	-	x	+	+	x	+	+	x	x	x	-	x	x	+
x	x	x	o	o	x	x	+	x	x	x	x	+	+	+	x	+	o
x	+	-	-	-	x	-	+	+	x	-	x	+	+	-	x	o	-
+	+	-	-	-	o	-	+	x	x	-	x	+	+	-	o	o	-
+	+	-	-	-	x	-	+	x	x	+	-	+	+	-	+	+	-
x	x	x	-	-	x	-	+	x	x	x	x	x	+	-	-	-	-
+	+	+	+	+	x	+	+	x	+	+	x	+	+	+	+	+	+
x	-	-	-	-	x	-	+	x	x	-	o	+	+	+	+	+	-
x	x	x	-	o	x	o	+	x	x	x	x	x	+	o	x	+	o
x	+	x	x	+	x	x	+	+	+	+	x	o	+	-	x	+	+
x	+	-	o	o	x	-	+	x	+	o	x	x	+	o	+	+	-
+	+	+	+	+	x	4	+	+	+	+	x	+	-	o	x	+	+
x	+	x	+	x	x	4	x	x	x	+	x	+	x	+	x	+	+
x	+	-	-	o	x	+	+	x	+	+	x	+	+	-	+	+	+
x	o	o	+	+	x	o	+	x	+	+	o	+	+	+	+	+	+
x	+	o	+	o	x	+	o	+	x	-	x	+	+	+	+	x	+
x	x	x	o	-	x	x	x	x	x	x	x	+	x	o	-	-	o
x	+	o	o	o	x	o	+	+	+	+	-	+	+	+	x	+	+
x	+	o	o	o	x	o	+	+	+	+	x	+	+	+	x	+	o
x	+	-	+	o	x	o	+	+	+	+	x	+	+	o	+	x	o
x	+	o	+	+	x	+	x	x	+	+	x	+	x	+	+	x	+
+	+	-	+	+	x	+	+	+	+	+	x	+	x	o	+	+	+
x	+	-	+	o	x	o	x	x	+	+	x	+	+	+	+	+	o
x	x	x	-	x	x	-	x	x	x	x	x	+	x	o	x	x	-
+	+	-	+	o	x	o	x	x	+	+	x	+	+	+	x	x	+
+	+	+	+	+	x	4	+	+	+	+	x	x	x	o	+	+	+
+	+	+	+	+	x	+	+	x	x	+	x	+	+	+	+	x	-
x	x	x	-	-	x	-	+	x	x	x	x	x	+	o	x	x	o
x	+	-	o	x	x	-	+	x	x	o	x	+	+	+	x	x	-
x	x	x	x	x	x	x	x	x	x	x	x	+	+	-	x	+	+
x	+	o	+	x	x	+	x	x	x	x	x	x	x	+	x	x	o
+	+	+	+	+	x	+	+	+	+	+	x	+	o	+	+	+	+

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Chemical resistance

Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available

Chemicals, iglidur®	A180	A200, G	A350	A500	A290	J	J260	J350	H	F2	Q
	A181	GLW		C500	F	J2	M260		H1	K	
	J200	G V0		UW500	Q290	J3			H2	P	
	R	M250		X	W360	J4			H370	P210	
	UW	N54, Q2		X6	G1	JB			H4	P4	
	xirodur® B180	W300, C		xirodur® A500		E			HLW	M210	
	xirodur® S180	L250, L100		L500					iguton G		
	xirodur® F180	igumid® G		AX500					H3, H5		
	xirodur® M180	xirodur® G220									
	FC180	igumid® FC									
Mercury chloride, 6%	-	-	x	+	-	-	+	x	o	o	-
Methane	+	+	+	+	+	+	+	+	+	+	x
Methanol	+	+	+	x	+	+	x	+	x	+	x
Methanol +20% CaCl2 or LiCl	+	-	x	o	o	o	-	x	o	+	o
Methyl acetate	o	+	x	+	+	o	x	x	+	o	+
Methyl ethyl ketone	o	+	-	+	+	o	-	-	+	-	+
Methylamine	+	+	x	x	+	+	x	x	x	+	x
Methylene chloride	o	-	-	x	-	-	x	-	+	-	-
Milk	+	4	+	+	4	+	+	x	+	+	4
Molasses	+	+	+	x	+	+	x	+	x	+	x
Mortar, cement, lime	+	+	x	x	+	+	x	x	x	+	x
Naphthalene	+	+	x	+	+	+	o	x	+	+	+
Naphthalenesulfonic acid	-	-	x	x	-	-	x	x	x	x	-
Nickel salts (aqueous), 10%	+	o	x	x	o	+	x	x	x	x	o
Nitric acetic acid	+	+	x	x	+	+	x	x	x	+	x
Nitric acid (aq.), 5%	-	-	x	+	-	-	-	x	-	-	-
Nitric acid (aqueous), 2%	-	-	+	+	-	-	o	+	-	-	-
Nitro gases	-	o	x	x	o	-	x	x	x	x	o
Nitrobenzene	o	-	-	+	-	o	-	x	o	-	o
Nitrocellulose lacquers, Hazard Class A I	+	o	x	x	o	+	x	x	x	o	o
Nitrocellulose lacquers, Hazard Class A II	+	+	x	x	+	+	x	x	x	o	x
Nitrogen oxides (dry)	-	o	x	x	o	-	x	x	x	o	o
Nitromethane	-	o	x	+	o	-	x	x	o	-	x
Nitrotoluene	o	o	x	x	o	o	x	x	x	-	o
Noble gases (argon, helium, neon)	+	+	x	x	+	+	x	x	x	+	x
Octane	x	+	x	x	+	+	x	x	x	+	x
Oil, cooking	+	+	+	+	+	+	+	+	+	+	+
Oleic acid	+	+	x	+	+	+	+	x	+	+	+
Oleum	-	-	-	-	-	-	-	-	-	-	-
Oxalic acid (aqueous), 10%	x	o	+	+	o	x	+	x	x	+	o
Oxygen gas +23°C, without pressure	+	+	x	+	+	+	+	x	+	+	x
Ozone	-	-	-	+	-	-	+	x	-	-	-
Palmitic acid	+	+	x	x	+	+	x	x	x	+	x
Paraffin oil	+	+	+	+	+	+	+	x	+	-	+
Paraffins	+	+	x	x	+	+	x	x	x	+	x
Perchloroethene	-	-	-	+	-	-	-	-	x	-	-
Perchloric acid, 10%	-	-	x	+	-	-	-	x	x	-	-
Perfume	+	+	x	x	+	+	x	x	x	+	x
Phenol (alcoholic), 70%	-	-	x	o	-	-	-	x	+	-	-

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Chemical resistance

"4" swelling, softening due to the water

V400	Z	B	D	T220	K230	PEP	A160	E7	I170	I180	xirodur®	xiros® ball bearings with	I150	C210	I3
							B160			I180-BL	D180	PEEK cage	PP cage	PA cage	P230
							UW160								I6
							xirodur® C160						PE cage		AB
x	x	-	-	o	x	-	+	x	+	+	x	+	+	+	x
x	x	-	+	+	x	x	+	x	x	x	x	x	+	+	+
x	x	x	x	x	o	x	+	+	o	o	-	+	+	+	+
+	o	+	+	+	x	o	x	x	-	-	x	x	+	+	x
x	+	x	o	o	x	o	+	x	x	x	x	o	x	-	o
x	+	-	o	-	o	o	+	x	x	-	x	x	-	-	+
x	x	x	x	x	x	x	+	x	x	x	x	+	+	+	x
+	o	o	-	-	x	-	-	o	-	-	x	x	+	+	x
+	+	+	+	+	x	4	+	+	+	+	x	+	+	+	+
x	x	x	x	x	x	x	+	+	x	x	x	x	+	+	+
x	x	x	x	x	x	x	x	x	x	x	x	x	+	+	+
x	+	-	+	+	x	+	+	+	x	o	x	x	+	+	+
x	x	x	-	x	x	-	x	x	x	x	x	+	+	+	x
x	x	x	-	x	x	o	x	x	x	x	x	x	+	+	-
x	x	x	-	x	x	x	x	x	x	x	x	x	+	+	-
+	+	-	-	-	x	-	+	-	x	-	x	+	+	-	+
+	+	-	-	-	x	-	+	+	x	o	-	+	+	-	+
x	x	x	-	x	x	-	x	x	x	x	x	+	+	-	x
x	x	x	-	x	x	x	x	x	x	x	x	+	+	+	+
+	+	o	+	+	x	+	+	x	x	+	x	+	+	+	+
+	+	o	+	+	x	+	+	+	+	+	x	-	-	-	+
-	-	-	-	-	x	-	-	-	+	x	-	+	+	+	-
x	+	-	x	+	x	x	+	x	x	+	x	+	+	+	+
x	x	-	+	+	x	x	+	x	x	+	x	x	x	-	+
x	+	-	-	-	x	-	o	x	+	+	x	+	+	o	x
x	x	x	x	x	x	x	+	+	+	+	x	+	o	-	+
x	+	-	-	-	x	+	+	+	+	+	x	x	+	+	+
x	x	x	x	x	x	x	+	+	x	x	x	x	+	+	+
x	+	-	-	-	x	-	o	x	o	-	x	x	+	+	o
x	+	-	-	-	x	-	+	+	x	-	x	+	o	-	x
x	x	x	x	x	x	x	+	x	x	x	x	+	+	+	+
x	+	-	-	-	x	-	+	x	x	-	x	+	+	-	x
x	+	-	-	-	x	-	+	x	x	-	x	+	+	-	x

EN 06/2023



Chemical resistance

Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available

Chemicals, iglidur®	A180	A200, G	A350	A500	A290	J	J260	J350	H	F2	Q
	A181	GLW		C500	F	J2	M260		H1	K	
	J200	G V0		UW500	Q290	J3			H2	P	
	R	M250		X	W360	J4			H370	P210	
	UW	N54, Q2		X6	G1	JB			H4	P4	
	xirodur® B180	W300, C		xirodur® A500		E			HLW	M210	
	xirodur® S180	L250, L100		L500					iguton G		
	xirodur® F180	igumid® G		AX500					H3, H5		
	xirodur® M180	xirodur® G220									
	FC180	igumid® FC									
Phenol (aq.), 88%	+	–	–	x	–	–	x	x	x	x	–
Phenol (aqueous), 6%	–	–	–	x	–	–	–	x	+	–	–
Phosphoric acid (aqueous), 0.3%	+	o	x	+	o	+	+	x	o	–	o
Phosphoric acid (aqueous), 10%	–	–	–	+	–	–	o	x	–	–	–
Phosphoric acid (aqueous), 3%	–	o	x	+	–	o	+	x	o	–	o
Phthalic acid, saturated solution	+	o	x	+	o	+	o	x	o	+	o
Polyester resins (with styrene)	o	+	x	+	+	+	–	x	+	o	+
Potassium bromide (aqueous), 10%	+	o	x	+	o	o	+	x	+	o	4
Potassium carbonate (aqueous), 60%	+	4	x	+	4	+	+	x	+	o	4
Potassium chloride (aq.), 90%	+	4	x	+	4	+	+	x	+	+	4
Potassium chloride (aqueous), 10%	+	4	x	x	4	+	x	x	x	+	x
Potassium dichromate (aqueous), 5%	+	o	–	+	o	o	+	x	+	o	o
Potassium nitrate (aqueous), 10%	+	4	x	+	4	+	+	x	+	+	4
Potassium permanganate (aqueous), 1%	+	–	–	+	–	+	+	x	–	+	o
Potassium sulphate, saturated solution	+	4	x	+	4	+	+	x	+	o	4
Propane, propene	+	+	x	+	+	+	–	x	+	+	+
Propanol	+	+	–	+	+	+	+	x	o	+	+
Propenoic acid	o	–	x	x	–	–	x	x	x	–	–
Pyridine	o	+	–	+	+	o	–	x	+	x	+
Pyrocatechol (aqueous), 6%	–	–	x	+	–	–	–	x	x	–	o
Pyruvic acid (aqueous), 10%	x	o	x	x	o	x	x	x	x	o	o
Resorcinol (1,3-dihydroxybenzene), 50%	x	–	x	x	–	–	x	x	x	–	–
Salicylic acid	–	+	–	+	+	–	+	x	+	–	+
Seawater	+	+	+	+	+	+	+	+	+	+	+
Silicone oils	+	+	+	+	+	+	+	x	+	+	+
Silver nitrate	+	4	x	+	4	+	+	x	+	o	4
Soap solutions	+	4	+	+	4	+	+	x	+	+	4
Soda lye (aqueous), 10%	+	+	+	+	+	o	x	x	+	–	o
Soda lye (aqueous), 50%	o	o	x	+	o	o	x	x	x	x	x
Soda solution, 10%	+	4	+	+	4	+	x	x	+	+	4
Sodium acetate (aqueous), 10%	+	–	x	+	4	+	+	x	+	o	+
Sodium bisulphite (aqueous), 10%	+	4	–	+	4	+	o	x	+	+	4
Sodium bromide (aqueous), 10%	+	4	x	+	4	+	+	x	+	+	4
Sodium carbonate (aqueous), 21.5%	+	4	–	+	4	+	+	x	+	+	4
Sodium carbonate (aqueous), 50%	+	4	–	+	4	+	+	x	+	+	4
Sodium carbonate, 5%	+	4	–	+	4	+	+	x	+	+	4
Sodium chlorate (aqueous), 10%	+	o	x	x	o	o	x	x	x	o	o
Sodium chloride, saturated solution	+	4	x	+	4	+	+	x	+	+	4
Sodium dichromate (aqueous), 10%	x	o	x	x	o	x	x	x	x	o	o

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Chemical resistance

"4" swelling, softening due to the water

V400	Z	B	D	T220	K230	PEP	A160	E7	I170	I180	xirodur®	xiros® ball bearings with	I150	C210	I3
							B160			I180-BL	D180	PEEK cage	PP cage	PA cage	P230
							UW160								I6
							xirodur® C160						PE cage		AB
x	x	x	–	x	x	–	+	x	x	x	x	x	+	–	x
x	+	–	–	–	x	–	x	x	x	–	x	x	+	–	x
x	+	o	–	+	x	o	+	+	+	+	x	o	x	–	+
x	+	–	–	–	x	–	+	+	x	o	x	+	+	–	x
x	+	o	–	–	x	o	+	+	x	+	o	+	+	o	+
x	+	o	+	+	x	o	+	x	+	+	x	+	+	o	+
x	+	–	o	o	x	+	x	x	–	x	+	+	+	o	+
x	+	o	+	o	x	+	+	x	+	+	x	+	+	o	+
+	+	+	+	+	x	+	+	+	x	+	x	+	+	+	x
x	x	x	x	x	x	x	+	+	+	+	x	+	+	+	x
x	+	–	+	o	x	o	+	x	+	+	x	+	+	o	o
+	+	+	+	+	x	+	+	+	+	+	x	+	+	o	+
x	+	–	+	+	x	o	+	x	+	+	x	+	+	+	+
x	+	o	+	+	x	+	+	+	+	+	x	+	+	–	x
x	+	+	+	+	x	+	+	+	+	+	x	+	+	+	+
x	+	o	+	+	x	+	+	+	+	+	x	+	+	–	x
x	+	+	+	+	x	+	+	+	+	+	x	+	+	+	+
x	+	x	+	+	x	+	+	x	x	+	x	+	+	+	x
x	+	o	+	+	x	+	+	+	+	+	x	+	+	+	x
x	+	x	+	+	x	+	+	+	+	+	x	+	+	+	+
x	x	x	o	o	+	x	+	o	x	x	x	+	+	+	x
x	+	+	+	+	x	4	+	+	+	+	x	x	+	o	+
x	x	x	–	o	x	x	x	x	x	x	x	+	+	+	o

EN 06/2023



Chemical resistance

Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available

Chemicals, iglidur®	A180	A200, G	A350	A500	A290	J	J260	J350	H	F2	Q
	A181	GLW		C500	F	J2	M260		H1	K	
	J200	G V0		UW500	Q290	J3			H2	P	
	R	M250		X	W360	J4			H370	P210	
	UW	N54, Q2		X6	G1	JB			H4	P4	
	xirodur® B180	W300, C		xirodur® A500		E			HLW	M210	
	xirodur® S180	L250, L100		L500					iguton G		
	xirodur® F180	igumid® G		AX500					H3, H5		
	xirodur® M180	xirodur® G220									
	FC180	igumid® FC									
Sodium dodecylbenzenesulfonate	+	+	x	x	+	+	x	x	x	+	x
Sodium hypochlorite (aqueous), 10%	-	-	x	+	-	-	o	x	o	o	o
Sodium hypophosphite (aqueous), 10%	+	+	x	x	+	+	x	x	x	+	x
Sodium nitrate (aqueous), 10%	+	4	-	+	4	+	+	x	+	+	4
Sodium nitrilotriacetate (aqueous), 10%	+	+	x	x	+	+	x	x	x	+	x
Sodium oleate	+	+	x	x	+	+	x	x	x	+	x
Sodium salts, 10%	+	+	x	x	+	+	x	x	x	+	x
Sodium sulphate, 10%	+	4	x	+	4	+	+	x	+	+	4
Sodium sulphite, neutral, 2%	o	4	x	+	4	o	o	x	+	o	4
Sodium thiosulphate, 10%	+	4	-	+	4	+	+	x	+	+	4
Soldering fluid	-	-	x	x	-	-	x	x	x	-	-
Soluble glass (sodium silicate)	+	4	x	+	4	+	+	x	+	+	4
Steam	x	-	o	+	-	x	o	x	+	-	o
Styrene	o	+	x	+	+	o	-	x	+	-	+
Sulphur	+	+	x	+	+	+	+	x	+	+	+
Sulphuric acid (concentrated), 98%	-	-	-	-	-	-	-	x	-	-	-
Sulphuric acid, 10%	-	-	+	o	-	-	o	o	-	-	-
Sulphuric acid, 2%	-	-	+	o	-	-	o	+	o	-	-
Tallow	+	+	x	+	+	+	+	x	+	+	+
Tar	+	+	+	+	+	+	o	x	+	+	+
Tartaric acid	o	o	+	+	o	+	+	x	+	x	4
Tetrahydrofuran (solvent)	o	+	-	+	+	o	-	x	+	+	+
Tetralin	+	+	x	+	+	+	x	x	+	-	+
Thionyl chloride	o	o	-	+	o	o	-	x	x	x	o
Tincture of iodine, 3%	o	-	-	+	-	o	-	x	+	x	o
Toluol	o	+	o	+	+	o	-	o	+	-	+
Transformer oil	+	+	+	+	+	+	o	x	+	+	+
Trichloroacetic acid (aqueous), 50%	-	-	x	x	-	-	x	x	x	-	-
Trichloroethane	-	o	x	+	o	-	x	x	+	-	o
Trichloroethylene	-	-	-	+	-	-	-	-	o	-	-
Triethanolamine, 90%	+	4	-	+	4	+	+	x	+	+	4
Trisodium phosphate, 90%	+	+	x	+	+	+	+	x	+	+	+
Uranium fluorides	-	-	x	x	-	-	x	x	x	-	-
Urea	+	+	x	+	+	+	+	x	+	+	+
Uric acid (aqueous), 10%	+	+	+	x	+	+	x	x	x	+	x
Urine	+	+	+	+	+	+	+	+	+	+	+
Vaseline	o	o	+	+	+	+	o	x	+	o	+
Violet oil	+	+	x	+	+	+	x	x	+	x	+

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Chemical resistance

"4" swelling, softening due to the water

V400	Z	B	D	T220	K230	PEP	A160	E7	I170	I180	xirodur®	xiros® ball bearings with	I150	C210	I3
							B160			I180-BL	D180	PEEK cage	PP cage	PA cage	P230
							UW160								I6
							xirodur® C160						PE cage		AB
x	x	x	x	x	x	x	+	x	x	x	x	x	x	o	+
x	x	o	o	o	x	o	+	+	+	o	o	x	+	+	o
x	x	x	x	x	x	x	x	x	x	x	x	+	+	-	x
x	+	+	+	+	x	4	+	+	+	+	o	x	x	+	+
x	x	x	x	x	x	x	x	x	x	x	x	+	+	+	x
x	x	x	x	x	x	x	x	x	x	x	x	x	x	+	x
x	+	+	+	+	x	4	+	x	+	+	x	x	x	+	+
x	+	x	o	o	x	o	+	x	+	+	x	+	+	+	x
x	+	x	+	+	x	4	x	+	x	+	x	+	+	+	+
x	x	x	-	-	x	-	x	x	x	x	x	x	x	-	x
x	+	+	+	+	x	4	+	x	+	+	x	+	+	-	+
o	o	-	x	-	x	x	+	x	x	o	x	+	+	o	x
x	+	-	-	-	x	+	o	o	x	-	x	x	-	o	+
+	+	+	+	+	x	+	+	-	+	+	+	+	x	o	+
+	+	-	-	-	o	-	+	-	x	o	-	+	+	+	x
+	+	+	+	+	x	+	+	+	x	+	x	+	o	+	+
x	+	x	+	+	x	+	+	+	x	o	x	+	+	+	+
x	+	o	o	x	x	4	+	x	+	+	x	+	+	-	x
+	+	x	o	+	x	o	o	o	-	-	x	+	+	+	+
x	+	x	-	-	x	+	-	x	-	-	x	+	o	+	+
x	x	o	o	x	x	o	-	-	-	-	x	+	-	+	x
x	+	-	o	x	x	o	+	+	o	-	x	+	o	+	x
+	+	-	-	-	+	+	o	o	-	-	x	+	+	+	x
x	+	-	+	+	x	+	o	x	+	o	x	+	o	+	+
x	x	x	-	-	x	-	+	+	x	x	x	+	o	+	-
x	o	x	-	-	+	-	x	x	-	-	x	+	x	o	-
x	+	-	-	-	x	-	o	x	-	-	x	x	+	-	-
x	+	x	+	+	x	4	x	x	+	+	o	+	o	-	+
x	+	x	+	+	x	+	x	x	+	+	x	+	x	+	x
x	x	x	-	-	x	-	x	x	x	x	x	+	x	+	-
x	+	o	+	+	x	+	+	+	+	+	o	x	+	+	+
x	x	x	x	x	x	x	+	x	x	x	x	+	+	+	+
+	+	+	+	+	x	+	+	x	x	+	x	x	x	-	+
x	+	o	o	+	x	+	+	+	+	o	x	+	+	+	+
x	+	x	+	x	x	+	x	x	+	+	+	+	+	+	+
x	+	x	+	x	x	+	x	x	x	x	x	+	+	o	x

EN 06/2023



Chemical resistance

Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available

Chemicals, iglidur®	A180	A200, G	A350	A500	A290	J	J260	J350	H	F2	Q
	A181	GLW		C500	F	J2	M260		H1	K	
	J200	G V0		UW500	Q290	J3			H2	P	
	R	M250		X	W360	J4			H370	P210	
	UW	N54, Q2		X6	G1	JB			H4	P4	
	xirodur® B180	W300, C		xirodur® A500		E			HLW	M210	
	xirodur® S180	L250, L100		L500					iguton G		
	xirodur® F180	igumid® G		AX500					H3, H5		
	xirodur® M180	xirodur® G220									
	FC180	igumid® FC									
Washing machine cleaner (phosphoric and nitric acid)	+	o	x	+	o	–	x	x	+	+	o
Wax, melted	+	+	+	+	+	+	+	+	+	+	+
White spirit	+	+	x	+	+	+	o	x	+	+	+
Xylol	o	o	+	+	+	o	–	x	+	–	+
Zinc chloride (aqueous), 10%	–	–	x	+	+	–	–	x	+	–	o
Zinc oxide	+	+	x	+	+	+	+	x	+	+	+
Zinc sulphate (aq.), 10%	+	4	x	+	4	+	+	x	+	+	4
Zinc sulphate (aqueous), 10%	+	4	x	+	4	+	+	x	+	+	4

Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available

⁴⁾ The lead screw nuts are not chemically attacked by these substances. However, there may be a dimensional change due to total moisture absorption.



Chemical resistance

"4" swelling, softening due to water

V400	Z	B	D	T220	K230	PEP	A160	E7	I170	I180	xirodur®	xiros® ball bearings with	I150	C210	I3		
							B160			I180-BL	D180	PEEK cage	PP cage	PA cage	P230	I6	
							UW160									AB	
							xirodur® C160						PE cage				
x	+	o	–	+	x	–	+	x	x	x	x	+	o	+	x	x	o
+	+	+	+	+	x	+	o	x	+	+	x	+	x	+	x	+	+
x	+	x	+	+	x	+	x	x	x	o	x	+	+	o	x	x	+
x	+	o	–	–	+	+	–	o	–	–	x	+	x	+	x	o	+
x	+	–	–	x	o	–	+	+	+	–	x	+	–	o	x	x	–
+	+	+	+	+	x	+	x	x	+	+	x	+	+	o	+	x	+
x	+	+	+	+	x	4	+	x	+	+	x	+	x	+	+	x	x
x	+	+	+	+	x	4	+	x	+	+	x	+	x	+	+	x	x

The data was determined using laboratory specimens or based on comparisons with similar chemicals. Therefore, this data can only act as a reference. No interaction is also considered between the single chemicals / media which can lead to a change of the resistance of iglidur® plain bearings. The chemical resistance of actual parts should be tested under

application conditions. All data given concerns the chemical resistance at room temperature. Other temperatures may lead to different classifications of the chemical resistance. We therefore recommend custom-designed tests under real application conditions.



Material properties

iglidur® J4

General properties	Unit	iglidur® J4	Testing method
Density	g/cm ³	1.48	
Colour		grey	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.3	DIN 53495
Max. moisture absorption	% weight	1.3	
Coefficient of sliding friction, dynamic against steel	μ	0.06 - 0.20	
pv value, max. (dry)	MPa · m/s	0.3	
Mechanical properties			
Flexural modulus	MPa	2,350	DIN 53457
Flexural strength at +20°C	MPa	70	DIN 53452
Compressive strength	MPa	55	
Max. recommended surface pressure (+20°C)	MPa	35	
Shore D hardness		74	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+90	
Max. short-term application temperature	°C	+120	
Min. application temperature	°C	-50	
Thermal conductivity	W/m · K	0.25	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	10	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹³	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

iglidur® FC180

General properties	Unit	iglidur® FC180	Testing method
Density	g/cm ³	1.73	
Colour		blue	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.7	DIN 53495
Max. moisture absorption	% weight	1.3	
Mechanical properties			
Flexural modulus	MPa	2,600	DIN 53457
Flexural strength at +20°C	MPa	68	DIN 53452
Max. recommended surface pressure (+20°C)	MPa	31	
Shore D hardness		69	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+90	
Max. short-term application temperature	°C	+120	
Min. application temperature	°C	-40	
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

Material properties



iglidur® I3

General properties	Unit	iglidur® I3	Testing method
Density	g/cm ³	1.05	
Colour		yellow	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.8	DIN 53495
Max. moisture absorption	% weight	1.9	
Mechanical properties			
Flexural modulus	MPa	1,400	DIN 53457
Flexural strength at +20°C	MPa	68/61 ¹³⁰⁾	DIN 53452
Shore D hardness		70	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+80	
Max. short-term application temperature	°C	+140	
Min. application temperature	°C	-40	
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹¹	DIN 53482

¹³⁰⁾ Printed flat/upright

iglidur® K230

General properties	Unit	iglidur® K230	Testing method
Density	g/cm ³	1.36	
Colour		dark grey	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.8	DIN 53495
Max. moisture absorption	% weight	2.9	
Mechanical properties			
Flexural modulus	MPa	1,600	DIN 53457
Flexural strength at +20°C	MPa	40	DIN 53452
Max. recommended surface pressure (+20°C)	MPa	38	
Shore D hardness		68	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+110	
Max. short-term application temperature	°C	+130	
Min. application temperature	°C	-30	
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482



Material properties

iglidur® K250

General properties	Unit	iglidur® K250	Testing method
Density	g/cm ³	1.19	
Colour		black	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.3	DIN 53495
Max. moisture absorption	% weight	3.6	
Mechanical properties			
Flexural modulus	MPa	2,975	DIN 53457
Flexural strength at +20°C	MPa	79	DIN 53452
Shore D hardness		70	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+90	
Max. short-term application temperature	°C	+110	
Min. application temperature	°C	-50	
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

iglidur® A230

General properties	Unit	iglidur® A230	Testing method
Density	g/cm ³	1.20	
Colour		blue	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.3	DIN 53495
Max. moisture absorption	% weight	2.5	
Mechanical properties			
Flexural modulus	MPa	1,530	DIN 53457
Flexural strength at +20°C	MPa	53	DIN 53452
Max. recommended surface pressure (+20°C)	MPa	18	
Shore D hardness		73	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+110	
Max. short-term application temperature	°C	+130	
Min. application temperature	°C	-30	
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

Material properties



iglidur® L100

General properties	Unit	iglidur® L100	Testing method
Density	g/cm ³	1.35	
Colour		yellow	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.7	DIN 53495
Max. moisture absorption	% weight	5.2	
Mechanical properties			
Flexural modulus	MPa	5,500	DIN 53457
Flexural strength at +20°C	MPa	150	DIN 53452
Max. recommended surface pressure (+20°C)	MPa	70	
Shore D hardness		79	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+100	
Max. short-term application temperature	°C	+190	
Max. short-term ambient temperature	°C	+200	
Min. application temperature	°C	-40	
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹³	DIN IEC 93
Surface resistance	Ω	> 10 ¹¹	DIN 53482

iglidur® P UV

General properties	Unit	iglidur® P UV	Testing method
Density	g/cm ³	1.45	
Colour		black	
Max. moisture absorption at +23°C/50% r.h.	% weight	0.5	DIN 53495
Max. moisture absorption	% weight	0.5	
Mechanical properties			
Flexural modulus	MPa	4,250	DIN 53457
Flexural strength at +20°C	MPa	110	DIN 53452
Max. recommended surface pressure (+20°C)	MPa	n.s.	
Shore D hardness		78	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+100	
Max. short-term application temperature	°C	+160	
Min. application temperature	°C	-40	
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹¹	DIN IEC 93
Surface resistance	Ω	> 10 ¹¹	DIN 53482



Material properties

igumid® F300

General properties	Unit	igumid® F300	Testing method
Density	g/cm ³	1.44	
Colour		grey	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.9	DIN 53495
Max. moisture absorption	% weight	3.9	
Mechanical properties			
Flexural modulus	MPa	5,900	DIN 53457
Flexural strength at +20°C	MPa	150	DIN 53452
Max. recommended surface pressure (+20°C)	MPa	45	
Shore D hardness		79	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+90	
Max. short-term application temperature	°C	+170	
Min. application temperature	°C	-40	
Electrical properties			
Specific transitional resistance ⁵⁾	Ωcm	> 10 ⁴ - 10 ⁹ ³⁷⁾	DIN IEC 93
Surface resistance ⁵⁾	Ω	> 10 ⁴ - 10 ⁹ ³⁷⁾	DIN 53482

⁵⁾ The good conductivity of this plastic material under certain circumstances can favour the generation of corrosion on the metallic contact components

³⁷⁾ Depending on the geometry

igumid® G

General properties	Unit	igumid® G	Testing method
Density	g/cm ³	1.37	
Colour		black	
Max. moisture absorption at +23°C and 50% r.h.	% weight	1.4	DIN 53495
Max. moisture absorption	% weight	5.6	
Mechanical properties			
Flexural modulus	MPa	7,800	DIN 53457
Flexural strength at +20°C	MPa	240	DIN 53452
Shore D hardness		79	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+120	
Max. short-term application temperature	°C	+180	
Min. application temperature	°C	-40	
Thermal conductivity	W/m · K	0.24	ASTM C 177
Coefficient of thermal expansion (at +23°C)	K ⁻¹ · 10 ⁻⁵	17	DIN 53752
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹¹	DIN IEC 93
Surface resistance	Ω	> 10 ¹¹	DIN 53482

Material properties



igumid® FC

General properties	Unit	igumid® FC	Testing method
Density	g/cm ³	1.47	
Colour		dark blue	
Max. moisture absorption at +23°C and 50% r.h.	% weight	2.3	DIN 53495
Max. moisture absorption	% weight	5.2	
Mechanical properties			
Flexural modulus	MPa	7,083	DIN 53457
Flexural strength at +20°C	MPa	193	DIN 53452
Shore D hardness		83	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+100	
Max. short-term application temperature	°C	+140	
Min. application temperature	°C	-30	
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

iguton G

General properties	Unit	iguton G	Testing method
Density	g/cm ³	1.69	
Colour		brown	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.1	DIN 53495
Max. moisture absorption	% weight	0.2	
Mechanical properties			
Flexural modulus	MPa	10,200	DIN 53457
Flexural strength at +20°C	MPa	140	DIN 53452
Max. recommended surface pressure (+20°C)	MPa	65	
Shore D hardness		85	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+200	
Max. short-term application temperature	°C	+240	
Max. short-term ambient temperature ¹	°C	+260	
Min. application temperature	°C	-40	
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹⁵	DIN IEC 93
Surface resistance	Ω	> 10 ¹⁴	DIN 53482



Material properties

POM black

General properties	Unit	POM black	Testing method
Density	g/cm ³	1.41	
Colour		black	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.2	DIN 53495
Max. moisture absorption	% weight	1.1	
Mechanical properties			
Flexural modulus	MPa	1,900	DIN 53457
Flexural strength at +20°C	MPa	68	DIN 53452
Max. recommended surface pressure (+20°C)	MPa	23	
Shore D hardness		78	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+90	
Max. short-term application temperature	°C	+120	
Min. application temperature	°C	-50	
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹²	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482

iglidur® RN33 + RN89

General properties	Unit	RN33	RN89	Testing method
Density	g/cm ³	1.36	1.44	
Colour		black	grey	
Max. moisture absorption at +23°C and 50% r.h.	% weight	1.4	0.9	DIN 53495
Max. moisture absorption	% weight	6.0	3.9	
Mechanical properties				
Flexural modulus	MPa	3,200	5,900	DIN 53457
Flexural strength at +20°C	MPa	80	150	DIN 53452
Max. recommended surface pressure (+20°C)	MPa	60	45	
Shore D hardness		77	79	DIN 53505
Physical and thermal properties				
Max. long-term application temperature	°C	+90	+90	
Max. short-term application temperature	°C	+120	+170	
Min. application temperature	°C	-40	-40	
Electrical properties				
Specific transitional resistance	Ωcm	~ 10 ¹¹	10 ⁴ - 10 ⁹	DIN IEC 93
Surface resistance	Ω	~ 10 ¹¹	10 ⁴ - 10 ⁹	DIN 53482

Material properties



iglidur® RN246 + RN248

General properties	Unit	RN246	RN248	Testing method
Density	g/cm ³	1.49	1.25	
Colour		blue	black	
Max. moisture absorption at +23°C and 50% r.h.	% weight	2.0	1.4	DIN 53495
Max. moisture absorption	% weight	6.0	7.6	
Mechanical properties				
Flexural modulus	MPa	6,000	2,700	DIN 53457
Flexural strength at +20°C	MPa	180	99	DIN 53452
Max. recommended surface pressure (+20°C)	MPa	65	50	
Shore D hardness		85	-	DIN 53505
Physical and thermal properties				
Max. long-term application temperature	°C	+80	+90	
Max. short-term application temperature ¹⁾	°C	+120	+180	
Min. application temperature	°C	-40	-40	
Electrical properties				
Specific transitional resistance	Ωcm	> 10 ¹¹	> 10 ³	DIN IEC 93
Surface resistance	Ω	> 10 ¹¹	> 10 ⁹	DIN 53482

¹⁾ Without fill weight; no gliding movement; relaxation not excluded

iglidur® JB

General properties	Unit	iglidur® JB	Testing method
Density	g/cm ³	1.49	
Colour		black	
Max. moisture absorption at +23°C and 50% r.h.	% weight	0.3	DIN 53495
Max. moisture absorption	% weight	1.3	
Mechanical properties			
Flexural modulus	MPa	2,400	DIN 53457
Flexural strength at +20°C	MPa	73	DIN 53452
Max. recommended surface pressure (+20°C)	MPa	35	
Shore D hardness		74	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+90	
Max. short-term application temperature	°C	+120	
Min. application temperature	°C	-50	
Electrical properties			
Specific transitional resistance	Ωcm	> 10 ¹³	DIN IEC 93
Surface resistance	Ω	> 10 ¹²	DIN 53482



Date:	Phone: +49 2203 9649-145 Fax: +49 2203 9649-334
From:	To: igus® GmbH Technical Sales igubal® spherical bearings PO Box 90 61 23 51127 Cologne, Germany
Phone:	
Fax:	

Please enter all the data you know. If you prefer other measuring units, cross out the given unit and write your units next to it. Please enter as much information as possible. The question "Is igubal® a possible solution?" can already be answered with minimal data. Please call for further information (Phone: +49 2203 9649-145).

Rod end, Type A	<input type="checkbox"/> (male thread)	Average surface finish Ra:
Rod end, Type B	<input type="checkbox"/> (female thread)	Target service life (hrs):
Pillow block bearing	<input type="checkbox"/>	Current bearing type:
Spherical bearings	<input type="checkbox"/>
Fixed flange bearing	<input type="checkbox"/> 2-hole	Surrounding media (e.g. acids, water, alkalines etc.):
	<input type="checkbox"/> 4-hole
Clevis joint	<input type="checkbox"/> with pin and clip	Which problem can igubal® solve for you?
	<input type="checkbox"/> with spring-loaded fixing clip	<input type="checkbox"/> Dry operation <input type="checkbox"/> Chemicals
Dimensional series	<input type="checkbox"/> E	<input type="checkbox"/> Corrosion <input type="checkbox"/> Dirt
	<input type="checkbox"/> K	<input type="checkbox"/> Vibration dampening <input type="checkbox"/> Dust
Thread	<input type="checkbox"/> Standard thread	<input type="checkbox"/> Cost reduction <input type="checkbox"/> Weight
	<input type="checkbox"/> Fine thread	Other load characteristics:

Speed (m/s; 1/min):

Type of movements:

- Rotating
- Oscillating with degrees
- Linear

Lubrication:

- Dry
- Oil
- Greases
- Water

Shaft diameter (mm/inch):

Bearing load [N]:

Ambient temperature [°C]:

Shaft material (e.g. steel, VA, plastic):

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Phone:	
Fax:	

Application:

Current guide system:

System orientation (1 = horizontal, 2 = lateral, 3 = vertical):

Number of bearings per rail/shaft: Number of rails/shafts:

Type of drive: Drive force [N]:

Average speed: Maximum speed:

Stroke: Expected service life:

Duty cycle:

Ambient temperature: Maximum temperature:

Surrounding medium: Lubrication:

Static load: Dynamic load:

Distance between bearings/carriages on a rail/shaft (wx):

Distance between rails/shafts (b):

Distance to centre of gravity in x-direction (Sx):

Distance to centre of gravity in y-direction (Sy):

Distance to centre of gravity in z-direction (Sz):

Distance to the drive force in y-direction (ay):

Distance to the drive force in z-direction (az):

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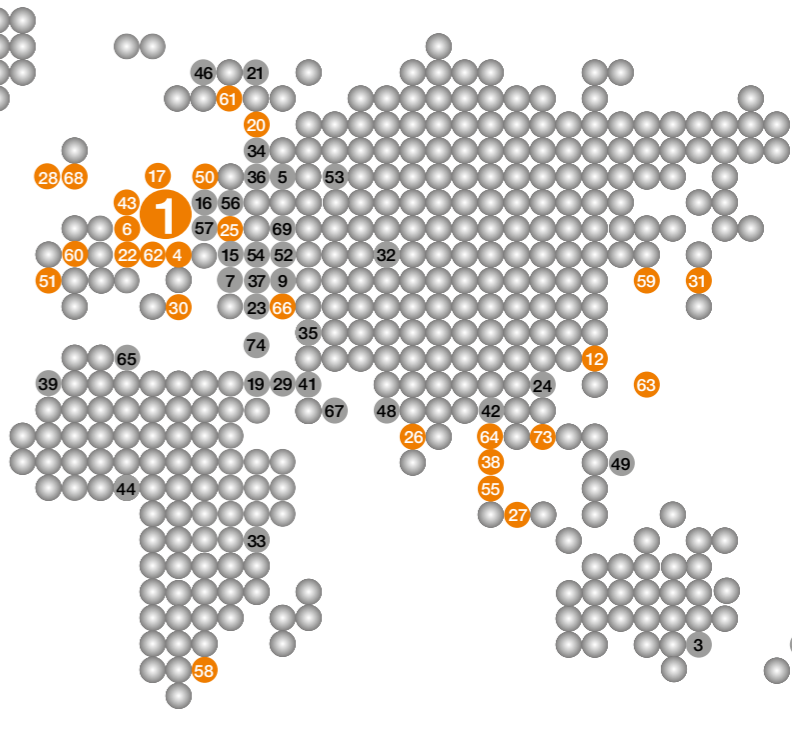
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Subject to technical alterations. MAT0070571.20 Issue 06/2023

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