igubal®

Polymer spherical bearings

...plastics

igubal® bearing elements | Application examples

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.

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**

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**

Sun protection
Arcora, a French company, is developing a system for moving sun protection fins on facades.
▶ **www.igus.eu/manus-2021-bronze**

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**

igubal® bearing elements | Product overview

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

New

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

New

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

igubal® pillow block bearings - standard design

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

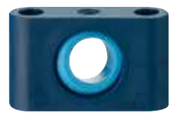
Extremely light, compact design:
ESTM-SL
▶ Page 934

New

Space-saving:
PA-KS-JEM-SP
▶ Page 935

Split pillow block bearings for square profiles:
ESQM
▶ Page 936

New



Pillow block bearings for contact with food:
ESTM-FC
▶ Page 937

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igubal® bearing elements | Product overview

... 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

igubal® pillow block bearings - low-cost design

Pillow block bearings with cost-effective metallic housing:
PP-JEM-SP
▶ Page 940

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

igubal® spherical thrust bearings

Resistant to edge loads:
SAM
▶ Page 992


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

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igubal® bearing elements | Product overview

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

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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 1190**

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 1186**

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.

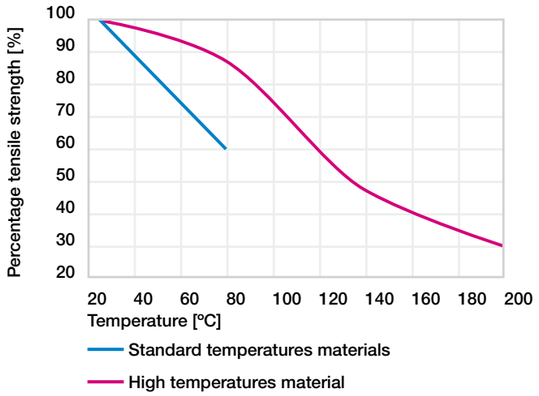


Diagram 01: Trends indicate the effect of temperature on the max. tensile strength of igubal® rod end bearings.

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 1170**

igubal® bearing elements | Technical data

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 $3 \cdot 10^2$Gy.

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

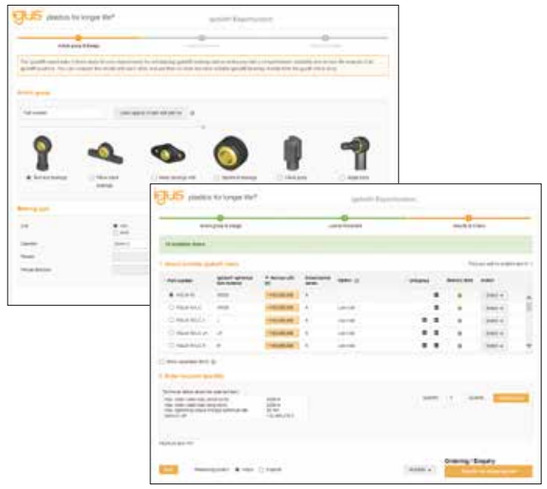
Tolerance test with plug gauge

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

Notes

igubal® rod ends

- Maintenance-free dry operation
- High rigidity
- Durable
- Compensation of misalignment
- Compensation of edge loads
- Lightweight

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igubal® rod ends

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.

Maintenance-free dry operation

High rigidity

Durable

Compensation of misalignment errors

Compensation of edge loads

Lightweight

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

Available from stock
Detailed information about delivery time online.

Imperial dimensions available
▶ From page 1152

Price breaks online
No minimum order value. No minimum order quantity

Online product finder
▶ www.igus.eu/igubal-finder

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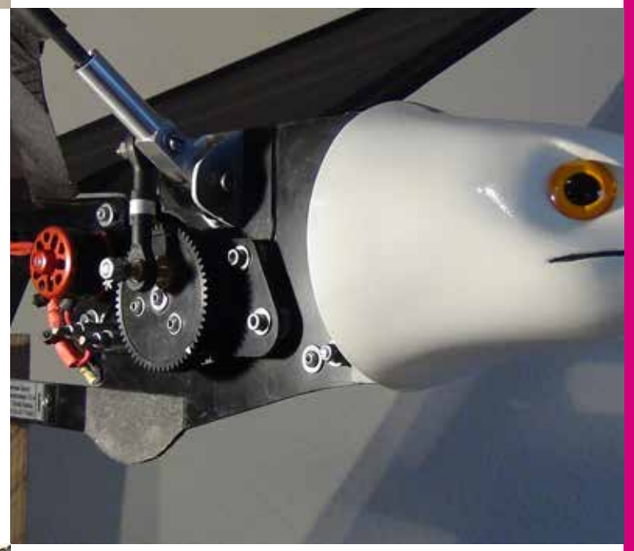
igubal® rod ends | Application examples

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.

igubal® rod ends | Technical data

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.

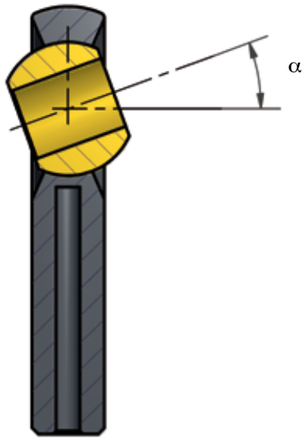
Temperatures

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



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igubal® rod ends | Product overview

igubal® rod end bearings with female thread

Selectable spherical ball material

K series

▶ **Page 878**

Easy assembly

K series

▶ **Page 880**

Classic design

K series

▶ **From page 882**

Space-saving

E series

▶ **Page 888**

For temperatures up to +200°C

E series

▶ **Page 892**

Suitable for food contact

E series

▶ **Page 894**

New

Suitable for food contact

K series

▶ **Page 894**

New

Metallic housing

K series

▶ **Page 896**

igubal® rod end bearings with male thread

For higher loads

K series

▶ **Page 884**

Classic design

K series

▶ **From page 886**

Space-saving

E series

▶ **From page 890**

For temperatures up to +200°C

E series

▶ **Page 893**

New

Metallic housing

K series

▶ **From page 897**

igubal® angled and in-line ball and socket joints

Angled ball and socket joints

▶ **Page 898**

Angled ball and socket joints, low-cost

▶ **Page 899**

Easy assembly and disassembly

▶ **Page 900**

igubal® angled and in-line ball and socket joints

In-line ball and socket joint

▶ **Page 901**

In-line ball and socket joints, low-cost

▶ **Page 902**

igubal® accessories for rod ends

Clevis joints with clevis pin and circlip

E series

▶ **Page 912**

Clevis joints with spring-loaded fixing clip

E series

▶ **Page 913**

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igubal® rod ends | Product range

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	
	[N]	[N]	[N]	[N]	[mm]	[Nm]	[Nm]	[Nm]	[g]
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

RKM: Low-cost

JKM: Low moisture absorption

WKM-MH: Standard spherical ball with stainless steel sleeve

J4KM: Low-cost and low moisture absorption

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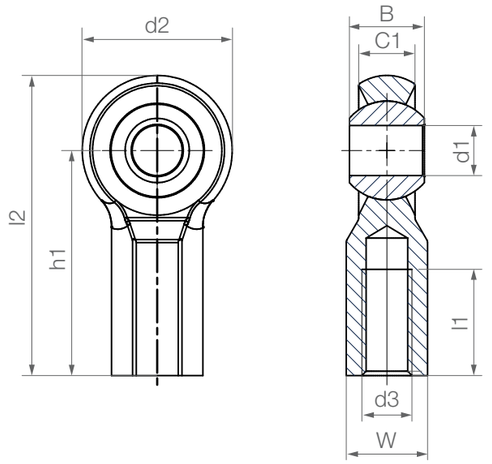
igubal® rod ends

igubal® rod ends | Product range

Rod ends with female thread: KCRM and KCLM



Material:
Housing: **igumid® G ▶ Page 1190**
Spherical ball: **iglidur® W300 ▶ Page 175**

Order key

Type				Size	Options
K	C □	M	- 06		- MH
K series	Housing (female thread)	Thread	Metric	Inner Ø [mm]	

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
		EK	: Stainless steel (AISI 303)

Dimensions [mm]

Part No.	d1	d2	d3	W	B		C1	h1	l1	l2	Max. pivot angle
	E10				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

EK: Stainless steel spherical ball

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igubal® rod ends | Product range

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	Max. tightening torque	Max. tightening torque through ball		Weight
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	Thread [mm]	Female thread [Nm]	without stainless steel sleeve [Nm]	with stainless steel sleeve [Nm]	[g]
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

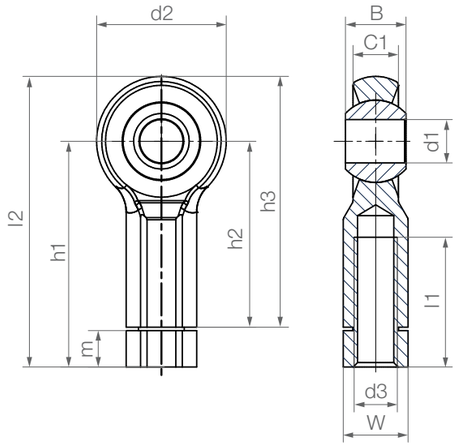
JKM: Low moisture absorption

WKM-MH: Standard spherical ball with stainless steel sleeve

J4KM: Low-cost and low moisture absorption

igubal® rod ends | Product range

Rod ends, female thread; 2nd generation: KBRM CL and KBLM CL



Material:
Housing: **igumid® G ▶ Page 1190**
Spherical ball: **iglidur® W300 ▶ Page 175**

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

Dimensions [mm]

Part No.	d1 E10	d2	d3	W	B without stainless steel sleeve	B with stainless steel sleeve +0.2	C1	h3	h1	h2	l1	l2	m	Max. pivot angle
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**

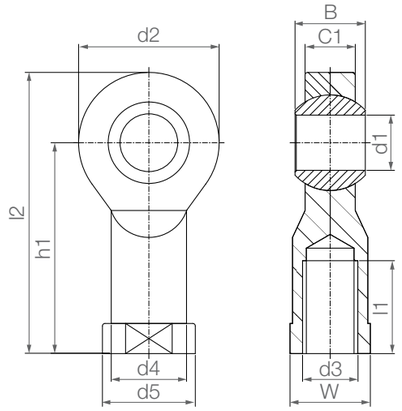
Online service life calculation
▶ www.igus.eu/igubal-expert

Technical data

Part No.	Max. static tensile strain		Max. static axial load		Min. thread depth	Max. tightening torque	Max. tightening torque through ball		Weight
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	Threads [mm]	Female thread [Nm]	without stainless steel sleeve [Nm]	with stainless steel sleeve [Nm]	[g]
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	Housing (female 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

Material:
Housing: **igumid® G ▶ Page 1190**
Spherical ball: **iglidur® W300 ▶ Page 175**

Imperial dimensions available
▶ Page 1154

Dimensions [mm]

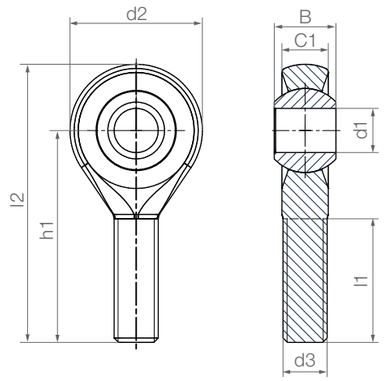
Part No.	d1	d2	d3	d4	d5	C1	B		h1	l1	l2	W	Max. pivot angle
	E10						without stainless steel sleeve	with stainless steel sleeve +0.2					
KB□M-02	2	9	M2	4.0	4.6	3.0	4	–	12.5	6	17	SW4	30°
KB□M-03	3	13	M3	6.5	8.0	4.5	6	6.2	18.5	8	25	SW6	30°
KB□M-05-M4	5	18	M4	9.0	12.0	6.0	8	8.2	27	10	36	SW9	30°
KB□M-05	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**



Material:
Housing: **igumid® G ▶ Page 1190**
Spherical ball: **iglidur® W300 ▶ Page 175**

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		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
		EK	: Stainless steel (AISI 303)

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	Male thread	without stainless steel sleeve	with stainless steel sleeve	
	[N]	[N]	[N]	[N]	[mm]	[Nm]	[Nm]	[Nm]	[g]
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

Dimensions [mm]

Part No.	d1 E10	d2	d3	C1	B without stainless steel sleeve	B with stainless steel sleeve +0.2	h1	l1	l2	Max. pivot angle
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


RKM: Low-cost


JKM: Low moisture absorption


WKM-MH: Standard spherical ball with stainless steel sleeve


J4KM: Low-cost and low moisture absorption

Alternative spherical ball materials ▶ Page 993


EK: Stainless steel spherical ball

igubal® rod ends | Product range

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	Max. tightening torque	Max. tightening torque through ball		Weight
	Short-term	Long-term	Short-term	Long-term	Threads	Male thread	without stainless steel sleeve	with stainless steel sleeve	
	[N]	[N]	[N]	[N]	[mm]	[Nm]	[Nm]	[Nm]	[g]
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

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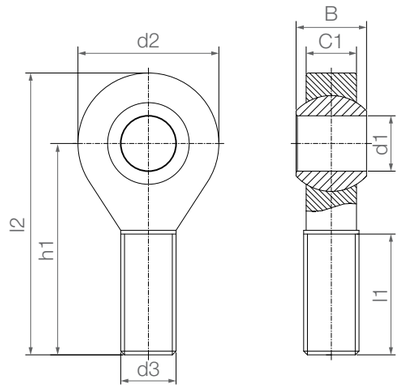
igubal® rod ends

igubal® rod ends | Product range

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

Material:
Housing: **igumid® G ▶ Page 1190**
Spherical ball: **iglidur® W300 ▶ Page 175**

Imperial dimensions available
▶ Page 1153

Dimensions [mm]

Part No.	d1	d2	d3	C1	B		h1	l1	l2	Max. pivot angle
	E10				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: KABM-10-**MH (Inner Ø: 10mm).**

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igubal® rod ends | Product range

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	Max. tightening torque	Max. tightening torque through ball	Weight
	Short-term	Long-term	Short-term	Long-term	Thread	Female thread		
	[N]	[N]	[N]	[N]	[mm]	[Nm]	[Nm]	[g]
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

J4VEM: Clearance-free, pre-loaded

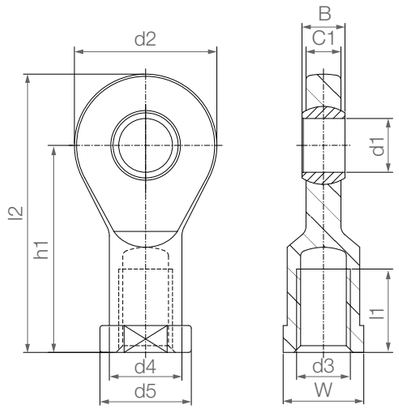
JEM: Low moisture absorption

REM: Low-cost

J4EM: Low-cost and low moisture absorption

igubal® rod ends | Product range

Rod ends with female thread: EBRM and EBLM



Material:
Housing: **igumid® G ▶ Page 1190**
Spherical ball: **iglidur® W300 ▶ Page 175**

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)

Dimensions [mm]

Part No.	d1	d2	d3	d4	d5	C1	B	h1	l1	l2	W	Max. pivot angle
	E10											
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

EK: Stainless steel spherical ball

Imperial dimensions available
▶ Page 1152

igubal® rod ends | Product range

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	Max. tightening torque	Max. tightening torque through ball	Weight
	Short-term	Long-term	Short-term	Long-term	Thread	Male thread		
	[N]	[N]	[N]	[N]	[mm]	[Nm]	[Nm]	[g]
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

J4VEM: Clearance-free, pre-loaded

JEM: Low moisture absorption

REM: Low-cost

J4EM: Low-cost and low moisture absorption

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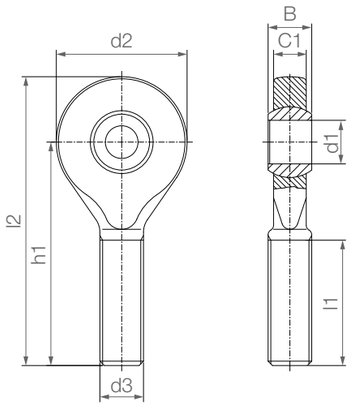
igubal® rod ends

igubal® rod ends | Product range

Rod ends with male thread: EARM and EALM



Material:
Housing: **igumid® G** ▶ **Page 1190**
Spherical ball: **iglidur® W300** ▶ **Page 175**

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)

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

EK: Stainless steel spherical ball

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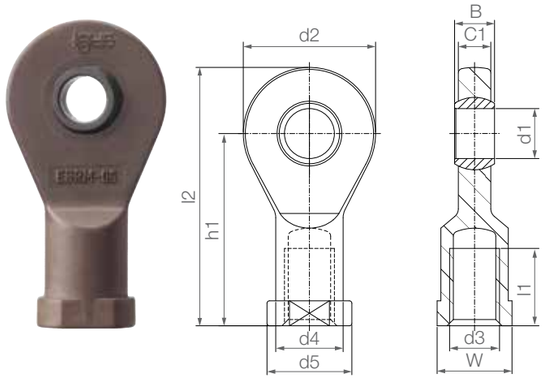
igubal® rod ends | Product range

High temperature rod ends with female thread: EBRM-HT and EBLM-HT



- 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 1170**)
- Can be used underwater
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional series E following DIN ISO 12240

Order key

Type				Size	Version
E	B	□	M-	05	-HT
E series	Housing (female thread)	Thread	Metric	Inner Ø [mm]	High temperature

Options:

Thread

L : Left-hand thread

R : Right-hand thread

Material:

Housing: **iguton G ▶ Page 1191**

Spherical ball: **iglidur® X ▶ Page 291**

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 [N]	Long-term [N]	Short-term [N]	Long-term [N]	Thread [mm]	Female thread [Nm]	[Nm]	[g]
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°

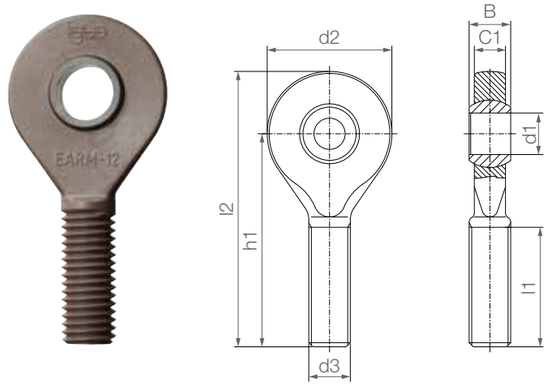
Other dimensions available upon request

EN 09/2023

igubal®
rod ends

igubal® rod ends | Product range

High temperature rod ends with male thread: EARM-HT and EALM-HT



- 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 1170**)
- Can be used underwater
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional series E following DIN ISO 12240

Order key

Type				Size	Version
E	A	□	M-	05	-HT
E series	Housing (male thread)	Thread	Metric	Inner Ø [mm]	High temperature

Options:

Thread

L : Left-hand thread

R : Right-hand thread

Material:

Housing: **iguton G ▶ Page 1191**

Spherical ball: **iglidur® X ▶ Page 291**

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 [N]	Long-term [N]	Short-term [N]	Long-term [N]	Thread [mm]	Male thread [Nm]	[Nm]	[g]
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]

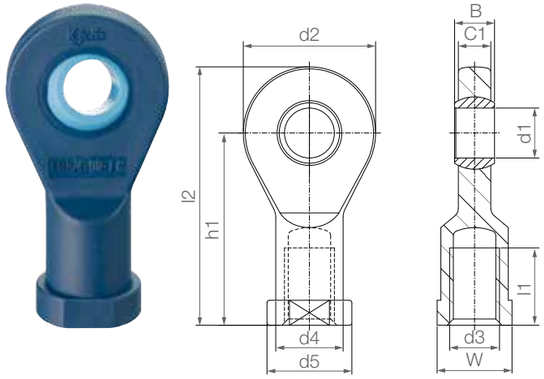
Part No.	d1 E10	d2	d3	C1	B	h1	l1	l2	Max. pivot angle
EA□M-05-HT	5	19	M5	4.4	6	36.0	20	45.5	33°
EA□M-06-HT	6	21	M6	4.4	6	36.0	20	46.5	27°
EA□M-08-HT	8	24	M8	6.0	8	41.0	24	53.0	24°
EA□M-10-HT	10	29	M10	7.0	9	47.5	27	62.0	24°
EA□M-12-HT	12	34	M12	8.0	10	54.0	29	71.0	21°

Other dimensions available upon request

EN 09/2023

igubal® rod ends | Product range

Rod ends with female thread, suitable for food contact: EBRM-FC



- 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

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 ▶ Page 1191**
Spherical ball: **iglidur® A181 ▶ Page 401**
iglidur® FC180 ▶ upon request

- Cost-effective
- Left-hand thread upon request

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		
		[N]	[N]	[N]	[N]	[mm]	[Nm]	[Nm]	[g]
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]

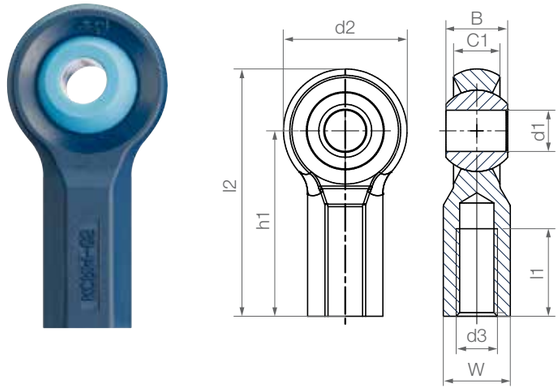
Part No.		d1 E10	d2	d3	d4	d5	C1	B	h1	l1	l2	W	Max. pivot angle
EBRM-04-FC	New	4	15	M4	–	–	3.5	5	22.5	9.5	30.0	SW8	33°
EBRM-05-FC	New	5	19	M5	9.0	11	4.4	6	30	12	40.5	SW9	33°
EBRM-06-FC		6	21	M6	11.0	13	4.4	6	30	12	40.5	SW11	27°
EBRM-08-FC		8	24	M8	13.0	16	6.0	8	36	14	48.0	SW14	24°
EBRM-10-FC		10	29	M10	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

igubal®
rod ends

igubal® rod ends | Product range

Rod ends with female thread, suitable for food contact: KCRM-FC



- 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

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 ▶ Page 1191**
Spherical ball: **iglidur® A181 ▶ Page 401**
iglidur® FC180 ▶ upon request

- Cost-effective
- Left-hand thread upon request

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	Thread	Male thread		
		[N]	[N]	[N]	[mm]	[Nm]	[Nm]	[g]
KCRM-05-FC	New	1,000	500	170	7.0	1.0	2.0	3.5
KCRM-06-FC		1,300	650	400	8.0	1.0	2.0	4.3
KCRM-12-FC	New	3,200	1,600	600	15.0	12.0	20.0	21.0

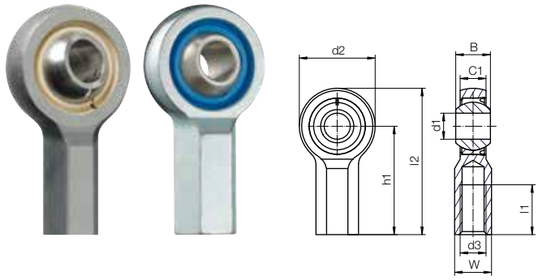
Dimensions [mm]

Part No.		d1 E10	d2	d3	C1	B without stainless steel sleeve	h1	l1	l2	W	Max. pivot angle
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

igubal® rod ends | Product range

Rod ends with female thread, metallic housing with maintenance-free inner ring: KCRM-ES/S



- 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**

Order key

Type				Size	Version
K	C ☐	M- ☐	-	06	- ☐ - 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

192) **The weight refers to a zinc die-cast housing with iglidur® J inner ring**

Technical data

Part No.	Max. tensile strain		Max.	Max.	min. thread depth	Weight192)
	Short-term	Long-term	axial force	axial load	Thread	
	[N]	[N]	[N]	[N]	[mm]	[g]
KC☐M-☐-06-☐-EK	1,900	1,100	600	110	14	22.8
KC☐M-☐-08-☐-EK	3,750	1,825	1,150	270	16	43.2
KC☐M-☐-10-☐-EK	4,500	2,250	2,100	500	18	67.4
KC☐M-☐-12-☐-EK	5,500	3,625	2,500	475	20	98.3
KC☐M-☐-16-☐-EK	7,000	6,000	2,600	1,250	23	179.4
KC☐M-☐-20-☐-EK	10,000	8,950	3,300	2,000	27	309.5
KC☐M-☐-20-M20-☐-EK	10,000	8,950	3,300	2,000	27	309.5

All values refer to KC☐M-S-XX-J-EK

Dimensions [mm]

Part No.	d1	d2	d3	h1	l1	l2	B	C1	W	Max. pivot angle
KC☐M-☐-06-☐-EK	6	22.0	M6	30.0	13	41.00	9	7.0	10	29°
KC☐M-☐-08-☐-EK	8	26.5	M8	36.0	16	49.25	12	9.0	13	25°
KC☐M-☐-10-☐-EK	10	31.0	M10	43.0	19	58.50	14	10.5	15	25°
KC☐M-☐-12-☐-EK	12	35.0	M12	50.0	23	67.50	16	12.0	17	25°
KC☐M-☐-16-☐-EK	16	44.0	M16	64.0	28	86.00	21	15.0	20	23°
KC☐M-☐-20-☐-EK	20	53.0	M20 x 1.5	77.0	33	103.50	25	18.0	24	23°
KC☐M-☐-20-M20-☐-EK	20	53.0	M20 x 2.5	77.0	33	103.50	25	18.0	24	23°

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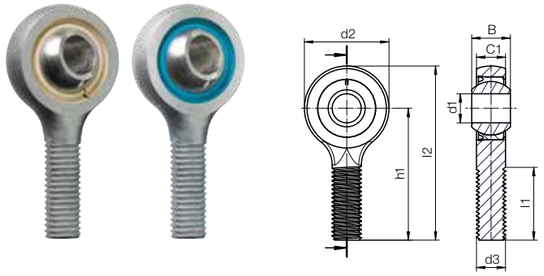
igubal®
rod ends

igubal® rod ends | Product range

Rod ends with male thread, metallic housing with maintenance-free inner ring: KARM-ES/S



- 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**

Order key

Type				Size	Version
K	A ☐	M- ☐	-	06	- ☐ - 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

192) **The weight refers to a zinc die-cast housing with iglidur® J inner ring**

Technical data

Part No.	Max. tensile strain		Max.	Max.	min. thread depth	Weight192)
	Short-term	Long-term	axial force	axial load	Thread	
	[N]	[N]	[N]	[N]	[mm]	[g]
KA☐M-☐-06-☐-EK	1,900	1,100	160	110	14	18.2
KA☐M-☐-08-☐-EK	3,750	1,825	330	270	16	34.4
KA☐M-☐-10-☐-EK	4,500	2,250	500	500	18	56.3
KA☐M-☐-12-☐-EK	5,500	3,625	750	475	20	85.5
KA☐M-☐-16-☐-EK	7,000	6,000	1,500	1,250	23	179.3
KA☐M-☐-20-☐-EK	10,000	8,950	2,000	2,000	27	309.0
KA☐M-☐-20-M20-☐-EK	10,000	8,950	2,000	2,000	27	309.0

All values refer to KA☐MS-XX-J-EK

Dimensions [mm]

Part No.	d1	d2	d3	h1	l1	l2	B	C1	Max. pivot angle
KA☐M-☐-06-☐-EK	6	22.0	M6	36.0	21	47.00	9	7.0	29°
KA☐M-☐-08-☐-EK	8	26.5	M8	42.0	24	55.25	12	9.0	25°
KA☐M-☐-10-☐-EK	10	31.0	M10	48.0	27	63.50	14	10.5	25°
KA☐M-☐-12-☐-EK	12	35.0	M12	54.5	30	72.00	16	12.0	25°
KA☐M-☐-16-☐-EK	16	44.0	M16	66.0	34	88.50	21	15.0	23°
KA☐M-☐-20-☐-EK	20	53.0	M20 x 1.5	78.0	40	104.50	25	18.0	23°
KA☐M-☐-20-M20-☐-EK	20	53.0	M20 x 2.5	78.0	40	104.50	25	18.0	23°

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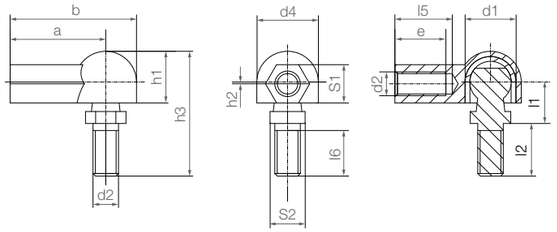
igubal® angled ball and socket joints | Product range

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 steel[19)]

▶ 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 stud[19)]
Blank : Made of plastic
MS : Made of galvanised steel
ES : Made of stainless steel[28)]

Online service life calculation
▶ www.igus.eu/igubal-expert

Material:
Housing: **igumid® G ▶ Page 1190**
Spherical cap: **iglidur® W300 ▶ Page 175**

Technical data

Part No.	Max. static tensile force (Ball stud axis)		Max. static compressive strength (Ball stud axis)		Max. axial tensile force (Housing axis)		Max. axial tensile force steel stud (Housing axis)		Weight
	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[g]
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 ±0.1	d2	d4 ±0.5	l1 ±0.2	l2 ±0.3	l5	l6 min.	h1 ±0.4	h2 ±0.5	h3 ±0.5	a ±0.3	b ±0.5	e ±1.0	S1	S2	Max. pivot angle
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

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igubal® angled ball and socket joint

igubal® angled ball and socket joints | Product range

Angled ball and socket joints (low-cost): WGRM-LC and WGLM-LC

- Housing with ball stud
- Lightweight
- Maintenance-free
- Ball studs made of plastic, galvanised steel and stainless steel[19)]

▶ Accessories, **page 1011**

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 stud[19)]
Blank : Made of plastic
MS : Made of galvanised steel
ES : Made of stainless steel[28)]

Online service life calculation
▶ www.igus.eu/igubal-expert

Material:
Housing: **igumid® G ▶ Page 1190**

Technical data

Part No.	Max. static tensile force (Ball stud axis)		Max. static compressive strength (Ball stud axis)		Max. axial tensile force (Housing axis)		Max. axial tensile force steel stud (Housing axis)		Weight
	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[g]
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 ±0.1	d2	d4 ±0.5	l1 ±0.2	l2 ±0.3	l5	l6 min.	h1 ±0.4	h2 ±0.5	h3 ±0.5	a ±0.3	b ±0.5	e ±1.0	S1	S2	Max. pivot angle
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

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igubal® angled ball and socket joints | Product range

Ball joints, removable: WGRM-DE and WGLM-DE

- 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 steel[19] ▶ Accessories, **page 1011**

Material:
Housing: **igumid® G ▶ Page 1190**

Order key

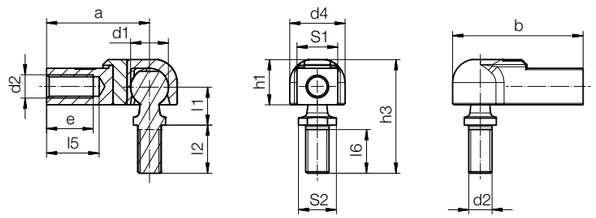
Type	Size	Version
WG☐M-	05	-DE-MS

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 stud[19]
Blank : Made of plastic
MS : Made of galvanised steel
ES : Made of stainless steel[28]



Technical data and dimensions [mm]

Part No.	Assembly force and disassembly force[176]	Max. static tensile force[180]		Max. static compressive force[180]		Max. axial tensile force[180]		Max. pivot angle	Weight
		Short-term	Long-term	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]	[N]	[N]	[N]		[g]
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

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igubal® in-line ball and socket joints | Product range

In-line ball and socket joints: AGRM and AGLM

- 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 steel[19] ▶ Accessories, **page 1011**

Material:
Housing: **igumid® G ▶ Page 1190**
Spherical cap: **iglidur® W300 ▶ Page 175**

Order key

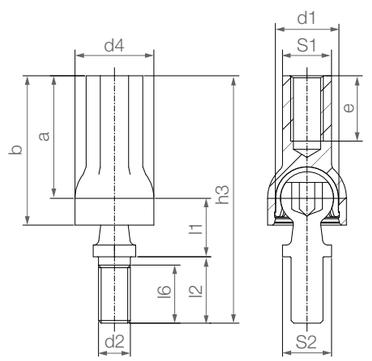
Type	Size
AG☐M-	08 -MS

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 stud[19]
Blank : Made of plastic
MS : Made of galvanised steel
ES : Made of stainless steel[28]



Technical data

Part No.	Max. static axial tensile force		Max. static axial compressive strength		Max. assembly force	Weight
	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]	[N]	[g]
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

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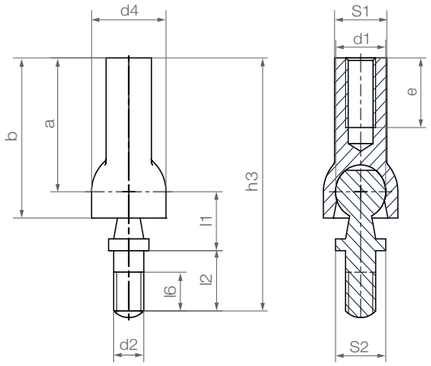
igubal® in-line ball and socket joints | Product range

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

Options:

Thread (housing)
L : Left-hand thread
R : Right-hand thread

Ball stud[19)]
Blank : Made of plastic
MS : Made of galvanised steel
ES : Made of stainless steel[28)]

Material:
Housing: **igumid® G ▶ Page 1190**

- Housing with ball stud
- Lightweight
- Maintenance-free
- Ball studs made of plastic, galvanised steel and stainless steel[19)] ▶ Accessories, **page 1011**

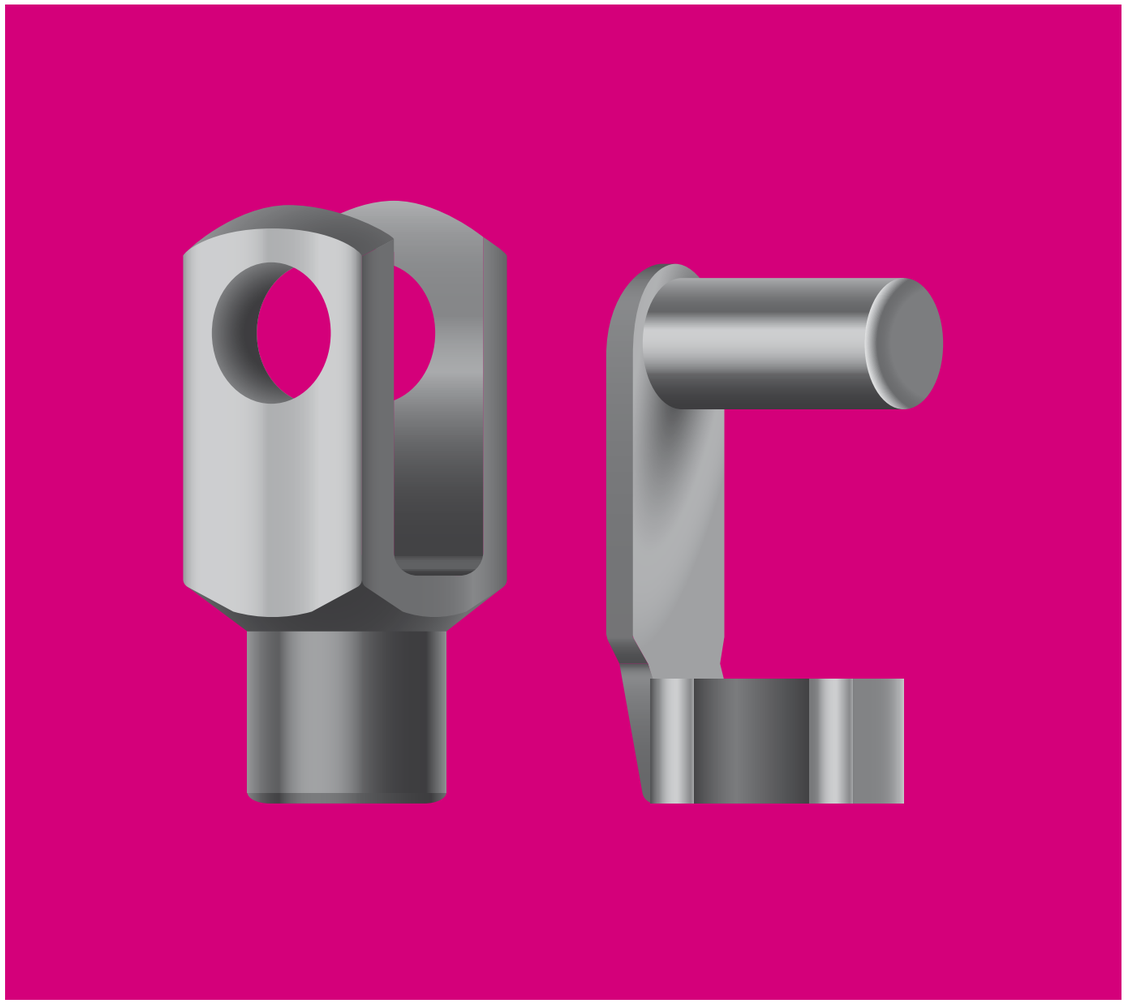
Technical data

Part No.	Max. static tensile strain		Max. static compressive force (with steel stud)		Max. static compressive force (with plastic stud)		Max. assembly force	Weight
	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[g]
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

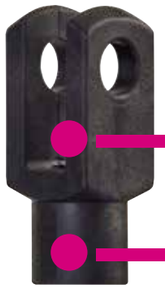
Can be combined with rod ends of the dimensional series E

Lightweight

EN 09/2023

igubal® clevis joints

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.



High tensile force

Vibration-dampening

Noise-dampening

Can be combined with rod ends of the dimensional series E

Lightweight

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

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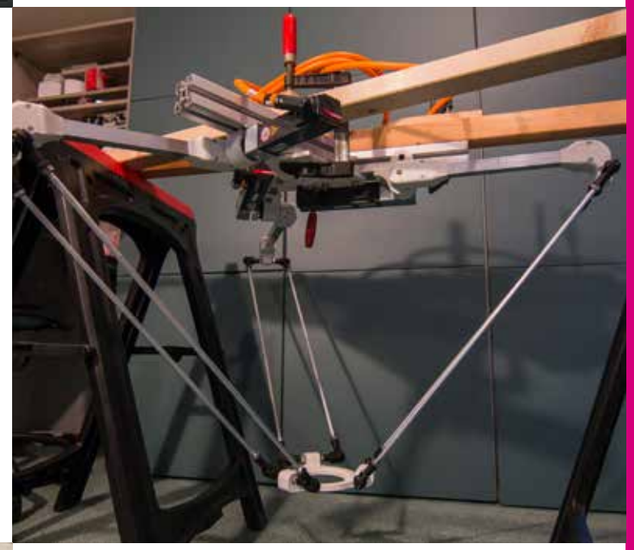
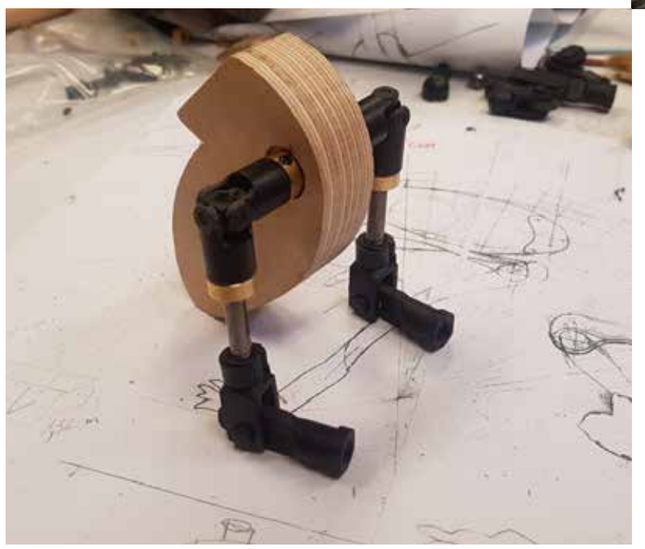
igubal® clevis joints | Application examples

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 Gledalisce 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 joints | Product overview

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

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Notes

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igubal® clevis joints | Product range

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

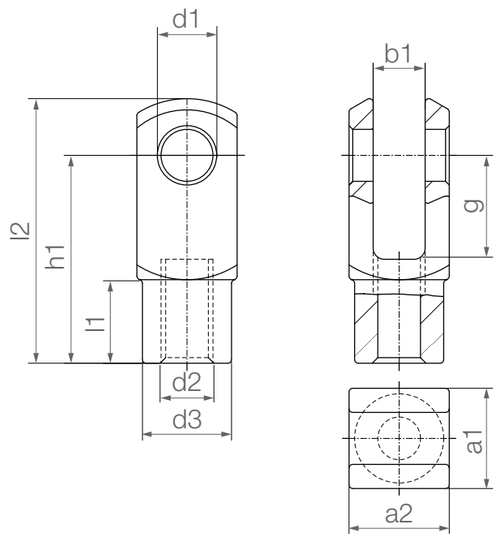
Part No.	Max. static tensile strain		Max. static axial force		Max. tightening torque	Weight
	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]	[Nm]	[g]
GE□M-04-M3.5	650	325	250	125	0.4	0.9
GE□M-04	650	325	250	125	0.4	0.9
GE□M-05-DIN-M4	1,000	500	250	125	0.4	1.5
GE□M-05-DIN-M5	1,000	500	250	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

igubal® clevis joints

igubal® clevis joints | Product range

Clevis joints: GERM and GELM



Order key

Type				Size	Options
G	E	□	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 1190

Imperial dimensions available
▶ Page 1156

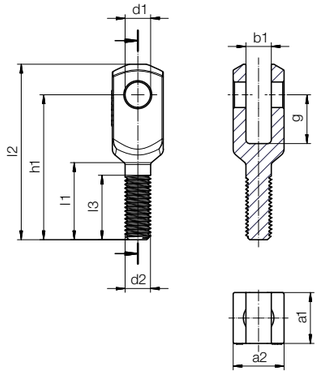
Dimensions [mm]

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

igubal® clevis joints | Product range

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	-10
Clevis joint	Male thread	Thread	Metric	Inner Ø [mm]

Material:
igumid® G ▶ Page 1190

Online service life calculation
▶ www.igus.eu/igubal-expert

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Max. tightening torque	Weight
	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]	[Nm]	[g]
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
	+0.1	h11	+0.3 -0.16	+0.3 -0.16	B13		±0.5	±0.3	±0.3	±0.2
GARM-10	10	19	20	20	10	M10	69	25	57	30.3

EN 09/2023

igubal® clevis joints

igubal® clevis joints | Product range

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	-10
Clevis joint	Male thread	Thread	Metric	With clevis pin and circlip	Inner Ø [mm]

Material:
igumid® G ▶ Page 1190

Online service life calculation
▶ www.igus.eu/igubal-expert

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Weight
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
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

EN 09/2023

igubal® clevis joints | Product range

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

Order key

Type						Size	Options
G	E	□	M	K	-	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 1190

Imperial dimensions available
▶ Page 1157

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Weight
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
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

igubal® clevis joints

igubal® clevis joints | Product range

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

Order key

Type						Size	Options
G	E	□	M	F	-	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 1190

Online service life calculation
▶ www.igus.eu/igubal-expert

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Weight
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
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

igubal® clevis joints | Product range

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
G	E	□	M	KE	-	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 1190

Online service life calculation
▶ www.igus.eu/igubal-expert

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Weight
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
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

igubal® clevis joints

igubal® clevis joints | Product range

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
G	E	□	M	FE	-	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 1190

Online service life calculation
▶ www.igus.eu/igubal-expert

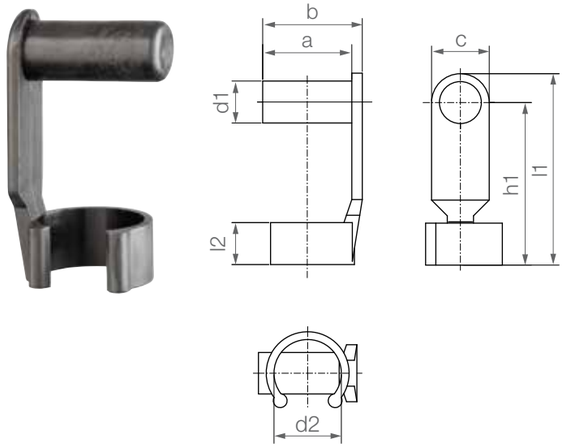
Technical data

Part No.	Max. static tensile strain		Max. static axial force		Weight
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
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

igubal® clevis joints | Product range

Spring-loaded fixing clips: GEFM



Material:
igumid® G ▶ Page 1190

Dimensions [mm]

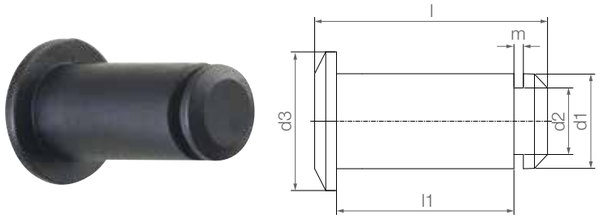
Part No.	d1	d2	a	b	C	l1 ±0.5	h1	l2	Weight [g]
GEFM-04	4	8	9.5	10.5	8	19.0	15	4.5	0.5
GEFM-05-DIN	5	9	12.0	13.5	8	23.0	19	5.5	0.8
GEFM-05-DIN-M5-LS[22)]	5	9	12.0	13.5	8	33.0	29	5.5	1.0
GEFM-05	5	10	14.0	15.5	8	27.0	23	6.5	1.1
GEFM-06-LS[22)]	6	10	14.0	15.5	8	39.0	35	6.5	1.0
GEFM-06	6	10	14.0	15.5	8	27.0	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

igubal® clevis joints

igubal® clevis joints | Product range

Clevis pins: GBM



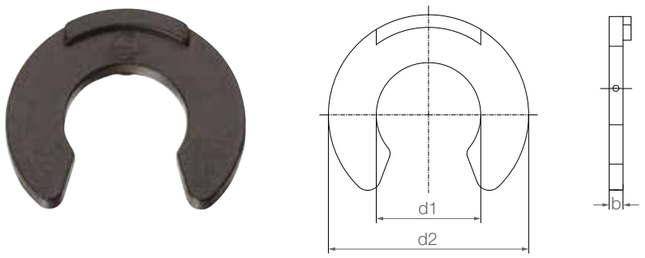
Material:
igumid® G ▶ Page 1190

Imperial dimensions available
▶ Page 1157

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



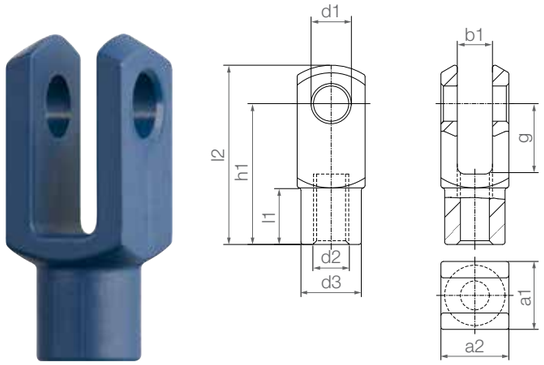
Material:
POM ▶ Page 1192

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

igubal® clevis joints | Product range

Clevis joints, detectable, FDA and EU10/2011-compliant: GERM-FC



Order key

Type	Size	Version
G E R M-	04	- FC

Type: Clevis joint | E series | Thread | Metric
Size: Inner Ø [mm]
Version: Suitable for food contact

- Lubrication and maintenance-free
- Visually and magnetically detectable
- Compliant with Regulation (EU) No. 10/2011 and FDA guidelines
- Left-hand thread upon request
- Corrosion and media-resistant
- Vibration-dampening
- Cost-effective

Material:
igumid® FC ▶ Page 1191

Technical data

Part No.	Max. static tensile strain		Max. static axial force		Max. tightening torque	Weight
	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]	[Nm]	[g]
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 +0.3 -0.16	a2 +0.3 -0.16	b1	d2	d3 ±0.3	l2 ±0.5	h1 ±0.3	l1 ±0.2
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

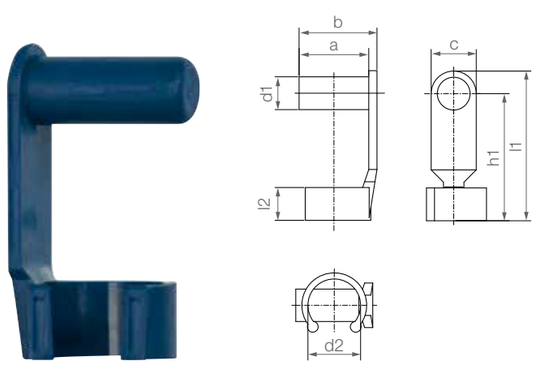
Left-hand thread and other dimensions available upon request

EN 09/2023

igubal® clevis joints

igubal® clevis joints | Product range

Spring-loaded fixing clips, detectable, FDA and EU10/2011-compliant: GEFM-FC



Order key

Type	Size	Version
G E F M-	04	- FC

Type: Clevis joint | E series | Spring-loaded fixing clip | Metric
Size: Inner Ø [mm]
Version: Suitable for food contact

- Lubrication and maintenance-free
- Visually and magnetically detectable
- Compliant with Regulation (EU) No. 10/2011 and FDA guidelines
- Corrosion and media-resistant
- Vibration-dampening
- Cost-effective

Material:
igumid® FC ▶ Page 1191

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

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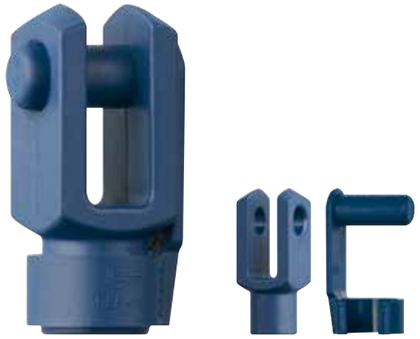
igubal® clevis joints | Product range

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	- 04	- FC
Clevis joint	E series	Thread	Metric	Spring-loaded fixing clip	Inner Ø [mm]	Suitable for food contact

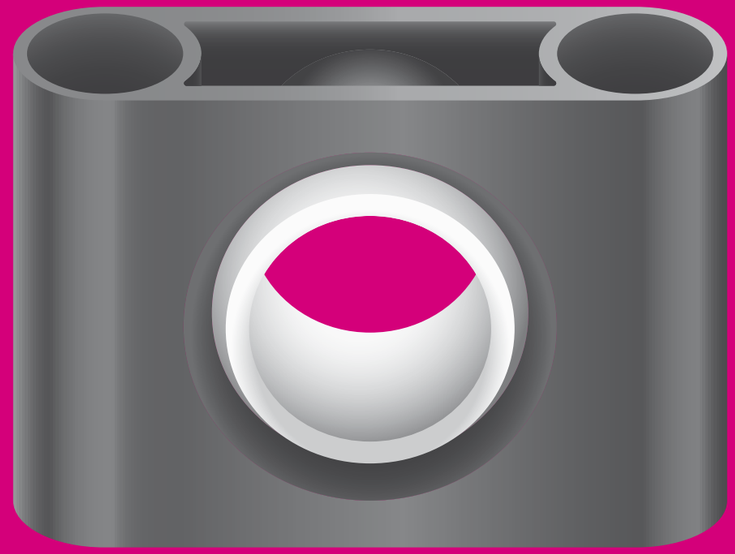
- Corrosion and media-resistant
- Vibration-dampening
- Cost-effective

Material:
igumid® FC ▶ Page 1191

Technical data

Part No.		Max. static tensile strain		Max. static axial force		Weight
		Short-term	Long-term	Short-term	Long-term	
		[N]	[N]	[N]	[N]	[g]
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

EN 09/2023

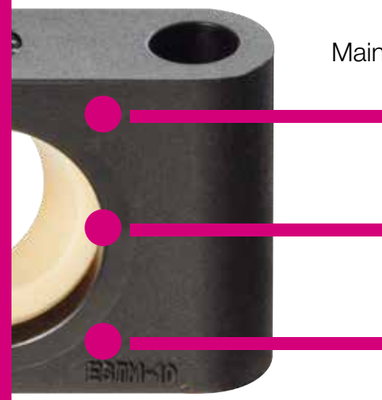
igubal® pillow block bearing

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 1155

Online product finder
▶ www.igus.eu/igubal-finder

igus EN 09/2023

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.

igubal® pillow block bearings | Technical data

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.

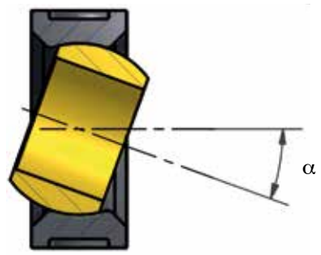
Tolerances

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 bearings | Product overview

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

New

Space-saving

E series
▶ Page 935

Split pillow block bearings for square profiles
E series
▶ Page 936

New

Pillow block bearings for contact with food
E series
▶ Page 937

New

Pillow block bearing with polymer housing

▶ Page 938

New

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

igubal® pillow block bearings | Product range New

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
	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]	[Nm]	[g]
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

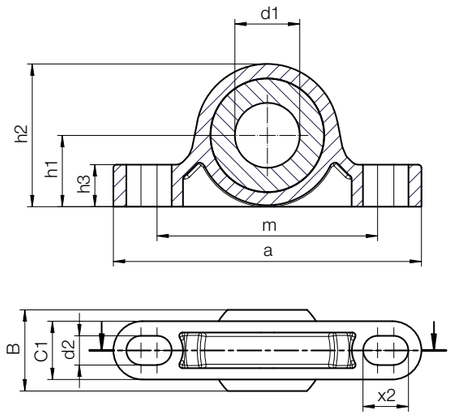
JKM: Low moisture absorption

J4KM: Low-cost and low moisture absorption

igubal® pillow block bearings

igubal® pillow block bearings | Product range New

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 1190**
Spherical ball: **iglidur® W300 ▶ Page 175**

Dimensions [mm]

Part No.	d1	B	C1	h1	h2	m	a	h3	d2	x2	Max.
	E10										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°

igubal® pillow block bearings | Product range

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 1155

Online service life calculation
▶ www.igus.eu/igubal-expert

Technical data

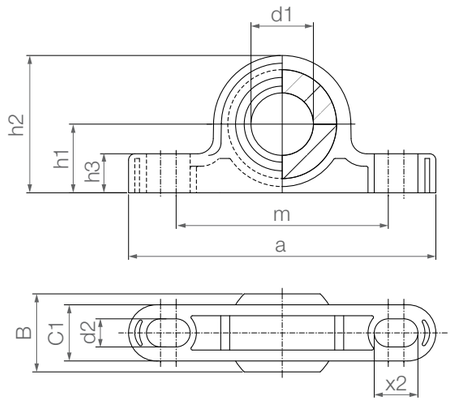
Part No.	Max. static tensile strain		Max. axial static compressive force	Max. tightening torque for longitudinal holes[144)]	Weight
	Short-term	Long-term			
	[N]	[N]	[N]	[Nm]	[g]
KSTM-05	700	350	300	0.6	1.7
KSTM-06	1,100	550	300	1.3	2.9
KSTM-08	1,300	650	400	1.3	4.6
KSTM-10	1,500	750	500	2.5	8.6
KSTM-12	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.

igubal® pillow block bearings

igubal® pillow block bearings | Product range

Pillow block bearings: KSTM



Order key

Type	Size
K STM	-05

K series | Pillow block bearing | Metric | Inner Ø [mm]

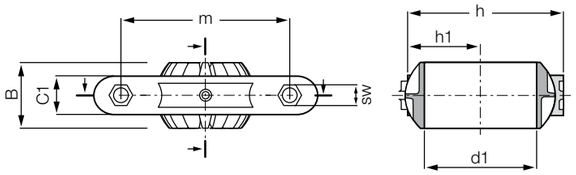
Material:
Housing: **igumid® G** ▶ Page 1190
Spherical ball: **iglidur® W300** ▶ Page 175

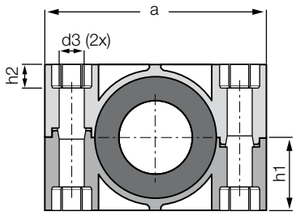
Dimensions [mm]

Part No.	d1	B	C1	h1	h2	m	a	h3	d2	x2	Max. pivot angle
	E10										
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°

igubal® pillow block bearings | Product range

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

Material:
Housing: **RN33** ▶ **Page 1192**
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
	Short-term	Long-term	Short-term	Long-term			
	[N]	[N]	[N]	[N]	[Nm]	[Nm]	[g]
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

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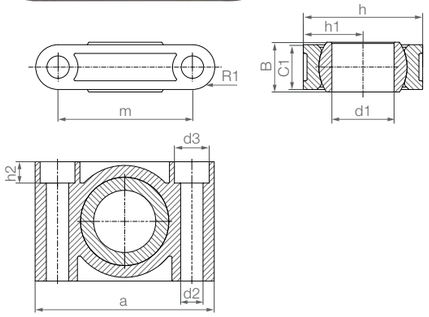
igubal® pillow block bearings

igubal® pillow block bearings | Product range

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 1190**
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	Weight
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	[Nm]	[g]
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

J4VEM: Clearance-free, pre-loaded

JEM: Low moisture absorption

REM: Low-cost

J4EM: Low-cost and low moisture absorption

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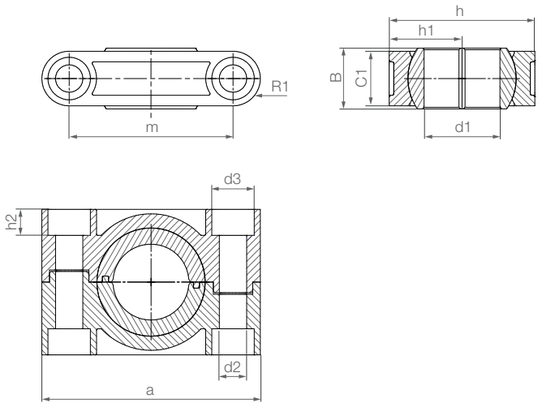
igubal® pillow block bearings | Product range

Pillow block bearings with split housing and split ball: ESTM-GT-GT



Order key

Type				Size	Version
E	ST	M-GT	16	-GT	
E series	Pillow block bearing	Metric	Split housing	Inner Ø [mm]	Split ball

Material:
Housing: **RN33 ▶ Page 1192**
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
	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]		[g]
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
	E10											
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°

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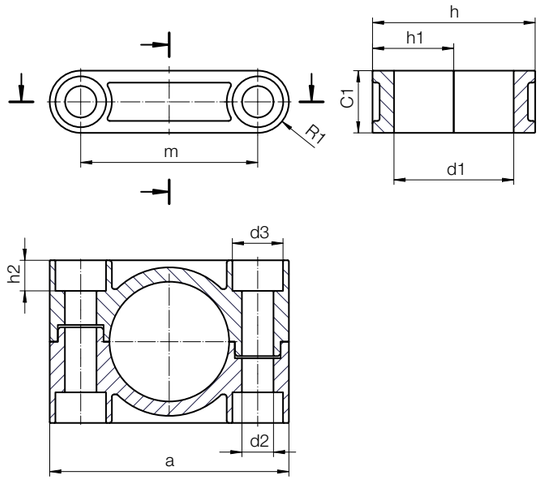
igubal® pillow block bearings

igubal® pillow block bearings | Product range

Split housings with parallel holes: ESTM-GT



Order key

Type				Size	Version
E	ST	M-GT	16	-25	
E series	Pillow block bearing	Metric	Split housing	Dimensions [mm]	Inner Ø

Material:
igumid® G ▶ Page 1190

- 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
	Short-term	Long-term	Short-term	Long-term		
	[N]	[N]	[N]	[N]		[g]
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
	E10									
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

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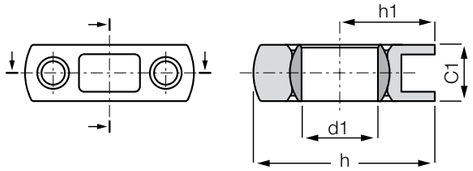
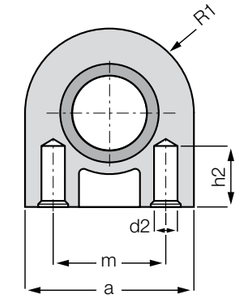
igubal® pillow block bearings | Product range

Pillow block bearings Slim Line: ESTM SL





Online service life calculation
▶ www.igus.eu/igubal-expert

Order key

Type	Size	Version
E STM-	05	- SL - M3

E series	Pillow block bearing	Metric	Inner Ø [mm]	Slim Line

Material:
Housing: **igumid® G ▶ Page 1190**
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

Technical data

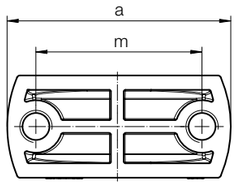
Part No.	Max. radial tensile force		Max. radial compressive strength		Max. lateral strength		Max. axial strength		Weight
	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[g]
ESTM-05-SL-M3	1,500	750	1,400	700	900	450	150	75	1.6
ESTM-06-SL-M3	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

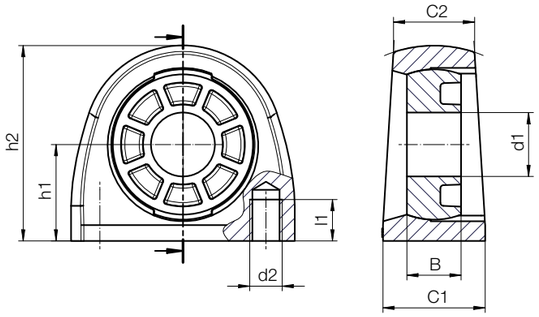
Dimensions [mm]

Part No.	d1 E10	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°

igubal® pillow block bearings | Product range New

Compact pillow block bearings: PA-KS-JEM-SP





Order key

Type	Size	Version
PA203-KS- J	E	M-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 1190**
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

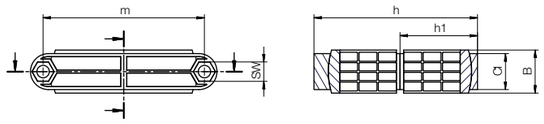
Part No.	Max. static radial tensile strain		Max. static axial compressive force		Weight
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
PA203-KS-JEM-17-17-SP New	7,500	3,750	1,100	550	85.3
PA204-KS-JEM-20-17-SP New	7,500	3,750	1,100	550	85.3
PA205-KS-JEM-25-17-SP New	8,000	4,000	2,300	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

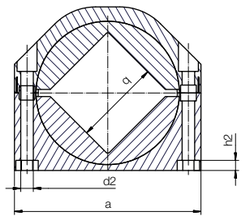
Dimensions [mm]

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

igubal® pillow block bearings | Product range

Split pillow block bearings for square profiles: ESQM





- 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

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 1190**
Spherical ball: **iglidur® J4 ▶ Page 1186**

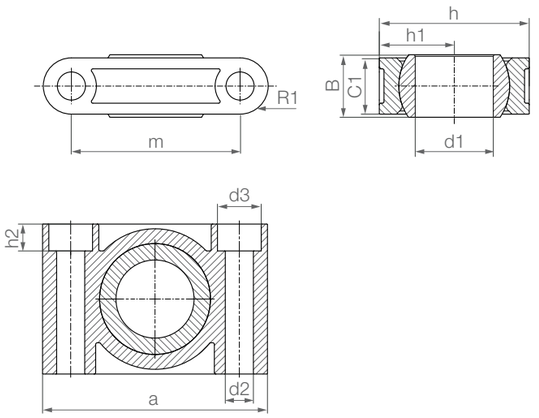
More materials for special parts:
Spherical ball: **iglidur® P UV ▶ Page 1189**

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

igubal® pillow block bearings | Product range New

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 1191**
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
		Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	[N]	[g]
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°

igubal® pillow block bearings | Product range New

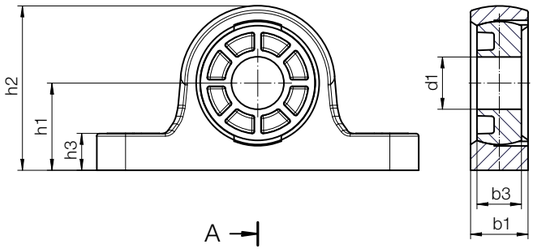
Pillow block bearings with polymer housing: P-KS-JEM-SP

- 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 1190**
Spherical ball: **iglidur® J ▶ Page 163**



Technical data

Part No.		Max. static radial tensile strain		Max. static axial compressive force		Weight
		Short-term	Long-term	Short-term	Long-term	
		[N]	[N]	[N]	[N]	[g]
P204-KS-JEM-20-17-SP	New	7,500	3,750	1,100	550	77.9
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

igubal® pillow block bearings

igubal® pillow block bearings | Product range New

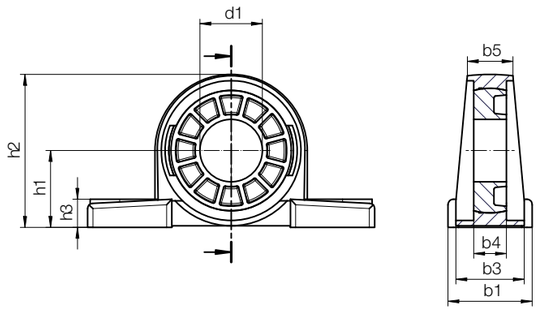
Pillow block bearings with cast iron housing: P-JEM-SP

- 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	Max. static axial load	d1	b1	b2
		[N]	[N]			
P204-JEM-20-17-SP	New	8,000	4,000	20	38	13
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

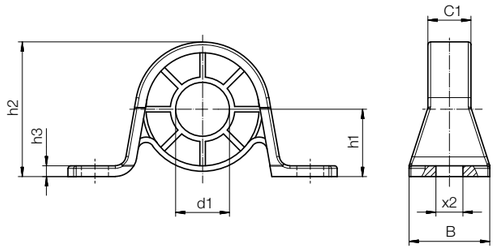
SRM-ES:
Steel fixing collar (galvanised)

SRM-KS:
Polymer fixing collar

igubal® pillow block bearings | Product range

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

Material:
Housing: **Galvanised steel (stainless steel upon request)**
Spherical ball: **iglidur® J (alternative iglidur® J4)**

Technical data

Part No.	Max. static radial tensile strain [N]	Max. static axial compressive force [N]	Weight [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 E10	h1	h2	h3	a	m	C1	B	x2
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

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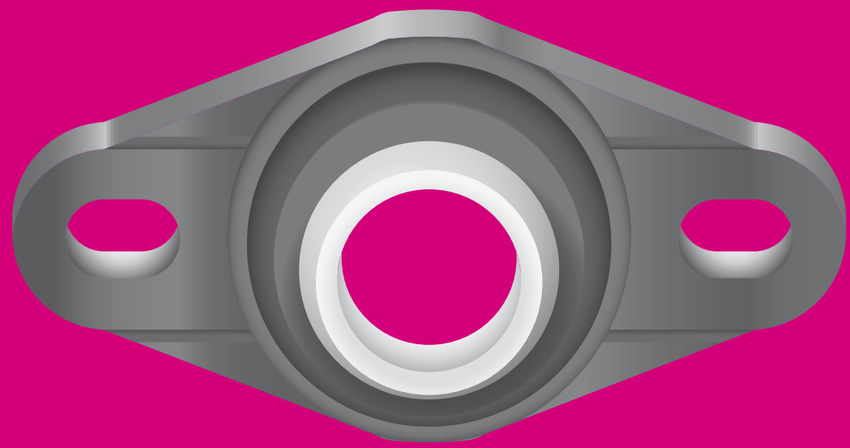

igubal® fixed flange bearings

- Maintenance-free dry operation
- High rigidity
- Durable
- Compensation of misalignment errors
- Compensation of edge loads
- Lightweight

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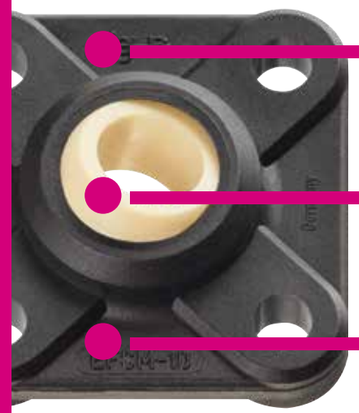
igubal® fixed flange bearings

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

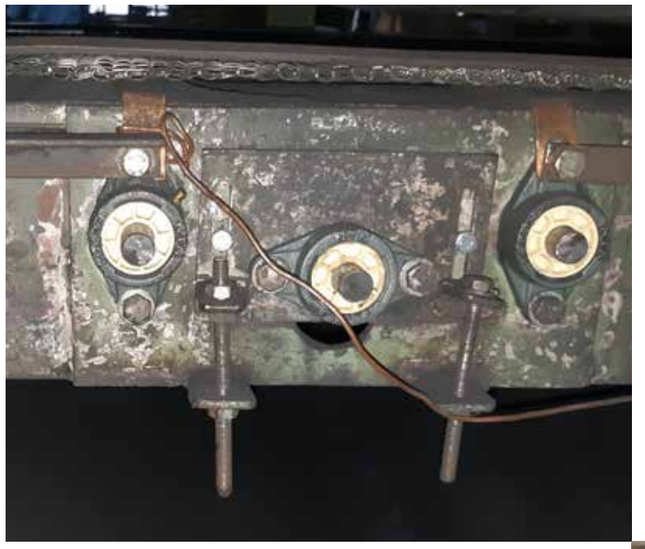
Max. +200 °C
min. -40°C
(depending on material: standard from -30°C to +80°C; HT from -40°C to +200°C)

5 types
Ø 4 - 50mm

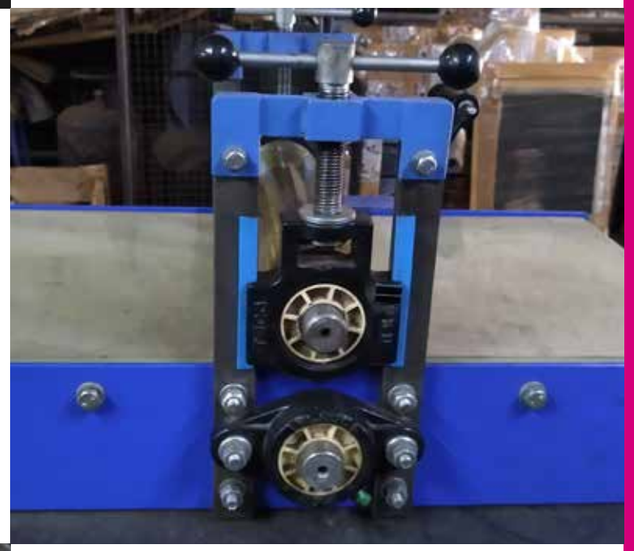
Online product finder
▶ www.igus.eu/igubal-finder

igus EN 09/2023

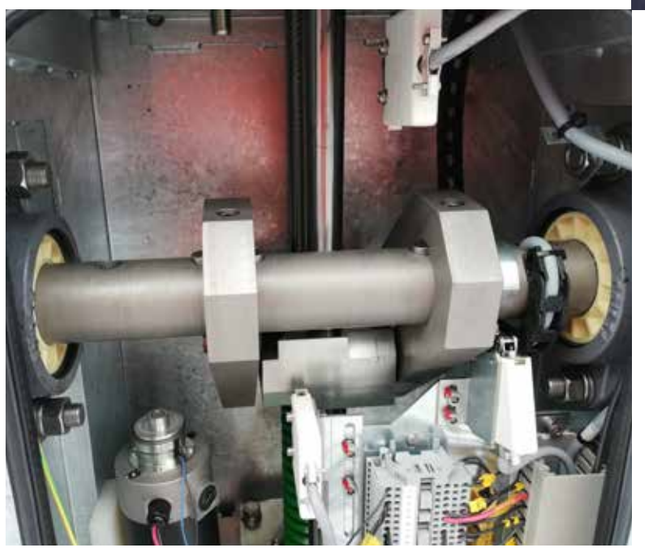
igubal®
fixed flange
bearings



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.

igubal® fixed flange bearings | Technical data

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.

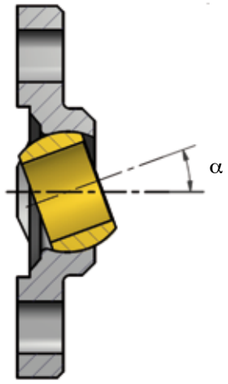
Tolerances

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



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igubal® fixed flange bearings | Product overview

igubal® fixed flange bearings - for temperatures up to +80 °C

Easy installation

E series

▶ From page 946

For high radial loads

E series

▶ From page 948

Universal and quick assembly

Female thread

▶ Page 950

Universal and quick assembly

Male thread

▶ Page 951

igubal® fixed flange bearings - for temperatures up to +200°C

High static load, split housing

K series

▶ Page 952

For high radial loads

E series

▶ Page 953

Easy installation

E series

▶ Page 954

igubal® fixed flange bearings for contact with food

Suitable for food contact

E series

▶ Page 955

igubal® fixed flange bearing with plastic housing - dimensionally interchangeable with cast iron housings

New

Easy installation

E series

▶ Page 956

New

Completely corrosion-free

E series

▶ Page 957

igubal® fixed flange bearing with cast iron housing - for high static loads

New

High static loads

E series

▶ Page 960

New

Low coefficient of friction

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

E series

▶ Page 1088

Low coefficient of friction, pivoting version

E series

▶ Page 1089

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igubal® fixed flange bearings | Product range

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	Weight
	Short-term	Long-term	Short-term	Long-term	Holes	
	[N]	[N]	[N]	[N]	[Nm]	[g]
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

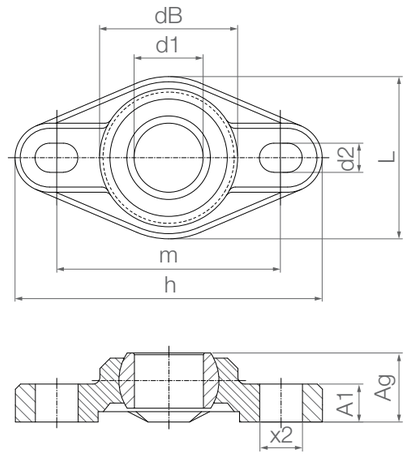
JEM: low moisture absorption

REM: Low-cost

J4EM: Low-cost and low moisture absorption

igubal® fixed flange bearings | Product range

Fixed flange bearings with 2 mounting holes: EFOM



Order key

Type				Size	
E	F	O	M	-04	

E series | Fixed flange bearing | 2 holes | 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 1190**
Spherical ball: **iglidur® W300 ▶ Page 175**
Combination with xiros® ball bearings **▶ Page 1089**

Imperial dimensions available
▶ Page 1158

Dimensions [mm]

Part No.	d1	dB	h	L	m	A1	Ag	d2	x2	Max. pivot angle
	E10		Length	Width	Hole pitch	Height of plate	Total height	Elongated hole		
					±0.1	+1.0				
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

igubal® fixed flange bearings | Product range

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	Weight
	Short-term	Long-term	Short-term	Long-term	Holes	
	[N]	[N]	[N]	[N]	[Nm]	[g]
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

J4VEM: Clearance-free, pre-loaded

JEM: low moisture absorption

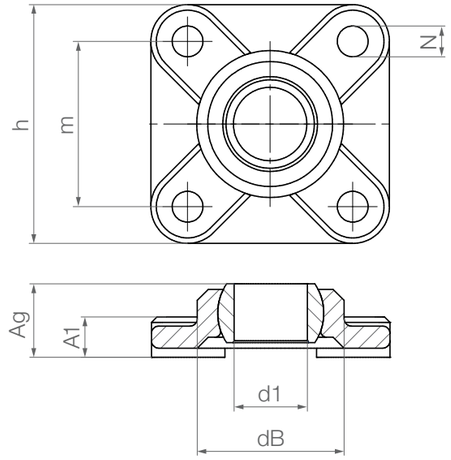
REM: Low-cost

J4EM: Low-cost and low moisture absorption

igubal® fixed flange bearings

igubal® fixed flange bearings | Product range

Fixed flange bearings with 4 mounting holes: EFSM



Order key

Type				Size	
E	F	S	M	-04	
E series	Fixed flange bearing	4 holes	Metric	Inner Ø [mm]	Spherical ball material

Spherical ball material
Blank : iglidur® W300
J4V : iglidur® J4V
R : iglidur® R
J : iglidur® J
J4 : iglidur® J4

Material:
Housing: **igumid® G ▶ Page 1190**
Spherical ball: **iglidur® W300 ▶ Page 175**
Combination with xiros® ball bearings **▶ Page 1088**

Imperial dimensions available
▶ Page 1159

Dimensions [mm]

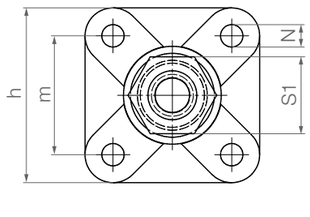
Part No.	d1	dB	h	m	A1	Ag	N	Max.
	E10		Width	Hole pitch	Height of plate	Total height	Hole Ø	pivot angle
				±0.1				
EFSM-04	4	14.0	25	17	4.5	8.5	3.2	28°
EFSM-05	5	14.0	25	17	4.5	8.5	3.2	29°
EFSM-06	6	14.0	25	17	4.5	8.5	3.2	25°
EFSM-08	8	18.0	33	22	5.5	10.5	4.3	25°
EFSM-10	10	21.9	38	26	6.5	12.0	5.3	25°
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°

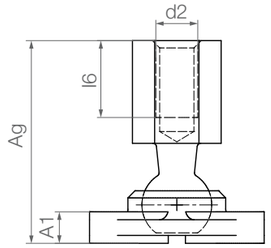
Standard tolerances:
from 0.5 to 6mm: ±0.1mm
from 6 to 30mm: ±0.2mm
from 30 to 120mm: ±0.3mm

igubal® fixed flange bearings | Product range

Complete housing with ball stud, female thread: GFSM-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
GF	S	M	06	IG

Options:

Ball stud

Blank : Galvanised steel

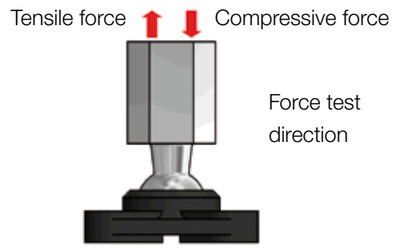
ES : Made of stainless steel[28)]

Material:

Housing: **igumid® G ▶ Page 1190**

Ball stud: galvanised and stainless steel[28)]

▶ Accessories, **page 1013**



Technical data

Part No.	Max. static tensile strain		Max. static compressive force		Weight
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
GFSM-06-IG	150	75	350	175	16.4
GFSM-08-IG	250	125	750	375	34.0
GFSM-10-IG	140	70	1,200	600	61.1

Dimensions [mm]

Part No.	d2	m	h	Ag	A1	l6	N	S1	Max. pivot angle
GFSM-06-IG	M6	17	25	29.0	4.5	11	3.2	SW11	32°
GFSM-08-IG	M8	22	33	36.0	5.5	12	4.3	SW14	40°
GFSM-10-IG	M10	26	38	43.5	6.5	16	5.3	SW17	34°

[28)] Stainless steel ball stud upon request

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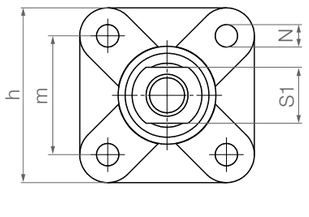
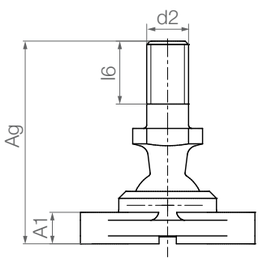
igubal® fixed flange bearings | Product range

Complete housing with ball stud, male thread: GFSM-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
GF	S	M	06	AG

Options:

Ball stud[19)]

Blank : Galvanised steel

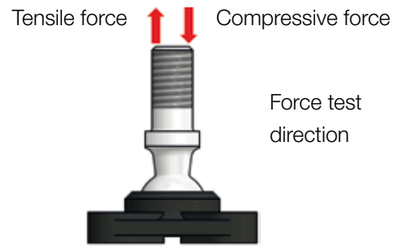
PZ : Made of plastic

ES : Made of stainless steel[28)]

Material:

Housing: **igumid® G ▶ Page 1190**

Ball studs: plastic, galvanised steel and stainless steel[28)] ▶ Accessories, **page 1014**



Technical data

Part No.	Max. static tensile strain		Max. static compressive force		Weight
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
GFSM-06-AG	150	75	350	175	10.6
GFSM-08-AG	250	125	750	375	23.1
GFSM-10-AG	140	70	1,200	600	41.2

Dimensions [mm]

Part No.	d2	m	h	Ag	A1	l6	N	S1	Max. pivot angle
GFSM-06-AG	M6	17	25	29.0	4.5	10.5	3.2	SW8	32°
GFSM-08-AG	M8	22	33	36.0	5.5	13.5	4.3	SW11	34°
GFSM-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

[28)] Stainless steel ball stud upon request

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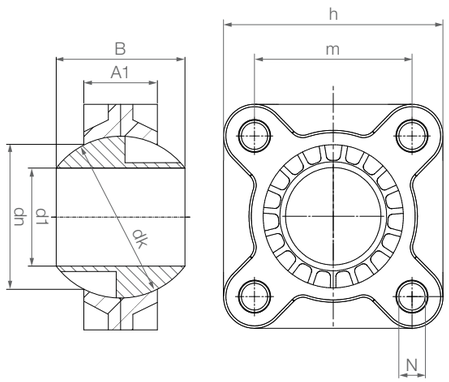
igubal® fixed flange bearings | Product range

Fixed flange bearings with 4 mounting holes and split housing: KFSM-GT

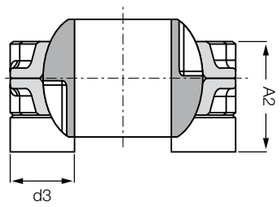
- Pre-assembled
- Option with push-in feet
- Resistant to dirt
- Lightweight
- Low installation space
- For high static loads
- High rigidity and durability
- Predictable service life
- Maintenance-free dry operation
- Mounting: with push-in feet M10, without push-in feet M12



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 1192**
Spherical ball: **iglidur® J** ▶ **Page 163**



Example: KFSM-GT-40-A

Technical data

Part No.	Max. permissible radial load		Max. permissible axial load		Weight
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
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	dn	d3	dk	A1	A2	B	m	h	N	Max.
	E10										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

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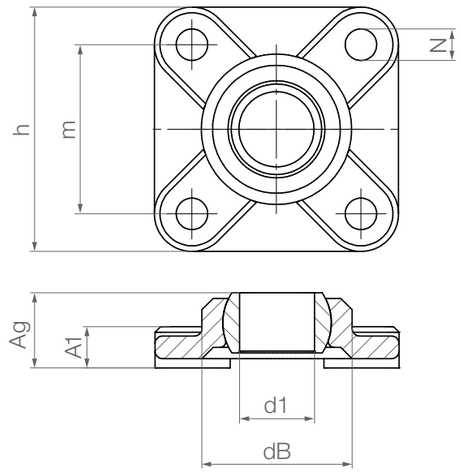
igubal® fixed flange bearings | Product range

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 1191**
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 1170**)
- 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	Holes	
	[N]	[N]	[N]	[N]	[Nm]	[g]
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	dB	h	m	A1	Ag	N	Max.
	E10		Width	Hole pitch ±0.1	Height of plate	Total height	Bore d	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

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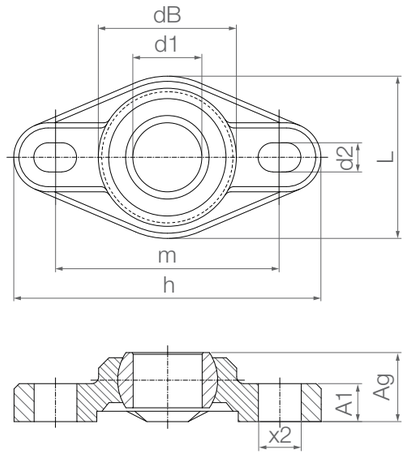
igubal® fixed flange bearings | Product range

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 1191**
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 1170**)
- 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	Holes	
	[N]	[N]	[N]	[N]	[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]

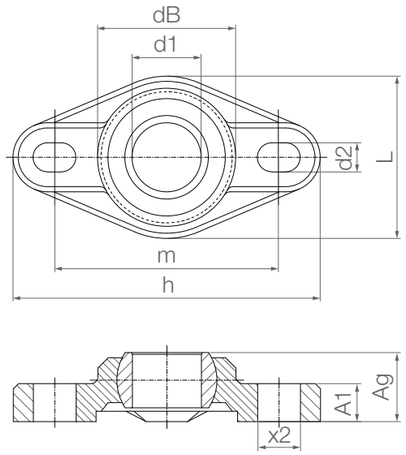
Part No.	d1	dB	h	L	m	A1	Ag	d2	x2	Max. pivot angle
	E10		Length	Width	Hole pitch ±0.1	Height of plate	Total height	Elongated hole		
EFOM-05-HT	5	14	33.8	16	24	4.5	8.5	3.2	5.0	29°
EFOM-06-HT	6	14	33.8	16	24	4.5	8.5	3.2	5.5	27°
EFOM-08-HT	8	18	44.2	22	31	5.5	10.5	4.3	6.5	24°
EFOM-10-HT	10	22	52.0	26	36	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

igubal® fixed flange bearings

igubal® fixed flange bearings | Product range

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 1191**
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	Short-term	Holes	
		[N]	[N]	[N]	[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

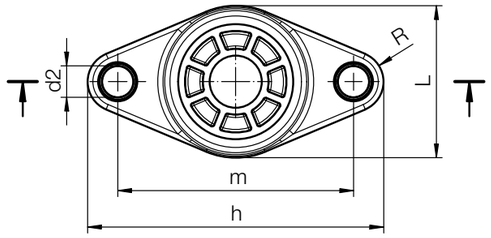
Dimensions [mm]

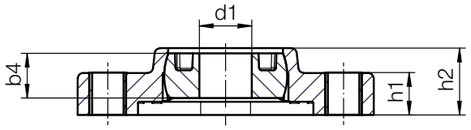
Part No.		d1	dB	h	L	m	A1	Ag	d2	x2	Max. pivot angle
		E10		Length	Width	Hole pitch ±0.1	Height of plate	Total height	Elongated hole		
EFOM-08-FC	New	8	18.0	44.2	22.0	31.0	5.5	10.5	4.3	6.5	25°
EFOM-10-FC	New	10	22.0	52.0	26.0	36.0	6.5	12.0	5.3	8.0	25°
EFOM-20-FC		20	40.0	89.0	47.0	65.0	11.0	20.0	8.4	12.5	19°

Other dimensions available upon request

igubal® fixed flange bearings | Product range New

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 1190**
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
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
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

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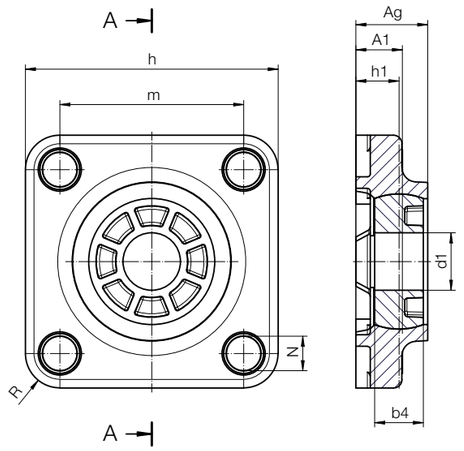
igubal® fixed flange bearings

igubal® fixed flange bearings | Product range New

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 1190**
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
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
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

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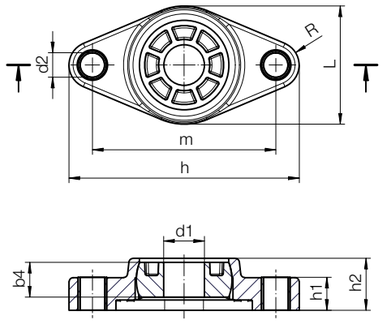
igubal® fixed flange bearings | Product range New

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 1190**
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
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
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

SRM-ES:
Steel fixing collar
(galvanised)

SRM-KS:
Polymer fixing
collar

Can be combined with accessories ▶ Page 1016

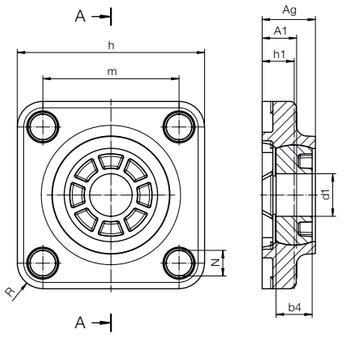
EC-208/EC-208-CLEAR:
End caps for fixed flange bearings
with spherical insert bearings

igubal® fixed flange bearings

igubal® fixed flange bearings | Product range New

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 1190**
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
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
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

SRM-ES:
Steel fixing collar
(galvanised)

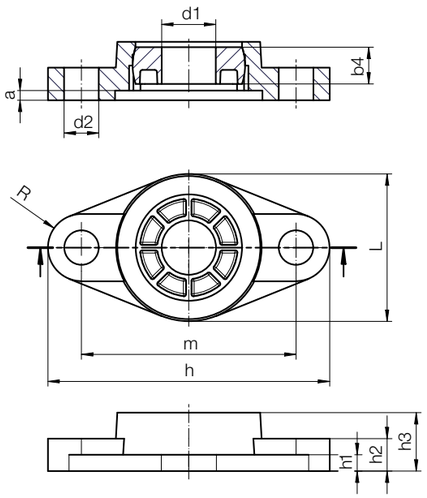
SRM-KS:
Polymer fixing
collar

Can be combined with accessories ▶ Page 1016

EC-208/EC-208-CLEAR:
End caps for fixed flange bearings
with spherical insert bearings

igubal® fixed flange bearings | Product range New

Fixed flange bearings with 2 mounting holes, cast iron housing: FL-JEM-SP



Order key

Type	Size	Version
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

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

SRM-ES:
Steel fixing collar (galvanised)

SRM-KS:
Polymer fixing collar

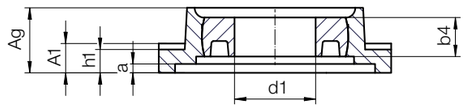
Can be combined with accessories ▶ Page 1016

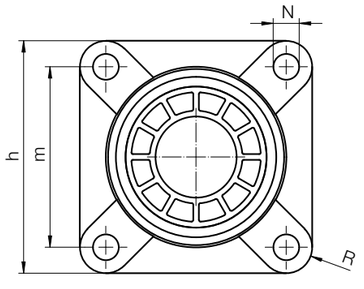
EC-208/EC-208-CLEAR:
End caps for fixed flange bearings with spherical insert bearings

igubal® fixed flange bearings

igubal® fixed flange bearings | Product range New

Fixed flange bearings with 4 mounting holes, cast iron housing: F-JEM-SP





Order key

Type	Size	Version
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

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

SRM-ES:
Steel fixing collar (galvanised)

SRM-KS:
Polymer fixing collar

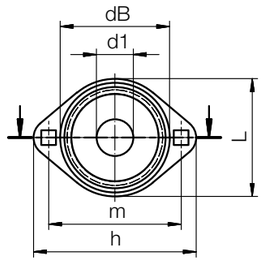
Can be combined with accessories ▶ Page 1016

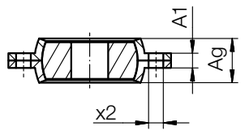
EC-208/EC-208-CLEAR:
End caps for fixed flange bearings with spherical insert bearings

igubal® fixed flange bearings | Product range

Fixed flange bearings with cost-effective metallic housing: PFL-JEM-SP

- Cost-effective spherical ball material iglidur® J4 available (order example: PFL204-J4EM-20-14-SP)
- Lubrication and maintenance-free
- Cost-effective
- Resistant to dirt





Order key

Type	Size	Version

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)**

Technical data

Part No.	Max. permissible axial load		Max. permissible radial load		Weight
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
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	h	L	m	A1	Ag	x2
	E10				+0.1		
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

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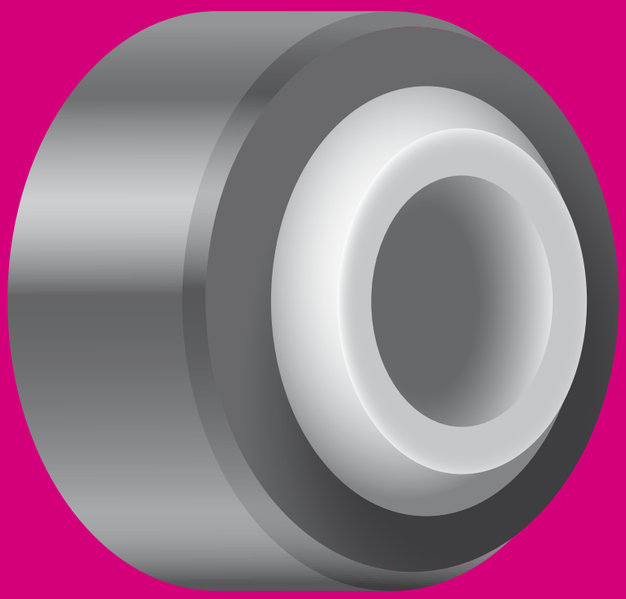

igubal® spherical bearings

- Easy to fit
- Cost-effective
- Chemical resistance
- Lightweight
- Very robust

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igubal® spherical bearings

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 1160

Online product finder
▶ www.igus.eu/igubal-finder

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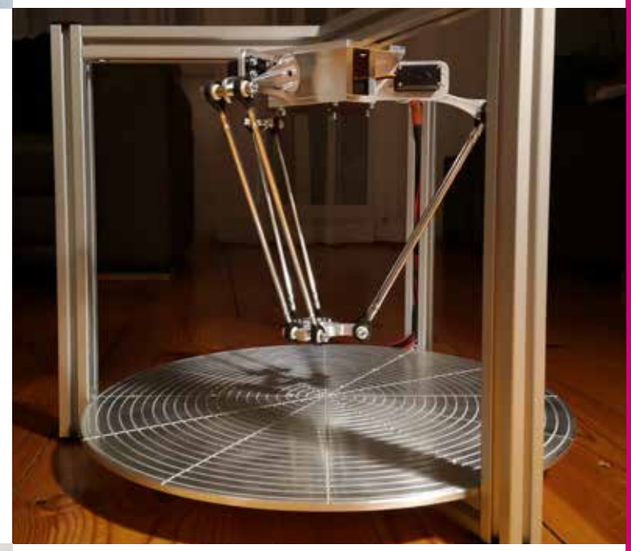
igubal® spherical bearings | Application examples

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 (KDGM-06-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.

igubal® spherical bearings | Technical data

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.

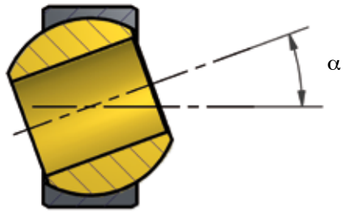
Assembly

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 | Product overview

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

Space-saving

E series

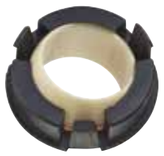
▶ Page 972

Suitable for food contact

E series

▶ Page 973

igubal® self-aligning clip bearings



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

▶ Page 977

igubal® double joints and coupling joints

Robust plastic, selectable spherical ball material

E series

▶ Page 978

Selectable materials, individual dimensions and alignment

▶ 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

New

Crimped coupling joints, particularly resistant to dirt

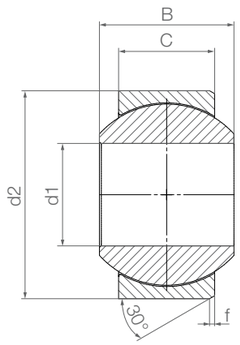
▶ Page 985

Crimped coupling joints with clevis joints

▶ Page 986

igubal® spherical bearings | Product range

Spherical bearings: KGLM low-cost



- Successor model of KGLM
- Variety of spherical ball materials
- Easy installation
- Cost-effective
- Split housing

Order key

Type	Size	Version
K GLM-	05	-LC

K series | Spherical bearings | Metric | Inner Ø [mm] | Low-cost

Spherical ball material
Blank : igilidur® W300
J4V : igilidur® J4V
J : igilidur® J
R : igilidur® R
J4 : igilidur® J4

Material:
Housing: **igumid® G ▶ Page 1190**
Spherical ball: **iglidur® W300 ▶ Page 175**
Other spherical ball materials upon request
▶ Page 993

Technical data

Part No.	Max. static load on the housing radial [N]	axial[29] [N]	Max. tightening torque through ball [Nm]	Weight [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]

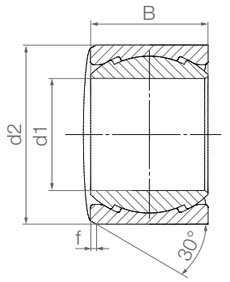
Part No.	d1 E10	d2[30]	B	C	f	Max. pivot angle
KGLM-03-LC	3	10	6	4.5	0.5	32°
KGLM-05-LC	5	13	8	6.0	0.8	30°
KGLM-08-LC	8	19	12	9.0	0.8	29°
KGLM-10-LC	10	22	14	10.5	0.8	25°
KGLM-12-LC	12	26	16	12.0	0.8	25°
KGLM-14-LC	14	28	19	13.5	0.8	23°
KGLM-16-LC	16	32	21	15.0	0.8	23°
KGLM-18-LC	18	35	23	16.5	0.8	23°
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

igubal® spherical bearings

igubal® spherical bearings | Product range

Spherical bearings: KGLM Slim Line



- Very small installation space
- Wall thickness halved compared to KGLM
- Angular compensation up to 5°
- Lightweight
- Dimensions according to DIN 1850

Order key

Type	Size	Version
K GLM-	08	-SL

K series | Spherical bearings | Metric | Inner Ø [mm] | Slim Line

Spherical ball material
Blank : igilidur® W300
J4V : igilidur® J4V
J : igilidur® J
R : igilidur® R
J4 : igilidur® J4

Material:
Housing: **iglidur® RN33 ▶ Page 1192**
Spherical ball: **iglidur® W300 ▶ Page 175**

Imperial dimensions available
▶ Page 1161

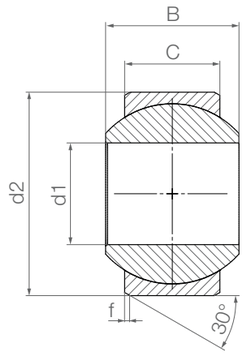
Online service life calculation
▶ www.igus.eu/igubal-expert

Technical data and dimensions [mm]

Part No.	Max static load (short-term) radial [N]	axial [N]	Max. static load (long-term) radial [N]	axial [N]	d1 E10	d2	B	f	Weight [g]	Max. pivot angle
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°

igubal® spherical bearings | Product range

Spherical bearings: KGLM



- 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

Order key

Type	Size
K GLM -	02

K series | Spherical bearings | Metric | Inner Ø [mm]

Material:
Housing: **igumid® G ▶ Page 1190**
Spherical ball: **iglidur® W300 ▶ Page 175**

Imperial dimensions available
▶ Page 1160

Online service life calculation
▶ www.igus.eu/igubal-expert

Technical data and dimensions [mm]

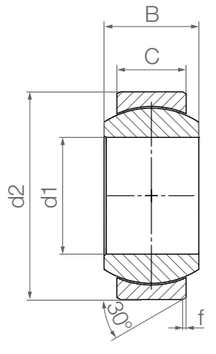
Part No.	Max. static load on the housing		Max. tightening torque through ball	d1 E10	d2	B	C	f	Weight	Max. pivot angle
	radial [N]	axial[29] [N]	[Nm]						[g]	
KGLM-02	300	60	1	2	8	4	3.0	0.8	0.1	32°
KGLM-03	550	200	2	3	10	6	4.5	0.8	0.5	32°
KGLM-05	1,300	500	5	5	13	8	6.0	0.8	1.0	30°
KGLM-06	1,800	650	10	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

igubal® spherical bearings

igubal® spherical bearings | Product range

Spherical bearings: EGLM Low-cost



- Successor model of EGLM
- Easy to fit
- Cost-effective
- Chemical and corrosion-resistant
- Very robust
- Compensation of misalignment errors

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

Material:
Housing: **igumid® G ▶ Page 1190**
Spherical ball: **iglidur® W300 ▶ Page 175**

Online service life calculation
▶ www.igus.eu/igubal-expert

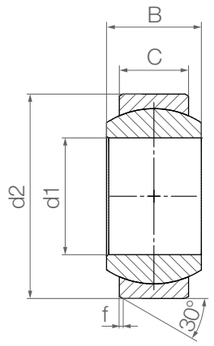
Technical data and dimensions [mm]

Part No.	Max. static load on the housing		Max. tightening torque through ball	d1 E10	d2	B	C	f	Weight	Max. pivot angle
	radial [N]	axial[29] [N]	[Nm]						[g]	
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

igubal® spherical bearings | Product range

Spherical bearings: EGLM



- Predecessor model of EGLM-LC
- Compensation of misalignment and edge loads
- Corrosion-resistant
- Vibration-dampening
- Excellent vibration dampening
- Suitable for rotating, oscillating and linear movements

Order key

Type	Size
E GLM	-04

E series | Spherical bearings | Metric | Inner Ø [mm]

Material:
Housing: **igumid® G ▶ Page 1190**
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

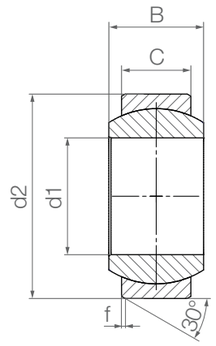
Technical data and dimensions [mm]

Part No.	Max. static load on the housing radial [N]	Max. static load on the housing axial[29] [N]	Max. tightening torque through ball [Nm]	d1 E10	d2	B	C	f	Weight [g]	Max. pivot angle
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

igubal® clip bearings | Product range New

Spherical bearings: EGLM-FC



- 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

Order key

Type	Size	Version
E GLM	- 08	- FC

E series | Spherical bearings | Metric | Inner Ø [mm] | Suitable for food contact

Material:
Housing: **igumid® FC ▶ Page 1191**
Spherical ball: **iglidur® A181 ▶ Page 401**
Other spherical ball materials upon request
▶ Page 993

Online service life calculation
▶ www.igus.eu/igubal-expert

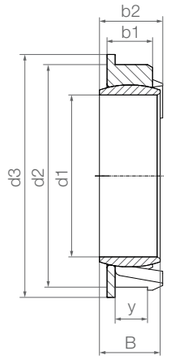
Technical data and dimensions [mm]

Part No.		Max. static load on the housing radial [N]	Max. static load on the housing axial[29] [N]	Max. tightening torque through ball [Nm]	d1 E10	d2	B	C	f	Weight [g]	Max. pivot angle
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-LC-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

igubal® clip bearings | Product range

Clip bearings: ECLM



Order key

Type	Size
E CLM - 05 - 02	

E series	Clip bearing	Metric	Inner Ø [mm]	Metal sheet thickness

- Very easy installation by clipping into sheet metal
- No additional locating spigot necessary
- Extremely small installation space: space-saving, thin-walled design

Material:
Housing: **igumid® G ▶ Page 1190**
Spherical ball: **iglidur® J ▶ Page 163**

Online service life calculation
▶ www.igus.eu/igubal-expert

Technical data

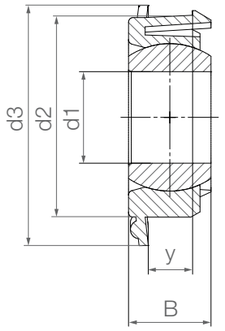
Part No.	Max. static compressive force (short-term)		Max. static compressive force (long-term)		Weight
	radial	axial	radial	axial	
	[N]	[N]	[N]	[N]	[g]
ECLM-05-02	700	25	350	12.5	0.5
ECLM-06-02	700	25	350	12.5	0.5
ECLM-08-02	1,000	25	500	12.5	0.5
ECLM-10-03	1,400	30	700	15.0	0.8
ECLM-12-03	1,800	35	900	17.5	0.8
ECLM-16-03	2,800	40	1,400	20.0	1.1

Dimensions [mm]

Part No.	d1 E10	B	d2 ±0.2	d3	y Sheet metal thickness	b1 ±0.1	b2	Max. pivot angle
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°

igubal® clip bearings | Product range

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

- 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

Material:
Housing: **igumid® G ▶ Page 1190**
Spherical ball: **iglidur® W300 ▶ Page 175**

Technical data

Part No.	Max. static compressive force (short-term)		Max. static compressive force (long-term)		Weight
	radial	axial	radial	axial	
	[N]	[N]	[N]	[N]	[g]
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 E10	B	d2 ±0.15	d3	y ±0.1	Max. pivot angle
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

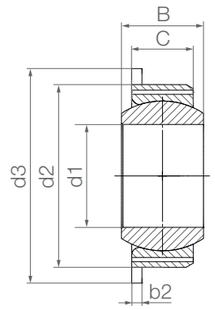

JEM: low moisture absorption


J4EM: low-cost and low moisture absorption


J4VEM: clearance-free pre-loaded spherical ball

igubal® clip bearings | Product range

Clip bearings: EGFM-...T



- Maintenance-free dry operation
- Easy installation
- Max. tolerance compensation ±0.2 mm

Order key

Type			Size	Version
E	GF	M-	08	-T

E series | Clip bearing with flange | Metric | Inner Ø d1 [mm] | Tolerance compensation

Spherical ball material
- Blank : iglidur® W300
- R : iglidur® R
- J : iglidur® J
- J4 : iglidur® J4
- J4V : iglidur® J4V

Material:
Housing: **igumid® G ▶ Page 1190**
Spherical ball: **iglidur® W300 ▶ Page 175**

Technical data

Part No.	Max. stat. compressive force (short-term)		Max. stat. compressive force (long-term)		Weight
	radial	axial	radial	axial	
	[N]	[N]	[N]	[N]	[g]
EGFM-08-T-SL[31]	1,100	150	550	75	0.9
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

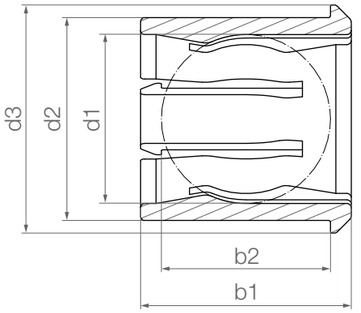
Dimensions [mm]

Part No.	d1	d2		d3	C	B	b2	Housing		Max.
	E10	Min.	max.					min.	max.	pivot angle
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

igubal® clip bearings | Product range

Ball stud clip bearings: ZCLM



- 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 steel[28]

▶ Accessories, **page 1013**

Order key

Type			Size		Options
Z	CLM-	06	-	10	-MS

Can be assembled on both sides | Clip bearings | Metric | Ball stud M6 [mm] | Metal sheet thickness [mm]

Ball stud[19]
- MS : Made of galvanised steel
- ES : Made of stainless steel[28]
- Blank : without ball stud

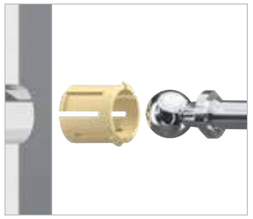
Material:
Clip bearing: **iglidur® J ▶ Page 163**

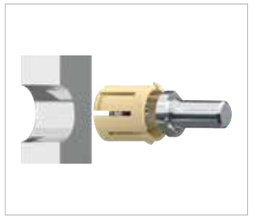
Technical data and dimensions [mm]

Part No.	Max. static axial load		d1	d2	d3	b1	b2	Weight
	Short-term	Long-term						
	[N]	[N]						[g]
ZCLM-06-10-MS	70	35	10	12	13.5	12.5	10	0.6

[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

igubal® double joints | Product range

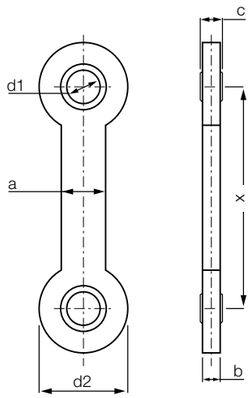
igubal® double joints

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

Material:
Housing: **igumid® G ▶ Page 1190**
Spherical ball: **iglidur® W300 ▶ Page 175**

Double joints: EGZM



Order key

Type			Size		
E	GZM	-	04	-	25

E series | Double joints | Metric | Inner Ø d1 [mm] | Pitch X [mm]

Spherical ball material
Blank : iglidur® W300
R : iglidur® R
J : iglidur® J
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
	Tensile force [N]	Compressive force [N]	Tensile force [N]	Compressive force [N]		[g]
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 E10	d2	X	b	a	c
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

REM:
Low-cost

JEM:
low moisture absorption

J4EM:
low-cost and low moisture absorption

J4VEM:
clearance-free pre-loaded spherical ball

igubal® double joints | Product range

igubal® double joints

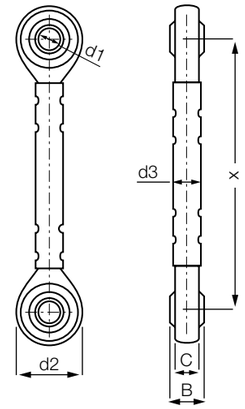
Variable double joints: KDGM

Version A Version B

- Ball diameters 5, 6, 8, 10 and 12mm
- Individual centre distance
- Individual alignment of the bearing position

Material:
Housing: **igumid® G ▶ Page 1190**
Spherical ball: **Variable ▶ Page 993**
Tube: **Galvanised or stainless steel**

Variable double joints: KDGM



Order key

Type	Size	Options
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:

Tube material
ER : Stainless steel (AISI 303)
SR : Galvanised steel

Spherical ball material
Blank : iglidur® W300
J : iglidur® J
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 [N]	Long-term [N]	Short-term [N]	Long-term [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

igubal® coupling joints | Product range

igubal® double joints

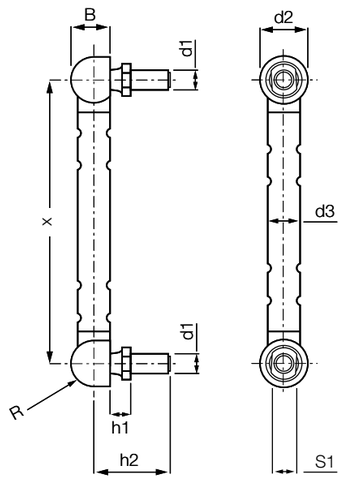
Variable coupling joints: WDGM

Version A Version B Version C Version D

- Socket cup M5, M6, M8 and M10
- Individual centre distance
- Individual alignment of the bearing position

Material:
Housing: **igumid® G ▶ Page 1190**
Ball stud: **Plastic, galvanised or stainless steel[28)]**
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)

Ball stud material
SZ : Galvanised steel
EZ : Stainless steel[28)]
PZ : igumid® G

Technical data

Part No.	Max. static tensile strain		Max. static compressive force[190)]		Max. pivot angle
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	
WDGM-05-A-SR-SZ ☐[32)]	800	400	1,250	625	23°
WDGM-06-A-ER-SZ[145)] ☐[32)]	1,700	850	2,400	1,200	25°
WDGM-08-A-SR-SZ ☐[32)]	950	475	3,200	1,600	24°
WDGM-10-A-SR-SZ ☐[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 min.	B	h1	h2	S1 Width across flats	R
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

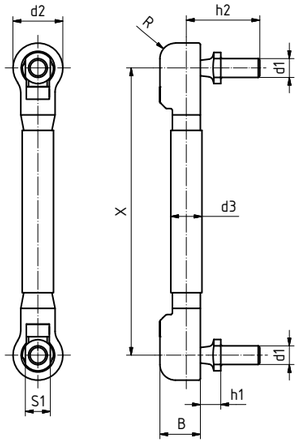

GZRM-MS /GZRM-ES

igubal® double joints | Product range

Variable coupling joints, removable: WDGM-DE

Version A Version B Version C Version D

- Socket cup M6
- Individual centre distance
- Individual alignment of the bearing position
- Easy assembly and disassembly
- High holding forces when assembled



Order key

Type	Size	Options
WDGM -	06 -	A -ER-SZ-DE

Angle	Coupling joint	Metric	Ball stud thread [mm]	Ball stud direction (A, B, C or D)	Tube material	Ball stud material	Disassembly

Options:

Tube material
ER : Stainless steel (AISI 303)

Ball stud material
SZ : Galvanised steel
EZ : Stainless steel[28)]
PZ : igumid® G

Material:
Housing: **igumid® G ▶ Page 1190**
Ball stud: **Plastic, galvanised or stainless steel[28)]**
Tube: **Stainless steel**

Dimensions [mm]

Part No.	d1	d2	d3	X min.	B	h1	h2	S1 Width across flats	R	Max. pivot angle
WDGM-06-A-ER-SZ-DE ☐ [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:


GZRM-IG


GZRM

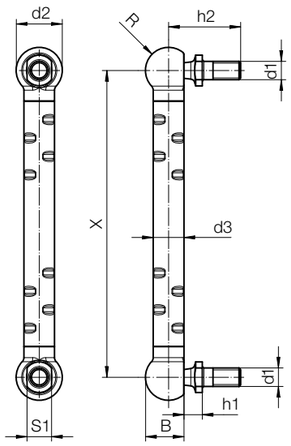

GZRM-MS /GZRM-ES

igubal® coupling joints | Product range New

Variable coupling joints, for very dirty environments: WDGM-FX

Version A Version B Version C Version D

- 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



Order key

Type	Size	Options
WDGM -	06 -	A -ER-SZ-FX

Angle	Coupling joint	Metric	Ball stud thread [mm]	Ball stud direction (A, B, C or D)	Tube material	Ball stud material	End piece

Options:

Tube material
ER : Stainless steel (AISI 303)

Ball stud material
SZ : Galvanised steel
EZ : Stainless steel[28)]
PZ : igumid® G

Material:
Ball stud: **Plastic, galvanised or stainless steel[28)]**
Tube: **Stainless steel**

Dimensions [mm]

Part No.		d1	d2	d3	X min.	B	h1	h2	S1 Width across flats	R	Max. pivot angle
WDGM-05-A-ER-SZ-FX ☐ [32)]	New	M5	13	10	70	11.5	4	19.2	SW7	6.5	13°
WDGM-06-A-ER-SZ-FX ☐ [32)]	New	M6	15	10	70	12.5	6	23.5	SW8	7.5	13°
WDGM-08-A-ER-SZ-FX ☐ [32)]	New	M8	18	12	82	15.0	7	29.5	SW11	9.0	13°
WDGM-10-A-ER-SZ-FX ☐ [32)]	New	M10	18	12	82	15.0	7	29.5	SW11	9.0	13°

Technical data

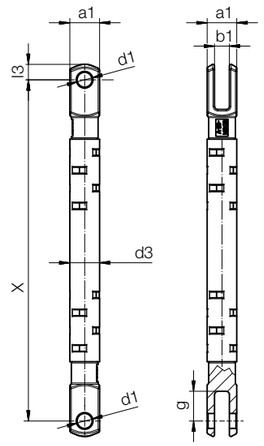
Part No.		Max. static tensile strain		Max. static compressive force[190)]	
		Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]
WDGM-05-A-ER-SZ-FX ☐ [32)]	New	80	40	460	230
WDGM-06-A-ER-SZ-FX ☐ [32)]	New	100	50	500	250

[32)] Please add the required centre distance in mm
[190)] The values refer to a length of 200mm

igubal® coupling joints | Product range

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



Order key

Type			Size	Options			
G	DG	M-	05	-V	-ER	-	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 1190**
Tube: **Stainless steel (AISI 303)**

Dimensions [mm]

Part No.	d1	d3	X	a1	a2	b1	g	l3	Max. static tensile strain	
				+0.3	+0.3	+0.3			Short-term	Long-term
	+0.1		min.	-0.16	-0.16	+0.1	±0.3	+0.3	[N]	[N]
GDGM-05-V-ER-☐	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

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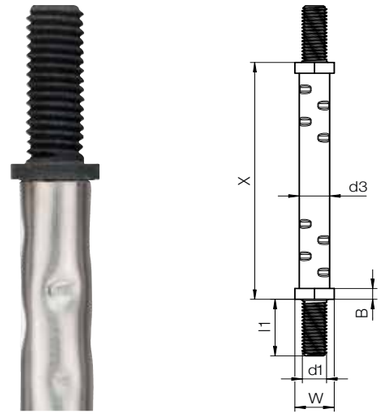
igubal® threaded inserts | Product range

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

Order key

Type			Size	Options			
T	DG	M-	06	-☐	-☐	-☐	
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

Dimensions [mm]

Part No.	d1	W	d3	X	B	l1
	+0.1			min.		
TDGM-06-☐-☐-☐	M6	10	8	56	3	18
TDGM-08-☐-ER-☐	M8	13	10	58	4	21
TDGM-10-☐-☐-☐	M10	15	12	62	6	24

Order example, TDGM-06-RL-ER-56: threaded inserts with M6 thread. Right-hand thread on one side, left-hand thread on the other side (adjustable). Stainless steel tube. Length X = 56mm.

Can be combined with:

KCR(L)M EBR(L)M GER(L)M WGR(L)M AGR(L)M

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Notes

igubal® - spherical thrust bearing

- Easy installation
- Compensation of misalignment errors
- Compensation of edge loads
- Very good friction and wear properties

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igubal® - spherical thrust bearing

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

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igubal® spherical thrust bearings | Technical data

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.

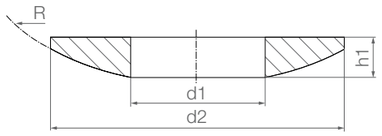
Assembly
The housing pad is installed so that it is countersunk and secured. The spherical washer is loosely fitted in the socket and is held in place by the shaft that is placed into the bearing.

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.

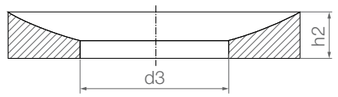
igubal® spherical thrust bearing | Product range

Spherical thrust bearings: SAM

Spherical washer



Housing pad



Order key

Type	Size
SA M	-05

Type | Metric | Inner Ø d1 [mm]

Material:
Spherical washer: **iglidur® W300** ▶ **Page 175**
Housing pad: **igumid® G** ▶ **Page 1190**

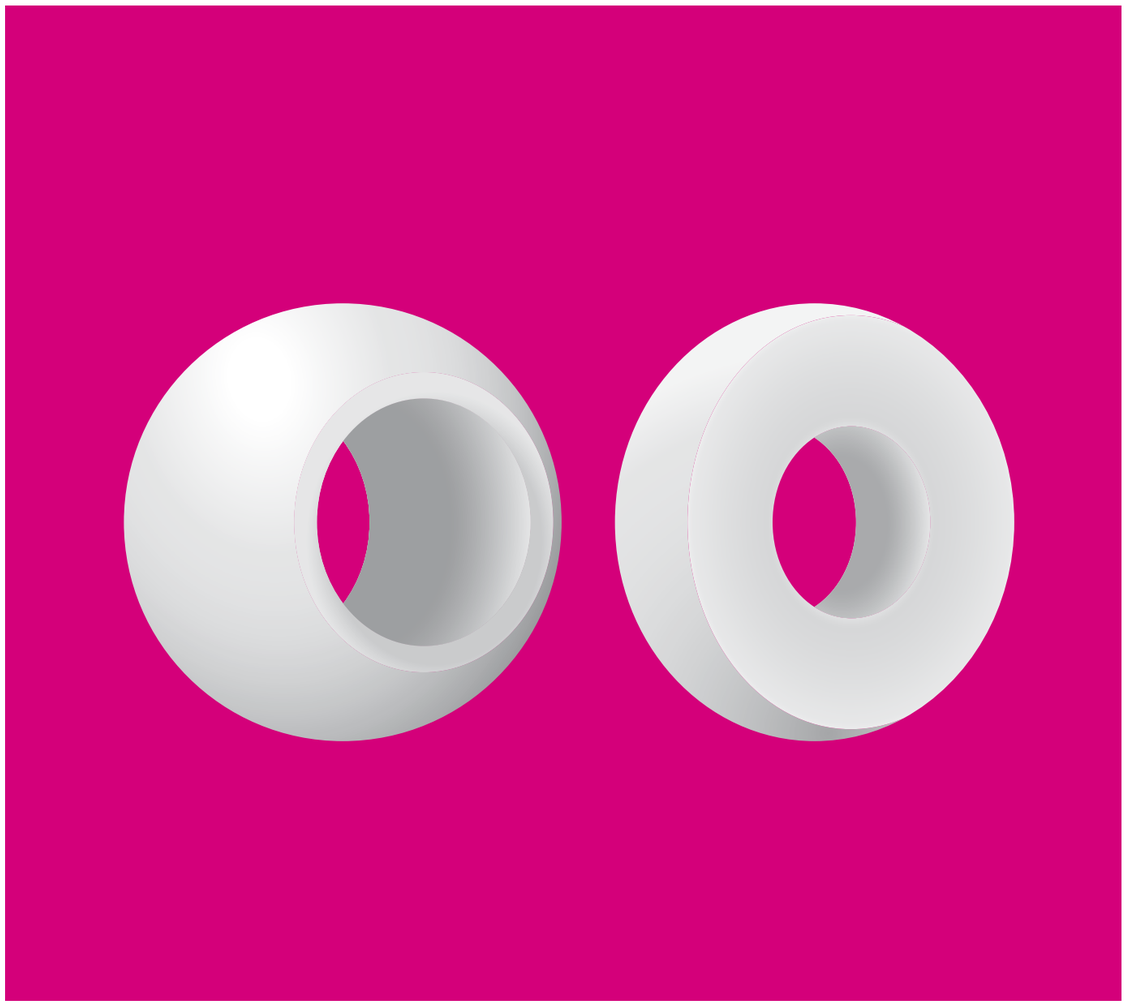
Technical data

Part No.	Max. static axial compressive strength Short-term [N]	Max. static axial compressive strength Long-term [N]	Weight [g]
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

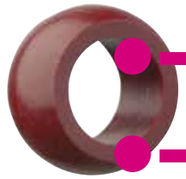
- Maintenance-free dry operation
- Corrosion-resistant
- High compressive strength
- High elasticity
- Lightweight
- Different materials
- Spherical ball for metallic bearing housings

EN 09/2023

igubal® spherical balls

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.

Maintenance-free, dry operation



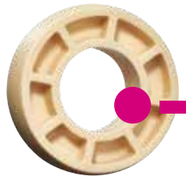
Corrosion-resistant

High compressive strength

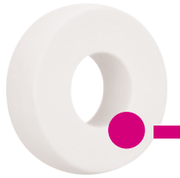
High elasticity

Lightweight

Different materials



For metallic bearing housings, low moisture absorption



For metallic bearing housings, FDA-compliant

For metallic bearing housings, FDA-compliant and high resistance to temperatures

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 1162

Online product finder
▶ www.igus.eu/igubal-finder

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igubal® spherical balls | Application examples

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.

igubal® spherical balls | Product overview

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 1186

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 1186

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
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FDA-compliant
UC series
▶ **Page 1009**

iglidur® J
▶ Page 163

Standard
UC series
▶ **Page 1009**

iglidur® J4
▶ Page 1186

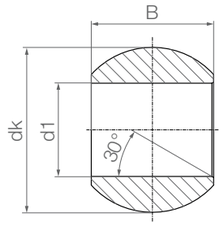
Low-cost
UC series
▶ **Page 1009**

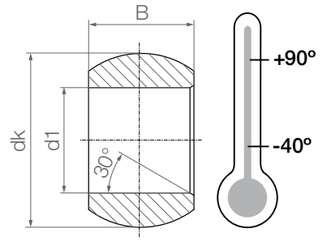
igus EN 09/2023

igubal® spherical balls

igubal® spherical balls | Product range

Spherical ball, standard: WKM and WEM





Order key

Type	Size	Options

W□M-02-04

- iglidur® W300 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 1163**

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

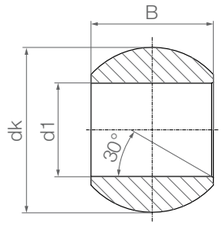
Dimensions [mm]

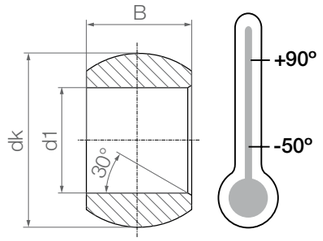
Part No.	d1 E10	dK	B	Weight [g]
WEM-04-05	4	8.30	5	0.2
WEM-05-06	5	10.30	6	0.3
WEM-06-06	6	10.30	6	0.4
WEM-08-08	8	13.30	8	0.7
WEM-10-09	10	16.10	9	1.2
WEM-12-10	12	18.10	10	1.5
WEM-15-12	15	22.00	12	2.4
WEM-16-13	16	24.10	13	3.3
WEM-17-14	17	25.10	14	3.7
WEM-20-16	20	29.10	16	5.3
WEM-25-20	25	35.60	20	9.5
WEM-30-22	30	40.90	22	12.1

EN 09/2023 igus

igubal® spherical balls | Product range

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 1162

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

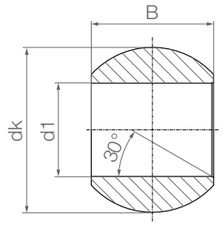
Dimensions [mm]

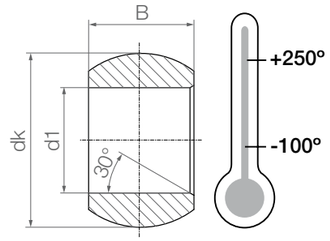
Part No.	d1 E10	dK	B	Weight [g]
REM-04-05	4	8.30	5	0.22
REM-05-06	5	10.20	6	0.40
REM-06-06	6	10.20	6	0.40
REM-08-08	8	13.20	8	0.80
REM-10-09	10	16.10	9	1.30
REM-12-10	12	18.10	10	1.60
REM-16-13	16	24.10	14	3.69
REM-20-16	20	29.10	16	5.94

igubal® spherical balls

igubal® spherical balls | Product range

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

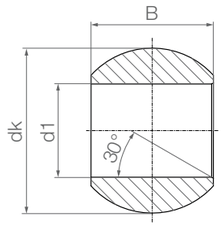
Dimensions [mm]

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

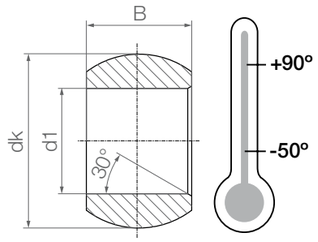
igubal® spherical balls | Product range

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 1163

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

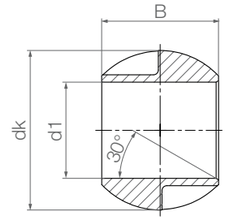
Dimensions [mm]

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

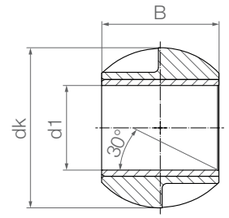
igubal® spherical balls | Product range

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]

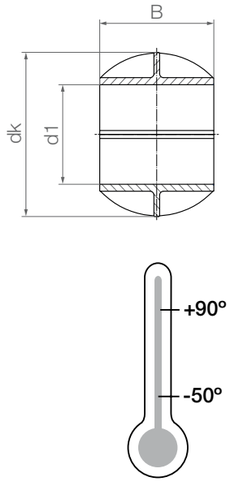
Dimensions [mm]

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

igubal® spherical balls | Product range

Low moisture absorption split spherical balls: JKM-GT



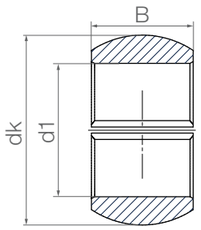
Order key

Type			Version	Size
J	K	M-	GT	-40
iglidur® J spherical balls	K series	Metric	Split ball	Inner Ø d1 [mm]

Dimensions [mm]

Part No.	d1	dK	B	Weight
	E10			[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

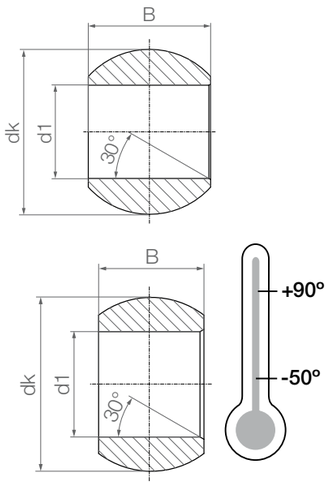
Type			Version	Size
J	E	M-	GT	-16
iglidur® J spherical balls	E series	Metric	Split ball	Inner Ø d1 [mm]

Dimensions [mm]

Part No.	d1	dK	B	Weight
	E10			[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

igubal® spherical balls | Product range

Spherical balls, cost-effective: J4KM and J4EM



Order key

Type		Size		Options
J4	□	M-	10-	14
iglidur® J4 spherical balls	Dimensional series	Metric	Inner Ø d1 [mm]	Width [mm]

Dimensional series
K : Dimensional K series
E : Dimensional E series

Dimensions [mm]

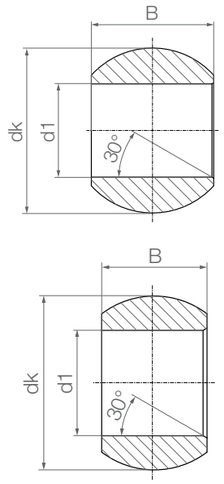
Part No.	d1	dK	B	Weight
	E10			[g]
J4KM-06-09	6	12.80	9	1.0
J4KM-08-12	8	15.90	12	1.9
J4KM-10-14	10	19.10	14	3.1
J4KM-12-16	12	22.10	16	4.7
J4KM-14-19	14	25.40	19	7.0
J4KM-16-21	16	28.40	21	9.4
J4KM-25-31	25	42.80	31	31.6

Dimensions [mm]

Part No.	d1	dK	B	Weight
	E10			[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

igubal® spherical balls | Product range

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

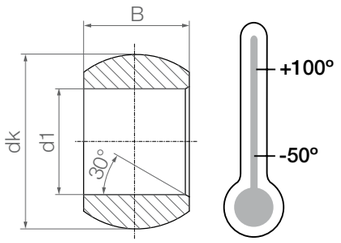
Dimensions [mm]

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

igubal® spherical balls

igubal® spherical balls | Product range

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]

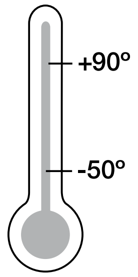
Width [mm]

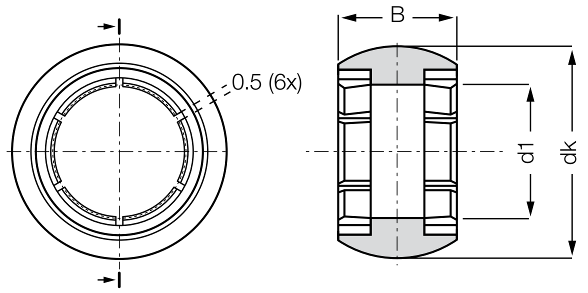
Dimensions [mm]

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

igubal® spherical balls | Product range

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]

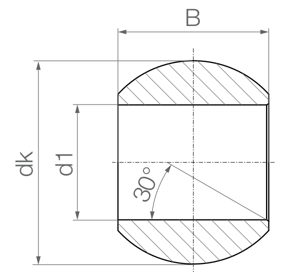
Part No.	d1 E10	dK	B	Weight [g]
J4VEM-08-08	8	13.20	8	0.7
J4VEM-10-09	10	16.10	9	1.2
J4VEM-12-10	12	18.10	10	1.5
J4VEM-16-13	16	24.10	13	3.7
J4VEM-20-16	20	29.10	16	6.2

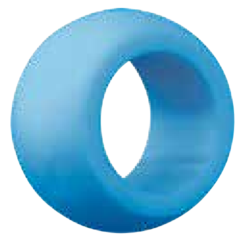
5 sizes available: Ø 8, 10, 12, 16, 20mm combinable with:

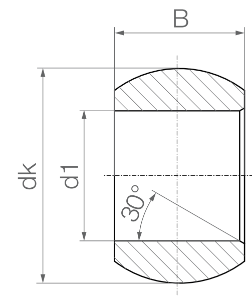
igubal® rod ends	EA(L)RM	▶ **Page 890**
igubal® rod ends	EB(L)RM	▶ **Page 888**
igubal® pillow block bearings	ESTM	▶ **Page 931**
igubal® fixed flange bearings	EFOM	▶ **Page 946**
igubal® fixed flange bearings	EFSM	▶ **Page 948**
igubal® clip bearings	EGFM-T	▶ **Page 976**
igubal® spherical bearing	EGLM	▶ **Page 972**
igubal® double joints	EGZM	▶ **Page 978**

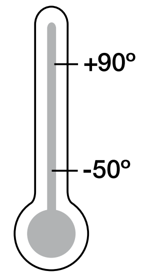
igubal® spherical balls | Product range New

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]

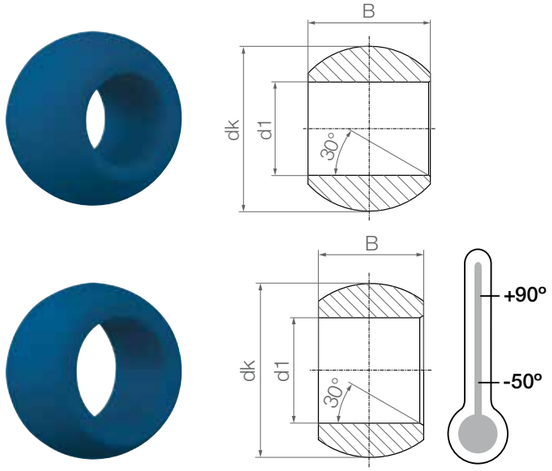
Part No.	d1 E10	dK	B	Weight [g]
A181KM-05-08 New	5	11.3	8	0.75
A181KM-06-09 New	6	12.8	9	0.97
A181KM-12-16 New	12	22.1	16	4.45

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

igubal® spherical balls | Product range New

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
- Metric
- Inner Ø d1 [mm]
- Width [mm]

Dimensional series
K : Dimensional K series
E : Dimensional E series

Dimensions [mm]

Part No.	d1	dK	B	Weight
	E10			[g]
FC180KM-06-09 New	6	12.8	9	1.26

Dimensions [mm]

Part No.	d1	dK	B	Weight
	E10			[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

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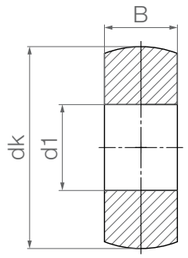
igubal® spherical insert bearings | Product range

Slim spherical insert bearings made of iglidur® materials for various metallic bearing housings

iglidur® J | iglidur® A180 | iglidur® A350 | iglidur® J3

- 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	dk	B	Max. static compressive force	
		E10			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

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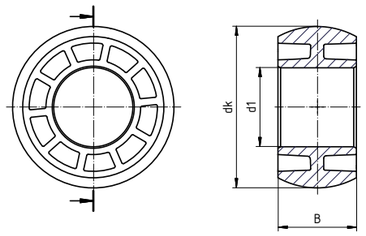
igubal® spherical insert bearings | Product range

Cost-effective spherical insert bearings for various metallic bearing housings

iglidur® J | iglidur® J4 | iglidur® A350 | iglidur® J3

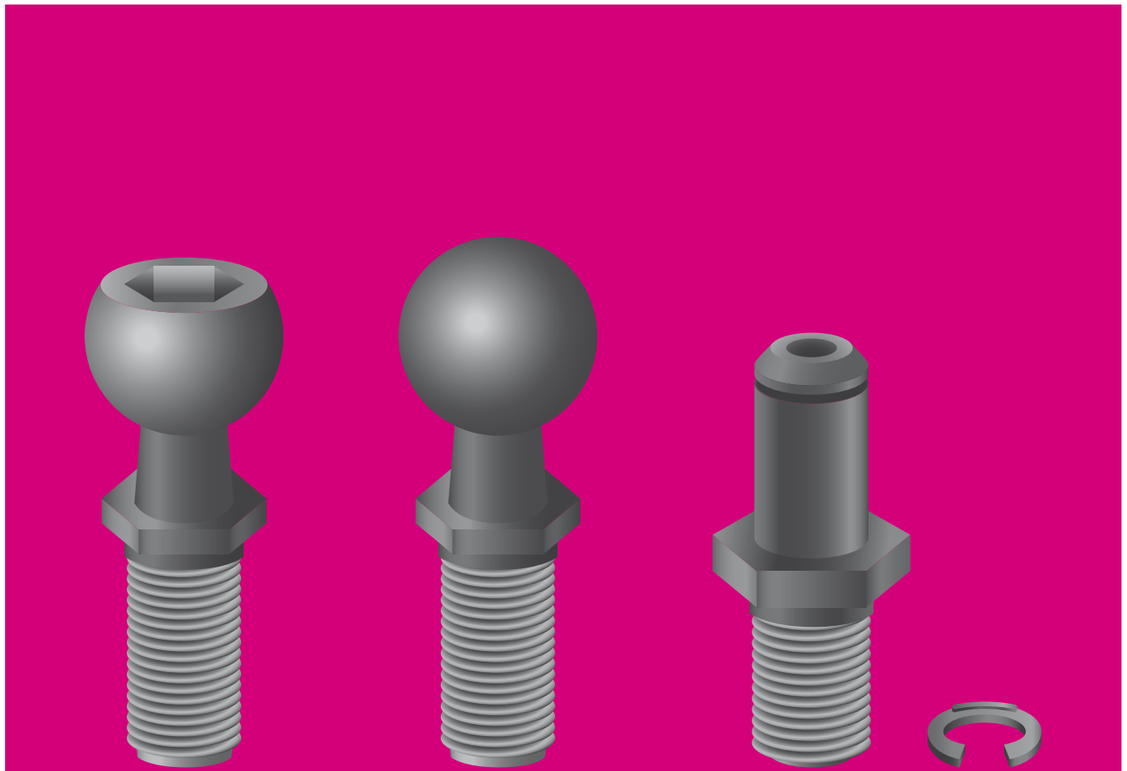
- Cost-effective due to injection moulding method
- Eight dimensions for housing numbers range includes UC203 to UC210
- Durable
- Low moisture absorption



inch Imperial dimensions available ▶ Page 1163

Dimensions [mm]

Part No.		Housing No.	d1	dk	B	Max. static compressive force			
			E10			radial		axial	
						Short-term	Long-term	Short-term	Long-term
						[N]	[N]	[N]	[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 1186)									
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

EN 09/2023

igubal® accessories | Product range

Fixing collar, galvanised steel with threaded pin

Fixing collar made of polymer

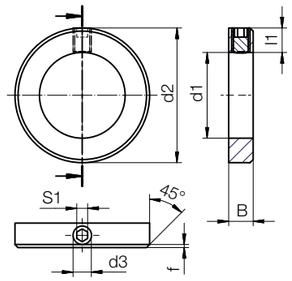
- Easy installation
- DIN 705 (lightweight series)
- Incl. DIN 914 threaded pin (Allen key)

Order key

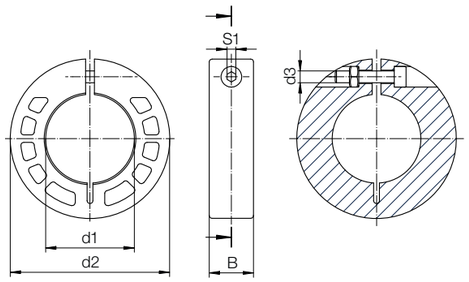
Type	Size	Version
SR M - S	20	- V - ES

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

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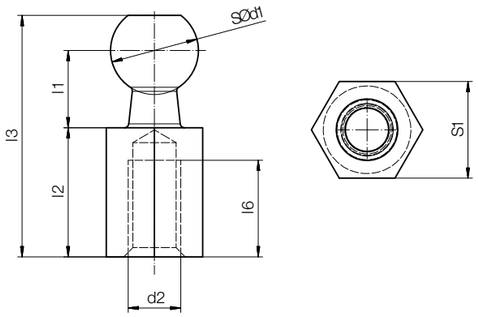
igubal® accessories

igubal® accessories | Product range

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[28)]

Material:
Galvanised and stainless steel (AISI 303)

Dimensions [mm]

Part No.	d1 -0.05	d2	l1	l2	l6	l3	S1	Weight [g]
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

[28)] **Stainless steel ball stud upon request**

Can be combined with:

WGR(L)M | WGR(L)M LC | WGR(L)M-DE | GFSM-IG | ZCLM-06-10 | WDGM | WDGM-DE

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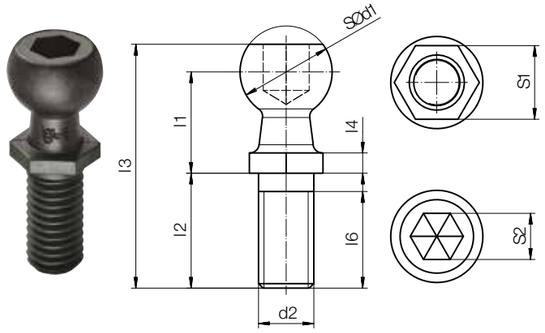
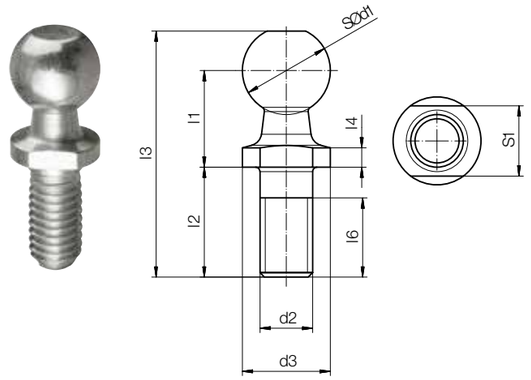
Ball studs with male thread





Order key

Type	Size
GZ R M-	05 - MS

Threaded pin | Thread direction | Metric | Thread size M... [mm]

Options:
Thread
R : Right-hand thread
L : Left-hand thread (upon request)

Add-on:
Blank : Plastic
MS : Galvanised steel
ES : Stainless steel (upon request)

Material:
Polymer: **igumid® G ▶ Page 1190**
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:


WGR(L)M


WGR(L)M LC


WGR(L)M-DE

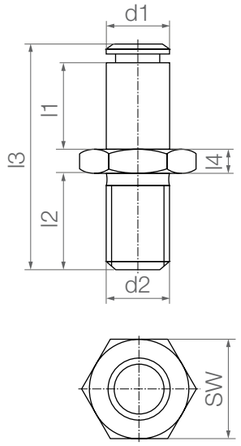

GFSM-IG


ZCLM-06-10


WDGM


WDGM-DE

Adapter screw



Order key

Type	Size	Options
P K □ M-	05	

Adapter screw | K series | Thread direction | Metric | Thread size M... [mm]

Thread
L : Left-hand thread[21]
R : Right-hand thread

Material:
POM ▶ Page 1192

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.

- Lightweight
- Absolute corrosion resistance
- Can be combined with K series rod end
- Vibration-dampening
- Easy installation
- Left-hand thread upon request
- Circlip (GSR) included

Technical data and dimensions [mm]

Part No.	Max. static tensile strain		Max. static radial load		d1	d2	l1	l2	l3	l4	SW	Weight
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	h11	Thread	Length adjusting bolt	Thread length	Total length	Nut width	Width across flats	[g]
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:


KBR(L)M


KBR(L)M-CL

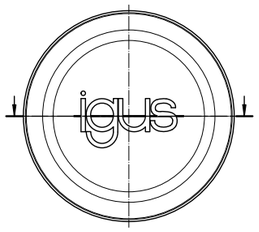

KAR(L)M

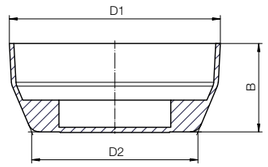

KAR(L)M-CL


KCR(L)M

igubal® accessories | Product range New

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	47.4	29.5	21.8
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

Notes