bike.

Solutions for the bicycle industry
40% less costs, 80% less weight,
100% less maintenance

plastics for longer life®

igus®.co.uk.

www.igus.co.uk/bike

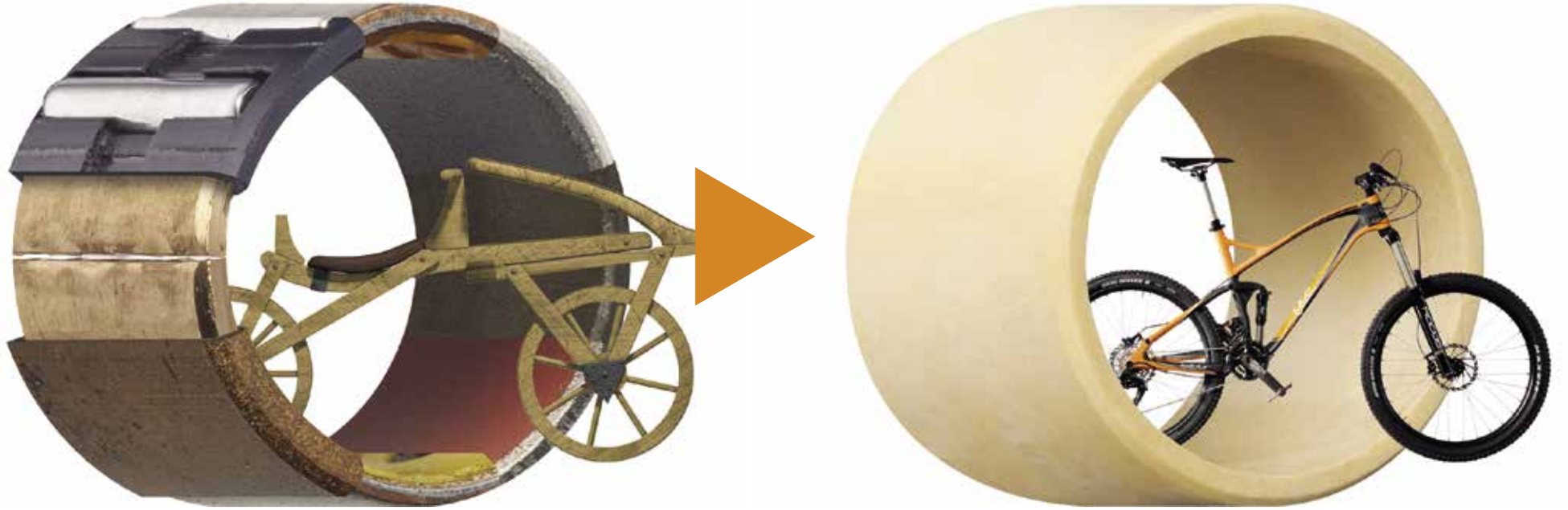
Change your bearings now! 40% less costs, 80% less weight and 100% less maintenance

Your technical innovator and cost reducer,
Rob Dumayne
Phone: 07801 694753
e-mail: rdumayne@igus.co.uk
www.igus.co.uk/bike

What began with the Draisian running machine with oiled brass bushes in 1817 advanced over the years into a weight-optimised lifestyle object. "Digital bike" and "bike as a vehicle" are some of the trends that are of great importance in today's bicycle world, and electrification also means new application potentials of bikes in everyday life.

This also changes the demands on the components installed on the bike: impact and shock loads are exerted on the bearings used in the components while riding the mountain bikes across uneven ground, whereas the focus of the e-bike lies on covering the greatest possible range with one battery charge. Therefore, the bike must be as light as possible although the higher mileage will result in a greater stress on the separate bicycle components, compared to the conventional bike.

Save weight, increase service life and minimise maintenance intervals with igus®. Dry operating iglidur® plain bearings made of high-performance plastics are lightweight, extremely wear-resistant and characterised by very low friction values. They defy shocks and bumps and are more resistant than metallic bearings - especially in extreme environmental conditions. Thus dirt, temperature, detergents and humidity are not challenges any more. By the elimination of external lubricants and, the maintenance is also minimised. Overall three-fold savings: in weight, in maintenance, and also in price.



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igus® motion plastics®: Plastics that drive and move

It all started with an idea. When Günter Blase founded the company in his Cologne garage in 1964, igus® consisted of no more than a small injection moulding machine and the belief in the future of the material "plastic". Tribologically optimised polymers, according to the basic igus® vision, was the key to solving the "eternal" problems of moving applications. The traditional "solution", the lubrication with oils or greases, has negative consequences, such as high maintenance, environmental pollution and machine failure. The Tribo-optimised (friction-optimised) high-performance plastics offered by igus® in the form of lubrication-free and cost-effective motion plastics® components help to solve this problem. There are 3,180 employees working in 35 countries for the implementation of the motion plastics® idea of manufacturing machine components from plastic, which creates a tangible technological and economic added value and thus a competitive advantage for more than 200,000 igus® customers worldwide.

The igus® solar system with the customer at the centre.
The company igus® receives its most important impulses from the customer. The drive was therefore always to provide each customer with the best individual solution, which at the same time increases the service life and reduces costs.

No limits for plastics for longer life®
Constant development of the products, also thanks to the impulses of our customers, have led to the development of ever new customer circles and applications. The second generation of the family-owned company has therefore become a globally leading producer of energy chain systems and polymer plain bearings. Altogether, their positive material properties, in particular their wear and abrasion resistance, significantly reduce maintenance and downtime.

Research in the igus® laboratory for better products and guaranteed service life
igus® operates the largest research and test laboratory in the industry on an area of 2,750 square metres. By conducting research in new materials and continually improving the products, today, for instance, more than 50 different iglidur® materials are offered every year with different material properties for demanding applications and more than a hundred new products and extensions. The igus® R & D investments (clearly above the average in mechanical engineering with a research rate of 5% of sales per year) serve the double purpose of achieving and maintaining the highest quality in the process, as well as providing the customer with a durable, process-safe machine part.

The 1965 idea:
"Show me the plastic part that gives you problem. I'll provide you with a solution!"

igus® research and test laboratory on a floor area of 2,750 square metres.

Conversion of festoon to energy chain system at MVA Weisweiler. It has been running "round" 24/7 for more than six years.

Change from ball bushings to drylin® linear bearings. With igus® drylin®, the machine has now been operating completely trouble-free for many years under the toughest conditions.

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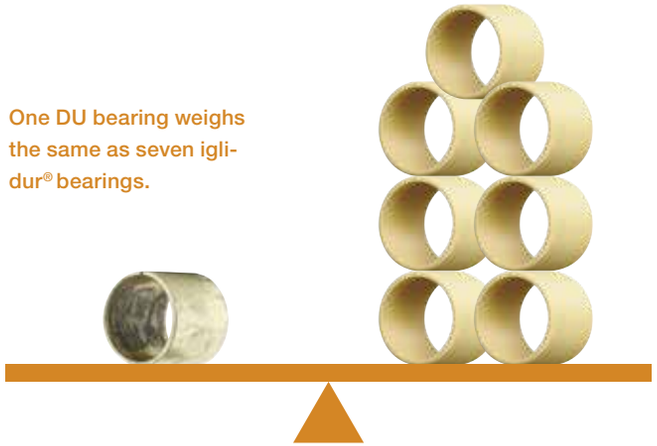
igus® plain bearings for bikes. Plastic beats metal even on the bike

Light and robust plain bearings for shocks, edge loads, dirt.

The igus® iglidur® plain bearings combine all the advantages of the processed high-performance plastics. They can be used in dry operation and have excellent vibration dampening properties. They have a high stiffness and wear resistance and are resistant to dirt and dust. Due to their high corrosion resistance iglidur® plain bearings from igus® can also be used in damp environments. Major weight reductions can be achieved by replacing metal bearings with iglidur® bearings.

Advantages of igus® products in bicycle technology:

- Self lubricating dry operation
- Impact and shock resistant
- Very light compared to metallic bearings
- Resistant to corrosion and chemicals
- Extremely strong and wear-resistant
- Vibration-dampening property



One DU bearing weighs the same as seven iglidur® bearings.

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25 bearing points with dry-tech® high-performance polymers - less weight, longer service life

www.igus.co.uk/bike

Please note: this bike is a single item and is not distributed by igus®!

Employees of igus® America Garrison Rios brings four titles in series

2015 **CA State CX Champion**
2015 **2nd** Overal Kenda Cup Series
2016 **2nd** National Championships Cat 1
2016 **3rd** Overall Kenda Cup Series

Garrison uses iglidur® plain bearings in all moving components.

Rocky Mountain element with iglidur® plain bearings. Fox Shox suspension with iglidur® double flange bearings. Crank Brothers pedals with iglidur® plain bearings.
On his road machine, he also uses an SRAM derailleur with iglidur® plain bearings.

Easier steering with heavy loads – igubal® in the cargo bike

BUTCHERS & BICYCLES Copenhagen, Morten Mogensen, København V, Denmark.

This cargo bike can always be steered easily. This is ensured by robust polymer bearings from igus®, which are used in the steering and tilt mechanism of the front wheels. Compared to conventional bearing solutions, they have the advantage that they are absolutely maintenance-free thanks to the freedom from lubrication, and are also resistant to weathering. In addition, they are much more space-saving and, in small numbers, much more cost-effective than the metal solutions.

Steering and tilt mechanism with igubal® polymer plain bearings

www.igus.co.uk/bike

iglidur® H in disc brakes: Perfect function guaranteed

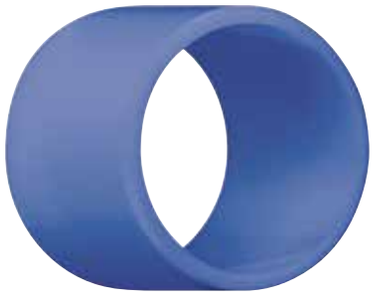
- Temperature resistant up to +200 °C
- Corrosion resistant, no seizing.
- Wear resistant, low friction

www.igus.co.uk/H

iglidur® G in front derailleurs: Smooth running and durable

- Smooth running thanks to low coefficient of friction
- Reliable, maintenance-free and dirt-resistant
- Precise and fast switching

www.igus.co.uk/G



iglidur® A160 in suspension fork: Ideal response

- Extremely low coefficients of friction and breakaway torques
- Constant stability
- Extreme wear resistance

www.igus.co.uk/A160

www.igus.co.uk/bike

iglidur® J in oscillating joint: Resistant to impact loads

- Resistant to high frequency shocks and vibrations
- Extreme wear resistance
- No 'stick slip'

www.igus.co.uk/J

iglidur® J3 in the rear shock: Easy installation

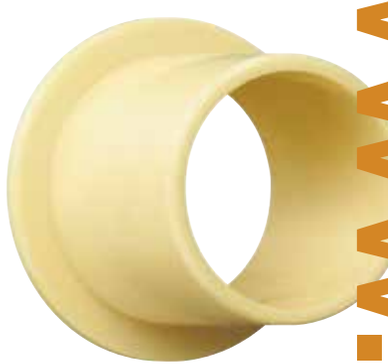
- High impact strength, maintains shape
- Sensitive feedback from the rear shock
- Dimensional stability of the bearing

www.igus.co.uk/J3

iglidur® J in seat posts: Very easy to adjust

- Wear resistant with linear motion
- Low coefficient of friction, no squeaking (stick-slip)
- Resistant to edge loads

www.igus.co.uk/J

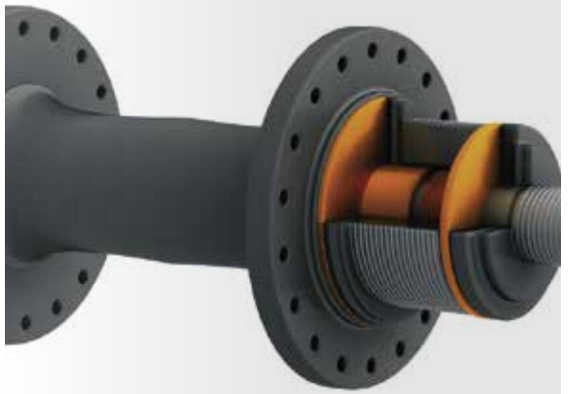


www.igus.co.uk/bike

igubal® in track rods: Lubrication-free connection

- Absorbs vibrations
- Angle and tolerance compensation
- Lightweight, lubrication-free and thus insensitive to dirt and sand

www.igus.co.uk/igubal



iglidur® J3 in freewheels: No seals required

- Extreme wear resistance
- Dirt resistant
- Lightweight

www.igus.co.uk/J3

iglidur® G in rim brakes: Ideal against dirt and dust

- Resistant to dirt and dust
- Wear-resistant
- Maintenance-free

www.igus.co.uk/G

iglidur® G in Spicycle tricycle: Quickly into the corner

- High wear resistance
- Resistance to dust and dirt
- Cost-effective

www.igus.co.uk/G

iglidur® J in hand bike: Safe and easy in open country

- Dust and moisture resistant
- Lightweight
- Vibration dampening

www.igus.co.uk/J

iglidur® J3 in pedals: Dirt-resistant and lightweight

- Extremely wear-resistance
- Resistant to corrosion, high pressure cleaners and cleaning agents
- Lightweight, lubrication and maintenance-free.

www.igus.co.uk/J3

www.igus.co.uk/bike

iglidur® plain bearings on e-bike: Lightweight construction and service life.

www.igus.co.uk/bike

When it is all about the bike – igus® catalogue parts, special parts, bar stock and 3D printed solutions

We can also go your way: customised solutions, special designs and special materials - (virtually) everything is possible.
The standard is not the right solution for everyone. Therefore, igus® also manufactures a number of customised special designs. Structural and material special solutions such as plain bearings for multiple-edge shafts, bearings with reduced clearance or anti-rotation feature, special lead screw support blocks and glide pads, and so on, are specially adapted to your requirements. Starting from medium quantities we make almost everything possible.

www.igus.co.uk/speedigus

3D printing service – for individual parts made of high-performance plastics
In two simple steps to the 3D-printed component - with instant price We print your individual component, using lubrication-free, abrasion-resistant iglidur® high-performance plastics. Upload your drawing in the STEP (STP) format, check the 360° view and select a filament. We ship your desired product - depending on the complexity - from 24hours.

www.igus.co.uk/3Dprintservice

www.igus.co.uk/bike


Test rig permanent load

Tested ...

- Test: Pivoting wear rate
- Load per bearing point: 25 N to 300 N
- Surface speed: 0.01 m/s


Test rig pivoting wear

Extensive test data-base

www.igus.co.uk/bike

Tested ...

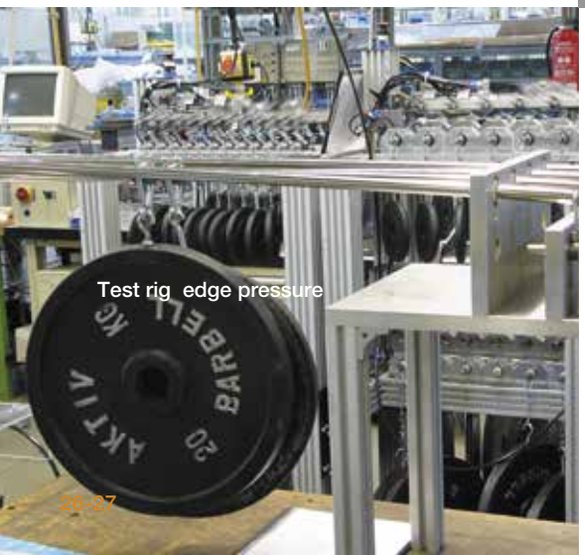
- Simulation of continuous load
- Tested with impact.
- In suspended parallelogram seatpost


Test rig seatpost

Tested ...

- Test: Rotating coefficient of friction
- Load per bearing point: 10 N to 1000 N
- Surface speed: 200 to 2000 RPM.


Test rig coefficient of friction


Test rig edge pressure

Tested ...

- Test: Linear wear rate
- Load per bearing point: 10 N to 200 N
- Surface speed: 0.1m/s up to 0.3m/s


Test rig linear wear (short stroke)

From more than 15,000 tests per year was created, what is probably the world's largest data-base. This database gives us the ability to select always the right product for your specific applicati-on. Individual tests for your branch of industry are also possible.

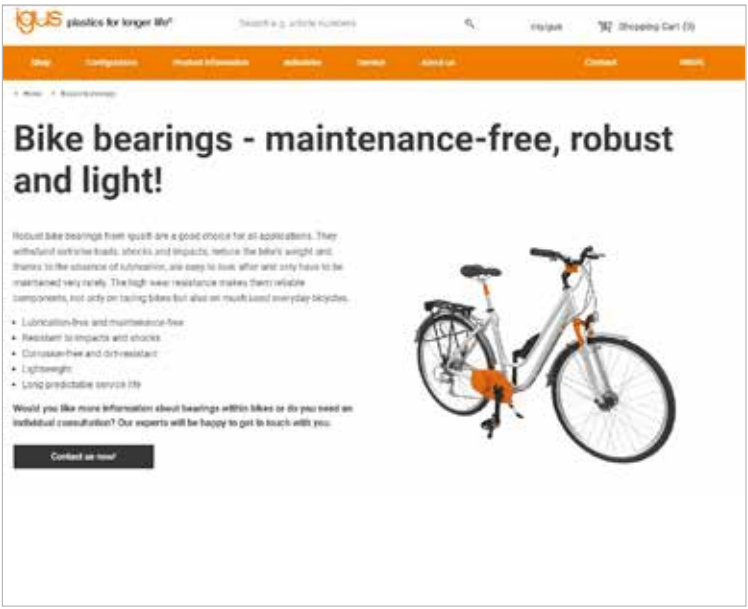
www.igus.co.uk/test

igus.co.uk/8pm

Buy online – 24h!

Visit our industry web pages for more information, products, application examples and useful online tools.

Quickly find and configure products and calculate service life – all online. With the help of our product finders, you can quickly find the right article and obtain an exact prediction of service life. All online tools also enable you to reduce process costs. igus® delivers from stock in 24-48 hours!



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Always the right solution for the bike industry.

igus® is certified in accordance with ISO 9001:2008 and ISO/TS 16949:2009 in the field of energy supply systems, cables and harnessing, as well as plastic plain bearings.

www.igus.co.uk/bike

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