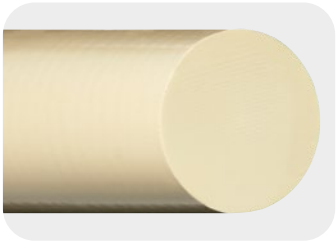
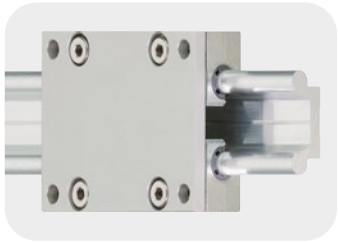
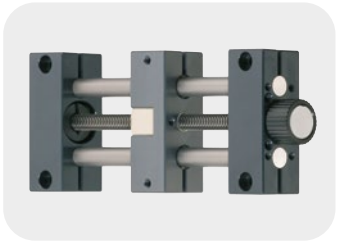
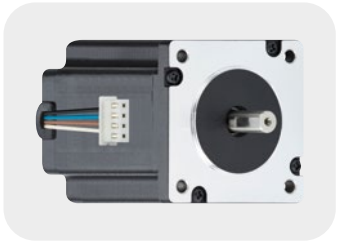
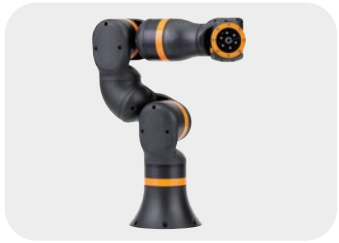
igubal®
spherical bearings



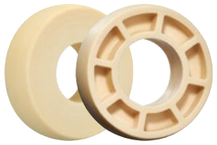





dry-tech® | Lubrication-free made easy ...

igubal® spherical bearings

Rod end bearings

Spherical balls



Spherical insert bearings

Double joints

Coupling joints

Clevis joints

Flange mounted bearings

Spherical bearings

Pillow block bearings

Food industry

Angle and axial joints

Accessories

igubal® self-aligning bearings

Rod end bearings

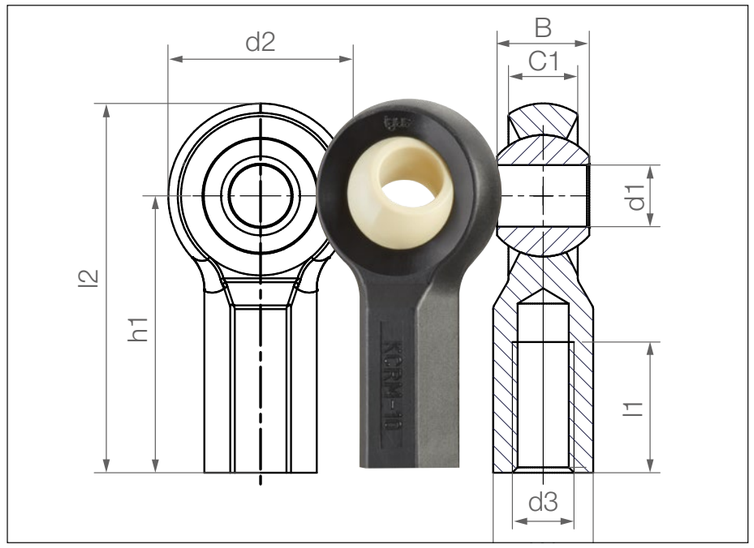
Compensation of misalignment and edge loads

The igubal® plastic rod ends offer an attractive alternative to conventional metal spherical bearings. With their lightweight and the absence of external lubricants, they are a cost-effective and maintenance-free choice for a wide range of applications in numerous industries.

- Exact alignment of the shaft not necessary
- Up to 40% more cost-effective than metallic solutions
- In use in all industries
- No lubrication necessary

Introduction

What are rod ends and what can they do?



Typical application areas

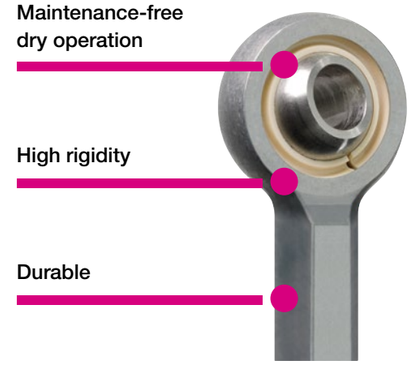
- Agricultural engineering
- Food industry
- Railway technology
- Automotive industry
- Vehicle technology
- Automation

Maintenance-free, lubrication-free solution: the igus® rod ends are equipped with a solid lubricant that is released in microscopic quantities over time. As a result, they enable low-friction dry operation between the shaft and spherical ball, eliminating the need for relubrication. The absence of lubrication significantly speeds up cleaning of the rod ends and prevents the accumulation of dirt and dust. The igus® rod end bearings enable precise movements and contribute to increased efficiency.

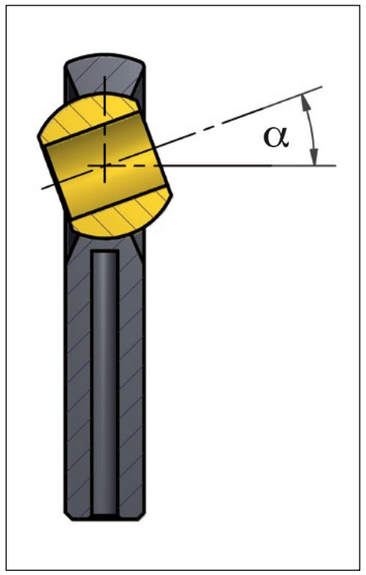
Versatile areas of application
Rod ends from igus® are used in various industries. They are used everywhere from bottling plants and meat processing machines to packaging systems to transmit dynamic forces in pivoting, tilting and rotating movements. You can use our igubal® expert system to ensure that the rod ends are optimally matched to the individual requirements of a specific application. This system draws on data determined in the igus® laboratory and makes it possible to obtain a customised recommendation for the respective application.

igus® rod end bearings are indispensable components in machine and plant construction. Their maintenance-free and lubrication-free operation makes them a reliable and cost-effective choice for precise movements and efficient use in various industrial sectors. With their outstanding specifications, they are an ideal solution for demanding applications where high performance and low maintenance costs are required.

Metallic solutions as an alternative
In addition to the plastic rod ends, igus® also offers metallic solutions that have a lubrication-free inner ring made of iglidur® materials. The metallic rod ends are characterised by higher breaking strength and rigidity and are resistant to moisture, acids, alkalis and UV rays. They are suitable for temperatures between -40°C and +90°C.



The lubrication-free inner ring is available in two versions: one is iglidur® A181, an FDA-compliant material that is suitable for use in food processing and medical environments. Two, the inner ring is available in iglidur® J, which is an excellent solution for a wide range of industrial applications. Both variants offer high wear resistance and ensure that the rod ends function reliably.



Tilt angle of a rod end

Rod ends for the food industry
The housings of the rod end bearings are made of igumid® FC, a metallic detectable material that makes it possible to easily recognise and separate any material abrasion particles. This drastically reduces the risk of contamination in food processing. In addition, these rod ends have FDA approval, which confirms their suitability for direct contact with food.

For the spherical ball materials, you can choose between iglidur® A181, an FDA-compliant material that is suitable for use in food-related applications, and igumid® FC, a detectable material. The rod ends for the food industry have a maximum operating temperature of up to +80°C, which makes them suitable for a wide range of processes and applications in food processing.

Tolerances
The rod ends have a diameter that is manufactured in accordance with the E10 tolerance class, which ensures a high level of precision and accuracy of fit. The mating partner, on the other hand, should have a tolerance class of h6 to h9 in order to enable optimum manoeuvrability and smooth operation. The generously designed clearance tolerance ensures safe operation of the rod ends and guarantees reliable performance even under demanding conditions in the food industry.

When are rod ends used?
- If you want to save weight
- For rotating, oscillating and linear movements
- When high-frequency oscillation/ vibration occurs
- When silent operation is required
- When 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

Plastic rod ends

Metal rod ends

Food industry

Spherical balls

Application example

Ornithopter

In the expansive skies, seen from afar, a remarkable work of engineering glides through the sky. This flying robot, also known as an ornithopter, is the result of the visionary work of citrusträume, a company based in Groß-Gerau. With a clear vision and ambitious requirements, they set out to create a flying robot that would be lubrication and maintenance-free.

The challenges were great, but the citrusträume team was not deterred. For the success of their customers, they set themselves the goal of making the flying robot not only lubrication-free but also cost-effective. The secret of this technical masterpiece lies in the igubal® products, in particular the polymer rod ends (KBRM-03-MH), which were used in the joints of the wings.

These rod ends transmit the high tensile and compressive forces that occur with the wing-beat. Unique in operation, they do not require any lubrication and are low-friction and light - just one fifth of the weight of an equivalent metal counterpart. The wings of the ornithopter are of an impressive size, comparable to those of a majestic bird of prey with a wingspan of 190cm. To keep the robot in the air long term, weight reduction was of paramount importance. This goal was achieved thanks to the lightweight polymer rod ends. Thanks to the outstanding efficiency of the drive, the flying robot only needs 40 watts to stay in the air for up to 26 minutes. Weighing just 0.8kg, it glides elegantly through the air.

The ornithopter from citrusträume is therefore not only a milestone in the development of flying robots, but also an example of the innovative use of igubal® products. The combination of technology, lightness and freedom from lubrication opens up a completely new perspective on the flying robot industry.

igubal® rod ends

Rod end bearings **with female thread**

KCRM / KCLM
Rod end with female thread

Housing	**igumid® G**
Spherical ball	**EK, J, J4, R, W-MH**
Shaft diameter	**5–30mm**

KCRM-ES/S / KCLM-ES/S
Rod end with female thread, metal housing with inner ring

Housing	**Zinc die-casting, stainless steel**
Inner ring	**J**
Spherical ball	**Stainless steel**

KCRM-ES / KCLM-ES
Rod end with female thread, metal housing with inner ring

Housing	**Stainless steel**
Inner ring	**X**
Spherical ball	**Stainless steel**

KCRM-FC / KCLM-FC
Rod end with female thread, detectable, FDA and EU 10/2011-compliant

Housing	**igumid® FC**
Spherical ball	**A181, EK, FC180**
Shaft diameter	**5–12mm**

KBRM / KBLM
Rod end with female thread

Housing	**igumid® G**
Spherical ball	**W-MH**
Shaft diameter	**5–30mm**

KBRM-CL / KBLM-CL
Rod end with female thread, 2nd generation

Housing	**igumid® G**
Spherical ball	**EK, J, J4, R, W-MH**
Shaft diameter	**5–30mm**

EBRM / EBLM
Rod end with female thread

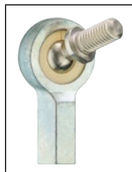
Housing	**igumid® G**
Spherical ball	**W-MH**
Shaft diameter	**5–30mm**

EBRM-FC
Rod end with female thread, detectable, FDA and EU 10/2011-compliant

Housing	**igumid® FC**
Spherical ball	**A181, EK, FC180**
Shaft diameter	**4–12mm**

EBRM-HT / EBLM-HT
High-temperature rod end with female thread

Housing	**igumid® G**
Spherical ball	**X**
Shaft diameter	**5–12mm**



KCRM-ES/S-EZ / KCLM-ES/S-EZ
Rod end with female thread and 2.0 inner ring for ball studs

Housing	**Zinc die-casting, stainless steel**
Inner ring	**J**
Ball stud	**Stainless steel**

Rod end bearings **with male thread**

KARM / KALM
Rod end, male thread

Housing	**igumid® G**
Spherical ball	**EK, J, J4, R, W-MH**
Shaft diameter	**5–30mm**

KARM-CL / KALM-CL
Rod end with male thread, 2nd generation

Housing	**igumid® G**
Spherical ball	**EK, J, J4, R, W-MH**
Shaft diameter	**5–30mm**

KARM-ES/S / KALM-ES/S
Rod end with male thread, metal housing with inner ring

Housing	**Zinc die-casting, stainless steel**
Inner ring	**J**
Spherical ball	**Stainless steel**

KARM-ES / KALM-ES
Rod end with male thread, metal housing with inner ring

Housing	**Stainless steel**
Inner ring	**X**
Spherical ball	**Stainless steel**

EARM / EALM
Rod end, male thread

Housing	**igumid® G**
Spherical ball	**W-MH**
Shaft diameter	**5–30mm**

EARM-HT / EALM-HT
High-temperature rod end with male thread

Housing	**igumid® G**
Spherical ball	**X**
Shaft diameter	**5–12mm**

KARM-ES/S-EZ / KALM-ES/S-EZ
Rod end with male thread and 2.0 inner ring for ball studs

Housing	**Zinc die-casting, stainless steel**
Inner ring	**J**
Ball stud	**Stainless steel**

igubal® self-aligning bearings

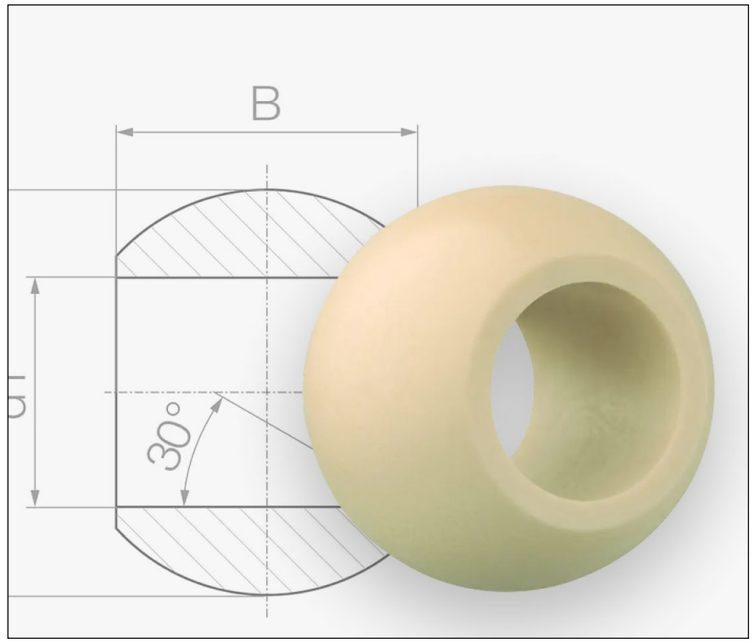
Spherical balls

Lightweight, lubrication-free and cost-effective

Our igubal® spherical balls offer a variety of special specifications that make them particularly suitable for different applications and requirements. We currently offer spherical balls made of eight different iglidur® materials, including W300 (standard), J, J4, R, A181, FC180, UW and X.

- Low coefficient of friction
- No lubricant necessary
- Load tests in the igus® laboratory
- Environmentally friendly and eliminates costly maintenance by dispensing with additional lubricants

What are spherical balls and what can they do?



Lightweight wings
Leichtwerk AG from Braunschweig is building a wing for a high-flying communication system. The challenge: lightweight wings are relatively flexible. This means that you have to accept a bending deformation of the wing when the aircraft flies through a gust. The designers therefore use spherical balls from the igubal® series, which means that one bearing point weighs just 19g.

Our igubal® spherical balls are significantly lighter than their metal counterparts, while still offering comparable robustness. They are around 80% lighter and up to 40% more cost-effective. In addition, they enable dry operation without lubrication, which further increases their efficiency in operation.

The advantages of our igubal® spherical balls:

1. **Low coefficient of friction**
   The spherical balls have a low coefficient of friction, which results in less wear and a longer service life.

2. **Less downtime**
   Thanks to the outstanding specifications of our spherical balls, you can operate your systems longer and more efficiently, as there is less maintenance and downtime.

3. **Environmentally friendly and maintenance-free**
   By dispensing with additional lubricants, there is no environmental impact and the spherical balls are maintenance-free, which leads to cost-saving operating processes.

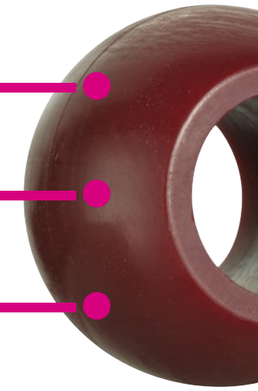
Our range of materials offers the right solution for every application. For example, the iglidur® X polymer withstands extreme temperatures from -100°C to +250°C and retains its full compressive strength. It is also almost universally resistant to chemicals.

iglidur® J is characterised by low moisture absorption, while iglidur® R scores with a particularly attractive purchase price. For the food sector, we have developed another high-performance plastic that can be detected by metal detectors and thus increases product safety. With iglidur® UW, we also offer a solution for underwater applications.

Maintenance-free dry operation

Corrosion-resistant

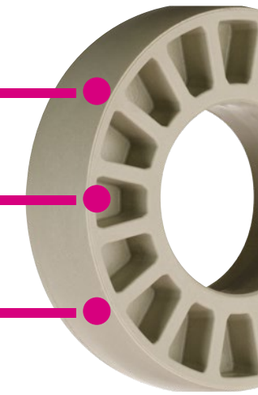
High elasticity



Lightweight

Different materials

For metallic bearing housings



igubal® spherical balls

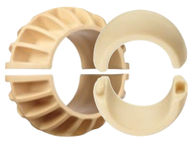
Spherical balls

WKM / WEM
Standard

Material	**W300**
Dimensional series	**E, K**

JKM / JEM
Low moisture absorption

Material	**J**
Dimensional series	**E, K**



JKM-GT / JEM-GT
Split spherical ball

Material	**J**
Dimensional series	**E, K**

J4KM / J4EM
Cost-effective

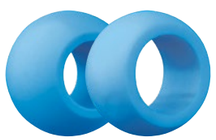
Material	**J4**
Dimensional series	**E, K**

RKM / REM
Low-cost

Material	**R**
Dimensional series	**E, K**

XKM / XEM
High temperature

Material	**X**
Dimensional series	**E, K**



A181KM / A181EM
Suitable for food contact

Material	**A181**
Dimensional series	**E, K**

FC180KM / FC180EM
Suitable for food contact

Material	**FC180**
Dimensional series	**E, K**

J4VEM
Clearance-free, pre-loaded

Material	**J4V**
Dimensional series	**E, K**

UWEM
Underwater applications

Material	**UW**
Dimensional series	**E, K**

EK-K / EK
Particularly robust

Material	**Stainless steel**
Dimensional series	**E, K**

igubal® spherical insert bearings

Spherical insert bearings **moulded**

iglidur® J-SP
Standard

Material	**J**
Diameter	**17 – 50mm**

iglidur® J3-SP
High wear resistance

Material	**J3**
Diameter	**30, 35, 40mm**

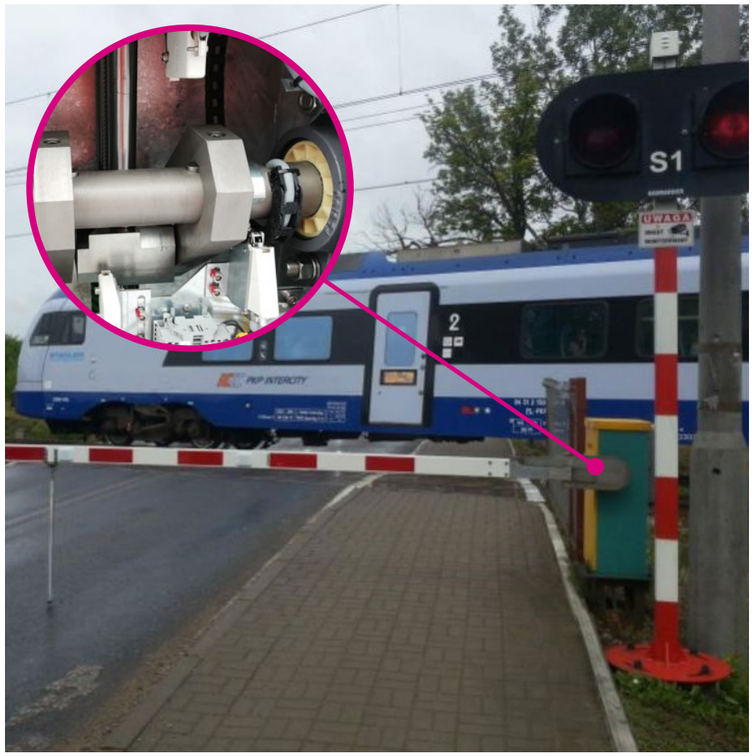
iglidur® J4-SP
Low-cost

Material	**J4**
Diameter	**17 – 30mm**

iglidur® A350-SP
Detectable, FDA and EU 10/2011-compliant

Material	**A350**
Diameter	**20mm**

Railway barrier
A barrier at a level crossing that gets stuck and remains open: a horror scenario for operators and manufacturers alike. 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° 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® spherical insert bearings

Spherical insert bearings **machined**

iglidur® J
Standard

Material	**J**
Diameter	**17–50mm**

iglidur® J3
High wear resistance

Material	**J3**
Diameter	**30, 35, 40mm**

iglidur® A350
Detectable, FDA and EU 10/2011-compliant

Material	**A350**
Diameter	**17–40mm**

iglidur® A180
For wet environments

Material	**A180**
Diameter	**17–50mm**

iglidur® H3
For high speeds

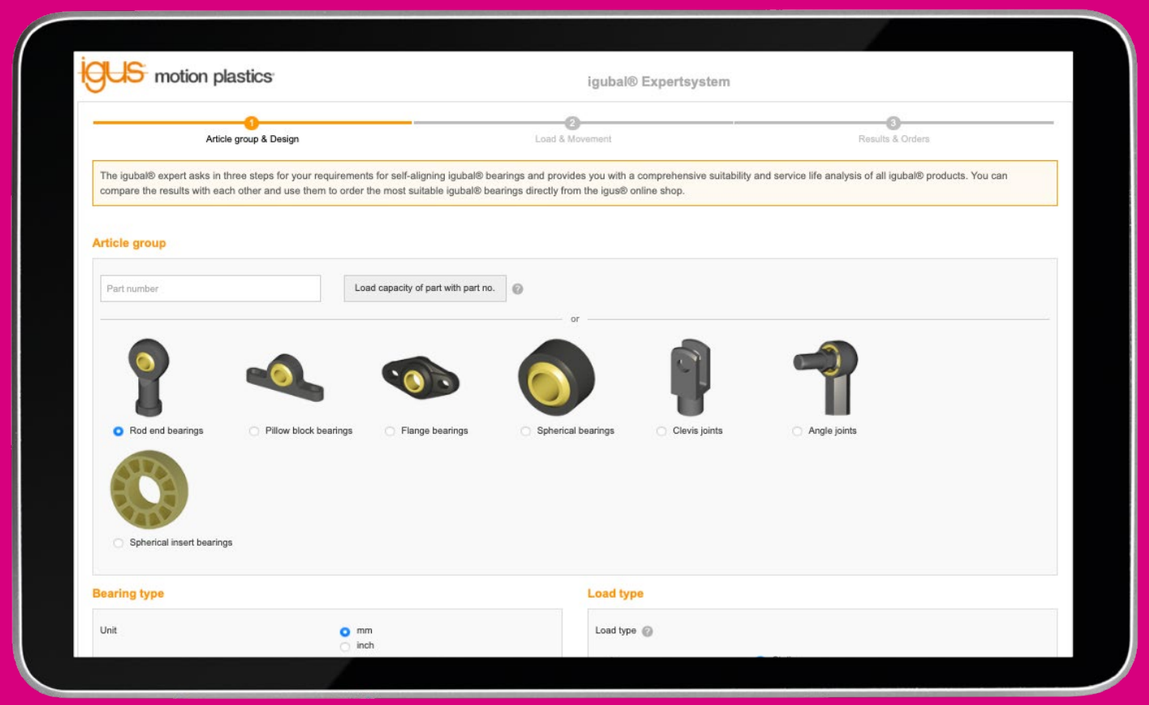
Material	**H3**
Diameter	**20–40mm**

iglidur® X
For high temperatures

Material	**X**
Diameter	**20–40mm**

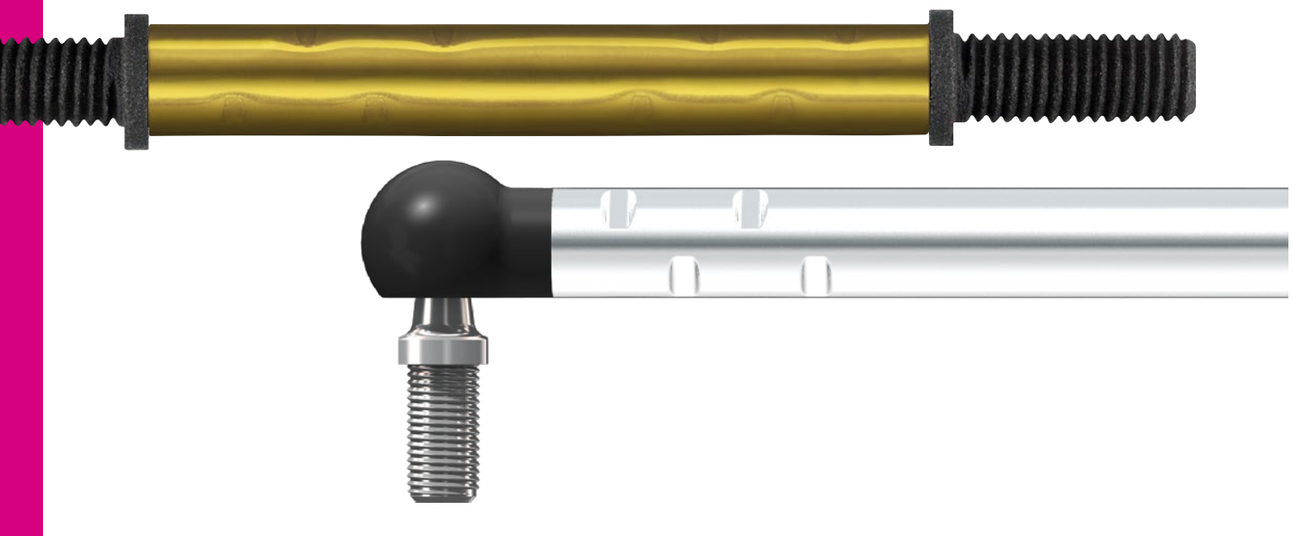
Service life calculator

Comprehensive igubal® suitability and service life analysis



igubal® self-aligning bearings

Spherical joints



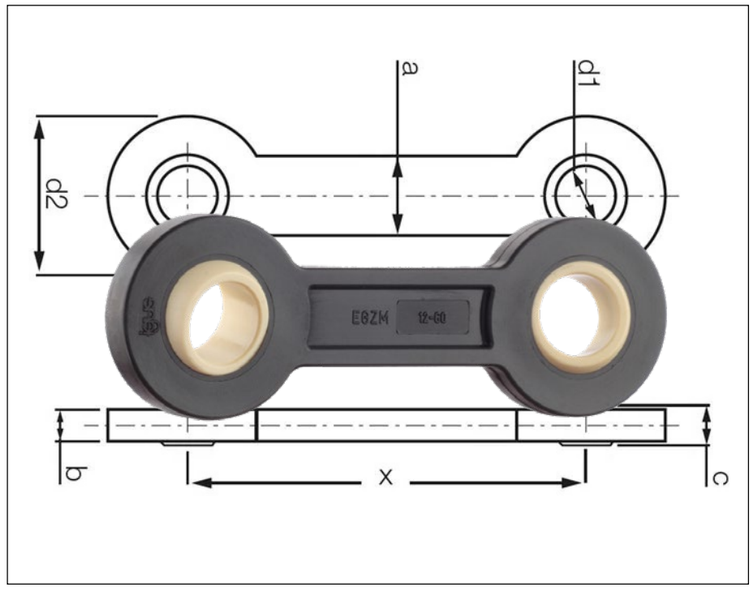
Bespoke or standard

The igubal® plastic coupling joints are much more than just an alternative to conventional metal solutions. With their unique materials and specifications, they offer a wide range of benefits. Especially in situations with high loads and fast movements, the tribologically optimised and reinforced polymers from igus® achieve optimum results.

- Customised lengths
- Maintenance-free
- Up to 50% weight advantages compared to metallic solutions
- No lubrication necessary

Introduction

What are double joints and what can they do?



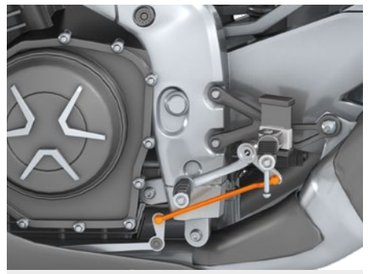
Traditional double joints and coupling joints made of metal are heavy, often expensive and require a lot of maintenance. The economical alternative are the double joints and coupling joints of the igubal® series. Manufactured from special polymers, they enable weight savings of up to 80% and reduce costs by up to 40%.

But that's not all. The plastic coupling joints are quick and easy to fit and enable cost-efficient operation as they do not require lubrication and are maintenance-free.

The range of igubal® double joints and coupling joints is constantly being expanded. Thanks to a modular system with spherical balls made of different materials and housings with different geometries, you as a user are guaranteed to find the ideal solution for your application. If required, igus® also offers the option of creating customised components.

Companies from the automotive industry, automation, agricultural engineering, plant engineering and automotive engineering already trust in the quality and reliability of igubal® double joints and coupling joints.

Over 99 variants of crimped igubal® coupling joints are available for your application. Customised pitch dimensions and alignment of the bearing points offer complete flexibility. If you still can't find the right product in our online shop, we will be happy to develop a customised solution for you!



Motorbike coupling
- Maintenance-free dry operation
- Great rigidity and durability with varying loads
- Compensation of misalignment and edge loads
- Resistant to dirt, dust and lint
- Corrosion and chemical-resistant

Maintenance-free dry operation

Compensation of misalignment

Corrosion-resistant

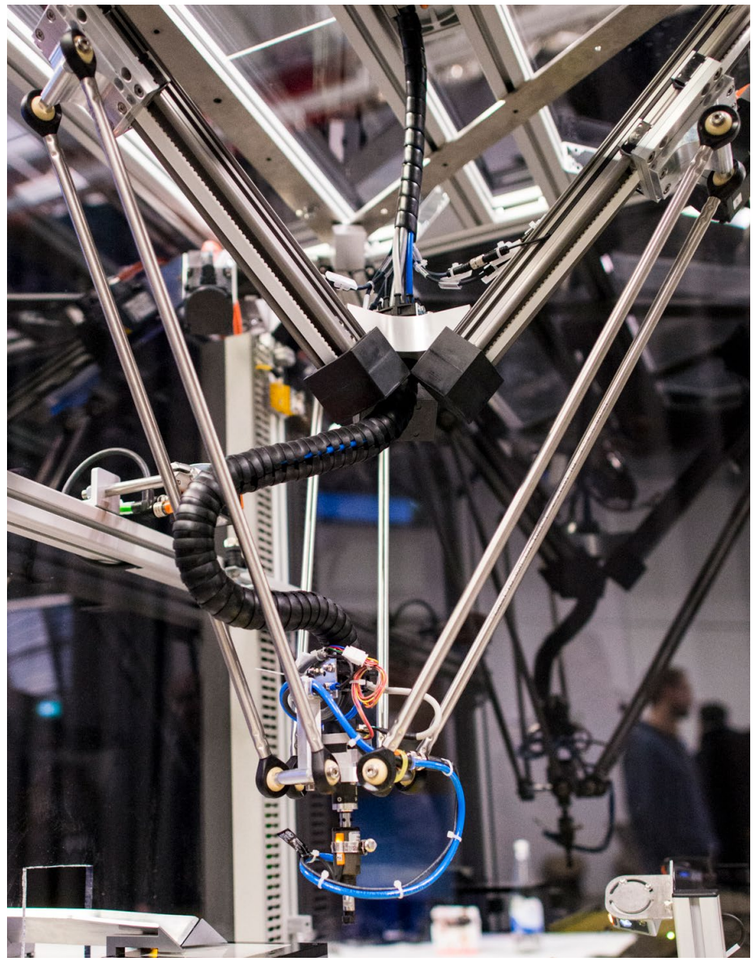
Individual centre dimensions and lengths

Individual alignment of the bearing position

Ends sealed against dirt

Application example

Safely protected from fire



The delta robot from igus® achieves cost-effective automation in the production of fire-resistant glass.

Vetrotech Saint-Gobain Kinon GmbH has been manufacturing safety glass for public institutions and marine applications since 1980. In addition to bulletproof and explosion-proof glass, the company also manufactures fire-resistant glass.

To make the production of the glass even faster and more reliable, the company now employs automation technology. For example, an igus® delta robot is used to sort bulk goods on predefined pallets. The retrofit pays off in two ways: it gives employees relief and greatly reduces costs. Following a successful test phase in Germany, all five company sites will now use these robotic solutions.

Special liquid provides fire protection

Vetrotech Saint-Gobain specialises in building glass, including fire-resistant glass, heat-insulating glass, sound-insulating glass and safety glass. Fire-resistant glass acts as an obstacle to fire, preventing it from spreading for a certain period of time. Conventional glass cannot do this task because it shatters due to the heat. In the production of fire protection glass, special glass with cavities are required that offer insulation protection in the event of fire. The multilayer glass is encased in a compound. Before that, however, a liquid must be filled between the glass panes.

The igus® delta robot convinces through simple implementation

In their search for a suitable automation solution, the project team encountered the delta robot from igus® at the Hannover Messe 2019, which the motion plastics® specialist had exhibited at its trade show stand. The low-cost variant is perfectly suited as an automation solution for simple project implementation. The robot is based on three maintenance-free drylin® ZLW toothed belt axes, lubrication-free igubal® coupling bars and matching adapter plates.

Improved work quality with short payback period

The automation solution relieves employees and simultaneously accelerates production processes. This allows employees to use their free capacities for more demanding activities. The improved quality of work was not the only incentive to automate. The low-cost robot pays off, ascertained by a quick ROI. "If, with three shifts per day, one employee sorts the filling corners for three hours at a time, in terms of costs the project will pay back the cost after twelve months", says Niklas Kuhl.

Self-aligning bearings

igubal® double joints and coupling joints

Double joints

EGZM
Double joints

Housing	**igumid® G**
Spherical ball	**EK, J, J4, J4V, R**
Inner diameter	**5, 6, 8, 10, 12mm**

EGZM-FC
Double joint, detectable, FDA and EU 10/2011-compliant

Housing	**igumid® FC**
Spherical ball	**A181, EK, FC180**
Inner diameter	**6mm**

KDGM
Variable double joint

Orientation	**A, B**
Spherical ball	**EK, J, J4, J4V, R, W-MH**
Tube	**stainless steel, brass**

Coupling joints

WDGM
Variable coupling joint

Orientation	**A, B, C, D**
Min. gauge	**64mm**
Tube	**stainless steel, brass**

WDGM (without machined end)
Variable coupling joint

Orientation	**A, B, C, D**
Min. gauge	**64mm**
Tube	**stainless steel, brass**

WDGM-DE
Variable coupling joints, removable

Orientation	**A, B, C, D**
Min. gauge	**102mm**
Tube	**stainless steel, brass**

WDGM-FX
Variable coupling joint for very dirty environments

Orientation	**A, B, C, D**
Min. gauge	**70mm**
Tube	**stainless steel, brass**

WDGM-FX (without machined end)
Variable coupling joint for very dirty environments

Orientation	**A, B, C, D**
Min. gauge	**70mm**
Tube	**stainless steel, brass**

GDGM-05-V
Crimped coupling joints with rotatable clevis joints

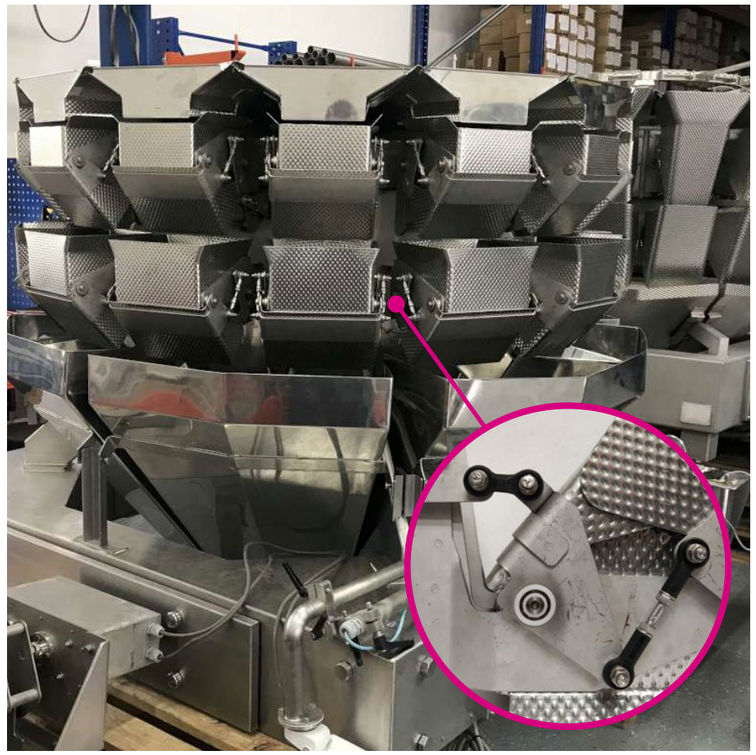
Min. gauge	**56mm**
Size	**5mm**
Tube	**stainless steel, brass**

TDGM
Crimpable thread inserts

Min. gauge	**56mm**
Size	**6, 8, 10mm**
Tube	**stainless steel, brass**

Application example

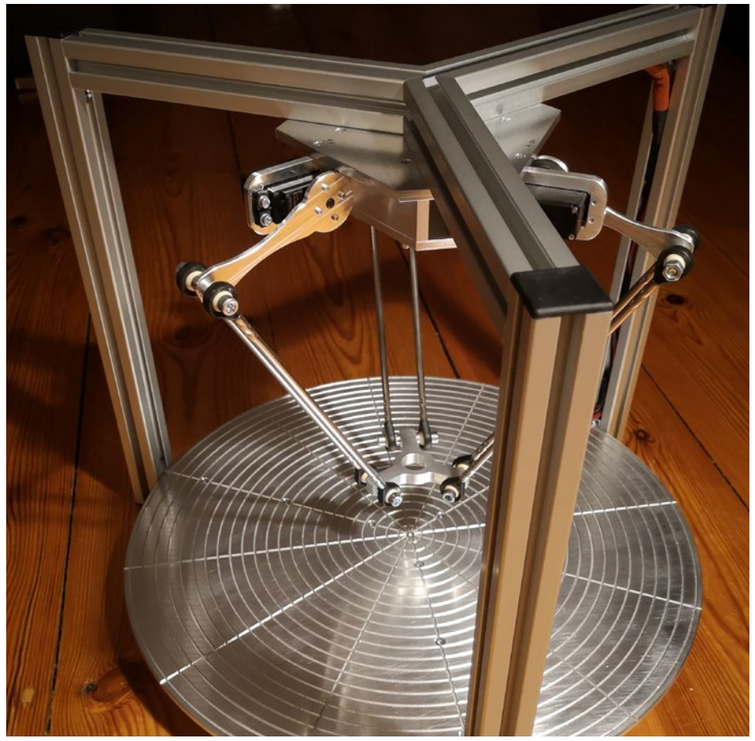
Dosing machine and 3D delta robot



Dosing machine
The Polish company Intelimato builds dosing machines. The units are equipped with around a dozen dosing cups driven by electric stepper motors. In each bucket, up to six spherical bearings take over the power transmission between the stepper motor fingers and the opening flaps.

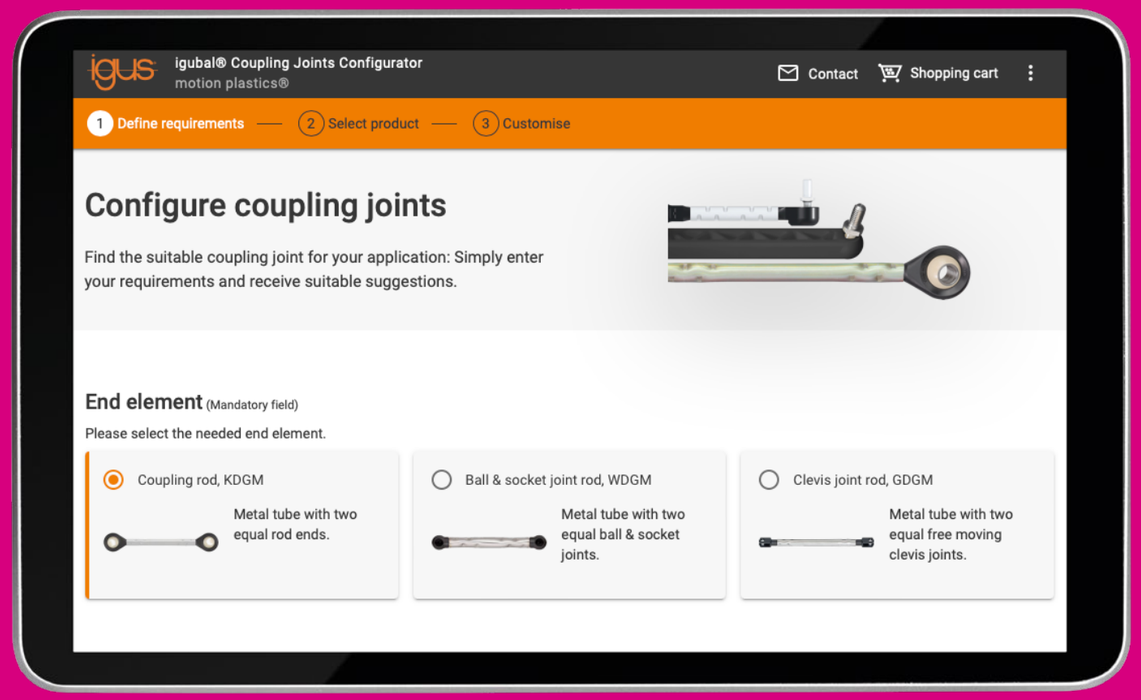
Originally, the engineers used stainless steel bearings here. However, the thin Teflon coating wore off too quickly at around 60 cycles per minute and caused ever greater rolling resistance and bearing clearance. The experts solved this problem by replacing the steel bearings with wear-resistant polymer bearings (KCRM-06-EK) from the iglidur® J range.

3D 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.



igubal® configurator for coupling joints

Simply choose one of three versions and then add your own data



Just a few mouse clicks take you to your individual coupling joint specially for your application:

- Enter your own details for the desired product
- Many options can be customised
- Rapid prototypes feasible in just a few days
- Variants for small batches in the product range
- Result: The best solution for your application

igubal® self-aligning bearings

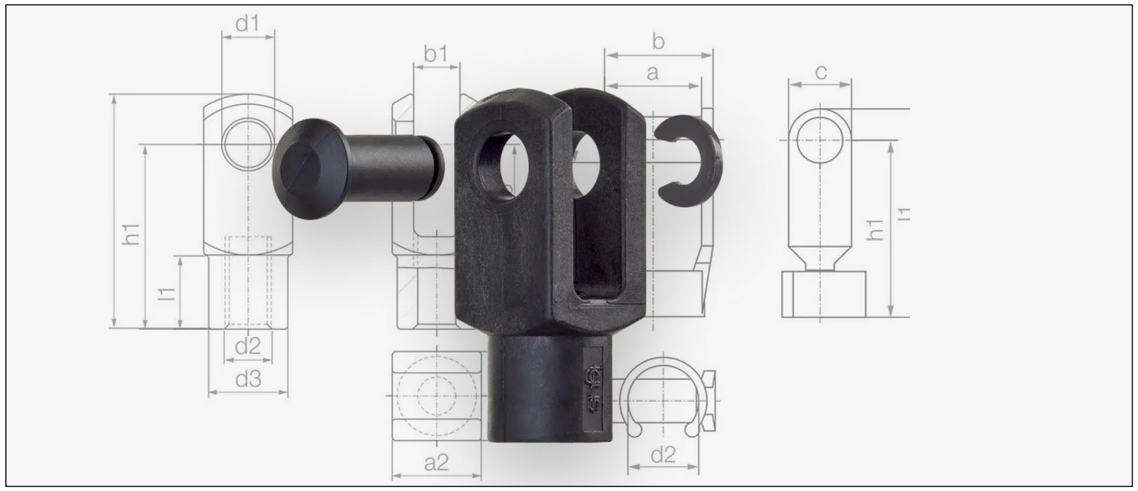
Clevis joints and combinations

The corrosion-free solution

Discover the world of igubal® clevis joints! Manufactured from high-quality igumid® G in accordance with DIN 71752, these clevis joints offer unique specifications and numerous application possibilities. As the perfect counterpart to the E dimensional series rod ends, they can be seamlessly combined to ensure smooth movement and reliable performance.

- Reduced weight
- No minimum order quantity
- Static tensile strain up to 7,200N
- Environmentally friendly, no additional lubricants needed

What are clevis joints and what can they do?



Clevis joints are important components in numerous industrial applications. They are used to convert linear movements into rotary movements and to transmit forces and torques in different directions. igus® has further developed this important component and offers clevis joints made of high-performance polymers that can replace traditional metal components in many cases.

The advantages of igus® clevis joints and combinations are wide. Firstly, they are wear-resistant and maintenance-free, as they do not require lubrication. This not only saves time and money, but also increases the service life of the systems. They are also lightweight and corrosion-free, which makes them an excellent choice for environments with aggressive media and high loads.

Another major advantage of igus® clevis joints is their versatility. They are available in various sizes and designs to meet the requirements of a wide range of applications. Clevis joints from igus® can also be combined with other igus® products such as spherical bearings and plain bearings to create customised solutions for complex tasks.

The design of the igubal® clevis joints includes various components such as the robust clevis joint itself, the matching pin and a circlip. Alternatively, there is also the option of a reliable spring-loaded folding pin, which ensures quick and easy installation. Thanks to these sophisticated design features, the clevis joints offer a high degree of flexibility and enable uncomplicated customisation to individual requirements.

Food industry
Detectable versions are available for special applications in the food industry. This enables easy monitoring and ensures the highest safety standards, especially in sensitive industrial environments.

When are clevis joints used?
- If high rigidity is required
- If corrosion resistance is required
- When no lubrication is to be used
- If you want to save weight
- When maintenance-free, dry operation is required
- If simple assembly is required
- In combination with pneumatic cylinders and gas struts

High tensile force

Vibration-dampening

Noise-dampening

Can be combined with rod ends of the dimensional series E

Lightweight

igubal® clevis joints and clevis joint combinations

Clevis joints

GERM / GELM
Clevis joint with female thread

Material	**igumid® G**
Diameter	**4–20mm**

GARM-10
Clevis joint with male thread

Material	**igumid® G**
Diameter	**10mm**

GERM-FC
Clevis joints, detectable, FDA and EU 10/2011-compliant

Material	**igumid® FC**
Diameter	**4–12mm**

GEFM-FC
Spring-loaded pin, detectable, FDA and EU10/2011-compliant

Material	**igumid® FC**
Diameter	**4–12mm**

GEFM
Spring-loaded fixing clip

Material	**igumid® G**
Diameter	**4–16mm**

GBM
Bolt

Material	**igumid® G**
Diameter	**4–20mm**

GSR
Circlip

Material	**igumid® G**
Diameter	**4–20mm**

Clevis joint combinations

GERMK / GELMK
Clevis joint with clevis pin and circlip

Material	**igumid® G**
Diameter	**4–20mm**

GERMF / GELMF
Clevis joints with spring-loaded fixing clip

Material	**igumid® G**
Diameter	**4–16mm**

GERMKE / GELMKE
Clevis joint with clevis pin, circlip and rod end

Material	**igumid® G**
Diameter	**4–20mm**

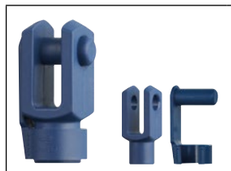
igubal® clevis joint combinations

GERMFE / GELMFE
Clevis joint with spring-loaded fixing clip and rod end

Material	**igumid® G**
Diameter	**4–16mm**

GARMK-10
Clevis joint with male thread, clevis pin and circlip

Material	**igumid® G**
Diameter	**10mm**



GERMF-FC
Clevis joint with spring-loaded fixing clip, detectable, FDA- and EU10/2011-compliant

Material	**igumid® FC**
Diameter	**4–12mm**

Sport catamaran
Tight tolerances for appropriate control precision and high component reliability are the requirements for a mechanical flight control system for a hydrofoil sailing ship. The lubrication-free, maintenance-free and cost-effective igubal® products ESTM, GERMF and EBRM are used.

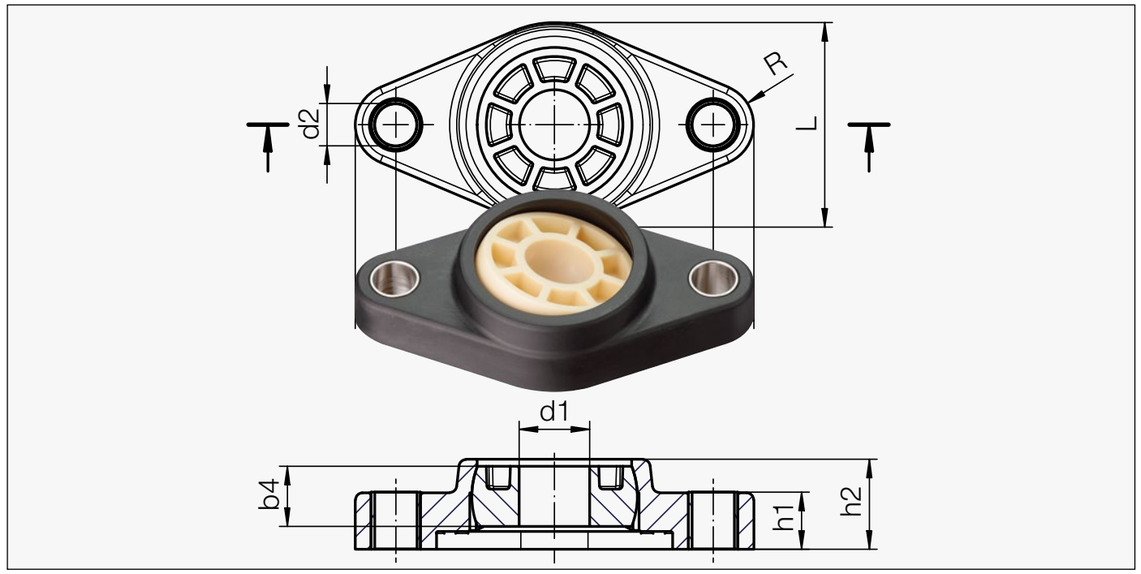
Flange mounted bearings

Replace metal 1:1

The igubal® flange mounted bearings are a wonderful choice for the bearing support of shaft ends or shaft bushings. Their outstanding specifications make them an excellent option for a wide range of industries and applications. They are available with two or four mounting holes and correspond to dimensional series E. The HT version is available for high-temperature applications up to +200°C. The igubal® expert system allows you to calculate the right solution easily and efficiently.

- Up to 60% lighter than metallic solutions
- Completely corrosion-free
- Application examples in a wide range of industries
- More energy-efficient production method

What are flange mounted bearings and what can they do?



igubal® flange mounted bearings are compact bearing units consisting of a housing and spherical insert bearing, which are used for the very simple bearing support of shafts. Our flange mounted bearings are made entirely of plastic and offer enormous advantages in terms of maintenance, weight and costs compared to their metal counterparts due to the absence of lubrication.

The advantages of igubal® flange mounted bearings can be seen in numerous application examples in various industries. Thanks to their corrosion resistance and chemical resistance, they also cope well in damp or wet environments. The bearings are particularly suitable for installation locations that are difficult to access and even fulfil special hygiene requirements depending on the choice of material.

For example, igubal® flange mounted bearings are used in washing brush control systems, façade sun protection systems, in conveyor technology and in bakery machines. Thanks to their maintenance-free dry-operation suitability, they are a reliable solution that saves you unnecessary maintenance work.

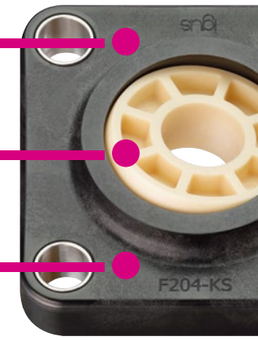
When are fixed flanged bearings used?

- When chemical resistance is required
- When a cost-effective alternative is needed
- When dirt-resistant bearings are required
- To adjust misalignment

Maintenance-free and lubrication-free

High rigidity

Durable



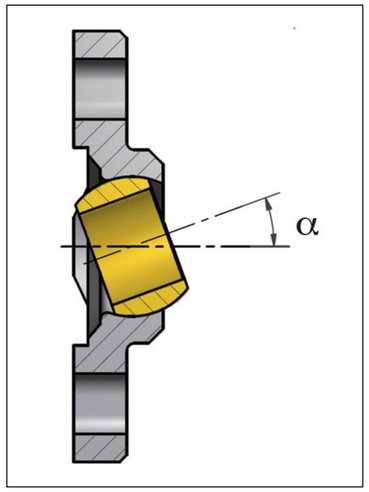
Lightweight

Low installation space

Self-lubrication
An outstanding feature of igubal® flange mounted bearings is their self-lubricating ability. Thanks to special lubricants and additives in the plastics, this bearing also minimises maintenance considerably and offers reliable performance over a longer period of time.

Versions
There is also a version of our flange mounted bearings specially designed for the food industry. These are metal detectable and can be recognised if they accidentally get into the food. These detectable variants represent an additional level of safety and make it possible to quickly identify possible foreign bodies and remove them from the production process. There are also versions for the high-temperature range, which can withstand temperatures of up to +200°C thanks to our combination of materials.

We also offer flange bearings with replaceable bearing inserts. This makes it possible to replace the bearing's inner ring separately from the housing instead of having to replace the entire flange mounted bearing. This can also be used in metallic housings.



Tilt angle of a flange mounted bearing

Tolerances
The igubal® flange mounted bearings are available in the dimensional series E and K with an inner diameter tolerance of E10. A suitable shaft should be toleranced between h6 and h9 to ensure optimum bearing support. The bearing clearance compensates for bearing expansion due to warming. All values and tolerances according to ISO 2768-m. Please contact us in case you require lower or other bearing tolerances.

Assembly
The two hole igubal® flange mounted bearings are equipped with elongated holes that allow easy adjustment. A precise alignment of the bearing housing is not required as the flange bearing automatically compensates for error. Special adjusting rings can be used to fix the shaft.

Corrosion-resistant
Due to the use of plastics, the flange mounted bearings from igus® are particularly resistant to corrosion. This makes them ideal for applications in environments with humid conditions or aggressive media.

Lightweight
Thanks to the use of lightweight materials, igubal® flange mounted bearings are lighter than conventional metal bearings. This is particularly advantageous when it comes to applications with weight restrictions or use in moving systems.

Custom-solutions
igus® not only offers a wide range of standard flange mounted bearings, but also develops customised solutions to meet the specific requirements of different projects.

Standard flange mounted bearing

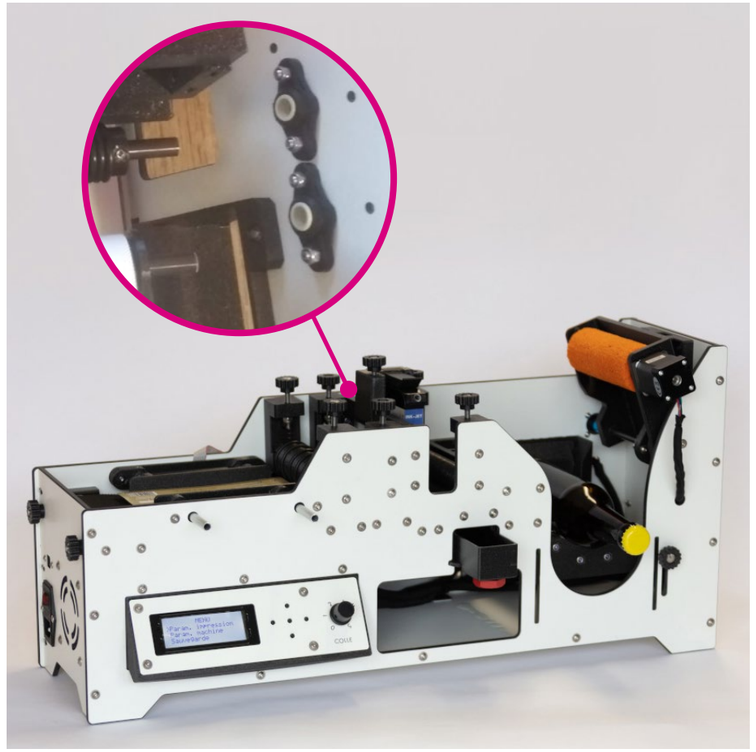
Flange mounted bearing with plastic housing

For temperatures up to +200°C

For food applications

Application example

Labelling machine and flight simulator

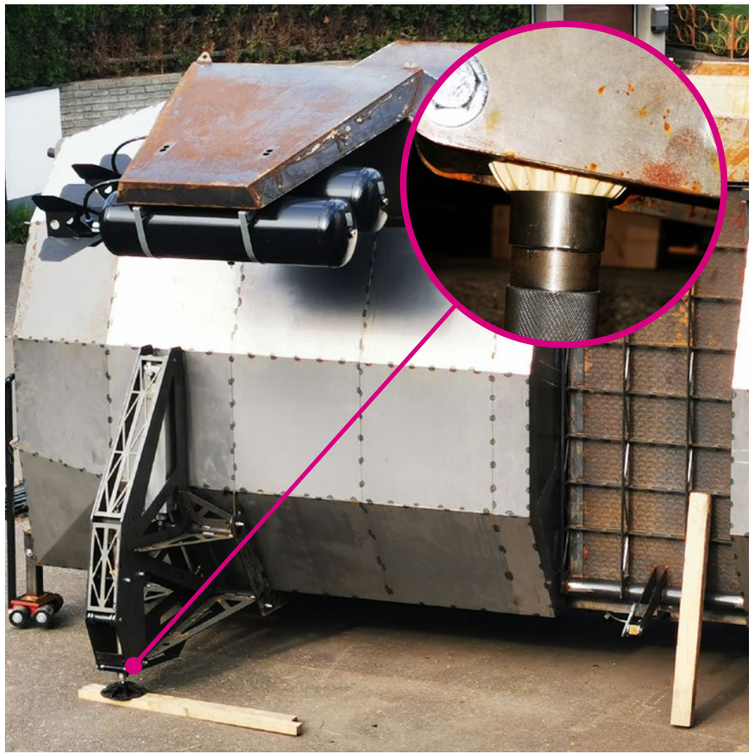


Labelling machine
The French company EDMS has developed a compact machine that is ideal for labelling honey, fruit juices, soft drinks and wine. It is particularly important that maintenance requirements are minimised even under demanding conditions such as humid and dusty environments with fluctuating temperatures.

To fulfil these requirements, EDMS relies on the igubal® EFOM flange mounted bearing. These bearings are used to precisely guide all rotating rollers in the machine, ensuring smooth and efficient operation. The use of these special bearings ensures a long service life and durability of the machine, even under the challenging conditions mentioned.

Flight simulator
Fire at will: The Austrian company metalartworks is developing a flight simulator for laser tag systems.

Pneumatic cylinders ensure the movement of the seats. This poses a particular challenge for bearing technology. This is because the shuttles are parked in a hall that is converted into a skating rink in winter. The temperature fluctuations and humidity are accordingly high. In the case of metal bearings, there would be a risk of corrosion under these conditions. To defy this risk, the designers use weather-resistant materials from igus®. For this reason, polymer pillow block bearings of the igubal® series (KSTM-GT-50) are used in the mechanics of the shuttles.

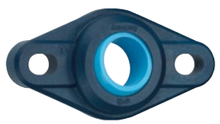


igubal® flange mounted bearing

Flange mounted bearings

EFOM
Easy installation

Housing	**igumid® G**
Spherical ball	**EK, J, J4, J4V, R**
Shaft diameter	**4–30mm**



EFOM-FC
Detectable, FDA and EU 10/2011-compliant

Housing	**igumid® FC**
Spherical ball	**A181, FC180**
Shaft diameter	**8, 10, 12mm**

F208-KS
Low coefficient of friction

Housing	**igumid® G**
Spherical insert bearing	**A180, A350, H3, J, J3, J4**
Shaft diameter	**30, 35, 40mm**

F-JEM-SP
Low coefficient of friction

Housing	**Cast iron**
Spherical insert bearing	**A180, A350, H3, J, J3, J4, X**
Shaft diameter	**20–50mm**

GFSM-IG
Complete housing with ball stud, female thread

Housing	**igumid® G**
Pin	**Galvanised steel, stainless steel**

EFOM-HT
High temperature

Housing	**iguton G**
Spherical ball	**X**
Shaft diameter	**5–12mm**

FL-KS-JEM-SP
Easy installation

Housing	**igumid® G**
Spherical insert bearing	**A180, A350, H3, J, J3, J4, X**
Shaft diameter	**17–50mm**

FL208-KS
High static loads

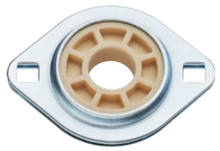
Housing	**igumid® G**
Spherical insert bearing	**A180, A350, H3, J, J3, J4**
Shaft diameter	**30, 35, 40mm**

GFSM-AG
Complete housing with ball stud, male thread

Housing	**igumid® G**
Pin	**Galvanised steel, stainless steel**

FL-JEM-SP
Easy replacement of the spherical ball

Housing	**Cast iron**
Spherical insert bearing	**A180, A350, H3, J, J3, J4, X**
Shaft diameter	**20–50mm**



PFL-JEM-SP
Low-cost version

Housing	**Sheet metal**
Spherical insert bearing	**A180, A350, H3, J, J3, J4**
Shaft diameter	**17–40mm**

EFSM
For high radial loads

Housing	**igumid® G**
Spherical ball	**EK, J, J4, J4V, R**
Shaft diameter	**4–30mm**

EFSM-HT
High temperature

Housing	**iguton G**
Spherical ball	**X**
Shaft diameter	**5–12mm**

KFSM-GT
High stiffness, split housing

Housing	**RN33**
Spherical ball	**J**
Shaft diameter	**35–50mm**

F-KS-JEM-SP
Completely corrosion-free

Housing	**igumid® G**
Spherical insert bearing	**A180, A350, H3, J, J3, J4, X**
Shaft diameter	**17–50mm**

igubal® self-aligning bearings

Spherical bearings

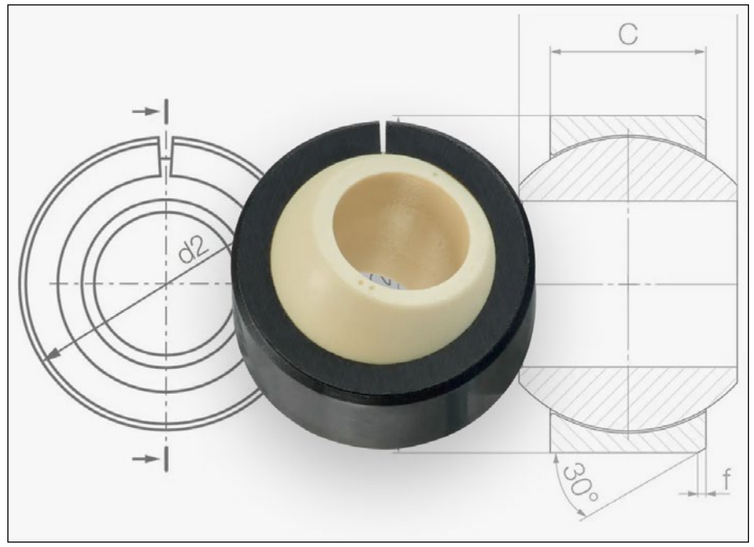
Easy handling and simple installation

Spherical bearings are 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.

- Absolutely dirt and media-resistant
- No maintenance and lubrication costs
- Tested in the igus® laboratory: up to 50kN static load capacity
- Energy-efficient production method

Introduction

What are spherical bearings and what can they do?



Typical application areas

- Agricultural engineering
- Food industry
- Railway technology
- Automotive industry
- Vehicle technology
- Automation

igubal® spherical bearings are characterised by their high-quality materials, in particular the use of high-performance polymers. These materials enable high wear resistance and a long bearing service life without the need for lubrication. This not only means less maintenance, but also reliable and continuous performance in a wide range of applications.

The igubal® spherical bearings are an outstanding solution for a wide range of applications where high performance, freedom from maintenance and insensitivity to dirt are essential. These spherical bearings are made of high-quality, tribologically high-performance materials and offer numerous advantages over conventional metallic spherical bearings. These spherical plain bearings are assembled by combining a housing with a spherical ball. With a metallic mating partner, these are characterised by their exceptional resistance to wear, which significantly increases the service life and reliability of the bearings. A particularly noteworthy advantage of igubal® spherical bearings is that they are lubrication-free, making them maintenance-free. This means that users no longer have to top up time-consuming and cost-intensive lubricants, which significantly reduces maintenance costs. In addition, the bearings are insensitive to dirt so that they function smoothly even under adverse environmental conditions. Another important aspect of igubal® spherical bearings is their self-aligning by means of a spherical ball. This enables reliable compensation of misalignments that can occur during assembly. However, it is important to align the bearings precisely in order to maximise this advantage.

Tolerances

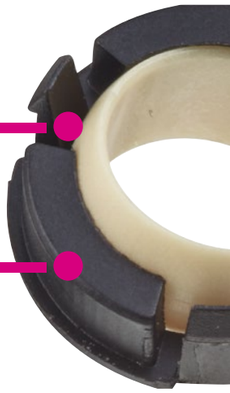
When the bearing is installed, it is pressed into an H7-toleranced housing and secured axially. The inner diameter of the bearing is tolerated according to E10. The shaft on which the bearing is installed should therefore be matched to a tolerance of h6 to h9 in order to ensure an ideal fit and function.

Easy to fit

Cost-effective

Chemical resistance

Lightweight



Very robust

igubal® spherical bearings

Spherical bearings

KGLM-LC
Cost-effective spherical bearing, clipped

Housing	**igumid® G**
Spherical ball	**EK, J, J4, W-MH**
Shaft diameter	**3–30mm**

KGLM-SL
For small installation spaces

Housing	**RN33**
Spherical ball	**W300**
Shaft diameter	**8–16mm**

KGLM
Spherical bearing, overmoulded

Housing	**igumid® G**
Spherical ball	**W300**
Shaft diameter	**2–30mm**

EGLM-LC
Low-cost spherical bearing, clipped

Housing	**igumid® G**
Spherical ball	**EK, J, J4, J4V**
Shaft diameter	**15–30mm**

EGLM
Spherical bearing, injection moulded

Housing	**igumid® G**
Spherical ball	**EK, J, J4, J4V, W-MH**
Shaft diameter	**4–80mm**

EGLM-FC
Detectable, FDA and EU 10/2011-compliant

Housing	**igumid® FC**
Spherical ball	**A181, FC180**
Shaft diameter	**8, 10, 20mm**

igubal® clip bearings

Clip bearings

ECLM
For small installation space

Housing	**igumid® G**
Spherical ball	**J**
Shaft diameter	**5–16mm**

ECLM-HD
For high axial and radial loads:

Housing	**igumid® G**
Spherical ball	**EK, J, J4, J4V, R, UW, X**
Shaft diameter	**8–20mm**

EGFM-T
Easy installation

Housing	**igumid® G**
Spherical ball	**EK, J, J4, J4V, R, UW**
Shaft diameter	**8–30mm**

ZCLM
Connection for rotating and pivoting movements

Ball stud	**galvanised steel, stainless steel**
Diameter	**6mm**

Saxophone
A saxophone that can be played with one hand: the Dutch company Flutelab accepted this challenge. To realise this concept, Flutelab relied on the mechanics of the igubal® KGLM series polymer spherical bearings from igus®.

These bearings ensure silent power transmission from the touch to the saxophone key, allowing the instrument to play smoothly and silently in the musician's hand. But that's not all - the vibration dampening provided by the igubal® KGLM bearings not only enables quiet performance, but also leads to weight savings. This makes the saxophone lighter and easier to handle, making it a high-quality musical instrument.

Pillow block bearings

Space-saving and lightweight

In the world of bearings, igubal® pillow block bearings are true masters of lightness and robustness. Thanks to their tribological properties, they also compensate for misalignments and prevent unwelcome edge pressure. However, it is not only their technical capabilities that impress, but also their environmentally friendly and maintenance-free nature.

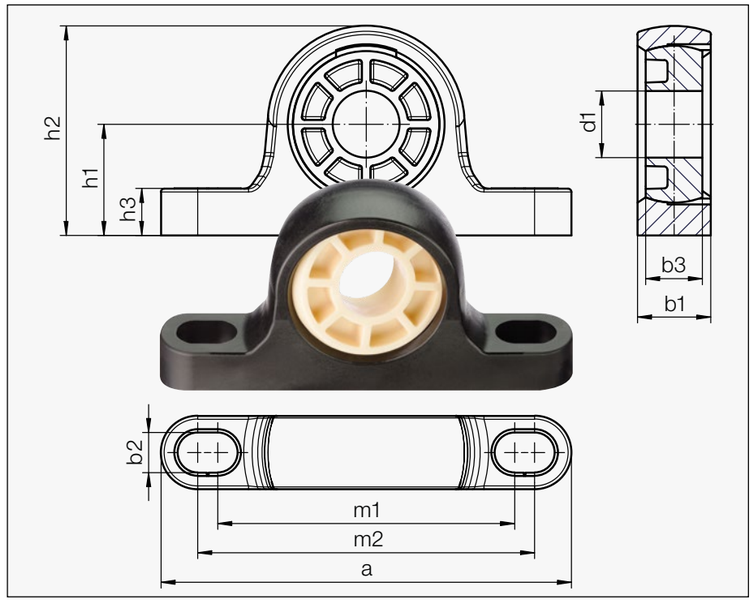
Up to 15% tensile strain

Maintenance-free and lubrication-free

Tested in the igus® laboratory: up to 25kN static load capacity

Environmentally friendly, no additional lubricants needed

What are pillow block bearings and what can they do?



Split pillow block bearing for square profiles

- Split housing and spherical ball design
- Compensation of misalignment
- Easy assembly and disassembly
- For long service life under high loads
- 25-year guarantee

Economical alternative to metallic solutions

Put through their paces in the igus® test laboratory, igubal® pillow block bearings are a reliable and cost-efficient alternative to metal solutions. Up to 40% more cost-effective and up to 80% lighter, they are the smart choice for economical operation. No lubrication required means no maintenance, which simplifies the life of the pillow block bearings and minimises costs.

Reliability in demanding environments

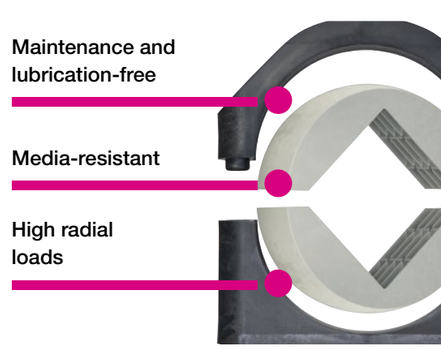
The high-performance plastics from which these pillow block bearings are made give them high durability and rigidity. This means they can withstand the most challenging environmental conditions for years and remain reliable in their function even in liquids and media.

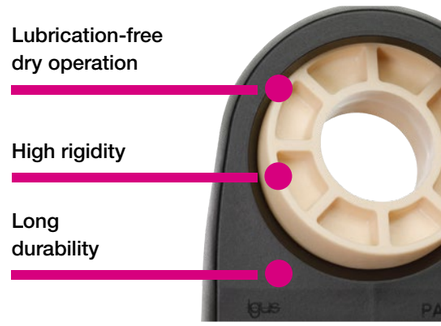
The impressive range of applications for igubal® pillow block bearings even extends to dirty and dusty environments. Resistant to dust and dirt, they retain their perfect functionality even under adverse conditions.

Pillow block bearings from igubal® set new standards in the world of plastic bearings. Lightweight, robust and cost-effective, they enable smooth and reliable performance. In a world where simplicity and efficiency count, the pillow block bearings are a shining example of the art of engineering.

When are pillow block bearings used?

- When chemical resistance is required
- When a cost-effective alternative is needed
- When dirt-resistant bearings are required
- To adjust misalignment
- When you need split components





igubal® pillow block bearings

Pillow block bearings

KSTM-CL
Pillow block bearing

Housing	**igumid® G**
Spherical ball	**J, J4**
Shaft diameter	**6–30mm**

KSTM
Pillow block bearing, overmoulded

Housing	**igumid® G**
Spherical ball	**W300**
Shaft diameter	**5–30mm**

KSTM-GT
Split pillow block bearing

Housing	**RN33**
Spherical ball	**J**
Shaft diameter	**35–50mm**

ESTM
Different spherical ball materials

Housing	**RN33**
Spherical ball	**J, J4, J4V, R**
Shaft diameter	**8–30mm**

ESTM-SL
Extremely space-saving and lightweight

Housing	**igumid® G**
Spherical ball	**J**
Shaft diameter	**5–10mm**

ESTM-GT-GT
Split pillow block bearing with split spherical ball

Housing	**RN33**
Spherical ball	**J**
Shaft diameter	**16–30mm**

ESTM-GT
Split pillow block bearing without spherical ball

Housing	**RN33**
Spherical ball	**Cylindrical**
Shaft diameter	**16–30mm**

ESTM-FC
Detectable, FDA and EU 10/2011-compliant

Housing	**igumid® FC**
Spherical ball	**A181, FC180**
Shaft diameter	**10, 20mm**

P-KS-JEM-SP
Plastic housing

Housing	**igumid® G**
Spherical insert bearing	**A180, A350, H3, J3, J4, X**
Shaft diameter	**10, 20mm**

PA-KS-JEM-SP
Compact pillow block bearing

Housing	**igumid® G**
Spherical insert bearing	**A180, A350, H3, J3, J4, X**
Shaft diameter	**17–50mm**

P-JEM-SP
Cast iron housing UC

Housing	**Cast iron**
Spherical insert bearing	**A180, A350, H3, J3, J4, X**
Shaft diameter	**20–50mm**

PP-JEM-SP
Metallic housing

Housing	**Galvanised steel**
Spherical insert bearing	**J**
Shaft diameter	**17–40mm**

ESQM
Split pillow block bearing for square profiles

Housing	**igumid® G**
Half-shells	**J4**
Shaft diameter	**100–150mm**

ESRM
Split pillow block bearing for shafts

Housing	**igumid® G**
Half-shells	**J4**
Shaft diameter	**120–140mm**

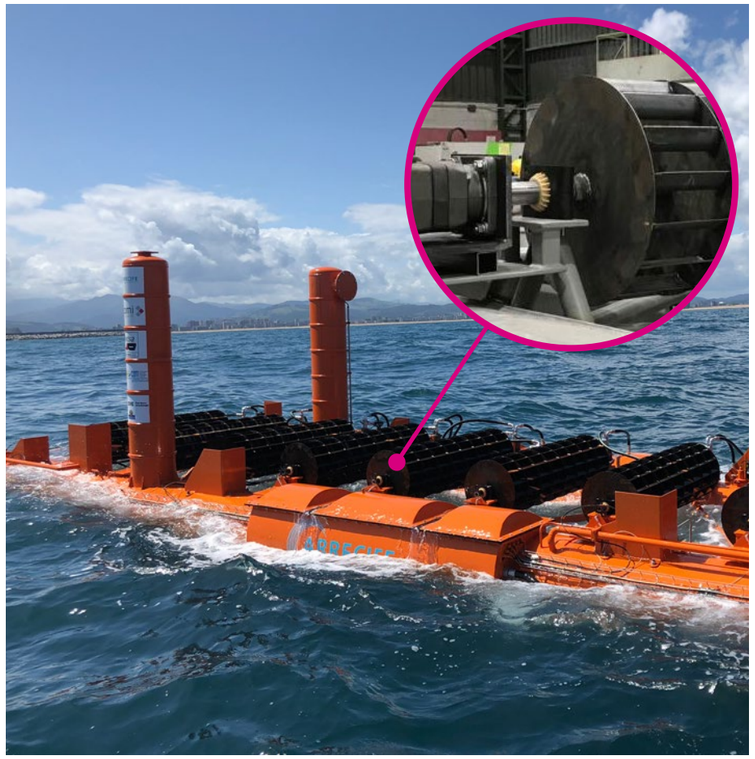
ESQM-GT
Split pillow block bearing with square spherical ball

Housing	**RN33**
Half-shells	**J4**
Shaft diameter	**20, 25mm**

KSQM-GT
Split pillow block bearing with square spherical ball

Housing	**RN33**
Half-shells	**J4**
Shaft diameter	**30, 40mm**

Floating power turbine
The Spanish company Arrecife Energy is developing a floating power generation system that converts the power of the sea into energy. The bearings of the system must have a high mechanical strength, be light and resistant to salt water. The designers opted for igubal® pillow block bearings KSTM-GT and flange bearings made of iglidur® W300.



igubal® self-aligning bearings

Food Contact

igubal® FC – detectable spherical bearing for the food industry

Their detectable materials allow igubal® FC (Food Contact) self-aligning bearings to be found quickly if the system crashes or is misused. Even the smallest fragments can be found with standard metal-detecting techniques.

FDA- and EU10/2011-compliant

Longer service life

No lubricants necessary

Introduction

Solutions for the food industry

igubal® FC spherical bearings
The use of spherical bearings is generally associated with heavy bearing material, difficult installation and high costs. In most cases, long-term maintenance is necessitated, and the bearings are only corrosion-free in special designs. Rolling or plain bearings often fail prematurely due to high edge loads, or they have to be readjusted, abraded or reassembled in order to compensate for misalignment. igubal® spherical bearings put an end to all these disadvantages and open up many new options for your design: they are easy to handle, cost-effective, lightweight and robust. The housing is made of igumid® FC.

Typical application areas
- Food industry
- Beverage industry
- Packaging industry

Our high-performance polymers for the food sector are lubrication-free and can be sterilised with hot steam and cleaned with chemical substances without any problems. They fulfil essential requirements for use in food processing machines and production processes. The blue colouring also makes them easy to detect. In addition, they offer all the typical igus® advantages such as freedom from maintenance, simple installation and low-noise and low-vibration operation.

The iglidur® A181 material offers both FDA and EU 10/2011 conformity. The blue colour also facilitates the "optical detectability" often desired in the food sector. Compared to iglidur® A180 with regard to the mechanical properties, temperature and media resistance, iglidur® A181 is more suitable with respect to the wear resistance in most cases. The housing and clevis joint material igumid® FC is metal detectable. The material is suitable for long-term use at temperatures from -30°C to +90°C.

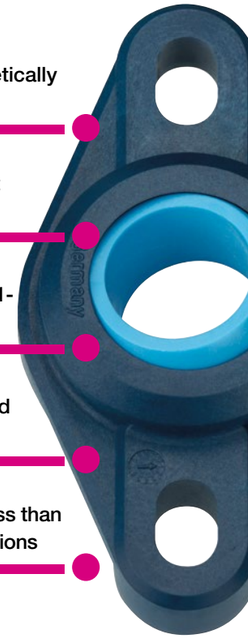
Visually and magnetically detectable

Suitable for contact with food

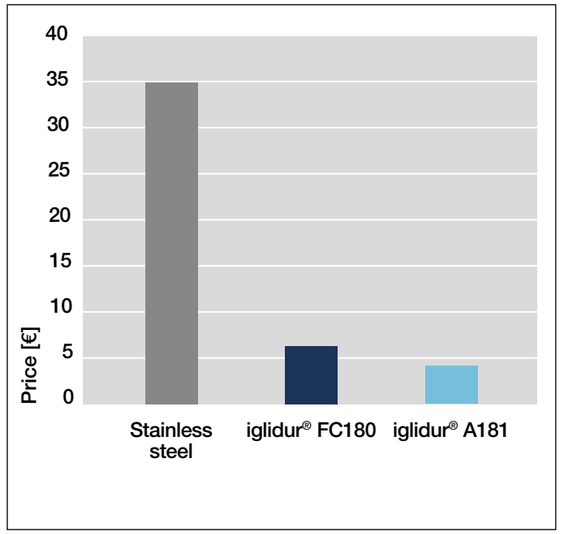
FDA- and EU10/2011-compliant

Lubrication-free and maintenance-free

Costs up to 80% less than stainless steel solutions

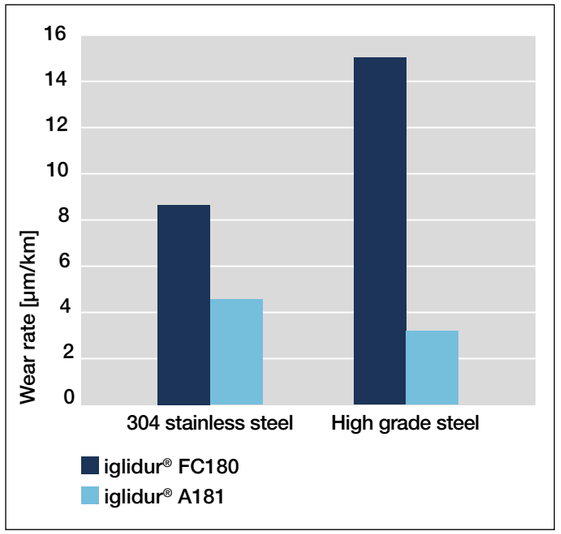


Cost down ...



Price for rod end with female thread M6; Ø 6mm; dimensional series K*
* Exemplary unit price for purchases of 25 pieces

service life up ...



Wear, rotating
p= 1MPa; v= 0.3m/s; T= 23°C

Quality you can touch with a new sample box for the expanded igubal® Food Contact spherical bearing system

New igus® polymer double joint for direct food contact

Food manufacturers are faced with the challenge of constantly improving system reliability. Detecting the smallest impurities is a decisive safety factor for guaranteeing product purity.
By integrating detectable additives that are also food-compliant into its high-performance plastics, igus® has developed a spherical bearing series specifically for direct food contact. It can be used to greatly reduce the risk of a costly recall. Detectors recognise even the smallest parts of components, facilitating quality assurance work.
The materials are coloured blue to improve optical detectability as well. Food residue and mould spores can thus be quickly identified during cleaning checks.

More design freedom with new double joint

"To give users even more design freedom in such a hygiene-sensitive area, we are now adding another component to our proven igubal® FC series. In addition to pillow block and flange mounted bearings, rod ends and clevis joints, the product range now also includes a double joint," explains Dennis Steffen, Product Manager for igubal® Spherical Bearings at igus®. Like all igubal® FC products, it contains an optically and magnetically detectable housing made of the FDA-compliant igumid® FC material. The new spherical bearing is also lubrication and maintenance-free, vibration-dampening, corrosion-free and, in combination with a spherical ball, suitable for compensating for misalignments.

"When selecting the right spherical ball, customers can choose between several materials, depending on their needs," says Dennis. "The insert made of the material iglidur® A181 can be used to comply with the strict FDA guidelines. The material iglidur® FC180 guarantees 100% detectability. Both also meet the EU 10/2011 standard for direct food contact. If a higher tightening torque is required due to the spherical ball, customers can also choose a stainless-steel version." As with all igus® products, they work without external lubricants, which rules out contamination. In addition, cleaning processes can be carried out regardless of the bearings.

Try it yourself: new Food Contact sample box

If you would like to convince yourself of the advantages and the quality of the materials of igubal® FC spherical bearings before buying, you can order a free sample box with samples from all product ranges: pillow block bearings, flange mounted bearings, rod ends, clevis joints and the new double joints.

The entire spherical bearing system is characterised by a long service life and chemical resistance, proven by numerous tests in our own test laboratory. The igubal® FC also beats the conventional spherical bearings made of stainless steel in terms of costs. A cost advantage of up to 85% can be achieved compared to stainless-steel solutions. The igus product also requires less maintenance due to the self-lubricating specifications of the bearing material.

igubal® products for the food industry

Food industry

KCRM-FC / KCLM-FC
Rod end with female thread, detectable, FDA and EU 10/2011-compliant

Housing	**igumid® FC**
Spherical ball	**A181, EK, FC180**
Shaft diameter	**5–12mm**

EBRM-FC / EBLM-FC
Rod end with female thread, detectable, FDA and EU 10/2011-compliant

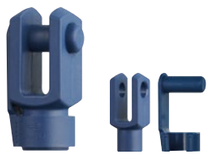
Housing	**igumid® FC**
Spherical ball	**A181, EK, FC180**
Shaft diameter	**4–12mm**

A350-SP
Spherical insert bearing, injection moulded, detectable, FDA and EU 10/2011-compliant

Material	**A350**
Diameter	**20mm**

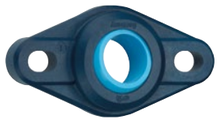
EGZM-FC
Double joint, detectable, FDA and EU 10/2011-compliant

Housing	**igumid® FC**
Spherical ball	**A181, EK, FC180**



GERMF-FC
Clevis joint with spring cap pin, detectable, FDA and EU 10/2011-compliant

Material	**igumid® FC**
Diameter	**4–12mm**

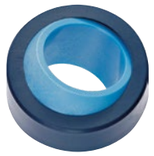


EFOM-FC
Flange mounted bearing, detectable, FDA and EU 10/2011-compliant

Housing	**igumid® FC**
Spherical ball	**A181, FC180**
Shaft diameter	**8, 10, 12mm**

ESTM-FC
Pillow block bearing, detectable, FDA and EU 10/2011-compliant

Housing	**igumid® FC**
Spherical ball	**A181, FC180**
Shaft diameter	**10, 20mm**



EGLM-FC
Spherical bearing, detectable, FDA and EU 10/2011-compliant

Housing	**igumid® FC**
Spherical ball	**A181, FC180**
Shaft diameter	**8, 10, 20mm**

FC180EM / FC180KM
Spherical ball, food-safe

Material	**FC180**
Dimensional series	**E, K**
Diameter	**4–20mm**

A181EM / A181KM
Spherical ball, food-safe

Material	**A181**
Dimensional series	**E, K**
Diameter	**4–20mm**

KCRM-ES / KCLM-ES
Rod end with female thread, food-safe

Housing	**Stainless steel**
Inner ring	**A181**
Shaft diameter	**6–20mm**

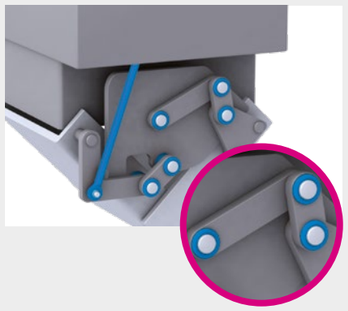
igubal® products for the food industry

KARM-ES / KALM-ES
Rod end with male thread, food-safe

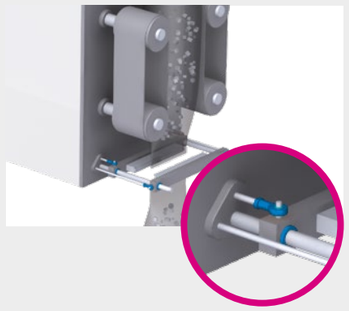
Housing	**Stainless steel**
Inner ring	**A181**
Shaft diameter	**6 – 20mm**

SRM-V-KS-GT-FC
Adjusting ring, split, detectable, FDA and EU 10/2011-compliant

Material	**igumid® FC**
Diameter	**20 – 50mm**

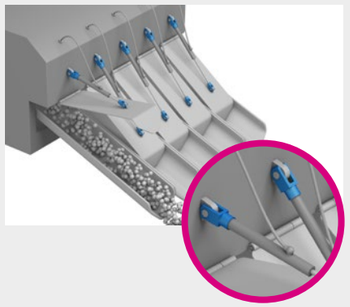


Multi-head weighing flaps

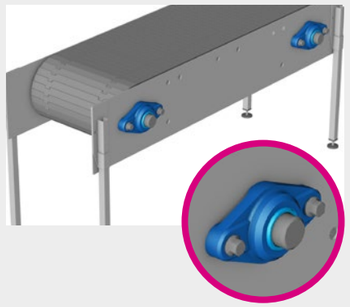


Sealing bar guidance

Advantages of igubal® FC (Food Contact):
- Visually and magnetically detectable
- Suitable for contact with food
- FDA- and EU10/2011-compliant
- Lubrication and maintenance-free
- Costs up to 80% less than stainless steel solutions



Pneumatic flap control system



Roller conveyors

igubal® spherical bearings

Individual customised products

Our spherical bearings are now available in food-compliant and detectable materials.

FDA- and EU10/2011-compliant

Costs much less than similar stainless steel designs

No lubricants necessary

Self-aligning bearings

igubal® angled and in-line ball and socket joints

Ready-to-install joints

igubal® coupling bearings are corrosion-resistant, resistant to chemicals, dust and dirt, UV radiation and nuclear radiation.

- Long service life thanks to iglidur® materials
- Ready-to-install system
- Suitable for temperatures from -30°C to +80°C
- No external lubrication

Application example

Ball coupling

Ball coupling
Rockinger Agriculture GmbH develops KS80 ball couplings with a high-performance plastic of the iglidur® series from igus® for balers, loader wagons, manure spreaders, tippers and field sprayers. The coupling consists of a coupling ball and a claw, which are installed in the height adjustment. The special feature of this coupling only becomes visible when you look into the coupling claw - inside is the wear insert made of high-performance plastic. In a fatigue test in the laboratory, the inserts withstood two million load changes - with a support load of 4.5 tons. If a third of the tractors in Germany are equipped with a KS80 and wear insert, this means that around 8,300 couplings can manage without lubrication. Eight tons of grease per year could be saved.

Angled and in-line ball and socket joints

WGRM / WGLM
Angled joints

Housing	**igumid® G**
Spherical cap	**W300**
Pin	**igumid® G, galvanised steel**

AGRM / AGLM
In-line ball and socket joint

Housing	**igumid® G**
Spherical cap	**W300**
Pin	**igumid® G, galvanised steel**

WGRM-DE / WGLM-DE
Angled ball and socket joints, removable

Housing	**igumid® G**
Pin	**igumid® G, galvanised steel**

WGRM-LC / WGLM-LC
Angled ball and socket joints, low-cost

Housing	**igumid® G**
Pin	**igumid® G, galvanised steel**

AGRM-LC / AGLM-LC
In-line ball and socket joints, low-cost

Housing	**igumid® G**
Pin	**igumid® G, galvanised steel**

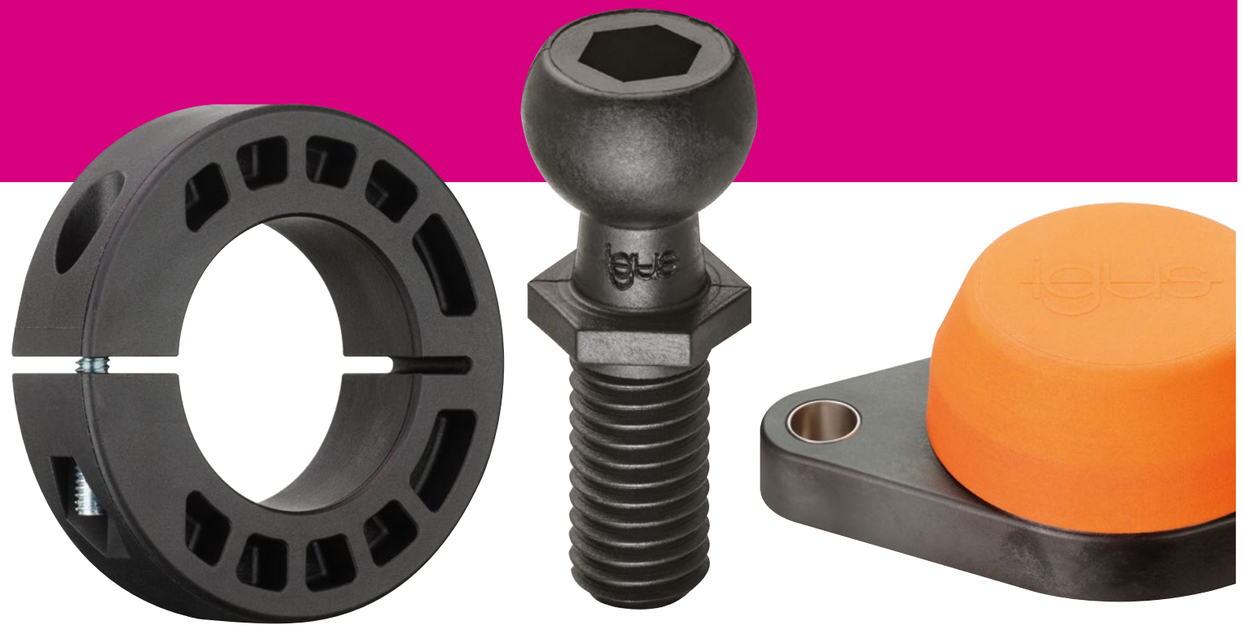
Compensation of misalignment errors

igubal® spherical thrust bearings

The housing pad is made of the impact-resistant, thermoplastic composite igumid® G. The spherical washer is made of iglidur® W300 material. This combination results in particularly good sliding and wear characteristics during relative movements.

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

Accessories



Environmentally friendly additional products

igubal® accessories can be combined and supplemented with the familiar igubal® products. We also use environmentally friendly materials.

- Easy assembly and disassembly
- Cost-effective plastic solutions due to injection-moulding method
- Proven in a wide range of customer applications
- No environmental pollution from lubricants

igubal® accessories

Accessories

SRM-V-KS
Fixing collar, also available FDA and EU 10/2011-compliant

Material	**igumid® G, igumid® FC**
Diameter	**20 – 50mm**

SRM-V-KS-GT
Fixing collar, split, also available FDA and EU 10/2011-compliant

Material	**igumid® G, igumid® FC**
Diameter	**20 – 50mm**

SRM-S-V/ES
Fixing collar with threaded pin

Material	**Galvanised steel, stainless steel**
Diameter	**17 – 50mm**

EC
End caps for flange mounted bearings with spherical insert bearings

End caps	**orange, clear**
Diameter	**20, 30, 40mm**

GZRM
Ball studs with male thread

Material	**igumid® G, galvanised steel, stainless steel**
Thread	**M5, M6, M8, M10**

GZRM-IG
Ball studs with female thread

Material	**Galvanised steel, stainless steel**
Thread	**M5, M6, M8, M10**

PKM
Adapter screws with circlip

Material	**POM**
Thread	**M5 – M20**

motion plastics®