# polymer...

... dry-tech® ... bearing technology 2023 ... motion plastics® ... igus.eu

Ball bearings. Spherical bearings. Slewing rings. Bar stock. 3D printing. Gears.

# ..dry-tech®

www.igus.eu/dry-tech

**Tech up, Cost down**

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

**Available from stock.**
**Ready to ship from 24hrs, earlier upon request.**
The delivery times indicated are the average time until the ordered goods are dispatched.

**No minimum order value. No surcharges.**
No minimum order value with igus®. Just order the amount you need.
You can find our prices online at **www.igus.eu**

**"7 to 8 plus Saturday" service**
Monday to Friday 7.00am to 8.00pm
Saturday from 8.00am to 12.00pm

**Order hotline**
Phone +49-2203 9649-145
Fax +49-2203 9649-334

**Online shop www.igus.eu**
Product finder, configurator, online catalogue,
CAD modules and many more. Order around-the-clock!

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

**igus® live chat**
There are many ways to reach us.
For example, you can use our online live chat.

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

iglidur®
## Polymer plain bearings
▶ Online service life calculation
▶ Online product finder

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iglidur®
## Clip bearings, piston rings and more
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▶ Online product finder

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## PRT slewing rings
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▶ Online product finder

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## Bar stock for design freedom
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## Ball bearings and accessories
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**Disclaimer**

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

Our offers are directed to traders/resellers only. The delivery times indicated correspond to the time until the goods are dispatched, and transport costs are not included in the price. We recommend that you always check the suitability of the products for a particular purpose in a practical trial. Contact us for advice.

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

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All catalogues at a glance

# motion plastics®

## Bearing technology

Plain bearings, piston rings, slewing rings, bar stock, gears, 3D printing, spherical bearings and ball bearings

## Linear technology

Linear technology, lead screw technology, drive technology, Low Cost Automation

## e-chains® and e-chain systems®

- ▶ Online service life calculation
- ▶ System configurator online

## chainflex® cables

- ▶ Online service life calculation
- ▶ System configurator online

## New products journal

All motion plastics® new products at a glance

## igus® Kiosk

Brochures, journals and catalogues to browse through

# Proven.
# Predictable.
# Performance.

iglidur® plastic plain bearings from igus® are lubrication-free, maintenance-free, cost-effective and versatile. They are suitable for mass-produced automotive products or for the construction of special machines, for underwater applications, for the food and packaging industry, for extreme resistance to chemicals and temperature fluctuations or for simple metal-sheet bearings: iglidur® plain bearings always offer a solution - either from the product range in the catalogue or as a special customised bearing solution - no minimum order quantity!
For more than 30 years, iglidur® plain bearings, which conform with RoHS, have been a technically and economically advantageous alternative to metal bearings of all kinds. The industry's biggest test laboratory with approximately 15,000 tests per year enables reliable predictability.

## Longer service life, no maintenance, available immediately.

### The most cost-effective bearing for any application

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

**Sustainability at igus®**
We have been focusing on sustainability in manufacturing and products. As a result, we are now also able to state the $CO_2$ footprint of a large number of our iglidur® plain bearings. In addition, there are new products that are largely or completely made from recycled material.

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

**No lubrication with igus®**
The lubrication-free design of iglidur® also permits its use in the food and pharmaceutical industries. Don't wait any longer!

**No maintenance with igus®**
iglidur® materials for wide variety of operating conditions. Large program of dimensions compatible with nearly all applications. Predictable service life!

**No corrosion with igus®**
Lightweight, corrosion resistance as well as zero maintenance and lubrication achieve solutions for almost all types of applications. Fit and forget!

# Reduce process costs: bearings technology on the web

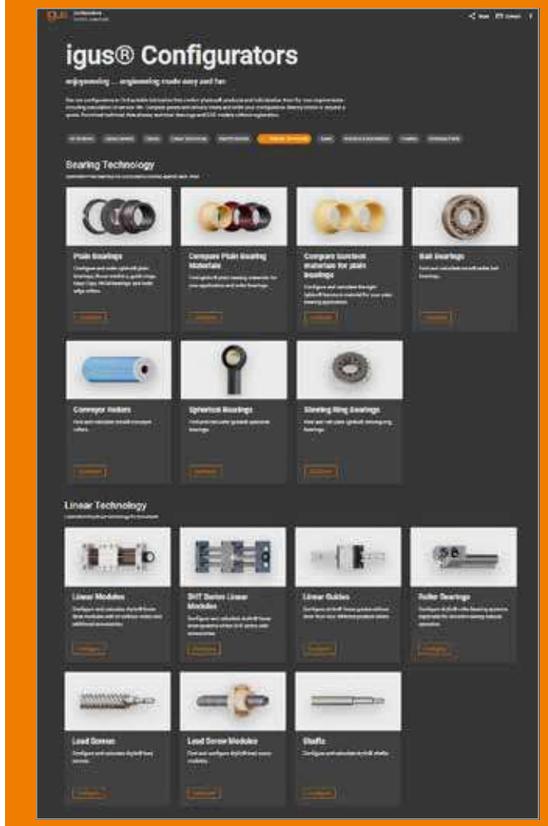
For every product in this catalogue, there is a special quick link or direct online pointer to further details, data and facts. These include:

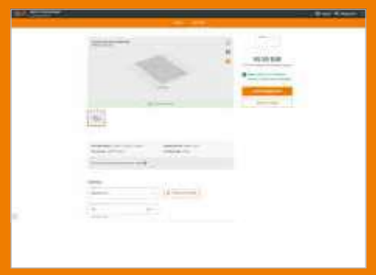
- Online tools for calculating service life
- 3D CAD files
- DXF data
- Download of current catalogues, brochures, videos and assembly instructions
- Application pictures
- Imperial dimensions
- Personal support
- Catalogue and sample ordering
- Online price list and online shop

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

▶ **www.igus.eu/CAD**

▶ **www.igus.eu/online-tools**





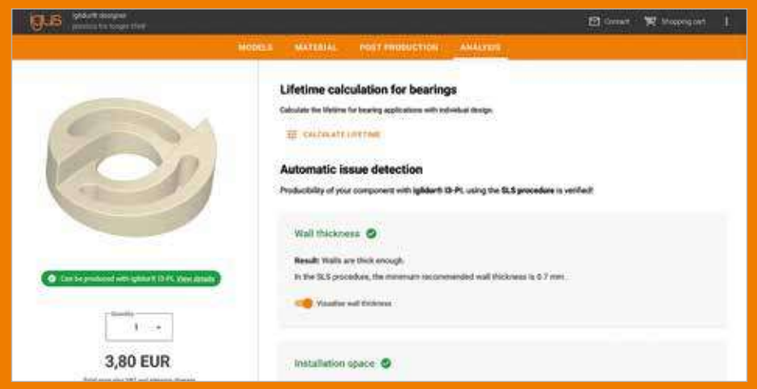
**ONLINE TOOLS**
Fast selection of the right product incl. Service life calculation

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

**SERVICES**
Custom machining and other tools.

## Individual components

- Service life calculation
- Feasibility analysis
- Instant price



# Quality from the igus® test laboratory

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

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

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

▶ **www.igus.eu/test**

**Explore the igus® test laboratory virtually:**
▶ **igusvr.igus.eu**

**All products are tested and available from one source.**

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

▶ **www.igus.eu/quality**

igus® quality assurance ...

... 100% visual inspection ...

... tested in the 250m² dry-tech® lab

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

... 549 customer tests per year ...

... or heavy duty tests up to 250MPa

# Worldwide, quick and reliable - the igus® service

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

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

Take advantage of further service options from igus®:

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

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

## 24hrs

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

## 24 - 48hrs

**Custom-made linear systems**
Example:
2.46m drylin® T profile rail with carriages.

## 24 - 72hrs

**Complete drive modules**
Example:
Lead screw linear systems made to your individual requirements and dimensions.

## 3 - 7 days

**FastLine service**
Example:
Customised injection-moulded plain bearings.

## 3 - 10 days

**Machined components or 3D printed special parts**
Example:
online configured and machined shafts, lead screws, special parts and bar stock made to design.

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

## 3 - 6 weeks

**Initial samples from new tools**
Example:
Injection moulding of parts made to your design.

Shipped from 24hrs

No minimum order quantity

7am to 8pm plus Saturday service

# Free igus® online services

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

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

From your application evaluation to our free in-house exhibitions directly on your premises, to specific tests performed exactly according to your requirements.
We are always happy to work with you and support you.
Find out about our free offers for your application now.

Use services now
▶ www.igus.eu/service

### Handle and test
Free sample parts for tests and prototypes

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

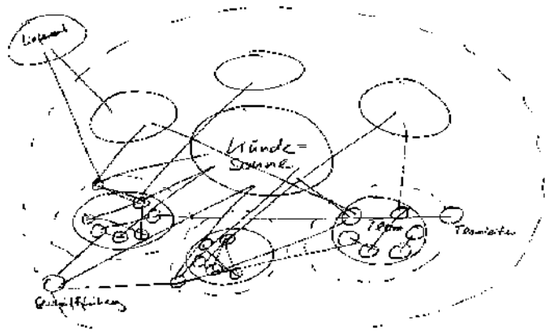
### Products developed for you
Numerous innovations every year, to meet customer requests.

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

# The flexible igus® factory

### Investments in better technology and faster delivery times

Nearly 200,000 customers worldwide trust "motion plastics®" - manufacturing products at low-cost, while also ensuring quality. We have been developing, making and selling our products according to this principle for years. Wear-resistant parts as catalogue items are on stock, to allow us to complete customer requests within hours and ship.
igus® is continuing its growth trend and is focusing more than ever on sophisticated yet simpler solutions for all applications and budgets.



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

Material preparation

Injection moulding

Warehouse

Assembly factory

Toolmaking

Open offices

# Global standards - igus® is close to you

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

A large network of sales engineers are at your disposal in Germany and worldwide. We will gladly provide consultation at your premises, supply assembly instructions and tools to installation sites, as well as measure installation spaces and check environmental conditions on site.
There are 4,500 employees in Germany and 30 international subsidiaries, plus distributors in another 52 countries to guarantee a rapid delivery worldwide.

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

▶ **www.igus.eu/worldwide**

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

Technical consultation at your premises

Worldwide open offices - for example in China

Worldwide modular factories - for example in the USA

igus® in-house trade show stand

igus® at trade shows

igus® offices and distributors
All addresses on last page.

# Sustainable product development

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

▶ **www.igus.eu/sustainability**

igus certificate

iglidur® ECO P

100 % recycled iglidur®

## ECO product range

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

## $CO_2$ footprint

**$CO_2$ footprint in the online shop**
igus® has been focusing more and more on sustainability in manufacturing and products since 2018. As a result, we are now also able to state the carbon footprint of a large number of our iglidur® plain bearings. In addition, there are new products that are largely or completely made from recycled material from our own production. And these are also tested in the laboratory and have a predictable service life.

## chainge program

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

## igus:bike

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

# Fit and forget

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

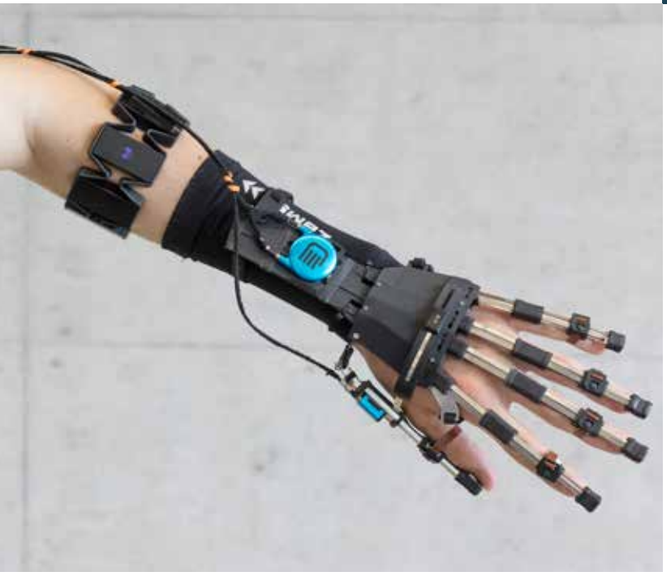
Different industries need different solutions. From mechanical engineering, automotive assembly or medical technology, to the robotics industry - igus® offers customised solutions for specific applications. igus® possesses many years of experience in most branches of industry and has competent specialists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

**Go online and find solutions for almost every branch of industry**
**▶ www.igus.eu/industry**

**Packaging of sterile syringe sets**
This isolator from the Japanese cleanroom specialist Airex Co. Ltd. is used for sterile packaging of syringe sets. The syringe trays are guided through the isolator on a slightly inclined roller system and ejected again at the end of the decontamination isolator via a mechanism. Due to the cleanroom conditions, the bearings used for the roller system had to be lubrication-free and highly resistant to chemicals. The designer decided on xiros® deep groove ball bearings made of the material xirodur® C160 and igubal® pillow block bearings.

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

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



**3D printed finger phalanxes in an exoskeleton**
Low friction, light and made to measure - quickly printed components for therapeutic applications. According to the German Stroke Association, someone in Germany suffers a stroke every two minutes. In order to make it easier to re-learn how to grasp things after a stroke, Eidgenössische Technische Hochschule Zurich (ETHZ university) developed a hand exoskeleton called RELab tenoexo. This can perform up to 80 per cent of everyday activities. 3D printed finger phalanges made of the iglidur® i6 high-performance plastic ensure optimum force transmission.

**Automated production of thermal walls**
An important factor in the sustainability and energy efficiency of a building is insulation. An efficient invention in the field of insulation material is the automatic insulation material cutter. This enables fast and precise cutting optimisation, which results in significantly less waste saving material and time costs. In addition, the cutter allows many applications and is therefore also suitable for special shapes and angle cuts. This leads to simplified processing of insulation material and higher efficiency in the work process. The axes bearings of the 3D head were realised with iglidur® slewing ring bearings (PRT-01 type).

# iglidur®

## Polymer plain bearings

# ...plastics

# Application examples: iglidur®

## Tech up ... Cost down

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

**Automated guided vehicle system**
iglidur® Z plain bearings are used in the control arms of the autonomous transport vehicles. The bearings ensure that the weight of the robot and its load are distributed evenly. They transmit the axial forces exerted on the suspension bolts and ensure that the entire mechanism moves easily.
(Etisoft Smart Solutions)

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

**Solar steam system saves $CO_2$**
With iglidur® plain bearings made of the material J UV, the ideal solution was found for the approximately 1,000 bearing points in each plant. The material was specially developed for use in UV radiation and is durable, reliable and maintenance-free even in sunlight.
(ECOTHERM)

**Oscillating axles for heavy load transport**
The use of iglidur® G plain bearings as well as igutex® TX1 thrust washers made the use of additional lubricants unnecessary and reduced maintenance and servicing to a minimum.
(Demarko)

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

# iglidur® plain bearings | Product overview

## iglidur® plain bearings: all-rounder

### Materials for general purpose

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

More universal: iglidur® G1
▶ Page 101

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

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

For series: iglidur® P230
▶ Page 129

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

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

## iglidur® plain bearings: endurance runner

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

### Materials for long service life

The versatile endurance runner: iglidur® J
▶ Page 163

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

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

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

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

Ideal for plastic shafts: iglidur® J260
▶ Page 211

## iglidur® plain bearings: endurance runner

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

For fast rotating applications: iglidur® L250
▶ Page 227

For high rotational speeds: iglidur® L350
▶ Page 235

For extreme rotational speeds: iglidur® L500
▶ Page 243

Low-cost: iglidur® R
▶ Page 251

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

Specialist for aluminium shafts: iglidur® J200
▶ Page 265

Ideal for pivoting movement: iglidur® E7
▶ Page 271

## iglidur® plain bearings: high temperature

New

Extremely wear-resistant: iglidur® E
▶ Page 279

### Materials for use at high temperatures

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

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

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

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

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

For hot liquids: iglidur® UW500
▶ Page 335

## iglidur® plain bearings: high media resistance

### Materials with good media resistance

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

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

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

High temperature endurance runner: iglidur® C500
▶ Page 371

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

New

Chemical-resistant: iglidur® H3
▶ Page 385

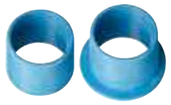
New

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

# iglidur® plain bearings | Product overview

## iglidur® plain bearings: for contact with food

### Materials for contact with food



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

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

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

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

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

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

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

## iglidur® plain bearings: for contact with food

For the tobacco industry:
iglidur® T220
▶ Page 459

New

Conductive and resistant:
iglidur® AX500
▶ Page 465

## iglidur® plain bearings: for harsh environments

### Materials for harsh environments

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

New

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

The peak of stability:
iglidur® Q
▶ Page 491

## iglidur® plain bearings: for harsh environments

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

New

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

New

For heavy duty:
iglidur® M260
▶ Page 511

## igutex® plain bearings: for high loads

### Materials for heavy-duty applications

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

New

The technical shafts specialist:
igutex® TX2
▶ Page 527

New

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

## iglidur® plain bearings: specialists

### Materials for special application areas

Electrically conductive:
iglidur® F
▶ Page 545

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

The automotive standard:
iglidur® H4
▶ Page 561

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

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

The biopolymer:
iglidur® N54
▶ Page 585

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

## iglidur® plain bearings: specialists

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

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

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

The variable one:
iglidur® B
▶ Page 625

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

# iglidur® plain bearings | Technical properties - quick selection

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

| J | W300 | J3 | J3B | J350 | J260 | W360 | L250 | L350 | L500 | R | D |
|---|---|---|---|---|---|---|---|---|---|---|---|
| E10 | E10 | E10 | E10 | F10 | E10 | E10 | E10 | F10 | F10 | E10 | E10 |
| | | | | | | | | | | | |
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| | | | | ● | | ● | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| HB | HB | HB | HB | V-0 | V-2 | HB | HB | V-0 | V-0 | HB | HB |
| ● | | | | ● | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| ● | ● | | | | | | | | | | |
| ● | ● | ● | | ● | ● | | | | | ● | |
| ● | | | | | | | | | | | |
| ● | | | | | | | | | | | |
| ● | ● | ● | | ● | ● | | | | | ● | |
| | | | | | | | | | | | |
| 163 | 175 | 187 | 195 | 203 | 211 | 219 | 227 | 235 | 243 | 251 | 259 |

# iglidur® plain bearings | Technical properties - quick selection

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

| iglidur® | H1 | H370 | H | C500 | H2 | H3 | H5 | A181 | A350 | A500 | A180 | A200 | A160 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Installation tolerances | F10 | F10 | F10 | F10 | F10 | F10 | F10 | E10 | F10 | F10 | E10 | D11 | E10 |
| **Descriptive technical specifications** | | | | | | | | | | | | | |
| Wear resistance at +23°C | | | | | | | | | | | | | |
| Wear resistance at +90°C | | | | | | | | | | | | | |
| Wear resistance at +150°C | | | | | | | | | | | | | |
| Slide property | | | | | | | | | | | | | |
| Wear resistance under water | | | | | | | | | | | | | |
| Media resistance | | | | | | | | | | | | | |
| Resistant to edge pressures | | | | | | | | | | | | | |
| Resistant to shock and impact loads | | | | | | | | | | | | | |
| Dirt resistance | | | | | | | | | | | | | |
| For high loads (>60MPa) | ● | ● | ● | ● | ● | | | | ● | ● | | | |
| Electrically conductive | | ● | | | | | | | | | | | |
| **Approvals and standards** | | | | | | | | | | | | | |
| Dimensions in accordance with DIN | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 2795 | ISO 3547 |
| FDA-compliant | | | | | | | | ● | ● | ● | ● | ● | ● |
| EU 10/2011-compliant | | | | | | | | ● | ● | ● | ● | ● | ● |
| Fire class in accordance with UL-94 | V-0 | V-0 | V-0 | V-0 | V-0 | V-0 | V-0 | HB | V-0 | V-1 | HB | V-2 | HB |
| Mould test DIN EN ISO 846 | ● | | | | | | | | | | | | |
| Fogging DIN 75201-B | | | | | | | | | | | | | |
| **Availabilities / variants** | | | | | | | | | | | | | |
| Type S, sleeve | ● | ● | ● | ● | | | | ● | ● | ● | ● | ● | ● |
| Type F, with flange | ● | ● | ● | ● | | | | ● | ● | ● | ● | ● | ● |
| Type T, thrust washer | | | | | | | | | | | | | |
| Bar stock, round material | ● | | ● | ● | | ● | | ● | ● | ● | ● | | ● |
| Bar stock, plate | | | | | | | | | ● | | | | |
| Bar stock, tube | | | | | | | | | | | | | |
| Machined parts made from bar stock | ● | | ● | ● | | ● | | ● | ● | ● | ● | | ● |
| tribo-tape liner | | | | | | | | | | | | | ● |
| **Page** | 345 | 353 | 363 | 371 | 379 | 385 | 391 | 401 | 409 | 417 | 425 | 433 | 443 |

# iglidur® plain bearings | Technical properties - quick selection

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

| iglidur® | TX2 | TX3 | F | F2 | H4 | UW | J UV | N54 | G V0 | J2 | AB | RW370 | B | C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Installation tolerances | D11 | D11 | D11 | E10 | F10 | E10 | E10 | E10 | E10 | E10 | E10 | F10 | D11 | D11 |
| **Descriptive technical specifications** | | | | | | | | | | | | | | |
| Wear resistance at +23°C | | | | | | | | | | | | | | |
| Wear resistance at +90°C | | | | | | | | | | | | | | |
| Wear resistance at +150°C | | | | | | | | | | | | | | |
| Slide property | | | | | | | | | | | | | | |
| Wear resistance under water | | | | | | | | | | | | | | |
| Media resistance | | | | | | | | | | | | | | |
| Resistant to edge pressures | | | | | | | | | | | | | | |
| Resistant to shock and impact loads | | | | | | | | | | | | | | |
| Dirt resistance | | | | | | | | | | | | | | |
| For high loads (>60MPa) | ● | ● | ● | ● | ● | | | | ● | | | ● | | |
| Electrically conductive | | | ● | ● | | | | | | | | | | |
| **Approvals and standards** | | | | | | | | | | | | | | |
| Dimensions in accordance with DIN | ISO 2795 | ISO 2795 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | |
| FDA-compliant | | | | | | | | | | | | | | |
| EU 10/2011-compliant | | | | | | | | | | | | | | |
| Fire class in accordance with UL-94 | | | HB | HB | V-0 | HB | HB | HB | V-0 | HB | HB | V-0 | HB | HB |
| Mould test DIN EN ISO 846 | | | | | | | | | ● | | | | | |
| Fogging DIN 75201-B | | | | | | | | | | | | | | |
| **Availabilities / variants** | | | | | | | | | | | | | | |
| Type S, sleeve | ● | ● | ● | ● | ● | ● | ● | ● | ● | | ● | ● | | |
| Type F, with flange | | | ● | ● | ● | ● | ● | ● | ● | | ● | ● | | |
| Type T, thrust washer | | | | | | | | | | | | | | |
| Bar stock, round material | | | | ● | | | | | | ● | ● | ● | | |
| Bar stock, plate | | | | | | | | | | | | | | |
| Bar stock, tube | | | | | | | | | | | | | | |
| Machined parts made from bar stock | | | | ● | | | | | | ● | ● | ● | | |
| tribo-tape liner | | | | | | | | | | | | | | |
| **Page** | 527 | 533 | 545 | 553 | 561 | 569 | 577 | 585 | 593 | 601 | 609 | 617 | 625 | 631 |

# iglidur® plain bearings | Material properties

| iglidur® | Unit | G | G1 | M250 | P210 | P230 | P | K | GLW | J | W300 | J3 | J3B | J350 | J260 | W360 | L250 | L350 | L500 | R | D | J200 | E7 | E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **General properties** | | | | | | | | | | | | | | | | | | | | | | | | |
| Density | [g/cm³] | 1.46 | 1.58 | 1.14 | 1.40 | 1.57 | 1.58 | 1.52 | 1.36 | 1.49 | 1.24 | 1.42 | 1.42 | 1.44 | 1.35 | 1.34 | 1.5 | 1.54 | 1.53 | 1.39 | 1.4 | 1.72 | 1.05 | 1.50 |
| Colour | | | | | | | | | | | | | | | | | | | | | | | | |
| Max. moisture absorption at +23°C and 50% relative humidity | [% weight] | 0.7 | 0.2 | 1.4 | 0.3 | 0.1 | 0.2 | 0.1 | 1.3 | 0.3 | 1.3 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.7 | 0.4 | 0.1 | 0.2 | 0.3 | 0.2 | 0.1 | 0.2 |
| Max. moisture absorption | [% weight] | 4.0 | 1.7 | 7.6 | 0.5 | 0.3 | 0.4 | 0.6 | 5.5 | 1.3 | 6.5 | 1.3 | 1.3 | 1.6 | 0.4 | 1.6 | 3.9 | 1.4 | 0.3 | 1.1 | 1.1 | 0.7 | 0.1 | 1.7 |
| Coefficient of sliding friction, dynamic against steel | [µ] | 0.08 - 0.15 | 0.08 - 0.15 | 0.18 - 0.40 | 0.07 - 0.19 | 0.06 - 0.21 | 0.06 - 0.21 | 0.06 - 0.21 | 0.10 - 0.24 | 0.06 - 0.18 | 0.08 - 0.23 | 0.06 - 0.20 | 0.09 - 0.23 | 0.10 - 0.20 | 0.06 - 0.20 | 0.07 - 0.21 | 0.08 - 0.19 | 0.15 - 0.20 | 0.19 - 0.26 | 0.09 - 0.25 | 0.08 - 0.26 | 0.11 - 0.17 | 0.08 - 0.17 | 0.08 - 0.23 |
| pv value, max. (dry) | [MPa·m/s] | 0.42 | 0.60 | 0.12 | 0.4 | 0.30 | 0.39 | 0.3 | 0.3 | 0.34 | 0.23 | 0.5 | 0.5 | 0.45 | 0.35 | 0.35 | 0.4 | 3.0 | 4.0 | 0.27 | 0.27 | 0.3 | 0.22 | 0.25 |
| **Mechanical properties** | | | | | | | | | | | | | | | | | | | | | | | | |
| Flexural modulus | [MPa] | 7,800 | 11,486 | 2,700 | 2,500 | 6,532 | 5,300 | 3,500 | 7,700 | 2,400 | 3,500 | 2,700 | 2,895 | 2,000 | 2,200 | 3,829 | 1,950 | 15,882 | 12,015 | 1,950 | 2,000 | 2,800 | 1,477 | 2,975 |
| Flexural strength at +20°C | [MPa] | 210 | 178 | 112 | 70 | 173 | 120 | 80 | 235 | 73 | 125 | 70 | 65 | 55 | 60 | 119 | 67 | 210 | 201 | 70 | 72 | 58 | 22 | 79 |
| Compressive strength | [MPa] | 78 | 115 | 52 | 50 | 101 | 66 | 60 | 74 | 60 | 61 | 60 | n.s. | 60 | 50 | n.s. | 47 | 210 | 70 | 68 | 70 | 43 | 18 | n.s. |
| Max. permissible surface pressure at +20°C | [MPa] | 80 | 91 | 20 | 50 | 60 | 50 | 50 | 80 | 35 | 60 | 45 | 44 | 60 | 40 | 75 | 45 | 59 | 70 | 23 | 23 | 23 | 18 | 37 |
| Shore D hardness | | 81 | 81 | 79 | 75 | 80 | 75 | 72 | 78 | 74 | 77 | 73 | 76 | 80 | 77 | n.s. | 68 | 80 | 81 | 77 | 78 | 70 | 61 | 78 |
| **Physical and thermal properties** | | | | | | | | | | | | | | | | | | | | | | | | |
| Max. continuous operating temperature | [°C] | +130 | +180 | +80 | +100 | +110 | +130 | +170 | +100 | +90 | +90 | +90 | +90 | +180 | +120 | +180 | +90 | +180 | +250 | +90 | +90 | +90 | +70 | +90 |
| Max. short-term operating temperature | [°C] | +220 | +220 | +170 | +160 | +180 | +200 | +240 | +160 | +120 | +180 | +120 | +110 | +220 | +140 | +200 | +180 | +210 | +315 | +110 | +110 | +120 | +90 | +120 |
| Min. continuous operating temperature | [°C] | -40 | -40 | -40 | -40 | -30 | -40 | -40 | -40 | -50 | -40 | -50 | -50 | -100 | -100 | -40 | -40 | -100 | -100 | -50 | -50 | -50 | -50 | -50 |
| Thermal conductivity | [W/m · K] | 0.24 | 0.46 | 0.24 | 0.25 | 0.34 | 0.25 | 0.25 | 0.24 | 0.25 | 0.24 | 0.25 | 0.30 | 0.24 | 0.24 | 0.24 | 0.24 | 0.61 | 0.45 | 0.25 | 0.25 | 0.24 | 0.24 | 0.25 |
| Coefficient of thermal expansion at +23°C | [$K^{-1} \cdot 10^{-5}$] | 9 | 3.5 | 10 | 8 | 5 | 4 | 3 | 17 | 10 | 9 | 13 | 12.7 | 7 | 13 | 6 | 10 | 7 | 6 | 11 | 11 | 8 | 25 | 10 |
| **Electrical properties** | | | | | | | | | | | | | | | | | | | | | | | | |
| Specific contact resistance | [Ωcm] | $> 10^{13}$ | $> 10^{9}$ | $> 10^{13}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{13}$ | $> 10^{12}$ | $> 10^{11}$ | $> 10^{13}$ | $> 10^{13}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{13}$ | $> 10^{12}$ | $> 10^{13}$ | $> 10^{10}$ | $> 10^{5}$ | $> 10^{10}$ | $> 10^{12}$ | $> 10^{14}$ | $> 10^{8}$ | $> 10^{9}$ | $> 10^{12}$ |
| Surface resistance | [Ω] | $> 10^{11}$ | $> 10^{11}$ | $> 10^{11}$ | $> 10^{11}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{11}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{10}$ | $> 10^{10}$ | $> 10^{12}$ | $> 10^{11}$ | $> 10^{5}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{14}$ | $> 10^{8}$ | $> 10^{9}$ | $> 10^{12}$ |
| Page | | 85 | 101 | 111 | 121 | 129 | 135 | 145 | 153 | 163 | 175 | 187 | 195 | 203 | 211 | 219 | 227 | 235 | 243 | 251 | 259 | 265 | 271 | 279 |

# iglidur® plain bearings | Material properties

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

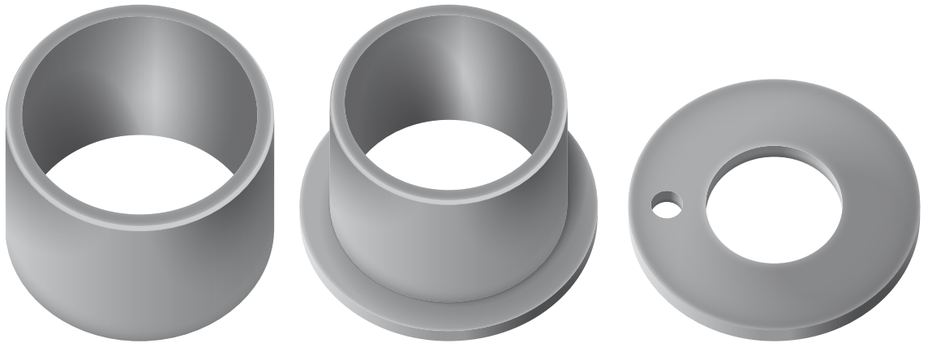
| iglidur® | H | C500 | H2 | H3 | H5 | A181 | A350 | A500 | A180 | A200 | A160 | UW160 | T220 | AX500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **General properties** | | | | | | | | | | | | | | |
| Density | 1.71 | 1.37 | 1.72 | 1.41 | 1.41 | 1.38 | 1.42 | 1.28 | 1.46 | 1.14 | 1.00 | 1.04 | 1.28 | 1.52 |
| Colour | | | | | | | | | | | | | | |
| Max. moisture absorption at +23°C and 50% relative humidity | 0.1 | 0.3 | 0.1 | 0.2 | 0.1 | 0.2 | 0.6 | 0.3 | 0.2 | 1.5 | 0.1 | 0.1 | 0.3 | 0.3 |
| Max. moisture absorption | 0.3 | 0.5 | 0.2 | 0.5 | 0.7 | 1.3 | 1.9 | 0.5 | 1.3 | 7.6 | 0.1 | 0.1 | 0.5 | 0.5 |
| Coefficient of sliding friction, dynamic against steel | 0.07 - 0.20 | 0.07 - 0.19 | 0.07 - 0.30 | 0.08 - 0.17 | 0.08 - 0.24 | 0.10 - 0.21 | 0.10 - 0.20 | 0.26 - 0.41 | 0.05 - 0.23 | 0.10 - 0.40 | 0.09 - 0.19 | 0.17 - 0.31 | 0.20 - 0.32 | 0.08 - 0.22 |
| pv value, max. (dry) | 1.37 | 0.7 | 0.58 | 0.7 | 0.7 | 0.31 | 0.40 | 0.28 | 0.31 | 0.09 | 0.25 | 0.22 | 0.28 | 0.9 |
| **Mechanical properties** | | | | | | | | | | | | | | |
| Flexural modulus | 12,500 | 3,300 | 10,300 | 2,760 | 6,400 | 1,913 | 2,000 | 3,600 | 2,300 | 2,500 | 1,151 | 1,349 | 1,800 | 6,170 |
| Flexural strength at +20°C | 175 | 100 | 210 | 68 | 150 | 48 | 110 | 140 | 88 | 116 | 19 | 22 | 65 | 115 |
| Compressive strength | 81 | 110 | 109 | n.s. | n.s. | 60 | 78 | 118 | 78 | 54 | 37 | 32 | 55 | n.s. |
| Max. permissible surface pressure at +20°C | 90 | 80 | 110 | 40 | 80 | 31 | 60 | 120 | 28 | 18 | 14 | 20 | 40 | 69 |
| Shore D hardness | 87 | 80 | 88 | 75 | 72 | 76 | 76 | 83 | 76 | 81 | 60 | 60 | 76 | 81 |
| **Physical and thermal properties** | | | | | | | | | | | | | | |
| Max. continuous operating temperature | +200 | +250 | +200 | +200 | +200 | +90 | +180 | +250 | +90 | +80 | +90 | +90 | +100 | +250 |
| Max. short-term operating temperature | +240 | +300 | +240 | +240 | +240 | +110 | +210 | +300 | +110 | +170 | +100 | +100 | +160 | +300 |
| Min. continuous operating temperature | -40 | -100 | -40 | -40 | -40 | -50 | -100 | -100 | -50 | -40 | -50 | -50 | -40 | -100 |
| Thermal conductivity | 0.6 | 0.24 | 0.24 | 0.25 | 0.25 | 0.25 | 0.24 | 0.24 | 0.25 | 0.24 | 0.30 | 0.50 | 0.24 | 0.26 |
| Coefficient of thermal expansion at +23°C | 4 | 9 | 4 | 6 | 7 | 11 | 8 | 9 | 11 | 10 | 11 | 18 | 11 | 9 |
| **Electrical properties** | | | | | | | | | | | | | | |
| Specific contact resistance | $< 10^5$ | $> 10^{14}$ | $> 10^{15}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{11}$ | $> 10^{14}$ | $> 10^{12}$ | $> 10^{13}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{10}$ | $> 10^5$ - $> 10^{11}$ |
| Surface resistance | $< 10^2$ | $> 10^{13}$ | $> 10^{14}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{11}$ | $> 10^{13}$ | $> 10^{11}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{10}$ | $> 10^5$ - $> 10^{11}$ |
| **Page** | 363 | 371 | 379 | 385 | 391 | 401 | 409 | 417 | 425 | 433 | 443 | 451 | 459 | 465 |

# iglidur® plain bearings | Material properties

| iglidur® | Unit | Q2 | Q3E | Q | Q290 | M210 | M260 | TX1 | TX2 | TX3 | F | F2 | H4 | UW | J UV | N54 | G V0 | J2 | AB | RW370 | B | C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **General properties** | | | | | | | | | | | | | | | | | | | | | | |
| Density | [g/cm³] | 1.46 | 1.46 - 1.69 | 1.4 | 1.27 | 1.4 | 1.35 | 2.1 | 1.77 | 1.9 | 1.25 | 1.52 | 1.79 | 1.52 | 1.49 | 1.13 | 1.53 | 1.44 | 1.11 | 1.34 | 1.15 | 1.1 |
| Colour | | | | | | | | | | | | | | | | | | | | | | |
| Max. moisture absorption at +23°C and 50% relative humidity | [% weight] | 1.1 | 1.5 | 0.9 | 3.0 | 0.3 | 0.2 | 0.2 | 1.0 | 0.1 | 1.8 | 0.2 | 0.1 | 0.2 | 0.3 | 1.6 | 0.7 | 0.2 | 0.8 | 0.25 | 1.0 | 1.0 |
| Max. moisture absorption | [% weight] | 4.6 | 5.0 | 4.9 | 9.3 | 0.5 | 0.4 | 0.5 | 1.3 | 0.1 | 8.4 | 0.4 | 0.2 | 0.8 | 1.3 | 3.6 | 4.0 | 1.3 | 1.6 | 1.2 | 6.3 | 6.9 |
| Coefficient of sliding friction, dynamic against steel | [µ] | 0.22 - 0.42 | 0.22 - 0.42 | 0.05 - 0.15 | 0.14 - 0.26 | 0.08 - 0.20 | 0.08 - 0.16 | 0.09 - 0.37 | n.s. | n.s. | 0.10 - 0.39 | 0.16 - 0.22 | 0.08 - 0.25 | 0.15 - 0-35 | 0.08 - 0.19 | 0.15 - 0.23 | 0.07 - 0.20 | 0.11 - 0.27 | 0.18 - 0.31 | 0.13 - 0.17 | 0.18 - 0.28 | 0.17 - 0.25 |
| pv value, max. (dry) | [MPa·m/s] | 0.7 | 0.7 | 0.55 | 0.70 | 0.5 | 0.35 | 0.89 | 0.2 | 0.2 | 0.34 | 0.31 | 0.70 | 0.11 | 0.30 | 0.5 | 0.5 | 0.23 | 0.25 | 1.2 | 0.15 | 0.10 |
| **Mechanical properties** | | | | | | | | | | | | | | | | | | | | | | |
| Flexural modulus | [MPa] | 8,370 | n.s. | 4,500 | 3,074 | 2,200 | 2,200 | 12,000 | n.s. | n.s. | 11,600 | 7,418 | 7,500 | 9,600 | 2,400 | 1,800 | 7,900 | 3,605 | 1,850 | 2,997 | 1,800 | 1,900 |
| Flexural strength at +20°C | [MPa] | 240 | 235 | 120 | 97 | 65 | 60 | 55 | n.s. | n.s. | 260 | 93 | 120 | 90 | 72 | 70 | 140 | 101 | 50 | 100 | 55 | 60 |
| Compressive strength | [MPa] | 130 | n.s. | 89 | 68 | 50 | 50 | 220 | 180 | n.s. | 98 | 61 | 50 | 70 | n.s. | 30 | 100 | 77 | 40 | 129 | 20 | 30 |
| Max. permissible surface pressure at +20°C | [MPa] | 120 | 135 | 100 | 55 | 50 | 40 | 200 | 180 | 180 | 105 | 47 | 65 | 40 | 34 | 36 | 75 | 46 | 25 | 75 | 40 | 40 |
| Shore D hardness | | 80 | 80 | 83 | 80 | 75 | 77 | 94 | 91 | 91 | 84 | 72 | 80 | 78 | 74 | 74 | 80 | n.s. | 70 | 80 | 69 | 72 |
| **Physical and thermal properties** | | | | | | | | | | | | | | | | | | | | | | |
| Max. continuous operating temperature | [°C] | +130 | +100 | +135 | +140 | +100 | +120 | +120 | +130 | +130 | +140 | +120 | +200 | +90 | +90 | +80 | +130 | +90 | +70 | +170 | +100 | +90 |
| Max. short-term operating temperature | [°C] | +200 | +140 | +155 | +180 | +160 | +140 | +170 | +140 | +140 | +180 | +165 | +240 | +110 | +120 | +120 | +210 | +110 | +140 | +190 | +130 | +130 |
| Min. continuous operating temperature | [°C] | -40 | -30 | -40 | -40 | -40 | -100 | -60 | -20 | -20 | -40 | -40 | -40 | -50 | -50 | -40 | -40 | -50 | -40 | -50 | -40 | -40 |
| Thermal conductivity | [W/m · K] | 0.24 | n.s. | 0.23 | 0.24 | 0.25 | 0.24 | 0.24 | 0.25 | 0.25 | 0.65 | 0.61 | 0.24 | 0.6 | 0.3 | 0.24 | 0.25 | 0.25 | 0.24 | 0.22 | 0.24 | 0.24 |
| Coefficient of thermal expansion at +23°C | [$K^{-1} \cdot 10^{-5}$] | 8 | n.s. | 5 | 7 | 8 | 13 | 3 | n.s. | n.s. | 12 | 5 | 5 | 6 | 10 | 9 | 9 | 7 | 10 | 5 | 12 | 15 |
| **Electrical properties** | | | | | | | | | | | | | | | | | | | | | | |
| Specific contact resistance | [Ωcm] | $> 10^{13}$ | $> 10^{12}$ | $> 10^{15}$ | $> 10^{12}$ | $> 10^{11}$ | $> 10^{10}$ | $> 10^{11}$ | insulating | insulating | $< 10^{3}$ | $< 10^{9}$ | $> 10^{13}$ | $< 10^{5}$ | $> 10^{13}$ | $> 10^{13}$ | $> 10^{12}$ | $> 10^{13}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{10}$ | $> 10^{10}$ |
| Surface resistance | [Ω] | $> 10^{11}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{11}$ | $> 10^{10}$ | $> 10^{13}$ | insulating | insulating | $< 10^{2}$ | $< 10^{9}$ | $> 10^{12}$ | $< 10^{5}$ | $> 10^{13}$ | $> 10^{11}$ | $> 10^{11}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{9}$ | $> 10^{9}$ |
| Page | | 477 | 485 | 491 | 499 | 505 | 511 | 521 | 527 | 533 | 545 | 553 | 561 | 569 | 577 | 585 | 593 | 601 | 609 | 617 | 625 | 631 |

# dry-tech® bearing technology | Lubrication-free made easy

## Proven. Predictable. Performance.



### Proven.

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

### Predictable.

Plain bearings are wear-resistant parts. And wear-resistant parts wear out. But when? When is the wear limit reached and when does the plain bearing have to be replaced? The iglidur® expert system answers this question. Based on more than 15,000 wear tests per year, the iglidur® expert system offers designers the possibility of not only determining the iglidur® plain bearing with the best price-performance ratio within a few minutes, but also to get an exact report on the predicted service life in the application. Easy. Online calculation available.

### Performance.

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

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



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# iglidur® | High-performance polymers

## Properties and design

### iglidur® plain bearings made from high-performance polymers

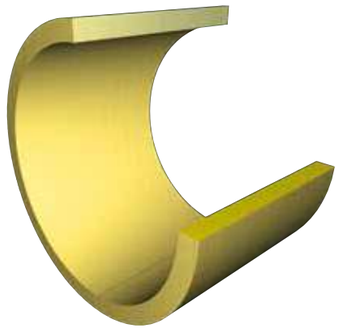
Wear-resistant tribo-polymers improved by precise additions of strengthening materials and solid lubricants, tested thousands of times and proven millions of times - that is iglidur®. igus® engineers develop and test more than 267 new plastic compounds every year. The finely tuned combination of plastic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

**▶ www.igus.eu/online-tools**

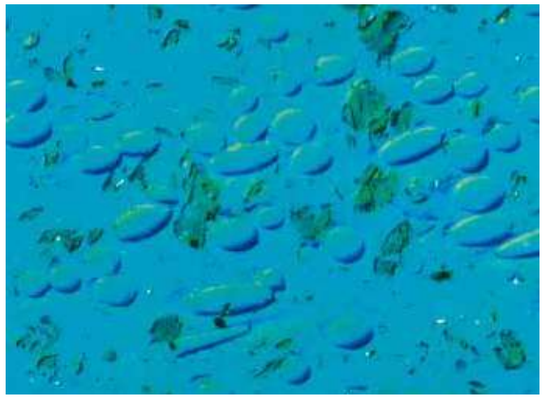
### General properties of iglidur® plain bearings

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

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



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



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

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## Properties and design

### The traditional solution

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

### Base polymers and technical fibres

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

### Incorporated self-lubrication

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

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

### The iglidur® solution: the self-lubricating effect

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

- Base polymer
- Fibres and filling material
- Solid lubricants

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

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

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

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



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## Load

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

**Radial bearing:**

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

**Thrust bearing:**

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

In these equations:

***F*** **load in [N]**

***d1*** **bearing inner diameter in [mm]**

***b1*** **bearing length in [mm]**

***d2*** **outer diameter of the bearing in [mm]**

**Max. recommended surface pressure**

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

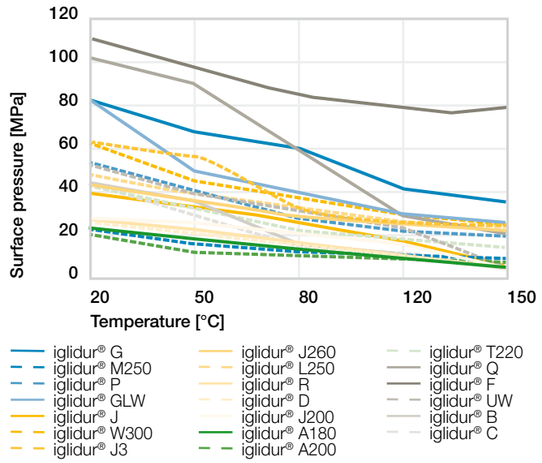
▶ Material properties, **page 60**

**Load and temperature**

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

**Pressure and speed**

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



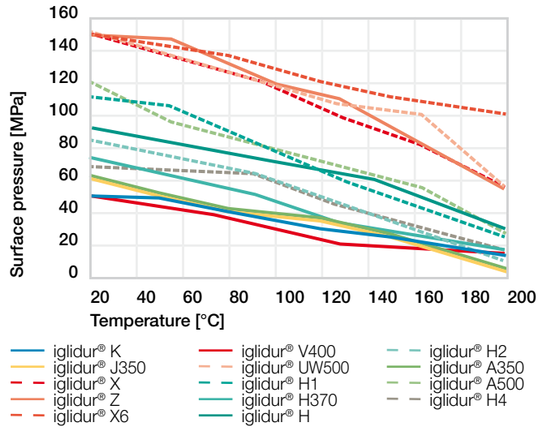




**Diagram 02-03: Maximum recommended surface pressure as a function of temperature**

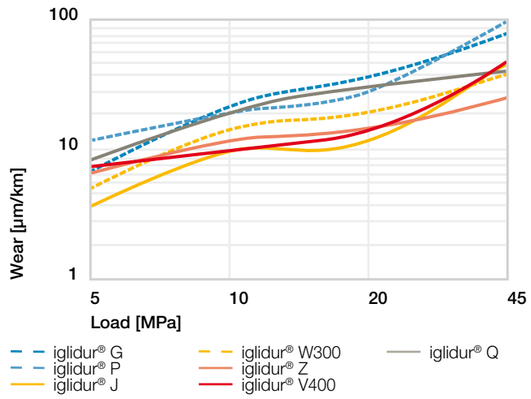



**Diagram 04: Wear of iglidur® plain bearings under medium and high pressures**

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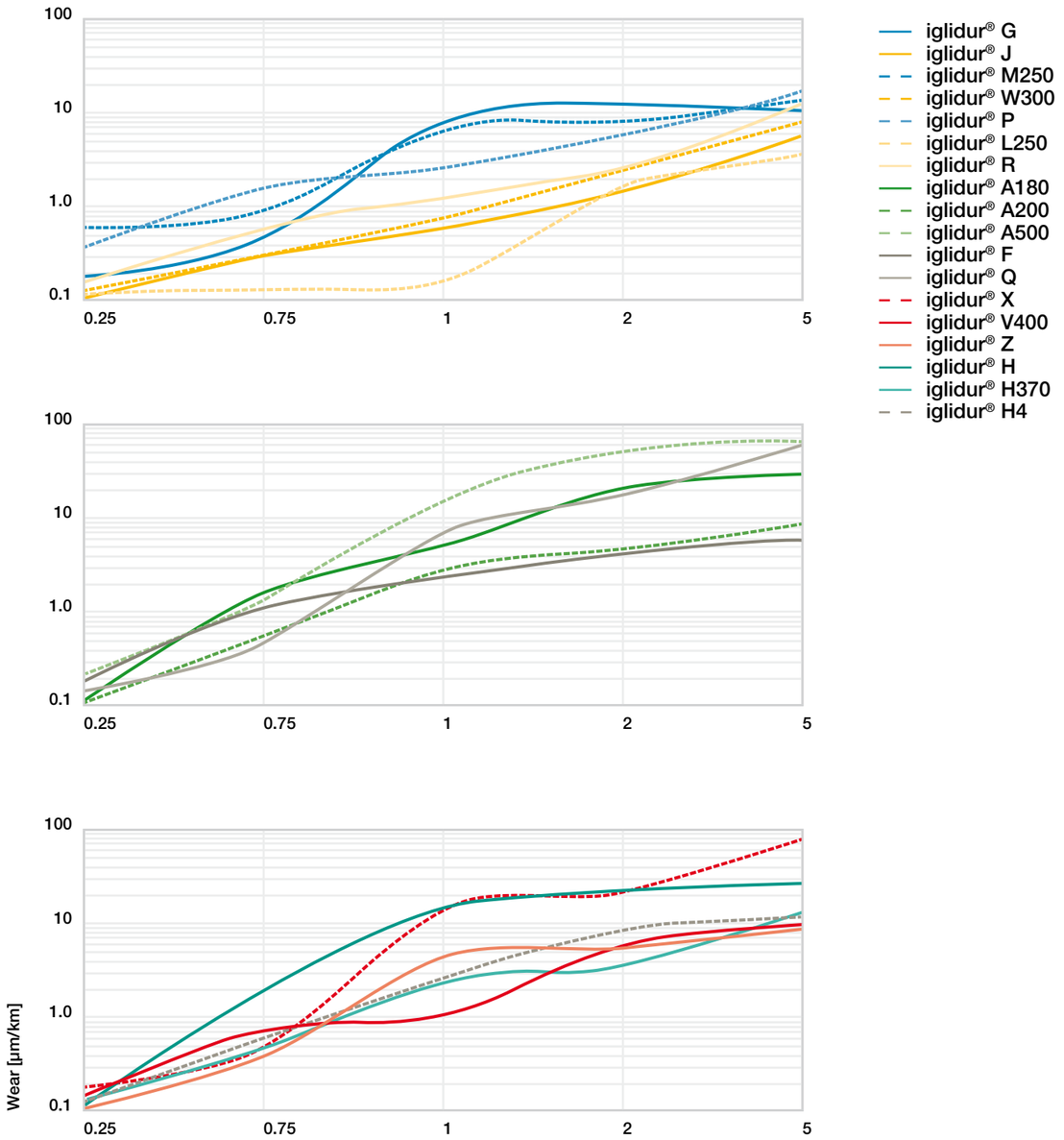
## Pressure and wear

The following diagrams show the wear behaviour of the iglidur® bearing materials. It is easily recognised that for each pressure, there is an optimal plain bearing available. The wear is shown as a wear rate in [µm/km].




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



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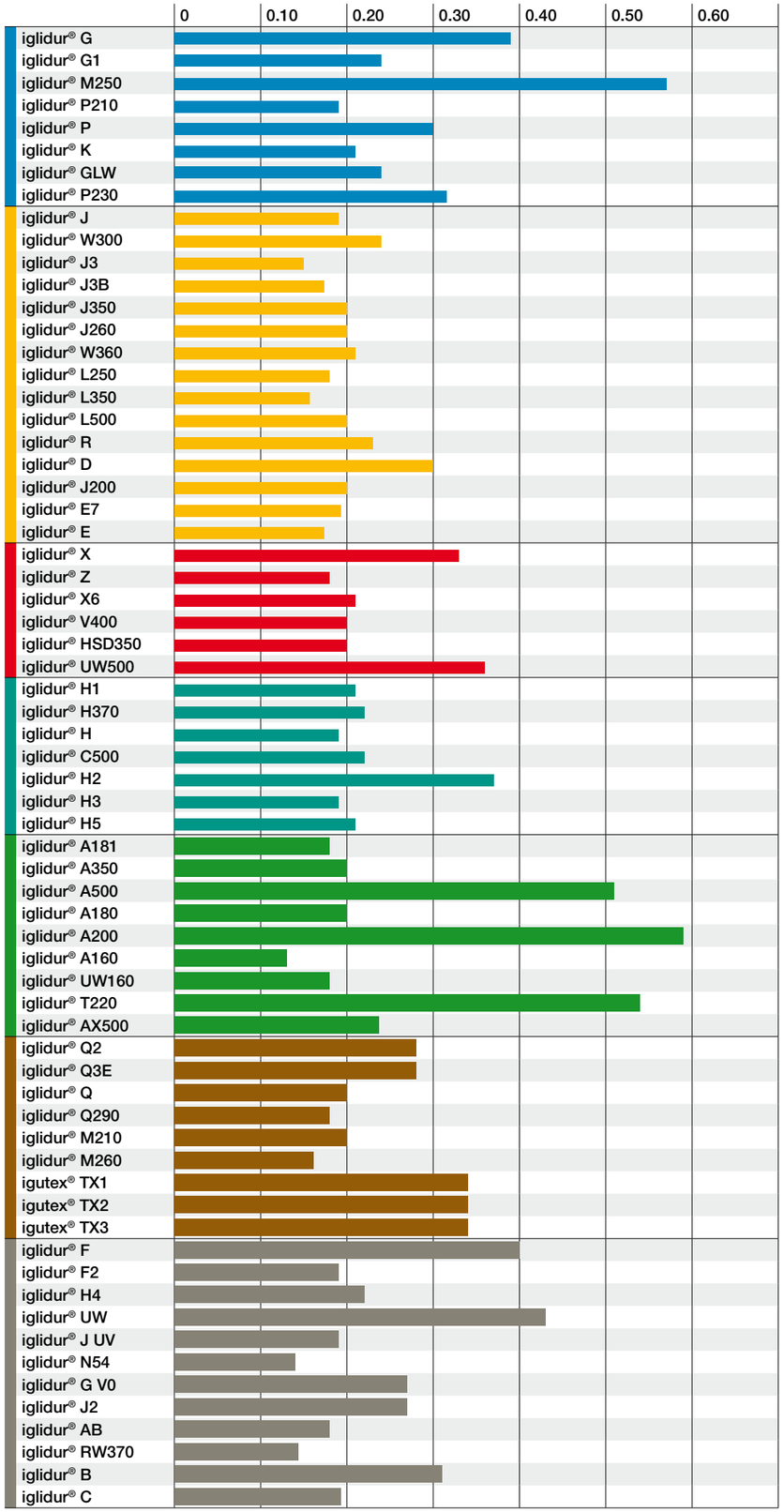
## Pressure and coefficient of friction




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

▶ Coefficient of friction, **page 51**

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

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## Surface Speed

The peripheral speed is always significant in plain bearings. The absolute speed is not crucial, but the relative speed between the shaft and the bearing. The surface speed is expressed in meters per second [m/s] and calculated from the speed n [rpm] with the following formula.
With varying speeds for example with pivoting movements, the value needed is the average surface speed v (see above formula).

**Rotational movement:**

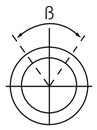
$$v = \frac{n \cdot d1 \cdot \pi}{60 \cdot 1{,}000} \left[\frac{m}{s}\right]$$

**Pivoting movement:**

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

In these equations:

***d1*** **= Shaft diameter [mm]**
***f*** **= Frequency per second**
***ß*** **= Angle of motion per cycle [°]**
***n*** **= rpm**




### Permissible surface speeds

iglidur® plain bearings were primarily developed for low to average surface speeds in continuous operation. Table 01 shows the permissible surface speed of iglidur® plain bearings for rotating, pivoting, and linear movements. These surface speeds are limit values assuming minimal pressure loading of the bearing. In practice, these limit values are rarely reached due to an inverse relationship between load and speed. Each pressure increase leads unavoidably to a reduction of the permissible surface speeds and vice versa. The speed limit is determined by the thermal properties of the bearing. This is also the reason why different surface speeds can occur for the different movement types. For linear movements, more heat can be dissipated via the shaft, since the bearing uses a longer surface area on the shaft.

### Surface speed and wear

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

### Surface speed and coefficient of friction

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



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iglidur® | Technical data

## Chemical resistance

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

▶ Chemical table, **page 1170**

### Applications in the food industry

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

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

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

**Table 05: Chemical resistance of iglidur® materials**
**+ resistant 0 conditionally resistant – not resistant**
**All data given at room temperature [+20°C]**

EN 09/2023

## pv value and coefficient of friction

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

### Correction factor

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

### Lubrication

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

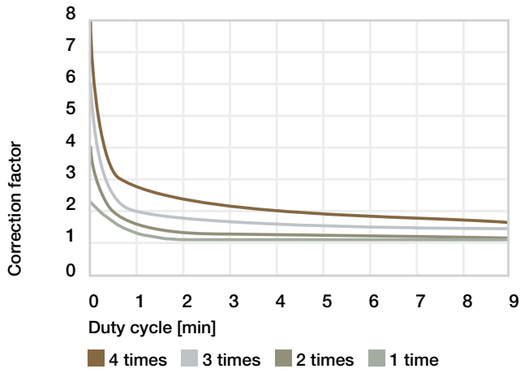



**Diagram 09: Correction factor for p · v**

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

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

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

**Table 03: Heat conductivity values of shaft or housing materials**

### pv value

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

In these equations:

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

## Coefficient of friction

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

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

### Coefficient of friction and surfaces

Shown here is the relationship between coefficient of friction and surface finish of shaft materials. It is clearly shown that the amount of friction is composed of different factors.
If the shaft is too rough, abrasion levels play an important role. Small areas of unevenness that can interlock with each other must be worn off the surface.
When the surfaces are too smooth, however, higher adhesion results, i.e. the surfaces stick to each other. Higher forces are necessary to overcome the adhesion, which results from an increased coefficient of friction.
Stick-slip can be the result of a large difference between static and dynamic friction and of a higher adhesive tendency of mating surfaces. Stick-slip also occurs due to intermittent running behaviour and can result in loud squeaking. Over and over again, it is observed that these noises do not occur or can be eliminated with rough shafts. Thus for applications that have a great potential for stick-slip - slow movements, large resonance of the housing - attention must be paid to the optimal surface finish of the shafts.

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

# iglidur® | Technical data

## Temperatures

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

### Application temperatures

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

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

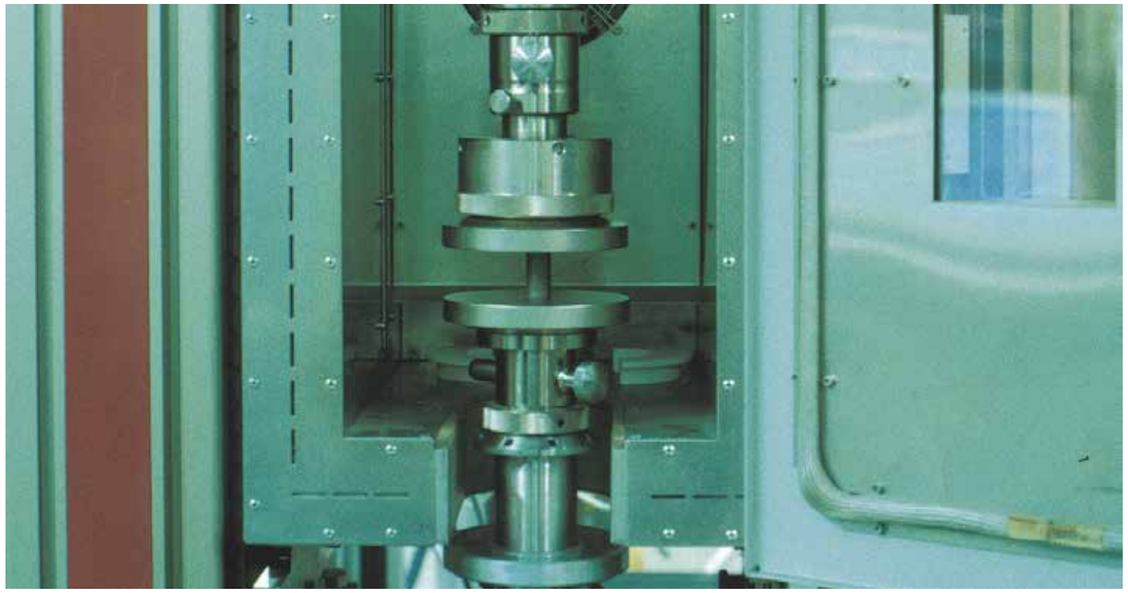
If the plain bearings are moved axially or axial forces occur, there is more opportunity for the bearing to lose press-fit. In these cases, axial securing of the bearing is necessary in addition to the press-fit. The table 04 shows the temperature at which additional securing of the iglidur® plain bearing is required, even under low axial loads. The greater the forces, the more reasons to engage such a fastening.

### Temperature and load

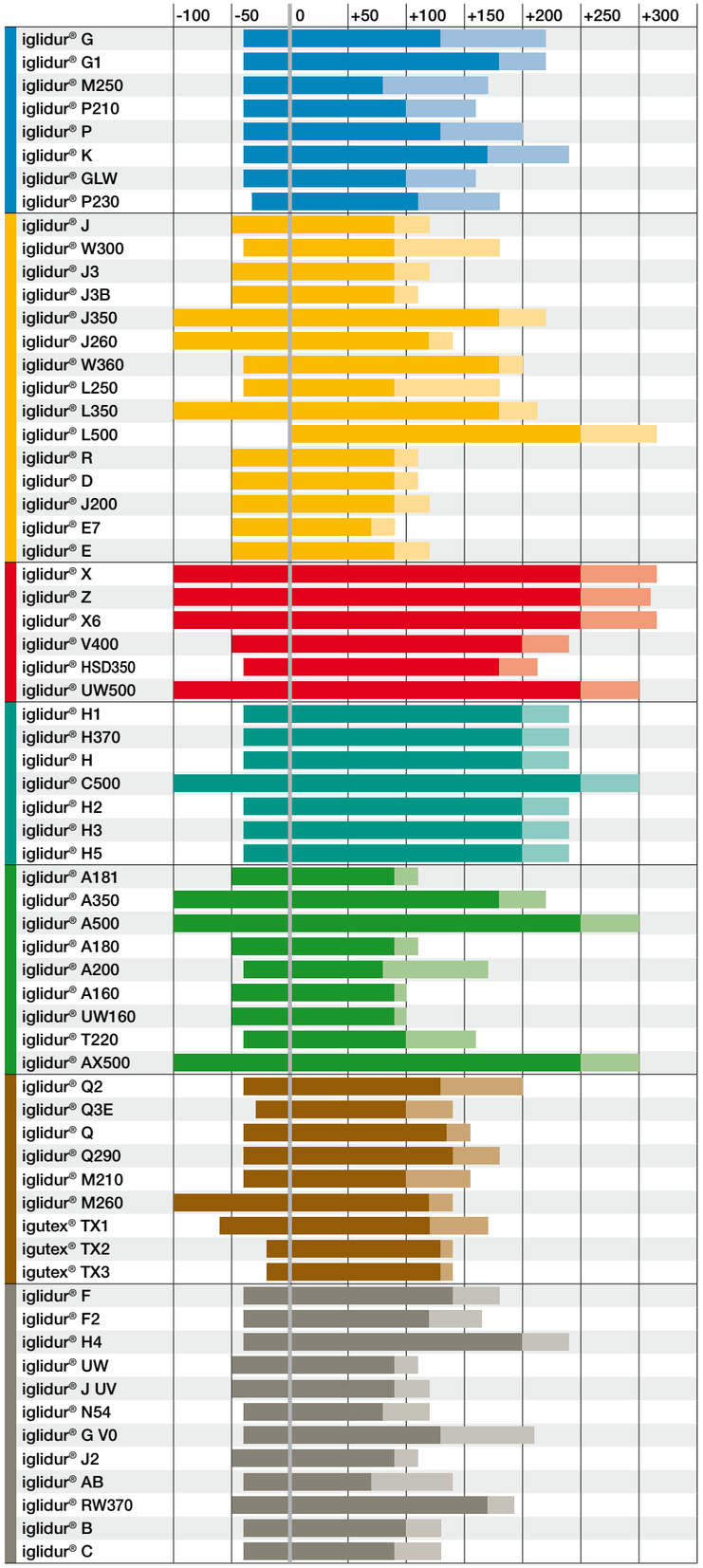
The diagrams 02 and 03 (▶ **Page 45**) show the maximum recommended surface pressure [p] of the iglidur® plain bearings as a function of temperature. With increasing temperature, this value decreases continuously. With plain bearings it is important to note that, due to the friction, the bearing temperature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

### Coefficient of thermal expansion

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



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




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

Diagram 10 (left): Comparison of the continuous and short-term upper application temperature limits [°C].
Table 04 (right): Temperature at which additional securing of the iglidur® plain bearing is required

## Wear resistance

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

▶ Shaft materials, **page 56**

### Wear under load

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

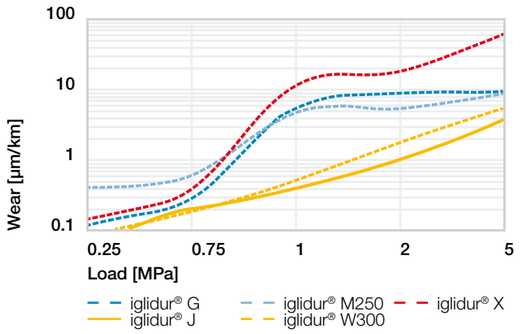



**Diagram 11: Wear of iglidur® plain bearings under low pressures, Cf53 shaft, v = 0.1m/s**

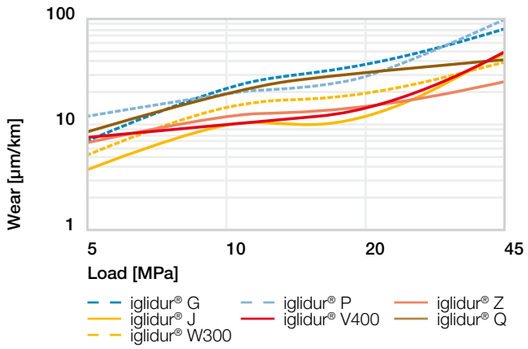



**Diagram 12: Wear of iglidur® plain bearings at medium and high pressures, shaft: Cf53, v = 0.1m/s**

### Wear and temperature

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

### Wear during abrasive dirt accumulation

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

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

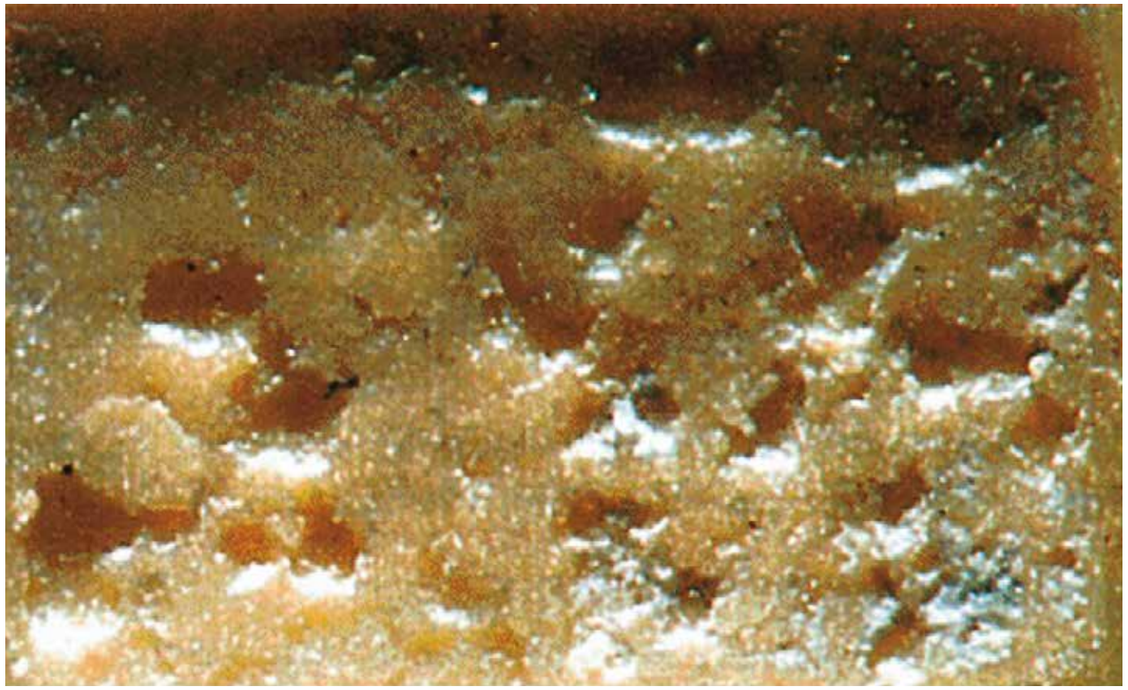
### Wear and surfaces

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

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

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

**Picture 8: Wear experiments with aluminium shafts**



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

## Wear and shaft materials

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

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

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

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

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

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

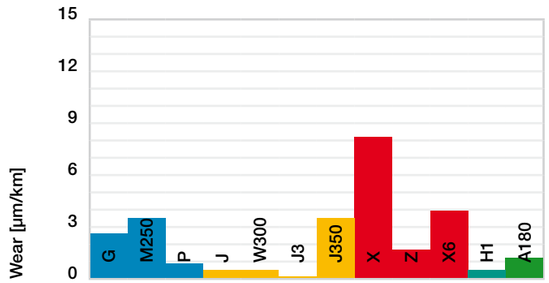



Diagram 13: Wear with Cf53 shaft, p = 1MPa, v = 0.30m/s, Ra = 0.20µm

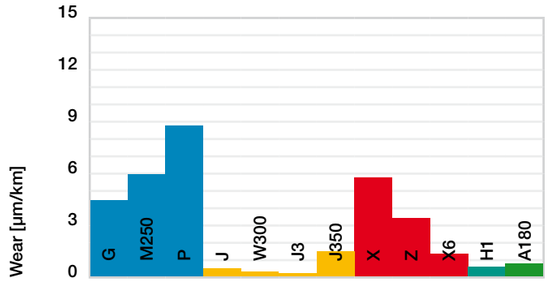



Diagram 14: Wear with 304 stainless steel shaft, p = 1MPa, v = 0.30m/s, Ra = 0.20µm

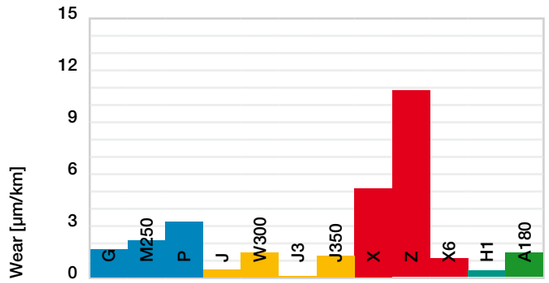



Diagram 15: Wear with HR carbon steel shaft, p = 1MPa, v = 0.30m/s, Ra = 0.20µm

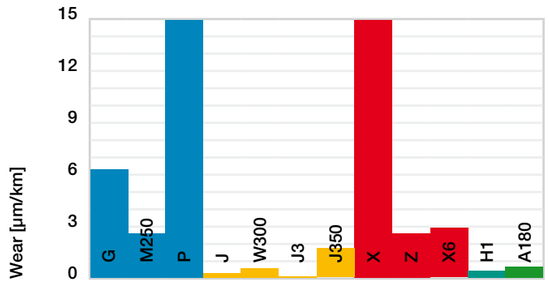



Diagram 16: Wear with Cf53 hard-chromed shaft, p = 1MPa, v = 0.30m/s, Ra = 0.20µm

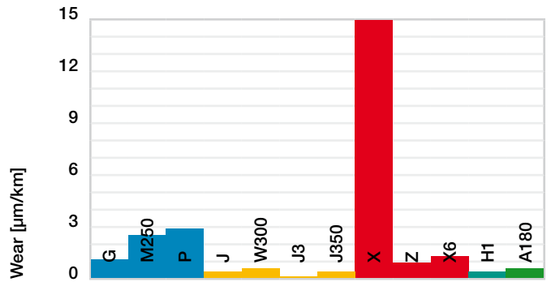



Diagram 17: Wear with hard-anodised aluminium shaft, p = 1MPa, v = 0.30m/s, Ra = 0.20µm

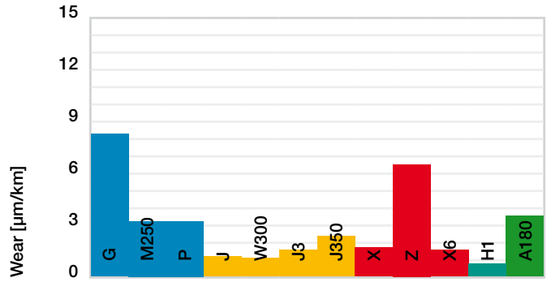



Diagram 18: Wear with free cutting steel shaft, p = 1MPa, v = 0.30m/s, Ra = 0.20µm

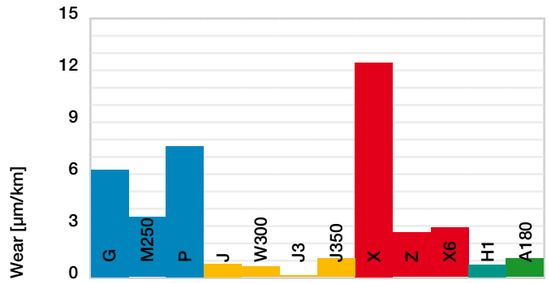



Diagram 19: Wear with high grade steel shaft, p = 1MPa, v = 0.30m/s, Ra = 0.20µm

## Resistance to weathering

### Radioactive radiation

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

### Resistance to weathering

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

### Vacuum

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

### Electrical properties

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

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

Table 07: Electrical properties of conductive iglidur® plain bearings

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

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

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

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

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

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

## Assembly instructions

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

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

### Adhesion

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

## Machining

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

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

**Table 09: Guidelines for machining**



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iglidur® | Technical data

## Tolerances and measurement system

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

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

### Testing methods

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

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

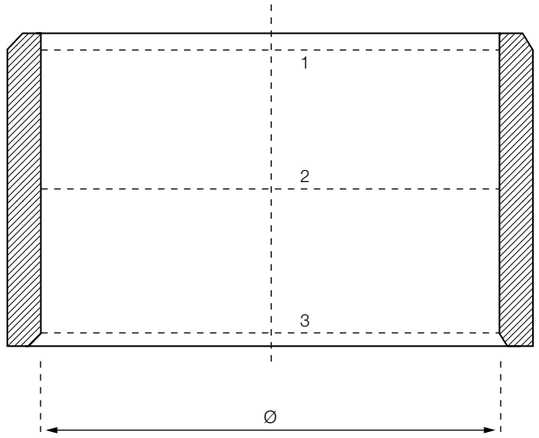


**Diagram 20: Positions of the measurement lines**

### Troubleshooting

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

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

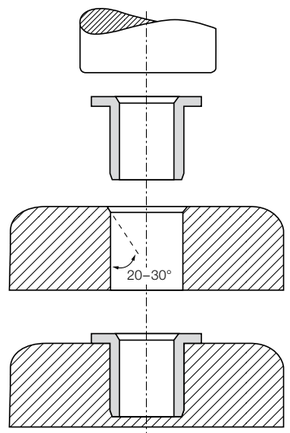


**Diagram 21: Press-fit of the bearing (section view)**

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## Tolerances

### Installation tolerances

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

### ISO tolerances for iglidur® plain bearings [mm]

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

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





iglidur® | Calculation

Tolerances

| Material | E10 | E11 | F10 | D11 |
|---|---|---|---|---|
| iglidur® G | ● | | | |
| iglidur® G1 | | | ● | |
| iglidur® M250 | | | | ● |
| iglidur® P210 | ● | | | |
| iglidur® P | ● | | | |
| iglidur® K | ● | | | |
| iglidur® GLW | ● | | | |
| iglidur® P230 | ● | | | |
| iglidur® J | ● | | | |
| iglidur® W300 | ● | | | |
| iglidur® J3 | ● | | | |
| iglidur® J3B | ● | | | |
| iglidur® J350 | | | ● | |
| iglidur® J260 | ● | | | |
| iglidur® W360 | ● | | | |
| iglidur® L250 | ● | | | |
| iglidur® L350 | | | ● | |
| iglidur® L500 | | | ● | |
| iglidur® R | ● | | | |
| iglidur® D | ● | | | |
| iglidur® J200 | ● | | | |
| iglidur® E7 | ● | | | |
| iglidur® E | ● | | | |
| iglidur® X | | | ● | |
| iglidur® Z | | | ● | |
| iglidur® X6 | | | ● | |
| iglidur® V400 | | | ● | |
| iglidur® HSD350 | | | ● | |
| iglidur® UW500 | | | ● | |
| iglidur® H1 | | | ● | |
| iglidur® H370 | | | ● | |
| iglidur® H | | | ● | |
| iglidur® C500 | | | ● | |

| Material | E10 | E11 | F10 | D11 |
|---|---|---|---|---|
| iglidur® H2 | | | ● | |
| iglidur® H3 | | | ● | |
| iglidur® H5 | | | ● | |
| iglidur® A181 | ● | | | |
| iglidur® A350 | | | ● | |
| iglidur® A500 | | | ● | |
| iglidur® A180 | ● | | | |
| iglidur® A200 | | | | ● |
| iglidur® A160 | ● | | | |
| iglidur® UW160 | ● | | | |
| iglidur® T220 | ● | | | |
| iglidur® AX500 | | | ● | |
| iglidur® Q2 | ● | | | |
| iglidur® Q3E | | ● | | |
| iglidur® Q | ● | | | |
| iglidur® Q290 | ● | | | |
| iglidur® M210 | | | | ● |
| iglidur® M260 | | | | ● |
| igutex® TX1 | | | | ● |
| igutex® TX2 | | | | ● |
| igutex® TX3 | | | | ● |
| iglidur® F | | | | ● |
| iglidur® F2 | ● | | | |
| iglidur® H4 | | | ● | |
| iglidur® UW | ● | | | |
| iglidur® J UV | ● | | | |
| iglidur® N54 | ● | | | |
| iglidur® G V0 | ● | | | |
| iglidur® J2 | ● | | | |
| iglidur® AB | ● | | | |
| iglidur® RW370 | | | ● | |
| iglidur® B | | | | ● |
| iglidur® C | | | | ● |

Table 10: Tolerances of iglidur® plain bearing materials

# iglidur® | Calculation

## igus® formulae

### Surface pressure

**Radial bearing:**

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

**Thrust bearing:**

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

### Surface Speed

**Rotational movement:**

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

**Pivoting movement:**

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

### pv value

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

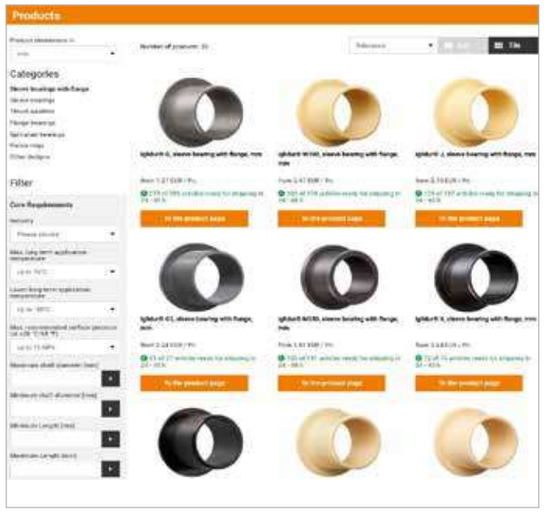
### Friction force

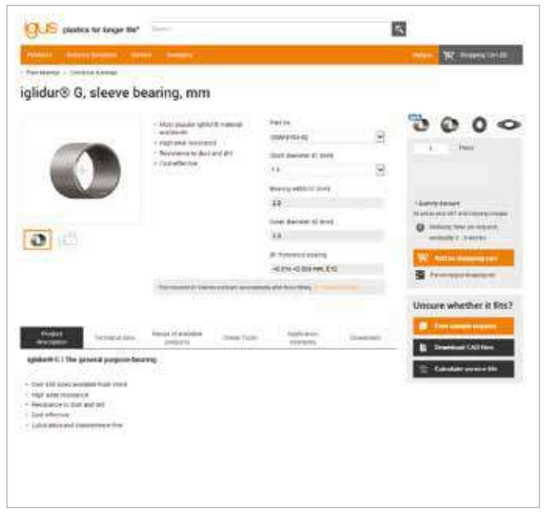
$$F_R = \mu \cdot F$$

**Short cuts and formulae for polymer plain bearings**

| | | | |
|---|---|---|---|
| $F$ | = | Load | [N] |
| $F_R$ | = | Friction force | [N] |
| $d1$ | = | Inner diameter of the bearing | [mm] |
| $b1$ | = | Bearing length | [mm] |
| $d2$ | = | Outer diameter of the bearing | [mm] |
| $p$ | = | Surface pressure | [N/mm²] |
| $v$ | = | Surface Speed | [m/s] |
| $n$ | = | Revolutions per minute | |
| $ß$ | = | Angle | [°] |
| $f$ | = | Frequency in Hertz | |
| $K1, K2$ | = | Constant for heat dissipation | |
| | | *(K1 = 0.5  K2 = 0.042)* | [N] |
| $s$ | = | Bearing wall thickness | [mm] |
| $\mu$ | = | Coefficient of friction | |
| $\lambda s$ | = | Thermal conductivity of the shaft | |
| $\lambda k$ | = | Thermal conductivity of the bearing | |
| $\Delta T$ | = | $(T_a - T_u)$ | |
| $T_u$ | = | Ambient temperature | [°C] |
| $T_a$ | = | Max. Application temperature | [°C] |

### Quicklinks

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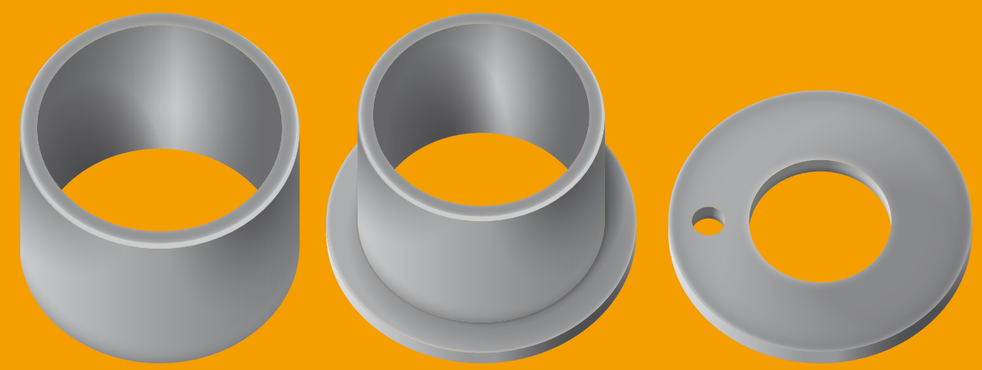

# iglidur® standards: more than 1,900 parts from stock

- Choice of 17 standard iglidur® materials
- For shaft sizes up to 50mm according to ISO 3547-1
- Lubrication and maintenance-free
- Calculate service life online

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# iglidur® standards | Materials overview

## iglidur® plain bearings: all-rounder

### Materials for general purpose

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

More universal: iglidur® G1
▶ Page 101

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

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

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

## iglidur® plain bearings: endurance runner

### Materials for long service life

The versatile endurance runner: iglidur® J
▶ Page 163

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

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

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

## iglidur® plain bearings: high temperature

### Materials for use at high temperatures

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

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

## iglidur® plain bearings: high media resistance

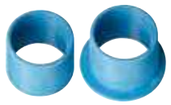
### Materials with good media resistance

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

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

## iglidur® plain bearings: for contact with food

### Materials for contact with food



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

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

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

## iglidur® plain bearings: for harsh environments

### Materials for harsh environments

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

# The most suitable bearing for any application

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

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

**iglidur® G - the classic all-rounder**
Excellent price-performance ratio
▶ Page 85

| | | | |
|---|---|---|---|
| Temperature [°C] [123] | +130 | – | + |
| Surface pressure [MPa] [124] | 80 | – | + |
| Coefficient of friction [µ] [125] | 0.22 | – | + |
| Wear [µm/km] [125] | 1.75 | – | + |
| Price index | | – | + |

**iglidur® G1 - more universal**
The advanced development of iglidur® G
▶ Page 101

| | | | |
|---|---|---|---|
| Temperature [°C] [123] | +180 | – | + |
| Surface pressure [MPa] [124] | 91 | – | + |
| Coefficient of friction [µ] [125] | 0.11 | – | + |
| Wear [µm/km] [125] | 0.76 | – | + |
| Price index | | – | + |

**iglidur® M250 - the robust all-rounder according to ISO 2795**
Excellent vibration dampening
▶ Page 111

| | | | |
|---|---|---|---|
| Temperature [°C] [123] | +80 | – | + |
| Surface pressure [MPa] [124] | 20 | – | + |
| Coefficient of friction [µ] [125] | 0.56 | – | + |
| Wear [µm/km] [125] | 2.10 | – | + |
| Price index | | – | + |

**iglidur® P210 - specialist for pivoting, rolling applications and more**
Low coefficient of friction and wear on almost every shaft ▶ Page 121

| | | | |
|---|---|---|---|
| Temperature [°C] [123] | +100 | – | + |
| Surface pressure [MPa] [124] | 50 | – | + |
| Coefficient of friction [µ] [125] | 0.17 | – | + |
| Wear [µm/km] [125] | 0.38 | – | + |
| Price index | | – | + |

**iglidur® P - the cost-effective outdoor all-rounder**
No moisture absorption even with high ambient humidity
▶ Page 135

| | | | |
|---|---|---|---|
| Temperature [°C] [123] | +130 | – | + |
| Surface pressure [MPa] [124] | 50 | – | + |
| Coefficient of friction [µ] [125] | 0.24 | – | + |
| Wear [µm/km] [125] | 1.80 | – | + |
| Price index | | – | + |

**iglidur® J - the versatile endurance runner**
Strong performer on most shafts, very low coefficient of friction
▶ Page 163

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

**iglidur® W300 - the classic endurance runner up to 30MPa**
Excellent wear resistance on (virtually) all shafts
▶ Page 175

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

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



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**iglidur® J3 - the new endurance runner: specialist for pivoting and pulsating loads**
Up to 10MPa up to three times more wear-resistant than iglidur® J ▶ Page 187

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

**iglidur® J350 - endurance runner with high dimensional stability at high temperature**
Can be used with many kinds of shafts and loads
▶ Page 203

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

**iglidur® X - the chemical and temperature specialist**
Up to 150MPa
▶ Page 291

| | | | |
|---|---|---|---|
| Temperature [°C] [123] | +250 | – | + |
| Surface pressure [MPa] [124] | 150 | – | + |
| Coefficient of friction [µ] [125] | 0.31 | – | + |
| Wear [µm/km] [125] | 6.30 | – | + |
| Price index | | – | + |

**iglidur® Z - long service life under extreme conditions**
Resistant to wear and impact even at high loads and temperatures ▶ Page 301

| | | | |
|---|---|---|---|
| Temperature [°C] [123] | +250 | – | + |
| Surface pressure [MPa] [124] | 150 | – | + |
| Coefficient of friction [µ] [125] | 0.18 | – | + |
| Wear [µm/km] [125] | 1.00 | – | + |
| Price index | | – | + |

**iglidur® H1 - endurance runner with high media resistance**
Excellent coefficient of friction and wear
▶ Page 345

| | | | |
|---|---|---|---|
| Temperature [°C] [123] | +200 | – | + |
| Surface pressure [MPa] [124] | 80 | – | + |
| Coefficient of friction [µ] [125] | 0.17 | – | + |
| Wear [µm/km] [125] | 0.29 | – | + |
| Price index | | – | + |

**iglidur® H370 - long service life under water**
High media resistance
▶ Page 353

| | | | |
|---|---|---|---|
| Temperature [°C] [123] | +200 | – | + |
| Surface pressure [MPa] [124] | 75 | – | + |
| Coefficient of friction [µ] [125] | 0.17 | – | + |
| Wear [µm/km] [125] | 1.20 | – | + |
| Price index | | – | + |

**iglidur® A181 - the universal bearing for food contact**
FDA- and EU10/2011-compliant
▶ Page 401

| | | | |
|---|---|---|---|
| Temperature [°C] [123] | +90 | – | + |
| Surface pressure [MPa] [124] | 31 | – | + |
| Coefficient of friction [µ] [125] | 0.18 | – | + |
| Wear [µm/km] [125] | 0.48 | – | + |
| Price index | | – | + |

**iglidur® A350 - the endurance runner at higher temperatures in the food sector**
FDA- and EU10/2011-compliant, extremely wear-resistant ▶ Page 409

| | | | |
|---|---|---|---|
| Temperature [°C] [123] | +180 | – | + |
| Surface pressure [MPa] [124] | 60 | – | + |
| Coefficient of friction [µ] [125] | 0.17 | – | + |
| Wear [µm/km] [125] | 1.79 | – | + |
| Price index | | – | + |

**iglidur® A500 - the media and temperature specialist in the food sector**
FDA- and EU10/2011-compliant, extremely wear-resistant for high temperatures ▶ Page 417

| | | | |
|---|---|---|---|
| Temperature [°C] [123] | +250 | – | + |
| Surface pressure [MPa] [124] | 120 | – | + |
| Coefficient of friction [µ] [125] | 0.36 | – | + |
| Wear [µm/km] [125] | 4.10 | – | + |
| Price index | | – | + |

**iglidur® Q2 - the durable heavy-duty bearing**
Combined wear resistance and compressive strength at high loads
▶ Page 477

| | | | |
|---|---|---|---|
| Temperature [°C] [123] | +130 | – | + |
| Surface pressure [MPa] [124] | 120 | – | + |
| Coefficient of friction [µ] [125] | 0.17 | - | + |
| Wear [µm/km] [125] | 1.50 | – | + |
| Price index | | – | + |

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

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# iglidur® standards | Technical properties - quick selection

iglidur® standard product range

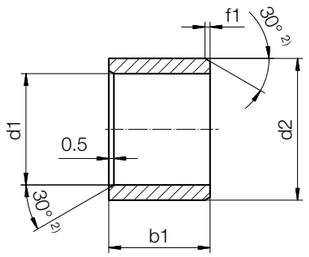
| iglidur® | G | G1 | M250 | P210 | P | J | W300 | J3 | J350 | X | Z | H1 | H370 | A181 | A350 | A500 | Q2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Installation tolerances | E10 | E10 | D11 | E10 | E10 | E10 | E10 | E10 | F10 | F10 | F10 | F10 | F10 | E10 | F10 | F10 | E10 |
| **Descriptive technical specifications** | | | | | | | | | | | | | | | | | |
| Wear resistance at +23°C | | | | | | | | | | | | | | | | | |
| Wear resistance at +90°C | | | | | | | | | | | | | | | | | |
| Wear resistance at +150°C | | | | | | | | | | | | | | | | | |
| Slide property | | | | | | | | | | | | | | | | | |
| Wear resistance under water | | | | | | | | | | | | | | | | | |
| Media resistance | | | | | | | | | | | | | | | | | |
| Resistant to edge pressures | | | | | | | | | | | | | | | | | |
| Resistant to shock and impact loads | | | | | | | | | | | | | | | | | |
| Dirt resistance | | | | | | | | | | | | | | | | | |
| For high loads (>60MPa) | ● | ● | | | | | | | ● | ● | ● | ● | ● | | ● | ● | ● |
| Electrically conductive | | | | | | | | | | ● | | | ● | | | | |
| **Approvals and standards** | | | | | | | | | | | | | | | | | |
| Dimensions in accordance with DIN | ISO 3547 | ISO 3547 | ISO 2795 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 | ISO 3547 |
| FDA- and EU10/2011-compliant | | | | | | | | | | | | | | ● | ● | ● | |
| Fire class in accordance with UL-94 | HB | HB | V-2 | HB | HB | HB | HB | HB | V-0 | V-0 | V-0 | V-0 | V-0 | HB | V-0 | V-1 | HB |
| Mould test DIN EN ISO 846 | ● | ● | | | | ● | | | ● | ● | | ● | | | | | |
| Fogging DIN 75201-B | ● | | ● | ● | | | | | | | | | | | | | |
| **Availabilities / variants** | | | | | | | | | | | | | | | | | |
| Type S, sleeve | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Type F, with flange | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Type T, thrust washer | ● | | ● | | | ● | ● | | | ● | ● | | | | | | |
| Bar stock, round bar / tube | | | ● | ● | | ● | ● | ● | ● | ● | | ● | | ● | ● | | |
| Bar stock, plate | | | | | | ● | | | | | | | | | ● | | |
| Machined made from bar stocks | | | ● | ● | | ● | ● | ● | ● | ● | | ● | | ● | ● | | |

# iglidur® standards | Material properties table

| iglidur® | Unit | G | G1 | M250 | P210 | P | J | W300 | J3 | J350 | X | Z | H1 | H370 | A181 | A350 | A500 | Q2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **General properties** | | | | | | | | | | | | | | | | | | |
| Density | [g/cm³] | 1.46 | 1.58 | 1.14 | 1.40 | 1.58 | 1.49 | 1.24 | 1.42 | 1.44 | 1.44 | 1.4 | 1.53 | 1.66 | 1.38 | 1.42 | 1.28 | 1.46 |
| Colour | | | | | | | | | | | | | | | | | | |
| Max. moisture absorption at +23°C and 50% relative humidity | [% weight] | 0.7 | 0.2 | 1.4 | 0.3 | 0.2 | 0.3 | 1.3 | 0.3 | 0.3 | 0.1 | 0.3 | 0.1 | 0.1 | 0.2 | 0.6 | 0.3 | 1.1 |
| Max. moisture absorption | [% weight] | 4.0 | 1.7 | 7.6 | 0.5 | 0.4 | 1.3 | 6.5 | 1.3 | 1.6 | 0.5 | 1.1 | 0.3 | 0.1 | 1.3 | 1.9 | 0.5 | 4.6 |
| Coefficient of sliding friction, dynamic against steel | [µ] | 0.08 - 0.15 | 0.08 - 0.15 | 0.18 - 0.40 | 0.07 - 0.19 | 0.06 - 0.21 | 0.06 - 0.18 | 0.08 - 0.23 | 0.06 - 0.20 | 0.10 - 0.20 | 0.09 - 0.27 | 0.06 - 0.14 | 0.06 - 0.20 | 0.07 - 0.17 | 0.10 - 0.21 | 0.10 - 0.20 | 0.26 - 0.41 | 0.22 - 0.42 |
| pv value, max. (dry) | [MPa · m/s] | 0.42 | 0.60 | 0.12 | 0.4 | 0.39 | 0.34 | 0.23 | 0.5 | 0.45 | 1.32 | 0.84 | 0.80 | 0.74 | 0.31 | 0.40 | 0.28 | 0.7 |
| **Mechanical properties** | | | | | | | | | | | | | | | | | | |
| Flexural modulus | [MPa] | 7,800 | 11,486 | 2,700 | 2,500 | 5,300 | 2,400 | 3,500 | 2,700 | 2,000 | 8,100 | 2,400 | 2,800 | 11,100 | 1,913 | 2,000 | 3,600 | 8,370 |
| Flexural strength at +20°C | [MPa] | 210 | 178 | 112 | 70 | 120 | 73 | 125 | 70 | 55 | 170 | 95 | 55 | 135 | 48 | 110 | 140 | 240 |
| Compressive strength | [MPa] | 78 | 115 | 52 | 50 | 66 | 60 | 61 | 60 | 60 | 100 | 65 | 78 | 79 | 60 | 78 | 118 | 130 |
| Max. permissible surface pressure at +20°C | [MPa] | 80 | 91 | 20 | 50 | 50 | 35 | 60 | 45 | 60 | 150 | 150 | 80 | 75 | 31 | 60 | 120 | 120 |
| Shore D hardness | | 81 | 81 | 79 | 75 | 75 | 74 | 77 | 73 | 80 | 85 | 81 | 77 | 82 | 76 | 76 | 83 | 80 |
| **Physical and thermal properties** | | | | | | | | | | | | | | | | | | |
| Max. continuous operatingtemperature | [°C] | +130 | +180 | +80 | +100 | +130 | +90 | +90 | +90 | +180 | +250 | +250 | +200 | +200 | +90 | +180 | +250 | +130 |
| Max. short-term operating temperature | [°C] | +220 | +220 | +170 | +160 | +200 | +120 | +180 | +120 | +220 | +315 | +310 | +240 | +240 | +110 | +210 | +300 | +200 |
| Min. continuous operating temperature | [°C] | -40 | -40 | -40 | -40 | -40 | -50 | -40 | -50 | -100 | -100 | -100 | -40 | -40 | -50 | -100 | -100 | -40 |
| Thermal conductivity | [W/m · K] | 0.24 | 0.46 | 0.24 | 0.25 | 0.25 | 0.25 | 0.24 | 0.25 | 0.24 | 0.60 | 0.62 | 0.24 | 0.5 | 0.25 | 0.24 | 0.24 | 0.24 |
| Coefficient of thermal expansion at +23°C | [$K^{-1} \cdot 10^{-5}$] | 9 | 3.5 | 10 | 8 | 4 | 10 | 9 | 13 | 7 | 5 | 4 | 6 | 5 | 11 | 8 | 9 | 8 |
| **Electrical properties** | | | | | | | | | | | | | | | | | | |
| Specific contact resistance | [Ωcm] | $> 10^{13}$ | $> 10^{9}$ | $> 10^{13}$ | $> 10^{12}$ | $> 10^{13}$ | $> 10^{13}$ | $> 10^{13}$ | $> 10^{12}$ | $> 10^{13}$ | $< 10^{5}$ | $> 10^{11}$ | $> 10^{12}$ | $< 10^{5}$ | $> 10^{12}$ | $> 10^{11}$ | $> 10^{14}$ | $> 10^{13}$ |
| Surface resistance | [Ω] | $> 10^{11}$ | $> 10^{11}$ | $> 10^{11}$ | $> 10^{11}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{10}$ | $< 10^{3}$ | $> 10^{11}$ | $> 10^{11}$ | $< 10^{5}$ | $> 10^{12}$ | $> 10^{11}$ | $> 10^{13}$ | $> 10^{11}$ |

# iglidur® standards | Product range

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

### Order key

| Type | Dimensions [mm] |
|---|---|
| ☐ S M | -04 05-04 |

iglidur® material | Form S | Metric | Inner Ø d1 | Outer Ø d2 | Length b1

Choose the suitable material and dimensions for your application

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

**Imperial dimensions available**
▶ From page 1096

### Dimensions [mm]

| d1[126] | d2 | b1 | Part No. |
|---|---|---|---|
| 4 | 5.5 | 4 | ☐SM-0405-04 |
| 4 | 5.5 | 6 | ☐SM-0405-06 |
| 5 | 7 | 5 | ☐SM-0507-05 |
| 5 | 7 | 10 | ☐SM-0507-10 |
| 6 | 8 | 6 | ☐SM-0608-06 |
| 6 | 8 | 8 | ☐SM-0608-08 |
| 6 | 8 | 10 | ☐SM-0608-10 |
| 8 | 10 | 8 | ☐SM-0810-08 |
| 8 | 10 | 10 | ☐SM-0810-10 |
| 8 | 10 | 12 | ☐SM-0810-12 |
| 10 | 12 | 8 | ☐SM-1012-08 |
| 10 | 12 | 10 | ☐SM-1012-10 |
| 10 | 12 | 12 | ☐SM-1012-12 |
| 10 | 12 | 15 | ☐SM-1012-15 |
| 10 | 12 | 20 | ☐SM-1012-20 |
| 12 | 14 | 10 | ☐SM-1214-10 |
| 12 | 14 | 12 | ☐SM-1214-12 |
| 12 | 14 | 15 | ☐SM-1214-15 |
| 12 | 14 | 20 | ☐SM-1214-20 |
| 13 | 15 | 10 | ☐SM-1315-10 |

| d1[126] | d2 | b1 | Part No. |
|---|---|---|---|
| 13 | 15 | 20 | ☐SM-1315-20 |
| 14 | 16 | 15 | ☐SM-1416-15 |
| 14 | 16 | 20 | ☐SM-1416-20 |
| 14 | 16 | 25 | ☐SM-1416-25 |
| 15 | 17 | 15 | ☐SM-1517-15 |
| 15 | 17 | 20 | ☐SM-1517-20 |
| 15 | 17 | 25 | ☐SM-1517-25 |
| 16 | 18 | 15 | ☐SM-1618-15 |
| 16 | 18 | 20 | ☐SM-1618-20 |
| 16 | 18 | 25 | ☐SM-1618-25 |
| 18 | 20 | 15 | ☐SM-1820-15 |
| 18 | 20 | 20 | ☐SM-1820-20 |
| 18 | 20 | 25 | ☐SM-1820-25 |
| 20 | 23 | 10 | ☐SM-2023-10 |
| 20 | 23 | 15 | ☐SM-2023-15 |
| 20 | 23 | 20 | ☐SM-2023-20 |
| 20 | 23 | 25 | ☐SM-2023-25 |
| 20 | 23 | 30 | ☐SM-2023-30 |
| 22 | 25 | 15 | ☐SM-2225-15 |
| 22 | 25 | 20 | ☐SM-2225-20 |

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



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iglidur® standards | Product range

## Absolute flexibility: all iglidur® standard sizes available from stock

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

### Dimensions [mm]

| d1[126] | d2 | b1 | Part No. |
|---|---|---|---|
| 22 | 25 | 25 | ☐SM-2225-25 |
| 22 | 25 | 30 | ☐SM-2225-30 |
| 24 | 27 | 15 | ☐SM-2427-15 |
| 24 | 27 | 20 | ☐SM-2427-20 |
| 24 | 27 | 25 | ☐SM-2427-25 |
| 24 | 27 | 30 | ☐SM-2427-30 |
| 25 | 28 | 15 | ☐SM-2528-15 |
| 25 | 28 | 20 | ☐SM-2528-20 |
| 25 | 28 | 25 | ☐SM-2528-25 |
| 25 | 28 | 30 | ☐SM-2528-30 |
| 28 | 32 | 20 | ☐SM-2832-20 |
| 28 | 32 | 25 | ☐SM-2832-25 |
| 28 | 32 | 30 | ☐SM-2832-30 |
| 30 | 34 | 20 | ☐SM-3034-20 |
| 30 | 34 | 25 | ☐SM-3034-25 |
| 30 | 34 | 30 | ☐SM-3034-30 |
| 30 | 34 | 40 | ☐SM-3034-40 |
| 32 | 36 | 20 | ☐SM-3236-20 |
| 32 | 36 | 30 | ☐SM-3236-30 |
| 32 | 36 | 40 | ☐SM-3236-40 |

| d1[126] | d2 | b1 | Part No. |
|---|---|---|---|
| 35 | 39 | 20 | ☐SM-3539-20 |
| 35 | 39 | 30 | ☐SM-3539-30 |
| 35 | 39 | 40 | ☐SM-3539-40 |
| 35 | 39 | 50 | ☐SM-3539-50 |
| 40 | 44 | 20 | ☐SM-4044-20 |
| 40 | 44 | 30 | ☐SM-4044-30 |
| 40 | 44 | 40 | ☐SM-4044-40 |
| 40 | 44 | 50 | ☐SM-4044-50 |
| 45 | 50 | 20 | ☐SM-4550-20 |
| 45 | 50 | 30 | ☐SM-4550-30 |
| 45 | 50 | 40 | ☐SM-4550-40 |
| 45 | 50 | 50 | ☐SM-4550-50 |
| 50 | 55 | 20 | ☐SM-5055-20 |
| 50 | 55 | 30 | ☐SM-5055-30 |
| 50 | 55 | 40 | ☐SM-5055-40 |
| 50 | 55 | 50 | ☐SM-5055-50 |
| 50 | 55 | 60 | ☐SM-5055-60 |

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

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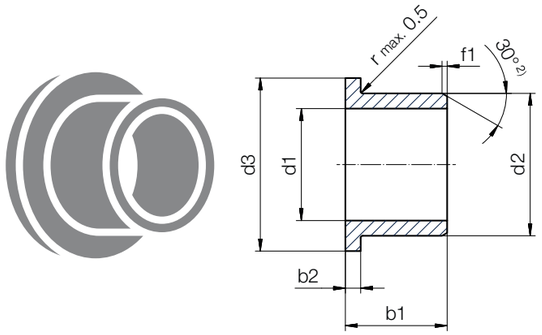
# iglidur® standards | Product range

## Flange bearings (form F)




2) Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

### Order key

| Type | Dimensions [mm] | | |
|---|---|---|---|
| ☐ F | M | -06 | 08-04 |
| iglidur® material | Form F | Metric | Inner Ø d1 / Outer Ø d2 / Length b1 |

Choose the suitable material and dimensions for your application

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

**Imperial dimensions available**
▶ From page 1098

### Dimensions [mm]

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

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



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iglidur® standards | Product range

## Absolute flexibility: all iglidur® standard sizes available from stock

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

### Dimensions [mm]

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

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

# iglidur® standards | Product range

## Thrust washer (form T)

Dimensions according to ISO 3547-1 and special dimensions

Imperial dimensions available

### Order key

| Type | | | Dimensions [mm] | | |
|---|---|---|---|---|---|
| ☐ T | M | - | 06 | 20 | -015 |
| iglidur® material | Form T | Metric | Inner Ø d1 | Outer Ø d2 | Length b1 |

Choose the suitable material and dimensions for your application

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

### Dimensions [mm]

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

[4] Design without fixing hole





### Dimensions [mm]

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

[4] Design without fixing hole

# Materials for general purpose

## Materials for general purpose

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

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert

**iglidur® G**
**The classic all-rounder**

| | | |
|---|---|---|
| Temperature [°C] [123] | +130 | – + |
| Surface pressure [MPa] [124] | 80 | – + |
| Coefficient of friction [µ] [125] | 0.22 | – + |
| Wear [µm/km] [125] | 1.75 | – + |
| Price index | – | + |

**iglidur® G1**
**More universal**

| | | |
|---|---|---|
| Temperature [°C] [123] | +180 | – + |
| Surface pressure [MPa] [124] | 91 | – + |
| Coefficient of friction [µ] [125] | 0.11 | – + |
| Wear [µm/km] [125] | 0.76 | – + |
| Price index | – | + |

**iglidur® M250**
**The robust all-rounder according to ISO 2795**

| | | |
|---|---|---|
| Temperature [°C] [123] | +80 | – + |
| Surface pressure [MPa] [124] | 20 | – + |
| Coefficient of friction [µ] [125] | 0.56 | – + |
| Wear [µm/km] [125] | 2.10 | – + |
| Price index | – | + |

**iglidur® P210**
**Specialist for pivoting, rolling applications and more**

| | | |
|---|---|---|
| Temperature [°C] [123] | +100 | – + |
| Surface pressure [MPa] [124] | 50 | – + |
| Coefficient of friction [µ] [125] | 0.17 | – + |
| Wear [µm/km] [125] | 0.38 | – + |
| Price index | – | + |

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



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**iglidur® P230**
**The low-cost all-rounder**

| | | |
|---|---|---|
| Temperature [°C] [123] | +110 | – + |
| Surface pressure [MPa] [124] | 60 | – + |
| Coefficient of friction [µ] [125] | 0.13 | – + |
| Wear [µm/km] [125] | 1.53 | – + |
| Price index | – | + |

**iglidur® P**
**The cost-effective outdoor all-rounder**

| | | |
|---|---|---|
| Temperature [°C] [123] | +130 | – + |
| Surface pressure [MPa] [124] | 50 | – + |
| Coefficient of friction [µ] [125] | 0.24 | – + |
| Wear [µm/km] [125] | 1.80 | – + |
| Price index | – | + |

**iglidur® K**
**Versatile and cost-effective**

| | | |
|---|---|---|
| Temperature [°C] [123] | +170 | – + |
| Surface pressure [MPa] [124] | 50 | – + |
| Coefficient of friction [µ] [125] | 0.16 | – + |
| Wear [µm/km] [125] | 0.60 | – + |
| Price index | – | + |

**iglidur® GLW**
**Low-cost material for high-volume production**

| | | |
|---|---|---|
| Temperature [°C] [123] | +100 | – + |
| Surface pressure [MPa] [124] | 80 | – + |
| Coefficient of friction [µ] [125] | 0.23 | – + |
| Wear [µm/km] [125] | 8.30 | – + |

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# The classic all-rounder

## Excellent price-performance ratio

## iglidur® G

**When to use it?**

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

**When not to use it?**

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



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# Bearing technology | Plain bearings | iglidur® G

Ø
1.5-195.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## The classic all-rounder
## Excellent price-performance ratio

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

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

### Typical application areas

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

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

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.46 | |
| Colour | | matt grey | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.7 | DIN 53495 |
| Max. moisture absorption | % weight | 4.0 | |
| Coefficient of friction, dynamic, against steel | μ | 0.08-0.15 | |
| pv value, max. (dry) | MPa · m/s | 0.42 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 7,800 | DIN 53457 |
| Flexural strength at +20°C | MPa | 210 | DIN 53452 |
| Compressive strength | MPa | 78 | |
| Max. permissible surface pressure (+20°C) | MPa | 80 | |
| Shore D hardness | | 81 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +130 | |
| Max. application temperature short-term | °C | +220 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 9 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{13}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{11}$ | DIN 53482 |

Table 01: Material properties

-40°C up to +130°C

80MPa

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

### Moisture absorption

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

### Vacuum

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

### Radiation resistance

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

### Resistance to weathering

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

### Mechanical properties

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

***Surface pressure, page 45***

# Bearing technology | Plain bearings | iglidur® G

### Permissible surface speeds

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

***Surface speed, page 48***

### Temperature

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

***Application temperatures, page 53***
***Additional securing, page 53***

### Friction and wear

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

***Coefficient of friction and surfaces, page 51***
***Wear resistance, page 54***

### Shaft materials

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

***Shaft materials, page 56***

### Installation tolerances

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

***Testing methods, page 61***

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

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

**Table 02: Chemical resistance**

***Chemical table, page 1170***

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

**Table 03: Maximum surface speeds**

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

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

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

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





# Technical data

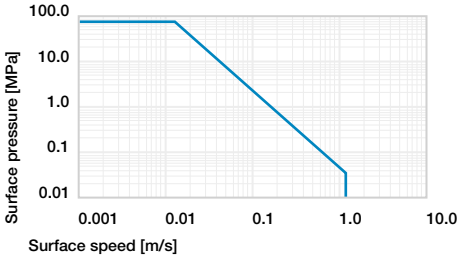



**Diagram 01: Permissible pv values for iglidur® G plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.**

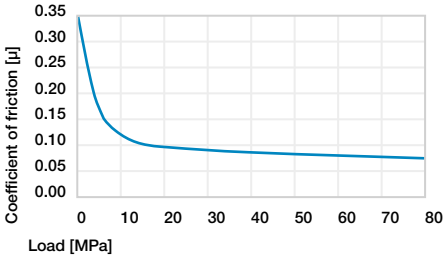



**Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s**

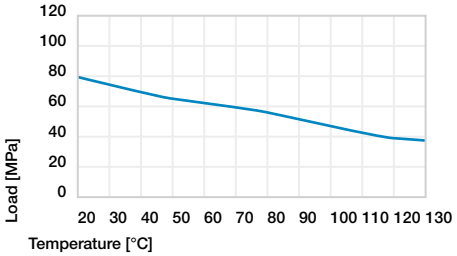



**Diagram 02: Maximum recommended surface pressure as a function of temperature (80MPa at +20°C)**

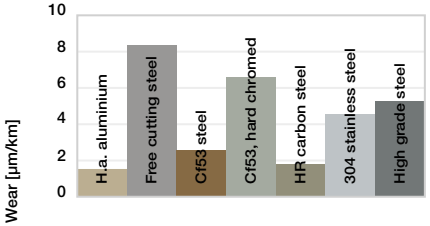



**Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s**

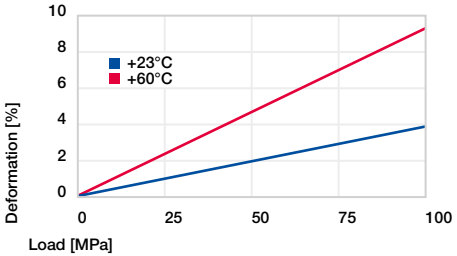



**Diagram 03: Deformation under pressure and temperature**

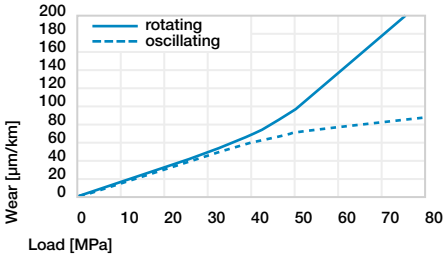



**Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load**

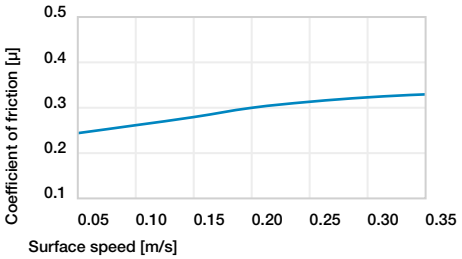
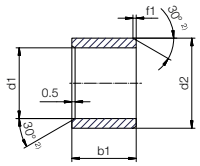



**Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa**

# Bearing technology | Plain bearings | iglidur® G

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: GSM-0103-02 – no minimum order quantity.
G iglidur® material S Cylindrical M Metric 01 Inner Ø d1 03 Outer Ø d2 02 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 1.5 | | 3.0 | 2.0 | GSM-0103-02 |
| 2.0 | | 3.5 | 3.0 | GSM-0203-03 |
| 2.5 | +0.014 | 4.5 | 5.0 | GSM-02504-05 |
| 3.0 | +0.054 | 4.5 | 3.0 | GSM-0304-03 |
| 3.0 | | 4.5 | 5.0 | GSM-0304-05 |
| 3.0 | | 4.5 | 6.0 | GSM-0304-06 |
| 4.0 | | 5.5 | 4.0 | GSM-0405-04 |
| 4.0 | +0.020 | 5.5 | 6.0 | GSM-0405-06 |
| 4.0 | +0.068 | 7.0 | 5.5 | GSM-0407-05 |
| 4.5 | | 6.0 | 8.0 | GSM-0406-08 |
| 5.0 | +0.010 | 6.0 | 4.6 | GSM-0506-046 |
| 5.0 | +0.040 | 6.0 | 5.0 | GSM-0506-05 |
| 5.0 | | 6.0 | 7.0 | GSM-0506-07 |
| 5.0 | | 7.0 | 5.0 | GSM-0507-05 |
| 5.0 | +0.020 | 7.0 | 7.0 | GSM-0507-07 |
| 5.0 | +0.068 | 7.0 | 8.0 | GSM-0507-08 |
| 5.0 | | 7.0 | 10.0 | GSM-0507-10 |
| 6.0 | | 7.0 | 6.0 | GSM-0607-06 |
| 6.0 | +0.010 | 7.0 | 12.0 | GSM-0607-12 |
| 6.0 | +0.040 | 7.0 | 17.0 | GSM-0607-17 |
| 6.0 | | 7.0 | 17.5 | GSM-0607-17.5 |
| 6.0 | | 7.0 | 19.0 | GSM-0607-19 |
| 6.0 | | 8.0 | 1.5 | GSM-0608-015 |
| 6.0 | | 8.0 | 2.5 | GSM-0608-025 |
| 6.0 | +0.020 | 8.0 | 3.0 | GSM-0608-03 |
| 6.0 | +0.068 | 8.0 | 4.0 | GSM-0608-04 |
| 6.0 | | 8.0 | 5.0 | GSM-0608-05 |
| 6.0 | | 8.0 | 5.5 | GSM-0608-055 |
| 6.0 | | 8.0 | 6.0 | GSM-0608-06 |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 6.0 | | 8.0 | 8.0 | GSM-0608-08 |
| 6.0 | | 8.0 | 9.5 | GSM-0608-09 |
| 6.0 | +0.020 | 8.0 | 10.0 | GSM-0608-10 |
| 6.0 | +0.068 | 8.0 | 11.8 | GSM-0608-11 |
| 6.0 | | 8.0 | 13.8 | GSM-0608-13 |
| 7.0 | +0.013 | 8.0 | 10.0 | GSM-0708-10 |
| 7.0 | +0.049 | 8.0 | 19.0 | GSM-0708-19 |
| 7.0 | | 9.0 | 8.0 | GSM-0709-08 |
| 7.0 | +0.025 | 9.0 | 9.0 | GSM-0709-09 |
| 7.0 | +0.083 | 9.0 | 10.0 | GSM-0709-10 |
| 7.0 | | 9.0 | 12.0 | GSM-0709-12 |
| 8.0 | | 9.0 | 5.0 | GSM-0809-05 |
| 8.0 | +0.013 | 9.0 | 6.0 | GSM-0809-06 |
| 8.0 | +0.049 | 9.0 | 8.0 | GSM-0809-08 |
| 8.0 | | 9.0 | 12.0 | GSM-0809-12 |
| 8.0 | | 10.0 | 5.0 | GSM-0810-05 |
| 8.0 | | 10.0 | 6.0 | GSM-0810-06 |
| 8.0 | | 10.0 | 6.8 | GSM-0810-07 |
| 8.0 | | 10.0 | 8.0 | GSM-0810-08 |
| 8.0 | | 10.0 | 10.0 | GSM-0810-10 |
| 8.0 | | 10.0 | 12.0 | GSM-0810-12 |
| 8.0 | +0.025 | 10.0 | 13.8 | GSM-0810-13 |
| 8.0 | +0.083 | 10.0 | 14.0 | GSM-0810-14 |
| 8.0 | | 10.0 | 15.0 | GSM-0810-15 |
| 8.0 | | 10.0 | 16.0 | GSM-0810-16 |
| 8.0 | | 10.0 | 18.0 | GSM-0810-18 |
| 8.0 | | 10.0 | 20.0 | GSM-0810-20 |
| 8.0 | | 10.0 | 22.0 | GSM-0810-22 |
| 8.0 | | 10.0 | 25.0 | GSM-0810-25 |

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



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# Product range

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 8.0 | +0.040 +0.130 | 12.0 | 9.0 | GSM-0812-09 |
| 9.0 | +0.013 | 10.0 | 12.0 | GSM-0910-12 |
| 9.0 | +0.049 | 10.0 | 16.0 | GSM-0910-16 |
| 9.0 | +0.025 | 11.0 | 6.0 | GSM-0911-06 |
| 9.0 | +0.083 | 11.0 | 20.0 | GSM-0911-20 |
| 10.0 | | 11.0 | 6.0 | GSM-1011-06 |
| 10.0 | | 11.0 | 7.0 | GSM-1011-07 |
| 10.0 | +0.013 | 11.0 | 10.0 | GSM-1011-10 |
| 10.0 | +0.049 | 11.0 | 20.0 | GSM-1011-20 |
| 10.0 | | 11.0 | 25.0 | GSM-1011-25 |
| 10.0 | | 11.0 | 30.0 | GSM-1011-30 |
| 10.0 | | 12.0 | 4.0 | GSM-1012-04 |
| 10.0 | | 12.0 | 4.5 | GSM-1012-045 |
| 10.0 | | 12.0 | 5.0 | GSM-1012-05 |
| 10.0 | | 12.0 | 6.0 | GSM-1012-06 |
| 10.0 | | 12.0 | 7.0 | GSM-1012-07 |
| 10.0 | | 12.0 | 8.0 | GSM-1012-08 |
| 10.0 | +0.025 | 12.0 | 9.0 | GSM-1012-09 |
| 10.0 | +0.083 | 12.0 | 10.0 | GSM-1012-10 |
| 10.0 | | 12.0 | 12.0 | GSM-1012-12 |
| 10.0 | | 12.0 | 14.0 | GSM-1012-14 |
| 10.0 | | 12.0 | 15.0 | GSM-1012-15 |
| 10.0 | | 12.0 | 17.0 | GSM-1012-17 |
| 10.0 | | 12.0 | 20.0 | GSM-1012-20 |
| 10.0 | | 13.0 | 13.5 | GSM-1013-13 |
| 10.0 | +0.025 | 14.0 | 10.0 | GSM-1014-10 |
| 10.0 | +0.115 | 14.0 | 20.0 | GSM-1014-20 |
| 10.0 | +0.040 +0.130 | 16.0 | 10.0 | GSM-1016-10 |
| 12.0 | | 13.0 | 4.7 | GSM-1213-047 |
| 12.0 | +0.016 | 13.0 | 10.0 | GSM-1213-10 |
| 12.0 | +0.059 | 13.0 | 12.0 | GSM-1213-12 |
| 12.0 | | 13.0 | 15.0 | GSM-1213-15 |
| 12.0 | | 14.0 | 4.0 | GSM-1214-04 |
| 12.0 | | 14.0 | 5.0 | GSM-1214-05 |
| 12.0 | | 14.0 | 6.0 | GSM-1214-06 |
| 12.0 | | 14.0 | 8.0 | GSM-1214-08 |
| 12.0 | | 14.0 | 10.0 | GSM-1214-10 |
| 12.0 | +0.032 | 14.0 | 12.0 | GSM-1214-12 |
| 12.0 | +0.102 | 14.0 | 14.0 | GSM-1214-14 |
| 12.0 | | 14.0 | 15.0 | GSM-1214-15 |
| 12.0 | | 14.0 | 20.0 | GSM-1214-20 |
| 12.0 | | 14.0 | 25.0 | GSM-1214-25 |
| 12.0 | | 15.0 | 6.0 | GSM-1215-06 |
| 12.0 | | 15.0 | 22.0 | GSM-1215-22 |
| 12.0 | +0.050 | 16.0 | 10.0 | GSM-1216-10 |
| 12.0 | +0.160 | 16.0 | 20.0 | GSM-1216-20 |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 13.0 | | 15.0 | 7.0 | GSM-1315-070 |
| 13.0 | | 15.0 | 7.5 | GSM-1315-075 |
| 13.0 | | 15.0 | 10.0 | GSM-1315-10 |
| 13.0 | | 15.0 | 15.0 | GSM-1315-15 |
| 13.0 | | 15.0 | 20.0 | GSM-1315-20 |
| 13.0 | | 15.0 | 25.0 | GSM-1315-25 |
| 14.0 | +0.032 | 16.0 | 3.0 | GSM-1416-03 |
| 14.0 | +0.102 | 16.0 | 6.0 | GSM-1416-06 |
| 14.0 | | 16.0 | 8.0 | GSM-1416-08 |
| 14.0 | | 16.0 | 10.0 | GSM-1416-10 |
| 14.0 | | 16.0 | 12.0 | GSM-1416-12 |
| 14.0 | | 16.0 | 15.0 | GSM-1416-15 |
| 14.0 | | 16.0 | 20.0 | GSM-1416-20 |
| 14.0 | | 16.0 | 25.0 | GSM-1416-25 |
| 14.0 | | 16.0 | 45.0 | GSM-1416-45 |
| 15.0 | +0.016 | 16.0 | 10.0 | GSM-1516-10 |
| 15.0 | +0.059 | 16.0 | 15.0 | GSM-1516-15 |
| 15.0 | | 17.0 | 4.0 | GSM-1517-04 |
| 15.0 | | 17.0 | 10.0 | GSM-1517-10 |
| 15.0 | | 17.0 | 12.0 | GSM-1517-12 |
| 15.0 | | 17.0 | 15.0 | GSM-1517-15 |
| 15.0 | | 17.0 | 20.0 | GSM-1517-20 |
| 15.0 | | 17.0 | 25.0 | GSM-1517-25 |
| 16.0 | | 18.0 | 5.5 | GSM-1618-055 |
| 16.0 | | 18.0 | 8.0 | GSM-1618-08 |
| 16.0 | +0.032 | 18.0 | 10.0 | GSM-1618-10 |
| 16.0 | +0.102 | 18.0 | 12.0 | GSM-1618-12 |
| 16.0 | | 18.0 | 13.5 | GSM-1618-13.5 |
| 16.0 | | 18.0 | 15.0 | GSM-1618-15 |
| 16.0 | | 18.0 | 20.0 | GSM-1618-20 |
| 16.0 | | 18.0 | 25.0 | GSM-1618-25 |
| 16.0 | | 18.0 | 30.0 | GSM-1618-30 |
| 16.0 | | 18.0 | 38.5 | GSM-1618-38.5 |
| 16.0 | | 18.0 | 50.0 | GSM-1618-50 |
| 17.0 | | 19.0 | 15.0 | GSM-1719-15 |
| 18.0 | +0.016 +0.059 | 19.0 | 15.0 | GSM-1819-15 |
| 18.0 | | 20.0 | 6.0 | GSM-1820-06 |
| 18.0 | | 20.0 | 10.0 | GSM-1820-10 |
| 18.0 | | 20.0 | 12.0 | GSM-1820-12 |
| 18.0 | | 20.0 | 15.0 | GSM-1820-15 |
| 18.0 | +0.032 | 20.0 | 20.0 | GSM-1820-20 |
| 18.0 | +0.102 | 20.0 | 25.0 | GSM-1820-25 |
| 18.0 | | 20.0 | 34.0 | GSM-1820-34 |
| 18.0 | | 20.0 | 38.0 | GSM-1820-38 |
| 18.0 | | 20.0 | 45.0 | GSM-1820-45 |
| 18.0 | | 22.0 | 30.0 | GSM-1822-30 |

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

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# Bearing technology | Plain bearings | iglidur® G

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 19.0 | +0.040 +0.124 | 22.0 | 6.0 | **GSM-1922-06** |
| 19.0 | | 22.0 | 28.0 | **GSM-1922-28** |
| 19.0 | | 22.0 | 35.0 | **GSM-1922-35** |
| 20.0 | +0.020 +0.072 | 21.0 | 20.0 | **GSM-2021-20** |
| 20.0 | +0.040 +0.124 | 22.0 | 3.0 | **GSM-2022-03** |
| 20.0 | | 22.0 | 8.0 | **GSM-2022-08** |
| 20.0 | | 22.0 | 10.5 | **GSM-2022-105** |
| 20.0 | | 22.0 | 15.0 | **GSM-2022-15** |
| 20.0 | | 22.0 | 20.0 | **GSM-2022-20** |
| 20.0 | | 22.0 | 22.0 | **GSM-2022-22** |
| 20.0 | | 22.0 | 28.0 | **GSM-2022-28** |
| 20.0 | | 22.0 | 30.0 | **GSM-2022-30** |
| 20.0 | | 22.0 | 47.0 | **GSM-2022-47** |
| 20.0 | | 23.0 | 4.5 | **GSM-2023-045** |
| 20.0 | | 23.0 | 10.0 | **GSM-2023-10** |
| 20.0 | | 23.0 | 15.0 | **GSM-2023-15** |
| 20.0 | | 23.0 | 20.0 | **GSM-2023-20** |
| 20.0 | | 23.0 | 24.0 | **GSM-2023-24** |
| 20.0 | | 23.0 | 25.0 | **GSM-2023-25** |
| 20.0 | | 23.0 | 30.0 | **GSM-2023-30** |
| 20.0 | | 23.0 | 35.0 | **GSM-2023-35** |
| 22.0 | | 24.0 | 8.0 | **GSM-2224-08** |
| 22.0 | | 24.0 | 10.0 | **GSM-2224-10** |
| 22.0 | | 24.0 | 12.0 | **GSM-2224-12** |
| 22.0 | | 24.0 | 15.0 | **GSM-2224-15** |
| 22.0 | | 24.0 | 17.0 | **GSM-2224-17** |
| 22.0 | | 24.0 | 20.0 | **GSM-2224-20** |
| 22.0 | | 24.0 | 30.0 | **GSM-2224-30** |
| 22.0 | | 24.0 | 48.0 | **GSM-2224-48** |
| 22.0 | | 25.0 | 15.0 | **GSM-2225-15** |
| 22.0 | | 25.0 | 20.0 | **GSM-2225-20** |
| 22.0 | | 25.0 | 25.0 | **GSM-2225-25** |
| 22.0 | | 25.0 | 30.0 | **GSM-2225-30** |
| 22.0 | | 25.0 | 38.5 | **GSM-2225-38.5** |
| 24.0 | +0.020 +0.072 | 25.0 | 25.0 | **GSM-2425-25** |
| 24.0 | +0.040 +0.124 | 27.0 | 6.0 | **GSM-2427-06** |
| 24.0 | | 27.0 | 15.0 | **GSM-2427-15** |
| 24.0 | | 27.0 | 20.0 | **GSM-2427-20** |
| 24.0 | | 27.0 | 24.0 | **GSM-2427-24** |
| 24.0 | | 27.0 | 25.0 | **GSM-2427-25** |
| 24.0 | | 27.0 | 30.0 | **GSM-2427-30** |
| 25.0 | +0.020 +0.072 | 26.0 | 23.0 | **GSM-2526-23** |
| 25.0 | | 26.0 | 25.0 | **GSM-2526-25** |
| 25.0 | +0.040 +0.124 | 28.0 | 12.0 | **GSM-2528-12** |
| 25.0 | | 28.0 | 15.0 | **GSM-2528-15** |
| 25.0 | | 28.0 | 20.0 | **GSM-2528-20** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 25.0 | +0.040 +0.124 | 28.0 | 24.0 | **GSM-2528-24** |
| 25.0 | | 28.0 | 25.0 | **GSM-2528-25** |
| 25.0 | | 28.0 | 30.0 | **GSM-2528-30** |
| 25.0 | | 28.0 | 35.0 | **GSM-2528-35** |
| 25.0 | | 28.0 | 50.0 | **GSM-2528-50** |
| 26.0 | | 30.0 | 16.0 | **GSM-2630-16** |
| 27.0 | | 30.0 | 5.0 | **GSM-2730-05** |
| 28.0 | | 32.0 | 10.5 | **GSM-2832-105** |
| 28.0 | | 32.0 | 12.0 | **GSM-2832-12** |
| 28.0 | | 32.0 | 15.0 | **GSM-2832-15** |
| 28.0 | | 32.0 | 20.0 | **GSM-2832-20** |
| 28.0 | | 32.0 | 23.0 | **GSM-2832-23** |
| 28.0 | | 32.0 | 25.0 | **GSM-2832-25** |
| 28.0 | | 32.0 | 30.0 | **GSM-2832-30** |
| 28.0 | +0.065 +0.195 | 35.0 | 19.0 | **GSM-2835-19** |
| 28.0 | | 35.0 | 28.0 | **GSM-2835-28** |
| 29.0 | +0.040 +0.124 | 33.0 | 6.0 | **GSM-2933-06** |
| 30.0 | +0.020 +0.072 | 31.0 | 5.0 | **GSM-3031-05** |
| 30.0 | | 31.0 | 12.0 | **GSM-3031-12** |
| 30.0 | | 31.0 | 30.0 | **GSM-3031-30** |
| 30.0 | +0.040 +0.124 | 34.0 | 12.0 | **GSM-3034-12** |
| 30.0 | | 34.0 | 15.0 | **GSM-3034-15** |
| 30.0 | | 34.0 | 20.0 | **GSM-3034-20** |
| 30.0 | | 34.0 | 24.0 | **GSM-3034-24** |
| 30.0 | | 34.0 | 25.0 | **GSM-3034-25** |
| 30.0 | | 34.0 | 30.0 | **GSM-3034-30** |
| 30.0 | | 34.0 | 35.0 | **GSM-3034-35** |
| 30.0 | | 34.0 | 40.0 | **GSM-3034-40** |
| 30.0 | | 34.0 | 52.5 | **GSM-3034-525** |
| 32.0 | +0.050 +0.150 | 36.0 | 15.0 | **GSM-3236-15** |
| 32.0 | | 36.0 | 20.0 | **GSM-3236-20** |
| 32.0 | | 36.0 | 30.0 | **GSM-3236-30** |
| 32.0 | | 36.0 | 40.0 | **GSM-3236-40** |
| 35.0 | | 39.0 | 14.0 | **GSM-3539-14** |
| 35.0 | | 39.0 | 20.0 | **GSM-3539-20** |
| 35.0 | | 39.0 | 25.0 | **GSM-3539-25** |
| 35.0 | | 39.0 | 30.0 | **GSM-3539-30** |
| 35.0 | | 39.0 | 40.0 | **GSM-3539-40** |
| 35.0 | | 39.0 | 50.0 | **GSM-3539-50** |
| 35.0 | | 41.0 | 50.0 | **GSM-3541-50** |
| 36.0 | | 40.0 | 20.0 | **GSM-3640-20** |
| 37.0 | | 41.0 | 20.0 | **GSM-3741-20** |
| 38.0 | | 42.0 | 25.0 | **GSM-3842-25** |
| 40.0 | | 44.0 | 10.0 | **GSM-4044-10** |
| 40.0 | | 44.0 | 16.5 | **GSM-4044-16** |
| 40.0 | | 44.0 | 20.0 | **GSM-4044-20** |
| 40.0 | | 44.0 | 30.0 | **GSM-4044-30** |

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



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# Product range

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 40.0 | +0.050 +0.150 | 44.0 | 40.0 | **GSM-4044-40** |
| 40.0 | | 44.0 | 50.0 | **GSM-4044-50** |
| 40.0 | | 44.0 | 52.5 | **GSM-4044-525** |
| 42.0 | | 46.0 | 40.0 | **GSM-4246-40** |
| 44.0 | | 48.0 | 20.0 | **GSM-4448-20** |
| 45.0 | | 50.0 | 10.0 | **GSM-4550-10** |
| 45.0 | | 50.0 | 20.0 | **GSM-4550-20** |
| 45.0 | | 50.0 | 22.0 | **GSM-4550-22** |
| 45.0 | | 50.0 | 23.5 | **GSM-4550-235** |
| 45.0 | | 50.0 | 30.0 | **GSM-4550-30** |
| 45.0 | | 50.0 | 38.0 | **GSM-4550-38** |
| 45.0 | | 50.0 | 40.0 | **GSM-4550-40** |
| 45.0 | | 50.0 | 50.0 | **GSM-4550-50** |
| 50.0 | | 55.0 | 20.0 | **GSM-5055-20** |
| 50.0 | | 55.0 | 25.0 | **GSM-5055-25** |
| 50.0 | | 55.0 | 30.0 | **GSM-5055-30** |
| 50.0 | | 55.0 | 40.0 | **GSM-5055-40** |
| 50.0 | | 55.0 | 50.0 | **GSM-5055-50** |
| 50.0 | | 55.0 | 60.0 | **GSM-5055-60** |
| 52.0 | +0.060 +0.180 | 57.0 | 20.0 | **GSM-5257-20** |
| 55.0 | | 60.0 | 20.0 | **GSM-5560-20** |
| 55.0 | | 60.0 | 40.0 | **GSM-5560-40** |
| 55.0 | | 60.0 | 50.0 | **GSM-5560-50** |
| 55.0 | | 60.0 | 60.0 | **GSM-5560-60** |
| 60.0 | | 65.0 | 30.0 | **GSM-6065-30** |
| 60.0 | | 65.0 | 40.0 | **GSM-6065-40** |
| 60.0 | | 65.0 | 50.0 | **GSM-6065-50** |
| 60.0 | | 65.0 | 60.0 | **GSM-6065-60** |
| 60.0 | | 65.0 | 70.0 | **GSM-6065-70** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 62.0 | +0.100 +0.250 | 67.0 | 35.0 | **GSM-6267-35** |
| 62.0 | +0.060 +0.180 | 67.0 | 72.0 | **GSM-6267-72** |
| 65.0 | | 70.0 | 30.0 | **GSM-6570-30** |
| 65.0 | | 70.0 | 50.0 | **GSM-6570-50** |
| 65.0 | | 70.0 | 104.0 | **GSM-6570-104** |
| 68.0 | | 73.0 | 60.0 | **GSM-6873-60** |
| 70.0 | | 75.0 | 60.0 | **GSM-7075-60** |
| 72.0 | | 77.0 | 24.5 | **GSM-7277-24.5** |
| 72.0 | | 77.0 | 76.0 | **GSM-7277-76** |
| 75.0 | | 80.0 | 40.0 | **GSM-7580-40** |
| 75.0 | | 80.0 | 60.0 | **GSM-7580-60** |
| 80.0 | | 85.0 | 60.0 | **GSM-8085-60** |
| 80.0 | | 85.0 | 100.0 | **GSM-8085-100** |
| 85.0 | | 90.0 | 100.0 | **GSM-8590-100** |
| 90.0 | | 95.0 | 100.0 | **GSM-9095-100** |
| 95.0 | | 100.0 | 100.0 | **GSM-95100-100** |
| 100.0 | | 105.0 | 21.5 | **GSM-100105-21.5** |
| 100.0 | +0.072 +0.212 | 105.0 | 30.0 | **GSM-100105-30** |
| 100.0 | | 105.0 | 32.0 | **GSM-100105-32** |
| 100.0 | | 105.0 | 100.0 | **GSM-100105-100** |
| 105.0 | | 110.0 | 100.0 | **GSM-105110-100** |
| 110.0 | | 115.0 | 100.0 | **GSM-110115-100** |
| 120.0 | | 125.0 | 100.0 | **GSM-120125-100** |
| 125.0 | +0.085 +0.245 | 130.0 | 100.0 | **GSM-125130-100** |
| 130.0 | | 135.0 | 100.0 | **GSM-130135-100** |
| 135.0 | | 140.0 | 80.0 | **GSM-135140-80** |
| 140.0 | | 145.0 | 100.0 | **GSM-140145-100** |
| 140.0 | | 145.0 | 104.0 | **GSM-140145-104** |
| 150.0 | | 155.0 | 100.0 | **GSM-150155-100** |

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

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Detailed information about delivery time online.
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including delivery times, prices, online tools
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**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

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

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

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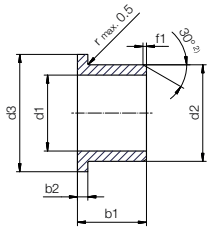
# Bearing technology | Plain bearings | iglidur® G

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: GFM-0304-02 – no minimum order quantity.
G iglidur® material F With flange M Metric 03 Inner Ø d1 04 Outer Ø d2 02 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 3.0 | +0.014 +0.054 | 4.5 | 7.5 | 2.0 | 0.50 | GFM-0304-02 |
| 3.0 | | 4.5 | 7.5 | 2.7 | 0.75 | GFM-0304-0275 |
| 3.0 | | 4.5 | 7.5 | 3.0 | 0.75 | GFM-0304-03 |
| 3.0 | | 4.5 | 7.5 | 5.0 | 0.75 | GFM-0304-05 |
| 3.0 | | 4.5 | 7.0 | 5.0 | 0.75 | GFM-030407-05 |
| 4.0 | +0.010 | 5.0 | 9.5 | 4.0 | 0.50 | GFM-04050-04 |
| 4.0 | +0.040 | 5.0 | 9.5 | 6.0 | 0.50 | GFM-04050-06 |
| 4.0 | +0.020 +0.068 | 5.5 | 9.5 | 2.5 | 0.75 | GFM-0405-0255 |
| 4.0 | | 5.5 | 9.5 | 3.0 | 0.75 | GFM-0405-03 |
| 4.0 | | 5.5 | 9.5 | 4.0 | 0.75 | GFM-0405-04 |
| 4.0 | | 5.5 | 9.5 | 6.0 | 0.75 | GFM-0405-06 |
| 4.0 | | 5.5 | 8.0 | 10.0 | 1.00 | GFM-040508-10 |
| 5.0 | +0.010 +0.040 | 6.0 | 10.0 | 3.5 | 0.50 | GFM-0506-035 |
| 5.0 | | 6.0 | 10.0 | 4.0 | 0.50 | GFM-0506-04 |
| 5.0 | | 6.0 | 10.0 | 5.0 | 0.50 | GFM-0506-05 |
| 5.0 | | 6.0 | 10.0 | 6.0 | 0.50 | GFM-0506-06 |
| 5.0 | | 6.0 | 10.0 | 15.3 | 0.50 | GFM-0506-15 |
| 5.0 | +0.020 +0.068 | 7.0 | 11.0 | 3.5 | 1.00 | GFM-0507-03 |
| 5.0 | | 7.0 | 11.0 | 4.0 | 1.00 | GFM-0507-04 |
| 5.0 | | 7.0 | 15.0 | 4.0 | 1.00 | GFM-050715-04 |
| 5.0 | | 7.0 | 11.0 | 5.0 | 1.00 | GFM-0507-05 |
| 5.0 | | 7.0 | 9.5 | 5.0 | 1.00 | GFM-050709-05 |
| 5.0 | | 7.0 | 11.0 | 7.0 | 1.00 | GFM-0507-07 |
| 5.0 | | 7.0 | 11.0 | 11.0 | 1.00 | GFM-0507-11 |
| 5.0 | | 7.0 | 11.0 | 14.5 | 1.00 | GFM-0507-145 |
| 5.0 | | 7.0 | 11.0 | 30.0 | 1.00 | GFM-0507-30 |
| 6.0 | +0.010 | 7.0 | 11.0 | 2.4 | 0.50 | GFM-0607-024 |
| 6.0 | +0.040 | 7.0 | 11.0 | 4.5 | 0.50 | GFM-0607-045 |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 6.0 | +0.010 +0.040 | 7.0 | 11.0 | 6.0 | 0.50 | GFM-0607-06 |
| 6.0 | | 7.0 | 11.0 | 10.0 | 0.50 | GFM-0607-10 |
| 6.0 | +0.020 +0.068 | 8.0 | 12.0 | 2.5 | 1.00 | GFM-0608-025 |
| 6.0 | | 8.0 | 14.0 | 2.8 | 1.00 | GFM-060814-028 |
| 6.0 | | 8.0 | 12.0 | 4.0 | 1.00 | GFM-0608-04 |
| 6.0 | | 8.0 | 12.0 | 4.8 | 1.00 | GFM-0608-048 |
| 6.0 | | 8.0 | 12.0 | 5.0 | 1.00 | GFM-0608-05 |
| 6.0 | | 8.0 | 12.0 | 6.0 | 1.00 | GFM-0608-06 |
| 6.0 | | 8.0 | 12.0 | 7.0 | 1.00 | GFM-0608-07 |
| 6.0 | | 8.0 | 12.0 | 8.0 | 1.00 | GFM-0608-08 |
| 6.0 | | 8.0 | 12.0 | 10.0 | 1.00 | GFM-0608-10 |
| 6.0 | | 8.0 | 14.0 | 12.0 | 1.00 | GFM-060814-12 |
| 6.0 | | 8.0 | 12.0 | 25.0 | 1.00 | GFM-0608-25 |
| 6.0 | | 8.0 | 12.0 | 35.0 | 1.00 | GFM-0608-35 |
| 7.0 | +0.013 +0.049 | 8.0 | 12.0 | 1.7 | 0.50 | GFM-0708-017 |
| 7.0 | | 8.0 | 12.0 | 3.0 | 0.50 | GFM-0708-03 |
| 7.0 | | 8.0 | 12.0 | 6.0 | 0.50 | GFM-0708-06 |
| 7.0 | | 8.0 | 12.0 | 8.0 | 0.50 | GFM-0708-08 |
| 7.0 | +0.025 +0.083 | 9.0 | 15.0 | 3.5 | 1.00 | GFM-0709-035 |
| 7.0 | | 9.0 | 15.0 | 6.0 | 1.00 | GFM-0709-06 |
| 7.0 | | 9.0 | 15.0 | 10.0 | 1.00 | GFM-0709-10 |
| 7.0 | | 9.0 | 19.0 | 10.0 | 1.00 | GFM-070919-10 |
| 7.0 | | 9.0 | 15.0 | 12.0 | 1.00 | GFM-0709-12 |
| 8.0 | +0.013 +0.049 | 9.0 | 15.0 | 3.0 | 0.50 | GFM-0809-03 |
| 8.0 | | 9.0 | 13.0 | 3.5 | 0.50 | GFM-0809-035 |
| 8.0 | | 9.0 | 13.0 | 5.5 | 0.50 | GFM-0809-055 |
| 8.0 | | 9.0 | 13.0 | 8.0 | 0.50 | GFM-0809-08 |
| 8.0 | | 9.0 | 13.0 | 12.0 | 0.50 | GFM-0809-12 |

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







# Product range

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 8.0 | +0.025 +0.083 | 10.0 | 15.0 | 3.0 | 1.00 | GFM-0810-03 |
| 8.0 | | 10.0 | 18.0 | 3.0 | 1.00 | GFM-081018-03 |
| 8.0 | | 10.0 | 15.0 | 4.0 | 1.00 | GFM-0810-04 |
| 8.0 | +0.040 +0.098 | 10.0 | 14.0 | 5.0 | 1.00 | GFM-081014-05 |
| 8.0 | +0.025 +0.083 | 10.0 | 15.0 | 5.5 | 1.00 | GFM-0810-05 |
| 8.0 | | 10.0 | 14.0 | 6.0 | 1.00 | GFM-081014-06 |
| 8.0 | | 10.0 | 15.0 | 6.5 | 1.00 | GFM-0810-065 |
| 8.0 | | 10.0 | 15.0 | 7.5 | 1.00 | GFM-0810-07 |
| 8.0 | | 10.0 | 13.0 | 8.0 | 1.00 | GFM-081013-08 |
| 8.0 | | 10.0 | 14.0 | 8.0 | 1.00 | GFM-081014-08 |
| 8.0 | | 10.0 | 15.0 | 9.5 | 1.00 | GFM-0810-09 |
| 8.0 | | 10.0 | 15.0 | 10.0 | 1.00 | GFM-0810-10 |
| 8.0 | +0.040 +0.098 | 10.0 | 14.0 | 10.0 | 1.00 | GFM-081014-10 |
| 8.0 | +0.025 +0.083 | 10.0 | 14.0 | 11.0 | 1.00 | GFM-0810-11 |
| 8.0 | | 10.0 | 16.0 | 11.5 | 1.50 | GFM-081016-11 |
| 8.0 | | 10.0 | 12.0 | 12.5 | 1.00 | GFM-081012-125 |
| 8.0 | | 10.0 | 15.0 | 15.0 | 1.00 | GFM-0810-15 |
| 8.0 | | 10.0 | 16.0 | 15.0 | 1.50 | GFM-081016-15 |
| 8.0 | | 10.0 | 17.0 | 15.0 | 1.00 | GFM-081017-15 |
| 8.0 | | 10.0 | 15.0 | 25.0 | 1.00 | GFM-0810-25 |
| 8.0 | | 10.0 | 15.0 | 30.0 | 1.00 | GFM-0810-30 |
| 8.0 | +0.040 +0.130 | 12.0 | 16.0 | 6.0 | 2.00 | GFM-0812-06 |
| 8.0 | | 12.0 | 21.0 | 8.0 | 2.00 | GFM-081221-08 |
| 9.0 | +0.013 +0.049 | 10.0 | 15.0 | 6.5 | 0.50 | GFM-0910-065 |
| 9.0 | | 10.0 | 15.0 | 17.5 | 0.50 | GFM-0910-17 |
| 10.0 | +0.013 +0.046 | 11.0 | 20.0 | 3.5 | 0.50 | GFM-1011-03 |
| 10.0 | +0.013 +0.049 | 11.0 | 15.0 | 4.4 | 0.50 | GFM-1011-044 |
| 10.0 | | 11.0 | 15.0 | 10.0 | 0.50 | GFM-1011-10 |
| 10.0 | +0.025 +0.083 | 12.0 | 18.0 | 3.5 | 1.00 | GFM-1012-035 |
| 10.0 | | 12.0 | 18.0 | 4.0 | 1.00 | GFM-1012-04 |
| 10.0 | | 12.0 | 18.0 | 5.0 | 1.00 | GFM-1012-05 |
| 10.0 | | 12.0 | 18.0 | 6.0 | 1.00 | GFM-1012-06 |
| 10.0 | | 12.0 | 16.0 | 6.0 | 1.00 | GFM-101216-06 |
| 10.0 | | 12.0 | 18.0 | 7.0 | 1.00 | GFM-1012-07 |
| 10.0 | | 12.0 | 18.0 | 9.0 | 1.00 | GFM-1012-09 |
| 10.0 | | 12.0 | 16.0 | 9.0 | 1.00 | GFM-101216-09 |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | GFM-1012-10 |
| 10.0 | | 12.0 | 18.0 | 12.0 | 1.00 | GFM-1012-12 |
| 10.0 | | 12.0 | 15.0 | 12.0 | 1.00 | GFM-101215-12 |
| 10.0 | | 12.0 | 18.0 | 15.0 | 1.00 | GFM-1012-15 |
| 10.0 | | 12.0 | 16.0 | 15.0 | 1.00 | GFM-101216-15 |
| 10.0 | | 12.0 | 18.0 | 17.0 | 1.00 | GFM-1012-17 |
| 11.0 | +0.016 +0.059 | 12.0 | 16.0 | 6.0 | 0.50 | GFM-1112-06 |
| 12.0 | | 13.0 | 17.0 | 3.0 | 0.50 | GFM-1213-03 |
| 12.0 | | 13.0 | 17.0 | 12.0 | 0.50 | GFM-1213-12 |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 12.0 | +0.016 +0.059 | 13.0 | 15.0 | 12.0 | 0.50 | GFM-121315-12 |
| 12.0 | +0.032 +0.102 | 14.0 | 20.0 | 3.0 | 1.00 | GFM-1214-03 |
| 12.0 | | 14.0 | 18.0 | 4.0 | 1.00 | GFM-121418-04 |
| 12.0 | | 14.0 | 20.0 | 5.0 | 1.00 | GFM-1214-05 |
| 12.0 | | 14.0 | 20.0 | 6.0 | 1.00 | GFM-1214-06 |
| 12.0 | | 14.0 | 20.0 | 7.0 | 1.00 | GFM-1214-07 |
| 12.0 | | 14.0 | 18.0 | 8.0 | 1.00 | GFM-121418-08 |
| 12.0 | | 14.0 | 20.0 | 9.0 | 1.00 | GFM-1214-09 |
| 12.0 | | 14.0 | 20.0 | 10.0 | 1.00 | GFM-1214-10 |
| 12.0 | | 14.0 | 18.0 | 10.0 | 1.00 | GFM-121418-10 |
| 12.0 | | 14.0 | 20.0 | 11.0 | 1.00 | GFM-1214-11 |
| 12.0 | | 14.0 | 20.0 | 12.0 | 1.00 | GFM-1214-12 |
| 12.0 | | 14.0 | 18.0 | 12.0 | 1.00 | GFM-121418-12 |
| 12.0 | | 14.0 | 20.0 | 15.0 | 1.00 | GFM-1214-15 |
| 12.0 | | 14.0 | 18.0 | 15.0 | 1.00 | GFM-121418-15 |
| 12.0 | | 14.0 | 20.0 | 17.0 | 1.00 | GFM-1214-17 |
| 12.0 | | 14.0 | 20.0 | 20.0 | 1.00 | GFM-1214-20 |
| 12.0 | | 14.0 | 18.0 | 20.0 | 1.00 | GFM-121418-20 |
| 12.0 | | 14.0 | 20.0 | 24.0 | 1.00 | GFM-1214-24 |
| 12.0 | | 14.0 | 20.0 | 31.0 | 1.00 | GFM-1214-31 |
| 12.0 | | 14.0 | 20.0 | 40.0 | 1.00 | GFM-1214-40 |
| 13.0 | | 15.0 | 22.0 | 6.0 | 1.00 | GFM-1315-06 |
| 13.0 | | 15.0 | 22.0 | 8.0 | 1.00 | GFM-1315-08 |
| 13.0 | | 15.0 | 22.0 | 40.0 | 1.00 | GFM-131522-40 |
| 14.0 | | 16.0 | 22.0 | 3.0 | 1.00 | GFM-1416-03 |
| 14.0 | | 16.0 | 22.0 | 4.0 | 1.00 | GFM-1416-04 |
| 14.0 | | 16.0 | 22.0 | 6.0 | 1.00 | GFM-1416-06 |
| 14.0 | | 16.0 | 22.0 | 8.0 | 1.00 | GFM-1416-08 |
| 14.0 | | 16.0 | 22.0 | 10.0 | 1.00 | GFM-1416-10 |
| 14.0 | | 16.0 | 22.0 | 12.0 | 1.00 | GFM-1416-12 |
| 14.0 | | 16.0 | 22.0 | 17.0 | 1.00 | GFM-1416-17 |
| 14.0 | | 16.0 | 22.0 | 21.0 | 1.00 | GFM-1416-21 |
| 15.0 | +0.016 +0.059 | 16.0 | 20.0 | 2.0 | 0.50 | GFM-1516-02 |
| 15.0 | | 16.0 | 20.0 | 2.5 | 0.50 | GFM-1516-025 |
| 15.0 | | 16.0 | 20.0 | 3.0 | 0.50 | GFM-1516-03 |
| 15.0 | | 16.0 | 20.0 | 15.0 | 0.50 | GFM-1516-15 |
| 15.0 | +0.032 +0.102 | 17.0 | 23.0 | 4.0 | 1.00 | GFM-1517-04 |
| 15.0 | | 17.0 | 23.0 | 4.5 | 1.00 | GFM-1517-045 |
| 15.0 | | 17.0 | 23.0 | 5.0 | 1.00 | GFM-1517-05 |
| 15.0 | | 17.0 | 23.0 | 9.0 | 1.00 | GFM-1517-09 |
| 15.0 | | 17.0 | 23.0 | 12.0 | 1.00 | GFM-1517-12 |
| 15.0 | | 17.0 | 23.0 | 17.0 | 1.00 | GFM-1517-17 |
| 15.0 | | 17.0 | 23.0 | 20.0 | 1.00 | GFM-1517-20 |
| 15.0 | | 18.0 | 24.0 | 32.0 | 1.50 | GFM-151824-32 |
| 16.0 | | 18.0 | 24.0 | 4.0 | 1.00 | GFM-1618-04 |
| 16.0 | | 18.0 | 24.0 | 5.0 | 1.00 | GFM-1618-05 |
| 16.0 | | 18.0 | 24.0 | 6.0 | 1.00 | GFM-1618-060 |

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

# Bearing technology | Plain bearings | iglidur® G

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 16.0 | +0.032 +0.102 | 18.0 | 24.0 | 9.0 | 1.00 | **GFM-1618-09** |
| 16.0 | | 18.0 | 24.0 | 12.0 | 1.00 | **GFM-1618-12** |
| 16.0 | | 18.0 | 24.0 | 16.0 | 1.00 | **GFM-1618-16** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **GFM-1618-17** |
| 16.0 | | 18.0 | 24.0 | 21.0 | 1.00 | **GFM-1618-21** |
| 17.0 | | 19.0 | 25.0 | 9.0 | 1.00 | **GFM-1719-09** |
| 17.0 | | 19.0 | 25.0 | 16.0 | 1.00 | **GFM-1719-16** |
| 17.0 | | 19.0 | 25.0 | 25.0 | 1.00 | **GFM-1719-25** |
| 18.0 | | 20.0 | 26.0 | 4.0 | 1.00 | **GFM-1820-04** |
| 18.0 | | 20.0 | 26.0 | 6.0 | 1.00 | **GFM-1820-06** |
| 18.0 | | 20.0 | 22.0 | 6.0 | 1.00 | **GFM-182022-06** |
| 18.0 | | 20.0 | 26.0 | 9.0 | 1.00 | **GFM-1820-09** |
| 18.0 | | 20.0 | 26.0 | 11.0 | 1.00 | **GFM-1820-11** |
| 18.0 | | 20.0 | 26.0 | 12.0 | 1.00 | **GFM-1820-12** |
| 18.0 | | 20.0 | 26.0 | 17.0 | 1.00 | **GFM-1820-17** |
| 18.0 | | 20.0 | 26.0 | 22.0 | 1.00 | **GFM-1820-22** |
| 18.0 | | 20.0 | 26.0 | 30.0 | 1.00 | **GFM-1820-30** |
| 18.0 | | 20.0 | 26.0 | 32.0 | 1.00 | **GFM-1820-32** |
| 18.0 | | 22.0 | 26.0 | 28.0 | 2.00 | **GFM-1822-28** |
| 20.0 | +0.020 +0.072 | 21.0 | 26.0 | 3.5 | 0.50 | **GFM-2021-035** |
| 20.0 | | 21.0 | 25.0 | 15.0 | 0.50 | **GFM-2021-15** |
| 20.0 | | 21.0 | 25.0 | 20.0 | 0.50 | **GFM-2021-20** |
| 20.0 | +0.040 +0.124 | 23.0 | 30.0 | 7.0 | 1.50 | **GFM-2023-07** |
| 20.0 | | 23.0 | 26.0 | 7.0 | 1.50 | **GFM-202326-07** |
| 20.0 | | 23.0 | 30.0 | 11.5 | 1.50 | **GFM-2023-11** |
| 20.0 | | 23.0 | 28.0 | 15.0 | 1.50 | **GFM-202328-15** |
| 20.0 | | 23.0 | 30.0 | 16.5 | 1.50 | **GFM-2023-16** |
| 20.0 | | 23.0 | 29.0 | 20.0 | 1.50 | **GFM-202329-20** |
| 20.0 | | 23.0 | 30.0 | 21.5 | 1.50 | **GFM-2023-21** |
| 20.0 | | 23.0 | 26.0 | 21.5 | 1.50 | **GFM-202326-21** |
| 22.0 | | 24.0 | 30.0 | 25.0 | 1.00 | **GFM-2224-25** |
| 22.0 | | 25.0 | 29.0 | 4.5 | 1.50 | **GFM-222529-045** |
| 22.0 | | 25.0 | 30.0 | 21.5 | 1.50 | **GFM-222530-215** |
| 22.0 | | 25.0 | 30.0 | 25.0 | 1.50 | **GFM-222530-25** |
| 22.0 | | 25.0 | 35.0 | 31.5 | 1.50 | **GFM-222535-315** |
| 24.0 | | 27.0 | 32.0 | 7.0 | 1.50 | **GFM-2427-07** |
| 24.0 | | 27.0 | 32.0 | 10.5 | 1.50 | **GFM-2427-10** |
| 25.0 | +0.020 +0.072 | 26.0 | 30.0 | 25.0 | 0.50 | **GFM-2526-25** |
| 25.0 | +0.040 +0.124 | 27.0 | 32.0 | 7.0 | 1.00 | **GFM-2527-07** |
| 25.0 | | 27.0 | 32.0 | 48.0 | 1.00 | **GFM-2527-48** |
| 25.0 | | 28.0 | 30.0 | 10.0 | 1.50 | **GFM-252830-10** |
| 25.0 | | 28.0 | 35.0 | 11.5 | 1.50 | **GFM-2528-11** |
| 25.0 | | 28.0 | 35.0 | 16.5 | 1.50 | **GFM-2528-16** |
| 25.0 | | 28.0 | 35.0 | 21.5 | 1.50 | **GFM-2528-21** |
| 26.0 | | 30.0 | 37.0 | 12.0 | 2.00 | **GFM-2630-12** |
| 27.0 | | 30.0 | 38.0 | 20.0 | 1.50 | **GFM-2730-20** |
| 28.0 | | 30.0 | 35.0 | 10.0 | 1.00 | **GFM-2830-10** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 28.0 | +0.040 +0.124 | 30.0 | 36.0 | 31.0 | 1.00 | **GFM-283036-31** |
| 28.0 | | 30.0 | 35.0 | 36.0 | 1.00 | **GFM-2830-36** |
| 28.0 | | 30.0 | 35.0 | 48.0 | 1.00 | **GFM-2830-48** |
| 28.0 | | 32.0 | 39.0 | 20.0 | 2.00 | **GFM-283239-20** |
| 28.0 | | 32.0 | 50.0 | 35.0 | 2.00 | **GFM-283250-35** |
| 30.0 | | 31.0 | 36.0 | 20.0 | 0.50 | **GFM-3031-20** |
| 30.0 | | 31.0 | 35.0 | 30.0 | 0.50 | **GFM-3031-30** |
| 30.0 | | 32.0 | 37.0 | 4.0 | 1.00 | **GFM-3032-04** |
| 30.0 | | 32.0 | 37.0 | 12.0 | 1.00 | **GFM-3032-12** |
| 30.0 | | 32.0 | 37.0 | 17.5 | 1.00 | **GFM-3032-17** |
| 30.0 | | 32.0 | 37.0 | 22.0 | 1.00 | **GFM-3032-22** |
| 30.0 | | 34.0 | 42.0 | 9.0 | 2.00 | **GFM-3034-09** |
| 30.0 | | 34.0 | 40.0 | 10.0 | 2.00 | **GFM-303440-10** |
| 30.0 | | 34.0 | 42.0 | 16.0 | 2.00 | **GFM-3034-16** |
| 30.0 | | 34.0 | 42.0 | 20.0 | 2.00 | **GFM-3034-20** |
| 30.0 | | 34.0 | 42.0 | 26.0 | 2.00 | **GFM-3034-26** |
| 30.0 | | 34.0 | 42.0 | 37.0 | 2.00 | **GFM-3034-37** |
| 32.0 | +0.050 +0.150 | 36.0 | 40.0 | 16.0 | 2.00 | **GFM-3236-16** |
| 32.0 | | 36.0 | 40.0 | 26.0 | 2.00 | **GFM-3236-26** |
| 34.0 | | 38.0 | 50.0 | 35.0 | 2.00 | **GFM-343850-35** |
| 35.0 | | 39.0 | 47.0 | 5.8 | 2.00 | **GFM-3539-058** |
| 35.0 | | 39.0 | 47.0 | 7.0 | 2.00 | **GFM-3539-07** |
| 35.0 | | 39.0 | 47.0 | 12.0 | 2.00 | **GFM-3539-12** |
| 35.0 | | 39.0 | 47.0 | 16.0 | 2.00 | **GFM-3539-16** |
| 35.0 | | 39.0 | 47.0 | 26.0 | 2.00 | **GFM-3539-26** |
| 35.0 | | 39.0 | 47.0 | 36.0 | 2.00 | **GFM-3539-36** |
| 38.0 | | 42.0 | 54.0 | 10.0 | 2.00 | **GFM-3842-10** |
| 38.0 | | 42.0 | 54.0 | 22.0 | 2.00 | **GFM-3842-22** |
| 40.0 | | 44.0 | 52.0 | 7.0 | 2.00 | **GFM-4044-07** |
| 40.0 | | 44.0 | 52.0 | 14.0 | 2.00 | **GFM-4044-14** |
| 40.0 | | 44.0 | 52.0 | 20.0 | 2.00 | **GFM-4044-20** |
| 40.0 | | 44.0 | 52.0 | 30.0 | 2.00 | **GFM-4044-30** |
| 40.0 | | 44.0 | 52.0 | 40.0 | 2.00 | **GFM-4044-40** |
| 40.0 | | 44.0 | 52.0 | 50.0 | 2.00 | **GFM-4044-50** |
| 40.0 | | 46.0 | 50.0 | 20.0 | 2.00 | **GFM-4046-20** |
| 42.0 | | 46.0 | 53.0 | 19.0 | 2.00 | **GFM-4246-19** |
| 45.0 | | 50.0 | 58.0 | 25.0 | 2.00 | **GFM-4550-25** |
| 45.0 | | 50.0 | 58.0 | 30.0 | 2.00 | **GFM-4550-30** |
| 45.0 | | 50.0 | 58.0 | 50.0 | 2.00 | **GFM-4550-50** |
| 50.0 | | 55.0 | 63.0 | 7.0 | 2.00 | **GFM-5055-07** |
| 50.0 | | 55.0 | 63.0 | 10.0 | 2.00 | **GFM-5055-10** |
| 50.0 | | 55.0 | 63.0 | 25.0 | 2.00 | **GFM-5055-25** |
| 50.0 | | 55.0 | 63.0 | 40.0 | 2.00 | **GFM-5055-40** |
| 50.0 | | 55.0 | 63.0 | 50.0 | 2.00 | **GFM-5055-50** |
| 60.0 | +0.060 +0.180 | 65.0 | 73.0 | 7.0 | 2.00 | **GFM-6065-07** |
| 60.0 | | 65.0 | 73.0 | 22.0 | 2.00 | **GFM-6065-22** |
| 60.0 | | 65.0 | 73.0 | 30.0 | 2.00 | **GFM-6065-30** |
| 60.0 | | 65.0 | 73.0 | 50.0 | 2.00 | **GFM-6065-50** |

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



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iglidur® G
+130°C
80MPa

# Product range

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 60.0 | +0.060 +0.180 | 65.0 | 80.0 | 62.0 | 2.00 | **GFM-606580-62** |
| 65.0 | | 70.0 | 78.0 | 50.0 | 2.00 | **GFM-6570-50** |
| 70.0 | | 75.0 | 83.0 | 50.0 | 2.00 | **GFM-7075-50** |
| 70.0 | | 75.0 | 83.0 | 85.5 | 2.00 | **GFM-7075-855** |
| 75.0 | | 80.0 | 88.0 | 50.0 | 2.00 | **GFM-7580-50** |
| 80.0 | | 85.0 | 93.0 | 50.0 | 2.50 | **GFM-8085-50** |
| 80.0 | | 85.0 | 93.0 | 100.0 | 2.50 | **GFM-8085-100** |
| 85.0 | +0.072 +0.212 | 90.0 | 98.0 | 100.0 | 2.50 | **GFM-8590-100** |
| 90.0 | | 95.0 | 103.0 | 100.0 | 2.50 | **GFM-9095-100** |
| 95.0 | | 100.0 | 108.0 | 100.0 | 2.50 | **GFM-95100-100** |
| 100.0 | | 105.0 | 113.0 | 42.5 | 2.50 | **GFM-100105-425** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 100.0 | +0.072 +0.212 | 105.0 | 113.0 | 100.0 | 2.50 | **GFM-100105-100** |
| 110.0 | | 115.0 | 123.0 | 100.0 | 2.50 | **GFM-110115-100** |
| 120.0 | | 125.0 | 133.0 | 80.0 | 2.50 | **GFM-120125-80** |
| 120.0 | | 125.0 | 133.0 | 100.0 | 2.50 | **GFM-120125-100** |
| 125.0 | +0.085 +0.245 | 130.0 | 138.0 | 100.0 | 2.50 | **GFM-125130-100** |
| 130.0 | | 135.0 | 143.0 | 100.0 | 2.50 | **GFM-130135-100** |
| 140.0 | | 145.0 | 153.0 | 100.0 | 2.50 | **GFM-140145-100** |
| 150.0 | | 155.0 | 163.0 | 40.0 | 2.50 | **GFM-150155-40** |
| 150.0 | | 155.0 | 163.0 | 100.0 | 2.50 | **GFM-150155-100** |
| 195.0 | +0.100 +0.285 | 205.0 | 240.0 | 65.0 | 5.00 | **GFM-195205240-65** |

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

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|---|---|---|
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| 25-49 | 200-499 | 2,500-4,999 |

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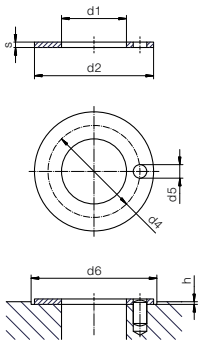
# Bearing technology | Plain bearings | iglidur® G

## Thrust washer (form T)




Dimensions according to ISO 3547-1 and special dimensions

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

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

[4] Design without fixing hole





# Product range

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

[4] Design without fixing hole

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

# More universal

## The advanced development of iglidur® G

## iglidur® G1

**When to use it?**

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

**When not to use it?**

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



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# Bearing technology | Plain bearings | iglidur® G1

Ø
4.0-50.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## More universal
## The advanced development of iglidur® G

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

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

### Typical application areas

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

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

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.58 | |
| Colour | | grey | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.2 | DIN 53495 |
| Max. moisture absorption | % weight | 1.7 | |
| Coefficient of friction, dynamic, against steel | μ | 0.10-0.29 | |
| pv value, max. (dry) | MPa · m/s | 0.60 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 11,486 | DIN 53457 |
| Flexural strength at +20°C | MPa | 178 | DIN 53452 |
| Compressive strength | MPa | 115 | |
| Max. permissible surface pressure (+20°C) | MPa | 91 | |
| Shore D hardness | | 81 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +180 | |
| Max. application temperature short-term | °C | +220 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.25 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 3.7 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^9$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^9$ | DIN 53482 |

Table 01: Material properties

-40°C up to +180°C

91MPa

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

### Moisture absorption

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

### Vacuum

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

### Radiation resistance

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

### Resistance to weathering

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

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® G1 plain bearings decreases. Diagram 02 shows this inverse relationship. With the long-term permitted application temperature of +180°C, the permitted surface pressure still amounts to 40MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® G1 at radial loads. The plastic deformation is minimal up to a pressure of approximately 100MPa. However, it is also dependent on the service time.
*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® G1

### Permissible surface speeds

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

***Surface speed, page 48***

### Temperature

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

***Application temperatures, page 53***
***Additional securing, page 53***

### Friction and wear

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

***Coefficient of friction and surfaces, page 51***
***Wear resistance, page 54***

### Shaft materials

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

***Shaft materials, page 56***

### Installation tolerances

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

***Testing methods, page 61***

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

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

**Table 02: Chemical resistance**

***Chemical table, page 1170***

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

**Table 03: Maximum surface speeds**

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

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

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

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





# Technical data

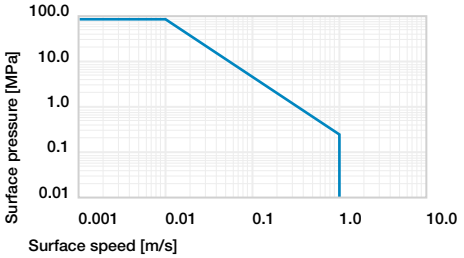



**Diagram 01: Permissible pv values for iglidur® G plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.**

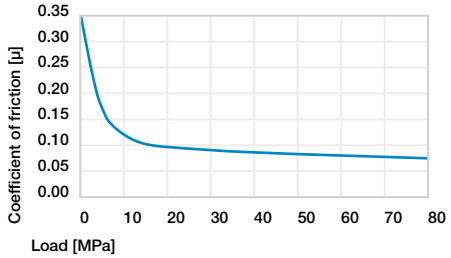



**Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s**

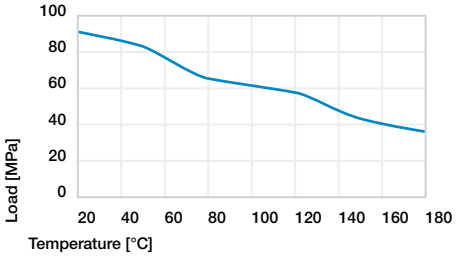



**Diagram 02: Maximum recommended surface pressure as a function of temperature (91MPa at +20°C)**

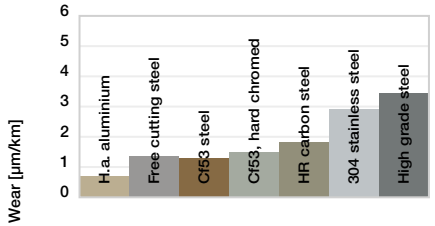



**Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s**

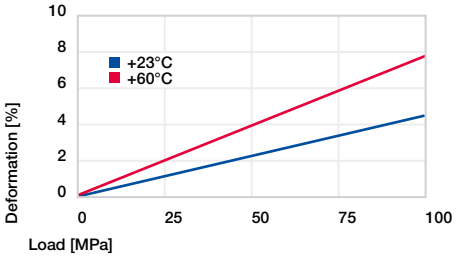



**Diagram 03: Deformation under pressure and temperature**

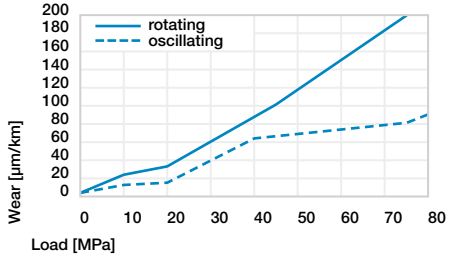



**Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load**

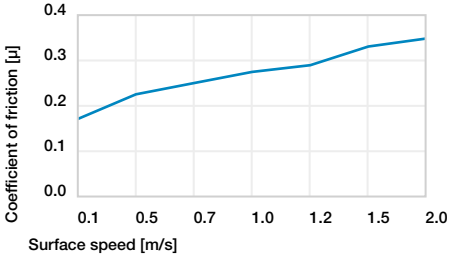
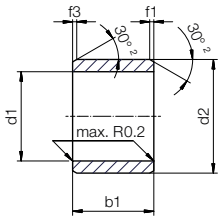



**Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa**

# Bearing technology | Plain bearings | iglidur® G1

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: G1SM-0405-04 – no minimum order quantity.
G1 iglidur® material S Cylindrical M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

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

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

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



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iglidur® G1
+180 °C
91MPa

# Product range

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

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

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

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| 25-49 | 200-499 | 2,500-4,999 |

No minimum order value.
No low-quantity surcharges.
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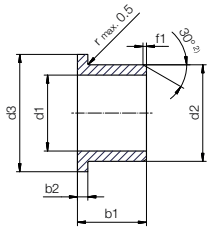
# Bearing technology | Plain bearings | iglidur® G1

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

**Order example: G1FM-0608-04 – no minimum order quantity.**
G1 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 04 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 6.0 | +0.010 +0.058 | 8.0 | 12.0 | 4.0 | 1.00 | **G1FM-0608-04** |
| 6.0 | | 8.0 | 12.0 | 8.0 | 1.00 | **G1FM-0608-08** |
| 8.0 | +0.013 +0.071 | 10.0 | 15.0 | 5.5 | 1.00 | **G1FM-0810-05** |
| 8.0 | | 10.0 | 15.0 | 7.5 | 1.00 | **G1FM-0810-07** |
| 8.0 | | 10.0 | 15.0 | 9.5 | 1.00 | **G1FM-0810-09** |
| 10.0 | | 12.0 | 18.0 | 7.0 | 1.00 | **G1FM-1012-07** |
| 10.0 | | 12.0 | 18.0 | 9.0 | 1.00 | **G1FM-1012-09** |
| 10.0 | | 12.0 | 18.0 | 12.0 | 1.00 | **G1FM-1012-12** |
| 10.0 | | 12.0 | 18.0 | 17.0 | 1.00 | **G1FM-1012-17** |
| 12.0 | +0.016 +0.086 | 14.0 | 20.0 | 7.0 | 1.00 | **G1FM-1214-07** |
| 12.0 | | 14.0 | 20.0 | 9.0 | 1.00 | **G1FM-1214-09** |
| 12.0 | | 14.0 | 20.0 | 12.0 | 1.00 | **G1FM-1214-12** |
| 12.0 | | 14.0 | 20.0 | 17.0 | 1.00 | **G1FM-1214-17** |
| 14.0 | | 16.0 | 22.0 | 12.0 | 1.00 | **G1FM-1416-12** |
| 14.0 | | 16.0 | 22.0 | 17.0 | 1.00 | **G1FM-1416-17** |
| 15.0 | | 17.0 | 23.0 | 9.0 | 1.00 | **G1FM-1517-09** |
| 15.0 | | 17.0 | 23.0 | 12.0 | 1.00 | **G1FM-1517-12** |
| 15.0 | | 17.0 | 23.0 | 17.0 | 1.00 | **G1FM-1517-17** |
| 16.0 | | 18.0 | 24.0 | 12.0 | 1.00 | **G1FM-1618-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **G1FM-1618-17** |
| 18.0 | | 20.0 | 26.0 | 12.0 | 1.00 | **G1FM-1820-12** |
| 18.0 | | 20.0 | 26.0 | 17.0 | 1.00 | **G1FM-1820-17** |
| 18.0 | | 20.0 | 26.0 | 22.0 | 1.00 | **G1FM-1820-22** |
| 20.0 | +0.020 +0.104 | 23.0 | 30.0 | 11.5 | 1.50 | **G1FM-2023-11** |
| 20.0 | | 23.0 | 30.0 | 16.5 | 1.50 | **G1FM-2023-16** |
| 20.0 | | 23.0 | 30.0 | 21.5 | 1.50 | **G1FM-2023-21** |
| 25.0 | | 28.0 | 35.0 | 11.5 | 1.50 | **G1FM-2528-11** |
| 25.0 | | 28.0 | 35.0 | 16.5 | 1.50 | **G1FM-2528-16** |

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





# Product range

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 25.0 | +0.020 +0.104 | 28.0 | 35.0 | 21.5 | 1.50 | **G1FM-2528-21** |
| 30.0 | | 34.0 | 42.0 | 16.0 | 2.00 | **G1FM-3034-16** |
| 30.0 | | 34.0 | 42.0 | 26.0 | 2.00 | **G1FM-3034-26** |
| 35.0 | +0.025 +0.125 | 39.0 | 47.0 | 16.0 | 2.00 | **G1FM-3539-16** |
| 35.0 | | 39.0 | 47.0 | 26.0 | 2.00 | **G1FM-3539-26** |
| 40.0 | | 44.0 | 52.0 | 30.0 | 2.00 | **G1FM-4044-30** |
| 40.0 | | 44.0 | 52.0 | 40.0 | 2.00 | **G1FM-4044-40** |
| 45.0 | | 50.0 | 58.0 | 50.0 | 2.00 | **G1FM-4550-50** |

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

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

# The robust all-rounder according to ISO 2795

## Excellent vibration dampening

## iglidur® M250

**When to use it?**

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

**When not to use it?**

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

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# Bearing technology | Plain bearings | iglidur® M250

Ø
1.0-75.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

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

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

- Over 450 sizes available from stock
- Excellent vibration dampening
- Suitable for high edge pressures
- Suitable for impact loads
- Thick-walled according to ISO 2795
- Dirt can become embedded for shaft protection
- Lubrication-free
- Maintenance-free
- Thrust washers available only in imperial sizes, from page 1147

### Typical application areas

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

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

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.14 | |
| Colour | | dark grey | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 1.4 | DIN 53495 |
| Max. moisture absorption | % weight | 7.6 | |
| Coefficient of friction, dynamic, against steel | μ | 0.18-0.40 | |
| pv value, max. (dry) | MPa · m/s | 0.12 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,700 | DIN 53457 |
| Flexural strength at +20°C | MPa | 112 | DIN 53452 |
| Compressive strength | MPa | 52 | |
| Max. permissible surface pressure (+20°C) | MPa | 20 | |
| Shore D hardness | | 79 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +80 | |
| Max. application temperature short-term | °C | +170 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 10 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{13}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{11}$ | DIN 53482 |

Table 01: Material properties

-40 °C up to +80 °C

210MPa

V-2

RoHS-II

ISO 2795

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

### Moisture absorption

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

### Vacuum

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

### Radiation resistance

Plain bearings made from iglidur® M250 have limited use under radioactive radiation. They are resistant up to a radiation intensity of $1 \cdot 10^4$ Gy.

### Resistance to weathering

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

### Mechanical properties

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

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

*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® M250

### Permissible surface speeds

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

*Surface speed, page 48*

### Temperature

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

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

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

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

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

*Shaft materials, page 56*

### Installation tolerances

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

*Testing methods, page 61*

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

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

Table 02: Chemical resistance

*Chemical table, page 1170*

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

Table 03: Maximum surface speeds

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

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

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

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



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iglidur® M250
+80°C
210MPa

# Technical data

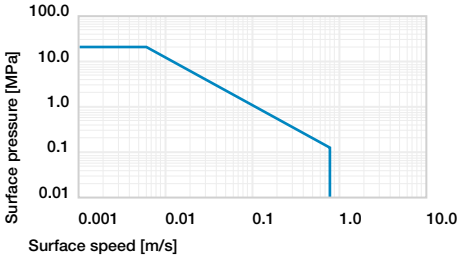


Diagram 01: Permissible pv values for iglidur® M250 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

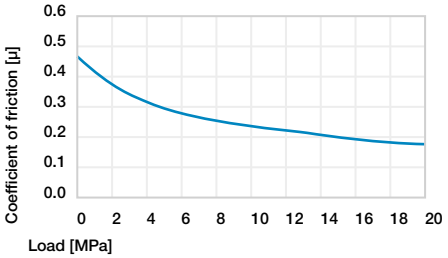


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

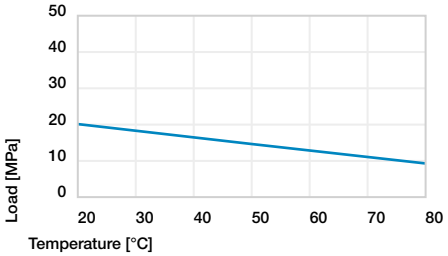


Diagram 02: Maximum recommended surface pressure as a function of temperature (20MPa at +20°C)

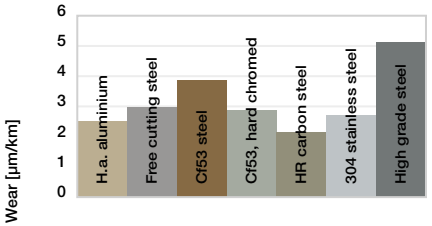


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

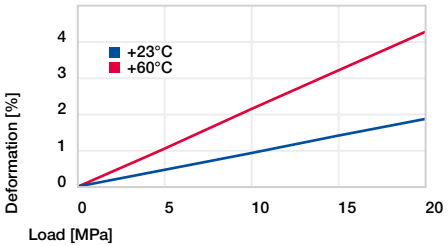


Diagram 03: Deformation under pressure and temperature

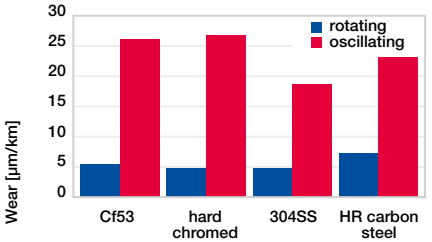


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

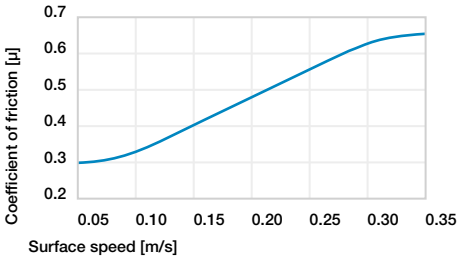


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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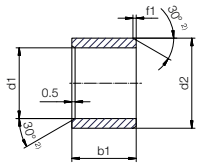
# Bearing technology | Plain bearings | iglidur® M250

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 2795 and special dimensions

Order example: MSM-0103-02 – no minimum order quantity.
M250 iglidur® material S Cylindrical M Metric 01 Inner Ø d1 03 Outer Ø d2 02 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 1.0 | +0.020 +0.080 | 3.0 | 2.0 | MSM-0103-02 |
| 1.5 | | 4.0 | 2.0 | MSM-0104-02 |
| 2.0 | | 5.0 | 1.0 | MSM-0205-01 |
| 2.0 | | 5.0 | 2.0 | MSM-0205-02 |
| 2.0 | | 5.0 | 3.0 | MSM-0205-03 |
| 2.5 | | 6.0 | 3.0 | MSM-0206-03 |
| 3.0 | | 5.0 | 3.0 | MSM-0305-03 |
| 3.0 | | 5.0 | 4.0 | MSM-0305-04 |
| 3.0 | | 6.0 | 3.0 | MSM-0306-03 |
| 3.0 | | 6.0 | 4.0 | MSM-0306-04 |
| 4.0 | +0.030 +0.105 | 5.5 | 4.0 | MSM-0405-04 |
| 4.0 | | 5.5 | 6.0 | MSM-0405-06 |
| 4.0 | | 7.0 | 3.0 | MSM-0407-03 |
| 4.0 | | 7.0 | 4.0 | MSM-0407-04 |
| 4.0 | | 7.0 | 6.0 | MSM-0407-06 |
| 4.0 | | 8.0 | 4.0 | MSM-0408-04 |
| 4.0 | | 8.0 | 6.0 | MSM-0408-06 |
| 5.0 | | 7.0 | 5.0 | MSM-0507-05 |
| 5.0 | | 7.0 | 10.0 | MSM-0507-10 |
| 5.0 | | 8.0 | 4.0 | MSM-0508-04 |
| 5.0 | | 8.0 | 5.0 | MSM-0508-05 |
| 5.0 | | 8.0 | 8.0 | MSM-0508-08 |
| 5.0 | | 9.0 | 5.0 | MSM-0509-05 |
| 5.0 | | 9.0 | 8.0 | MSM-0509-08 |
| 6.0 | | 8.0 | 6.0 | MSM-0608-06 |
| 6.0 | | 8.0 | 8.0 | MSM-0608-08 |
| 6.0 | | 8.0 | 10.0 | MSM-0608-10 |
| 6.0 | | 9.0 | 6.0 | MSM-0609-06 |
| 6.0 | | 10.0 | 2.5 | MSM-0610-02 |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 6.0 | +0.030 +0.105 | 10.0 | 4.0 | MSM-0610-04 |
| 6.0 | | 10.0 | 6.0 | MSM-0610-06 |
| 6.0 | | 10.0 | 8.0 | MSM-0610-08 |
| 6.0 | | 10.0 | 10.0 | MSM-0610-10 |
| 6.0 | | 11.0 | 4.0 | MSM-0611-04 |
| 6.0 | | 12.0 | 6.0 | MSM-0612-06 |
| 6.0 | | 12.0 | 10.0 | MSM-0612-10 |
| 7.0 | +0.040 +0.130 | 10.0 | 5.0 | MSM-0710-05 |
| 7.0 | | 10.0 | 8.0 | MSM-0710-08 |
| 7.0 | | 10.0 | 10.0 | MSM-0710-10 |
| 7.0 | | 11.0 | 16.0 | MSM-0711-16 |
| 8.0 | | 10.0 | 6.0 | MSM-0810-06 |
| 8.0 | | 10.0 | 8.0 | MSM-0810-08 |
| 8.0 | | 10.0 | 10.0 | MSM-0810-10 |
| 8.0 | | 10.0 | 12.0 | MSM-0810-12 |
| 8.0 | | 11.0 | 6.0 | MSM-0811-06 |
| 8.0 | | 11.0 | 8.0 | MSM-0811-08 |
| 8.0 | | 11.0 | 12.0 | MSM-0811-12 |
| 8.0 | | 12.0 | 4.0 | MSM-0812-04 |
| 8.0 | | 12.0 | 6.0 | MSM-0812-06 |
| 8.0 | | 12.0 | 8.0 | MSM-0812-08 |
| 8.0 | | 12.0 | 10.0 | MSM-0812-10 |
| 8.0 | | 12.0 | 12.0 | MSM-0812-12 |
| 8.0 | | 14.0 | 6.0 | MSM-0814-06 |
| 8.0 | | 14.0 | 10.0 | MSM-0814-10 |
| 9.0 | | 12.0 | 14.0 | MSM-0912-14 |
| 10.0 | | 12.0 | 8.0 | MSM-1012-08 |
| 10.0 | | 12.0 | 10.0 | MSM-1012-10 |
| 10.0 | | 12.0 | 12.0 | MSM-1012-12 |

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



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# Product range

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 10.0 | +0.040 +0.130 | 12.0 | 15.0 | MSM-1012-15 |
| 10.0 | | 12.0 | 20.0 | MSM-1012-20 |
| 10.0 | | 14.0 | 6.0 | MSM-1014-06 |
| 10.0 | | 14.0 | 8.0 | MSM-1014-08 |
| 10.0 | | 14.0 | 10.0 | MSM-1014-10 |
| 10.0 | | 14.0 | 16.0 | MSM-1014-16 |
| 10.0 | | 16.0 | 6.0 | MSM-1016-06 |
| 10.0 | | 16.0 | 8.0 | MSM-1016-08 |
| 10.0 | | 16.0 | 10.0 | MSM-1016-10 |
| 10.0 | | 16.0 | 16.0 | MSM-1016-16 |
| 10.0 | | 16.0 | 50.0 | MSM-1016-50 |
| 12.0 | +0.050 +0.160 | 14.0 | 10.0 | MSM-1214-10 |
| 12.0 | | 14.0 | 12.0 | MSM-1214-12 |
| 12.0 | | 14.0 | 15.0 | MSM-1214-15 |
| 12.0 | | 14.0 | 20.0 | MSM-1214-20 |
| 12.0 | | 16.0 | 15.0 | MSM-1216-15 |
| 12.0 | | 16.0 | 20.0 | MSM-1216-20 |
| 12.0 | | 18.0 | 8.0 | MSM-1218-08 |
| 12.0 | | 18.0 | 10.0 | MSM-1218-10 |
| 12.0 | | 18.0 | 15.0 | MSM-1218-15 |
| 12.0 | | 18.0 | 20.0 | MSM-1218-20 |
| 13.0 | | 15.0 | 10.0 | MSM-1315-10 |
| 13.0 | | 15.0 | 20.0 | MSM-1315-20 |
| 14.0 | | 16.0 | 8.5 | MSM-1416-085 |
| 14.0 | | 16.0 | 10.0 | MSM-1416-10 |
| 14.0 | | 16.0 | 15.0 | MSM-1416-15 |
| 14.0 | | 16.0 | 20.0 | MSM-1416-20 |
| 14.0 | | 16.0 | 25.0 | MSM-1416-25 |
| 14.0 | | 16.0 | 29.0 | MSM-1416-29 |
| 14.0 | | 18.0 | 20.0 | MSM-1418-20 |
| 14.0 | | 20.0 | 10.0 | MSM-1420-10 |
| 14.0 | | 20.0 | 15.0 | MSM-1420-15 |
| 14.0 | | 20.0 | 20.0 | MSM-1420-20 |
| 15.0 | | 17.0 | 10.0 | MSM-1517-10 |
| 15.0 | | 17.0 | 15.0 | MSM-1517-15 |
| 15.0 | | 17.0 | 20.0 | MSM-1517-20 |
| 15.0 | | 17.0 | 25.0 | MSM-1517-25 |
| 15.0 | | 21.0 | 10.0 | MSM-1521-10 |
| 15.0 | | 21.0 | 15.0 | MSM-1521-15 |
| 15.0 | | 21.0 | 20.0 | MSM-1521-20 |
| 15.0 | | 21.0 | 23.0 | MSM-1521-23 |
| 16.0 | | 18.0 | 12.0 | MSM-1618-12 |
| 16.0 | | 18.0 | 15.0 | MSM-1618-15 |
| 16.0 | | 18.0 | 20.0 | MSM-1618-20 |
| 16.0 | | 18.0 | 25.0 | MSM-1618-25 |
| 16.0 | | 20.0 | 20.0 | MSM-1620-20 |
| 16.0 | | 20.0 | 25.0 | MSM-1620-25 |
| 16.0 | | 20.0 | 30.0 | MSM-1620-30 |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 16.0 | +0.050 +0.160 | 21.0 | 7.0 | MSM-1621-07 |
| 16.0 | | 22.0 | 12.0 | MSM-1622-12 |
| 16.0 | | 22.0 | 15.0 | MSM-1622-15 |
| 16.0 | | 22.0 | 16.0 | MSM-1622-16 |
| 16.0 | | 22.0 | 20.0 | MSM-1622-20 |
| 16.0 | | 22.0 | 25.0 | MSM-1622-25 |
| 18.0 | | 20.0 | 15.0 | MSM-1820-15 |
| 18.0 | | 20.0 | 20.0 | MSM-1820-20 |
| 18.0 | | 20.0 | 25.0 | MSM-1820-25 |
| 18.0 | | 24.0 | 12.0 | MSM-1824-12 |
| 18.0 | | 24.0 | 20.0 | MSM-1824-20 |
| 18.0 | | 24.0 | 30.0 | MSM-1824-30 |
| 18.0 | | 24.0 | 40.0 | MSM-1824-40 |
| 20.0 | +0.065 +0.195 | 23.0 | 10.0 | MSM-2023-10 |
| 20.0 | | 23.0 | 15.0 | MSM-2023-15 |
| 20.0 | | 23.0 | 20.0 | MSM-2023-20 |
| 20.0 | | 23.0 | 25.0 | MSM-2023-25 |
| 20.0 | | 23.0 | 30.0 | MSM-2023-30 |
| 20.0 | | 25.0 | 14.0 | MSM-2025-14 |
| 20.0 | | 25.0 | 20.0 | MSM-2025-20 |
| 20.0 | | 25.0 | 30.0 | MSM-2025-30 |
| 20.0 | | 26.0 | 12.0 | MSM-2026-12 |
| 20.0 | | 26.0 | 15.0 | MSM-2026-15 |
| 20.0 | | 26.0 | 20.0 | MSM-2026-20 |
| 20.0 | | 26.0 | 30.0 | MSM-2026-30 |
| 22.0 | | 24.0 | 8.0 | MSM-2224-08 |
| 22.0 | | 25.0 | 15.0 | MSM-2225-15 |
| 22.0 | | 25.0 | 20.0 | MSM-2225-20 |
| 22.0 | | 25.0 | 25.0 | MSM-2225-25 |
| 22.0 | | 25.0 | 30.0 | MSM-2225-30 |
| 22.0 | | 26.0 | 15.0 | MSM-2226-15 |
| 22.0 | | 28.0 | 10.0 | MSM-2228-10 |
| 22.0 | | 28.0 | 15.0 | MSM-2228-15 |
| 22.0 | | 28.0 | 20.0 | MSM-2228-20 |
| 22.0 | | 28.0 | 30.0 | MSM-2228-30 |
| 24.0 | | 27.0 | 15.0 | MSM-2427-15 |
| 24.0 | | 27.0 | 20.0 | MSM-2427-20 |
| 24.0 | | 27.0 | 25.0 | MSM-2427-25 |
| 24.0 | | 27.0 | 30.0 | MSM-2427-30 |
| 24.0 | | 30.0 | 15.0 | MSM-2430-15 |
| 24.0 | | 30.0 | 20.0 | MSM-2430-20 |
| 24.0 | | 30.0 | 30.0 | MSM-2430-30 |
| 25.0 | | 28.0 | 12.0 | MSM-2528-12 |
| 25.0 | | 28.0 | 15.0 | MSM-2528-15 |
| 25.0 | | 28.0 | 20.0 | MSM-2528-20 |
| 25.0 | | 28.0 | 25.0 | MSM-2528-25 |
| 25.0 | | 28.0 | 30.0 | MSM-2528-30 |
| 25.0 | | 30.0 | 20.0 | MSM-2530-20 |

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

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# Bearing technology | Plain bearings | iglidur® M250

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 25.0 | | 30.0 | 30.0 | **MSM-2530-30** |
| 25.0 | | 30.0 | 40.0 | **MSM-2530-40** |
| 25.0 | | 32.0 | 10.0 | **MSM-2532-10** |
| 25.0 | | 32.0 | 12.0 | **MSM-2532-12** |
| 25.0 | | 32.0 | 20.0 | **MSM-2532-20** |
| 25.0 | | 32.0 | 30.0 | **MSM-2532-30** |
| 25.0 | | 32.0 | 35.0 | **MSM-2532-35** |
| 25.0 | | 32.0 | 40.0 | **MSM-2532-40** |
| 26.0 | | 30.0 | 20.0 | **MSM-2630-20** |
| 26.0 | | 32.0 | 30.0 | **MSM-2632-30** |
| 27.0 | | 34.0 | 20.0 | **MSM-2734-20** |
| 27.0 | | 34.0 | 30.0 | **MSM-2734-30** |
| 27.0 | +0.065 | 34.0 | 40.0 | **MSM-2734-40** |
| 28.0 | +0.195 | 32.0 | 20.0 | **MSM-2832-20** |
| 28.0 | | 32.0 | 25.0 | **MSM-2832-25** |
| 28.0 | | 32.0 | 30.0 | **MSM-2832-30** |
| 28.0 | | 33.0 | 20.0 | **MSM-2833-20** |
| 28.0 | | 36.0 | 20.0 | **MSM-2836-20** |
| 28.0 | | 36.0 | 30.0 | **MSM-2836-30** |
| 28.0 | | 36.0 | 40.0 | **MSM-2836-40** |
| 30.0 | | 34.0 | 20.0 | **MSM-3034-20** |
| 30.0 | | 34.0 | 25.0 | **MSM-3034-25** |
| 30.0 | | 34.0 | 30.0 | **MSM-3034-30** |
| 30.0 | | 34.0 | 40.0 | **MSM-3034-40** |
| 30.0 | | 35.0 | 20.0 | **MSM-3035-20** |
| 30.0 | | 35.0 | 40.0 | **MSM-3035-40** |
| 30.0 | +0.032 +0.102 | 38.0 | 3.0 | **MSM-3038-03** |
| 30.0 | +0.065 +0.195 | 38.0 | 4.5 | **MSM-3038-045** |
| 30.0 | +0.080 +0.240 | 38.0 | 17.0 | **MSM-3038-17** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 30.0 | | 38.0 | 20.0 | **MSM-3038-20** |
| 30.0 | +0.065 | 38.0 | 30.0 | **MSM-3038-30** |
| 30.0 | +0.195 | 38.0 | 40.0 | **MSM-3038-40** |
| 30.0 | | 40.0 | 40.0 | **MSM-3040-40** |
| 32.0 | | 36.0 | 20.0 | **MSM-3236-20** |
| 32.0 | | 36.0 | 30.0 | **MSM-3236-30** |
| 32.0 | | 36.0 | 40.0 | **MSM-3236-40** |
| 32.0 | | 40.0 | 20.0 | **MSM-3240-20** |
| 32.0 | | 40.0 | 30.0 | **MSM-3240-30** |
| 32.0 | | 40.0 | 40.0 | **MSM-3240-40** |
| 35.0 | | 39.0 | 20.0 | **MSM-3539-20** |
| 35.0 | | 39.0 | 30.0 | **MSM-3539-30** |
| 35.0 | | 39.0 | 40.0 | **MSM-3539-40** |
| 35.0 | | 39.0 | 50.0 | **MSM-3539-50** |
| 35.0 | | 42.0 | 50.0 | **MSM-3542-50** |
| 40.0 | +0.080 | 44.0 | 20.0 | **MSM-4044-20** |
| 40.0 | +0.240 | 44.0 | 30.0 | **MSM-4044-30** |
| 40.0 | | 44.0 | 40.0 | **MSM-4044-40** |
| 40.0 | | 44.0 | 50.0 | **MSM-4044-50** |
| 40.0 | | 46.0 | 20.0 | **MSM-4046-20** |
| 45.0 | | 50.0 | 20.0 | **MSM-4550-20** |
| 45.0 | | 50.0 | 30.0 | **MSM-4550-30** |
| 45.0 | | 50.0 | 40.0 | **MSM-4550-40** |
| 45.0 | | 50.0 | 50.0 | **MSM-4550-50** |
| 50.0 | | 55.0 | 20.0 | **MSM-5055-20** |
| 50.0 | | 55.0 | 30.0 | **MSM-5055-30** |
| 50.0 | | 55.0 | 40.0 | **MSM-5055-40** |
| 50.0 | | 55.0 | 50.0 | **MSM-5055-50** |
| 50.0 | | 55.0 | 60.0 | **MSM-5055-60** |
| 75.0 | +0.100 +0.290 | 80.0 | 60.0 | **MSM-7580-60** |

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

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

**Order online**
including delivery times, prices, online tools
www.igus.eu/M250

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

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

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

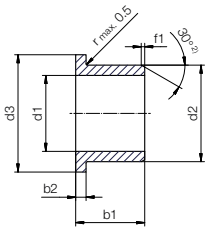




iglidur® M250
+80°C
210MPa

# Bearing technology | Plain bearings | iglidur® M250

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

**Chamfer in relation to d1**

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

**Dimensions according to ISO 2795 and special dimensions**

**Order example: MFM-0103-02 – no minimum order quantity.**
M250 iglidur® material F With flange M Metric 01 Inner Ø d1 03 Outer Ø d2 02 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 1.0 | | 3.0 | 5.0 | 2.0 | 1.00 | **MFM-0103-02** |
| 1.5 | +0.020 | 4.0 | 6.0 | 2.0 | 1.00 | **MFM-0104-02** |
| 2.0 | +0.080 | 5.0 | 8.0 | 3.0 | 1.50 | **MFM-0205-03** |
| 2.5 | | 6.0 | 9.0 | 3.0 | 1.50 | **MFM-0206-03** |
| 3.0 | | 6.0 | 9.0 | 4.0 | 1.50 | **MFM-0306-04** |
| 4.0 | | 8.0 | 12.0 | 4.0 | 2.00 | **MFM-0408-04** |
| 4.0 | | 8.0 | 12.0 | 6.0 | 2.00 | **MFM-0408-06** |
| 4.0 | | 8.0 | 12.0 | 8.0 | 2.00 | **MFM-0408-08** |
| 5.0 | | 9.0 | 13.0 | 5.0 | 2.00 | **MFM-0509-05** |
| 5.0 | | 9.0 | 13.0 | 6.0 | 2.00 | **MFM-0509-06** |
| 5.0 | | 9.0 | 13.0 | 8.0 | 2.00 | **MFM-0509-08** |
| 6.0 | +0.030 | 8.0 | 12.0 | 4.0 | 1.00 | **MFM-0608-04** |
| 6.0 | +0.105 | 8.0 | 12.0 | 8.0 | 1.00 | **MFM-0608-08** |
| 6.0 | | 10.0 | 14.0 | 4.0 | 2.00 | **MFM-0610-04** |
| 6.0 | | 10.0 | 14.0 | 6.0 | 2.00 | **MFM-0610-06** |
| 6.0 | | 10.0 | 14.0 | 10.0 | 2.00 | **MFM-0610-10** |
| 6.0 | | 11.0 | 14.0 | 4.0 | 2.00 | **MFM-0611-04** |
| 6.0 | | 12.0 | 14.0 | 6.0 | 3.00 | **MFM-0612-06** |
| 6.0 | | 12.0 | 14.0 | 10.0 | 3.00 | **MFM-0612-10** |
| 7.0 | | 11.0 | 15.0 | 6.0 | 2.00 | **MFM-0711-06** |
| 7.0 | | 11.0 | 15.0 | 8.0 | 2.00 | **MFM-0711-08** |
| 8.0 | | 9.0 | 13.0 | 5.5 | 0.50 | **MFM-0809-055** |
| 8.0 | +0.040 | 10.0 | 15.0 | 5.5 | 1.00 | **MFM-0810-05** |
| 8.0 | +0.130 | 10.0 | 15.0 | 7.5 | 1.00 | **MFM-0810-07** |
| 8.0 | | 10.0 | 15.0 | 9.5 | 1.00 | **MFM-0810-09** |
| 8.0 | | 11.0 | 13.0 | 5.0 | 2.00 | **MFM-0811-05** |
| 8.0 | | 11.0 | 13.0 | 8.0 | 2.00 | **MFM-0811-08** |
| 8.0 | | 12.0 | 16.0 | 6.0 | 2.00 | **MFM-0812-06** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 8.0 | | 12.0 | 16.0 | 8.0 | 2.00 | **MFM-0812-08** |
| 8.0 | | 12.0 | 16.0 | 12.0 | 2.00 | **MFM-0812-12** |
| 8.0 | | 14.0 | 18.0 | 6.0 | 3.00 | **MFM-0814-06** |
| 8.0 | | 14.0 | 16.0 | 6.0 | 3.00 | **MFM-081416-06** |
| 8.0 | | 14.0 | 18.0 | 10.0 | 3.00 | **MFM-0814-10** |
| 8.0 | | 14.0 | 16.0 | 10.0 | 3.00 | **MFM-081416-10** |
| 9.0 | | 14.0 | 19.0 | 6.0 | 2.00 | **MFM-0914-06** |
| 9.0 | | 14.0 | 19.0 | 10.0 | 2.00 | **MFM-0914-10** |
| 9.0 | | 14.0 | 19.0 | 14.0 | 2.00 | **MFM-0914-14** |
| 10.0 | | 12.0 | 18.0 | 7.0 | 1.00 | **MFM-1012-07** |
| 10.0 | | 12.0 | 18.0 | 9.0 | 1.00 | **MFM-1012-09** |
| 10.0 | | 12.0 | 18.0 | 9.0 | 1.00 | **MFM-1012-09** |
| 10.0 | | 12.0 | 18.0 | 12.0 | 1.00 | **MFM-1012-12** |
| 10.0 | +0.040 | 12.0 | 18.0 | 17.0 | 1.00 | **MFM-1012-17** |
| 10.0 | +0.130 | 14.0 | 19.0 | 8.0 | 2.00 | **MFM-101419-08** |
| 10.0 | | 14.0 | 19.0 | 10.0 | 2.00 | **MFM-1014-10** |
| 10.0 | | 14.0 | 19.0 | 12.0 | 1.50 | **MFM-101419-12** |
| 10.0 | | 14.0 | 20.0 | 12.0 | 2.00 | **MFM-101420-12** |
| 10.0 | | 14.0 | 17.5 | 14.0 | 1.00 | **MFM-1014-14** |
| 10.0 | | 14.0 | 17.5 | 19.0 | 1.00 | **MFM-1014-19** |
| 10.0 | | 14.0 | 17.5 | 24.0 | 1.00 | **MFM-1014-24** |
| 10.0 | | 14.0 | 17.5 | 34.0 | 1.00 | **MFM-1014-34** |
| 10.0 | | 16.0 | 20.0 | 6.0 | 3.00 | **MFM-101620-06** |
| 10.0 | | 16.0 | 22.0 | 8.0 | 3.00 | **MFM-1016-08** |
| 10.0 | | 16.0 | 22.0 | 10.0 | 3.00 | **MFM-1016-10** |
| 10.0 | | 16.0 | 20.0 | 10.0 | 3.00 | **MFM-101620-10** |
| 10.0 | | 16.0 | 22.0 | 16.0 | 3.00 | **MFM-1016-16** |

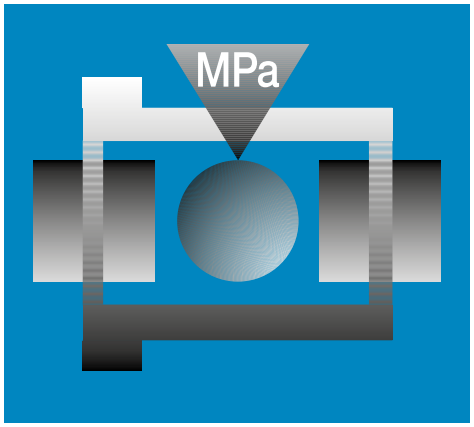
[3] After press-fit. *Testing methods, page 61*

# Bearing technology | Plain bearings | iglidur® M250

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 12.0 | | 14.0 | 20.0 | 7.0 | 1.00 | **MFM-1214-07** |
| 12.0 | | 14.0 | 20.0 | 9.0 | 1.00 | **MFM-1214-09** |
| 12.0 | | 14.0 | 20.0 | 12.0 | 1.00 | **MFM-1214-12** |
| 12.0 | | 14.0 | 20.0 | 17.0 | 1.00 | **MFM-1214-17** |
| 12.0 | | 16.0 | 22.0 | 10.0 | 2.00 | **MFM-1216-10** |
| 12.0 | | 16.0 | 22.0 | 20.0 | 2.00 | **MFM-1216-20** |
| 12.0 | | 18.0 | 24.0 | 8.0 | 3.00 | **MFM-1218-08** |
| 12.0 | | 18.0 | 22.0 | 10.0 | 3.00 | **MFM-1218-10** |
| 12.0 | | 18.0 | 24.0 | 12.0 | 3.00 | **MFM-1218-12** |
| 12.0 | | 18.0 | 22.0 | 15.0 | 3.00 | **MFM-1218-15** |
| 12.0 | | 18.0 | 22.0 | 20.0 | 3.00 | **MFM-1218-20** |
| 13.0 | | 15.0 | 20.0 | 14.0 | 2.00 | **MFM-1315-14** |
| 13.0 | | 16.0 | 24.0 | 8.0 | 2.00 | **MFM-131624-08** |
| 14.0 | | 16.0 | 22.0 | 12.0 | 1.00 | **MFM-1416-12** |
| 14.0 | | 16.0 | 22.0 | 17.0 | 1.00 | **MFM-1416-17** |
| 14.0 | | 20.0 | 25.0 | 7.0 | 3.00 | **MFM-1420-07** |
| 14.0 | | 20.0 | 25.0 | 10.0 | 3.00 | **MFM-1420-10** |
| 14.0 | | 20.0 | 25.0 | 15.0 | 3.00 | **MFM-1420-15** |
| 14.0 | | 20.0 | 25.0 | 20.0 | 3.00 | **MFM-1420-20** |
| 15.0 | | 17.0 | 23.0 | 9.0 | 1.00 | **MFM-1517-09** |
| 15.0 | +0.050 | 17.0 | 23.0 | 12.0 | 1.00 | **MFM-1517-12** |
| 15.0 | +0.160 | 17.0 | 23.0 | 17.0 | 1.00 | **MFM-1517-17** |
| 15.0 | | 21.0 | 27.0 | 10.0 | 3.00 | **MFM-1521-10** |
| 15.0 | | 21.0 | 27.0 | 15.0 | 3.00 | **MFM-1521-15** |
| 15.0 | | 21.0 | 27.0 | 20.0 | 3.00 | **MFM-1521-20** |
| 15.0 | | 21.0 | 27.0 | 25.0 | 3.00 | **MFM-1521-25** |
| 16.0 | | 18.0 | 28.0 | 8.0 | 2.00 | **MFM-1618-08/02** |
| 16.0 | | 18.0 | 24.0 | 12.0 | 1.00 | **MFM-1618-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **MFM-1618-17** |
| 16.0 | | 22.0 | 28.0 | 12.0 | 3.00 | **MFM-1622-12** |
| 16.0 | | 22.0 | 28.0 | 15.0 | 3.00 | **MFM-1622-15** |
| 16.0 | | 22.0 | 28.0 | 20.0 | 3.00 | **MFM-1622-20** |
| 16.0 | | 22.0 | 28.0 | 25.0 | 3.00 | **MFM-1622-25** |
| 18.0 | | 20.0 | 26.0 | 12.0 | 1.00 | **MFM-1820-12** |
| 18.0 | | 20.0 | 26.0 | 17.0 | 1.00 | **MFM-1820-17** |
| 18.0 | | 20.0 | 26.0 | 22.0 | 1.00 | **MFM-1820-22** |
| 18.0 | | 24.0 | 26.0 | 7.8 | 3.00 | **MFM-182426-078** |
| 18.0 | | 24.0 | 30.0 | 8.0 | 3.00 | **MFM-1824-08** |
| 18.0 | | 24.0 | 30.0 | 12.0 | 3.00 | **MFM-1824-12** |
| 18.0 | | 24.0 | 30.0 | 18.0 | 3.00 | **MFM-1824-18** |
| 18.0 | | 24.0 | 30.0 | 20.0 | 3.00 | **MFM-1824-20** |
| 18.0 | | 24.0 | 30.0 | 30.0 | 3.00 | **MFM-1824-30** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 19.0 | | 24.0 | 27.0 | 12.0 | 2.00 | **MFM-192427-12** |
| 20.0 | | 23.0 | 30.0 | 11.5 | 1.50 | **MFM-2023-11** |
| 20.0 | | 23.0 | 30.0 | 16.5 | 1.50 | **MFM-2023-16** |
| 20.0 | | 23.0 | 30.0 | 21.5 | 1.50 | **MFM-2023-21** |
| 20.0 | | 26.0 | 28.0 | 12.0 | 3.00 | **MFM-202628-12** |
| 20.0 | | 26.0 | 32.0 | 15.0 | 3.00 | **MFM-2026-15** |
| 20.0 | | 26.0 | 32.0 | 20.0 | 3.00 | **MFM-2026-20** |
| 20.0 | | 26.0 | 32.0 | 30.0 | 3.00 | **MFM-2026-30** |
| 22.0 | | 28.0 | 34.0 | 15.0 | 3.00 | **MFM-2228-15** |
| 22.0 | | 28.0 | 34.0 | 20.0 | 3.00 | **MFM-2228-20** |
| 22.0 | | 28.0 | 34.0 | 30.0 | 3.00 | **MFM-2228-30** |
| 24.0 | | 30.0 | 36.0 | 15.0 | 3.00 | **MFM-2430-15** |
| 24.0 | | 30.0 | 36.0 | 20.0 | 3.00 | **MFM-2430-20** |
| 24.0 | | 30.0 | 36.0 | 30.0 | 3.00 | **MFM-2430-30** |
| 25.0 | | 28.0 | 35.0 | 11.5 | 1.50 | **MFM-2528-11** |
| 25.0 | | 28.0 | 35.0 | 16.5 | 1.50 | **MFM-2528-16** |
| 25.0 | +0.065 | 28.0 | 35.0 | 21.5 | 1.50 | **MFM-2528-21** |
| 25.0 | +0.195 | 32.0 | 38.0 | 12.0 | 4.00 | **MFM-2532-12** |
| 25.0 | | 32.0 | 38.0 | 15.0 | 4.00 | **MFM-2532-15** |
| 25.0 | | 32.0 | 38.0 | 20.0 | 4.00 | **MFM-2532-20** |
| 25.0 | | 32.0 | 38.0 | 30.0 | 4.00 | **MFM-2532-30** |
| 25.0 | | 32.0 | 38.0 | 40.0 | 4.00 | **MFM-2532-40** |
| 27.0 | | 34.0 | 40.0 | 20.0 | 4.00 | **MFM-2734-20** |
| 27.0 | | 34.0 | 40.0 | 30.0 | 4.00 | **MFM-2734-30** |
| 27.0 | | 34.0 | 40.0 | 40.0 | 4.00 | **MFM-2734-40** |
| 28.0 | | 36.0 | 42.0 | 20.0 | 4.00 | **MFM-2836-20** |
| 28.0 | | 36.0 | 42.0 | 30.0 | 4.00 | **MFM-2836-30** |
| 28.0 | | 36.0 | 42.0 | 40.0 | 4.00 | **MFM-2836-40** |
| 30.0 | | 34.0 | 42.0 | 16.0 | 2.00 | **MFM-3034-16** |
| 30.0 | | 34.0 | 42.0 | 26.0 | 2.00 | **MFM-3034-26** |
| 30.0 | | 35.0 | 44.0 | 20.0 | 4.00 | **MFM-3035-20** |
| 30.0 | | 38.0 | 44.0 | 20.0 | 4.00 | **MFM-3038-20** |
| 30.0 | | 38.0 | 44.0 | 30.0 | 4.00 | **MFM-3038-30** |
| 30.0 | | 38.0 | 44.0 | 40.0 | 4.00 | **MFM-3038-40** |
| 32.0 | | 40.0 | 46.0 | 20.0 | 4.00 | **MFM-3240-20** |
| 32.0 | | 40.0 | 46.0 | 30.0 | 4.00 | **MFM-3240-30** |
| 32.0 | | 40.0 | 46.0 | 40.0 | 4.00 | **MFM-3240-40** |
| 35.0 | +0.080 | 39.0 | 47.0 | 16.0 | 2.00 | **MFM-3539-16** |
| 35.0 | +0.240 | 39.0 | 47.0 | 26.0 | 2.00 | **MFM-3539-26** |
| 40.0 | | 44.0 | 52.0 | 30.0 | 2.00 | **MFM-4044-30** |
| 40.0 | | 44.0 | 52.0 | 40.0 | 2.00 | **MFM-4044-40** |
| 45.0 | | 50.0 | 58.0 | 50.0 | 2.00 | **MFM-4550-50** |

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




## Specialist for pivoting, rolling applications and more

Low coefficient of friction and wear on almost every shaft

## iglidur® P210

**When to use it?**

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

**When not to use it?**

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


EN 09/2023

# Bearing technology | Plain bearings | iglidur® P210

Ø
4.0-50.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## Specialist for pivoting, rolling applications and more

Low coefficient of friction and wear on almost every shaft

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

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

### Typical application areas

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

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

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

-40°C up to +100°C

50MPa

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.40 | |
| Colour | | yellow | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.3 | DIN 53495 |
| Max. moisture absorption | % weight | 0.5 | |
| Coefficient of friction, dynamic, against steel | μ | 0.07-0.19 | |
| pv value, max. (dry) | MPa · m/s | 0.40 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,500 | DIN 53457 |
| Flexural strength at +20°C | MPa | 70 | DIN 53452 |
| Compressive strength | MPa | 50 | |
| Max. permissible surface pressure (+20°C) | MPa | 50 | |
| Shore D hardness | | 75 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +100 | |
| Max. application temperature short-term | °C | +160 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.25 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 8 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{11}$ | DIN 53482 |

Table 01: Material properties

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

### Moisture absorption

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

### Vacuum

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

### Radiation resistance

Plain bearings made from iglidur® P210 have limited use under radioactive radiation. They are resistant up to a radiation intensity of 3 - $10^2$ Gy.

### Resistance to weathering

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

### Mechanical properties

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

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

*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® P210

### Permissible surface speeds

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

*Surface speed, page 48*

### Temperature

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

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

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

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

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

*Shaft materials, page 56*

### Installation tolerances

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

*Testing methods, page 61*

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

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

Table 02: Chemical resistance

*Chemical table, page 1170*

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

Table 03: Maximum surface speeds

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

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

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

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





# Technical data

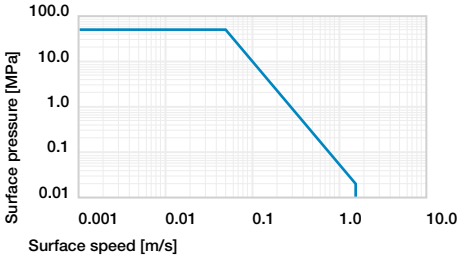



Diagram 01: Permissible pv values for iglidur® P210 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

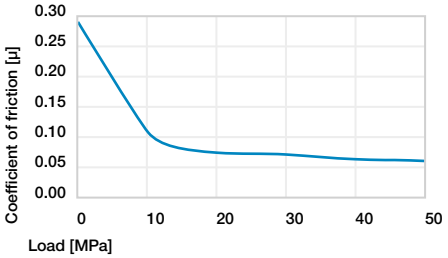



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

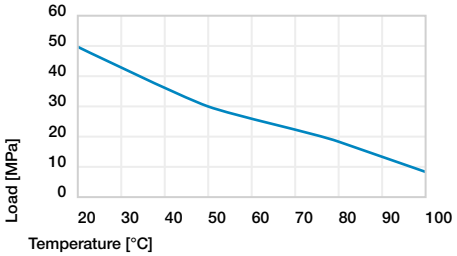



Diagram 02: Maximum recommended surface pressure as a function of temperature (50MPa at +20°C)

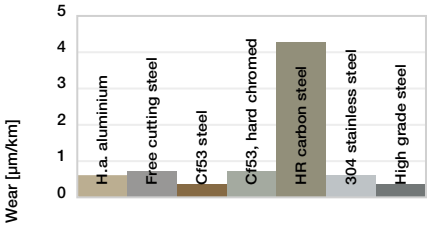



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

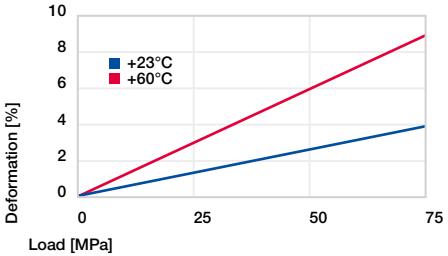



Diagram 03: Deformation under pressure and temperature

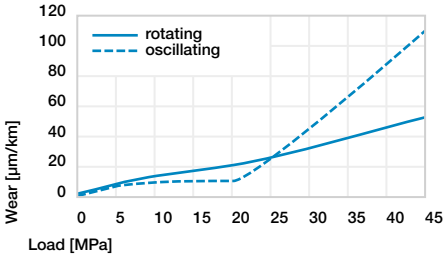



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

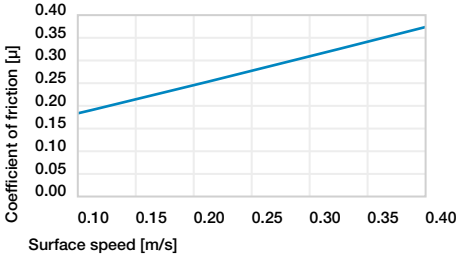
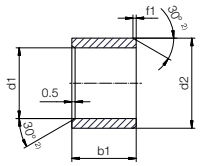



Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

# Bearing technology | Plain bearings | iglidur® P210

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

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

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 4.0 | +0.020 +0.068 | 5.5 | 4.0 | P210SM-0405-04 |
| 4.0 | | 5.5 | 6.0 | P210SM-0405-06 |
| 5.0 | | 7.0 | 5.0 | P210SM-0507-05 |
| 5.0 | | 7.0 | 10.0 | P210SM-0507-10 |
| 6.0 | | 8.0 | 6.0 | P210SM-0608-06 |
| 6.0 | | 8.0 | 8.0 | P210SM-0608-08 |
| 6.0 | | 8.0 | 10.0 | P210SM-0608-10 |
| 8.0 | +0.025 +0.083 | 10.0 | 8.0 | P210SM-0810-08 |
| 8.0 | | 10.0 | 10.0 | P210SM-0810-10 |
| 8.0 | | 10.0 | 12.0 | P210SM-0810-12 |
| 10.0 | | 12.0 | 8.0 | P210SM-1012-08 |
| 10.0 | | 12.0 | 10.0 | P210SM-1012-10 |
| 10.0 | | 12.0 | 12.0 | P210SM-1012-12 |
| 10.0 | | 12.0 | 15.0 | P210SM-1012-15 |
| 10.0 | | 12.0 | 20.0 | P210SM-1012-20 |
| 12.0 | +0.032 +0.102 | 14.0 | 10.0 | P210SM-1214-10 |
| 12.0 | | 14.0 | 12.0 | P210SM-1214-12 |
| 12.0 | | 14.0 | 15.0 | P210SM-1214-15 |
| 12.0 | | 14.0 | 20.0 | P210SM-1214-20 |
| 13.0 | | 15.0 | 10.0 | P210SM-1315-10 |
| 13.0 | | 15.0 | 20.0 | P210SM-1315-20 |
| 14.0 | | 16.0 | 15.0 | P210SM-1416-15 |
| 14.0 | | 16.0 | 20.0 | P210SM-1416-20 |
| 14.0 | | 16.0 | 25.0 | P210SM-1416-25 |
| 15.0 | | 17.0 | 15.0 | P210SM-1517-15 |
| 15.0 | | 17.0 | 20.0 | P210SM-1517-20 |
| 15.0 | | 17.0 | 25.0 | P210SM-1517-25 |
| 16.0 | | 18.0 | 15.0 | P210SM-1618-15 |
| 16.0 | | 18.0 | 20.0 | P210SM-1618-20 |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 16.0 | +0.032 +0.102 | 18.0 | 25.0 | P210SM-1618-25 |
| 18.0 | | 20.0 | 15.0 | P210SM-1820-15 |
| 18.0 | | 20.0 | 20.0 | P210SM-1820-20 |
| 18.0 | | 20.0 | 25.0 | P210SM-1820-25 |
| 20.0 | +0.040 +0.124 | 23.0 | 10.0 | P210SM-2023-10 |
| 20.0 | | 23.0 | 15.0 | P210SM-2023-15 |
| 20.0 | | 23.0 | 20.0 | P210SM-2023-20 |
| 20.0 | | 23.0 | 25.0 | P210SM-2023-25 |
| 20.0 | | 23.0 | 30.0 | P210SM-2023-30 |
| 22.0 | | 25.0 | 15.0 | P210SM-2225-15 |
| 22.0 | | 25.0 | 20.0 | P210SM-2225-20 |
| 22.0 | | 25.0 | 25.0 | P210SM-2225-25 |
| 22.0 | | 25.0 | 30.0 | P210SM-2225-30 |
| 24.0 | | 27.0 | 15.0 | P210SM-2427-15 |
| 24.0 | | 27.0 | 20.0 | P210SM-2427-20 |
| 24.0 | | 27.0 | 25.0 | P210SM-2427-25 |
| 24.0 | | 27.0 | 30.0 | P210SM-2427-30 |
| 25.0 | | 28.0 | 15.0 | P210SM-2528-15 |
| 25.0 | | 28.0 | 20.0 | P210SM-2528-20 |
| 25.0 | | 28.0 | 25.0 | P210SM-2528-25 |
| 25.0 | | 28.0 | 30.0 | P210SM-2528-30 |
| 28.0 | | 32.0 | 20.0 | P210SM-2832-20 |
| 28.0 | | 32.0 | 25.0 | P210SM-2832-25 |
| 28.0 | | 32.0 | 30.0 | P210SM-2832-30 |
| 30.0 | | 34.0 | 20.0 | P210SM-3034-20 |
| 30.0 | | 34.0 | 25.0 | P210SM-3034-25 |
| 30.0 | | 34.0 | 30.0 | P210SM-3034-30 |
| 30.0 | | 34.0 | 40.0 | P210SM-3034-40 |

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



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iglidur® P210
+100°C
50MPa

# Product range

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

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

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

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

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

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

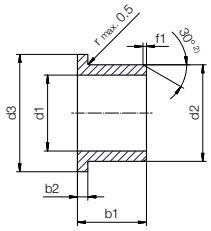
| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

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

EN 09/2023

# Bearing technology | Plain bearings | iglidur® P210

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

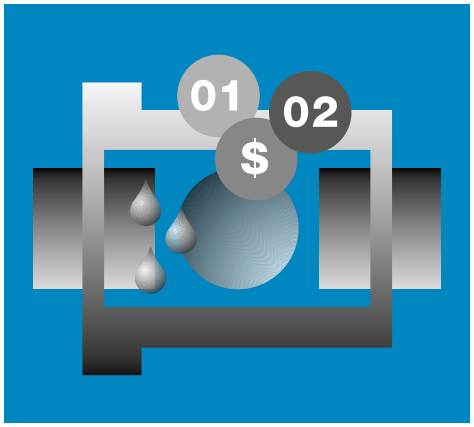
Dimensions according to ISO 3547-1 and special dimensions

Order example: P210FM-0608-04 – no minimum order quantity.
P210 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 04 Total length b1

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

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

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




# The low-cost all-rounder

## Well-balanced properties at a low price

## iglidur® P230

**When to use it?**

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

**When not to use it?**

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

# Bearing technology | Plain bearings | iglidur® P230

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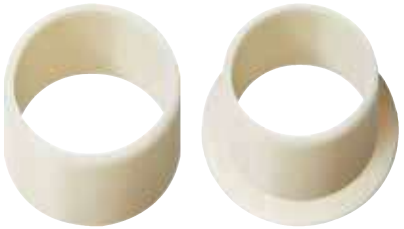


Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

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

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

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

### Typical application areas

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

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

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

-30°C up to +110°C

60MPa

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

Table 01: Material properties

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

### Moisture absorption

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

### Vacuum

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

### Radiation resistance

Plain bearings made from iglidur® P230 have limited use under radioactive radiation. They are resistant up to a radiation intensity of 3 - $10^2$ Gy.

### Resistance to weathering

iglidur® P230 plain bearings have not yet been tested for their resistance to weathering. Please consult igus® if you're planning to use them outdoors.

### Mechanical properties

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

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

*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® P230

### Permissible surface speeds

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

***Surface speed, page 48***

### Temperature

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

***Application temperatures, page 53***
***Additional securing, page 53***

### Friction and wear

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

***Coefficient of friction and surfaces, page 51***
***Wear resistance, page 54***

### Shaft materials

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

***Shaft materials, page 56***

### Installation tolerances

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

***Testing methods, page 61***

### Product range

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

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

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

**Table 02: Chemical resistance**

***Chemical table, page 1170***

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

**Table 03: Maximum surface speeds**

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

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

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

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





# Technical data

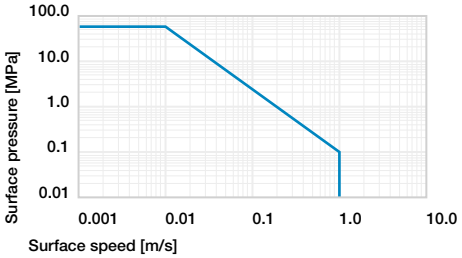



**Diagram 01: Permissible pv values for iglidur® P230 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing**

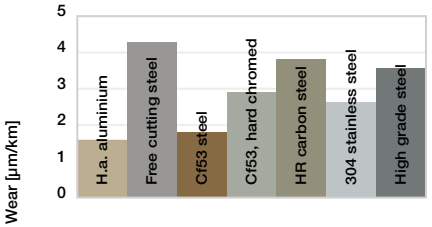



**Diagram 05: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s**

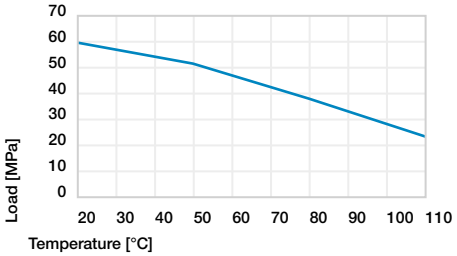



**Diagram 02: Maximum recommended surface pressure as a function of temperature (60MPa at +20°C)**

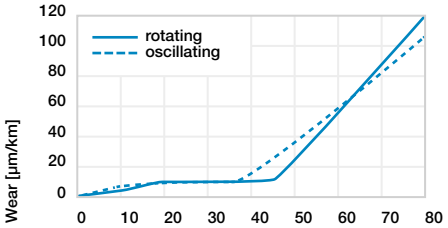



**Diagram 06: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load**

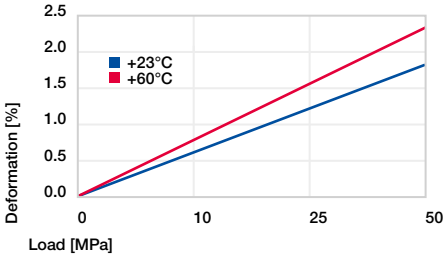



**Diagram 03: Deformation under pressure and temperature**

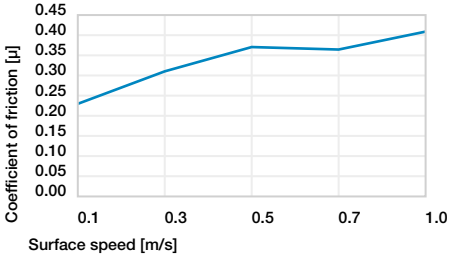
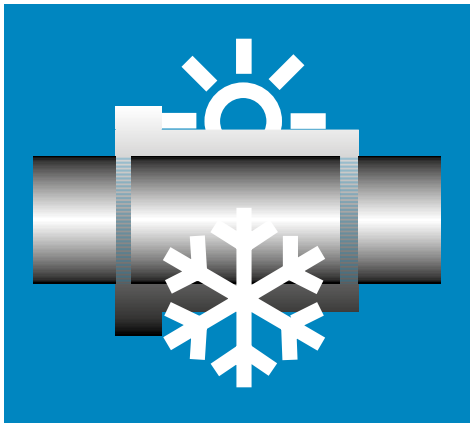



**Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa**



# The cost-effective outdoor all-rounder

## No moisture absorption even with high ambient humidity

## iglidur® P

**When to use it?**

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

**When not to use it?**

- When the maximum application temperature is above +120°C
  ***iglidur® K***
- When mechanical reaming of the bore is necessary
  ***iglidur® M250***
- When the highest wear resistance is required
  ***iglidur® W300***



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# Bearing technology | Plain bearings | iglidur® P

Ø 3.0-
95.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

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

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

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

### Typical application areas

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

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

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.58 | |
| Colour | | black | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.2 | DIN 53495 |
| Max. moisture absorption | % weight | 0.4 | |
| Coefficient of friction, dynamic, against steel | μ | 0.06-0.21 | |
| pv value, max. (dry) | MPa · m/s | 0.39 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 5,300 | DIN 53457 |
| Flexural strength at +20°C | MPa | 120 | DIN 53452 |
| Compressive strength | MPa | 66 | |
| Max. permissible surface pressure (+20°C) | MPa | 50 | |
| Shore D hardness | | 75 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +130 | |
| Max. application temperature short-term | °C | +200 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.25 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 4 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{13}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{12}$ | DIN 53482 |

Table 01: Material properties

-40°C up to +130°C

50MPa

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

### Moisture absorption

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

### Vacuum

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

### Radiation resistance

Plain bearings made from iglidur® P have limited use under radioactive radiation. They are resistant up to a radiation intensity of $5 \cdot 10^2$ Gy.

### Resistance to weathering

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

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® P plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® P at radial loads. At the maximum recommended surface pressure of 50MPa, the deformation is less than 4%.
***Surface pressure, page 45***

# Bearing technology | Plain bearings | iglidur® P

### Permissible surface speeds

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

*Surface speed, page 48*

### Temperature

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

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

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

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

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

*Shaft materials, page 56*

### Installation tolerances

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

*Testing methods, page 61*

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

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

Table 02: Chemical resistance

*Chemical table, page 1170*

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

Table 03: Maximum surface speeds

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

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

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

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





# Technical data

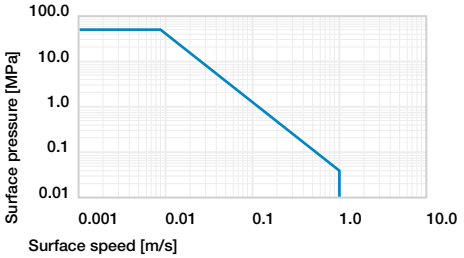



Diagram 01: Permissible pv values for iglidur® P plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

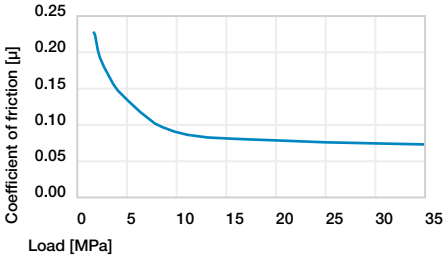



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

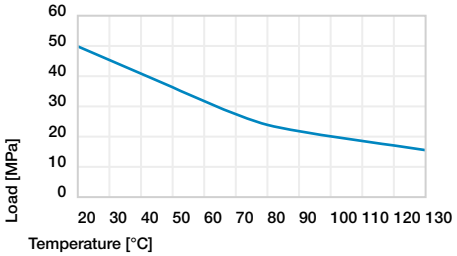



Diagram 02: Maximum recommended surface pressure as a function of temperature (50MPa at +20°C)

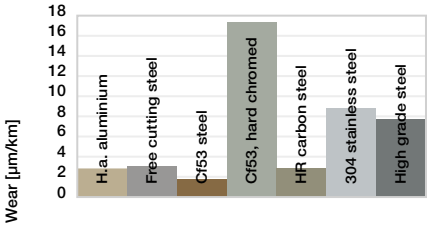



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

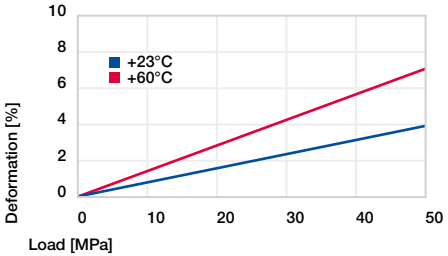



Diagram 03: Deformation under pressure and temperature

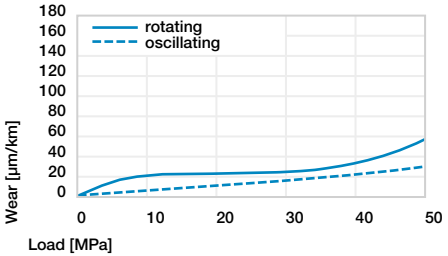



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

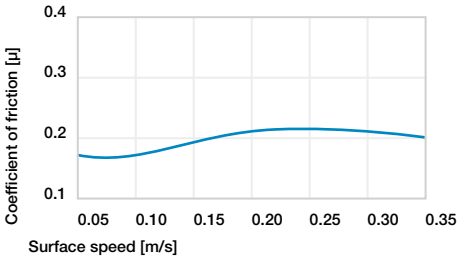
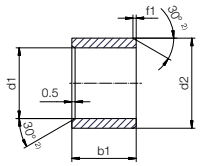



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

# Bearing technology | Plain bearings | iglidur® P

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: PSM-0304-03 – no minimum order quantity.
P iglidur® material S Cylindrical M Metric 03 Inner Ø d1 04 Outer Ø d2 03 Total length b1

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

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

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



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iglidur® P
+130°C
50MPa

# Product range

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

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 35.0 | +0.050 +0.150 | 39.0 | 40.0 | PSM-3539-40 |
| 35.0 | | 39.0 | 50.0 | PSM-3539-50 |
| 40.0 | | 44.0 | 20.0 | PSM-4044-20 |
| 40.0 | | 44.0 | 30.0 | PSM-4044-30 |
| 40.0 | | 44.0 | 40.0 | PSM-4044-40 |
| 40.0 | | 44.0 | 50.0 | PSM-4044-50 |
| 40.0 | | 44.0 | 58.0 | PSM-4044-58 |
| 45.0 | | 50.0 | 20.0 | PSM-4550-20 |
| 45.0 | | 50.0 | 30.0 | PSM-4550-30 |
| 45.0 | | 50.0 | 40.0 | PSM-4550-40 |
| 45.0 | | 50.0 | 50.0 | PSM-4550-50 |
| 50.0 | | 55.0 | 20.0 | PSM-5055-20 |
| 50.0 | | 55.0 | 30.0 | PSM-5055-30 |
| 50.0 | | 55.0 | 40.0 | PSM-5055-40 |
| 50.0 | | 55.0 | 50.0 | PSM-5055-50 |
| 50.0 | | 55.0 | 60.0 | PSM-5055-60 |
| 60.0 | +0.060 +0.180 | 65.0 | 50.0 | PSM-6065-50 |
| 60.0 | | 65.0 | 60.0 | PSM-6065-60 |
| 65.0 | | 70.0 | 50.0 | PSM-6570-50 |
| 75.0 | | 80.0 | 80.0 | PSM-7580-80 |
| 90.0 | +0.072 | 95.0 | 100.0 | PSM-9095-100 |
| 95.0 | +0.212 | 100.0 | 100.0 | PSM-95100-100 |

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

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

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

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

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

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

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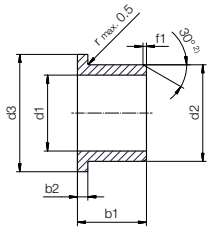
# Bearing technology | Plain bearings | iglidur® P

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

**Order example: PFM-0405-04 – no minimum order quantity.**
P iglidur® material F With flange M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

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

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

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





# Product range

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

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

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

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www.igus.eu/24

**Order online**
including delivery times, prices, online tools
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**Ordering note**
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| Discount scaling | | |
|---|---|---|
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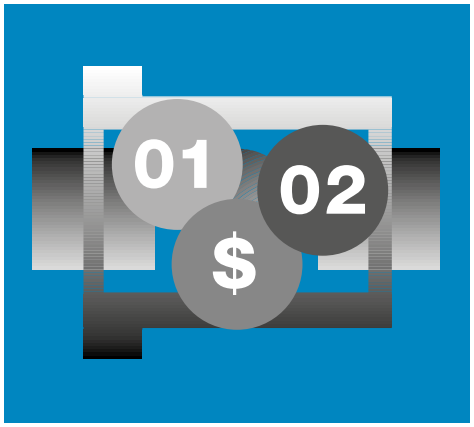
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

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




# Versatile and cost-effective

## For medium temperatures and wet environments

## iglidur® K

**When to use it?**

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

**When not to use it?**

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



EN 09/2023

# Bearing technology | Plain bearings | iglidur® K

Ø
6.0-20.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## Versatile and cost-effective
## For medium temperatures and wet environments

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

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

### Typical application areas

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

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

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.52 | |
| Colour | | yellow-beige | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.1 | DIN 53495 |
| Max. moisture absorption | % weight | 0.6 | |
| Coefficient of friction, dynamic, against steel | μ | 0.06-0.21 | |
| pv value, max. (dry) | MPa · m/s | 0.30 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 3,500 | DIN 53457 |
| Flexural strength at +20°C | MPa | 80 | DIN 53452 |
| Compressive strength | MPa | 60 | |
| Max. permissible surface pressure (+20°C) | MPa | 50 | |
| Shore D hardness | | 72 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +170 | |
| Max. application temperature short-term | °C | +240 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.25 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 3 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{12}$ | DIN 53482 |

Table 01: Material properties

-40°C up to +170°C

50MPa

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

### Moisture absorption

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

### Vacuum

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

### Radiation resistance

Plain bearings made from iglidur® K are resistant up to a radiation intensity of $5 \cdot 10^2$ Gy.

### Resistance to weathering

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

### Mechanical properties

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

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

*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® K

### Permissible surface speeds

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

*Surface speed, page 48*

### Temperature

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

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

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

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

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

*Shaft materials, page 56*

### Installation tolerances

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

*Testing methods, page 61*

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

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

Table 02: Chemical resistance

*Chemical table, page 1170*

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

Table 03: Maximum surface speeds

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

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

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

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





# Technical data

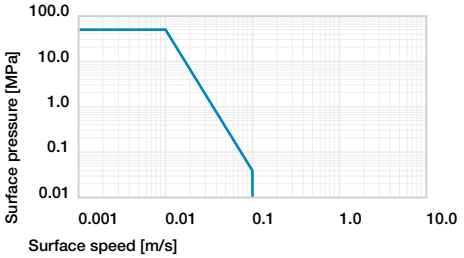



Diagram 01: Permissible pv values for iglidur® K plain bearing with a wall thickness of 1 mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

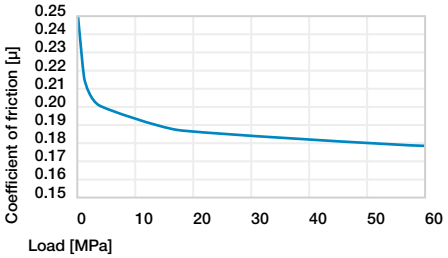



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

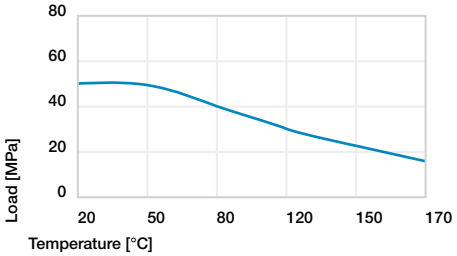



Diagram 02: Maximum recommended surface pressure as a function of temperature (50MPa at +20°C)

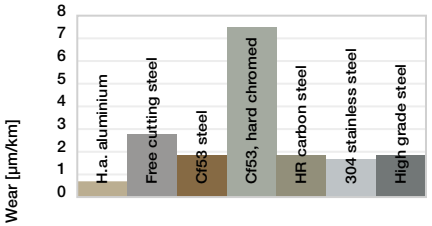



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

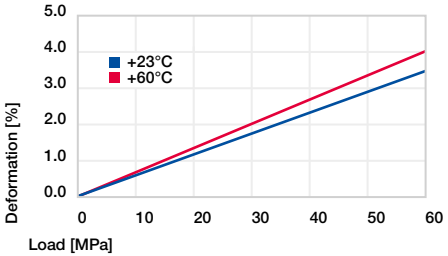



Diagram 03: Deformation under pressure and temperature

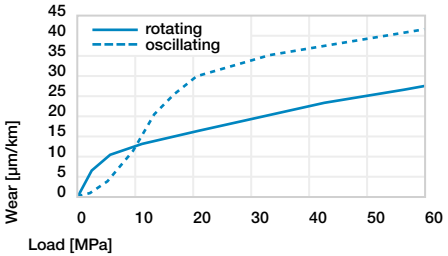



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

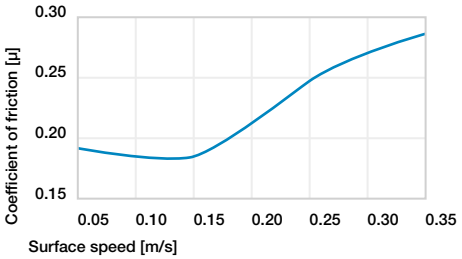
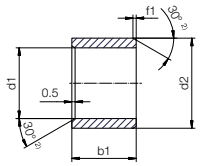



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

# Bearing technology | Plain bearings | iglidur® K

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

**Order example: KSM-0608-06 – no minimum order quantity.**
K iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

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

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

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**No low-quantity surcharges.**
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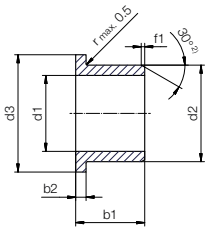
# Bearing technology | Plain bearings | iglidur® K

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

**Order example: KFM-0608-06 – no minimum order quantity.**
K iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

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

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

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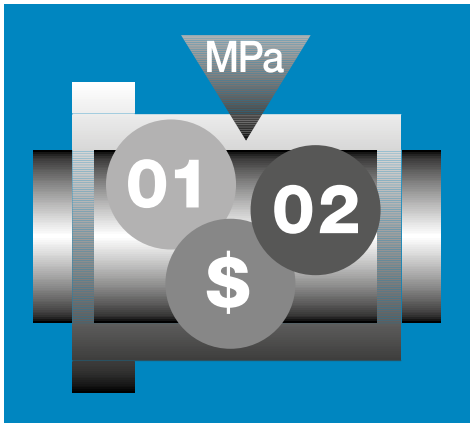
www.igus.eu/24

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

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

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

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




# Low-cost material for high-volume production

## For applications with mainly static loads

## iglidur® GLW

**When to use it?**

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

**When not to use it?**

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



EN 09/2023

# Bearing technology | Plain bearings | iglidur® GLW

Ø
–

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

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

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

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

### Typical application areas

- Automation
- Automotive
- Industrial handling

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

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

-40°C up to +100°C

80MPa

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.36 | |
| Colour | | black | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 1.3 | DIN 53495 |
| Max. moisture absorption | % weight | 5.5 | |
| Coefficient of friction, dynamic, against steel | μ | 0.10-0.24 | |
| pv value, max. (dry) | MPa · m/s | 0.30 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 7,700 | DIN 53457 |
| Flexural strength at +20°C | MPa | 235 | DIN 53452 |
| Compressive strength | MPa | 74 | |
| Max. permissible surface pressure (+20°C) | MPa | 80 | |
| Shore D hardness | | 78 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +100 | |
| Max. application temperature short-term | °C | +160 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 17 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{11}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{11}$ | DIN 53482 |

Table 01: Material properties

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

### Moisture absorption

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

### Vacuum

In vacuum, any present moisture is released as vapour.

### Radiation resistance

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

### Resistance to weathering

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

### Mechanical properties

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

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

***Surface pressure, page 45***

# Bearing technology | Plain bearings | iglidur® GLW

### Permissible surface speeds

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

***Surface speed, page 48***

### Temperature

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

***Application temperatures, page 53***
***Additional securing, page 53***

### Friction and wear

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

***Coefficient of friction and surfaces, page 51***
***Wear resistance, page 54***

### Shaft materials

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

***Shaft materials, page 56***

### Installation tolerances

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

***Testing methods, page 61***

### Product range

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

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

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

Table 02: Chemical resistance

***Chemical table, page 1170***

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

Table 03: Maximum surface speeds

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

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

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

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





# Technical data

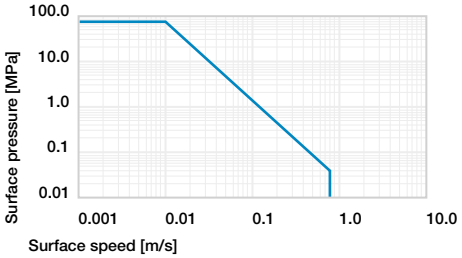



Diagram 01: Permissible pv values for iglidur® GLW with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

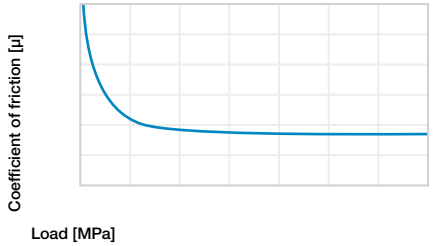



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

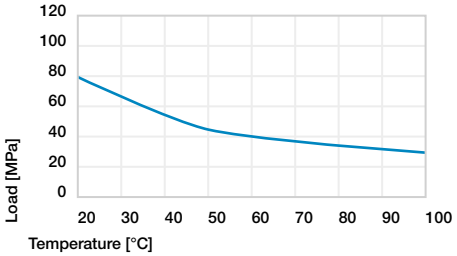



Diagram 02: Maximum recommended surface pressure as a function of temperature (80MPa at +20°C)

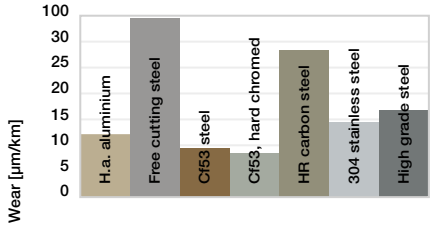



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

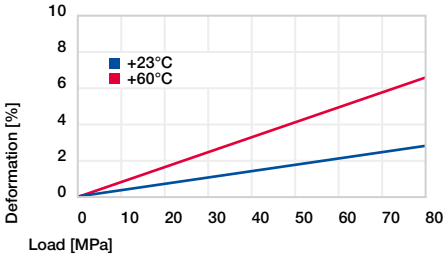



Diagram 03: Deformation under pressure and temperature

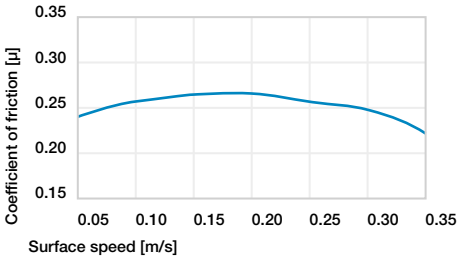



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

# Materials for long service life

## Materials for long service life

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

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**Online service life calculation**
www.igus.eu/iglidur-expert

### iglidur® J
**The versatile endurance runner**

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

### iglidur® W300
**The classic endurance runner up to 30MPa**

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

### iglidur® J3
**The new endurance runner: specialist for pivoting applications and pulsating loads**

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

### iglidur® J3B
**Proven long-life material in black**

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

### iglidur® J350
**Endurance runner with high dimensional stability at high temperatures**

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

### iglidur® J260
**Ideal for plastic shafts**

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

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



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## Endurance runner

### iglidur® W360
**Endurance runner up to +180°C**

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

### iglidur® L250
**For fast rotating applications**

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

### iglidur® L350
**For high rotational speeds**

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

### iglidur® L500
**For extreme rotational speeds**

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

### iglidur® R
**Low-cost**

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

### iglidur® D
**Low-cost with silicone**

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

### iglidur® J200
**Specialist for linear movement**

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

### iglidur® E7
**Ideal for pivoting movement**

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

### iglidur® E
**Extremely wear-resistant**

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

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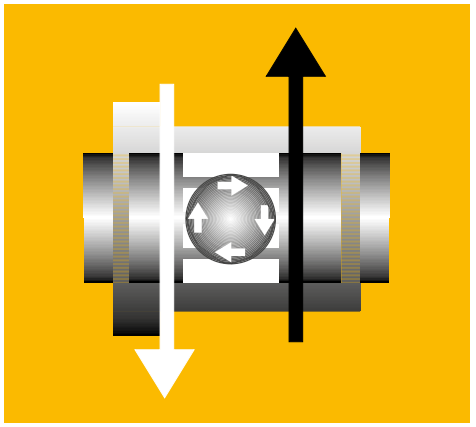

# The versatile endurance runner

## Strong performer on most shafts, very low coefficient of friction

## iglidur® J

**When to use it?**

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

**When not to use it?**

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



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# Bearing technology | Plain bearings | iglidur® J

Ø
1.5-120.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 848

## The versatile endurance runner

### Strong performer on most shafts, very low coefficient of friction

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

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

**Typical application areas**

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

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

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**Online service life calculation**
www.igus.eu/iglidur-expert



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iglidur® J
+90°C
35MPa

# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.49 | |
| Colour | | yellow | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.3 | DIN 53495 |
| Max. moisture absorption | % weight | 1.3 | |
| Coefficient of friction, dynamic, against steel | μ | 0.06-0.18 | |
| pv value, max. (dry) | MPa · m/s | 0.34 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,400 | DIN 53457 |
| Flexural strength at +20°C | MPa | 73 | DIN 53452 |
| Compressive strength | MPa | 60 | |
| Max. permissible surface pressure (+20°C) | MPa | 35 | |
| Shore D hardness | | 74 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +90 | |
| Max. application temperature short-term | °C | +120 | |
| Min. application temperature | °C | -50 | |
| Thermal conductivity | W/m · K | 0.25 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 10 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{13}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{12}$ | DIN 53482 |

Table 01: Material properties

-50°C up to +90°C

35MPa

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

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

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

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

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

**Mechanical properties**
With increasing temperatures, the compressive strength of iglidur® J plain bearings decreases. Diagram 02 shows this inverse relationship. With the long-term permitted application temperature of +90°C, the permitted surface pressure still amounts to 20MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
With a maximum recommended surface pressure of 35MPa, iglidur® J plain bearings are not suitable for extreme loads. Diagram 03 shows the elastic deformation of iglidur® J at radial loads.
***Surface pressure, page 45***

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# Bearing technology | Plain bearings | iglidur® J

### Permissible surface speeds

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

***Surface speed, page 48***

### Temperature

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

***Application temperatures, page 53***
***Additional securing, page 53***

### Friction and wear

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

***Coefficient of friction and surfaces, page 51***
***Wear resistance, page 54***

### Shaft materials

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

***Shaft materials, page 56***

### Installation tolerances

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

***Testing methods, page 61***

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

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

Table 02: Chemical resistance

***Chemical table, page 1170***

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

Table 03: Maximum surface speeds

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

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

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

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





# Technical data

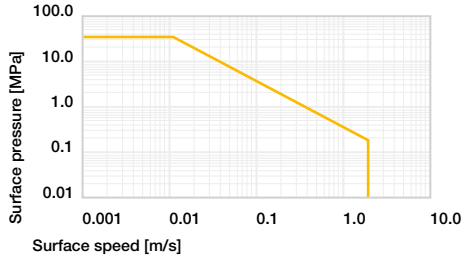



Diagram 01: Permissible pv values for iglidur® J plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

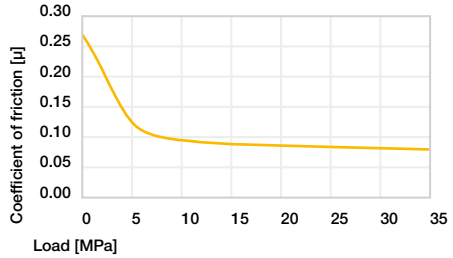



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

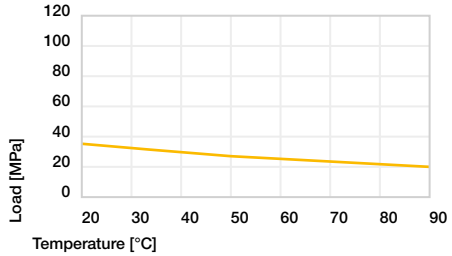



Diagram 02: Maximum recommended surface pressure as a function of temperature (35MPa at +20°C)

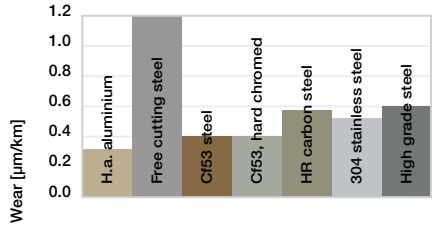



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

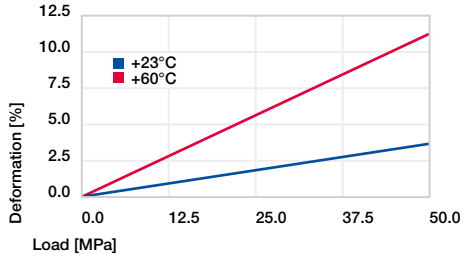



Diagram 03: Deformation under pressure and temperature

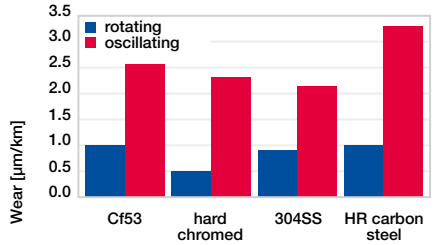



Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

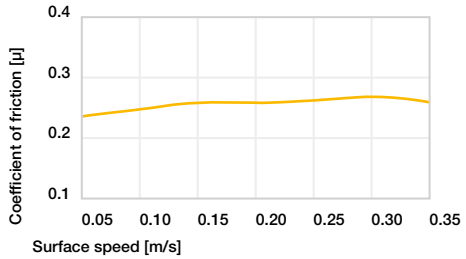
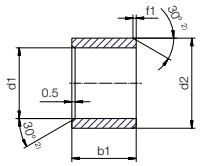



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

# Bearing technology | Plain bearings | iglidur® J

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: JSM-0104-02 – no minimum order quantity.
J iglidur® material S Cylindrical M Metric 01 Inner Ø d1 04 Outer Ø d2 02 Total length b1

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

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

[3] After press-fit. *Testing methods, page 57*



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# Product range

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

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

[3] After press-fit. *Testing methods, page 57*

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# Bearing technology | Plain bearings | iglidur® J

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

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

[3] After press-fit. *Testing methods, page 57*

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

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

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

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

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



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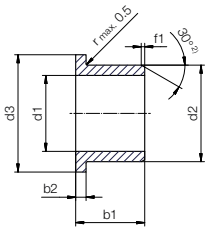
iglidur® J
+90°C
35MPa

# Bearing technology | Plain bearings | iglidur® J

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

**Chamfer in relation to d1**

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

**Dimensions according to ISO 3547-1 and special dimensions**

**Order example:** JFM-0304-03 – **no minimum order quantity.**
J iglidur® material F With flange M Metric 03 Inner Ø d1 04 Outer Ø d2 03 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 3.0 | +0.014 +0.054 | 4.5 | 7.5 | 3.0 | 0.75 | **JFM-0304-03** |
| 3.0 | | 4.5 | 7.5 | 4.5 | 0.75 | **JFM-0304-045** |
| 3.0 | | 4.5 | 7.5 | 5.0 | 0.75 | **JFM-0304-05** |
| 3.0 | +0.020 +0.080 | 6.0 | 9.0 | 10.0 | 1.50 | **JFM-0306-10** |
| 4.0 | +0.020 +0.068 | 5.5 | 9.5 | 3.0 | 0.75 | **JFM-0405-03** |
| 4.0 | | 5.5 | 9.5 | 6.0 | 0.75 | **JFM-0405-06** |
| 5.0 | | 6.0 | 10.0 | 5.0 | 0.50 | **JFM-0506-05** |
| 5.0 | | 7.0 | 11.0 | 3.0 | 1.00 | **JFM-0507-03** |
| 5.0 | | 7.0 | 11.0 | 5.0 | 1.00 | **JFM-0507-05** |
| 6.0 | | 8.0 | 12.0 | 4.0 | 1.00 | **JFM-0608-04** |
| 6.0 | | 8.0 | 12.0 | 6.0 | 1.00 | **JFM-0608-06** |
| 6.0 | | 8.0 | 12.0 | 8.0 | 1.00 | **JFM-0608-08** |
| 6.0 | | 8.0 | 12.0 | 10.0 | 1.00 | **JFM-0608-10** |
| 6.0 | +0.030 +0.105 | 10.0 | 14.0 | 10.0 | 2.00 | **JFM-0610-10** |
| 8.0 | +0.025 +0.083 | 10.0 | 15.0 | 3.8 | 1.00 | **JFM-0810-038** |
| 8.0 | | 10.0 | 15.0 | 5.0 | 1.00 | **JFM-0810-05** |
| 8.0 | | 10.0 | 15.0 | 6.0 | 1.00 | **JFM-0810-06** |
| 8.0 | | 10.0 | 15.0 | 7.0 | 1.00 | **JFM-0810-07** |
| 8.0 | | 10.0 | 15.0 | 8.0 | 1.00 | **JFM-0810-08** |
| 8.0 | | 10.0 | 15.0 | 9.5 | 1.00 | **JFM-0810-09** |
| 8.0 | | 10.0 | 15.0 | 10.0 | 1.00 | **JFM-0810-10** |
| 8.0 | | 10.0 | 12.5 | 10.0 | 1.00 | **JFM-0810125-10** |
| 8.0 | | 10.0 | 14.0 | 10.0 | 1.00 | **JFM-081014-10** |
| 8.0 | | 10.0 | 16.0 | 11.0 | 2.00 | **JFM-081016-11** |
| 8.0 | | 10.0 | 12.0 | 16.0 | 1.00 | **JFM-081012-16** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 8.0 | +0.025 +0.115 | 12.0 | 16.0 | 6.0 | 2.00 | **JFM-0812-06** |
| 8.0 | +0.025 +0.083 | 12.0 | 16.0 | 9.0 | 2.00 | **JFM-0812-09** |
| 10.0 | | 12.0 | 15.0 | 3.5 | 1.00 | **JFM-101215-035** |
| 10.0 | | 12.0 | 18.0 | 5.0 | 1.00 | **JFM-1012-05** |
| 10.0 | | 12.0 | 18.0 | 7.0 | 1.00 | **JFM-1012-07** |
| 10.0 | | 12.0 | 18.0 | 9.0 | 1.00 | **JFM-1012-09** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **JFM-1012-10** |
| 10.0 | | 12.0 | 18.0 | 12.0 | 1.00 | **JFM-1012-12** |
| 10.0 | | 12.0 | 18.0 | 15.0 | 1.00 | **JFM-1012-15** |
| 10.0 | | 12.0 | 18.0 | 17.0 | 1.00 | **JFM-1012-17** |
| 10.0 | | 12.0 | 18.0 | 18.0 | 1.00 | **JFM-1012-18** |
| 10.0 | | 14.0 | 17.5 | 14.0 | 1.00 | **JFM-1014-14** |
| 10.0 | +0.040 | 16.0 | 22.0 | 10.0 | 3.00 | **JFM-1016-10** |
| 10.0 | +0.130 | 16.0 | 22.0 | 16.0 | 3.00 | **JFM-1016-16** |
| 11.0 | +0.032 +0.102 | 13.0 | 18.0 | 5.0 | 1.00 | **JFM-1113-05** |
| 12.0 | | 14.0 | 20.0 | 4.0 | 1.00 | **JFM-1214-04** |
| 12.0 | | 14.0 | 18.0 | 4.5 | 1.00 | **JFM-121418-045** |
| 12.0 | | 14.0 | 20.0 | 5.0 | 1.00 | **JFM-1214-05** |
| 12.0 | | 14.0 | 20.0 | 7.0 | 1.00 | **JFM-1214-07** |
| 12.0 | | 14.0 | 20.0 | 9.0 | 1.00 | **JFM-1214-09** |
| 12.0 | | 14.0 | 18.0 | 10.0 | 1.00 | **JFM-121418-10** |
| 12.0 | | 14.0 | 20.0 | 12.0 | 1.00 | **JFM-1214-12** |
| 12.0 | | 14.0 | 20.0 | 15.0 | 1.00 | **JFM-1214-15** |
| 12.0 | | 14.0 | 20.0 | 17.0 | 1.00 | **JFM-1214-17** |
| 12.0 | +0.050 | 18.0 | 24.0 | 8.0 | 3.00 | **JFM-1218-08** |
| 12.0 | +0.160 | 18.0 | 24.0 | 12.0 | 3.00 | **JFM-1218-12** |

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

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# Bearing technology | Plain bearings | iglidur® J

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 12.0 | +0.050 +0.160 | 18.0 | 22.0 | 20.0 | 3.00 | **JFM-1218-20** |
| 14.0 | +0.032 +0.102 | 16.0 | 22.0 | 3.0 | 1.00 | **JFM-1416-03** |
| 14.0 | | 16.0 | 22.0 | 10.0 | 1.00 | **JFM-1416-10** |
| 14.0 | | 16.0 | 22.0 | 12.0 | 1.00 | **JFM-1416-12** |
| 14.0 | | 16.0 | 22.0 | 17.0 | 1.00 | **JFM-1416-17** |
| 14.0 | | 18.0 | 22.0 | 20.0 | 2.00 | **JFM-141822-20** |
| 14.0 | | 18.0 | 25.0 | 24.0 | 2.00 | **JFM-141825-24** |
| 15.0 | | 17.0 | 23.0 | 4.0 | 1.00 | **JFM-1517-04** |
| 15.0 | | 17.0 | 23.0 | 5.5 | 1.00 | **JFM-1517-055** |
| 15.0 | | 17.0 | 23.0 | 9.0 | 1.00 | **JFM-1517-09** |
| 15.0 | | 17.0 | 23.0 | 12.0 | 1.00 | **JFM-1517-12** |
| 15.0 | | 17.0 | 23.0 | 17.0 | 1.00 | **JFM-1517-17** |
| 15.0 | +0.050 +0.160 | 21.0 | 27.0 | 20.0 | 3.00 | **JFM-1521-20** |
| 16.0 | +0.032 +0.102 | 18.0 | 24.0 | 6.0 | 1.00 | **JFM-1618-06** |
| 16.0 | | 18.0 | 24.0 | 12.0 | 1.00 | **JFM-1618-12** |
| 16.0 | | 18.0 | 24.0 | 16.0 | 1.00 | **JFM-1618-16** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **JFM-1618-17** |
| 16.0 | +0.050 +0.160 | 22.0 | 28.0 | 12.0 | 3.00 | **JFM-1622-12** |
| 16.0 | | 22.0 | 28.0 | 15.0 | 3.00 | **JFM-1622-15** |
| 17.0 | +0.032 +0.102 | 19.0 | 25.0 | 9.0 | 1.00 | **JFM-1719-09** |
| 17.0 | | 19.0 | 25.0 | 21.0 | 1.00 | **JFM-1719-21** |
| 18.0 | | 20.0 | 26.0 | 4.0 | 1.00 | **JFM-1820-04** |
| 18.0 | | 20.0 | 26.0 | 12.0 | 1.00 | **JFM-1820-12** |
| 18.0 | | 20.0 | 26.0 | 17.0 | 1.00 | **JFM-1820-17** |
| 18.0 | | 20.0 | 26.0 | 22.0 | 1.00 | **JFM-1820-22** |
| 18.0 | | 21.0 | 25.0 | 12.0 | 1.00 | **JFM-1821-12** |
| 19.0 | | 22.0 | 26.0 | 23.0 | 1.00 | **JFM-1922-23** |
| 19.0 | | 22.0 | 26.0 | 36.0 | 1.00 | **JFM-1922-36** |
| 20.0 | +0.040 +0.124 | 23.0 | 30.0 | 11.5 | 1.50 | **JFM-2023-11** |
| 20.0 | | 23.0 | 30.0 | 15.5 | 1.50 | **JFM-2023-15.5** |
| 20.0 | | 23.0 | 30.0 | 16.5 | 1.50 | **JFM-2023-16** |
| 20.0 | | 23.0 | 30.0 | 21.5 | 1.50 | **JFM-2023-21** |
| 20.0 | +0.065 +0.195 | 26.0 | 32.0 | 15.0 | 3.00 | **JFM-2026-15** |
| 20.0 | | 26.0 | 32.0 | 20.0 | 3.00 | **JFM-2026-20** |
| 20.0 | | 26.0 | 32.0 | 25.0 | 3.00 | **JFM-2026-25** |
| 22.0 | +0.040 | 25.0 | 32.0 | 8.0 | 1.50 | **JFM-222532-08** |
| 24.0 | +0.124 | 30.0 | 36.0 | 30.0 | 3.00 | **JFM-2430-30** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 25.0 | +0.040 +0.124 | 28.0 | 39.0 | 5.0 | 1.50 | **JFM-252839-05** |
| 25.0 | | 28.0 | 35.0 | 6.0 | 1.50 | **JFM-2528-06** |
| 25.0 | | 28.0 | 39.0 | 7.5 | 1.50 | **JFM-252839-075** |
| 25.0 | | 28.0 | 35.0 | 11.5 | 1.50 | **JFM-2528-11** |
| 25.0 | | 28.0 | 35.0 | 12.0 | 1.50 | **JFM-2528-12** |
| 25.0 | | 28.0 | 35.0 | 14.5 | 1.50 | **JFM-2528-14.5** |
| 25.0 | | 28.0 | 35.0 | 21.5 | 1.50 | **JFM-2528-21** |
| 25.0 | +0.065 +0.195 | 32.0 | 38.0 | 20.0 | 4.00 | **JFM-2532-20** |
| 25.0 | | 32.0 | 38.0 | 25.0 | 4.00 | **JFM-2532-25** |
| 28.0 | | 32.0 | 35.0 | 7.0 | 2.00 | **JFM-283235-07** |
| 28.0 | +0.040 +0.124 | 32.0 | 39.0 | 20.0 | 2.00 | **JFM-283239-20** |
| 30.0 | | 32.0 | 40.0 | 12.0 | 1.00 | **JFM-303240-12** |
| 30.0 | | 34.0 | 42.0 | 16.0 | 2.00 | **JFM-3034-16** |
| 30.0 | | 34.0 | 42.0 | 20.0 | 2.00 | **JFM-3034-20** |
| 30.0 | | 34.0 | 42.0 | 26.0 | 2.00 | **JFM-3034-26** |
| 30.0 | +0.080 +0.240 | 38.0 | 44.0 | 20.0 | 4.00 | **JFM-3038-20** |
| 30.0 | +0.065 +0.195 | 38.0 | 44.0 | 30.0 | 4.00 | **JFM-3038-30** |
| 30.0 | | 38.0 | 44.0 | 36.0 | 4.00 | **JFM-3038-36** |
| 35.0 | +0.050 +0.150 | 39.0 | 47.0 | 12.0 | 2.00 | **JFM-3539-12** |
| 35.0 | | 39.0 | 47.0 | 16.0 | 2.00 | **JFM-3539-16** |
| 35.0 | | 39.0 | 47.0 | 26.0 | 2.00 | **JFM-3539-26** |
| 40.0 | | 44.0 | 52.0 | 20.0 | 2.00 | **JFM-4044-20** |
| 40.0 | | 44.0 | 52.0 | 30.0 | 2.00 | **JFM-4044-30** |
| 40.0 | | 44.0 | 52.0 | 40.0 | 2.00 | **JFM-4044-40** |
| 45.0 | | 50.0 | 58.0 | 12.0 | 2.00 | **JFM-4550-12** |
| 45.0 | | 50.0 | 58.0 | 20.0 | 2.00 | **JFM-4550-20** |
| 45.0 | | 50.0 | 58.0 | 50.0 | 2.00 | **JFM-4550-50** |
| 50.0 | | 55.0 | 63.0 | 11.5 | 2.00 | **JFM-5055-115** |
| 50.0 | | 55.0 | 63.0 | 50.0 | 2.00 | **JFM-5055-50** |
| 55.0 | +0.060 +0.180 | 60.0 | 68.0 | 50.0 | 2.00 | **JFM-5560-50** |
| 60.0 | | 65.0 | 73.0 | 37.0 | 2.00 | **JFM-6065-37** |
| 60.0 | | 65.0 | 73.0 | 50.0 | 2.00 | **JFM-6065-50** |
| 60.0 | | 70.0 | 78.0 | 60.0 | 2.00 | **JFM-6570-60** |
| 70.0 | | 75.0 | 83.0 | 50.0 | 2.00 | **JFM-7075-50** |
| 90.0 | +0.072 +0.212 | 95.0 | 103.0 | 100.0 | 2.50 | **JFM-9095-100** |
| 100.0 | | 105.0 | 113.0 | 100.0 | 2.50 | **JFM-100105-100** |
| 110.0 | | 115.0 | 123.0 | 100.0 | 2.50 | **JFM-110115-100** |
| 120.0 | | 125.0 | 133.0 | 100.0 | 2.50 | **JFM-120125-100** |

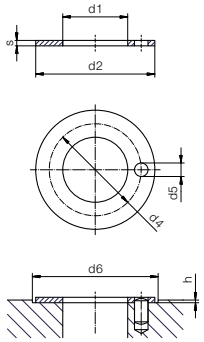
[3] After press-fit. *Testing methods, page 61*





# Bearing technology | Plain bearings | iglidur® J

## Thrust washer (form T)




Dimensions according to ISO 3547-1 and special dimensions

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

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

[4] Design without fixing hole

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

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

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

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

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

# The classic endurance runner up to 30MPa

## Excellent wear resistance on (virtually) all shafts

# iglidur® W300

**When to use it?**

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

**When not to use it?**

- For high loads starting at 50MPa
  ***iglidur® Q***
- When temperatures are constantly higher than +90 °C
  ***iglidur® H, iglidur® X***
- For very wet environments
  ***iglidur® P***
- When a cost-effective plain bearing is required
  ***iglidur® G***



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# Bearing technology | Plain bearings | iglidur® W300

Ø
2.0-120.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 845

## The classic endurance runner up to 30MPa
## Excellent wear resistance on (virtually) all shafts

iglidur® W300 gives excellent wear resistance, even in harsh environments or when used with rough shafts. Of all iglidur® materials, iglidur® W300 is the most resistant to these conditions.

- Over 400 sizes available from stock
- Very long service life
- Low coefficient of friction
- Low coefficient of friction
- Very wear-resistant
- Suitable for applications with soft shafts
- Lubrication-free
- Maintenance-free

### Typical application areas

- Automation
- Printing industry
- Woodworking
- Mechatronics
- Test engineering and quality assurance

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

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

-40°C up to +90°C

60MPa

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.24 | |
| Colour | | yellow | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 1.3 | DIN 53495 |
| Max. moisture absorption | % weight | 6.5 | |
| Coefficient of friction, dynamic, against steel | μ | 0.08-0.23 | |
| pv value, max. (dry) | MPa · m/s | 0.23 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 3,500 | DIN 53457 |
| Flexural strength at +20°C | MPa | 125 | DIN 53452 |
| Compressive strength | MPa | 61 | |
| Max. permissible surface pressure (+20°C) | MPa | 60 | |
| Shore D hardness | | 77 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +90 | |
| Max. application temperature short-term | °C | +180 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 9 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{13}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{12}$ | DIN 53482 |

Table 01: Material properties

iglidur® W300 gives excellent wear resistance, even in harsh environments or when used with rough shafts. This material is the most tolerant of these external effects out of all the iglidur® range.

### Moisture absorption

The moisture absorption of iglidur® W300 plain bearings in ambient conditions is approximately 1.3% weight. The saturation limit submerged in water is 6.5% weight. This must be taken into account for these types of applications.

### Vacuum

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

### Radiation resistance

Plain bearings made from iglidur® W300 are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® W300 plain bearings have limited resistance to weathering. The material properties are affected. Discolouration occurs. Practical tests under real application conditions are recommended.

### Mechanical properties

When temperatures increase, the compressive strength of iglidur® W300 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
iglidur® W300 shows a very high compressive strength despite high elasticity. Diagram 03 shows the elastic deformation of iglidur® W300 at radial loads. At the maximum recommended surface pressure of 60MPa, the deformation is less than 3%.
*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® W300

### Permissible surface speeds

Even at higher surface speeds, the coefficient of friction of iglidur® W300 plain bearings do not increase. In relation to other materials, therefore, somewhat higher surface speeds can be attained, for example, up to 1.5m/s rotating and up to 6m/s linear. The wear remains low when used for long periods at high speeds, due to exceptional wear resistance. Very high speeds can be attained with iglidur® W300 bearings on hardened shafts that are not too smooth.

***Surface speed, page 48***

### Temperature

iglidur® W300 bearings retain their exceptional wear resistance even up to the highest permissible application temperatures and at the same time resist becoming brittle at low temperatures. For temperatures over +60°C an additional securing is required.

***Application temperatures, page 53***
***Additional securing, page 53***

### Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the load. In contrast to other iglidur® materials, the coefficient of friction of iglidur® W300 remains consistently low at higher rotational speeds.

***Coefficient of friction and surfaces, page 51***
***Wear resistance, page 54***

### Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. Smooth shafts have the danger of stick slip. Squeaking as an effect of stick-slip is usually the result of shafts that are too smooth. Shaft finishes of Ra = 0.4-0.5μm have proven best. For iglidur® W300, the wear resistance is still excellent with this surface finish as the friction adopts the minimum value. Diagram 06 shows results of testing different shafts. Hardened shafts are preferred for applications for higher loads. If the shaft material you plan on using is not shown in these test results, please contact us.

***Shaft materials, page 56***

### Installation tolerances

iglidur® W300 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

***Testing methods, page 61***

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

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

Table 02: Chemical resistance

***Chemical table, page 1170***

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 1.0 | 0.7 | 4.0 |
| Short-term | **m/s** | 1.5 | 1.8 | 6.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.08-0.23 | 0.09 | 0.04 | 0.04 |

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

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

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





# Technical data

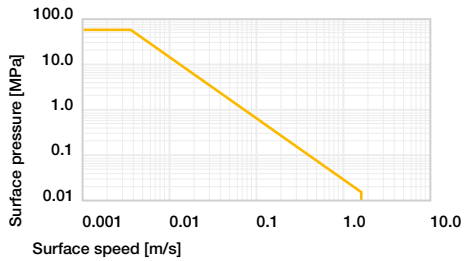



Diagram 01: Permissible pv values for iglidur® W300 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

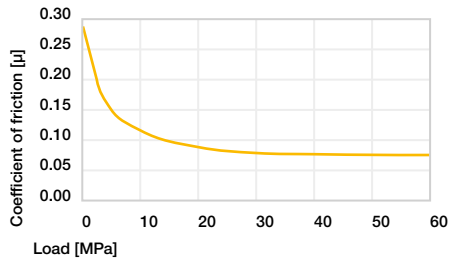



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

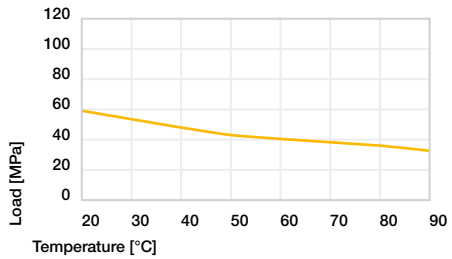



Diagram 02: Maximum recommended surface pressure as a function of temperature (60MPa at +20°C)

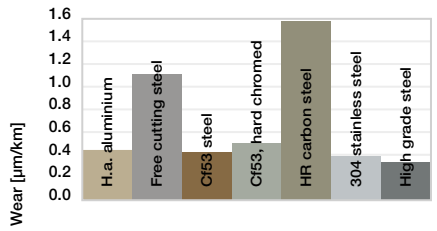



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

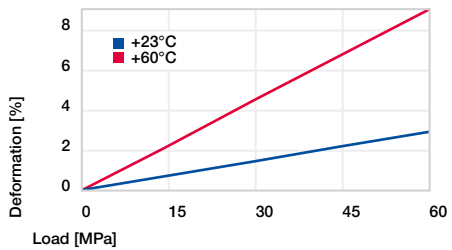



Diagram 03: Deformation under pressure and temperature

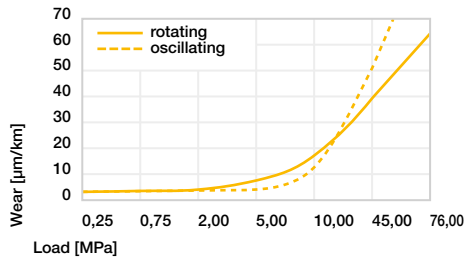



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

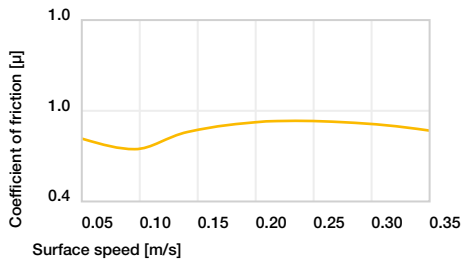
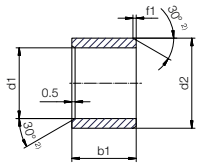



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

# Bearing technology | Plain bearings | iglidur® W300

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

Order example: WSM-0203-03 – no minimum order quantity.
W300 iglidur® material S Cylindrical M Metric 02 Inner Ø d1 03 Outer Ø d2 03 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 2.0 | +0.014 +0.054 | 3.5 | 3.0 | WSM-0203-03 |
| 2.5 | | 4.0 | 1.8 | WSM-0204-018 |
| 2.5 | | 4.0 | 3.0 | WSM-0204-03 |
| 3.0 | | 4.5 | 3.0 | WSM-0304-03 |
| 3.0 | | 4.5 | 5.0 | WSM-0304-05 |
| 3.0 | | 4.5 | 6.0 | WSM-0304-06 |
| 4.0 | +0.020 +0.068 | 5.5 | 4.0 | WSM-0405-04 |
| 4.0 | | 5.5 | 6.0 | WSM-0405-06 |
| 4.0 | | 5.5 | 8.0 | WSM-0405-08 |
| 4.0 | | 5.5 | 10.0 | WSM-0405-10 |
| 5.0 | | 7.0 | 5.0 | WSM-0507-05 |
| 5.0 | | 7.0 | 8.0 | WSM-0507-08 |
| 5.0 | | 7.0 | 10.0 | WSM-0507-10 |
| 6.0 | +0.010 +0.058 | 7.0 | 14.0 | WSM-0607-14 |
| 6.0 | +0.020 +0.068 | 8.0 | 6.0 | WSM-0608-06 |
| 6.0 | | 8.0 | 8.0 | WSM-0608-08 |
| 6.0 | | 8.0 | 9.5 | WSM-0608-09 |
| 6.0 | | 8.0 | 10.0 | WSM-0608-10 |
| 6.0 | | 8.0 | 11.8 | WSM-0608-11 |
| 6.0 | | 8.0 | 13.8 | WSM-0608-13 |
| 7.0 | +0.025 +0.083 | 9.0 | 9.0 | WSM-0709-09 |
| 7.0 | | 9.0 | 12.0 | WSM-0709-12 |
| 7.0 | | 9.0 | 12.5 | WSM-0709-125 |
| 8.0 | | 10.0 | 6.0 | WSM-0810-06 |
| 8.0 | | 10.0 | 8.0 | WSM-0810-08 |
| 8.0 | | 10.0 | 10.0 | WSM-0810-10 |
| 8.0 | | 10.0 | 12.0 | WSM-0810-12 |
| 8.0 | | 10.0 | 13.8 | WSM-0810-13 |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 8.0 | +0.025 +0.083 | 10.0 | 15.0 | WSM-0810-15 |
| 8.0 | | 10.0 | 16.0 | WSM-0810-16 |
| 8.0 | | 10.0 | 20.0 | WSM-0810-20 |
| 8.0 | | 10.0 | 21.0 | WSM-0810-21 |
| 9.0 | | 11.0 | 6.0 | WSM-0911-06 |
| 10.0 | | 12.0 | 4.0 | WSM-1012-04 |
| 10.0 | | 12.0 | 6.0 | WSM-1012-06 |
| 10.0 | | 12.0 | 8.0 | WSM-1012-08 |
| 10.0 | | 12.0 | 9.0 | WSM-1012-09 |
| 10.0 | | 12.0 | 10.0 | WSM-1012-10 |
| 10.0 | | 12.0 | 12.0 | WSM-1012-12 |
| 10.0 | | 12.0 | 15.0 | WSM-1012-15 |
| 10.0 | | 12.0 | 17.0 | WSM-1012-17 |
| 10.0 | | 12.0 | 20.0 | WSM-1012-20 |
| 10.0 | | 12.0 | 25.5 | WSM-1012-25.5 |
| 11.0 | +0.032 +0.102 | 13.0 | 8.0 | WSM-1113-08 |
| 12.0 | | 14.0 | 4.0 | WSM-1214-04 |
| 12.0 | | 14.0 | 5.0 | WSM-1214-05 |
| 12.0 | | 14.0 | 6.0 | WSM-1214-06 |
| 12.0 | | 14.0 | 8.0 | WSM-1214-08 |
| 12.0 | | 14.0 | 10.0 | WSM-1214-10 |
| 12.0 | | 14.0 | 12.0 | WSM-1214-12 |
| 12.0 | | 14.0 | 15.0 | WSM-1214-15 |
| 12.0 | | 14.0 | 20.0 | WSM-1214-20 |
| 12.0 | | 14.0 | 25.0 | WSM-1214-25 |
| 13.0 | | 15.0 | 7.0 | WSM-1315-07 |
| 13.0 | | 15.0 | 10.0 | WSM-1315-10 |
| 13.0 | | 15.0 | 15.0 | WSM-1315-15 |
| 13.0 | | 15.0 | 20.0 | WSM-1315-20 |

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



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# Product range

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 14.0 | +0.032 +0.102 | 16.0 | 7.2 | WSM-1416-07 |
| 14.0 | | 16.0 | 10.0 | WSM-1416-10 |
| 14.0 | | 16.0 | 15.0 | WSM-1416-15 |
| 14.0 | | 16.0 | 20.0 | WSM-1416-20 |
| 14.0 | | 16.0 | 25.0 | WSM-1416-25 |
| 14.0 | | 16.0 | 33.0 | WSM-1416-33 |
| 15.0 | | 17.0 | 10.0 | WSM-1517-10 |
| 15.0 | | 17.0 | 15.0 | WSM-1517-15 |
| 15.0 | | 17.0 | 20.0 | WSM-1517-20 |
| 15.0 | | 17.0 | 25.0 | WSM-1517-25 |
| 16.0 | | 18.0 | 7.0 | WSM-1618-07 |
| 16.0 | | 18.0 | 8.0 | WSM-1618-08 |
| 16.0 | | 18.0 | 11.5 | WSM-1618-11 |
| 16.0 | | 18.0 | 12.0 | WSM-1618-12 |
| 16.0 | | 18.0 | 15.0 | WSM-1618-15 |
| 16.0 | | 18.0 | 20.0 | WSM-1618-20 |
| 16.0 | | 18.0 | 25.0 | WSM-1618-25 |
| 16.0 | | 18.0 | 30.0 | WSM-1618-30 |
| 16.0 | | 18.0 | 35.0 | WSM-1618-35 |
| 16.0 | | 18.0 | 45.0 | WSM-1618-45 |
| 18.0 | | 20.0 | 12.0 | WSM-1820-12 |
| 18.0 | | 20.0 | 15.0 | WSM-1820-15 |
| 18.0 | | 20.0 | 20.0 | WSM-1820-20 |
| 18.0 | | 20.0 | 25.0 | WSM-1820-25 |
| 18.0 | | 20.0 | 33.0 | WSM-1820-33 |
| 18.0 | | 20.0 | 35.0 | WSM-1820-35 |
| 19.0 | +0.040 +0.124 | 22.0 | 28.0 | WSM-1922-28 |
| 20.0 | | 22.0 | 11.5 | WSM-2022-11 |
| 20.0 | | 22.0 | 12.0 | WSM-2022-12 |
| 20.0 | | 22.0 | 15.0 | WSM-2022-15 |
| 20.0 | | 22.0 | 20.0 | WSM-2022-20 |
| 20.0 | | 22.0 | 30.0 | WSM-2022-30 |
| 20.0 | | 23.0 | 8.0 | WSM-2023-08 |
| 20.0 | | 23.0 | 10.0 | WSM-2023-10 |
| 20.0 | | 23.0 | 12.0 | WSM-2023-12 |
| 20.0 | | 23.0 | 15.0 | WSM-2023-15 |
| 20.0 | | 23.0 | 20.0 | WSM-2023-20 |
| 20.0 | | 23.0 | 23.0 | WSM-2023-23 |
| 20.0 | | 23.0 | 25.0 | WSM-2023-25 |
| 20.0 | | 23.0 | 30.0 | WSM-2023-30 |
| 22.0 | | 24.0 | 15.0 | WSM-2224-15 |
| 22.0 | | 24.0 | 20.0 | WSM-2224-20 |
| 22.0 | | 24.0 | 30.0 | WSM-2224-30 |
| 22.0 | | 24.0 | 35.0 | WSM-2224-35 |
| 22.0 | | 24.0 | 45.0 | WSM-2224-45 |
| 22.0 | | 25.0 | 15.0 | WSM-2225-15 |
| 22.0 | | 25.0 | 20.0 | WSM-2225-20 |
| 22.0 | | 25.0 | 25.0 | WSM-2225-25 |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 22.0 | +0.040 +0.124 | 25.0 | 30.0 | WSM-2225-30 |
| 24.0 | | 27.0 | 15.0 | WSM-2427-15 |
| 24.0 | | 27.0 | 20.0 | WSM-2427-20 |
| 24.0 | | 27.0 | 25.0 | WSM-2427-25 |
| 24.0 | | 27.0 | 30.0 | WSM-2427-30 |
| 25.0 | | 28.0 | 12.0 | WSM-2528-12 |
| 25.0 | | 28.0 | 14.0 | WSM-2528-14 |
| 25.0 | | 28.0 | 15.0 | WSM-2528-15 |
| 25.0 | | 28.0 | 20.0 | WSM-2528-20 |
| 25.0 | | 28.0 | 25.0 | WSM-2528-25 |
| 25.0 | | 28.0 | 30.0 | WSM-2528-30 |
| 25.0 | | 28.0 | 50.0 | WSM-2528-50 |
| 26.0 | | 30.0 | 16.0 | WSM-2630-16 |
| 26.0 | | 30.0 | 25.0 | WSM-2630-25 |
| 28.0 | | 30.0 | 10.0 | WSM-2830-10 |
| 28.0 | | 31.0 | 10.0 | WSM-2831-10 |
| 28.0 | | 32.0 | 20.0 | WSM-2832-20 |
| 28.0 | | 32.0 | 25.0 | WSM-2832-25 |
| 28.0 | | 32.0 | 30.0 | WSM-2832-30 |
| 30.0 | | 34.0 | 16.0 | WSM-3034-16 |
| 30.0 | | 34.0 | 20.0 | WSM-3034-20 |
| 30.0 | | 34.0 | 24.0 | WSM-3034-24 |
| 30.0 | | 34.0 | 25.0 | WSM-3034-25 |
| 30.0 | | 34.0 | 30.0 | WSM-3034-30 |
| 30.0 | | 34.0 | 36.0 | WSM-3034-36 |
| 30.0 | | 34.0 | 38.0 | WSM-3034-38 |
| 30.0 | | 34.0 | 40.0 | WSM-3034-40 |
| 30.0 | | 34.0 | 45.0 | WSM-3034-45 |
| 30.0 | | 34.0 | 47.0 | WSM-3034-47 |
| 32.0 | +0.050 +0.150 | 36.0 | 20.0 | WSM-3236-20 |
| 32.0 | | 36.0 | 25.0 | WSM-3236-25 |
| 32.0 | | 36.0 | 30.0 | WSM-3236-30 |
| 32.0 | | 36.0 | 40.0 | WSM-3236-40 |
| 35.0 | | 39.0 | 20.0 | WSM-3539-20 |
| 35.0 | | 39.0 | 30.0 | WSM-3539-30 |
| 35.0 | | 39.0 | 40.0 | WSM-3539-40 |
| 35.0 | | 39.0 | 50.0 | WSM-3539-50 |
| 35.0 | | 40.0 | 7.0 | WSM-3540-07 |
| 40.0 | | 44.0 | 20.0 | WSM-4044-20 |
| 40.0 | | 44.0 | 30.0 | WSM-4044-30 |
| 40.0 | | 44.0 | 40.0 | WSM-4044-40 |
| 40.0 | | 44.0 | 50.0 | WSM-4044-50 |
| 45.0 | | 50.0 | 20.0 | WSM-4550-20 |
| 45.0 | | 50.0 | 30.0 | WSM-4550-30 |
| 45.0 | | 50.0 | 40.0 | WSM-4550-40 |
| 45.0 | | 50.0 | 50.0 | WSM-4550-50 |
| 50.0 | | 55.0 | 20.0 | WSM-5055-20 |
| 50.0 | | 55.0 | 30.0 | WSM-5055-30 |

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

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# Bearing technology | Plain bearings | iglidur® W300

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 50.0 | +0.050 +0.150 | 55.0 | 40.0 | **WSM-5055-40** |
| 50.0 | | 55.0 | 50.0 | **WSM-5055-50** |
| 50.0 | | 55.0 | 55.0 | **WSM-5055-55** |
| 50.0 | | 55.0 | 60.0 | **WSM-5055-60** |
| 55.0 | +0.060 +0.180 | 60.0 | 40.0 | **WSM-5560-40** |
| 55.0 | | 60.0 | 60.0 | **WSM-5560-60** |
| 60.0 | | 65.0 | 30.0 | **WSM-6065-30** |
| 60.0 | | 65.0 | 60.0 | **WSM-6065-60** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 65.0 | +0.060 +0.180 | 70.0 | 60.0 | **WSM-6570-60** |
| 70.0 | | 75.0 | 60.0 | **WSM-7075-60** |
| 75.0 | | 80.0 | 100.0 | **WSM-7580-100** |
| 80.0 | | 85.0 | 20.0 | **WSM-8085-20** |
| 80.0 | | 85.0 | 100.0 | **WSM-8085-100** |
| 90.0 | +0.072 +0.212 | 95.0 | 100.0 | **WSM-9095-100** |
| 100.0 | | 105.0 | 100.0 | **WSM-100105-100** |

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

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

**Order online**
including delivery times, prices, online tools
www.igus.eu/W300

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

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

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



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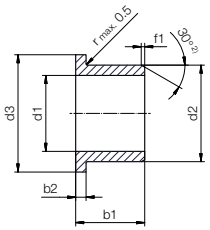
iglidur® W300
+90°C
60MPa

# Bearing technology | Plain bearings | iglidur® W300

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

**Chamfer in relation to d1**

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

**Dimensions according to ISO 3547-1 and special dimensions**

**Order example: WFM-0204-03 – no minimum order quantity.**
W300 iglidur® material F With flange M Metric 02 Inner Ø d1 04 Outer Ø d2 03 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 2.5 | +0.014 +0.054 | 4.0 | 6.5 | 3.0 | 0.75 | **WFM-0204-03** |
| 3.0 | | 4.5 | 7.5 | 3.0 | 0.75 | **WFM-0304-03** |
| 3.0 | | 4.5 | 7.5 | 5.0 | 0.75 | **WFM-0304-05** |
| 4.0 | +0.020 +0.068 | 5.5 | 9.5 | 3.0 | 0.75 | **WFM-0405-03** |
| 4.0 | | 5.5 | 9.5 | 4.0 | 0.75 | **WFM-0405-04** |
| 4.0 | | 5.5 | 9.5 | 6.0 | 0.75 | **WFM-0405-06** |
| 5.0 | +0.010 +0.040 | 6.0 | 10.0 | 8.0 | 0.50 | **WFM-0506-08** |
| 5.0 | +0.020 +0.068 | 7.0 | 11.0 | 4.0 | 1.00 | **WFM-0507-04** |
| 5.0 | | 7.0 | 11.0 | 5.0 | 1.00 | **WFM-0507-05** |
| 6.0 | | 8.0 | 12.0 | 4.0 | 1.00 | **WFM-0608-04** |
| 6.0 | | 8.0 | 12.0 | 6.0 | 1.00 | **WFM-0608-06** |
| 6.0 | | 8.0 | 12.0 | 8.0 | 1.00 | **WFM-0608-08** |
| 6.0 | | 8.0 | 12.0 | 10.0 | 1.00 | **WFM-0608-10** |
| 6.0 | | 8.0 | 12.0 | 15.0 | 1.00 | **WFM-0608-15** |
| 7.0 | +0.025 +0.083 | 9.0 | 15.0 | 10.0 | 1.00 | **WFM-0709-10** |
| 7.0 | | 9.0 | 15.0 | 12.0 | 1.00 | **WFM-0709-12** |
| 8.0 | | 10.0 | 15.0 | 2.7 | 1.00 | **WFM-0810-02** |
| 8.0 | | 10.0 | 15.0 | 4.0 | 1.00 | **WFM-0810-04** |
| 8.0 | | 10.0 | 15.0 | 5.0 | 1.00 | **WFM-081015-05** |
| 8.0 | | 10.0 | 15.0 | 5.5 | 1.00 | **WFM-0810-05** |
| 8.0 | | 10.0 | 15.0 | 7.5 | 1.00 | **WFM-0810-07** |
| 8.0 | | 10.0 | 15.0 | 9.5 | 1.00 | **WFM-0810-09** |
| 8.0 | | 10.0 | 15.0 | 10.0 | 1.00 | **WFM-0810-10** |
| 8.0 | | 10.0 | 15.0 | 23.0 | 1.00 | **WFM-0810-23** |
| 8.0 | | 10.0 | 15.0 | 30.0 | 1.00 | **WFM-0810-30** |
| 10.0 | | 12.0 | 18.0 | 4.0 | 1.00 | **WFM-1012-04** |
| 10.0 | | 12.0 | 18.0 | 5.0 | 1.00 | **WFM-1012-05** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 10.0 | +0.025 +0.083 | 12.0 | 18.0 | 6.0 | 1.00 | **WFM-1012-06** |
| 10.0 | | 12.0 | 18.0 | 7.0 | 1.00 | **WFM-1012-07** |
| 10.0 | | 12.0 | 18.0 | 9.0 | 1.00 | **WFM-1012-09** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **WFM-1012-10** |
| 10.0 | | 12.0 | 18.0 | 12.0 | 1.00 | **WFM-1012-12** |
| 10.0 | | 12.0 | 18.0 | 15.0 | 1.00 | **WFM-1012-15** |
| 10.0 | | 12.0 | 18.0 | 17.0 | 1.00 | **WFM-1012-17** |
| 12.0 | +0.032 +0.102 | 14.0 | 20.0 | 4.0 | 1.00 | **WFM-1214-04** |
| 12.0 | | 14.0 | 20.0 | 4.4 | 1.00 | **WFM-1214-044** |
| 12.0 | | 14.0 | 20.0 | 6.0 | 1.00 | **WFM-1214-06** |
| 12.0 | | 14.0 | 20.0 | 7.0 | 1.00 | **WFM-1214-07** |
| 12.0 | | 14.0 | 20.0 | 9.0 | 1.00 | **WFM-1214-09** |
| 12.0 | | 14.0 | 20.0 | 10.0 | 1.00 | **WFM-1214-10** |
| 12.0 | | 14.0 | 20.0 | 11.0 | 1.00 | **WFM-1214-11** |
| 12.0 | | 14.0 | 20.0 | 12.0 | 1.00 | **WFM-1214-12** |
| 12.0 | | 14.0 | 20.0 | 15.0 | 1.00 | **WFM-1214-15** |
| 12.0 | | 14.0 | 20.0 | 17.0 | 1.00 | **WFM-1214-17** |
| 12.0 | | 14.0 | 20.0 | 20.0 | 1.00 | **WFM-1214-20** |
| 13.0 | | 15.0 | 22.0 | 6.0 | 1.00 | **WFM-1315-06** |
| 14.0 | | 16.0 | 22.0 | 4.0 | 1.00 | **WFM-1416-04** |
| 14.0 | | 16.0 | 22.0 | 5.0 | 1.00 | **WFM-1416-05** |
| 14.0 | | 16.0 | 22.0 | 8.0 | 1.00 | **WFM-1416-08** |
| 14.0 | | 16.0 | 22.0 | 12.0 | 1.00 | **WFM-1416-12** |
| 14.0 | | 16.0 | 22.0 | 17.0 | 1.00 | **WFM-1416-17** |
| 14.0 | | 16.0 | 22.0 | 29.0 | 1.00 | **WFM-1416-29** |
| 15.0 | | 17.0 | 23.0 | 9.0 | 1.00 | **WFM-1517-09** |
| 15.0 | | 17.0 | 23.0 | 12.0 | 1.00 | **WFM-1517-12** |
| 15.0 | | 17.0 | 23.0 | 17.0 | 1.00 | **WFM-1517-17** |

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

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# Bearing technology | Plain bearings | iglidur® W300

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 15.0 | +0.032 +0.102 | 17.0 | 23.0 | 20.0 | 1.00 | **WFM-1517-20** |
| 16.0 | | 18.0 | 24.0 | 9.0 | 1.00 | **WFM-1618-09** |
| 16.0 | | 18.0 | 24.0 | 12.0 | 1.00 | **WFM-1618-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **WFM-1618-17** |
| 17.0 | | 19.0 | 25.0 | 12.0 | 1.00 | **WFM-1719-12** |
| 17.0 | | 19.0 | 25.0 | 18.0 | 1.00 | **WFM-1719-18** |
| 17.0 | | 19.0 | 25.0 | 25.0 | 1.00 | **WFM-1719-25** |
| 18.0 | | 20.0 | 26.0 | 6.0 | 1.00 | **WFM-1820-06** |
| 18.0 | | 20.0 | 26.0 | 12.0 | 1.00 | **WFM-1820-12** |
| 18.0 | | 20.0 | 26.0 | 17.0 | 1.00 | **WFM-1820-17** |
| 18.0 | | 20.0 | 26.0 | 22.0 | 1.00 | **WFM-1820-22** |
| 20.0 | +0.040 +0.124 | 23.0 | 30.0 | 8.0 | 1.50 | **WFM-2023-08** |
| 20.0 | | 23.0 | 30.0 | 8.5 | 1.50 | **WFM-2023-085** |
| 20.0 | | 23.0 | 30.0 | 11.5 | 1.50 | **WFM-2023-11** |
| 20.0 | | 23.0 | 30.0 | 14.5 | 1.50 | **WFM-2023-14** |
| 20.0 | | 23.0 | 30.0 | 16.5 | 1.50 | **WFM-2023-16** |
| 20.0 | | 23.0 | 30.0 | 21.5 | 1.50 | **WFM-2023-21** |
| 24.0 | | 27.0 | 32.0 | 10.5 | 1.50 | **WFM-2427-10** |
| 25.0 | | 28.0 | 35.0 | 11.5 | 1.50 | **WFM-2528-11** |
| 25.0 | | 28.0 | 31.0 | 13.5 | 1.50 | **WFM-252831-13** |
| 25.0 | | 28.0 | 35.0 | 16.5 | 1.50 | **WFM-2528-16** |
| 25.0 | | 28.0 | 35.0 | 21.5 | 1.50 | **WFM-2528-21** |
| 25.0 | | 28.0 | 32.0 | 30.0 | 1.50 | **WFM-2528-30** |
| 28.0 | | 30.0 | 35.0 | 36.0 | 1.00 | **WFM-2830-36** |
| 30.0 | | 34.0 | 42.0 | 10.0 | 2.00 | **WFM-3034-10** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 30.0 | +0.040 +0.124 | 34.0 | 42.0 | 16.0 | 2.00 | **WFM-3034-16** |
| 30.0 | | 34.0 | 42.0 | 26.0 | 2.00 | **WFM-3034-26** |
| 30.0 | | 34.0 | 42.0 | 37.0 | 2.00 | **WFM-3034-37** |
| 32.0 | +0.050 +0.150 | 36.0 | 40.0 | 16.0 | 2.00 | **WFM-3236-16** |
| 32.0 | | 36.0 | 40.0 | 26.0 | 2.00 | **WFM-3236-26** |
| 35.0 | | 39.0 | 47.0 | 9.0 | 2.00 | **WFM-3539-09** |
| 35.0 | | 39.0 | 47.0 | 16.0 | 2.00 | **WFM-3539-16** |
| 35.0 | | 39.0 | 47.0 | 26.0 | 2.00 | **WFM-3539-26** |
| 35.0 | | 39.0 | 50.0 | 35.0 | 2.00 | **WFM-353950-35** |
| 38.0 | | 42.0 | 50.0 | 22.0 | 2.00 | **WFM-3842-22** |
| 40.0 | | 44.0 | 52.0 | 30.0 | 2.00 | **WFM-4044-30** |
| 40.0 | | 44.0 | 52.0 | 40.0 | 2.00 | **WFM-4044-40** |
| 45.0 | | 50.0 | 58.0 | 50.0 | 2.00 | **WFM-4550-50** |
| 50.0 | | 55.0 | 63.0 | 40.0 | 2.00 | **WFM-5055-40** |
| 50.0 | | 55.0 | 63.0 | 50.0 | 2.00 | **WFM-5055-50** |
| 55.0 | +0.060 +0.180 | 60.0 | 68.0 | 60.0 | 2.00 | **WFM-5560-60** |
| 57.0 | | 62.0 | 67.0 | 40.0 | 2.00 | **WFM-5762-40** |
| 60.0 | | 65.0 | 73.0 | 60.0 | 2.00 | **WFM-6065-60** |
| 65.0 | | 70.0 | 78.0 | 60.0 | 2.00 | **WFM-6570-60** |
| 70.0 | | 75.0 | 83.0 | 100.0 | 2.50 | **WFM-7075-100** |
| 75.0 | | 80.0 | 88.0 | 100.0 | 2.50 | **WFM-7580-100** |
| 80.0 | | 85.0 | 93.0 | 100.0 | 2.50 | **WFM-8085-100** |
| 90.0 | +0.072 +0.212 | 95.0 | 103.0 | 100.0 | 2.50 | **WFM-9095-100** |
| 100.0 | | 105.0 | 113.0 | 100.0 | 2.50 | **WFM-100105-100** |
| 120.0 | | 125.0 | 133.0 | 100.0 | 2.50 | **WFM-120125-100** |

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

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

**Order online**
including delivery times, prices, online tools
www.igus.eu/W300

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

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

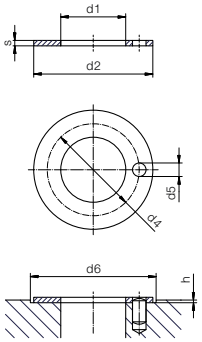
**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**





# Bearing technology | Plain bearings | iglidur® W300

## Thrust washer (form T)

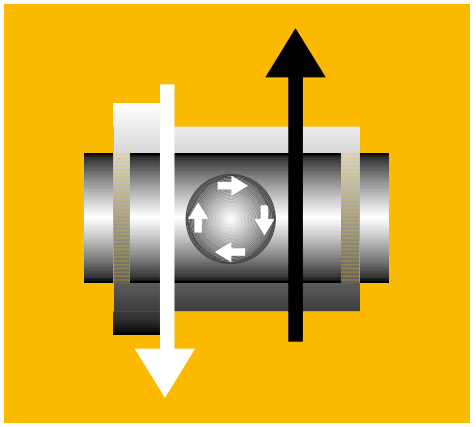



**Dimensions according to ISO 3547-1 and special dimensions**

**Order example: WTM-0509-006 – no minimum order quantity.**
W300 iglidur® material T Thrust washer M Metric 05 Inner Ø d1 09 Outer Ø d2 006 Height s

| d1 +0.25 [mm] | d2 -0.25 [mm] | d4 -0.12 +0.12 [mm] | d5 +0.375 +0.125 [mm] | h +0.2/-0.2 [mm] | d6 +0.12 [mm] | Øs -0.05 [mm] | Part No. |
|---|---|---|---|---|---|---|---|
| 5 | 9.5 | [4] | [4] | 0.3 | 9.5 | 0.6 | **WTM-0509-006** |
| 6 | 20 | 13 | 1.5 | 1 | 20 | 1.5 | **WTM-0620-015** |
| 8 | 18 | 13 | 1.5 | 1 | 18 | 1.5 | **WTM-0818-015** |
| 10 | 18 | [4] | [4] | 0.7 | 18 | 1 | **WTM-1018-010** |
| 10 | 18 | [4] | [4] | 1 | 18 | 1.5 | **WTM-1018-015** |
| 12 | 24 | 18 | 1.5 | 1 | 24 | 1.5 | **WTM-1224-015** |
| 14 | 26 | 20 | 2 | 1 | 26 | 1.5 | **WTM-1426-015** |
| 15 | 24 | 19.5 | 1.5 | 1 | 24 | 1.5 | **WTM-1524-015** |
| 16 | 30 | 23 | 2 | 1 | 30 | 1.5 | **WTM-1630-015** |
| 18 | 32 | 25 | 2 | 1 | 32 | 1.5 | **WTM-1832-015** |
| 18 | 44 | 30 | 7 | 1 | 44 | 1.5 | **WTM-1844-015** |
| 20 | 36 | 28 | 3 | 1 | 36 | 1.5 | **WTM-2036-015** |
| 22 | 38 | 30 | 3 | 1 | 38 | 1.5 | **WTM-2238-015** |
| 24 | 42 | 33 | 3 | 1 | 42 | 1.5 | **WTM-2442-015** |
| 26 | 44 | 35 | 3 | 1 | 44 | 1.5 | **WTM-2644-015** |
| 28 | 40 | 38 | 4 | 1 | 48 | 1.5 | **WTM-2840-015** |
| 28 | 48 | 38 | 4 | 1 | 48 | 1.5 | **WTM-2848-015** |
| 32 | 54 | 43 | 4 | 1 | 54 | 1.5 | **WTM-3254-015** |
| 38 | 62 | 50 | 4 | 1 | 62 | 1.5 | **WTM-3862-015** |
| 42 | 66 | 54 | 4 | 1 | 66 | 1.5 | **WTM-4266-015** |
| 48 | 74 | 61 | 4 | 1.5 | 74 | 2 | **WTM-4874-020** |
| 52 | 78 | 65 | 4 | 1.5 | 78 | 2 | **WTM-5278-020** |
| 62 | 90 | 76 | 4 | 1.5 | 90 | 2 | **WTM-6290-020** |
| 82 | 110 | [4] | [4] | 1.5 | 110 | 2 | **WTM-82110-020** |
| 102 | 130 | [4] | [4] | 1.5 | 130 | 2 | **WTM-102130-020** |
| 120 | 150 | [4] | [4] | 1.5 | 150 | 2 | **WTM-120150-020** |

[4] Design without fixing hole



# The new endurance runner: specialist for pivoting applications and pulsating loads

## Up to 10MPa, up to three times more wear-resistant than iglidur® J

## iglidur® J3

**When to use it?**

- When optimising wear resistance compared to iglidur® J
- When very low coefficient of friction in dry operation are required
- When high wear resistance at low loads is required
- When low moisture absorption is fundamental
- When good liquid media resistance is required

**When not to use it?**

- When a wear-resistant plain bearing for linear motion is required
  ***iglidur® J***
- When permanent temperatures exceed +90°C
  ***iglidur® J260***
- When radial surface pressure is higher than 45MPa
  ***iglidur® W300***



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# Bearing technology | Plain bearings | iglidur® J3

Ø
2.0-50.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## The new endurance runner: specialist for pivoting applications and pulsating loads

Up to 10MPa, up to three times more wear-resistant than iglidur® J

iglidur® J3 is a material with improved wear resistance at low to medium loads and high speed. The service life is up to 300% longer than iglidur® J - the proven top endurance runner material.

- Low coefficient of friction
- High media resistance
- Low moisture absorption
- PTFE-free
- Lubrication-free
- Maintenance-free

### Typical application areas

- Automation
- Printing industry
- Beverage industry
- Glass industry
- Aerospace engineering

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

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

-50°C up to +90°C

45MPa

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.42 | |
| Colour | | yellow | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.3 | DIN 53495 |
| Max. moisture absorption | % weight | 1.3 | |
| Coefficient of friction, dynamic, against steel | μ | 0.06-0.20 | |
| pv value, max. (dry) | MPa · m/s | 0.50 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,700 | DIN 53457 |
| Flexural strength at +20°C | MPa | 70 | DIN 53452 |
| Compressive strength | MPa | 60 | |
| Max. permissible surface pressure (+20°C) | MPa | 45 | |
| Shore D hardness | | 73 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +90 | |
| Max. application temperature short-term | °C | +120 | |
| Min. application temperature | °C | -50 | |
| Thermal conductivity | W/m · K | 0.25 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 13 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{12}$ | DIN 53482 |

Table 01: Material properties

With respect to its general mechanical and thermal specifications, iglidur® J3 is directly comparable to our classic, iglidur® J.

### Moisture absorption

The moisture absorption of iglidur® J3 plain bearings in ambient conditions is approximately 0.3% weight. The saturation limit submerged in water is 1.3% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

### Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® J3 bearings.

### Radiation resistance

They are resistant up to a radiation intensity of $1 \cdot 10^4$ Gy.

### Resistance to weathering

iglidur® J3 plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

### Mechanical properties

When temperatures increase, the compressive strength of iglidur® J3 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® J3 at radial loads. At the recommended maximum surface pressure of 45MPa the deformation is less than 6% at room temperature. A possible deformation could be, among others, dependant on the duty cycle of the load.

***Surface pressure, page 45***

# Bearing technology | Plain bearings | iglidur® J3

### Permissible surface speeds

iglidur® J3 is also suitable for medium to high surface speeds. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

*Surface speed, page 48*

### Temperature

The temperatures prevailing in the bearing system also have an influence on the wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +90°C. For temperatures over +60°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

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

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. For iglidur® J3 a ground surface with an average surface finish Ra = 0.1-0.3μm is recommended. Diagram 06 shows that iglidur® J3 can be combined with various shaft materials. Diagram 07 shows rotating and pivoting applications in comparison. With higher load, the wear increases more for rotating than for pivoting movements.

*Shaft materials, page 56*

### Installation tolerances

iglidur® J3 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table). In relation to the installation tolerance, the inner diameter changes with the absorption of humidity.

*Testing methods, page 61*

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

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

Table 02: Chemical resistance

*Chemical table, page 1170*

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

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.06-0.20 | 0.09 | 0.04 | 0.04 |

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

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

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





# Technical data

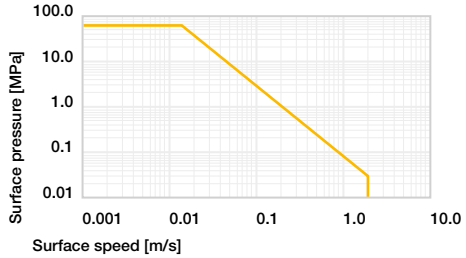



Diagram 01: Permissible pv values for iglidur® J3 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

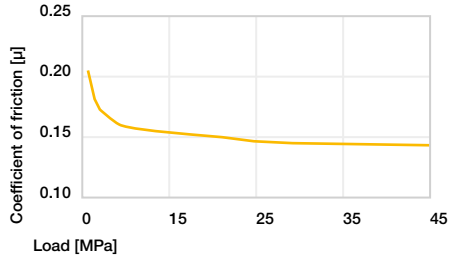



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

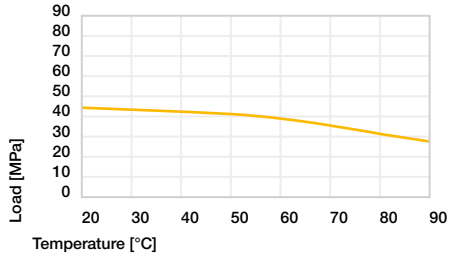



Diagram 02: Maximum recommended surface pressure as a function of temperature (45MPa at +20°C)

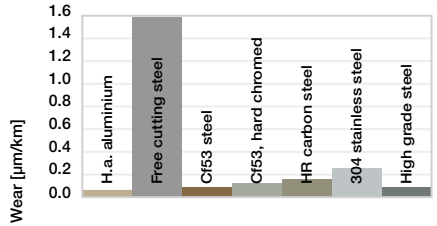



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

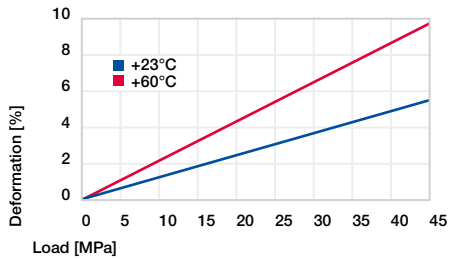



Diagram 03: Deformation under pressure and temperature

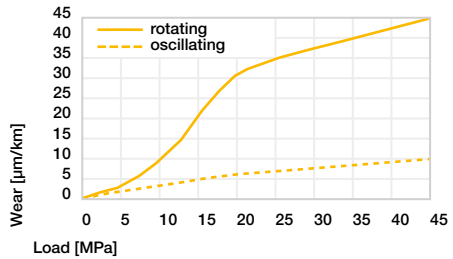



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

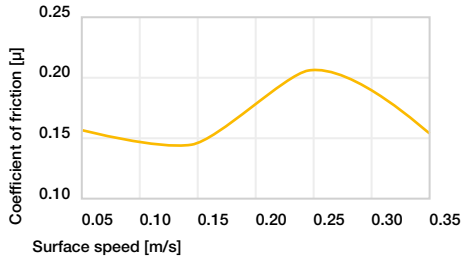
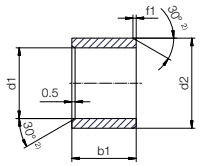



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

# Bearing technology | Plain bearings | iglidur® J3

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

**Order example: J3SM-0304-05 – no minimum order quantity.**
J3 iglidur® material S Cylindrical M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 3.0 | +0.014 +0.054 | 4.5 | 5.0 | **J3SM-0304-05** |
| 4.0 | +0.020 +0.068 | 5.5 | 4.0 | **J3SM-0405-04** |
| 4.0 | | 5.5 | 6.0 | **J3SM-0405-06** |
| 5.0 | | 7.0 | 5.0 | **J3SM-0507-05** |
| 5.0 | | 7.0 | 10.0 | **J3SM-0507-10** |
| 6.0 | | 8.0 | 6.0 | **J3SM-0608-06** |
| 6.0 | | 8.0 | 8.0 | **J3SM-0608-08** |
| 6.0 | | 8.0 | 10.0 | **J3SM-0608-10** |
| 8.0 | +0.025 +0.083 | 10.0 | 8.0 | **J3SM-0810-08** |
| 8.0 | | 10.0 | 10.0 | **J3SM-0810-10** |
| 8.0 | | 10.0 | 12.0 | **J3SM-0810-12** |
| 10.0 | | 12.0 | 8.0 | **J3SM-1012-08** |
| 10.0 | | 12.0 | 10.0 | **J3SM-1012-10** |
| 10.0 | | 12.0 | 12.0 | **J3SM-1012-12** |
| 10.0 | | 12.0 | 15.0 | **J3SM-1012-15** |
| 10.0 | | 12.0 | 20.0 | **J3SM-1012-20** |
| 12.0 | +0.032 +0.102 | 14.0 | 10.0 | **J3SM-1214-10** |
| 12.0 | | 14.0 | 12.0 | **J3SM-1214-12** |
| 12.0 | | 14.0 | 15.0 | **J3SM-1214-15** |
| 12.0 | | 14.0 | 20.0 | **J3SM-1214-20** |
| 13.0 | | 15.0 | 10.0 | **J3SM-1315-10** |
| 13.0 | | 15.0 | 20.0 | **J3SM-1315-20** |
| 14.0 | | 16.0 | 15.0 | **J3SM-1416-15** |
| 14.0 | | 16.0 | 20.0 | **J3SM-1416-20** |
| 14.0 | | 16.0 | 25.0 | **J3SM-1416-25** |
| 15.0 | | 17.0 | 15.0 | **J3SM-1517-15** |
| 15.0 | | 17.0 | 20.0 | **J3SM-1517-20** |
| 15.0 | | 17.0 | 25.0 | **J3SM-1517-25** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 15.0 | +0.032 +0.102 | 17.0 | 30.0 | **J3SM-1517-30** |
| 16.0 | | 18.0 | 15.0 | **J3SM-1618-15** |
| 16.0 | | 18.0 | 20.0 | **J3SM-1618-20** |
| 16.0 | | 18.0 | 25.0 | **J3SM-1618-25** |
| 18.0 | | 20.0 | 15.0 | **J3SM-1820-15** |
| 18.0 | | 20.0 | 20.0 | **J3SM-1820-20** |
| 18.0 | | 20.0 | 25.0 | **J3SM-1820-25** |
| 18.0 | | 21.0 | 25.0 | **J3SM-1821-25** |
| 20.0 | +0.040 +0.124 | 23.0 | 10.0 | **J3SM-2023-10** |
| 20.0 | | 23.0 | 15.0 | **J3SM-2023-15** |
| 20.0 | | 23.0 | 20.0 | **J3SM-2023-20** |
| 20.0 | | 23.0 | 25.0 | **J3SM-2023-25** |
| 20.0 | | 23.0 | 30.0 | **J3SM-2023-30** |
| 22.0 | | 25.0 | 15.0 | **J3SM-2225-15** |
| 22.0 | | 25.0 | 20.0 | **J3SM-2225-20** |
| 22.0 | | 25.0 | 25.0 | **J3SM-2225-25** |
| 22.0 | | 25.0 | 30.0 | **J3SM-2225-30** |
| 24.0 | | 27.0 | 15.0 | **J3SM-2427-15** |
| 24.0 | | 27.0 | 20.0 | **J3SM-2427-20** |
| 24.0 | | 27.0 | 25.0 | **J3SM-2427-25** |
| 24.0 | | 27.0 | 30.0 | **J3SM-2427-30** |
| 25.0 | | 28.0 | 15.0 | **J3SM-2528-15** |
| 25.0 | | 28.0 | 20.0 | **J3SM-2528-20** |
| 25.0 | | 28.0 | 25.0 | **J3SM-2528-25** |
| 25.0 | | 28.0 | 30.0 | **J3SM-2528-30** |
| 28.0 | | 32.0 | 20.0 | **J3SM-2832-20** |
| 28.0 | | 32.0 | 25.0 | **J3SM-2832-25** |
| 28.0 | | 32.0 | 30.0 | **J3SM-2832-30** |
| 30.0 | | 34.0 | 20.0 | **J3SM-3034-20** |

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



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# Product range

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 30.0 | +0.040 +0.124 | 34.0 | 25.0 | **J3SM-3034-25** |
| 30.0 | | 34.0 | 30.0 | **J3SM-3034-30** |
| 30.0 | | 34.0 | 40.0 | **J3SM-3034-40** |
| 32.0 | +0.050 +0.150 | 36.0 | 20.0 | **J3SM-3236-20** |
| 32.0 | | 36.0 | 30.0 | **J3SM-3236-30** |
| 32.0 | | 36.0 | 40.0 | **J3SM-3236-40** |
| 35.0 | | 39.0 | 20.0 | **J3SM-3539-20** |
| 35.0 | | 39.0 | 30.0 | **J3SM-3539-30** |
| 35.0 | | 39.0 | 40.0 | **J3SM-3539-40** |
| 35.0 | | 39.0 | 50.0 | **J3SM-3539-50** |
| 40.0 | | 44.0 | 20.0 | **J3SM-4044-20** |
| 40.0 | | 44.0 | 30.0 | **J3SM-4044-30** |
| 40.0 | +0.050 +0.150 | 44.0 | 40.0 | **J3SM-4044-40** |
| 40.0 | | 44.0 | 50.0 | **J3SM-4044-50** |
| 45.0 | | 50.0 | 20.0 | **J3SM-4550-20** |
| 45.0 | | 50.0 | 30.0 | **J3SM-4550-30** |
| 45.0 | | 50.0 | 40.0 | **J3SM-4550-40** |
| 45.0 | | 50.0 | 50.0 | **J3SM-4550-50** |
| 50.0 | | 55.0 | 20.0 | **J3SM-5055-20** |
| 50.0 | | 55.0 | 30.0 | **J3SM-5055-30** |
| 50.0 | | 55.0 | 40.0 | **J3SM-5055-40** |
| 50.0 | | 55.0 | 50.0 | **J3SM-5055-50** |
| 50.0 | | 55.0 | 60.0 | **J3SM-5055-60** |

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

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

**Order online**
including delivery times, prices, online tools
www.igus.eu/J3

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

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

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

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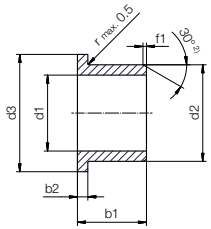
# Bearing technology | Plain bearings | iglidur® J3

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

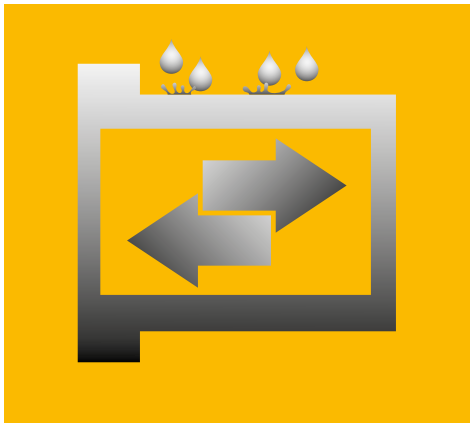
Dimensions according to ISO 3547-1 and special dimensions

**Order example: J3FM-0304-05 – no minimum order quantity.**
J3 iglidur® material F With flange M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 2.0 | +0.014 | 3.5 | 5.0 | 5.0 | 0.75 | **J3FM-0203505-05** |
| 3.0 | +0.054 | 4.5 | 7.5 | 5.0 | 0.75 | **J3FM-0304-05** |
| 5.0 | | 7.0 | 11.0 | 5.0 | 1.00 | **J3FM-0507-05** |
| 6.0 | +0.020 | 8.0 | 12.0 | 4.0 | 1.00 | **J3FM-0608-04** |
| 6.0 | +0.068 | 8.0 | 12.0 | 6.0 | 1.00 | **J3FM-0608-06** |
| 6.0 | | 8.0 | 12.0 | 8.0 | 1.00 | **J3FM-0608-08** |
| 8.0 | | 10.0 | 15.0 | 5.5 | 1.00 | **J3FM-0810-05** |
| 8.0 | | 10.0 | 15.0 | 7.5 | 1.00 | **J3FM-0810-07** |
| 8.0 | | 10.0 | 15.0 | 9.5 | 1.00 | **J3FM-0810-09** |
| 8.0 | | 10.0 | 15.0 | 10.0 | 1.00 | **J3FM-0810-10** |
| 10.0 | +0.025 +0.083 | 12.0 | 18.0 | 7.0 | 1.00 | **J3FM-1012-07** |
| 10.0 | | 12.0 | 18.0 | 9.0 | 1.00 | **J3FM-1012-09** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **J3FM-1012-10** |
| 10.0 | | 12.0 | 18.0 | 12.0 | 1.00 | **J3FM-1012-12** |
| 10.0 | | 12.0 | 18.0 | 17.0 | 1.00 | **J3FM-1012-17** |
| 12.0 | | 14.0 | 20.0 | 7.0 | 1.00 | **J3FM-1214-07** |
| 12.0 | | 14.0 | 20.0 | 9.0 | 1.00 | **J3FM-1214-09** |
| 12.0 | +0.032 | 14.0 | 20.0 | 12.0 | 1.00 | **J3FM-1214-12** |
| 12.0 | +0.102 | 14.0 | 20.0 | 17.0 | 1.00 | **J3FM-1214-17** |
| 14.0 | | 16.0 | 22.0 | 12.0 | 1.00 | **J3FM-1416-12** |
| 14.0 | | 16.0 | 22.0 | 17.0 | 1.00 | **J3FM-1416-17** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 15.0 | | 17.0 | 23.0 | 9.0 | 1.00 | **J3FM-1517-09** |
| 15.0 | +0.032 | 17.0 | 23.0 | 12.0 | 1.00 | **J3FM-1517-12** |
| 15.0 | +0.102 | 17.0 | 23.0 | 17.0 | 1.00 | **J3FM-1517-17** |
| 16.0 | | 18.0 | 24.0 | 12.0 | 1.00 | **J3FM-1618-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **J3FM-1618-17** |
| 18.0 | | 20.0 | 26.0 | 12.0 | 1.00 | **J3FM-1820-12** |
| 18.0 | | 20.0 | 26.0 | 17.0 | 1.00 | **J3FM-1820-17** |
| 18.0 | | 20.0 | 26.0 | 22.0 | 1.00 | **J3FM-1820-22** |
| 18.0 | | 21.0 | 25.0 | 12.0 | 1.00 | **J3FM-1821-12** |
| 20.0 | | 23.0 | 30.0 | 11.5 | 1.50 | **J3FM-2023-11** |
| 20.0 | +0.040 | 23.0 | 30.0 | 16.5 | 1.50 | **J3FM-2023-16** |
| 20.0 | +0.124 | 23.0 | 30.0 | 21.5 | 1.50 | **J3FM-2023-21** |
| 25.0 | | 28.0 | 35.0 | 11.5 | 1.50 | **J3FM-2528-11** |
| 25.0 | | 28.0 | 35.0 | 16.5 | 1.50 | **J3FM-2528-16** |
| 25.0 | | 28.0 | 35.0 | 21.5 | 1.50 | **J3FM-2528-21** |
| 30.0 | | 34.0 | 42.0 | 16.0 | 2.00 | **J3FM-3034-16** |
| 30.0 | | 34.0 | 42.0 | 26.0 | 2.00 | **J3FM-3034-26** |
| 35.0 | | 39.0 | 47.0 | 16.0 | 2.00 | **J3FM-3539-16** |
| 35.0 | +0.050 | 39.0 | 47.0 | 26.0 | 2.00 | **J3FM-3539-26** |
| 40.0 | +0.150 | 44.0 | 52.0 | 30.0 | 2.00 | **J3FM-4044-30** |
| 40.0 | | 44.0 | 52.0 | 40.0 | 2.00 | **J3FM-4044-40** |
| 45.0 | | 50.0 | 58.0 | 50.0 | 2.00 | **J3FM-4550-50** |

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



# Proven long-life material in black

## Wear-resistant endurance runner up to 10MPa

## iglidur® J3B

**When to use it?**

- When optimising wear resistance compared to iglidur® J
- When low moisture absorption is fundamental
- When good liquid media resistance is required
- When high wear resistance at low loads is required
- When very low coefficient of friction in dry operation are required

**When not to use it?**

- When a wear-resistant plain bearing for linear motion is required
  ***iglidur® J***
- When permanent temperatures exceed +90°C
  ***iglidur® J260***
- When radial surface pressure is higher than 45MPa
  ***iglidur® W300***

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# Bearing technology | Plain bearings | iglidur® J3B

Ø
6.0-20.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## Proven long-life material in black
## Wear-resistant endurance runner up to 10MPa

The proven long-life material iglidur® J3 is now available in black as well. The endurance runner is a specialist for pivoting and pulsating loads and also media-resistant.

- Aesthetically suitable
- Low coefficient of friction
- Is especially long-lasting in the most varied of applications
- Low moisture absorption

### Typical application areas

- Furniture industry
- Sports and leisure
- Two-wheel technology

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

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.42 | |
| Colour | | black | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.3 | DIN 53495 |
| Max. moisture absorption | % weight | 1.3 | |
| Coefficient of friction, dynamic, against steel | μ | 0.08-0.17 | |
| pv value, max. (dry) | MPa · m/s | 0.50 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,895 | DIN 53457 |
| Flexural strength at +20°C | MPa | 65 | DIN 53452 |
| Compressive strength | MPa | n.s. | |
| Max. permissible surface pressure (+20°C) | MPa | 44 | |
| Shore D hardness | | 76 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +90 | |
| Max. application temperature short-term | °C | +110 | |
| Min. application temperature | °C | -50 | |
| Thermal conductivity | W/m · K | 0.30 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 12.7 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{12}$ | DIN 53482 |

Table 01: Material properties

-50°C up to +90°C

44MPa

With respect to its general mechanical and thermal specifications, iglidur® J3B is directly comparable to our classic, iglidur® J.

### Moisture absorption

The moisture absorption of iglidur® J3B plain bearings in ambient conditions is approximately 0.3% weight. The saturation limit submerged in water is 1.3% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

### Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® J3B bearings.

### Radiation resistance

They are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® J3B plain bearings have not yet been tested for their resistance to weathering. Please consult igus® if you're planning to use them outdoors.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® J3B plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® J3B at radial loads. At the recommended maximum surface pressure of 44MPa the deformation is less than 6% at room temperature. A possible deformation could be, among others, dependant on the duty cycle of the load.
***Surface pressure, page 45***

# Bearing technology | Plain bearings | iglidur® J3B

### Permissible surface speeds

iglidur® J3B is also suitable for medium to high surface speeds. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

*Surface speed, page 48*

### Temperature

The temperatures prevailing in the bearing system also have an influence on the wear. For temperatures over +60°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

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

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. For iglidur® J3B a ground surface with an average surface finish Ra = 0.1-0.3μm is recommended. Diagram 06 shows results of testing different shafts. Diagram 07 shows rotating and pivoting applications in comparison. With higher load, the wear increases more for rotating than for pivoting movements.

*Shaft materials, page 56*

### Installation tolerances

iglidur® J3B plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table). In relation to the installation tolerance, the inner diameter changes with the absorption of humidity.

*Testing methods, page 61*

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

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

Table 02: Chemical resistance

*Chemical table, page 1170*

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

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.08-0.17 | 0.09 | 0.04 | 0.04 |

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

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

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





# Technical data

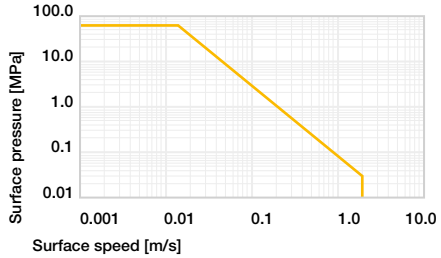



Diagram 01: Permissible pv values for iglidur® J3B plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

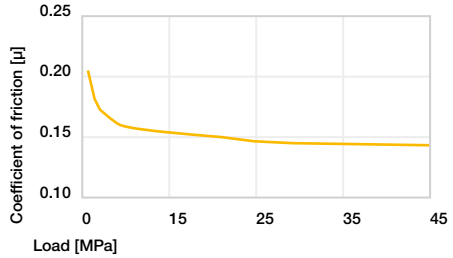



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

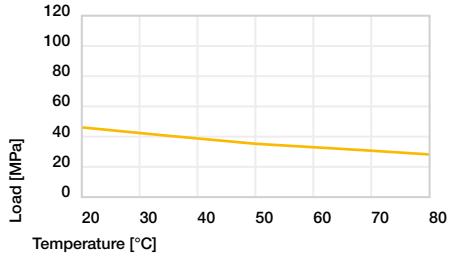



Diagram 02: Maximum recommended surface pressure as a function of temperature (44MPa at +20°C)

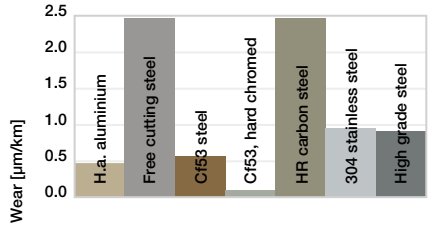



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

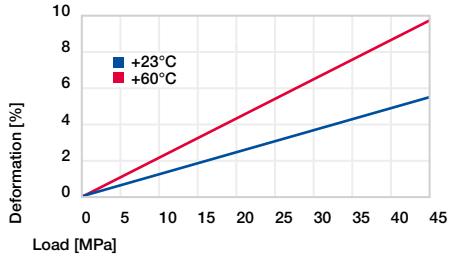



Diagram 03: Deformation under pressure and temperature

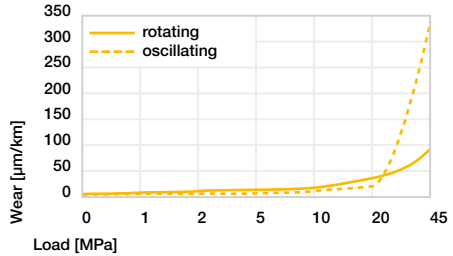



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

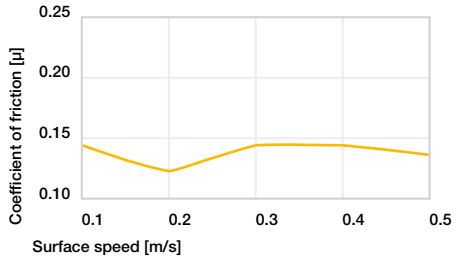
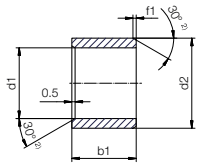



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

# Bearing technology | Plain bearings | iglidur® J3B

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** J3BSM-0608-06 – **no minimum order quantity.**
J3B iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 6.0 | **J3BSM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 10.0 | **J3BSM-0810-10** |
| 10.0 | | 12.0 | 10.0 | **J3BSM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 12.0 | **J3BSM-1214-12** |
| 16.0 | | 18.0 | 15.0 | **J3BSM-1618-15** |
| 20.0 | +0.040 +0.124 | 23.0 | 20.0 | **J3BSM-2023-20** |

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

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

**Order online**
including delivery times, prices, online tools
www.igus.eu/J3B

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

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

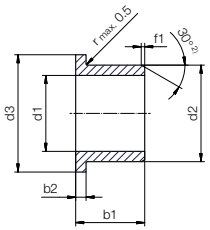
**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**





# Bearing technology | Plain bearings | iglidur® J3B

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** J3BFM-0608-06 – **no minimum order quantity.**
J3B iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 12.0 | 8.0 | 1.00 | **J3BFM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 15.0 | 9.5 | 1.00 | **J3BFM-0810-10** |
| 10.0 | | 12.0 | 18.0 | 9.0 | 1.00 | **J3BFM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 20.0 | 12.0 | 1.00 | **J3BFM-1214-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **J3BFM-1618-17** |
| 20.0 | +0.040 +0.124 | 23.0 | 30.0 | 21.5 | 1.50 | **J3BFM-2023-21** |

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

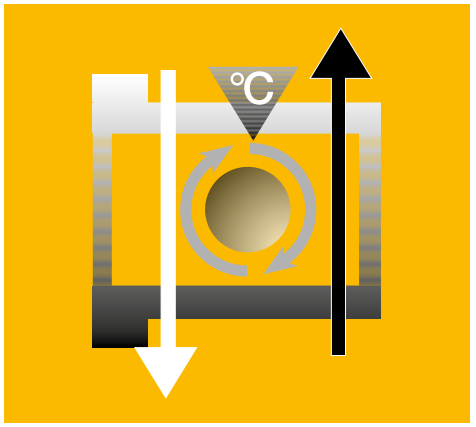
**Available from stock**
Detailed information about delivery time online.
www.igus.eu/24

**Order online**
including delivery times, prices, online tools
www.igus.eu/J3B

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

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

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




# Endurance runner with high dimensional stability at high temperatures

## Can be used with many kinds of shafts and loads

## iglidur® J350

**When to use it?**

- When a wear-resistant bearing for rotational movement at medium and high loads is required
- When a cost-effective plain bearing for high temperatures is required
- When press-fit up to +150°C is necessary
- When the bearing is exposed to shock loading

**When not to use it?**

- When continuous operating temperatures are higher than +180°C
  ***iglidur® X***
- When the lowest friction is required
  ***iglidur® J***
- When a cost-effective plain bearing with low friction is required
  ***iglidur® D, iglidur® R***
- For high rotational speeds
  ***iglidur® J***



EN 09/2023

# Bearing technology | Plain bearings | iglidur® J350

Ø
4.0-50.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## Endurance runner with high dimensional stability at high temperatures

Can be used with many kinds of shafts and loads

An outstanding plain bearing for rotating applications - and for a wide range of different shaft materials: with iglidur® J350 plain bearings, the service life can often be increased for applications between 2 and 50MPa. In addition, the high temperature resistance makes it a very versatile material.

- Recommended for steel shafts
- Continuous operating temperatures up to +180°C
- Suitable for medium and high loads
- Suitable for rotating applications
- Lubrication-free
- Maintenance-free

### Typical application areas

- Automation
- Mechanical engineering
- Automotive
- Glass industry

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

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.44 | |
| Colour | | yellow | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.3 | DIN 53495 |
| Max. moisture absorption | % weight | 1.6 | |
| Coefficient of friction, dynamic, against steel | μ | 0.10-0.20 | |
| pv value, max. (dry) | MPa · m/s | 0.45 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,000 | DIN 53457 |
| Flexural strength at +20°C | MPa | 55 | DIN 53452 |
| Compressive strength | MPa | 60 | |
| Max. permissible surface pressure (+20°C) | MPa | 60 | |
| Shore D hardness | | 80 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +180 | |
| Max. application temperature short-term | °C | +220 | |
| Min. application temperature | °C | -100 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 7 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{13}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{10}$ | DIN 53482 |

Table 01: Material properties

-100 °C up to +180 °C

60MPa

V-0

RoHS-II

ISO 3547-1

iglidur® J350 blends universally good wear resistance, flexibility and temperature resistance into a very versatile iglidur® material with a broad application spectrum.

### Moisture absorption

The moisture absorption of iglidur® J350 is low and can be ignored when using standard plain bearings. Even when saturated with water, iglidur® J350 does not absorb more than 1.6% weight of water (by weight).

### Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® J350 bearings.

### Radiation resistance

Plain bearings made from iglidur® J350 are resistant up to a radiation intensity of $2 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® J350 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

### Mechanical properties

When temperatures increase, the compressive strength of iglidur® J350 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
iglidur® J350 plain bearings are adequate for medium and high loads. Diagram 03 shows the elastic deformation of iglidur® J350 at radial loads. It shows the material behaviour submitted to a short-term load. The ambient temperatures are only noticeable at 60MPa.
***Surface pressure, page 45***

# Bearing technology | Plain bearings | iglidur® J350

### Permissible surface speeds

iglidur® J350 plain bearings are suitable for low and medium speeds in rotating and oscillating applications. The wear rates, however, are much better in the case of rotating applications. Good bearing support for linear movements is also possible with iglidur® J350.

*Surface speed, page 48*

### Temperature

The temperatures prevailing in the bearing system also have an influence on the wear. The wear-rate of iglidur® J350 bearings changes very little at high temperatures. In some cases, wear even decreases at +100°C. For temperatures over +140°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

The coefficient of friction of iglidur® J350 in dry operation against steel is very good. They decrease significantly at higher surface speeds. This benefits the service life of the plain bearings in continuous operations with high surface speeds. Diagram 04 shows this inverse relationship. Especially with loads higher than 2MPa, the iglidur® J350 plain bearings are clearly superior to other bearings in rotating applications.

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® J350. iglidur® J350 plain bearings can be combined with various shaft materials. One shaft - bearing combination stands out when looking at the wear results of the test: iglidur® J350 with soft 304 stainless steel. Not many bearing materials are suitable for use with this rather difficult soft stainless steel material (304 stainless steel) and achieve good wear results. Also, good properties are reached with hard-anodised aluminium shafts. If the shaft material you plan on using is not shown in these test results, please contact us.

*Shaft materials, page 56*

### Installation tolerances

iglidur® J350 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

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

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

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | m/s | 1.3 | 1.0 | 4.0 |
| Short-term | m/s | 3.0 | 2.3 | 8.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.10-0.20 | 0.09 | 0.04 | 0.04 |

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

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

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





# Technical data

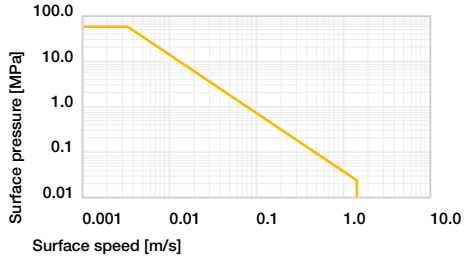



Diagram 01: Permissible pv values for iglidur® J350 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

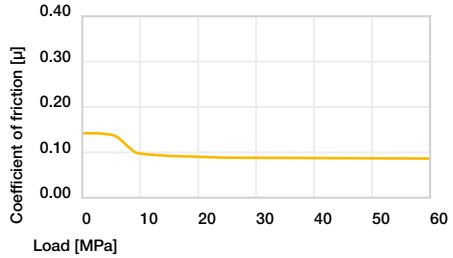



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

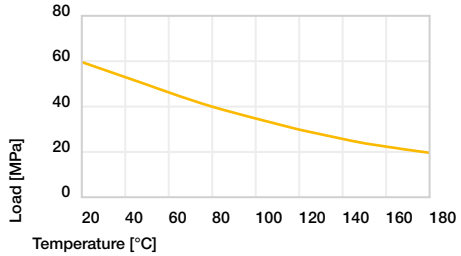



Diagram 02: Maximum recommended surface pressure as a function of temperature (60MPa at +20°C)

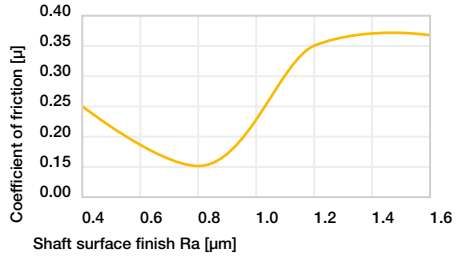



Diagram 06: Coefficient of friction as a function of the shaft surface (Cf53 shaft)

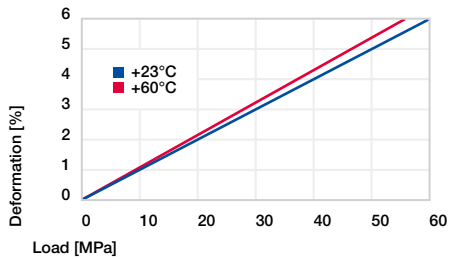



Diagram 03: Deformation under pressure and temperature

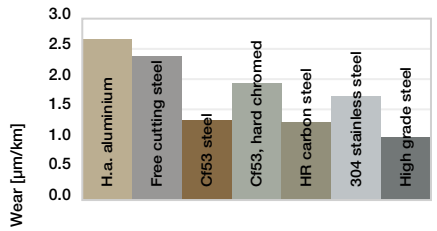



Diagram 07: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

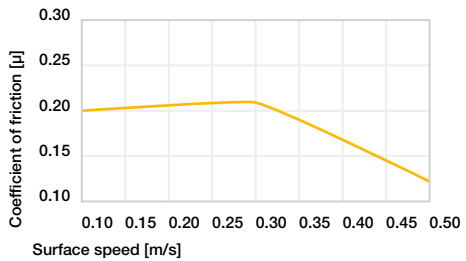
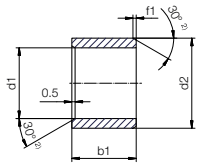



Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

# Bearing technology | Plain bearings | iglidur® J350

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

**Order example: J350SM-0405-04 – no minimum order quantity.**
J350 iglidur® material S Cylindrical M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 4.0 | +0.010 +0.058 | 5.5 | 4.0 | **J350SM-0405-04** |
| 4.0 | | 5.5 | 6.0 | **J350SM-0405-06** |
| 5.0 | | 7.0 | 5.0 | **J350SM-0507-05** |
| 5.0 | | 7.0 | 10.0 | **J350SM-0507-10** |
| 6.0 | | 8.0 | 6.0 | **J350SM-0608-06** |
| 6.0 | | 8.0 | 8.0 | **J350SM-0608-08** |
| 6.0 | | 8.0 | 10.0 | **J350SM-0608-10** |
| 8.0 | +0.013 +0.071 | 10.0 | 8.0 | **J350SM-0810-08** |
| 8.0 | | 10.0 | 10.0 | **J350SM-0810-10** |
| 8.0 | | 10.0 | 12.0 | **J350SM-0810-12** |
| 10.0 | | 12.0 | 8.0 | **J350SM-1012-08** |
| 10.0 | | 12.0 | 10.0 | **J350SM-1012-10** |
| 10.0 | | 12.0 | 12.0 | **J350SM-1012-12** |
| 10.0 | | 12.0 | 15.0 | **J350SM-1012-15** |
| 10.0 | | 12.0 | 20.0 | **J350SM-1012-20** |
| 12.0 | +0.016 +0.086 | 14.0 | 10.0 | **J350SM-1214-10** |
| 12.0 | | 14.0 | 12.0 | **J350SM-1214-12** |
| 12.0 | | 14.0 | 15.0 | **J350SM-1214-15** |
| 12.0 | | 14.0 | 20.0 | **J350SM-1214-20** |
| 13.0 | | 15.0 | 10.0 | **J350SM-1315-10** |
| 13.0 | | 15.0 | 20.0 | **J350SM-1315-20** |
| 14.0 | | 16.0 | 15.0 | **J350SM-1416-15** |
| 14.0 | | 16.0 | 20.0 | **J350SM-1416-20** |
| 14.0 | | 16.0 | 25.0 | **J350SM-1416-25** |
| 15.0 | | 17.0 | 15.0 | **J350SM-1517-15** |
| 15.0 | | 17.0 | 20.0 | **J350SM-1517-20** |
| 15.0 | | 17.0 | 25.0 | **J350SM-1517-25** |
| 16.0 | | 18.0 | 4.0 | **J350SM-1618-04** |
| 16.0 | | 18.0 | 15.0 | **J350SM-1618-15** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 16.0 | +0.016 +0.086 | 18.0 | 20.0 | **J350SM-1618-20** |
| 16.0 | | 18.0 | 25.0 | **J350SM-1618-25** |
| 18.0 | | 20.0 | 15.0 | **J350SM-1820-15** |
| 18.0 | | 20.0 | 20.0 | **J350SM-1820-20** |
| 18.0 | | 20.0 | 25.0 | **J350SM-1820-25** |
| 20.0 | +0.020 +0.104 | 23.0 | 10.0 | **J350SM-2023-10** |
| 20.0 | | 23.0 | 15.0 | **J350SM-2023-15** |
| 20.0 | | 23.0 | 20.0 | **J350SM-2023-20** |
| 20.0 | | 23.0 | 25.0 | **J350SM-2023-25** |
| 20.0 | | 23.0 | 30.0 | **J350SM-2023-30** |
| 22.0 | | 25.0 | 15.0 | **J350SM-2225-15** |
| 22.0 | | 25.0 | 20.0 | **J350SM-2225-20** |
| 22.0 | | 25.0 | 25.0 | **J350SM-2225-25** |
| 22.0 | | 25.0 | 30.0 | **J350SM-2225-30** |
| 24.0 | | 27.0 | 15.0 | **J350SM-2427-15** |
| 24.0 | | 27.0 | 20.0 | **J350SM-2427-20** |
| 24.0 | | 27.0 | 25.0 | **J350SM-2427-25** |
| 24.0 | | 27.0 | 30.0 | **J350SM-2427-30** |
| 25.0 | | 28.0 | 15.0 | **J350SM-2528-15** |
| 25.0 | | 28.0 | 20.0 | **J350SM-2528-20** |
| 25.0 | | 28.0 | 25.0 | **J350SM-2528-25** |
| 25.0 | | 28.0 | 30.0 | **J350SM-2528-30** |
| 25.0 | | 28.0 | 45.0 | **J350SM-2528-45** |
| 28.0 | | 32.0 | 20.0 | **J350SM-2832-20** |
| 28.0 | | 32.0 | 25.0 | **J350SM-2832-25** |
| 28.0 | | 32.0 | 30.0 | **J350SM-2832-30** |
| 30.0 | | 34.0 | 20.0 | **J350SM-3034-20** |
| 30.0 | | 34.0 | 25.0 | **J350SM-3034-25** |
| 30.0 | | 34.0 | 30.0 | **J350SM-3034-30** |

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



EN 09/2023

iglidur® J350
+180 °C
60MPa

# Product range

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 30.0 | +0.020 +0.104 | 34.0 | 40.0 | **J350SM-3034-40** |
| 32.0 | +0.025 +0.125 | 36.0 | 20.0 | **J350SM-3236-20** |
| 32.0 | | 36.0 | 30.0 | **J350SM-3236-30** |
| 32.0 | | 36.0 | 40.0 | **J350SM-3236-40** |
| 35.0 | | 39.0 | 20.0 | **J350SM-3539-20** |
| 35.0 | | 39.0 | 30.0 | **J350SM-3539-30** |
| 35.0 | | 39.0 | 40.0 | **J350SM-3539-40** |
| 35.0 | | 39.0 | 50.0 | **J350SM-3539-50** |
| 40.0 | | 44.0 | 20.0 | **J350SM-4044-20** |
| 40.0 | | 44.0 | 30.0 | **J350SM-4044-30** |
| 40.0 | +0.025 +0.125 | 44.0 | 40.0 | **J350SM-4044-40** |
| 40.0 | | 44.0 | 50.0 | **J350SM-4044-50** |
| 45.0 | | 50.0 | 20.0 | **J350SM-4550-20** |
| 45.0 | | 50.0 | 30.0 | **J350SM-4550-30** |
| 45.0 | | 50.0 | 40.0 | **J350SM-4550-40** |
| 45.0 | | 50.0 | 50.0 | **J350SM-4550-50** |
| 50.0 | | 55.0 | 20.0 | **J350SM-5055-20** |
| 50.0 | | 55.0 | 30.0 | **J350SM-5055-30** |
| 50.0 | | 55.0 | 40.0 | **J350SM-5055-40** |
| 50.0 | | 55.0 | 50.0 | **J350SM-5055-50** |
| 50.0 | | 55.0 | 60.0 | **J350SM-5055-60** |

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

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

**Order online**
including delivery times, prices, online tools
www.igus.eu/J350

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

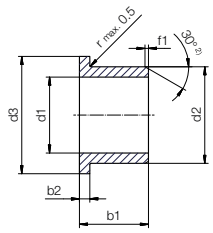
| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

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

EN 09/2023

# Bearing technology | Plain bearings | iglidur® J350

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

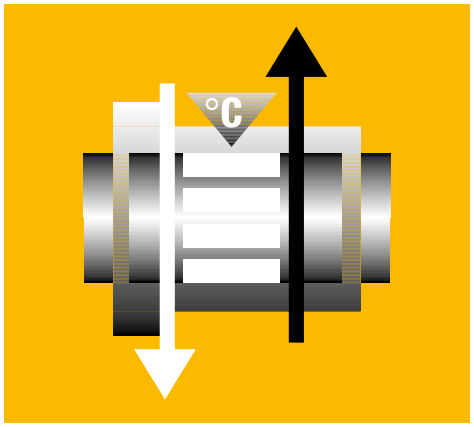
Dimensions according to ISO 3547-1 and special dimensions

Order example: J350FM-0608-04 – no minimum order quantity.
J350 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 04 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 6.0 | +0.010 +0.058 | 8.0 | 12.0 | 4.0 | 1.00 | **J350FM-0608-04** |
| 6.0 | | 8.0 | 12.0 | 6.0 | 1.00 | **J350FM-0608-06** |
| 6.0 | | 8.0 | 12.0 | 8.0 | 1.00 | **J350FM-0608-08** |
| 8.0 | +0.013 +0.071 | 10.0 | 15.0 | 5.5 | 1.00 | **J350FM-0810-05** |
| 8.0 | | 10.0 | 15.0 | 7.5 | 1.00 | **J350FM-0810-07** |
| 8.0 | | 10.0 | 15.0 | 9.5 | 1.00 | **J350FM-0810-09** |
| 8.0 | | 10.0 | 15.0 | 10.0 | 1.00 | **J350FM-0810-10** |
| 10.0 | | 12.0 | 18.0 | 7.0 | 1.00 | **J350FM-1012-07** |
| 10.0 | | 12.0 | 18.0 | 9.0 | 1.00 | **J350FM-1012-09** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **J350FM-1012-10** |
| 10.0 | | 12.0 | 18.0 | 12.0 | 1.00 | **J350FM-1012-12** |
| 10.0 | | 12.0 | 18.0 | 17.0 | 1.00 | **J350FM-1012-17** |
| 12.0 | +0.016 +0.086 | 14.0 | 20.0 | 7.0 | 1.00 | **J350FM-1214-07** |
| 12.0 | | 14.0 | 20.0 | 9.0 | 1.00 | **J350FM-1214-09** |
| 12.0 | | 14.0 | 20.0 | 12.0 | 1.00 | **J350FM-1214-12** |
| 12.0 | | 14.0 | 20.0 | 17.0 | 1.00 | **J350FM-1214-17** |
| 14.0 | | 16.0 | 22.0 | 12.0 | 1.00 | **J350FM-1416-12** |
| 14.0 | | 16.0 | 22.0 | 17.0 | 1.00 | **J350FM-1416-17** |
| 15.0 | | 17.0 | 23.0 | 9.0 | 1.00 | **J350FM-1517-09** |
| 15.0 | | 17.0 | 23.0 | 12.0 | 1.00 | **J350FM-1517-12** |
| 15.0 | | 17.0 | 23.0 | 17.0 | 1.00 | **J350FM-1517-17** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 16.0 | +0.016 +0.086 | 18.0 | 24.0 | 12.0 | 1.00 | **J350FM-1618-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **J350FM-1618-17** |
| 18.0 | | 20.0 | 26.0 | 12.0 | 1.00 | **J350FM-1820-12** |
| 18.0 | | 20.0 | 26.0 | 17.0 | 1.00 | **J350FM-1820-17** |
| 18.0 | | 20.0 | 26.0 | 22.0 | 1.00 | **J350FM-1820-22** |
| 20.0 | +0.020 +0.104 | 23.0 | 30.0 | 11.5 | 1.50 | **J350FM-2023-11** |
| 20.0 | | 23.0 | 30.0 | 16.5 | 1.50 | **J350FM-2023-16** |
| 20.0 | | 23.0 | 30.0 | 21.5 | 1.50 | **J350FM-2023-21** |
| 25.0 | | 28.0 | 35.0 | 11.5 | 1.50 | **J350FM-2528-11** |
| 25.0 | | 28.0 | 35.0 | 16.5 | 1.50 | **J350FM-2528-16** |
| 25.0 | | 28.0 | 35.0 | 21.5 | 1.50 | **J350FM-2528-21** |
| 30.0 | | 34.0 | 42.0 | 16.0 | 2.00 | **J350FM-3034-16** |
| 30.0 | | 34.0 | 42.0 | 22.0 | 2.00 | **J350FM-3034-22** |
| 30.0 | | 34.0 | 42.0 | 26.0 | 2.00 | **J350FM-3034-26** |
| 30.0 | | 34.0 | 42.0 | 37.0 | 2.00 | **J350FM-3034-37** |
| 35.0 | +0.025 +0.125 | 39.0 | 47.0 | 16.0 | 2.00 | **J350FM-3539-16** |
| 35.0 | | 39.0 | 47.0 | 26.0 | 2.00 | **J350FM-3539-26** |
| 40.0 | | 44.0 | 52.0 | 30.0 | 2.00 | **J350FM-4044-30** |
| 40.0 | | 44.0 | 52.0 | 40.0 | 2.00 | **J350FM-4044-40** |
| 45.0 | | 50.0 | 58.0 | 50.0 | 2.00 | **J350FM-4550-50** |

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




# Ideal for plastic shafts

## Wear-resistant at medium temperatures and loads

## iglidur® J260

**When to use it?**

- When polymer shafts are used
- When the temperature rating of iglidur® J is not sufficient
- When a plain bearing with low coefficient of friction is required
- When high wear resistance is required at medium loads
- When good liquid media resistance is required

**When not to use it?**

- When high surface pressures occur
  ***iglidur® Z***
- When permanent temperatures exceed +120°C
  ***iglidur® J350***
- When universal wear resistance is required
  ***iglidur® J***

# Bearing technology | Plain bearings | iglidur® J260

Ø
6.0-20.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## Ideal for plastic shafts
## Wear-resistant at medium temperatures and loads

Time and again the iglidur® J260 material proves its worth where the maximum service life and best coefficient of friction are required under special application conditions - particularly in connection with plastic shafts!

- For low and medium loads
- High media resistance
- Slightly higher temperature rating than iglidur® J
- Long service life - even on polymer shafts and other special cases

### Typical application areas

- Automation
- Plant construction
- Test engineering and quality assurance
- Robotics industry
- Electronics industry

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

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.35 | |
| Colour | | yellow | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.2 | DIN 53495 |
| Max. moisture absorption | % weight | 0.4 | |
| Coefficient of friction, dynamic, against steel | μ | 0.06-0.20 | |
| pv value, max. (dry) | MPa · m/s | 0.35 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,200 | DIN 53457 |
| Flexural strength at +20°C | MPa | 60 | DIN 53452 |
| Compressive strength | MPa | 50 | |
| Max. permissible surface pressure (+20°C) | MPa | 40 | |
| Shore D hardness | | 77 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +120 | |
| Max. application temperature short-term | °C | +140 | |
| Min. application temperature | °C | -100 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 13 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{10}$ | DIN 53482 |

Table 01: Material properties

-100 °C up to +120 °C

40MPa

V-2

RoHS-II

ISO 3547-1

Similar to the classic, iglidur® J, iglidur® J260 is an endurance runner with outstanding wear behaviour, but provides increased reserves at its long-term application temperature of +120°C.

### Moisture absorption

The moisture absorption of iglidur® J260 plain bearings in ambient conditions is approximately 0.2% weight. The saturation limit submerged in water is 0.4% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

### Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® J260 bearings.

### Radiation resistance

They are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® J260 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

### Mechanical properties

When temperatures increase, the compressive strength of iglidur® J260 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® J260 as a function of radial pressure. At the recommended maximum surface pressure of 40MPa the deformation is less than 2.5% at room temperature. A possible deformation could be, among others, dependant on the duty cycle of the load.

*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® J260

### Permissible surface speeds

iglidur® J260 has been developed for low to medium surface speeds. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

***Surface speed, page 48***

### Temperature

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

***Application temperatures, page 53***
***Additional securing, page 53***

### Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the load. The coefficient of friction decreases considerably with increasing loads, whereas a slight increase in surface speed causes an increase of the coefficient of friction (Diagram 04 and 05).

***Coefficient of friction and surfaces, page 51***
***Wear resistance, page 54***

### Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. For iglidur® J260 a ground surface with an average surface finish Ra = 0.8μm is recommended. Diagram 06 shows a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® J260. It is important to notice that with increasing loads, the recommended hardness of the shaft increases. The "soft" shafts tend to wear more easily and thus increase the wear of the overall system, if the loads exceed 2MPa. The comparison of rotating and pivoting movements in diagram 07 makes it very clear that iglidur® J260 plain bearings are most suited for rotating operation.

***Shaft materials, page 56***

### Installation tolerances

iglidur® J260 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

***Testing methods, page 61***

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

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

**Table 02: Chemical resistance**

***Chemical table, page 1170***

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

**Table 03: Maximum surface speeds**

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.06-0.20 | 0.09 | 0.04 | 0.04 |

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

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

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





# Technical data

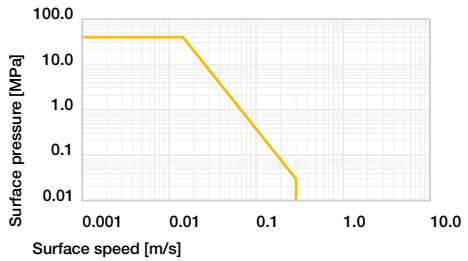



**Diagram 01: Permissible pv values for iglidur® J260 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing**

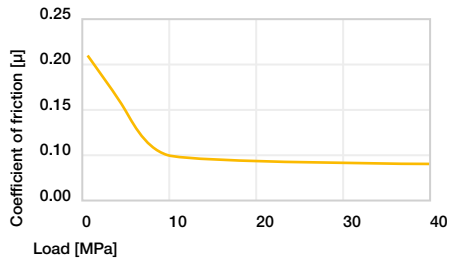



**Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s**

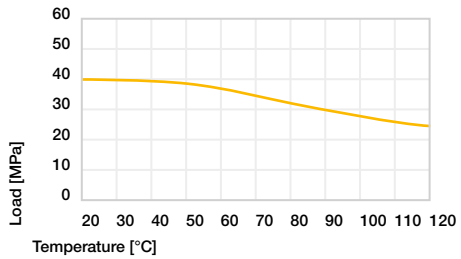



**Diagram 02: Maximum recommended surface pressure as a function of temperature (40MPa at +20°C)**

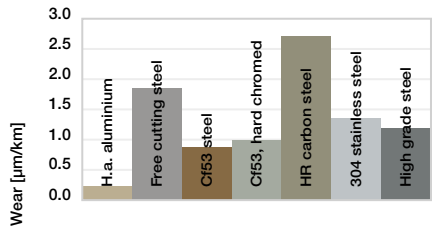



**Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s**

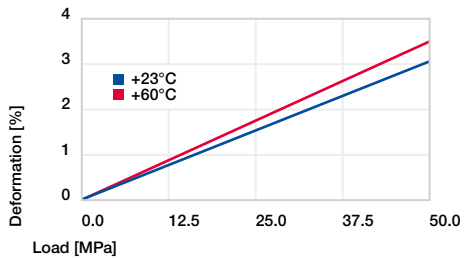



**Diagram 03: Deformation under pressure and temperature**

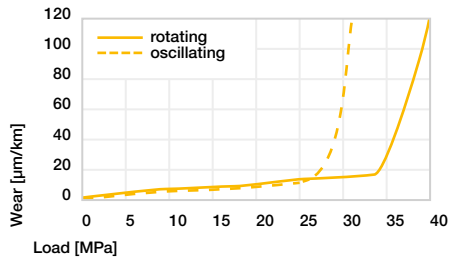



**Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load**

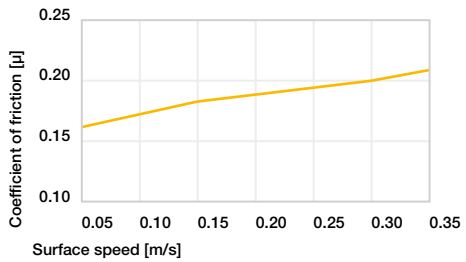
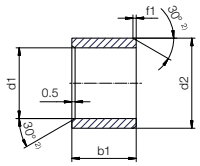



**Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa**

# Bearing technology | Plain bearings | iglidur® J260

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** J260SM-0608-06 – no minimum order quantity.
J260 iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 6.0 | **J260SM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 6.0 | **J260SM-0810-06** |
| 8.0 | | 10.0 | 10.0 | **J260SM-0810-10** |
| 10.0 | | 12.0 | 10.0 | **J260SM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 12.0 | **J260SM-1214-12** |
| 12.0 | | 14.0 | 15.0 | **J260SM-1214-15** |
| 16.0 | | 18.0 | 13.5 | **J260SM-1618-135** |
| 16.0 | | 18.0 | 15.0 | **J260SM-1618-15** |
| 18.0 | | 20.0 | 12.0 | **J260SM-1820-12** |
| 18.0 | | 20.0 | 20.0 | **J260SM-1820-20** |
| 20.0 | +0.040 +0.124 | 23.0 | 20.0 | **J260SM-2023-20** |

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

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

**Order online**
including delivery times, prices, online tools
www.igus.eu/J260

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

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

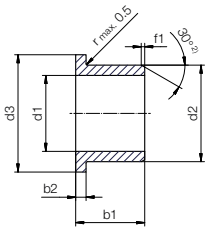
**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**





# Bearing technology | Plain bearings | iglidur® J260

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** J260FM-0608-06 – no minimum order quantity.
J260 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 12.0 | 6.0 | 1.00 | **J260FM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 15.0 | 10.0 | 1.00 | **J260FM-0810-10** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **J260FM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 20.0 | 12.0 | 1.00 | **J260FM-1214-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **J260FM-1618-17** |
| 20.0 | +0.040 +0.124 | 23.0 | 30.0 | 21.5 | 1.50 | **J260FM-2023-21** |

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

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**Ordering note**
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| Discount scaling | | |
|---|---|---|
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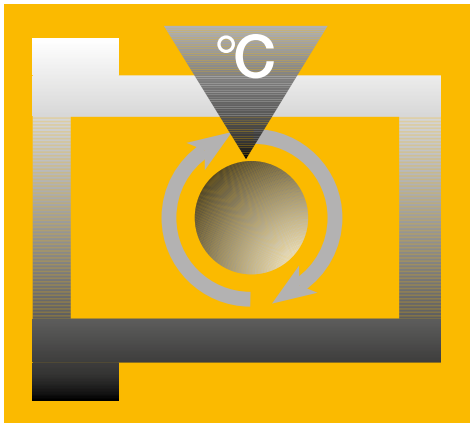
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

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




# Endurance runner up to +180°C

## For applications that are clean and dry

## iglidur® W360

**When to use it?**

- When an extremely wear-resistant plain bearing is required for medium loads
- When a low coefficient of friction at higher temperatures is required
- When continuous operating temperatures are higher than +90°C

**When not to use it?**

- When a wear-resistant plain bearing is sought for the standard temperature range and low to medium loads

  ***iglidur® J***
- When the maximum temperature resistance and high wear resistance is required
  ***iglidur® Z, iglidur® J350, iglidur® V400***
- When the highest wear resistance under water is required
  ***iglidur® UW, iglidur® H370***



EN 09/2023

# Bearing technology | Plain bearings | iglidur® W360

Ø
6.0-20.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## Endurance runner up to +180°C
## For applications that are clean and dry

The new iglidur® material combines outstanding endurance running properties with excellent temperature resistance, reduced moisture absorption and good value for money - a real all-rounder in the endurance field.

- High wear resistance
- Temperature-resistant up to +180°C
- Suitable for wet environments
- Good price-performance ratio
- Lubrication-free
- Maintenance-free

### Typical application areas

- Material handling
- Automation
- Two-wheel technology
- Electromobility

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

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.34 | |
| Colour | | yellow | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.2 | DIN 53495 |
| Max. moisture absorption | % weight | 1.6 | |
| Coefficient of friction, dynamic, against steel | μ | 0.07-0.21 | |
| pv value, max. (dry) | MPa · m/s | 0.35 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 3,829 | DIN 53457 |
| Flexural strength at +20°C | MPa | 119 | DIN 53452 |
| Compressive strength | MPa | 75 | |
| Max. permissible surface pressure (+20°C) | MPa | 75 | |
| Shore D hardness | | 80 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +180 | |
| Max. application temperature short-term | °C | +200 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 6 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{13}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{12}$ | DIN 53482 |

Table 01: Material properties

-40°C up to +180°C

75MPa

Low moisture absorption and high temperature resistance result in an extremely broad range of uses for this extremely wear-resistant material.

### Moisture absorption

The moisture absorption of iglidur® W360 is low and can be disregarded when used in a humid environment. With a full saturation of 1.6% weight, however, underwater use is only possible to a very restricted extent.

### Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® W360 bearings.

### Radiation resistance

Plain bearings made from iglidur® W360 are resistant up to a radiation intensity of $2 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® W360 plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

### Mechanical properties

When temperatures increase, the compressive strength of iglidur® W360 plain bearings decreases. Diagram 02 shows this inverse relationship. With the long-term permitted application temperature of +180°C, the permitted surface pressure still amounts to 10MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
iglidur® W360 plain bearings are suitable for a broad range of loads. Diagram 03 shows the deformation under temperature. It shows the material behaviour submitted to a short-term load.

*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® W360

### Permissible surface speeds

iglidur® W360 plain bearings are suitable for low and medium speeds in rotating and oscillating applications. The wear rates, however, are much better in the case of rotating applications. Good bearing support for linear movements is also possible with iglidur® W360.

*Surface speed, page 48*

### Temperature

The temperature resistance makes iglidur® W360 a very universal material for plain bearings in different industries. Application temperatures up to +200°C are permissible for short periods. For temperatures over +90°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

The coefficient of friction of iglidur® W360 in dry operation against steel is very good. They constantly remain at a low level regardless of the speed. Diagram 04 shows this inverse relationship. As the load increases, the coefficient of friction decreases. The correlation is especially strong up to approximately 15MPa (diagram 05).

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

In the case of W360, the shaft's surface finish has practically no effect on the coefficient of friction in the range of up to 1.6MPa (diagram 06). Diagram 07 shows results of testing different shafts. iglidur® W360 plain bearings are suitable for all sliding surfaces. During rotation with a load of 1MPa, all HC aluminium, Cf53 and stainless steel shafts stand out. A similar picture also exists with other loads or pivoting movements. If the shaft material you plan on using is not shown in these test results, please contact us.

*Shaft materials, page 56*

### Installation tolerances

iglidur® W360 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances.

*Testing methods, page 61*

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

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

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 1.2 | 0.9 | 3.0 |
| Short-term | **m/s** | 2.7 | 2.0 | 5.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.07-0.21 | 0.09 | 0.04 | 0.04 |

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

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

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





# Technical data

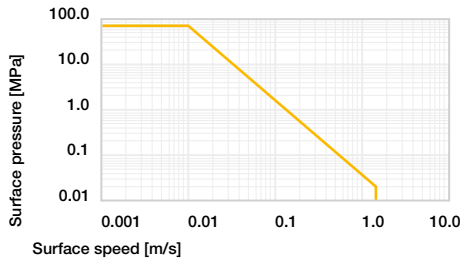



Diagram 01: Permissible pv values for iglidur® W360 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

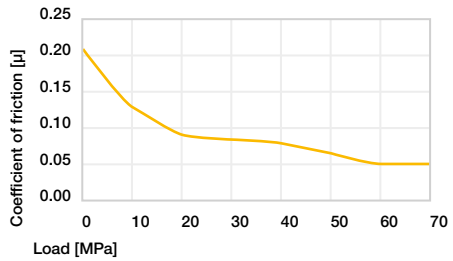



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

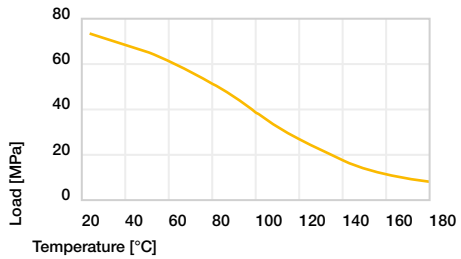



Diagram 02: Maximum recommended surface pressure as a function of temperature (75MPa at +20°C)

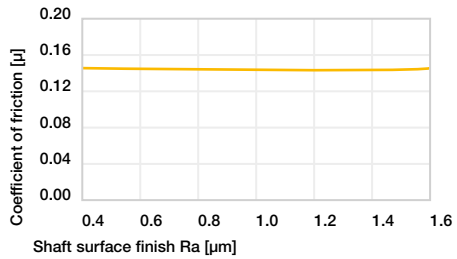



Diagram 06: Coefficient of friction as a function of the shaft surface (Cf53 shaft)

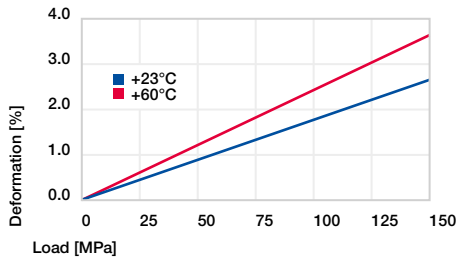



Diagram 03: Deformation under pressure and temperature

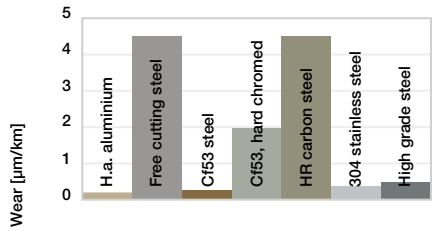



Diagram 07: Wear, rotating with different shaft materials, p = 1MPa, v = 0.3m/s

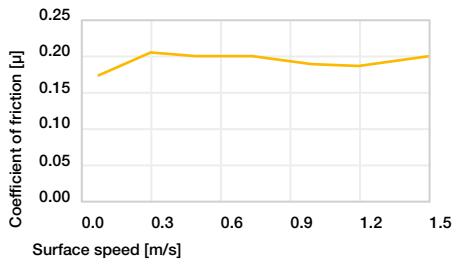
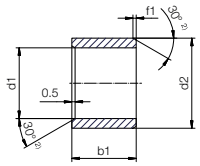



Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

# Bearing technology | Plain bearings | iglidur® W360

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** W360SM-0608-06 – **no minimum order quantity.**
W360 iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 6.0 | **W360SM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 10.0 | **W360SM-0810-10** |
| 10.0 | | 12.0 | 10.0 | **W360SM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 12.0 | **W360SM-1214-12** |
| 16.0 | | 18.0 | 15.0 | **W360SM-1618-15** |
| 20.0 | +0.040 +0.124 | 23.0 | 20.0 | **W360SM-2023-20** |

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

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

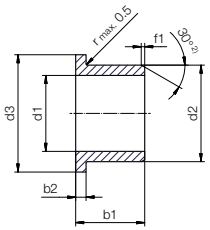
**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**





# Bearing technology | Plain bearings | iglidur® W360

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** W360FM-0608-06 – **no minimum order quantity.**
W360 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 12.0 | 6.0 | 1.00 | **W360FM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 15.0 | 10.0 | 1.00 | **W360FM-0810-10** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **W360FM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 20.0 | 12.0 | 1.00 | **W360FM-1214-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **W360FM-1618-17** |
| 20.0 | +0.040 +0.124 | 23.0 | 30.0 | 21.5 | 1.50 | **W360FM-2023-21** |

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

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|---|---|---|
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| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
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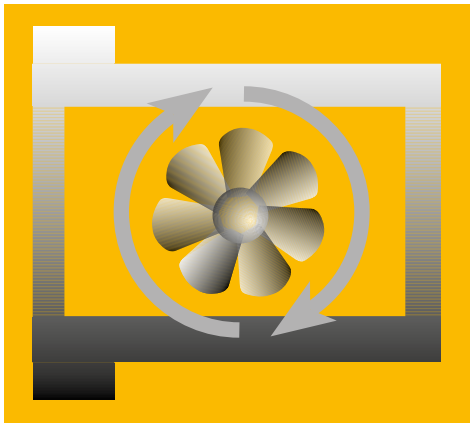

# For fast rotating applications

## Low coefficient of friction under low load

## iglidur® L250

**When to use it?**

- For rotating applications at high speed
- When the highest service life is required
- For low load applications
- When a low noise level is required
- For very low coefficient of friction

**When not to use it?**

- When high pressure occurs
  ***iglidur® Q, iglidur® W300***
- When continuous operating temperatures are higher than +90°C
  ***iglidur® V400***
- When low moisture absorption is required
  ***iglidur® H1, iglidur® J***



EN 09/2023

# Bearing technology | Plain bearings | iglidur® L250

Ø
6.0-20.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## For fast rotating applications
## Low coefficient of friction under low load

Plain bearings for high speed rotation applications, especially for fans and motors.

- Suitable for high rotating speeds
- Low coefficient of friction
- Very wear-resistant
- Lubrication-free
- Maintenance-free

### Typical application areas

- Automotive industry
- Electronics industry
- Mechatronics
- Optical industry
- Test engineering and quality assurance

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

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www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.50 | |
| Colour | | beige | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.7 | DIN 53495 |
| Max. moisture absorption | % weight | 3.9 | |
| Coefficient of friction, dynamic, against steel | μ | 0.08-0.19 | |
| pv value, max. (dry) | MPa · m/s | 0.40 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 1,950 | DIN 53457 |
| Flexural strength at +20°C | MPa | 67 | DIN 53452 |
| Compressive strength | MPa | 47 | |
| Max. permissible surface pressure (+20°C) | MPa | 45 | |
| Shore D hardness | | 68 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +90 | |
| Max. application temperature short-term | °C | +180 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 10 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{10}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{11}$ | DIN 53482 |

Table 01: Material properties

-40°C up to +90°C

45MPa

iglidur® L250 is a bearing material for high rotation speeds and low coefficient of friction. The iglidur® L250 material can highlight these advantages particularly with low loads. Applications which feature these advantages are fans, small motors, fast-running sensors or the magnet technology.

### Moisture absorption

With regard to applications where the smallest bearing clearances are concerned, please take the moisture absorption into consideration.

### Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® L250 bearings.

### Radiation resistance

Plain bearings made from iglidur® L250 are resistant up to a radiation intensity of $3 \cdot 10^4$ Gy. Higher radiation weakens the material and may result in a significant decrease in mechanical properties.

### Resistance to weathering

iglidur® L250 plain bearings have limited resistance to weathering. The material properties are affected. Discolouration occurs. Practical tests under real application conditions are recommended.

### Mechanical properties

When temperatures increase, the compressive strength of iglidur® L250 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® L250 under different loads. At the recommended maximum surface pressure of 45MPa the deformation is less than 3% at room temperature. A plastic deformation can be negligible up to this value. It is however also dependent on the duty cycle of the load.
***Surface pressure, page 45***

# Bearing technology | Plain bearings | iglidur® L250

### Permissible surface speeds

iglidur® L250 has been developed especially for high surface speeds with low loads. Besides the physical limit, which is pre-set by the heating of the bearing, the coefficient of wear also acts limiting if rapidly high glide paths emerge at high peripheral speeds and the permitted wear limit is thus reached earlier. The maximum speeds are shown in table 03.

*Surface speed, page 48*

### Temperature

iglidur® L250 plain bearings can be used at temperatures up to +180°C for short periods. Note that a mechanical securing of the bearing is recommended from temperatures of +55°C. Higher temperatures can also cause the plain bearing to lose its press-fit and move in the hole.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

In the best pairing (with 304 stainless steel shafts), coefficient of friction of 0.14µ is already reached with low loads. Coefficient of friction under 0.1 was measured already below 10MPa (diagrams 04 and 05).

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

As seen in diagram 06, many shafts are recommendable for low loads and low rotations. The low coefficient of friction is additionally retained over a wide range of recommendable shaft surfaces finish. For loads higher than 1MPa, particular attention should be paid to the shaft material used.

*Shaft materials, page 56*

### Installation tolerances

iglidur® L250 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

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

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

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 1.0 | 0.7 | 2.0 |
| Short-term | **m/s** | 1.5 | 1.1 | 3.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction µ | 0.08-0.19 | 0.09 | 0.04 | 0.04 |

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

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

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





# Technical data

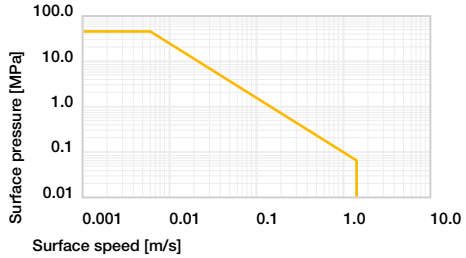



Diagram 01: Permissible pv values for iglidur® L250 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

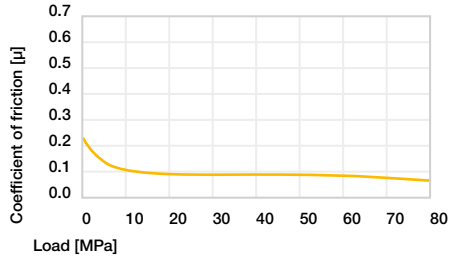



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

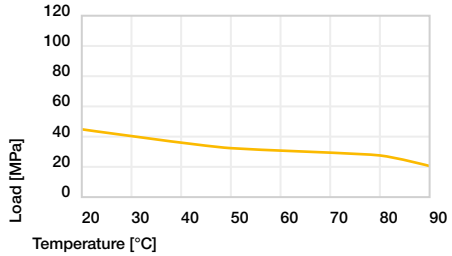



Diagram 02: Maximum recommended surface pressure as a function of temperature (45MPa at +20°C)

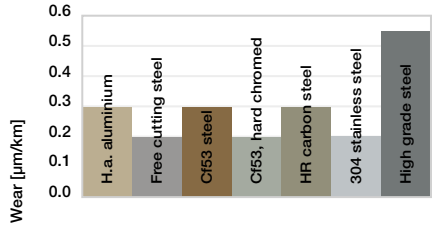



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

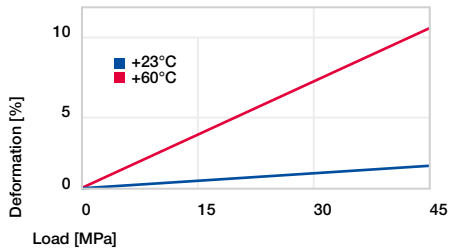



Diagram 03: Deformation under pressure and temperature

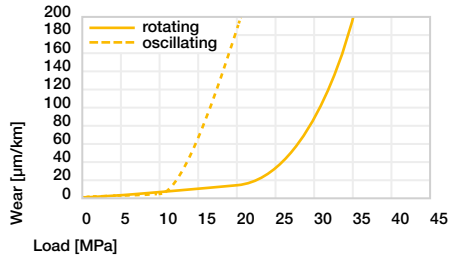



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

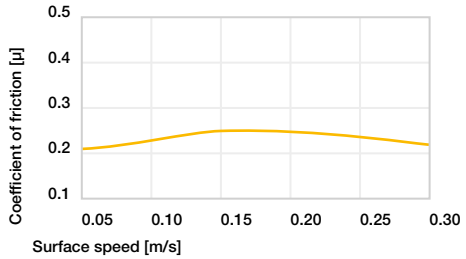
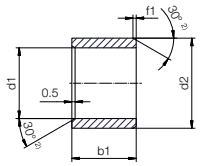



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

# Bearing technology | Plain bearings | iglidur® L250

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** L250SM-0608-06 **– no minimum order quantity.**
L250 iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 6.0 | **L250SM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 10.0 | **L250SM-0810-10** |
| 10.0 | | 12.0 | 10.0 | **L250SM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 12.0 | **L250SM-1214-12** |
| 16.0 | | 18.0 | 15.0 | **L250SM-1618-15** |
| 20.0 | +0.040 +0.124 | 23.0 | 20.0 | **L250SM-2023-20** |

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

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

**Order online**
including delivery times, prices, online tools
www.igus.eu/L250

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

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

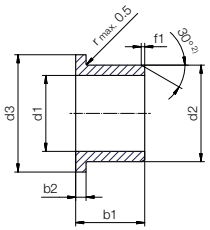
**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**





# Bearing technology | Plain bearings | iglidur® L250

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** 250FM-0608-06 **– no minimum order quantity.**
L250 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 12.0 | 6.0 | 1.00 | **L250FM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 15.0 | 10.0 | 1.00 | **L250FM-0810-10** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **L250FM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 20.0 | 12.0 | 1.00 | **L250FM-1214-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **L250FM-1618-17** |
| 20.0 | +0.040 +0.124 | 23.0 | 30.0 | 21.5 | 1.50 | **L250FM-2023-21** |

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

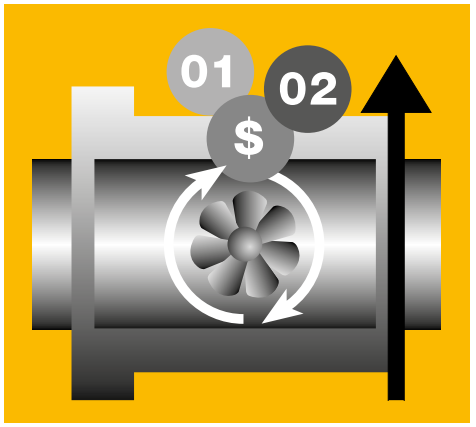
**Available from stock**
Detailed information about delivery time online.
www.igus.eu/24

**Order online**
including delivery times, prices, online tools
www.igus.eu/L250

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

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

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




# For high rotational speeds

## High performance at lower cost

## iglidur® L350

**When to use it?**

- For rotating applications at high speed
- When the highest service life is required
- For high pv values with low loads
- At operating temperatures up to +180 °C (long-term, short-term up to max. +210°C)

**When not to use it?**

- When a universal bearing for high temperatures is required
  ***iglidur® X***
- When medium to high pressures occur
  ***iglidur® G, iglidur® Q***
- For oscillating applications
  ***iglidur® W300, iglidur® J350***



EN 09/2023

# Bearing technology | Plain bearings | iglidur® L350

Ø
3.0-10.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## For high rotational speeds
## High performance at lower cost

iglidur® L350 is extremely long-lasting. Developed for the best coefficient of wear and friction at speeds of 1.5m/s and more, this material outperforms classic plain bearings in high-speed rotation operation.

- Up to 3.5m/s rotating
- Temperature-resistant up to +210°C in continuous use
- Low moisture absorption
- Good price-performance ratio
- Extremely wear-resistant
- Lubrication and maintenance-free
- Standard range from stock

### Typical application areas

- Electric motors
- Fans
- Household appliances

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

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

-100 °C up to +180 °C

59MPa

V-0

RoHS-II

ISO 3547-1

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.54 | |
| Colour | | dark grey | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.4 | DIN 53495 |
| Max. moisture absorption | % weight | 1.4 | |
| Coefficient of friction, dynamic, against steel | μ | 0.07-0.18 | |
| pv value, max. (dry) | MPa · m/s | 3.00 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 15,882 | DIN 53457 |
| Flexural strength at +20°C | MPa | 210 | DIN 53452 |
| Compressive strength | MPa | 210 | |
| Max. permissible surface pressure (+20°C) | MPa | 59 | |
| Shore D hardness | | 80 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +180 | |
| Max. application temperature short-term | °C | +210 | |
| Min. application temperature | °C | -100 | |
| Thermal conductivity | W/m · K | 0.61 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 7 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^5$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^5$ | DIN 53482 |

Table 01: Material properties

With iglidur® L350, another lubrication and maintenance-free material is now available, which is designed for continuous high speeds. Due to the low thermal expansion and low moisture absorption, bearings can be manufactured with very little clearance. iglidur® L350 is especially suitable for use in fans, blowers or electric motors – and the costs are also lower.

### Moisture absorption

The very low moisture absorption of 0.4 %weight in standard climatic conditions and 1.4 %weight at maximum water absorption also enables continuous operation in high humidity or in liquid media.

### Vacuum

In vacuum, the moisture content is released as vapour. Due to its low moisture absorption, use in a vacuum is possible.

### Radiation resistance

Plain bearings made from iglidur® L350 are resistant up to a radiation intensity of $2 \cdot 10^2$ Gy. Higher radiation affects the material and may result in a significant decrease in mechanical properties.

### Resistance to weathering

iglidur® L350 plain bearings have not yet been tested for their resistance to weathering. Please consult igus® if you're planning to use them outdoors.

### Mechanical properties

When temperatures increase, the compressive strength of iglidur® L350 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® L350 under different loads. At the recommended maximum surface pressure of 59MPa the deformation is less than 2.5% at room temperature. A plastic deformation can be negligible up to this value. It is however also dependent on the duty cycle of the load.

*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® L350

### Permissible surface speeds

iglidur® L350 has been developed especially for high surface speeds with low loads. Due to the high temperature resistance of iglidur® L350, the physical limit created from heating of the bearing has been increased significantly. In addition, the extremely low wear allows the high acceleration speeds to be reached and maintained. The maximum speeds are shown in table 03.

*Surface speed, page 48*

### Temperature

The iglidur® L350 plain bearings can be used at temperatures up to +210°C for short periods. Note that a mechanical securing of the bearing is recommended from temperatures of +140°C. Higher temperatures can also cause the plain bearing to lose its press-fit and move in the hole.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

The very low coefficient of friction remains, even at high speeds. Diagram 04 shows this relationship on a steel shaft at 0.75MPa surface pressure.

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

Diagram 05 compares the wear of a sintered bearing with that of bearings made of the materials iglidur® L500 and L350. At a surface speed of 1.5m/s or more, the wear of the sintered bearing increases exponentially whereas the wear of the iglidur® plain bearings almost remains the same up to a speed of more than 3m/s.

*Shaft materials, page 56*

### Installation tolerances

iglidur® L350 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

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

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

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | m/s | 3.0 | 1.5 | 4.0 |
| Short-term | m/s | 4.0 | 3.0 | 6.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction µ | 0.07-0.18 | 0.06 | 0.04 | 0.03 |

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

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

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



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iglidur® L350
+180 °C
59MPa

# Technical data

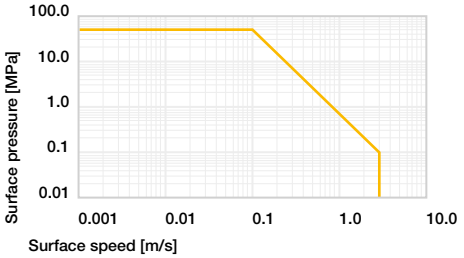


Diagram 01: Permissible pv values for iglidur® L350 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

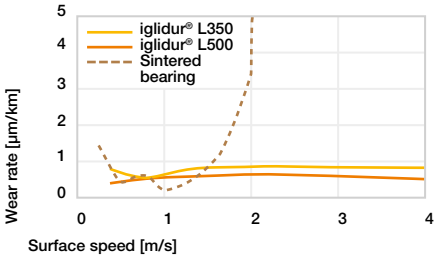


Diagram 05: Rotating wear against Cf53, p = 0.25MPa, T = +23°C

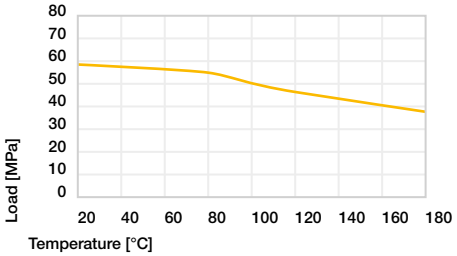


Diagram 02: Maximum recommended surface pressure as a function of temperature (59MPa at +20°C)

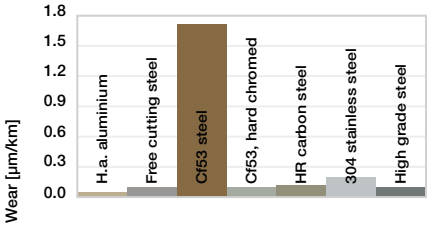


Diagram 06: Wear, rotating with different shaft materials, p = 1MPa, v = 0.3m/s

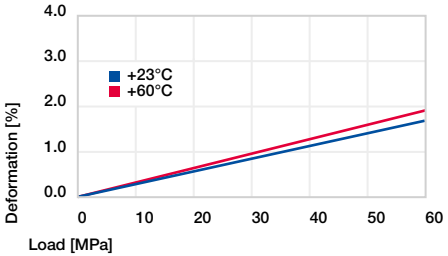


Diagram 03: Deformation under pressure and temperature

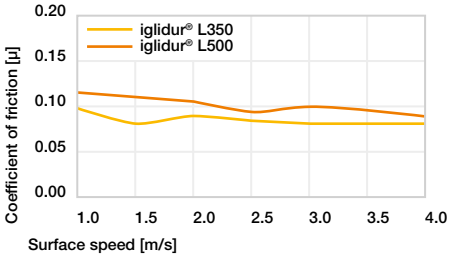


Diagram 07: Rotating coefficient of friction - "High speed" against Cf53, p = 1 MPa (except for iglidur® L250), T = +23°C

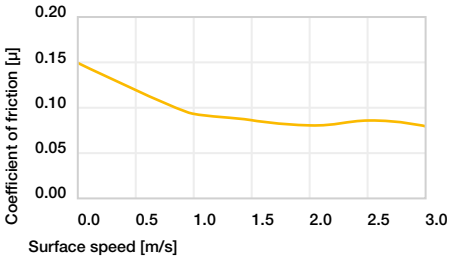


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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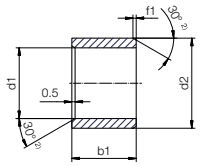
# Bearing technology | Plain bearings | iglidur® L350

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** L350SM-0304-03 **– no minimum order quantity.**
L350 iglidur® material S Cylindrical M Metric 03 Inner Ø d1 04 Outer Ø d2 03 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 3.0 | +0.006 +0.046 | 4.5 | 3.0 | **L350SM-0304-03** |
| 4.0 | +0.010 +0.058 | 5.5 | 4.0 | **L350SM-0405-04** |
| 5.0 | | 7.0 | 5.0 | **L350SM-0507-05** |
| 6.0 | | 8.0 | 6.0 | **L350SM-0608-06** |
| 8.0 | +0.013 +0.071 | 10.0 | 10.0 | **L350SM-0810-10** |
| 10.0 | | 12.0 | 10.0 | **L350SM-1012-10** |

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

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www.igus.eu/L350

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

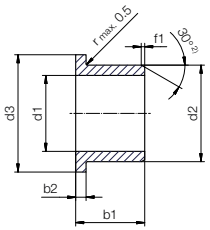
**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**





# Bearing technology | Plain bearings | iglidur® L350

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

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

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** L350FM-0304-05 **– no minimum order quantity.**
L350 iglidur® material F With flange M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 3.0 | +0.006 +0.046 | 4.5 | 7.5 | 5.0 | 0.75 | **L350FM-0304-05** |
| 4.0 | +0.010 +0.058 | 5.5 | 9.5 | 6.0 | 0.75 | **L350FM-0405-06** |
| 5.0 | | 7.0 | 11.0 | 7.0 | 1.00 | **L350FM-0507-07** |
| 6.0 | | 8.0 | 12.0 | 8.0 | 1.00 | **L350FM-0608-08** |
| 8.0 | +0.013 +0.071 | 10.0 | 15.0 | 9.0 | 1.00 | **L350FM-0810-09** |
| 10.0 | | 12.0 | 18.0 | 9.0 | 1.00 | **L350FM-1012-09** |

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

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| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
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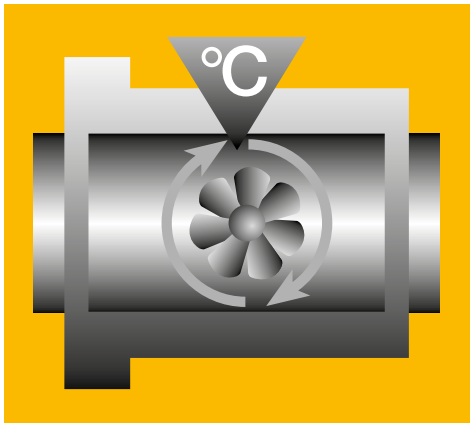


# For extreme rotational speeds

## Temperature-resistant and media-resistant

## iglidur® L500

**When to use it?**

- For rotating applications at high speed
- When the highest service life is required
- For high pv values with low loads
- At continuous operating temperatures up to +250°C (short-term up to max. +350°C)

**When not to use it?**

- When a universal plain bearing for high temperatures is required
  ***iglidur® X***
- When medium to high pressures occur
  ***iglidur® G, iglidur® Q***
- For oscillating applications
  ***iglidur® W300, iglidur® J350***

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# Bearing technology | Plain bearings | iglidur® L500

Ø
3.0-10.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## For extreme rotational speeds
## Temperature-resistant and media-resistant

Specially developed for fast continuous operation under low loads, iglidur® L500, inter alia, is intended for fan and electric motor applications.

- Temperature-resistant up to +250°C
- For rotational movements with surface speeds up to 5m/s
- Very wear-resistant
- Low moisture absorption
- Low thermal expansion
- Lubrication-free
- Maintenance-free

### Typical application areas

- Cooling fans
- Electric motors
- Fans, etc.

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

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.53 | |
| Colour | | black | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.1 | DIN 53495 |
| Max. moisture absorption | % weight | 0.3 | |
| Coefficient of friction, dynamic, against steel | μ | 0.08-0.15 | |
| pv value, max. (dry) | MPa · m/s | 4.00 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 12,015 | DIN 53457 |
| Flexural strength at +20°C | MPa | 201 | DIN 53452 |
| Compressive strength | MPa | 70 | |
| Max. permissible surface pressure (+20°C) | MPa | 70 | |
| Shore D hardness | | 81 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +250 | |
| Max. application temperature short-term | °C | +315 | |
| Min. application temperature | °C | -100 | |
| Thermal conductivity | W/m · K | 0.45 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 6 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{10}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{12}$ | DIN 53482 |

Table 01: Material properties

-100°C up to +250°C

70MPa

V-0

RoHS-II

ISO 3547-1

iglidur® L500 is a plain bearing material for high speeds and fast sliding movements with low loads. Due to the low thermal expansion and low moisture absorption, bearings can be manufactured with very little clearance. Applications which feature these advantages are fans, small motors, fast-running sensors or the magnet technology.

### Moisture absorption

The very low moisture absorption of 0.1% weight in standard climatic conditions and 1.4% weight at maximum water absorption also enables continuous operation in high humidity or in liquid media.

### Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

### Radiation resistance

Plain bearings made from iglidur® L500 are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy. Higher radiation weakens the material and may result in a significant decrease in mechanical properties.

### Resistance to weathering

iglidur® L500 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

### Mechanical properties

When temperatures increase, the compressive strength of iglidur® L500 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® L500 under different loads. At the recommended maximum surface pressure of 70MPa the deformation is less than 2.5% at room temperature. A plastic deformation can be negligible up to this value. It is however also dependent on the duty cycle of the load.

***Surface pressure, page 45***

# Bearing technology | Plain bearings | iglidur® L500

### Permissible surface speeds

iglidur® L500 has been developed especially for high surface speeds with low loads. Due to the high temperature resistance of iglidur® L500, the physical limit created from heating of the bearing has been increased significantly. In addition, the extremely low wear allows the high acceleration speeds to be reached and maintained. The maximum speeds are shown in table 03.

*Surface speed, page 48*

### Temperature

iglidur® L250 plain bearings can be used at temperatures up to +315°C for short periods. For temperatures over +135°C an additional securing is required. Higher temperatures can also cause the plain bearing to lose its press-fit and move in the hole.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

The excellent coefficient of friction level of iglidur® L500 in dry operation decreases considerably with speed. Diagram 04 shows this with respect to a steel shaft. As the load increases, the coefficient of friction decreases, especially in the range up to 20MPa (diagram 05).

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

Diagram 07 shows the result of a comparison test between iglidur® L500 and a sintered bearing. The wear of the sintered bearing increases exponentially above 1.5m/s, while the iglidur® L500 plain bearing retains a near constant wear rate up to and above 4m/s.

*Shaft materials, page 56*

### Installation tolerances

iglidur® L500 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | + |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | + |
| Strong alkalines | + |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | m/s | 4.0 | 1.5 | 5.0 |
| Short-term | m/s | 5.0 | 3.0 | 8.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.08-0.15 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | F10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.006 | +0.046 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.010 | +0.058 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.013 | +0.071 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.016 | +0.086 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.020 | +0.104 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.025 | +0.125 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.030 | +0.150 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | -0.036 | +0.176 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.043 | +0.203 | +0.000 | +0.100 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

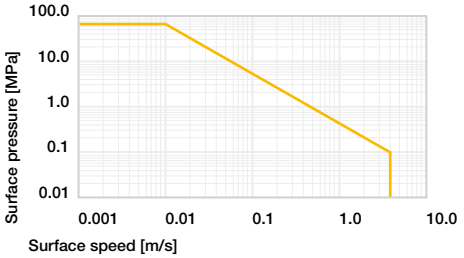



Diagram 01: Permissible pv values for iglidur® L500 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

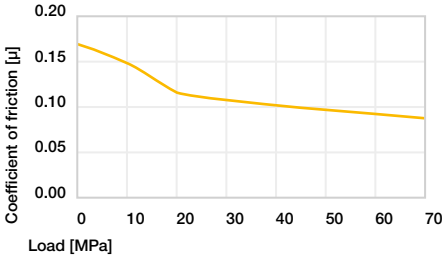



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

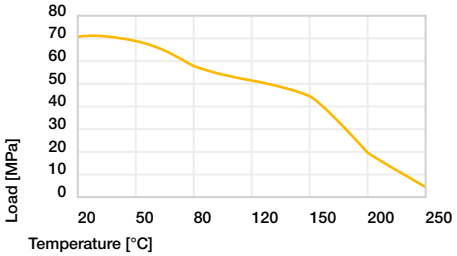



Diagram 02: Maximum recommended surface pressure as a function of temperature (70MPa at +20°C)

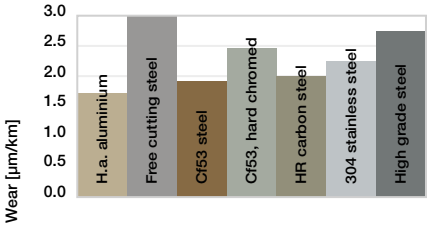



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

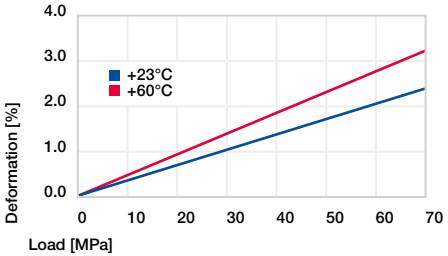



Diagram 03: Deformation under pressure and temperature

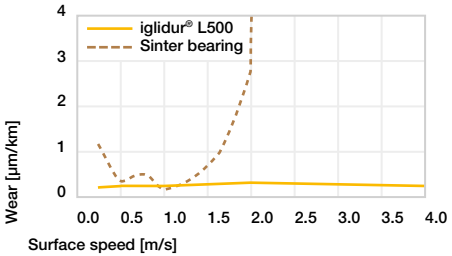



Diagram 07: Rotating wear against Cf53, p = 0.25MPa, T = +23°C

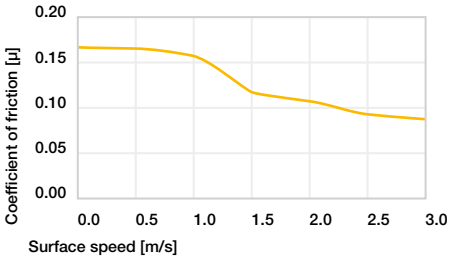
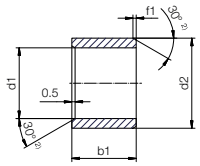



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

# Bearing technology | Plain bearings | iglidur® L500

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 |
|---|---|---|
| f1 [mm] | 0.3 | 0.5 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** L500SM-0304-03 **– no minimum order quantity.**
L500 iglidur® material S Cylindrical M Metric 03 Inner Ø d1 04 Outer Ø d2 03 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 3.0 | +0.006 +0.046 | 4.5 | 3.0 | **L500SM-0304-03** |
| 4.0 | +0.010 +0.058 | 5.5 | 4.0 | **L500SM-0405-04** |
| 5.0 | | 7.0 | 5.0 | **L500SM-0507-05** |
| 6.0 | | 8.0 | 6.0 | **L500SM-0608-06** |
| 8.0 | +0.013 +0.071 | 10.0 | 10.0 | **L500SM-0810-10** |
| 10.0 | | 12.0 | 10.0 | **L500SM-1012-10** |

[3] After press-fit. *Testing methods, page 61*

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| 25-49 | 200-499 | 2,500-4,999 |

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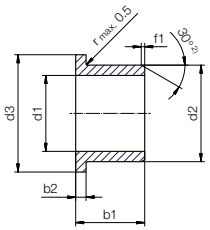
**Free shipping within Germany for orders above €150.**





# Bearing technology | Plain bearings | iglidur® L500

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 |
|---|---|---|
| f1 [mm] | 0.3 | 0.5 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** L500FM-0304-05 **– no minimum order quantity.**
L500 iglidur® material F With flange M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 3.0 | +0.006 +0.046 | 4.5 | 7.5 | 5.0 | 0.75 | **L500FM-0304-05** |
| 4.0 | +0.010 +0.058 | 5.0 | 9.5 | 4.0 | 0.75 | **L500FM-0405-04** |
| 5.0 | | 7.0 | 11.0 | 7.0 | 1.00 | **L500FM-0507-07** |
| 6.0 | | 8.0 | 12.0 | 8.0 | 1.00 | **L500FM-0608-08** |
| 8.0 | +0.013 +0.071 | 10.0 | 15.0 | 9.5 | 1.00 | **L500FM-0810-09** |
| 10.0 | | 12.0 | 18.0 | 9.5 | 1.00 | **L500FM-1012-09** |

[3] After press-fit. *Testing methods, page 61*

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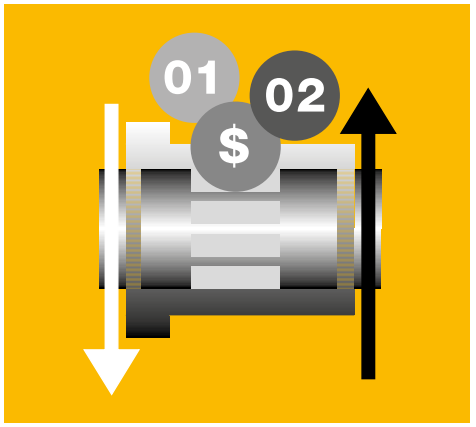


# Low-cost
## Abrasion-resistant
## iglidur® R

**When to use it?**

- When high wear resistance at low loads is required
- When a cost-effective plain bearing is required
- When very low coefficient of friction in dry operation are required
- When high edge loads occur
- When you are looking for low water absorption
- When PTFE and silicone are not allowed in your application

**When not to use it?**

- When high pressure occurs
  ***iglidur® G***
- When continuous operating temperatures are higher than +90°C
  ***iglidur® G, iglidur® P***
- When the best wear resistance is required
  ***iglidur® J***


EN 09/2023

# Bearing technology | Plain bearings | iglidur® R

Ø
2.0-35.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 846

## Low-cost
## Abrasion-resistant

Low-cost material with low coefficient of friction and good wear resistance at low to medium loads.

- High wear resistance
- Low coefficient of friction
- Cost-effective
- Low moisture absorption
- Lubrication-free
- Maintenance-free

### Typical application areas

- Sports and leisure
- Model making
- Furniture industry
- Mechatronics

| Descriptive technical specifications | | |
|---|---|---|
| Wear resistance at +23°C | – | + |
| Wear resistance at +90°C | – | + |
| Wear resistance at +150°C | – | + |
| Slide property | – | + |
| Wear resistance under water | – | + |
| Media resistance | – | + |
| Resistant to edge pressures | – | + |
| Resistant to shock and impact loads | – | + |
| Dirt resistance | – | + |

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**Online service life calculation**
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# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.39 | |
| Colour | | dark red | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.2 | DIN 53495 |
| Max. moisture absorption | % weight | 1.1 | |
| Coefficient of friction, dynamic, against steel | μ | 0.09-0.25 | |
| pv value, max. (dry) | MPa · m/s | 0.27 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 1,950 | DIN 53457 |
| Flexural strength at +20°C | MPa | 70 | DIN 53452 |
| Compressive strength | MPa | 68 | |
| Max. permissible surface pressure (+20°C) | MPa | 23 | |
| Shore D hardness | | 77 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +90 | |
| Max. application temperature short-term | °C | +110 | |
| Min. application temperature | °C | -50 | |
| Thermal conductivity | W/m · K | 0.25 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 11 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{12}$ | DIN 53482 |

Table 01: Material properties

-50°C up to +90°C

23MPa

The development of the iglidur® R as a bearing material focused on high performance and very low cost. Especially in the dry operation, low coefficient of friction and wear were to be achieved. Plain bearings made from iglidur® R are supported by a combination of solid lubricants. The PTFE and silicon-free material achieves extremely low coefficient of friction in dry operation and runs largely free of stick-slip effects.

### Moisture absorption

The moisture absorption of iglidur® R plain bearings in ambient conditions is approximately 0.2% weight. The saturation limit submerged in water is 1.1% weight. This must be taken into account for these types of applications.

### Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

### Radiation resistance

Plain bearings made from iglidur® R are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® R plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® R plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® R at radial loads. At the maximum recommended surface pressure of 23MPa the deformation is about 4% at room temperature. A plastic deformation can be negligible up to this value. However, it is also dependent on the service time.

*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® R

### Permissible surface speeds

iglidur® R plain bearings are suitable for high surface speeds. Speeds of up to 5.0m/s are permitted in linear motions. The maximum values shown in table 03 can only be achieved at low pressures. The specified values show the speed at which due to friction an increase in temperature up to the long-term permitted value can occur.

*Surface speed, page 48*

### Temperature

With increasing temperatures, the compressive strength of iglidur® R plain bearings decreases. Diagram 02 shows this inverse relationship. The temperatures prevailing in the bearing system also have an influence on the wear. For temperatures over +50°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagram 04 and 05). iglidur® R is especially suitable for applications in which high pv values are induced mainly through the high surface speed rather than surface pressure. Less distinct is the dependency of the coefficient of friction of the iglidur® R plain bearings on the shaft surface.

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® R. At 0.3m/s and 1MPa, the high grade steel and Cf53 shafts are the best materials. With increasing loads the iglidur® R bearings feature the best wear behaviour with Cf53 and 304 stainless steel shafts. In pivoting applications, the hard-chromed shaft proves to be the ideal mating surface. If the shaft material you plan on using is not shown in these test results, please contact us.

*Shaft materials, page 56*

### Installation tolerances

iglidur® R plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | 0 up to – |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | – |
| Strong alkalines | + up to 0 |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | m/s | 0.8 | 0.6 | 3.5 |
| Short-term | m/s | 1.2 | 1.0 | 5.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.09-0.25 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | E10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.014 | +0.054 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.020 | +0.068 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.025 | +0.083 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.032 | +0.102 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.040 | +0.124 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.050 | +0.150 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.060 | +0.180 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.072 | +0.212 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.085 | +0.245 | -0.100 | +0.000 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

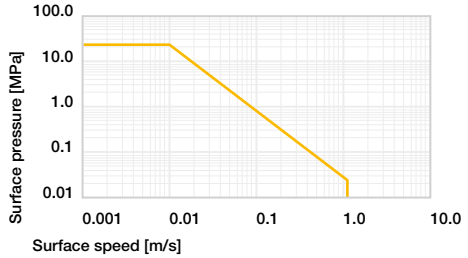



Diagram 01: Permissible pv values for iglidur® R plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

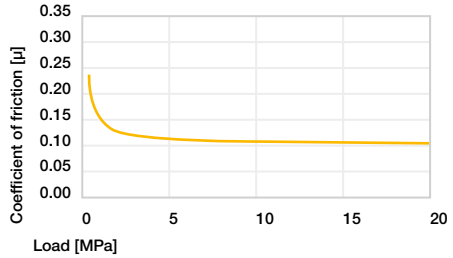



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

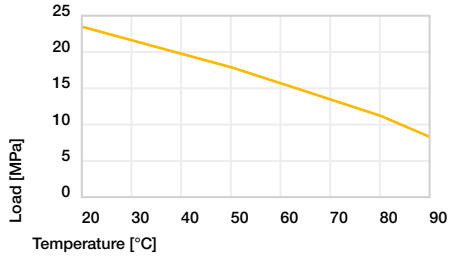



Diagram 02: Maximum recommended surface pressure as a function of temperature (23MPa at +20°C)

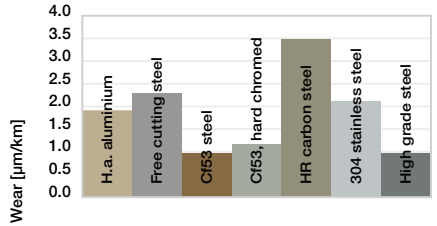



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

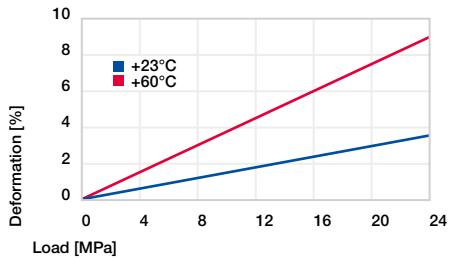



Diagram 03: Deformation under pressure and temperature

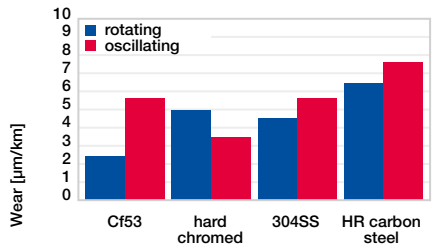



Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

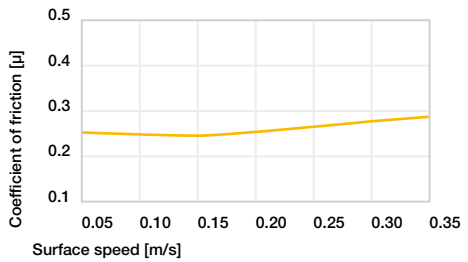
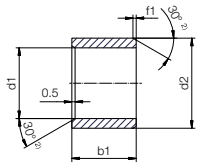



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

# Bearing technology | Plain bearings | iglidur® R

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** RSM-0203-07 – **no minimum order quantity.**
R iglidur® material S Cylindrical M Metric 02 Inner Ø d1 03 Outer Ø d2 07 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 2.0 | +0.014 +0.054 | 3.6 | 7.0 | **RSM-0203-07** |
| 4.0 | +0.020 +0.068 | 5.5 | 4.0 | **RSM-0405-04** |
| 5.0 | | 7.0 | 5.0 | **RSM-0507-05** |
| 6.0 | | 8.0 | 6.0 | **RSM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 10.0 | **RSM-0810-10** |
| 10.0 | | 12.0 | 5.0 | **RSM-1012-05** |
| 10.0 | | 12.0 | 10.0 | **RSM-1012-10** |
| 10.0 | | 12.0 | 15.0 | **RSM-1012-15** |
| 12.0 | +0.032 +0.102 | 14.0 | 12.0 | **RSM-1214-12** |
| 14.0 | | 16.0 | 15.0 | **RSM-1416-15** |
| 15.0 | | 17.0 | 15.0 | **RSM-1517-15** |
| 16.0 | | 18.0 | 15.0 | **RSM-1618-15** |
| 18.0 | | 20.0 | 25.0 | **RSM-1820-25** |
| 20.0 | +0.040 +0.124 | 23.0 | 15.0 | **RSM-2023-15** |
| 20.0 | | 23.0 | 20.0 | **RSM-2023-20** |
| 25.0 | | 28.0 | 25.0 | **RSM-2528-25** |
| 28.0 | | 32.0 | 12.0 | **RSM-2832-12** |
| 30.0 | | 34.0 | 25.0 | **RSM-3034-25** |
| 30.0 | | 34.0 | 30.0 | **RSM-3034-30** |
| 35.0 | +0.050 +0.150 | 39.0 | 30.0 | **RSM-3539-30** |

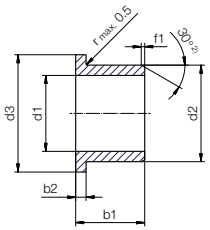
[3] After press-fit. *Testing methods, page 61*





# Bearing technology | Plain bearings | iglidur® R

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 |
|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** RFM-0405-03 – **no minimum order quantity.**
R iglidur® material F With flange M Metric 04 Inner Ø d1 05 Outer Ø d2 03 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 4.0 | +0.020 +0.068 | 5.5 | 9.5 | 3.0 | 0.75 | **RFM-0405-03** |
| 4.0 | | 5.5 | 9.5 | 4.0 | 0.75 | **RFM-0405-04** |
| 5.0 | | 7.0 | 11.0 | 5.0 | 1.00 | **RFM-0507-05** |
| 6.0 | | 8.0 | 12.0 | 6.0 | 1.00 | **RFM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 15.0 | 5.0 | 1.00 | **RFM-0810-05** |
| 8.0 | | 10.0 | 15.0 | 10.0 | 1.00 | **RFM-0810-10** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **RFM-1012-10** |
| 10.0 | | 12.0 | 18.0 | 18.0 | 1.00 | **RFM-1012-18** |
| 12.0 | +0.032 +0.102 | 14.0 | 20.0 | 10.0 | 1.00 | **RFM-1214-10** |
| 12.0 | | 14.0 | 20.0 | 12.0 | 1.00 | **RFM-1214-12** |
| 14.0 | | 16.0 | 22.0 | 17.0 | 1.00 | **RFM-1416-17** |
| 15.0 | | 17.0 | 23.0 | 17.0 | 1.00 | **RFM-1517-17** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **RFM-1618-17** |
| 18.0 | | 20.0 | 26.0 | 17.0 | 1.00 | **RFM-1820-17** |
| 20.0 | +0.040 +0.124 | 23.0 | 30.0 | 21.5 | 1.50 | **RFM-2023-21** |
| 22.0 | | 25.0 | 29.0 | 4.5 | 1.50 | **RFM-222529-045** |
| 25.0 | | 28.0 | 35.0 | 21.5 | 1.50 | **RFM-2528-21** |

[3] After press-fit. *Testing methods, page 61*

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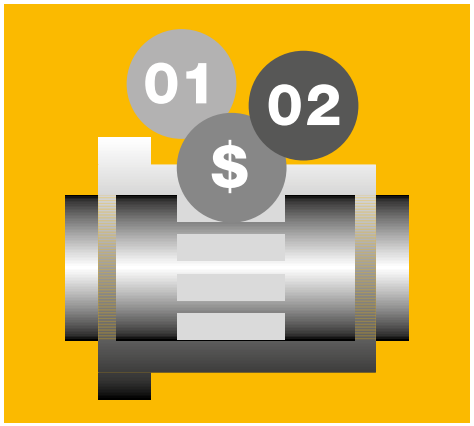
**Order online**
including delivery times, prices, online tools
www.igus.eu/R

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**




# Low-cost with silicone
## Abrasion-resistant
## iglidur® D

**When to use it?**

- When low coefficient of friction is required
- For high speeds
- For low load
- When a cost-effective plain bearing is required

**When not to use it?**

- When high pressure occurs
  ***iglidur® G***
- When the part should be free of silicone
  ***iglidur® J, iglidur® R***
- When continuous operating temperatures are higher than +90°C
  ***iglidur® G, iglidur® P***


EN 09/2023

# Bearing technology | Plain bearings | iglidur® D

Ø
–

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## Low-cost with silicone
## Abrasion-resistant

Low-cost-material with low coefficient of friction and good wear resistance at low loads.

- Low coefficient of friction
- For low loads
- Cost-effective
- Vibration-dampening
- Low moisture absorption
- Lubrication-free
- Suitable for high surface speeds

### Typical application areas

- Sports and leisure
- Model making
- Furniture industry
- Mechatronics

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | ■■■□□ | + |
| Wear resistance at +90°C | – | ■□□□□ | + |
| Wear resistance at +150°C | – | ■□□□□ | + |
| Slide property | – | ■■■□□ | + |
| Wear resistance under water | – | ■□□□□ | + |
| Media resistance | – | ■■■■□ | + |
| Resistant to edge pressures | – | ■■■■□ | + |
| Resistant to shock and impact loads | – | ■■■■□ | + |
| Dirt resistance | – | ■■■■□ | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.40 | |
| Colour | | green | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.3 | DIN 53495 |
| Max. moisture absorption | % weight | 1.1 | |
| Coefficient of friction, dynamic, against steel | μ | 0.08-0.26 | |
| pv value, max. (dry) | MPa · m/s | 0.27 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,000 | DIN 53457 |
| Flexural strength at +20°C | MPa | 72 | DIN 53452 |
| Compressive strength | MPa | 70 | |
| Max. permissible surface pressure (+20°C) | MPa | 23 | |
| Shore D hardness | | 78 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +90 | |
| Max. application temperature short-term | °C | +110 | |
| Min. application temperature | °C | -50 | |
| Thermal conductivity | W/m · K | 0.25 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 11 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{14}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{14}$ | DIN 53482 |

Table 01: Material properties

-50°C up to +90°C

23MPa

During the development process of iglidur® D as a bearing material, high performance and low price were the top requirements. In particular, low coefficient of friction was required at high speeds in dry operation. This material containing silicone achieves low coefficient of friction in dry operation and runs with virtually no stick-slip.

### Moisture absorption

The moisture absorption of iglidur® D plain bearings in ambient conditions is approximately 0.3% weight. The saturation limit submerged in water is 1.1% weight. This low moisture absorption allows its use in wet environments.

### Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

### Radiation resistance

Plain bearings made from iglidur® D are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® D plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® D plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

iglidur® D plain bearings were specially developed for low radial loads. Diagram 03 shows the elastic deformation of iglidur® D at radial loads. At the maximum recommended surface pressure of 23MPa, the deformation is less than 3%. A plastic deformation can be negligible up to this value. However, it is also dependent on the service time.

***Surface pressure, page 45***

# Bearing technology | Plain bearings | iglidur® D

### Permissible surface speeds

iglidur® D plain bearings are suitable for high surface speeds. Speeds of up to 10.0m/s are permitted in linear motions. The maximum values shown in table 03 can only be achieved at low pressures. The specified values show the speed at which due to friction an increase in temperature up to the long-term permitted value can occur.

*Surface speed, page 48*

### Temperature

With increasing temperatures, the compressive strength of iglidur® D plain bearings decreases. Diagram 02 shows this inverse relationship. The temperatures prevailing in the bearing system also have an influence on the wear. For temperatures over +50°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagram 04 and 05). In the Ra range between 0.4-0.6μm, the coefficient of friction attains its optimum value.

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® D. If the shaft material you plan on using is not shown in these test results, please contact us.

*Shaft materials, page 56*

### Installation tolerances

iglidur® D plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

### Product range

iglidur® D plain bearings are manufactured to special order.

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | 0 up to – |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | – |
| Strong alkalines | + up to 0 |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 1.5 | 1.1 | 8.0 |
| Short-term | **m/s** | 3.0 | 2.1 | 10.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.08-0.26 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | E10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.014 | +0.054 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.020 | +0.068 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.025 | +0.083 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.032 | +0.102 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.040 | +0.124 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.050 | +0.150 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.060 | +0.180 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.072 | +0.212 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.085 | +0.245 | -0.100 | +0.000 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

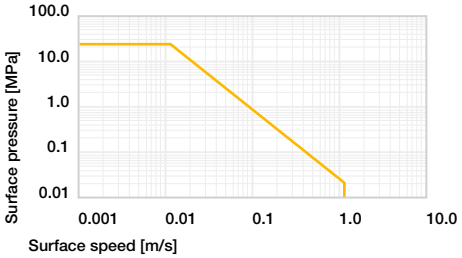



Diagram 01: Permissible pv values for iglidur® D plain bearing with a wall thickness of 1 mm dry operation against a steel shaft at +20°C, mounted in a steel housing

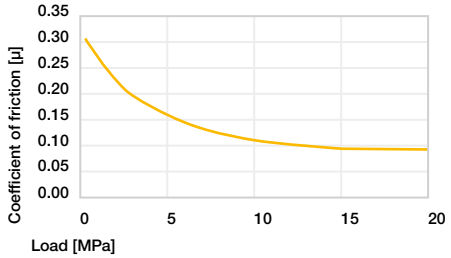



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

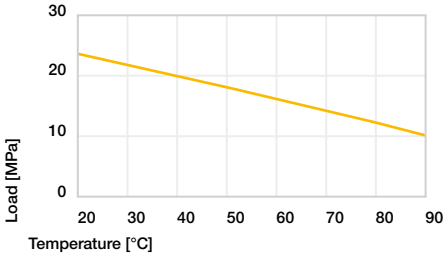



Diagram 02: Maximum recommended surface pressure as a function of temperature (23MPa at +20°C)

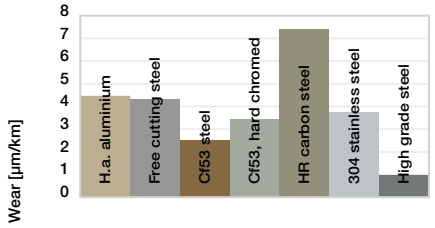



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

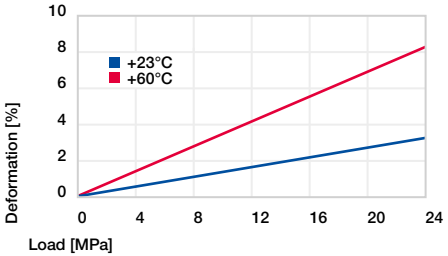



Diagram 03: Deformation under pressure and temperature

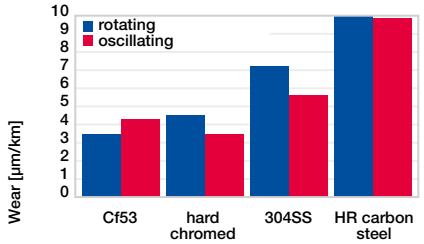



Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

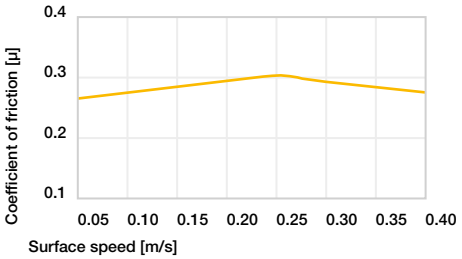
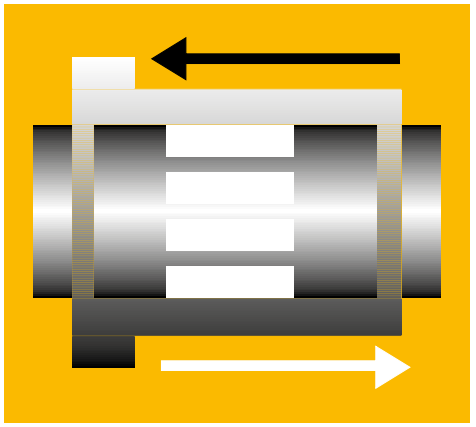



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa



# Specialist for linear movement

## Low wear with low coefficient of friction

## iglidur® J200

**When to use it?**

- For applications with hard-anodised shafts
- When lowest coefficient of friction is required
- When long service life at low loads is required

**When not to use it?**

- For steel shafts
  ***iglidur® J, iglidur® W300***
- When continuous operating temperatures are higher than +90°C
  ***iglidur® V400***
- When a cost-effective universal plain bearing is required
  ***iglidur® G, iglidur® P***



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# Bearing technology | Plain bearings | iglidur® J200

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## Specialist for linear movement
Low wear with low coefficient of friction

The specialist for low coefficient of friction and minimal wear with hard-anodised aluminium shafts.

- Recommended for hard-anodised aluminium shafts
- Low coefficient of friction
- High wear resistance
- For low and medium loads
- Lubrication-free
- Maintenance-free

**Typical application areas**

- Automation
- Linear technology
- Actuator

Also available as:

Bar stock, round bar
**Page 743**

Bar stock, plate
**Page 773**

tribo-tape liner
**Page 781**

Guide rings
**Page 641**

Two hole flange bearings
**Page 667**

Moulded special parts
**Page 696**

igubal® spherical balls
**Page 993**

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | ■■■□□ | + |
| Wear resistance at +90°C | – | ■■■□□ | + |
| Wear resistance at +150°C | – | ■■□□□ | + |
| Slide property | – | ■■■■□ | + |
| Wear resistance under water | – | ■■□□□ | + |
| Media resistance | – | ■■■■□ | + |
| Resistant to edge pressures | – | ■■■■□ | + |
| Resistant to shock and impact loads | – | ■■■■□ | + |
| Dirt resistance | – | ■■■□□ | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert



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iglidur® J200
+90°C
23MPa

# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.72 | |
| Colour | | matt grey | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.2 | DIN 53495 |
| Max. moisture absorption | % weight | 0.7 | |
| Coefficient of friction, dynamic, against steel | μ | 0.11-0.17 | |
| pv value, max. (dry) | MPa · m/s | 0.30 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,800 | DIN 53457 |
| Flexural strength at +20°C | MPa | 58 | DIN 53452 |
| Compressive strength | MPa | 43 | |
| Max. permissible surface pressure (+20°C) | MPa | 23 | |
| Shore D hardness | | 70 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +90 | |
| Max. application temperature short-term | °C | +120 | |
| Min. application temperature | °C | -50 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 8 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^8$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^8$ | DIN 53482 |

**Table 01: Material properties**

-50°C up to +90°C

23MPa

HB

RoHS-II

iglidur® J200 is the result of the development of extremely low friction plain bearing materials. When using plain bearings in linear motion, friction can be critical. Many materials can give low coefficient of friction under high loads, but iglidur® J200 can give excellent friction values even at low loads.

**Moisture absorption**
The moisture absorption of iglidur® J200 plain bearings in ambient conditions is approximately 0.2% weight. The saturation limit submerged in water is 0.7% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

**Vacuum**
In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

**Radiation resistance**
Plain bearings made from iglidur® J200 are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

**Resistance to weathering**
iglidur® J3 plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

**Mechanical properties**
When temperatures increase, the compressive strength of iglidur® J200 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
At the maximum permissible load of 23MPa, the deformation is approximately 3.5% (diagram 03). A plastic deformation can be negligible up to this value. However, it is also dependent on the service time.
***Surface pressure, page 45***

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# Bearing technology | Plain bearings | iglidur® J200

### Permissible surface speeds

iglidur® J200 allows high surface speeds due to its excellent coefficient of friction. Continuous rotation speeds of 1.0m/s are possible. The permitted speeds are clearly higher yet in linear movements or in short-term operation. Speeds of over 15.0m/s have already been successfully tested in linear applications.

*Surface speed, page 48*

### Temperature

The maximum permissible temperature of +120°C should not be exceeded. Therefore the ambient temperature generated by friction has to be added. From +60°C upwards, the bearing should be mechanically retained, so as to avoid the bearing moving out of the hole. The wear resistance also decreases exponentially from +70°C upwards.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

Among all the iglidur® materials, iglidur® J200 exhibits the lowest coefficient of friction. The average coefficient of friction of all measurements, even with different shaft materials, is 0.11µ. The use of hard-anodised aluminium as a shaft material is also of importance. The comparison with the rest of the iglidur® materials shows that iglidur® J200 plain bearings are suitable for rather low loads. The influence of surface speed and load on the coefficient of friction is small. The change of the coefficient of friction at high loads is in the normal range (diagrams 04 and 05). Surface finishes (Ra) of the shaft between 0.2-0.4 µm are ideal. The influence of the shaft material on the wear resistance is significant. Even at low loads, we recommend to have a closer look into the wear database.

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

The shaft material has a great impact on the wear resistance. In fact, all shaft materials (smooth or hardened) are suitable for use with iglidur® J200, but the best results are achieved with hard-anodised aluminium. In particular when used in linear motion, this running surface has proven its value.

*Shaft materials, page 56*

### Installation tolerances

iglidur® J200 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

### Product range

iglidur® J200 plain bearings are manufactured to special order.

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | 0 up to – |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | – |
| Strong alkalines | + up to 0 |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | m/s | 1.0 | 0.7 | 10.0 |
| Short-term | m/s | 1.5 | 1.1 | 15.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction µ | 0.11-0.17 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | E10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.014 | +0.054 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.020 | +0.068 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.025 | +0.083 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.032 | +0.102 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.040 | +0.124 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.050 | +0.150 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.060 | +0.180 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.072 | +0.212 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.085 | +0.245 | -0.100 | +0.000 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

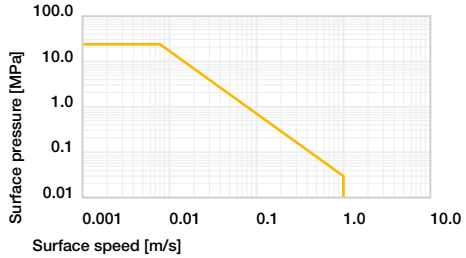



Diagram 01: Permissible pv values for iglidur® J200 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

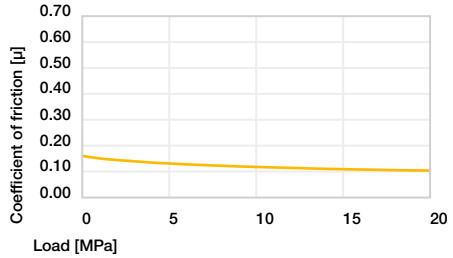



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

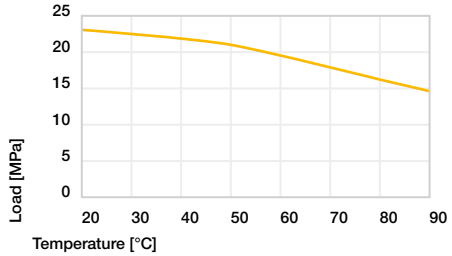



Diagram 02: Maximum recommended surface pressure as a function of temperature (23MPa at +20°C)

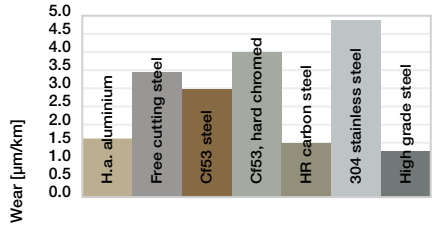



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

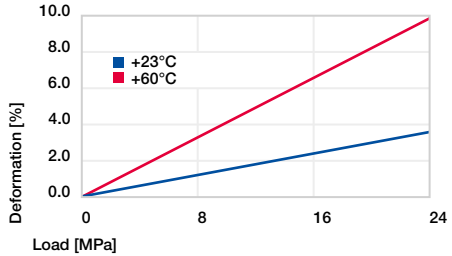



Diagram 03: Deformation under pressure and temperature

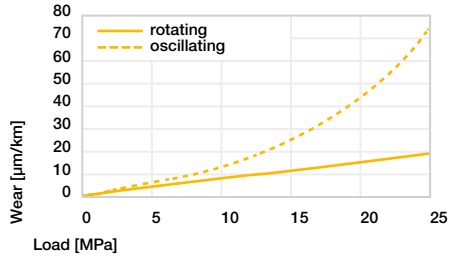



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

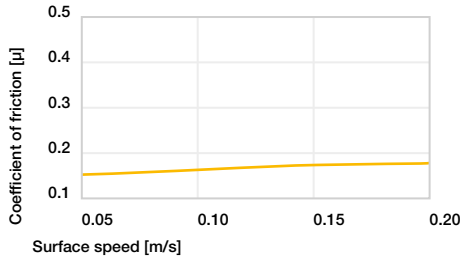
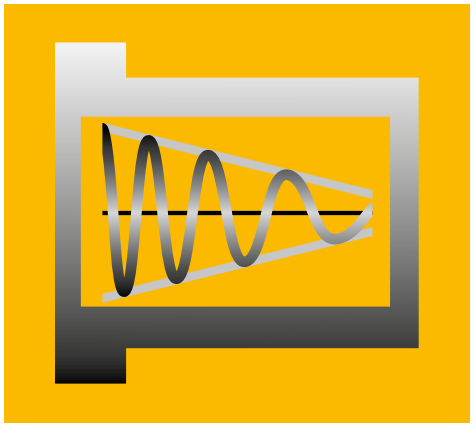



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa



# Ideal for pivoting movement

## Vibration-dampening with low coefficient of friction for low or medium loads

## iglidur® E7

**When to use it?**

- When good dampening properties and quiet operation are required
- When a low coefficient of friction in a pivoting movement is required
- When a tough material is required

**When not to use it?**

- When high pressures occur
  ***iglidur® G, iglidur® Z***
- When continuous operating temperatures are higher than +70°C
  ***iglidur® J350***
- When universal wear resistance is required
  ***iglidur® J***



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# Bearing technology | Plain bearings | iglidur® E7

Ø
6.0-20.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## Ideal for pivoting movement

Vibration-dampening with low coefficient of friction for low or medium loads

For the first time, the material iglidur® E7, well-known from drylin® linear technology, is also available as a plain bearing. Plain bearings made of the material offer excellent coefficient of friction and wear with low to medium loads.

- Noise-dampening
- Low coefficient of friction
- Lubrication-free
- Corrosion-free

### Typical application areas

- Packaging industry
- Textile industry
- Furniture/Industrial design

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | ■■■■■ | + |
| Wear resistance at +90°C | – | ■■■■■ | + |
| Wear resistance at +150°C | – | ■□□□□ | + |
| Slide property | – | ■■■■■ | + |
| Wear resistance under water | – | ■■■□□ | + |
| Media resistance | – | ■■■■□ | + |
| Resistant to edge pressures | – | ■■■■□ | + |
| Resistant to shock and impact loads | – | ■■■■□ | + |
| Dirt resistance | – | ■■■■□ | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.05 | |
| Colour | | dark grey | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.1 | DIN 53495 |
| Max. moisture absorption | % weight | 0.1 | |
| Coefficient of friction, dynamic, against steel | μ | 0.09-0.23 | |
| pv value, max. (dry) | MPa · m/s | 0.22 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 1,477 | DIN 53457 |
| Flexural strength at +20°C | MPa | 22 | DIN 53452 |
| Compressive strength | MPa | 18 | |
| Max. permissible surface pressure (+20°C) | MPa | 18 | |
| Shore D hardness | | 61 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +70 | |
| Max. application temperature short-term | °C | +90 | |
| Min. application temperature | °C | -50 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 25 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $>10^9$ | DIN IEC 93 |
| Surface resistance | Ω | $>10^9$ | DIN 53482 |

Table 01: Material properties

-50°C up to +70°C

18MPa

The material E7 offers good vibration-dampening properties. With low coefficient of friction at low and medium loads, the material is a suitable partner for almost all shaft materials.

### Moisture absorption

The moisture absorption of iglidur® E7 plain bearings in ambient conditions is approximately 0.1% weight. The saturation limit submerged in water is 0.1% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

### Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

### Radiation resistance

Plain bearings made from iglidur® E7 are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® E7 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® E7 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this. At the maximum permissible load of 18MPa, the deformation is approximately 3.5% (diagram 03). A plastic deformation can be negligible up to this value. However, it is also dependent on the service time.

*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® E7

### Permissible surface speeds

iglidur® E7 allows high surface speeds due to its excellent coefficient of friction. Continuous rotation speeds of 0.5m/s are possible. The permitted speeds are clearly higher yet in linear movements or in short-term operation. Speeds of over 3.0m/s have already been successfully tested in linear applications.

*Surface speed, page 48*

### Temperature

The maximum permissible temperature of +90°C should not be exceeded. Therefore the ambient temperature generated by friction has to be added. From +30°C upwards, the bearing should be mechanically retained, so as to avoid the bearing moving out of the hole. The wear resistance also decreases exponentially from +90°C upwards.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

Among all the iglidur® materials, iglidur® E7 exhibits the lowest coefficient of friction. The average coefficient of friction of all measurements, even with different shaft materials, is 0.11µ. The use of hard-anodised aluminium as a shaft material is also of importance. The comparison with the rest of the iglidur® materials shows that iglidur® E7 plain bearings are suitable for rather low loads. The influence of surface speed and load on the coefficient of friction is small. The change of the coefficient of friction at high loads is in the normal range (diagrams 04 and 05). Surface finishes (Ra) of the shaft between 0.8µm are ideal. The influence of the shaft material on the wear resistance is significant. Even at low loads, we recommend to have a closer look into the wear database.

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

The shaft material has a great impact on the wear resistance. In fact, all shaft materials (smooth or hardened) are suitable for use with iglidur® E7, but the best results are achieved with hard-anodised aluminium. In particular when used in linear motion, this running surface has proven its value.

*Shaft materials, page 56*

### Installation tolerances

iglidur® E7 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | 0 up to – |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | – |
| Strong alkalines | + up to 0 |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 0.5 | 0.4 | 2.0 |
| Short-term | **m/s** | 0.8 | 0.6 | 3.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction µ | 0.09-0.23 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | E10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.014 | +0.054 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.020 | +0.068 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.025 | +0.083 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.032 | +0.102 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.040 | +0.124 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.050 | +0.150 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.060 | +0.180 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.072 | +0.212 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.085 | +0.245 | -0.100 | +0.000 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

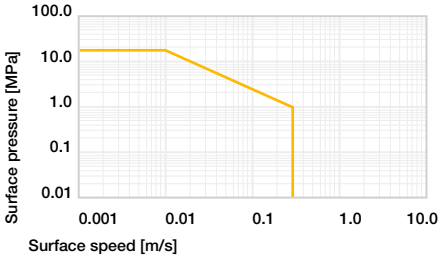



Diagram 01: Permissible pv values for iglidur® E7 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

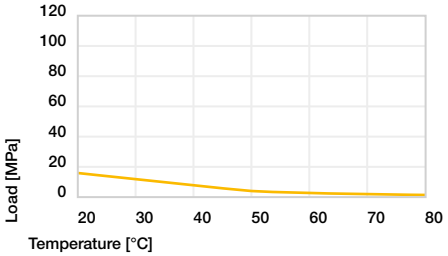



Diagram 02: Maximum recommended surface pressure as a function of temperature (18MPa at +20°C)

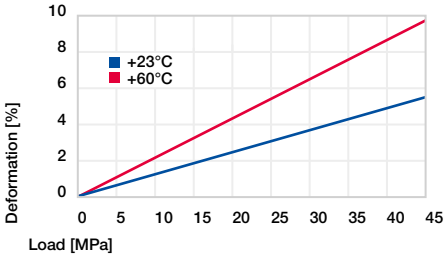



Diagram 03: Deformation under pressure and temperature

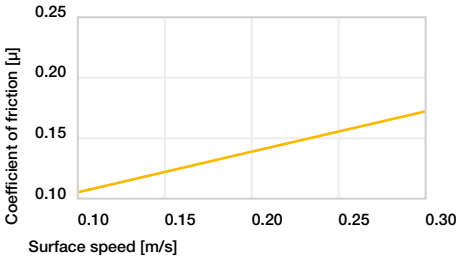



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

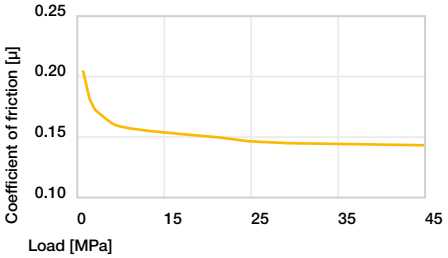



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

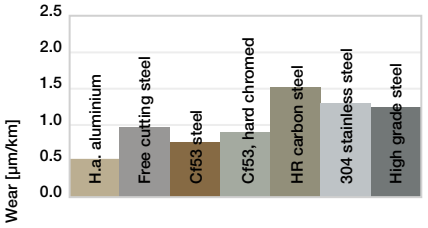



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

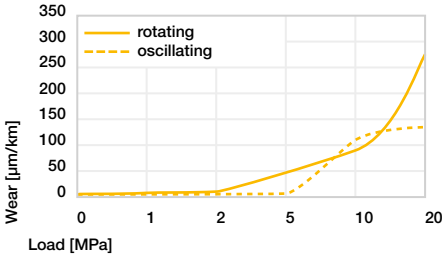
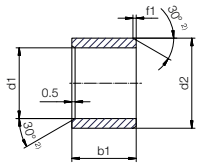



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

# Bearing technology | Plain bearings | iglidur® E7

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 |
|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** E7SM-0608-06 – **no minimum order quantity.**
E7 iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 6.0 | **E7SM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 10.0 | **E7SM-0810-10** |
| 10.0 | | 12.0 | 10.0 | **E7SM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 12.0 | **E7SM-1214-12** |
| 16.0 | | 18.0 | 15.0 | **E7SM-1618-15** |
| 20.0 | +0.040 +0.124 | 23.0 | 20.0 | **E7SM-2023-20** |

[3] After press-fit. *Testing methods, page 61*

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including delivery times, prices, online tools
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**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

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|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
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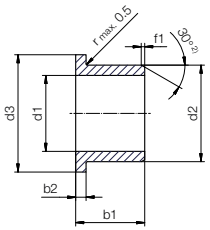
**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**





# Bearing technology | Plain bearings | iglidur® E7

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 |
|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** E7FM-0608-06 – **no minimum order quantity.**
E7 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 12.0 | 6.0 | 1.00 | **E7FM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 15.0 | 10.0 | 1.00 | **E7FM-0810-10** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **E7FM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 20.0 | 12.0 | 1.00 | **E7FM-1214-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **E7FM-1618-17** |
| 20.0 | +0.040 +0.124 | 23.0 | 30.0 | 21.5 | 1.50 | **E7FM-2023-21** |

[3] After press-fit. *Testing methods, page 61*

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**Order online**
including delivery times, prices, online tools
www.igus.eu/E7

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**

# Extremely wear-resistant

## Strong performer on most shafts, very low coefficient of friction

## iglidur® E

**When to use it?**

- For high speeds
- When highest wear resistance at low to medium pressures is required
- Low wear against different shafts
- When a low coefficient of friction in dry operation is requested
- For vibration dampening
- When good chemical resistance is required
- For best performance with soft shaft materials
- Low moisture absorption

**When not to use it?**

- When high pressures occur
  ***iglidur® G, iglidur® W300***
- When temperatures higher than +120 °C occur
  ***iglidur® G, iglidur® Z***
- When a cost-effective plain bearing for occasional movements is necessary
  ***iglidur® G***



EN 09/2023

# Bearing technology | Plain bearings | iglidur® E

Ø
6.0 - 20.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 848

## Extremely wear-resistant

Strong performer on most shafts, very low coefficient of friction

iglidur® E is especially characterised by its long service life in combination with hard-anodised aluminium shafts. Especially in linear and pivoting movement, iglidur® E offers particularly good wear-resistant properties.

- Low coefficient of friction
- Wear-resistant material for continuous operation
- Vibration-dampening

### Typical application areas

- Textile industry
- Packaging industry
- Printing industry
- Vending machinery

| Descriptive technical specifications | | |
|---|---|---|
| Wear resistance at +23°C | - | + |
| Wear resistance at +90°C | – | + |
| Wear resistance at +150°C | – | + |
| Slide property | – | + |
| Wear resistance under water | – | + |
| Media resistance | – | + |
| Resistant to edge pressures | – | + |
| Resistant to shock and impact loads | – | + |
| Dirt resistance | – | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.50 | |
| Colour | | beige | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.2 | DIN 53495 |
| Max. moisture absorption | % weight | 1.7 | |
| Coefficient of friction, dynamic, against steel | μ | 0.08 -0.23 | |
| pv value, max. (dry) | MPa · m/s | 0.25 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,975 | DIN 53457 |
| Flexural strength at +20°C | MPa | 79 | DIN 53452 |
| Compressive strength | MPa | n.s. | |
| Max. permissible surface pressure (+20°C) | MPa | 37 | |
| Shore D hardness | | 78 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +90 | |
| Max. application temperature short-term | °C | +120 | |
| Min. application temperature | °C | up to -50 | |
| Thermal conductivity | W/m · K | 0.25 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 10 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | n.s. | |
| Surface resistance | Ω | $> 10^{12}$ | DIN 53482 |

Table 01: Material properties

-50°C up to +90°C

37MPa

One main advantage of iglidur® E plain bearings is the combination of a low coefficient of friction in dry operation and the low stick-slip tendency.

### Moisture absorption

The moisture absorption of iglidur® E plain bearings in ambient conditions is approximately 0.2% weight. The saturation limit submerged in water is 1.7% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

### Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® E bearings.

### Radiation resistance

Plain bearings made from iglidur® E are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® E plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® E plain bearings decreases Diagram 02 shows this inverse relationship. With the long-term permitted application temperature of +90°C, the permitted surface pressure still amounts to 20MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

With a maximum recommended surface pressure of 37MPa, iglidur® E plain bearings are not suitable for extreme loads. Diagram 03 shows the elastic deformation of iglidur® E at radial loads.

*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® E

### Permissible surface speeds

The low coefficient of friction and no stick-slip tendency of iglidur® E plain bearings are particularly important at very low speeds. However, iglidur® E can also be used for high speeds of over 1m/s. In both cases the static friction is very low and stick slip does not occur. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

***Surface speed, page 48***

### Temperature

iglidur® E plain bearings can be used between -50°C and +90°C; the short-term maximum permissible temperature is +120°C. Wear increases significantly at temperatures above +80°C. For temperatures over +60°C an additional securing is required.

***Application temperatures, page 53***
***Additional securing, page 53***

### Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05).

***Coefficient of friction and surfaces, page 51***
***Wear resistance, page 54***

### Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. With increasing shaft surface finish, the coefficient of friction also increases. For iglidur® E a ground surface with an average surface finish Ra = 0.1-0.3μm is recommended. Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® E. When compared to most other iglidur® materials, iglidur® E plain bearings have very low wear results at low loads compared with all shaft materials tested. Also, for increasing loads up to 5 MPa, the wear resistance of iglidur® E plain bearings is excellent. If the shaft material you plan on using is not shown in these test results, please contact us.

***Shaft materials, page 56***

### Installation tolerances

iglidur® E plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

***Testing methods, page 61***

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | 0 up to – |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | – |
| Strong alkalines | + up to 0 |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

***Chemical table, page 1170***

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 1.0 | 0.7 | 2.0 |
| Short-term | **m/s** | 1.5 | 1.1 | 4.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.08-0.23 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | E10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.014 | +0.054 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.020 | +0.068 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.025 | +0.083 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.032 | +0.102 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.040 | +0.124 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.050 | +0.150 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.060 | +0.180 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.072 | +0.212 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.085 | +0.245 | -0.100 | +0.000 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

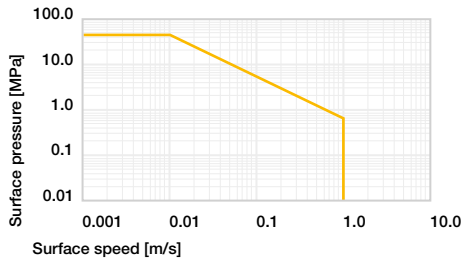



Diagram 01: Permissible pv values for iglidur® E plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

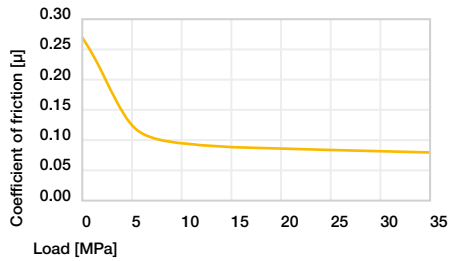



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

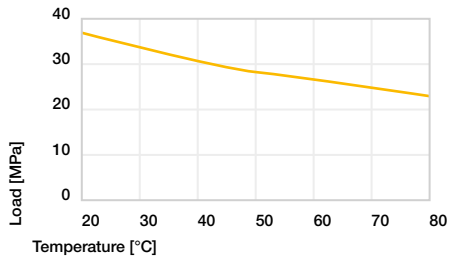



Diagram 02: Maximum recommended surface pressure as a function of temperature (35MPa at +20°C)

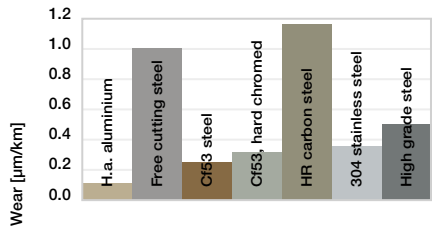



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

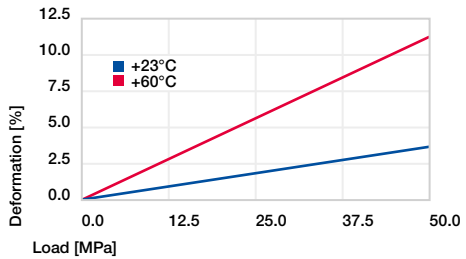



Diagram 03: Deformation under pressure and temperature

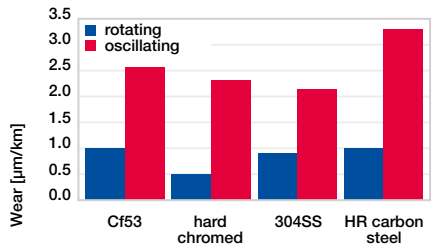



Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

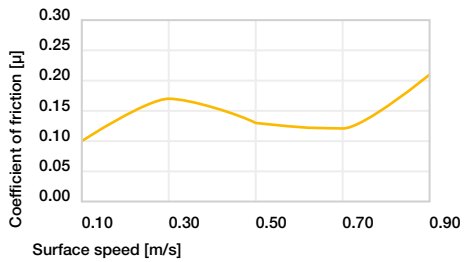
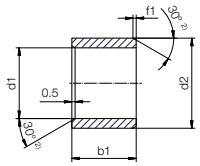



Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

# Bearing technology | Plain bearings | iglidur® E

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** ESM-0608-06 - **no minimum order quantity.**
E iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 6.0 | **ESM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 10.0 | **ESM-0810-10** |
| 10.0 | +0.025 +0.083 | 12.0 | 10.0 | **ESM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 12.0 | **ESM-1214-12** |
| 16.0 | +0.032 +0.102 | 18.0 | 15.0 | **ESM-1618-15** |
| 16.0 | +0.032 +0.102 | 18.0 | 17.0 | **ESM-1618-17** |
| 20.0 | +0.040 +0.124 | 23.0 | 20.0 | **ESM-2023-20** |
| 20.0 | +0.040 +0.124 | 23.0 | 21.0 | **ESM-2023-21** |

[3] After press-fit. *Testing methods, page 61*

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| 25-49 | 200-499 | 2,500-4,999 |

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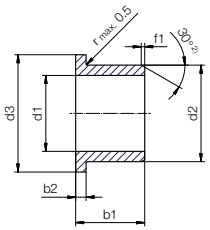
iglidur® E
+90°C
37MPa

# Bearing technology | Plain bearings | iglidur® E

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** EFM-0608-06 - **no minimum order quantity.**
E iglidur® material F With Flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 12.0 | 6.0 | 1.00 | **EFM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 15.0 | 9.5 | 1.00 | **EFM-0810-10** |
| 10.0 | +0.025 +0.083 | 12.0 | 18.0 | 9.0 | 1.00 | **EFM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 20.0 | 12.0 | 1.00 | **EFM-1214-12** |
| 16.0 | +0.032 +0.102 | 18.0 | 24.0 | 17.0 | 1.00 | **EFM-1618-17** |
| 20.0 | +0.040 +0.124 | 23.0 | 30.0 | 21.5 | 1.50 | **EFM-2023-21** |

[3] After press-fit. *Testing methods, page 61*

**Available from stock**
Detailed information about delivery time online.
www.igus.eu/24

**Order online**
including delivery times, prices, online tools
www.igus.eu/E

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**

# Plain bearing materials for high temperatures

## Plain bearing materials for high temperatures

Here you will find high-temperature specialists for continuous operating temperatures up to +250°C (exception: iglidur® V400 with +200°C).
In the meantime, the iglidur® X6 surpasses the standard iglidur® X here in many rotating and pivoting applications.
iglidur® Z has also been long established as standard with extremely low wear rates under high loads and/or temperatures.
iglidur® V400 is characterised as a problem solver in many special cases, and iglidur® UW500 is the specialist for hot liquids.

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert

**iglidur® X**
**The chemical and temperature specialist**

| | | |
|---|---|---|
| Temperature [°C] [123] | +250 | – + |
| Surface pressure [MPa] [124] | 150 | – + |
| Coefficient of friction [µ] [125] | 0.31 | – + |
| Wear [µm/km] [125] | 6.30 | – + |
| Price index | | – + |

**iglidur® Z**
**Long service life under extreme conditions**

| | | |
|---|---|---|
| Temperature [°C] [123] | +250 | – + |
| Surface pressure [MPa] [124] | 150 | – + |
| Coefficient of friction [µ] [125] | 0.18 | – + |
| Wear [µm/km] [125] | 1.00 | – + |
| Price index | | – + |

**iglidur® X6**
**The high-temperature specialist up to +250°C**

| | | |
|---|---|---|
| Temperature [°C] [123] | +250 | – + |
| Surface pressure [MPa] [124] | 150 | – + |
| Coefficient of friction [µ] [125] | | – + |
| Wear [µm/km] [125] | | – + |
| Price index | | – + |

**iglidur® V400**
**For soft shafts and high temperatures**

| | | |
|---|---|---|
| Temperature [°C] [123] | +200 | – + |
| Surface pressure [MPa] [124] | 45 | – + |
| Coefficient of friction [µ] [125] | 0.19 | – + |
| Wear [µm/km] [125] | 0.30 | – + |
| Price index | | – + |

[123] Upper long-term application temperature [124] Max. recommended surface pressure at +20°C [125] Best pairing for p = 1 MPa, v = 0.3m/s, rotating



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**iglidur® HSD350**
**All-rounder for steam sterilisation**

| | | |
|---|---|---|
| Temperature [°C] [123] | +180 | – + |
| Surface pressure [MPa] [124] | 30 | – + |
| Coefficient of friction [µ] [125] | 1.15 | – + |
| Wear [µm/km] [125] | 2.00 | – + |
| Price index | | – + |

**iglidur® UW500**
**For hot liquids**

| | | |
|---|---|---|
| Temperature [°C] [123] | +250 | – + |
| Surface pressure [MPa] [124] | 140 | – + |
| Coefficient of friction [µ] [125] | 0.33 | – + |
| Wear [µm/km] [125] | 2.20 | – + |
| Price index | | – + |

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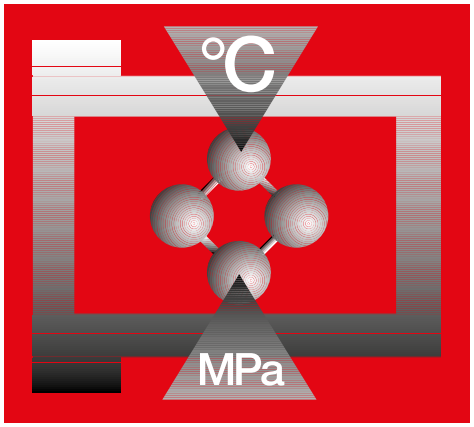



# The chemical and temperature specialist

## Up to 150MPa

## iglidur® X

**When to use it?**

- For pressure loads up to 150MPa
- For linear movements with stainless steel at high temperatures
- Universal chemical resistance
- For temperature resistance from -100°C to +250°C (short-term up to +315°C)
- For very low moisture absorption
- For high wear resistance over the entire temperature range

**When not to use it?**

- For very low wear at high loads
  ***iglidur® Q, iglidur® Z***
- When a cost-effective plain bearing for underwater use is required
  ***iglidur® H, iglidur® H370***
- For edge loads
  ***iglidur® Z***



EN 09/2023

# Bearing technology | Plain bearings | iglidur® X

Ø
2.0-120.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 847

## The chemical and temperature specialist
Up to 150MPa

iglidur® X is defined by its combination of very high temperature resistance with high compressive strength, along with high resistance to chemicals. iglidur® X is designed for higher speeds than other iglidur® bearings.

- Continuous operating temperature from -100°C to +250°C
- Extremely high chemical resistance
- High compressive strength
- Low moisture absorption
- High wear resistance

### Typical application areas

- Beverage industry
- Woodworking
- Plastic processing industry
- Aerospace engineering
- Cleanroom

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | | + |
| Wear resistance at +90°C | – | | + |
| Wear resistance at +150°C | – | | + |
| Slide property | – | | + |
| Wear resistance under water | – | | + |
| Media resistance | – | | + |
| Resistant to edge pressures | – | | + |
| Resistant to shock and impact loads | – | | + |
| Dirt resistance | – | | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.44 | |
| Colour | | black | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.1 | DIN 53495 |
| Max. moisture absorption | % weight | 0.5 | |
| Coefficient of friction, dynamic, against steel | μ | 0.09-0.27 | |
| pv value, max. (dry) | MPa · m/s | 1.32 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 8,100 | DIN 53457 |
| Flexural strength at +20°C | MPa | 170 | DIN 53452 |
| Compressive strength | MPa | 100 | |
| Max. permissible surface pressure (+20°C) | MPa | 150 | |
| Shore D hardness | | 85 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +250 | |
| Max. application temperature short-term | °C | +315 | |
| Min. application temperature | °C | -100 | |
| Thermal conductivity | W/m · K | 0.60 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 5 | DIN 53752 |
| **Electrical properties**[5] | | | |
| Specific transitional resistance | Ωcm | $< 10^5$ | DIN IEC 93 |
| Surface resistance | Ω | $< 10^3$ | DIN 53482 |

[5] The good conductivity of this material can favour the generation of corrosion on the metallic contact components.

Table 01: Material properties

-100°C up to +250°C

150MPa

V-0

RoHS-II

ISO 3547-1

iglidur® X has an excellent combination of high temperature resistance, high compressive strength, and excellent resistance to chemicals. The aspect of temperature resistance and pressure susceptibility is also reflected in the pv graph.

### Moisture absorption
The moisture absorption of iglidur® X plain bearings is very low. It is approximately 0.1% weight under standard climatic conditions. The maximum moisture absorption is 0.5% weight.

### Vacuum
In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

### Radiation resistance
Plain bearings made from iglidur® X are resistant up to a radiation intensity of $1 \cdot 10^5$ Gy.

### Resistance to weathering
iglidur® X plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

### Mechanical properties
With increasing temperatures, the compressive strength of iglidur® X plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® X at radial loads.
***Surface pressure, page 45***

# Bearing technology | Plain bearings | iglidur® X

### Permissible surface speeds

iglidur® X is designed for higher speeds than other iglidur® bearings. This is enabled by its high temperature resistance and excellent thermal conductivity. This is also made clear by the max. pv value of 1.32MPa. However, in this case, only the smallest radial loads may act on the bearings. At the given speeds, friction can cause a temperature increase to maximum permissible levels.

***Surface speed, page 48***

### Temperature

In the case of a permissible long-term application temperature of +250°C, iglidur® X will even withstand +315°C for short periods. As in the case of all thermoplastics, the compression strength of iglidur® X decreases when temperatures rise. For temperatures over +135°C an additional securing is required. At temperatures over +170°C the axial security of the bearing in the housing needs to be tested. Please contact us if you have questions on bearing use.

***Application temperatures, page 53***
***Additional securing, page 53***

### Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05).

***Coefficient of friction and surfaces, page 51***
***Wear resistance, page 54***

### Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. For iglidur® X a ground surface with an average surface finish Ra = 0.6-0.8μm is recommended. Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® X. If the shaft material you plan on using is not shown in these test results, please contact us.

***Shaft materials, page 56***

### Installation tolerances

iglidur® X plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

***Testing methods, page 61***

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | + |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | 0 up to – |
| Strong alkalines | + |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

***Chemical table, page 1170***

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 1.5 | 1.1 | 5.0 |
| Short-term | **m/s** | 3.5 | 2.5 | 10.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.09-0.27 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | F10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.006 | +0.046 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.010 | +0.058 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.013 | +0.071 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.016 | +0.086 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.020 | +0.104 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.025 | +0.125 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.030 | +0.150 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | -0.036 | +0.176 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.043 | +0.203 | +0.000 | +0.100 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

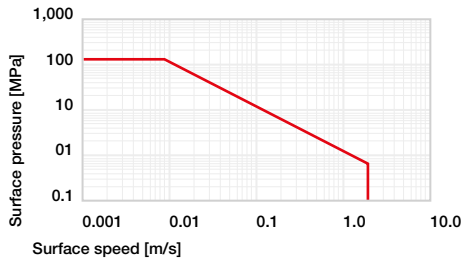



Diagram 01: Permissible pv values for iglidur® X plain bearing with a wall thickness of 1 mm dry operation against a steel shaft at +20°C, mounted in a steel housing

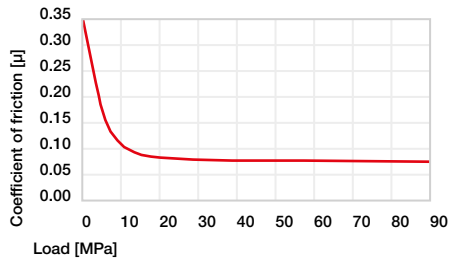



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

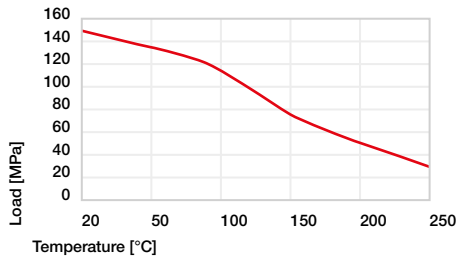



Diagram 02: Maximum recommended surface pressure as a function of temperature (150MPa at +20°C)

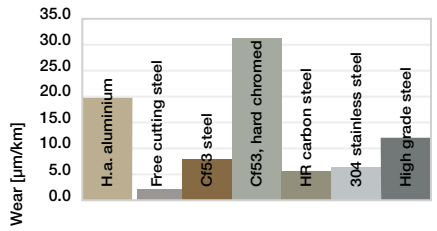



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

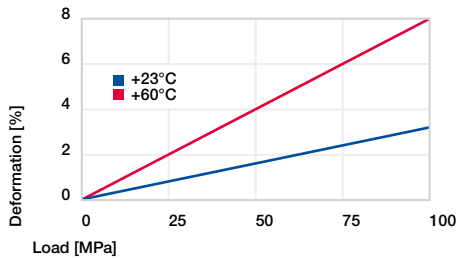



Diagram 03: Deformation under pressure and temperature

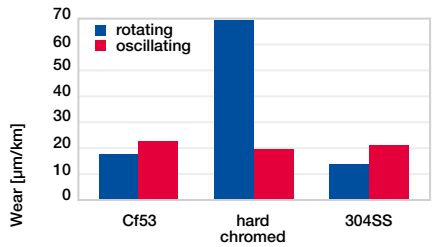



Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

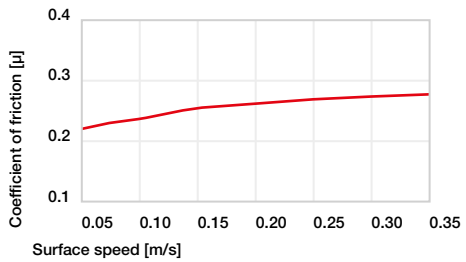
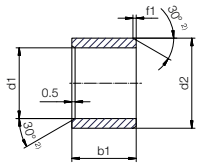



Diagram 04: Coefficient of friction as a function of the surface speed, v = 0.01m/s

# Bearing technology | Plain bearings | iglidur® X

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

Order example: XSM-0203-03 – no minimum order quantity.
X iglidur® material S Cylindrical M Metric 02 Inner Ø d1 03 Outer Ø d2 03 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 2.0 | +0.006 +0.046 | 3.5 | 3.0 | XSM-0203-03 |
| 3.0 | | 4.5 | 3.0 | XSM-0304-03 |
| 3.0 | | 4.5 | 6.0 | XSM-0304-06 |
| 4.0 | +0.010 +0.058 | 5.5 | 4.0 | XSM-0405-04 |
| 4.0 | | 5.5 | 6.0 | XSM-0405-06 |
| 4.0 | | 5.5 | 9.0 | XSM-0405-09 |
| 4.0 | | 5.5 | 10.0 | XSM-0405-10 |
| 5.0 | | 7.0 | 3.5 | XSM-0507-035 |
| 5.0 | | 7.0 | 5.0 | XSM-0507-05 |
| 5.0 | | 7.0 | 8.0 | XSM-0507-08 |
| 5.0 | | 7.0 | 10.0 | XSM-0507-10 |
| 6.0 | | 8.0 | 6.0 | XSM-0608-06 |
| 6.0 | | 8.0 | 8.0 | XSM-0608-08 |
| 6.0 | | 8.0 | 10.0 | XSM-0608-10 |
| 6.0 | | 8.0 | 13.8 | XSM-0608-13 |
| 7.0 | +0.013 +0.071 | 9.0 | 10.0 | XSM-0709-10 |
| 7.0 | | 9.0 | 12.0 | XSM-0709-12 |
| 8.0 | | 10.0 | 6.0 | XSM-0810-06 |
| 8.0 | | 10.0 | 8.0 | XSM-0810-08 |
| 8.0 | | 10.0 | 10.0 | XSM-0810-10 |
| 8.0 | | 10.0 | 12.0 | XSM-0810-12 |
| 8.0 | | 10.0 | 15.0 | XSM-0810-15 |
| 10.0 | | 12.0 | 3.5 | XSM-1012-035 |
| 10.0 | | 12.0 | 6.0 | XSM-1012-06 |
| 10.0 | | 12.0 | 8.0 | XSM-1012-08 |
| 10.0 | | 12.0 | 10.0 | XSM-1012-10 |
| 10.0 | | 12.0 | 12.0 | XSM-1012-12 |
| 10.0 | | 12.0 | 15.0 | XSM-1012-15 |
| 10.0 | | 12.0 | 20.0 | XSM-1012-20 |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 12.0 | +0.016 +0.086 | 14.0 | 3.5 | XSM-1214-035 |
| 12.0 | | 14.0 | 6.0 | XSM-1214-06 |
| 12.0 | | 14.0 | 8.0 | XSM-1214-08 |
| 12.0 | | 14.0 | 10.0 | XSM-1214-10 |
| 12.0 | | 14.0 | 12.0 | XSM-1214-12 |
| 12.0 | | 14.0 | 15.0 | XSM-1214-15 |
| 12.0 | | 14.0 | 20.0 | XSM-1214-20 |
| 12.0 | | 14.0 | 25.0 | XSM-1214-25 |
| 13.0 | | 15.0 | 10.0 | XSM-1315-10 |
| 13.0 | | 15.0 | 20.0 | XSM-1315-20 |
| 14.0 | | 16.0 | 12.0 | XSM-1416-12 |
| 14.0 | | 16.0 | 15.0 | XSM-1416-15 |
| 14.0 | | 16.0 | 20.0 | XSM-1416-20 |
| 14.0 | | 16.0 | 25.0 | XSM-1416-25 |
| 15.0 | | 17.0 | 7.0 | XSM-1517-07 |
| 15.0 | | 17.0 | 10.0 | XSM-1517-10 |
| 15.0 | | 17.0 | 15.0 | XSM-1517-15 |
| 15.0 | | 17.0 | 20.0 | XSM-1517-20 |
| 15.0 | | 17.0 | 25.0 | XSM-1517-25 |
| 16.0 | | 18.0 | 10.0 | XSM-1618-10 |
| 16.0 | | 18.0 | 12.0 | XSM-1618-12 |
| 16.0 | | 18.0 | 15.0 | XSM-1618-15 |
| 16.0 | | 18.0 | 20.0 | XSM-1618-20 |
| 16.0 | | 18.0 | 25.0 | XSM-1618-25 |
| 16.0 | | 18.0 | 35.0 | XSM-1618-35 |
| 17.0 | | 19.0 | 20.0 | XSM-1719-20 |
| 18.0 | | 20.0 | 15.0 | XSM-1820-15 |
| 18.0 | | 20.0 | 20.0 | XSM-1820-20 |
| 18.0 | | 20.0 | 25.0 | XSM-1820-25 |

[3] After press-fit. *Testing methods, page 61*





# Product range

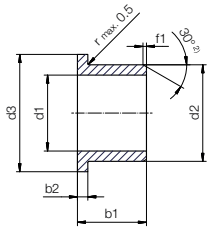
| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 20.0 | +0.016 +0.086 | 22.0 | 14.0 | XSM-2022-140 |
| 20.0 | +0.020 +0.104 | 22.0 | 14.5 | XSM-2022-145 |
| 20.0 | | 22.0 | 17.0 | XSM-2022-17 |
| 20.0 | | 22.0 | 18.0 | XSM-2022-18 |
| 20.0 | | 22.0 | 20.0 | XSM-2022-20 |
| 20.0 | | 23.0 | 7.0 | XSM-2023-07 |
| 20.0 | | 23.0 | 10.0 | XSM-2023-10 |
| 20.0 | | 23.0 | 15.0 | XSM-2023-15 |
| 20.0 | | 23.0 | 20.0 | XSM-2023-20 |
| 20.0 | | 23.0 | 25.0 | XSM-2023-25 |
| 20.0 | | 23.0 | 30.0 | XSM-2023-30 |
| 22.0 | | 25.0 | 15.0 | XSM-2225-15 |
| 22.0 | | 25.0 | 20.0 | XSM-2225-20 |
| 22.0 | | 25.0 | 25.0 | XSM-2225-25 |
| 22.0 | | 25.0 | 30.0 | XSM-2225-30 |
| 24.0 | | 26.0 | 20.0 | XSM-2426-20 |
| 24.0 | | 27.0 | 6.0 | XSM-2427-06 |
| 24.0 | | 27.0 | 15.0 | XSM-2427-15 |
| 24.0 | | 27.0 | 20.0 | XSM-2427-20 |
| 24.0 | | 27.0 | 25.0 | XSM-2427-25 |
| 24.0 | | 27.0 | 30.0 | XSM-2427-30 |
| 25.0 | | 28.0 | 7.7 | XSM-2528-077 |
| 25.0 | | 28.0 | 9.0 | XSM-2528-09 |
| 25.0 | | 28.0 | 12.0 | XSM-2528-12 |
| 25.0 | | 28.0 | 13.0 | XSM-2528-13 |
| 25.0 | | 28.0 | 15.0 | XSM-2528-15 |
| 25.0 | | 28.0 | 20.0 | XSM-2528-20 |
| 25.0 | | 28.0 | 25.0 | XSM-2528-25 |
| 25.0 | | 28.0 | 30.0 | XSM-2528-30 |
| 25.0 | | 28.0 | 35.0 | XSM-2528-35 |
| 26.0 | | 28.0 | 10.0 | XSM-2628-10 |
| 27.0 | | 30.0 | 5.7 | XSM-2730-05 |
| 28.0 | | 32.0 | 20.0 | XSM-2832-20 |
| 28.0 | | 32.0 | 25.0 | XSM-2832-25 |
| 28.0 | | 32.0 | 30.0 | XSM-2832-30 |
| 28.0 | | 32.0 | 69.0 | XSM-2832-69 |
| 30.0 | | 34.0 | 10.0 | XSM-3034-10 |
| 30.0 | | 34.0 | 15.0 | XSM-3034-15 |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 30.0 | +0.020 +0.104 | 34.0 | 20.0 | XSM-3034-20 |
| 30.0 | | 34.0 | 25.0 | XSM-3034-25 |
| 30.0 | | 34.0 | 30.0 | XSM-3034-30 |
| 30.0 | | 34.0 | 40.0 | XSM-3034-40 |
| 32.0 | +0.025 +0.125 | 36.0 | 20.0 | XSM-3236-20 |
| 32.0 | | 36.0 | 25.0 | XSM-3236-25 |
| 32.0 | | 36.0 | 30.0 | XSM-3236-30 |
| 32.0 | | 36.0 | 35.0 | XSM-3236-35 |
| 32.0 | | 36.0 | 40.0 | XSM-3236-40 |
| 32.0 | | 36.0 | 54.0 | XSM-3236-54 |
| 35.0 | | 39.0 | 20.0 | XSM-3539-20 |
| 35.0 | | 39.0 | 30.0 | XSM-3539-30 |
| 35.0 | | 39.0 | 40.0 | XSM-3539-40 |
| 35.0 | | 39.0 | 50.0 | XSM-3539-50 |
| 40.0 | | 44.0 | 20.0 | XSM-4044-20 |
| 40.0 | | 44.0 | 30.0 | XSM-4044-30 |
| 40.0 | | 44.0 | 40.0 | XSM-4044-40 |
| 40.0 | | 44.0 | 50.0 | XSM-4044-50 |
| 45.0 | | 50.0 | 20.0 | XSM-4550-20 |
| 45.0 | | 50.0 | 30.0 | XSM-4550-30 |
| 45.0 | | 50.0 | 40.0 | XSM-4550-40 |
| 45.0 | | 50.0 | 50.0 | XSM-4550-50 |
| 50.0 | | 55.0 | 20.0 | XSM-5055-20 |
| 50.0 | | 55.0 | 30.0 | XSM-5055-30 |
| 50.0 | | 55.0 | 40.0 | XSM-5055-40 |
| 50.0 | | 55.0 | 50.0 | XSM-5055-50 |
| 50.0 | | 55.0 | 60.0 | XSM-5055-60 |
| 55.0 | +0.030 +0.150 | 60.0 | 50.0 | XSM-5560-50 |
| 60.0 | | 65.0 | 45.0 | XSM-6065-45 |
| 60.0 | | 65.0 | 60.0 | XSM-6065-60 |
| 65.0 | | 70.0 | 50.0 | XSM-6570-50 |
| 70.0 | | 75.0 | 70.0 | XSM-7075-70 |
| 75.0 | | 80.0 | 60.0 | XSM-7580-60 |
| 80.0 | | 85.0 | 100.0 | XSM-8085-100 |
| 90.0 | +0.036 +0.176 | 95.0 | 100.0 | XSM-9095-100 |
| 100.0 | | 105.0 | 100.0 | XSM-100105-100 |
| 110.0 | | 115.0 | 100.0 | XSM-110115-100 |
| 120.0 | | 125.0 | 100.0 | XSM-120125-100 |

[3] After press-fit. *Testing methods, page 61*

# Bearing technology | Plain bearings | iglidur® X

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

**Chamfer in relation to d1**

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example: XFM-0304-05 – no minimum order quantity.**
X iglidur® material F With flange M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 2.0 | +0.006 | 4.0 | 6.0 | 3.0 | 1.00 | **XFM-020406-03** |
| 3.0 | +0.046 | 4.5 | 7.5 | 5.0 | 0.75 | **XFM-0304-05** |
| 4.0 | | 5.5 | 9.5 | 4.0 | 0.75 | **XFM-0405-04** |
| 4.0 | | 5.5 | 9.5 | 6.0 | 0.75 | **XFM-0405-06** |
| 4.0 | +0.010 | 5.5 | 8.0 | 6.0 | 0.75 | **XFM-040508-06** |
| 5.0 | +0.058 | 7.0 | 11.0 | 5.0 | 1.00 | **XFM-0507-05** |
| 6.0 | | 8.0 | 12.0 | 4.0 | 1.00 | **XFM-0608-04** |
| 6.0 | | 8.0 | 12.0 | 8.0 | 1.00 | **XFM-0608-08** |
| 6.0 | | 8.0 | 12.0 | 10.0 | 1.00 | **XFM-0608-10** |
| 8.0 | | 10.0 | 12.0 | 4.0 | 1.00 | **XFM-081012-04** |
| 8.0 | | 10.0 | 15.0 | 5.5 | 1.00 | **XFM-0810-05** |
| 8.0 | | 10.0 | 15.0 | 7.5 | 1.00 | **XFM-0810-07** |
| 8.0 | | 10.0 | 15.0 | 8.0 | 1.00 | **XFM-0810-08** |
| 8.0 | | 10.0 | 15.0 | 9.5 | 1.00 | **XFM-0810-09** |
| 8.0 | | 10.0 | 14.0 | 31.5 | 1.00 | **XFM-081014-31** |
| 9.0 | | 11.0 | 15.0 | 18.0 | 1.00 | **XFM-0911-18** |
| 10.0 | | 12.0 | 18.0 | 5.0 | 1.00 | **XFM-1012-05** |
| 10.0 | +0.013 | 12.0 | 18.0 | 6.0 | 1.00 | **XFM-1012-06** |
| 10.0 | +0.071 | 12.0 | 18.0 | 7.0 | 1.00 | **XFM-1012-07** |
| 10.0 | | 12.0 | 15.0 | 8.0 | 1.00 | **XFM-1012-08** |
| 10.0 | | 12.0 | 18.0 | 9.0 | 1.00 | **XFM-1012-09** |
| 10.0 | | 12.0 | 18.0 | 12.0 | 1.00 | **XFM-1012-12** |
| 10.0 | | 12.0 | 18.0 | 15.0 | 1.00 | **XFM-1012-15** |
| 10.0 | | 12.0 | 18.0 | 17.0 | 1.00 | **XFM-1012-17** |
| 10.0 | | 12.0 | 18.0 | 18.0 | 1.00 | **XFM-1012-18** |
| 10.0 | | 12.0 | 15.0 | 22.0 | 1.00 | **XFM-1012-22** |
| 10.0 | | 12.0 | 18.0 | 25.0 | 1.00 | **XFM-1012-25** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 12.0 | | 14.0 | 18.0 | 3.9 | 1.00 | **XFM-121418-039** |
| 12.0 | | 14.0 | 20.0 | 5.5 | 1.00 | **XFM-1214-055** |
| 12.0 | | 14.0 | 18.0 | 5.9 | 1.00 | **XFM-121418-059** |
| 12.0 | | 14.0 | 20.0 | 9.0 | 1.00 | **XFM-1214-09** |
| 12.0 | | 14.0 | 20.0 | 12.0 | 1.00 | **XFM-1214-12** |
| 12.0 | | 14.0 | 20.0 | 15.0 | 1.00 | **XFM-1214-15** |
| 12.0 | | 14.0 | 20.0 | 17.0 | 1.00 | **XFM-1214-17** |
| 14.0 | | 16.0 | 22.0 | 10.0 | 1.00 | **XFM-1416-10** |
| 14.0 | | 16.0 | 22.0 | 12.0 | 1.00 | **XFM-1416-12** |
| 14.0 | +0.016 | 16.0 | 22.0 | 17.0 | 1.00 | **XFM-1416-17** |
| 15.0 | +0.086 | 17.0 | 23.0 | 6.0 | 1.00 | **XFM-1517-06** |
| 15.0 | | 17.0 | 23.0 | 9.0 | 1.00 | **XFM-1517-09** |
| 15.0 | | 17.0 | 23.0 | 12.0 | 1.00 | **XFM-1517-12** |
| 15.0 | | 17.0 | 23.0 | 17.0 | 1.00 | **XFM-1517-17** |
| 16.0 | | 18.0 | 24.0 | 12.0 | 1.00 | **XFM-1618-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **XFM-1618-17** |
| 18.0 | | 20.0 | 26.0 | 12.0 | 1.00 | **XFM-1820-12** |
| 18.0 | | 20.0 | 26.0 | 17.0 | 1.00 | **XFM-1820-17** |
| 18.0 | | 20.0 | 26.0 | 22.0 | 1.00 | **XFM-1820-22** |
| 20.0 | | 23.0 | 30.0 | 6.5 | 1.50 | **XFM-2023-065** |
| 20.0 | | 23.0 | 30.0 | 7.5 | 1.50 | **XFM-2023-075** |
| 20.0 | | 23.0 | 30.0 | 11.5 | 1.50 | **XFM-2023-11** |
| 20.0 | +0.020 | 23.0 | 30.0 | 16.5 | 1.50 | **XFM-2023-16** |
| 20.0 | +0.104 | 23.0 | 30.0 | 21.0 | 1.50 | **XFM-2023-21** |
| 25.0 | | 28.0 | 33.0 | 8.0 | 1.00 | **XFM-252833-08** |
| 25.0 | | 28.0 | 35.0 | 11.5 | 1.50 | **XFM-2528-11** |
| 25.0 | | 28.0 | 35.0 | 13.5 | 1.50 | **XFM-2528-13** |
| 25.0 | | 28.0 | 35.0 | 16.5 | 1.50 | **XFM-2528-16** |

[3] After press-fit. *Testing methods, page 61*





# Product range

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 25.0 | | 28.0 | 35.0 | 21.0 | 1.50 | **XFM-2528-21** |
| 27.0 | +0.020 | 30.0 | 38.0 | 20.0 | 1.50 | **XFM-2730-20** |
| 30.0 | +0.104 | 34.0 | 42.0 | 16.0 | 2.00 | **XFM-3034-16** |
| 30.0 | | 34.0 | 42.0 | 26.0 | 2.00 | **XFM-3034-26** |
| 30.0 | | 34.0 | 42.0 | 40.0 | 2.00 | **XFM-3034-40** |
| 32.0 | | 36.0 | 45.0 | 15.0 | 2.00 | **XFM-3236-15** |
| 32.0 | +0.025 | 36.0 | 45.0 | 26.0 | 2.00 | **XFM-3236-26** |
| 35.0 | +0.125 | 39.0 | 47.0 | 16.0 | 2.00 | **XFM-3539-16** |
| 35.0 | | 39.0 | 47.0 | 26.0 | 2.00 | **XFM-3539-26** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 40.0 | | 44.0 | 52.0 | 22.0 | 2.00 | **XFM-4044-22** |
| 40.0 | +0.025 | 44.0 | 52.0 | 30.0 | 2.00 | **XFM-4044-30** |
| 40.0 | +0.125 | 44.0 | 52.0 | 40.0 | 2.00 | **XFM-4044-40** |
| 45.0 | | 50.0 | 58.0 | 50.0 | 2.00 | **XFM-4550-50** |
| 50.0 | | 55.0 | 63.0 | 40.0 | 2.00 | **XFM-5055-40** |
| 60.0 | +0.030 | 65.0 | 73.0 | 40.0 | 2.00 | **XFM-6065-40** |
| 70.0 | +0.150 | 75.0 | 83.0 | 40.0 | 2.00 | **XFM-7075-40** |
| 75.0 | | 80.0 | 88.0 | 50.0 | 2.00 | **XFM-7580-50** |

[3] After press-fit. *Testing methods, page 61*

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**Order online**
including delivery times, prices, online tools
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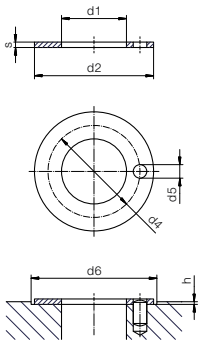
**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**

# Bearing technology | Plain bearings | iglidur® X

## Thrust washer (form T)




Dimensions according to ISO 3547-1 and special dimensions

Order example: XTM-0620-015 – no minimum order quantity.
X iglidur® material T Thrust washer M Metric 06 Inner Ø d1 20 Outer Ø d2 015 Height s

| d1 | d2 | d4 | d5 | h | d6 | Øs | Part No. |
|---|---|---|---|---|---|---|---|
| +0.25 | -0.25 | -0.12<br>+0.12 | +0.375<br>+0.125 | +0.2/-0.2 | +0.12 | -0.05 | |
| [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | |
| 6 | 20 | 13 | 1.5 | 1 | 20 | 1.5 | **XTM-0620-015** |
| 8 | 18 | 13 | 1.5 | 1 | 18 | 1.5 | **XTM-0818-015** |
| 8 | 29 | 4) | 4) | 1 | 29 | 1.5 | **XTM-0829-015** |
| 8 | 30 | 4) | 4) | 1 | 30 | 1.5 | **XTM-0830-015** |
| 10 | 18 | 4) | 4) | 0.7 | 18 | 1 | **XTM-1018-010** |
| 12 | 24 | 18 | 1.5 | 1 | 24 | 1.5 | **XTM-1224-015** |
| 14 | 26 | 20 | 2 | 1 | 26 | 1.5 | **XTM-1426-015** |
| 15 | 22 | 4) | 4) | 0.5 | 22 | 0.8 | **XTM-1522-008** |
| 15 | 24 | 19.5 | 1.5 | 1 | 24 | 1.5 | **XTM-1524-015** |
| 16 | 30 | 22 | 2 | 1 | 30 | 1.5 | **XTM-1630-015** |
| 18 | 32 | 25 | 2 | 1 | 32 | 1.5 | **XTM-1832-015** |
| 20 | 36 | 28 | 3 | 1 | 36 | 1.5 | **XTM-2036-015** |
| 22 | 38 | 30 | 3 | 1 | 38 | 1.5 | **XTM-2238-015** |
| 24 | 42 | 33 | 3 | 1 | 42 | 1.5 | **XTM-2442-015** |
| 26 | 44 | 35 | 3 | 1 | 44 | 1.5 | **XTM-2644-015** |
| 28 | 48 | 38 | 4 | 1 | 48 | 1.5 | **XTM-2848-015** |
| 32 | 54 | 43 | 4 | 1 | 54 | 1.5 | **XTM-3254-015** |
| 38 | 62 | 50 | 4 | 1 | 62 | 1.5 | **XTM-3862-015** |
| 42 | 66 | 54 | 4 | 1 | 66 | 1.5 | **XTM-4266-015** |
| 48 | 74 | 61 | 4 | 1.5 | 74 | 2 | **XTM-4874-020** |
| 52 | 78 | 65 | 4 | 1.5 | 78 | 2 | **XTM-5278-020** |
| 62 | 90 | 76 | 4 | 1.5 | 90 | 2 | **XTM-6290-020** |

4) Design without fixing hole



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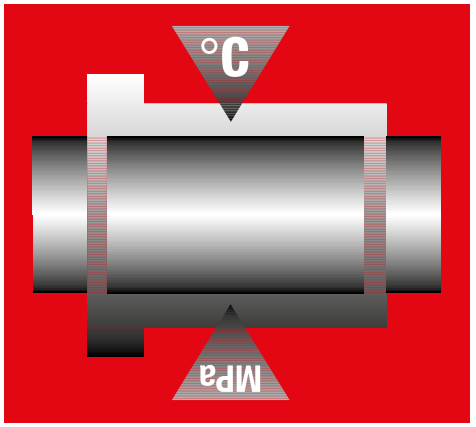



# Long service life under extreme conditions

## Resistant to wear and impact even at high loads and temperatures

## iglidur® Z

**When to use it?**

- For temperatures up to +250°C long-term or +310°C short-term
- When low wear is required especially under high radial loads
- For high surface speeds
- For edge pressure in connection with high surface pressures

**When not to use it?**

- For low loads and temperatures
  ***iglidur® P***
- When a cost-effective all-round plain bearing is required
  ***iglidur® G***
- When electrically conductive plain bearings are required
  ***iglidur® F, iglidur® H, iglidur® H370***

EN 09/2023

# Bearing technology | Plain bearings | iglidur® Z

Ø
4.0-120.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## Long service life under extreme conditions
## Resistant to wear and impact even at high loads and temperatures

Extremely high compressive strength coupled with high flexibility enables iglidur® Z bearings to attain their prominent properties in association with soft shafts, edge loads and impacts. At the same time the bearings suitable for temperatures up to +250°C.

- Excellent wear resistance especially with high loads
- High temperature resistance
- Suitable for very high loads
- Suitable for high surface speeds
- Suitable for high edge pressures
- Lubrication-free
- Maintenance-free

### Typical application areas

- Construction machinery industry
- Mechanical engineering
- Textile industry
- Aerospace engineering
- Glass industry

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | ■■■■□ | + |
| Wear resistance at +90°C | – | ■■■■□ | + |
| Wear resistance at +150°C | – | ■■■■□ | + |
| Slide property | – | ■■■■■ | + |
| Wear resistance under water | – | ■■□□□ | + |
| Media resistance | – | ■■■■□ | + |
| Resistant to edge pressures | – | ■■■■■ | + |
| Resistant to shock and impact loads | – | ■■■■■ | + |
| Dirt resistance | - | ■■■■■ | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

-100°C up to +250°C

150MPa

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.40 | |
| Colour | | brown | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.3 | DIN 53495 |
| Max. moisture absorption | % weight | 1.1 | |
| Coefficient of friction, dynamic, against steel | μ | 0.06-0.14 | |
| pv value, max. (dry) | MPa · m/s | 0.84 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,400 | DIN 53457 |
| Flexural strength at +20°C | MPa | 95 | DIN 53452 |
| Compressive strength | MPa | 65 | |
| Max. permissible surface pressure (+20°C) | MPa | 150 | |
| Shore D hardness | | 81 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +250 | |
| Max. application temperature short-term | °C | +310 | |
| Min. application temperature | °C | -100 | |
| Thermal conductivity | W/m · K | 0.62 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 4 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{11}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{11}$ | DIN 53482 |

Table 01: Material properties

In addition to iglidur® X, iglidur® Z is among the best-selling iglidur® high-temperature materials. Specifically worth noting is the outstanding wear behaviour under extreme conditions (high loads and temperatures).

### Moisture absorption
The moisture absorption of iglidur® Z plain bearings in ambient conditions is approximately 0.3% weight. The saturation limit submerged in water is 1.1% weight.

### Vacuum
In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® Z bearings.

### Radiation resistance
Plain bearings made from iglidur® Z are resistant up to a radiation intensity of $1 \cdot 10^5$ Gy.

### Resistance to weathering
iglidur® Z plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

### Mechanical properties
With increasing temperatures, the compressive strength of iglidur® Z plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
iglidur® Z is suitable for both medium and - due to its high heat resistance - high speeds. Diagram 03 shows the elastic deformation of iglidur® Z at radial loads. At the maximum recommended surface pressure of 23MPa the deformation is about 5.5% at room temperature.
***Surface pressure, page 45***

# Bearing technology | Plain bearings | iglidur® Z

### Permissible surface speeds

iglidur® Z is a high temperature material that is suitable for applications involving very high specific loads. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

*Surface speed, page 48*

### Temperature

The iglidur® Z plain bearings can be used at temperatures up to +310°C for short periods. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. At high temperatures iglidur® Z is also the most wear-resistant material in dry operation. For temperatures over +145°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

The coefficient of friction declines just as the wear resistance with increasing load (diagrams 04 and 05).

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

Diagram 06 shows wear rates in the lower load range, which are very similar to those of other wear-resistant iglidur® materials. However, in the upper load range iglidur® Z outperforms all other materials in wear resistance. Provided a Cf53 hardened and ground steel shaft is used, the wear is still only 15µm/km at 45MPa. At low loads iglidur® Z plain bearings wear less in pivoting applications than in rotating applications. 304 stainless steel and hard-chromed shafts are of interest here.

*Shaft materials, page 56*

### Installation tolerances

iglidur® Z plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

| Chemicals | Resistance |
|---|---|
| Alcohols | 0 |
| Diluted acids | + |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | – |
| Strong alkalines | – |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | m/s | 1.5 | 1.1 | 5.0 |
| Short-term | m/s | 3.5 | 2.5 | 6.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction µ | 0.06-0.14 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | F10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.006 | +0.046 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.010 | +0.058 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.013 | +0.071 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.016 | +0.086 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.020 | +0.104 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.025 | +0.125 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.030 | +0.150 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | -0.036 | +0.176 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.043 | +0.203 | +0.000 | +0.100 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

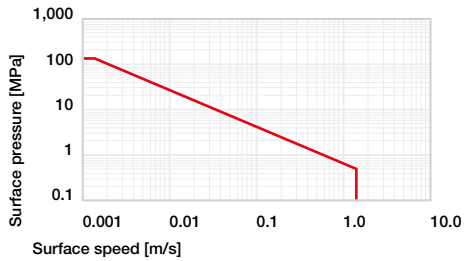



Diagram 01: Permissible pv values for iglidur® Z plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

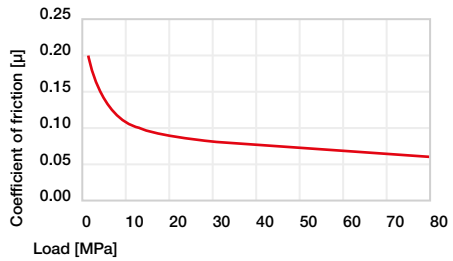



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

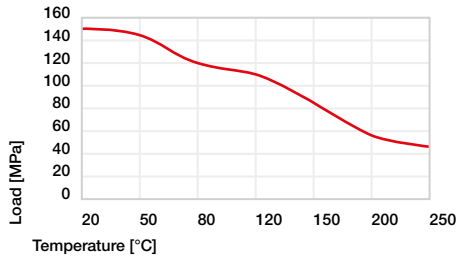



Diagram 02: Maximum recommended surface pressure as a function of temperature (150MPa at +20°C)

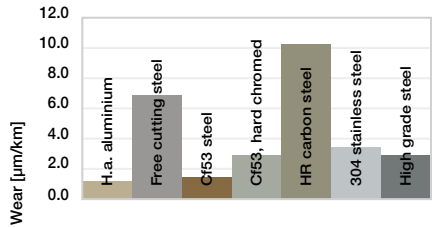



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

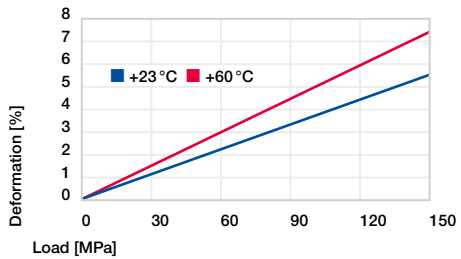



Diagram 03: Deformation under pressure and temperature

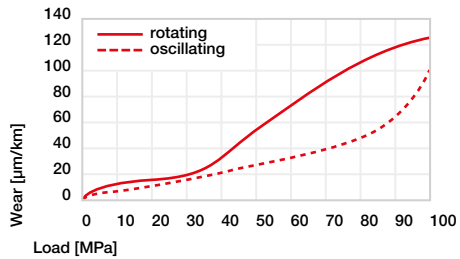



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

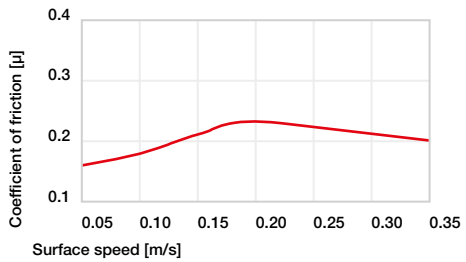
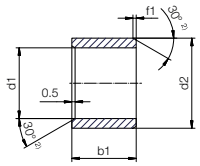



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

# Bearing technology | Plain bearings | iglidur® Z

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

Order example: ZSM-0405-04 – no minimum order quantity.
Z iglidur® material S Cylindrical M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 4.0 | +0.010 +0.058 | 5.5 | 8.0 | ZSM-0405-08 |
| 4.0 | | 5.5 | 4.0 | ZSM-0405-04 |
| 4.0 | | 5.5 | 6.0 | ZSM-0405-06 |
| 5.0 | | 7.0 | 5.0 | ZSM-0507-05 |
| 5.0 | | 7.0 | 9.0 | ZSM-0507-09 |
| 5.0 | | 7.0 | 10.0 | ZSM-0507-10 |
| 6.0 | | 8.0 | 6.0 | ZSM-0608-06 |
| 6.0 | | 8.0 | 8.0 | ZSM-0608-08 |
| 6.0 | | 8.0 | 10.0 | ZSM-0608-10 |
| 6.0 | | 8.0 | 12.0 | ZSM-0608-12 |
| 6.0 | | 10.0 | 6.0 | ZSM-0610-06 |
| 8.0 | +0.013 +0.071 | 10.0 | 6.0 | ZSM-0810-06 |
| 8.0 | | 10.0 | 8.0 | ZSM-0810-08 |
| 8.0 | | 10.0 | 10.0 | ZSM-0810-10 |
| 8.0 | | 10.0 | 12.0 | ZSM-0810-12 |
| 10.0 | | 12.0 | 8.0 | ZSM-1012-08 |
| 10.0 | | 12.0 | 10.0 | ZSM-1012-10 |
| 10.0 | | 12.0 | 12.0 | ZSM-1012-12 |
| 10.0 | | 12.0 | 15.0 | ZSM-1012-15 |
| 10.0 | | 12.0 | 20.0 | ZSM-1012-20 |
| 12.0 | +0.016 +0.086 | 14.0 | 8.0 | ZSM-1214-08 |
| 12.0 | | 14.0 | 10.0 | ZSM-1214-10 |
| 12.0 | | 14.0 | 12.0 | ZSM-1214-12 |
| 12.0 | | 14.0 | 15.0 | ZSM-1214-15 |
| 12.0 | | 14.0 | 20.0 | ZSM-1214-20 |
| 13.0 | | 15.0 | 10.0 | ZSM-1315-10 |
| 13.0 | | 15.0 | 20.0 | ZSM-1315-20 |
| 14.0 | | 16.0 | 15.0 | ZSM-1416-15 |
| 14.0 | | 16.0 | 20.0 | ZSM-1416-20 |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 14.0 | +0.016 +0.086 | 16.0 | 25.0 | ZSM-1416-25 |
| 15.0 | | 17.0 | 15.0 | ZSM-1517-15 |
| 15.0 | | 17.0 | 20.0 | ZSM-1517-20 |
| 15.0 | | 17.0 | 22.0 | ZSM-1517-22 |
| 15.0 | | 17.0 | 25.0 | ZSM-1517-25 |
| 16.0 | | 18.0 | 12.0 | ZSM-1618-12 |
| 16.0 | | 18.0 | 15.0 | ZSM-1618-15 |
| 16.0 | | 18.0 | 20.0 | ZSM-1618-20 |
| 16.0 | | 18.0 | 25.0 | ZSM-1618-25 |
| 18.0 | | 20.0 | 15.0 | ZSM-1820-15 |
| 18.0 | | 20.0 | 20.0 | ZSM-1820-20 |
| 18.0 | | 20.0 | 24.0 | ZSM-1820-24 |
| 18.0 | | 20.0 | 25.0 | ZSM-1820-25 |
| 20.0 | +0.020 +0.104 | 23.0 | 10.0 | ZSM-2023-10 |
| 20.0 | | 23.0 | 15.0 | ZSM-2023-15 |
| 20.0 | | 23.0 | 20.0 | ZSM-2023-20 |
| 20.0 | | 23.0 | 25.0 | ZSM-2023-25 |
| 20.0 | | 23.0 | 30.0 | ZSM-2023-30 |
| 20.0 | | 23.0 | 35.0 | ZSM-2023-35 |
| 22.0 | | 24.0 | 30.0 | ZSM-2224-30 |
| 22.0 | | 25.0 | 15.0 | ZSM-2225-15 |
| 22.0 | | 25.0 | 20.0 | ZSM-2225-20 |
| 22.0 | | 25.0 | 25.0 | ZSM-2225-25 |
| 22.0 | | 25.0 | 30.0 | ZSM-2225-30 |
| 24.0 | | 27.0 | 15.0 | ZSM-2427-15 |
| 24.0 | | 27.0 | 20.0 | ZSM-2427-20 |
| 24.0 | | 27.0 | 25.0 | ZSM-2427-25 |
| 24.0 | | 27.0 | 30.0 | ZSM-2427-30 |
| 25.0 | | 28.0 | 15.0 | ZSM-2528-15 |

[3] After press-fit. *Testing methods, page 61*





iglidur® Z
+250°C
150MPa

# Product range

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 25.0 | +0.020 +0.104 | 28.0 | 20.0 | ZSM-2528-20 |
| 25.0 | | 28.0 | 25.0 | ZSM-2528-25 |
| 25.0 | | 28.0 | 30.0 | ZSM-2528-30 |
| 25.0 | | 28.0 | 48.0 | ZSM-2528-48 |
| 25.0 | | 30.0 | 20.0 | ZSM-2530-20 |
| 26.0 | | 30.0 | 34.0 | ZSM-2630-34 |
| 28.0 | | 32.0 | 20.0 | ZSM-2832-20 |
| 28.0 | | 32.0 | 25.0 | ZSM-2832-25 |
| 28.0 | | 32.0 | 30.0 | ZSM-2832-30 |
| 28.0 | | 34.0 | 29.0 | ZSM-2834-29 |
| 30.0 | | 34.0 | 20.0 | ZSM-3034-20 |
| 30.0 | | 34.0 | 25.0 | ZSM-3034-25 |
| 30.0 | | 34.0 | 30.0 | ZSM-3034-30 |
| 30.0 | | 34.0 | 40.0 | ZSM-3034-40 |
| 32.0 | +0.025 +0.125 | 35.0 | 44.0 | ZSM-3235-44 |
| 32.0 | | 36.0 | 20.0 | ZSM-3236-20 |
| 32.0 | | 36.0 | 30.0 | ZSM-3236-30 |
| 32.0 | | 36.0 | 40.0 | ZSM-3236-40 |
| 35.0 | | 39.0 | 20.0 | ZSM-3539-20 |
| 35.0 | | 39.0 | 30.0 | ZSM-3539-30 |
| 35.0 | | 39.0 | 40.0 | ZSM-3539-40 |
| 35.0 | | 39.0 | 50.0 | ZSM-3539-50 |
| 40.0 | | 44.0 | 15.0 | ZSM-4044-15 |
| 40.0 | | 44.0 | 20.0 | ZSM-4044-20 |
| 40.0 | | 44.0 | 30.0 | ZSM-4044-30 |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 40.0 | +0.025 +0.125 | 44.0 | 40.0 | ZSM-4044-40 |
| 40.0 | | 44.0 | 47.0 | ZSM-4044-47 |
| 40.0 | | 44.0 | 50.0 | ZSM-4044-50 |
| 45.0 | | 50.0 | 20.0 | ZSM-4550-20 |
| 45.0 | | 50.0 | 30.0 | ZSM-4550-30 |
| 45.0 | | 50.0 | 40.0 | ZSM-4550-40 |
| 45.0 | | 50.0 | 50.0 | ZSM-4550-50 |
| 50.0 | | 55.0 | 20.0 | ZSM-5055-20 |
| 50.0 | | 55.0 | 30.0 | ZSM-5055-30 |
| 50.0 | | 55.0 | 40.0 | ZSM-5055-40 |
| 50.0 | | 55.0 | 50.0 | ZSM-5055-50 |
| 50.0 | | 55.0 | 60.0 | ZSM-5055-60 |
| 55.0 | +0.030 +0.150 | 60.0 | 60.0 | ZSM-5560-60 |
| 60.0 | | 65.0 | 60.0 | ZSM-6065-60 |
| 70.0 | | 75.0 | 70.0 | ZSM-7075-70 |
| 80.0 | | 85.0 | 60.0 | ZSM-8085-60 |
| 80.0 | | 85.0 | 80.0 | ZSM-8085-80 |
| 85.0 | +0.036 +0.176 | 90.0 | 60.0 | ZSM-8590-60 |
| 85.0 | | 90.0 | 100.0 | ZSM-8590-100 |
| 95.0 | | 100.0 | 60.0 | ZSM-95100-60 |
| 100.0 | +0.072 +0.212 | 105.0 | 100.0 | ZSM-100105-100 |
| 120.0 | +0.043 +0.203 | 125.0 | 100.0 | ZSM-120125-100 |

[3] After press-fit. *Testing methods, page 61*

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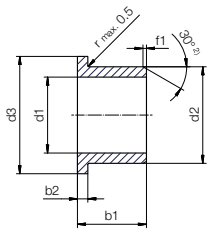
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**

# Bearing technology | Plain bearings | iglidur® Z

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

Order example: ZFM-0405-04 – no minimum order quantity.
Z iglidur® material F With flange M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 4.0 | | 5.5 | 9.5 | 4.0 | 0.75 | **ZFM-0405-04** |
| 5.0 | +0.010 | 7.0 | 11.0 | 5.0 | 1.00 | **ZFM-0507-05** |
| 6.0 | +0.058 | 8.0 | 12.0 | 4.0 | 1.00 | **ZFM-0608-04** |
| 6.0 | | 8.0 | 12.0 | 8.0 | 1.00 | **ZFM-0608-08** |
| 8.0 | | 10.0 | 15.0 | 5.0 | 1.00 | **ZFM-0810-05** |
| 8.0 | | 10.0 | 15.0 | 7.5 | 1.00 | **ZFM-0810-07** |
| 8.0 | | 10.0 | 15.0 | 9.0 | 1.00 | **ZFM-0810-09** |
| 9.0 | | 11.0 | 17.0 | 20.0 | 1.00 | **ZFM-091117-20** |
| 10.0 | | 12.0 | 18.0 | 5.0 | 1.00 | **ZFM-1012-05** |
| 10.0 | +0.013 | 12.0 | 18.0 | 7.0 | 1.00 | **ZFM-1012-07** |
| 10.0 | +0.071 | 12.0 | 18.0 | 9.0 | 1.00 | **ZFM-1012-09** |
| 10.0 | | 12.0 | 18.0 | 12.0 | 1.00 | **ZFM-1012-12** |
| 10.0 | | 12.0 | 18.0 | 15.0 | 1.00 | **ZFM-1012-15** |
| 10.0 | | 12.0 | 18.0 | 17.0 | 1.00 | **ZFM-1012-17** |
| 10.0 | | 13.0 | 15.0 | 5.5 | 1.50 | **ZFM-101315-05** |
| 12.0 | | 14.0 | 20.0 | 7.0 | 1.00 | **ZFM-1214-07** |
| 12.0 | | 14.0 | 20.0 | 9.0 | 1.00 | **ZFM-1214-09** |
| 12.0 | | 14.0 | 20.0 | 12.0 | 1.00 | **ZFM-1214-12** |
| 12.0 | | 14.0 | 20.0 | 17.0 | 1.00 | **ZFM-1214-17** |
| 12.0 | | 14.0 | 20.0 | 20.0 | 1.00 | **ZFM-1214-20** |
| 14.0 | | 16.0 | 22.0 | 12.0 | 1.00 | **ZFM-1416-12** |
| 14.0 | +0.016 | 16.0 | 22.0 | 17.0 | 1.00 | **ZFM-1416-17** |
| 15.0 | +0.086 | 17.0 | 23.0 | 9.0 | 1.00 | **ZFM-1517-09** |
| 15.0 | | 17.0 | 23.0 | 11.0 | 1.00 | **ZFM-1517-11** |
| 15.0 | | 17.0 | 23.0 | 12.0 | 1.00 | **ZFM-1517-12** |
| 15.0 | | 17.0 | 23.0 | 15.0 | 1.00 | **ZFM-1517-15** |
| 15.0 | | 17.0 | 23.0 | 17.0 | 1.00 | **ZFM-1517-17** |
| 15.0 | | 17.0 | 23.0 | 23.0 | 1.00 | **ZFM-151723-23** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 16.0 | | 18.0 | 24.0 | 12.0 | 1.00 | **ZFM-1618-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **ZFM-1618-17** |
| 18.0 | +0.016 | 20.0 | 26.0 | 4.0 | 1.00 | **ZFM-1820-04** |
| 18.0 | +0.086 | 20.0 | 26.0 | 12.0 | 1.00 | **ZFM-1820-12** |
| 18.0 | | 20.0 | 26.0 | 17.0 | 1.00 | **ZFM-1820-17** |
| 18.0 | | 20.0 | 26.0 | 22.0 | 1.00 | **ZFM-1820-22** |
| 20.0 | | 22.0 | 30.0 | 21.0 | 1.00 | **ZFM-2022-21** |
| 20.0 | | 23.0 | 30.0 | 11.5 | 1.50 | **ZFM-2023-11** |
| 20.0 | | 23.0 | 30.0 | 15.5 | 1.50 | **ZFM-2023-155** |
| 20.0 | | 23.0 | 30.0 | 16.5 | 1.50 | **ZFM-2023-16** |
| 20.0 | | 23.0 | 30.0 | 21.5 | 1.50 | **ZFM-2023-21** |
| 20.0 | | 23.0 | 30.0 | 31.5 | 1.50 | **ZFM-2023-31** |
| 25.0 | +0.020 | 28.0 | 35.0 | 11.5 | 1.50 | **ZFM-2528-11** |
| 25.0 | +0.104 | 28.0 | 35.0 | 16.5 | 1.50 | **ZFM-2528-16** |
| 25.0 | | 28.0 | 35.0 | 21.5 | 1.50 | **ZFM-2528-21** |
| 25.0 | | 28.0 | 35.0 | 31.5 | 1.50 | **ZFM-2528-31** |
| 30.0 | | 34.0 | 42.0 | 13.0 | 2.00 | **ZFM-3034-13** |
| 30.0 | | 34.0 | 42.0 | 16.0 | 2.00 | **ZFM-3034-16** |
| 30.0 | | 34.0 | 42.0 | 20.0 | 2.00 | **ZFM-3034-20** |
| 30.0 | | 34.0 | 42.0 | 26.0 | 2.00 | **ZFM-3034-26** |
| 30.0 | | 34.0 | 42.0 | 37.0 | 2.00 | **ZFM-3034-37** |
| 35.0 | | 39.0 | 47.0 | 16.0 | 2.00 | **ZFM-3539-16** |
| 35.0 | | 39.0 | 47.0 | 26.0 | 2.00 | **ZFM-3539-26** |
| 40.0 | | 44.0 | 52.0 | 20.0 | 2.00 | **ZFM-4044-20** |
| 40.0 | +0.025 | 44.0 | 52.0 | 30.0 | 2.00 | **ZFM-4044-30** |
| 40.0 | +0.125 | 44.0 | 52.0 | 40.0 | 2.00 | **ZFM-4044-40** |
| 45.0 | | 50.0 | 58.0 | 50.0 | 2.00 | **ZFM-4550-50** |
| 50.0 | | 55.0 | 63.0 | 20.0 | 2.00 | **ZFM-5055-20** |

[3] After press-fit. *Testing methods, page 61*





# Product range

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 50.0 | +0.025 +0.125 | 55.0 | 63.0 | 50.0 | 2.00 | **ZFM-5055-50** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 60.0 | +0.030 | 65.0 | 73.0 | 50.0 | 2.00 | **ZFM-6065-50** |
| 75.0 | +0.150 | 80.0 | 88.0 | 50.0 | 2.50 | **ZFM-7580-50** |
| 75.0 | | 80.0 | 94.0 | 65.0 | 2.00 | **ZFM-758094-65** |

[3] After press-fit. *Testing methods, page 61*

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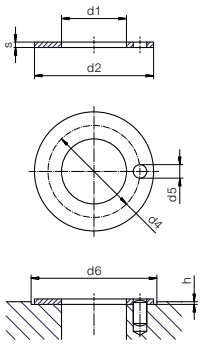
# Bearing technology | Plain bearings | iglidur® Z

## Thrust washer (form T)




Dimensions according to ISO 3547-1 and special dimensions

Order example: ZTM-1430-015 – no minimum order quantity.
Z iglidur® material T Thrust washer M Metric 14 Inner Ø d1 30 Outer Ø d2 015 Height s

| d1 | d2 | d4 | d5 | h | d6 | Øs | Part No. |
|---|---|---|---|---|---|---|---|
| +0.25 | -0.25 | -0.12<br>+0.12 | +0.375<br>+0.125 | +0.2/-0.2 | +0.12 | -0.05 | |
| [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | |
| 14 | 30 | 25 | 2 | 1.0 | 30 | 1.5 | **ZTM-1430-015**[146)] |
| 15 | 27 | [4)] | [4)] | 1.0 | 27 | 1.5 | **ZTM-1527-015** |
| 15 | 35 | [4)] | [4)] | 1.0 | 35 | 1.5 | **ZTM-1535-015** |
| 15 | 40 | [4)] | [4)] | 1.0 | 35 | 1.5 | **ZTM-1540-015** |
| 16 | 23 | [4)] | [4)] | 1.0 | 23 | 1.5 | **ZTM-1623-015** |
| 20 | 36 | 28 | 3 | 1.0 | 36 | 1.5 | **ZTM-2036-015** |
| 22 | 38 | 30 | 3 | 1.0 | 38 | 1.5 | **ZTM-2238-015** |
| 22 | 50 | 30 | 3 | 1.0 | 38 | 0.5 | **ZTM-2250-005** |
| 22 | 50 | 30 | 3 | 1.0 | 38 | 1.5 | **ZTM-2250-015** |
| 28 | 38 | [4)] | [4)] | 1.0 | 38 | 1.5 | **ZTM-2838-015** |
| 32 | 54 | 43 | 4 | 1.0 | 54 | 1.5 | **ZTM-3254-015** |
| 62 | 90 | [4)] | [4)] | 1.5 | 90 | 2.0 | **ZTM-6290-020** |

[4)] Design without fixing hole [146)] d4 +/-0.2, d5 +/-0.1

**Available from stock**
Detailed information about delivery time online.
www.igus.eu/24

**Order online**
including delivery times, prices, online tools
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**Ordering note**
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| Discount scaling | | |
|---|---|---|
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**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**



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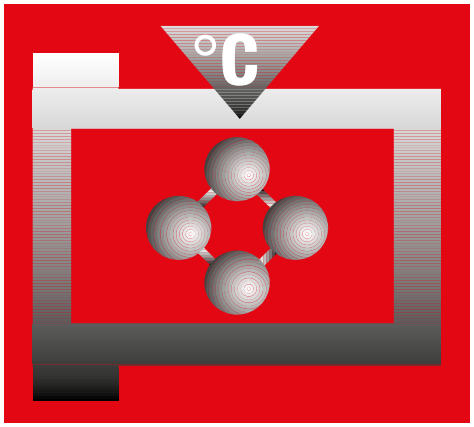



# The high-temperature specialist up to +250°C

## Up to six times more wear-resistant than iglidur® X

## iglidur® X6

**When to use it?**
- When temperatures are higher than +150°C
- When the wear resistance of iglidur® X in pivoting and rotating applications is not sufficient
- When the press-fit should be improved over iglidur® X
- When high media resistance is required
- When a bearing which is free of PTFE is required

**When not to use it?**
- When a cost-effective universal plain bearing is required
  ***iglidur® G***
- When a plain bearing for underwater use is required
  ***iglidur® UW500, iglidur® H370***
- When a wear-resistant high-temperature plain bearing for linear motion is required
  ***iglidur® Z***

EN 09/2023

# Bearing technology | Plain bearings | iglidur® X6

Ø
3.0-50.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## The high-temperature specialist up to +250°C
## Up to six times more wear-resistant than iglidur® X

Due to nanotechnology, iglidur® X6 shows up to six longer service life than iglidur® X in many pivoting and rotating applications - even at temperatures over +100°C.

- Continuous operating temperatures up to +250°C
- Up to 50 % better press-fit than iglidur® X
- High compressive strength
- Extremely high chemical resistance
- PTFE-free
- Lubrication-free
- Maintenance-free

### Typical application areas

- Glass industry
- Food industry
- Fluid technology
- Textile industry
- Mechanical engineering

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | | + |
| Wear resistance at +90°C | – | | + |
| Wear resistance at +150°C | – | | + |
| Slide property | – | | + |
| Wear resistance under water | – | | + |
| Media resistance | – | | + |
| Resistant to edge pressures | – | | + |
| Resistant to shock and impact loads | – | | + |
| Dirt resistance | – | | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.53 | |
| Colour | | dark blue | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.1 | DIN 53495 |
| Max. moisture absorption | % weight | 0.5 | |
| Coefficient of friction, dynamic, against steel | μ | 0.09-0.25 | |
| pv value, max. (dry) | MPa · m/s | 1.35 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 16,000 | DIN 53457 |
| Flexural strength at +20°C | MPa | 290 | DIN 53452 |
| Compressive strength | MPa | 190 | |
| Max. permissible surface pressure (+20°C) | MPa | 150 | |
| Shore D hardness | | 89 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +250 | |
| Max. application temperature short-term | °C | +315 | |
| Min. application temperature | °C | -100 | |
| Thermal conductivity | W/m · K | 0.55 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 1.1 | DIN 53752 |
| **Electrical properties**[5] | | | |
| Specific transitional resistance | Ωcm | $< 10^5$ | DIN IEC 93 |
| Surface resistance | Ω | $< 10^3$ | DIN 53482 |

[5] The good conductivity of this material can favour the generation of corrosion on the metallic contact components.

**Table 01: Material properties**

-100°C up to +250°C

150MPa

V-0

RoHS-II

ISO 3547-1

With respect to its general mechanical and thermal specifications, iglidur® X6 is directly comparable to our high-temperature classic, iglidur® X, and may even provide advantages, such as its wear behaviour.

### Moisture absorption

The moisture absorption of iglidur® X6 plain bearings in ambient conditions is approximately 0.1% weight. The saturation limit submerged in water is 0.5% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

### Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

### Radiation resistance

They are resistant up to a radiation intensity of $2 \cdot 10^5$ Gy.

### Resistance to weathering

iglidur® X6 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® X6 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® X6 at radial loads. At the maximum recommended surface pressure of 150MPa, the deformation is less than 2%. A possible deformation could be, among others, dependant on the duty cycle of the load.

***Surface pressure, page 45***

# Bearing technology | Plain bearings | iglidur® X6

### Permissible surface speeds

The high temperature resistance and good thermal conductivity values mean that iglidur® X6 is suitable for high-speed applications. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

*Surface speed, page 48*

### Temperature

The ambient temperatures strongly influence the properties of plain bearings. With regard to temperature resistance, iglidur® X6 is among the highest in the iglidur® range. In many tests it has shown a six times higher wear resistance compared to the established high-temperature specialist iglidur® X. For temperatures over +165°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the load. The coefficient of friction of iglidur® X6 declines with higher pressure and is practically constant for pressures above 30MPa. A higher speed of the shaft also results in a lower coefficient of friction (diagram 04 and 05).

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. The best case for iglidur® X6 is a ground surface with an average surface finish Ra = 0.4-0.7μm. Diagram 06 shows a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® X6. The best performance is achieved with the plain shaft materials free cutting steel and plain steel 1.0037. At higher loads, we recommend harder steel qualities. Non-hardened steel shafts can be worn by the bearing at pressures over 2MPa. The wear database shows that iglidur® X6 is more suitable for rotating than for pivoting applications (diagram 07). If the shaft material you plan on using is not shown in these test results, please contact us.

*Shaft materials, page 56*

### Installation tolerances

iglidur® X6 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table). In relation to the installation tolerance, the inner diameter changes with the absorption of humidity.

*Testing methods, page 61*

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | + |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | + |
| Strong alkalines | + |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | m/s | 1.5 | 1.1 | 5.0 |
| Short-term | m/s | 3.5 | 2.5 | 10.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.09-0.25 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | F10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.006 | +0.046 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.010 | +0.058 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.013 | +0.071 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.016 | +0.086 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.020 | +0.104 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.025 | +0.125 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.030 | +0.150 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | -0.036 | +0.176 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.043 | +0.203 | +0.000 | +0.100 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

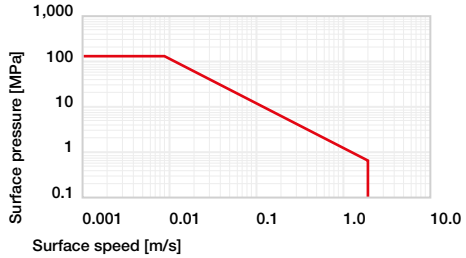



Diagram 01: Permissible pv values for iglidur® X6 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

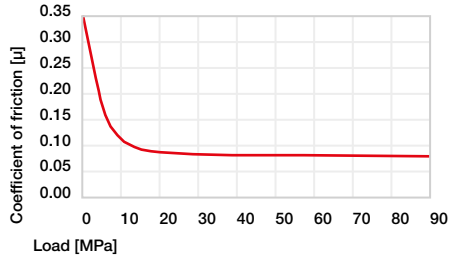



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

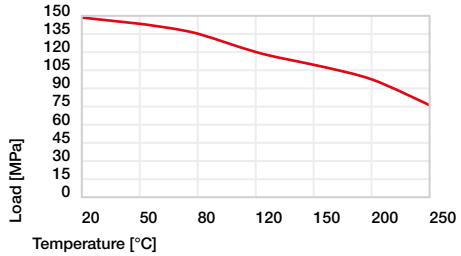



Diagram 02: Maximum recommended surface pressure as a function of temperature (150MPa at +20°C)

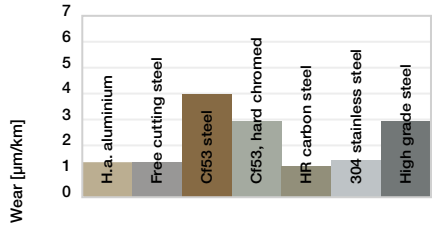



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

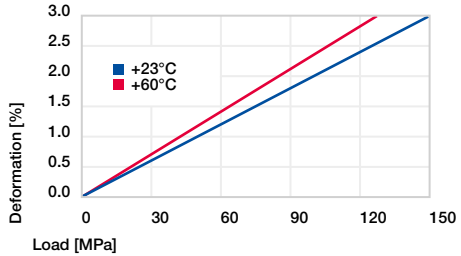



Diagram 03: Deformation under pressure and temperature

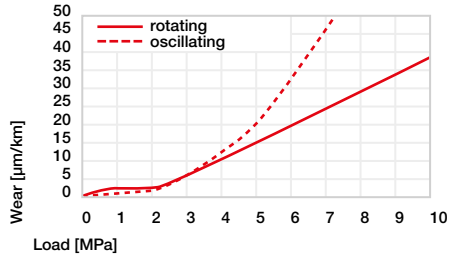



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

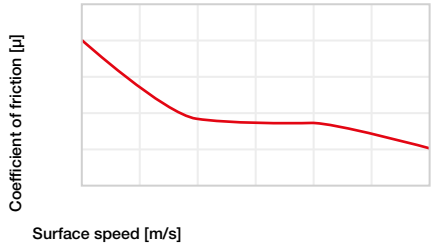
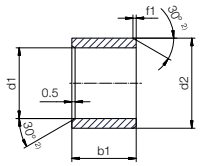



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

# Bearing technology | Plain bearings | iglidur® X6

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example: X6SM-0304-03 – no minimum order quantity.**
X6 iglidur® material S Cylindrical M Metric 03 Inner Ø d1 04 Outer Ø d2 03 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 3.0 | +0.010 +0.058 | 4.5 | 3.0 | **X6SM-0304-03** |
| 5.0 | | 7.0 | 5.0 | **X6SM-0507-05** |
| 6.0 | | 8.0 | 6.0 | **X6SM-0608-06** |
| 8.0 | +0.013 +0.071 | 10.0 | 10.0 | **X6SM-0810-10** |
| 10.0 | | 12.0 | 10.0 | **X6SM-1012-10** |
| 12.0 | +0.016 +0.086 | 14.0 | 12.0 | **X6SM-1214-12** |
| 16.0 | | 18.0 | 15.0 | **X6SM-1618-15** |
| 20.0 | +0.020 +0.104 | 23.0 | 20.0 | **X6SM-2023-20** |
| 25.0 | | 28.0 | 30.0 | **X6SM-2528-30** |
| 30.0 | | 34.0 | 30.0 | **X6SM-3034-30** |
| 35.0 | +0.025 +0.125 | 39.0 | 40.0 | **X6SM-3539-40** |
| 40.0 | | 44.0 | 40.0 | **X6SM-4044-40** |
| 50.0 | | 55.0 | 40.0 | **X6SM-5055-40** |

[3] After press-fit. *Testing methods, page 61*

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**No minimum order value.**
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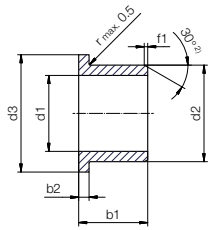
iglidur® X6
+250°C
150MPa

# Bearing technology | Plain bearings | iglidur® X6

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example: X6FM-0304-05 – no minimum order quantity.**
X6 iglidur® material F With flange M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 3.0 | +0.010 +0.058 | 4.5 | 7.5 | 5.0 | 0.75 | **X6FM-0304-05** |
| 5.0 | | 7.0 | 11.0 | 5.0 | 1.00 | **X6FM-0507-05** |
| 6.0 | | 8.0 | 12.0 | 6.0 | 1.00 | **X6FM-0608-06** |
| 8.0 | +0.013 +0.071 | 10.0 | 15.0 | 10.0 | 1.00 | **X6FM-0810-10** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **X6FM-1012-10** |
| 10.0 | | 12.0 | 18.0 | 25.0 | 1.00 | **X6FM-1012-25** |
| 12.0 | +0.016 +0.086 | 14.0 | 20.0 | 12.0 | 1.00 | **X6FM-1214-12** |
| 16.0 | | 18.0 | 24.0 | 12.0 | 1.00 | **X6FM-1618-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **X6FM-1618-17** |
| 20.0 | +0.020 +0.104 | 23.0 | 30.0 | 21.5 | 1.50 | **X6FM-2023-21** |
| 25.0 | | 28.0 | 35.0 | 21.5 | 1.50 | **X6FM-2528-21** |
| 30.0 | | 34.0 | 42.0 | 40.0 | 2.00 | **X6FM-3034-40** |
| 35.0 | +0.025 +0.125 | 39.0 | 47.0 | 26.0 | 2.00 | **X6FM-3539-26** |
| 40.0 | | 44.0 | 52.0 | 40.0 | 2.00 | **X6FM-4044-40** |

[3] After press-fit. *Testing methods, page 61*

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including delivery times, prices, online tools
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|---|---|---|
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| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**

# For soft shafts and high temperatures

## Wear and media-resistant

## iglidur® V400

**When to use it?**

- When extreme wear resistance is required with soft shafts
- When the highest wear resistance at temperatures above +100°C is required
- When vibrations and edge loads are present
- When the bearing should be resistant to chemicals

**When not to use it?**

- For hardened shafts
  ***iglidur® W300***
- For applications at normal temperatures
  ***iglidur® G, iglidur® J, iglidur® W300***
- When a cost-effective universal plain bearing is required
  ***iglidur® G***



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# Bearing technology | Plain bearings | iglidur® V400

Ø
6.0-20.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## For soft shafts and high temperatures
## Wear and media-resistant

Highly wear-resistant bearings for soft shafts and temperatures up to +200°C with low moisture absorption and excellent resistance to chemicals.

- Excellent wear resistance with soft shaft materials and for temperatures up to +200°C
- Chemical-resistant
- High elasticity
- Lubrication-free
- Maintenance-free

### Typical application areas

- Plant construction
- Automotive industry
- Automation
- Aerospace engineering
- Mechatronics

| Descriptive technical specifications | | |
|---|---|---|
| Wear resistance at +23°C | – | + |
| Wear resistance at +90°C | – | + |
| Wear resistance at +150°C | – | + |
| Slide property | – | + |
| Wear resistance under water | – | + |
| Media resistance | – | + |
| Resistant to edge pressures | – | + |
| Resistant to shock and impact loads | – | + |
| Dirt resistance | – | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.51 | |
| Colour | | cream | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.1 | DIN 53495 |
| Max. moisture absorption | % weight | 0.2 | |
| Coefficient of friction, dynamic, against steel | μ | 0.15-0.20 | |
| pv value, max. (dry) | MPa · m/s | 0.50 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 4,500 | DIN 53457 |
| Flexural strength at +20°C | MPa | 95 | DIN 53452 |
| Compressive strength | MPa | 47 | |
| Max. permissible surface pressure (+20°C) | MPa | 45 | |
| Shore D hardness | | 74 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +200 | |
| Max. application temperature short-term | °C | +240 | |
| Min. application temperature | °C | -50 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 3 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{12}$ | DIN 53482 |

Table 01: Material properties

-50°C up to +200°C

45MPa

V-0

RoHS-II

ISO 3547-1

iglidur® V400 plain bearings are not suitable for high pressures or static high loads. However they are characterised by a high wear resistance all the way up to the maximum recommended surface pressure.

### Moisture absorption

The moisture absorption of iglidur® V400 plain bearings is only 0.2%weight after saturation in water.

### Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

### Radiation resistance

Plain bearings made from iglidur® V400 are resistant up to a radiation intensity of $2 \cdot 10^4$ Gy. Higher radiation affects their mechanical properties.

### Resistance to weathering

iglidur® V400 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

### Mechanical properties

When temperatures increase, the compressive strength of iglidur® V400 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Moreover the limit of the permitted loads at +100°C is still very high with 20MPa. The high flexibility is shown in diagram 03.

*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® V400

### Permissible surface speeds

iglidur® V400 also permits high surface speeds due to the high temperature resistance. The very favourable coefficient of friction of the bearing enables maximum surface speeds up to 1.3m/s. In linear applications, the permissible speeds are even higher and can be up to 3.0m/s.

*Surface speed, page 48*

### Temperature

The maximum long-term application temperature is +200°C. For temperatures over +100°C an additional securing is required. Then, however, the wear resistance of the bearings is very good and adopts a leading position among all iglidur® materials. When temperatures increase, the compressive strength of iglidur® V400 plain bearings decreases. Diagram 02 shows this inverse relationship.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

The coefficient of friction is dependent on the bearing's stressing capacity (diagrams 04 and 05). The coefficient of friction of iglidur® V400 is very constant. No other iglidur® plain bearing material exhibits a lower variance in the coefficients of friction, even when the shaft material is altered.

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

The influence of the shaft material on the wear resistance is bigger than on the friction. Here, even at low loads (0.75MPa), significant differences occur, as shown in diagram 06. With regard to wear, iglidur® V400 plain bearings show better values in rotating applications than in pivoting movements (diagram 07).

*Shaft materials, page 56*

### Installation tolerances

iglidur® V400 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | + |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | + |
| Strong alkalines | – |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | m/s | 0.9 | 0.6 | 2.0 |
| Short-term | m/s | 1.3 | 0.9 | 3.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.15-0.20 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | F10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.006 | +0.046 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.010 | +0.058 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.013 | +0.071 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.016 | +0.086 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.020 | +0.104 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.025 | +0.125 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.030 | +0.150 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | -0.036 | +0.176 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.043 | +0.203 | +0.000 | +0.100 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

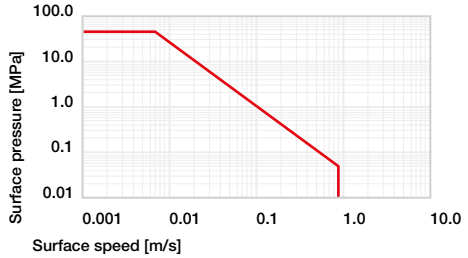



Diagram 01: Permissible pv values for iglidur® V400 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

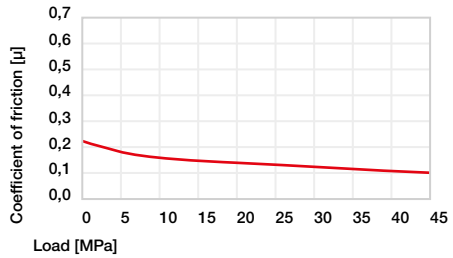



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

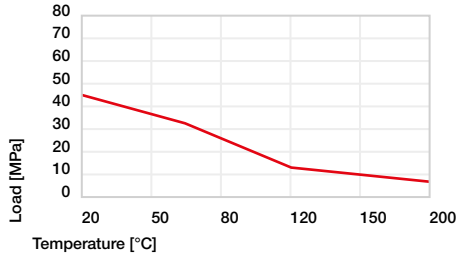



Diagram 02: Maximum recommended surface pressure as a function of temperature (45MPa at +20°C)

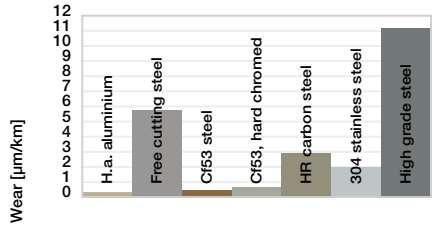



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

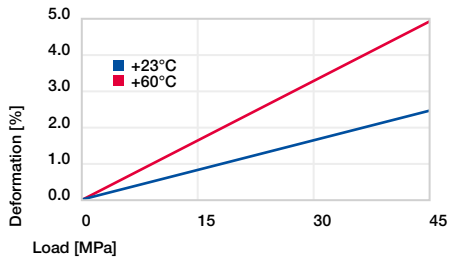



Diagram 03: Deformation under pressure and temperature

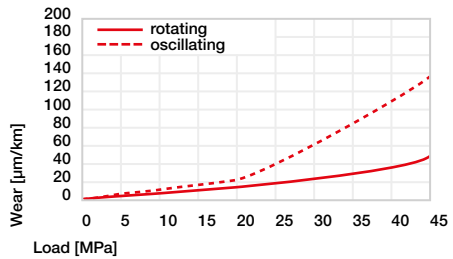



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

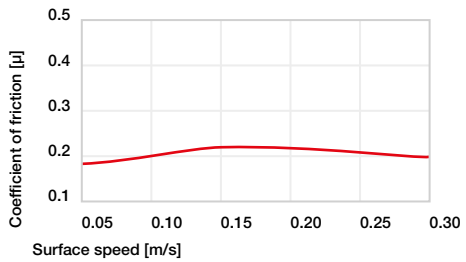
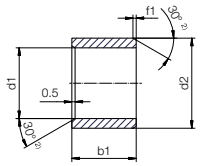



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

# Bearing technology | Plain bearings | iglidur® V400

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 |
|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example: VSM-0608-06 – no minimum order quantity.**
V400 iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 6.0 | +0.010 +0.058 | 8.0 | 6.0 | **VSM-0608-06** |
| 8.0 | +0.013 +0.071 | 10.0 | 10.0 | **VSM-0810-10** |
| 10.0 | | 12.0 | 10.0 | **VSM-1012-10** |
| 12.0 | +0.016 +0.086 | 14.0 | 12.0 | **VSM-1214-12** |
| 16.0 | | 18.0 | 15.0 | **VSM-1618-15** |
| 20.0 | +0.020 +0.104 | 23.0 | 20.0 | **VSM-2023-20** |

[3] After press-fit. *Testing methods, page 61*

**Available from stock**
Detailed information about delivery time online.
www.igus.eu/24

**Order online**
including delivery times, prices, online tools
www.igus.eu/V400

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

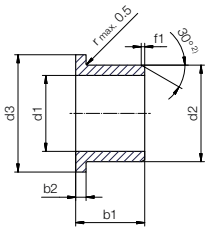
**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**



iglidur® V400
+200°C
45MPa

# Bearing technology | Plain bearings | iglidur® V400

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 |
|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example: VFM-0608-06 – no minimum order quantity.**
V400 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 6.0 | +0.010 +0.058 | 8.0 | 12.0 | 6.0 | 1.00 | **VFM-0608-06** |
| 8.0 | +0.013 +0.071 | 10.0 | 15.0 | 10.0 | 1.00 | **VFM-0810-10** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **VFM-1012-10** |
| 12.0 | +0.016 +0.086 | 14.0 | 20.0 | 12.0 | 1.00 | **VFM-1214-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **VFM-1618-17** |
| 18.0 | +0.020 +0.104 | 20.0 | 26.0 | 20.0 | 1.00 | **VFM-1820-20** |
| 20.0 | | 23.0 | 30.0 | 21.5 | 1.50 | **VFM-2023-21** |

[3] After press-fit. *Testing methods, page 61*

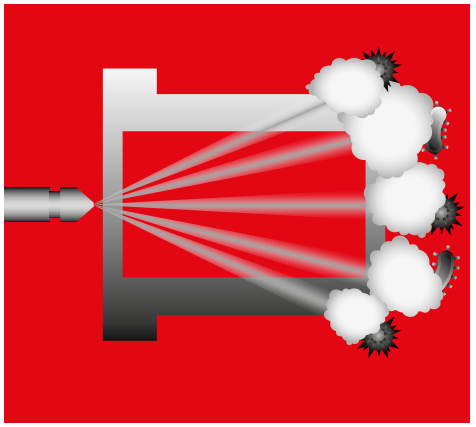
**Available from stock**
Detailed information about delivery time online.
www.igus.eu/24

**Order online**
including delivery times, prices, online tools
www.igus.eu/V400

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**



# All-rounder for steam sterilisation

## Low-cost, media-resistant and hygienic

## iglidur® HSD350

**When to use it?**

- If the bearing point is regularly sterilised with hot steam
- When a low-cost material is required at the same time
- When good chemical resistance is required
- Low moisture absorption

**When not to use it?**

- When high pressures occur
  ***iglidur® G, iglidur® W300***
- When continuous operating temperatures are higher than +180°C
  ***iglidur® G, iglidur® Z***
- When a cost-effective bearing for occasional movements is necessary
  ***iglidur® G***



EN 09/2023

# Bearing technology | Plain bearings | iglidur® HSD350

Ø 6.0-20.0mm

Also available as:

Bar stock, round bar Page 743

Bar stock, plate Page 773

tribo-tape liner Page 781

Guide rings Page 641

Two hole flange bearings Page 667

Moulded special parts Page 696

igubal® spherical balls Page 993

## All-rounder for steam sterilisation
## Low-cost, media-resistant and hygienic

The new material enables continuous operation where hygiene is important, including regular sterilisation, with an outstanding price-performance ratio.

- Temperature-resistant up to +180°C
- Suitable for wet environments
- High media resistance
- Corrosion-free
- Lubrication-free
- Sterilisable
- Maintenance-free

### Typical application areas

- Filling technology
- Medical and laboratory technology

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | - | | + |
| Wear resistance at +90°C | – | | + |
| Wear resistance at +150°C | – | | + |
| Slide property | – | | + |
| Wear resistance under water | – | | + |
| Media resistance | – | | + |
| Resistant to edge pressures | – | | + |
| Resistant to shock and impact loads | – | | + |
| Dirt resistance | – | | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.39 | |
| Colour | | beige | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.6 | ISO 175 |
| Max. moisture absorption | % weight | 1.2 | ISO 62 |
| Coefficient of friction, dynamic, against steel | μ | 0.07-0.23 | |
| pv value, max. (dry) | MPa · m/s | 0.30 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,150 | DIN EN ISO 178 |
| Flexural strength at +20°C | MPa | 67 | DIN EN ISO 178 |
| Compressive strength | MPa | 44 | |
| Max. permissible surface pressure (+20°C) | MPa | 30 | |
| Shore D hardness | | 77 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +180 | |
| Max. application temperature short-term | °C | +210 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 7 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{13}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{14}$ | DIN 53482 |

Table 01: Material properties

-40°C up to +180°C

30MPa

V-0

RoHS-II

ISO 3547-1

iglidur® HSD350 was specially developed for use in applications where decontamination by steam (e.g. in autoclaves) is necessary. iglidur® HSD350 offers an excellent price-performance ratio.

### Moisture absorption

The moisture absorption of iglidur® HSD350 plain bearings is approximately 0.6% weight in standard climatic conditions. The saturation limit submerged in water is 1.2% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

### Vacuum

In vacuum, the moisture content is released as vapour. Due to its low moisture absorption, use in a vacuum is possible.

### Radiation resistance

Plain bearings made from iglidur® HSD350 are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® HSD350 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® HSD350 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® HSD350 under different loads. At the maximum recommended surface pressure of 30MPa, the deformation is less than 2%. A possible deformation could be, among others, dependant on the duty cycle of the load.

*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® HSD350

### Permissible surface speeds

Due to its rather good thermal conductivity and thermal resistance, iglidur® HSD350 is suitable for speeds in the medium range. The permissible surface speed decreases with increasing surface pressure.

*Surface speed, page 48*

### Temperature

The ambient temperatures strongly influence the properties of plain bearings. According to its field of application as autoclavable material, iglidur® HSD350 offers good thermal resistance. For temperatures over +130°C an axial securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

The coefficient of friction increases constantly and slowly over the speed, but remains below 0.3µ up to a speed of 2.0m/s.

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

Diagram 06 and 07 display a summary of the test results with different shaft materials conducted with plain bearings made from iglidur® HSD350. At 0.3 m/s and 1 MPa surface pressure, a wide variety of shafts are suitable and provide good wear results. Hard-anodised aluminium, free cutting steel, hard-chromed Cf53, 304 stainless steel and high grade steel exhibit low wear. If the shaft material you plan on using is not shown in these test results, please contact us.

*Shaft materials, page 56*

### Installation tolerances

iglidur® HSD350 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table). In relation to the installation tolerance, the inner diameter changes with the absorption of humidity.

*Testing methods, page 61*

| Chemicals | Resistance |
|---|---|
| Alcohols | + up to 0 |
| Diluted acids | + |
| Diluted alkalines | + |
| Fuels | + up to 0 |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | 0 |
| Strong alkalines | 0 |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | m/s | 1.1 | 0.8 | 3.0 |
| Short-term | m/s | 1.2 | 1.0 | 3.2 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction µ | 0.07-0.23 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | F10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.006 | +0.046 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.010 | +0.058 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.013 | +0.071 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.016 | +0.086 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.020 | +0.104 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.025 | +0.125 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.030 | +0.150 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | -0.036 | +0.176 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.043 | +0.203 | +0.000 | +0.100 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

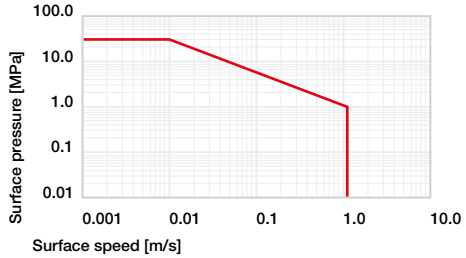



Diagram 01: Permissible pv values for iglidur® HSD350 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

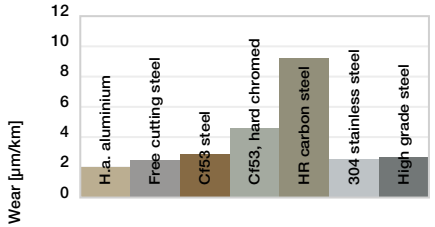



Diagram 05: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

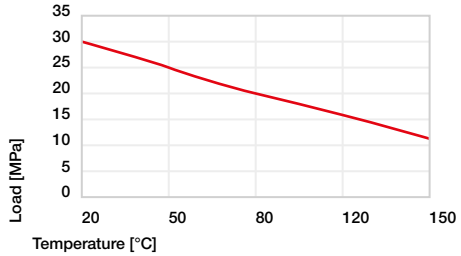



Diagram 02: Maximum recommended surface pressure as a function of temperature (30MPa at +20°C)

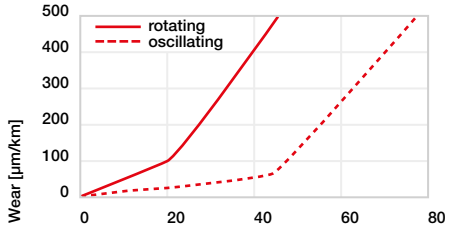



Diagram 06: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

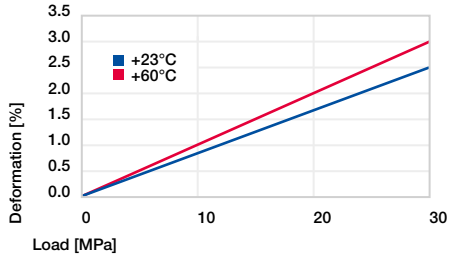



Diagram 03: Deformation under pressure and temperature

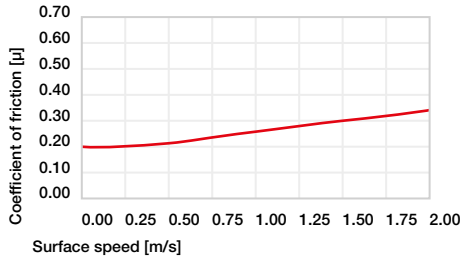
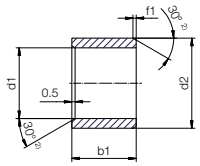



Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

# Bearing technology | Plain bearings | iglidur® HSD350

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 6-12 | Ø 12-30 |
|---|---|---|
| f1 [mm] | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

Order example: HSD350SM-0608-06 – no minimum order quantity.
HSD350 iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 6.0 | +0.010 +0.058 | 8.0 | 6.0 | **HSD350SM-0608-06** |
| 8.0 | +0.013 +0.071 | 10.0 | 10.0 | **HSD350SM-0810-10** |
| 10.0 | | 12.0 | 10.0 | **HSD350SM-1012-10** |
| 12.0 | +0.016 +0.086 | 14.0 | 12.0 | **HSD350SM-1214-12** |
| 16.0 | | 18.0 | 15.0 | **HSD350SM-1618-15** |
| 20.0 | +0.020 +0.104 | 23.0 | 20.0 | **HSD350SM-2023-20** |

[3] After press-fit. *Testing methods, page 61*

**Available from stock**
Detailed information about delivery time online.
www.igus.eu/24

**Order online**
including delivery times, prices, online tools
www.igus.eu/HSD350

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

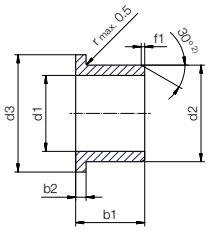
**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**





# Bearing technology | Plain bearings | iglidur® HSD350

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 6-12 | Ø 12-30 |
|---|---|---|
| f1 [mm] | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

Order example: HSD350FM-0608-06 – no minimum order quantity.
HSD350 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 6.0 | +0.010 +0.058 | 8.0 | 12.0 | 6.0 | 1.00 | **HSD350FM-0608-06** |
| 8.0 | +0.013 +0.071 | 10.0 | 15.0 | 10.0 | 1.00 | **HSD350FM-0810-09** |
| 10.0 | | 12.0 | 18.0 | 9.0 | 1.00 | **HSD350FM-1012-09** |
| 12.0 | +0.016 +0.086 | 14.0 | 20.0 | 12.0 | 1.00 | **HSD350FM-1214-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **HSD350FM-1618-17** |
| 20.0 | +0.020 +0.104 | 23.0 | 30.0 | 21.5 | 1.50 | **HSD350FM-2023-21** |

[3] After press-fit. *Testing methods, page 61*

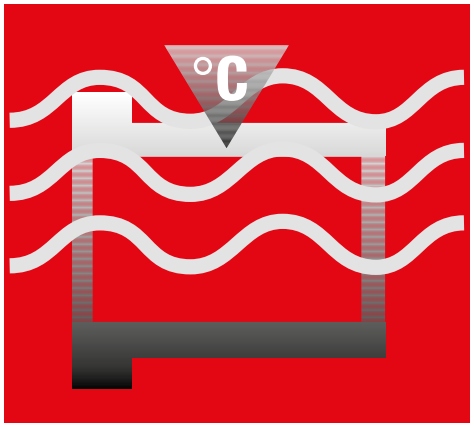
**Available from stock**
Detailed information about delivery time online.
www.igus.eu/24

**Order online**
including delivery times, prices, online tools
www.igus.eu/HSD350

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**




# For hot liquids

## Continuous wear resistance in liquids

## iglidur® UW500

**When to use it?**

- When plain bearings need to be used in liquids
- For high speeds
- For high temperatures
- When a high chemical resistance is required

**When not to use it?**

- When a cost-effective underwater plain bearing for the standard temperature range is required
  ***iglidur® UW***
- When a cost-effective underwater plain bearing is required for rare operations
  ***iglidur® H***
- When a cost-effective universal plain bearing is required
  ***iglidur® G***



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# Bearing technology | Plain bearings | iglidur® UW500

Ø
–

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## For hot liquids
## Continuous wear resistance in liquids

iglidur® UW500 was developed for underwater applications at higher temperatures up to +250°C. In addition, the plain bearings will run in chemicals which would act as a lubricant.

- High temperature resistance
- Suitable for high surface speeds
- Lubrication-free
- Suitable for underwater applications
- Maintenance-free

### Typical application areas

- Plant construction
- Pumps
- Chemical industry

| Descriptive technical specifications | | |
|---|---|---|
| Wear resistance at +23°C | – | + |
| Wear resistance at +90°C | – | + |
| Wear resistance at +150°C | – | + |
| Slide property | – | + |
| Wear resistance under water | – | + |
| Media resistance | – | + |
| Resistant to edge pressures | – | + |
| Resistant to shock and impact loads | – | + |
| Dirt resistance | – | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert



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# Technical data

-100°C up to +250°C

140 MPa

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.49 | |
| Colour | | black | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.1 | DIN 53495 |
| Max. moisture absorption[6] | % weight | 0.5 | |
| Coefficient of friction, dynamic, against steel | μ | 0.20-0.36 | |
| pv value, max. (dry) | MPa · m/s | 0.35 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 16,000 | DIN 53457 |
| Flexural strength at +20°C | MPa | 260 | DIN 53452 |
| Compressive strength | MPa | 140 | |
| Max. permissible surface pressure (+20°C) | MPa | 140 | |
| Shore D hardness | | 86 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +250 | |
| Max. application temperature short-term | °C | +300 | |
| Min. application temperature | °C | -100 | |
| Thermal conductivity | W/m · K | 0.60 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 4 | DIN 53752 |
| **Electrical properties[5]** | | | |
| Specific transitional resistance | Ωcm | $< 10^9$ | DIN IEC 93 |
| Surface resistance | Ω | $< 10^9$ | DIN 53482 |

[5] The good conductivity of this material can favour the generation of corrosion on the metallic contact components.

[6] All results were obtained under laboratory conditions with demineralised water. For application with direct water contact, we recommend tests under real application conditions.

**Table 01: Material properties**

The plain bearings made from iglidur® UW500 were developed for underwater applications with high temperatures. Examples for this are water pumps in automotive engineering, but also the field of medical engineering and related sectors. Unless the underwater operation is explicitly stated, the information in this chapter describes iglidur® UW500 in dry operation.

### Moisture absorption

The moisture absorption of iglidur® UW500 plain bearings is below 0.1% weight in ambient conditions. The maximum moisture absorption is 0.5% weight. iglidur® UW500 plain bearings can be used for underwater applications.

### Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

### Radiation resistance

Plain bearings made from iglidur® UW500 are resistant up to a radiation intensity of $1 \cdot 10^5$ Gy. They resist to hard gamma radiation (1,000Mrad) and alpha or beta radiation (10,000Mrad).

### Resistance to weathering

iglidur® UW500 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

### Mechanical properties

When temperatures increase, the compressive strength of iglidur® UW500 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® UW500 under different loads.

*Surface pressure, page 45*

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# Bearing technology | Plain bearings | iglidur® UW500

### Permissible surface speeds

iglidur® UW500 plain bearings can be used in applications involving dry operation as well as in liquids in a wide variety of applications. Due to hydrodynamic lubrication at high speeds, surface speeds far above 1.5m/s can be achieved.

*Surface speed, page 48*

### Temperature

iglidur® UW500 can be used in applications where there are continuous temperatures of +150°C. If the bearings are mechanically secured, these temperatures can be even higher than +200°C. iglidur® UW500 belongs to the most temperature-resistant iglidur® materials. For temperatures over +150°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

Diagrams 04 and 05 show the coefficient of friction of iglidur® UW500 plain bearings as a function of surface speed and pressure. The friction and wear are also dependent, to a large degree, on the mating partner. Ground surfaces with an average surface finish Ra of 0.1 to 0.4µm are ideal.

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® UW500.

*Shaft materials, page 56*

### Installation tolerances

iglidur® UW500 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

### Product range

iglidur® UW500 plain bearings are manufactured to special order.

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | + |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | + |
| Strong alkalines | + |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | m/s | 0.8 | 0.6 | 2.0 |
| Short-term | m/s | 1.5 | 1.1 | 3.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction µ | 0.20-0.36 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | F10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.006 | +0.046 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.010 | +0.058 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.013 | +0.071 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.016 | +0.086 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.020 | +0.104 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.025 | +0.125 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.030 | +0.150 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | -0.036 | +0.176 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.043 | +0.203 | +0.000 | +0.100 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit



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# Technical data

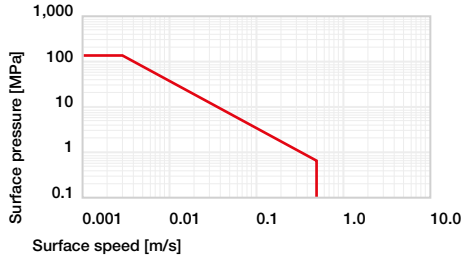


Diagram 01: Permissible pv values for iglidur® UW500 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

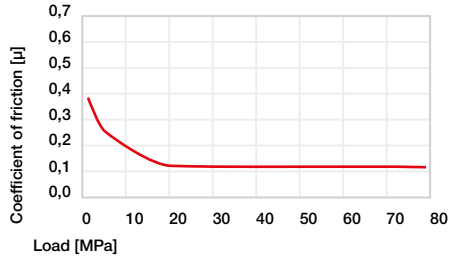


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

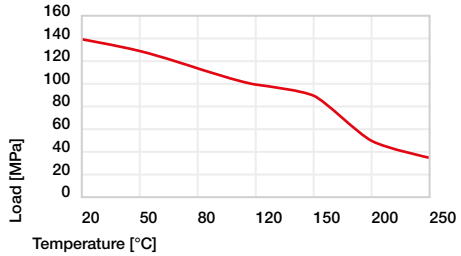


Diagram 02: Maximum recommended surface pressure as a function of temperature (140MPa at +20°C)

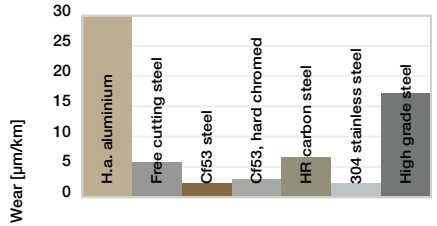


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

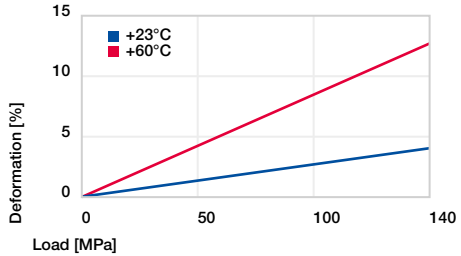


Diagram 03: Deformation under pressure and temperature

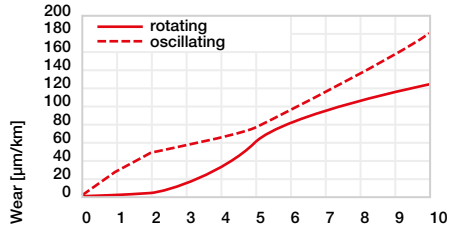


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

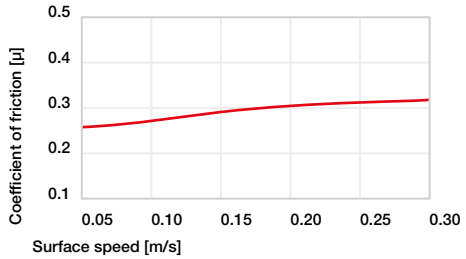


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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# Plain bearing materials with good media resistance

## Plain bearing materials with good media resistance

Almost at the same level as the previous group in terms of temperatures, the "iglidur® H family" is characterised by a high media resistance and a wide range of applications in wet areas.
iglidur® H370 is the specialist for underwater applications, iglidur® H2 is the media-resistant, low-cost bearing solution for high-volume production with low running performance and iglidur® H1, the endurance runner of this group.

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert

### iglidur® H1
**Endurance runner with high media resistance**

| | | |
|---|---|---|
| Temperature [°C] [123] | +200 | – + |
| Surface pressure [MPa] [124] | 80 | – + |
| Coefficient of friction [µ] [125] | 0.17 | – + |
| Wear [µm/km] [125] | 0.29 | – + |
| Price index | – | + |

### iglidur® H370
**Long service life under water**

| | | |
|---|---|---|
| Temperature [°C] [123] | +200 | – + |
| Surface pressure [MPa] [124] | 75 | – + |
| Coefficient of friction [µ] [125] | 0.17 | – + |
| Wear [µm/km] [125] | 1.20 | – + |
| Price index | – | + |

### iglidur® H
**The classic with high resistance to media and temperature**

| | | |
|---|---|---|
| Temperature [°C] [123] | +200 | – + |
| Surface pressure [MPa] [124] | 90 | – + |
| Coefficient of friction [µ] [125] | 0.17 | – + |
| Wear [µm/km] [125] | 2.10 | – + |
| Price index | – | + |

### iglidur® C500
**High temperature endurance runner**

| | | |
|---|---|---|
| Temperature [°C] [123] | +250 | – + |
| Surface pressure [MPa] [124] | 80 | – + |
| Coefficient of friction [µ] [125] | 0.19 | – + |
| Wear [µm/km] [125] | 0.48 | – + |
| Price index | – | + |

[123] Upper long-term application temperature [124] Max. recommended surface pressure at +20°C [125] Best pairing for p = 1 MPa, v = 0.3m/s, rotating



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### iglidur® H2
**The low-cost specialist for chemicals and temperatures**

| | | |
|---|---|---|
| Temperature [°C] [123] | +200 | – + |
| Surface pressure [MPa] [124] | 110 | – + |
| Coefficient of friction [µ] [125] | 0.32 | – + |
| Wear [µm/km] [125] | 4.80 | – + |
| Price index | – | + |

### iglidur® H3
**Chemical resistance**

| | | |
|---|---|---|
| Temperature [°C] [123] | +200 | – + |
| Surface pressure [MPa] [124] | 40 | – + |
| Coefficient of friction [µ] [125] | 0.17 | – + |
| Wear [µm/km] [125] | 0.14 | – + |
| Price index | – | + |

### iglidur® H5
**Resistant to temperature and chemicals**

| | | |
|---|---|---|
| Temperature [°C] [123] | +200 | – + |
| Surface pressure [MPa] [124] | 80 | – + |
| Coefficient of friction [µ] [125] | 0.23 | – + |
| Wear [µm/km] [125] | 1.82 | – + |
| Price index | – | + |

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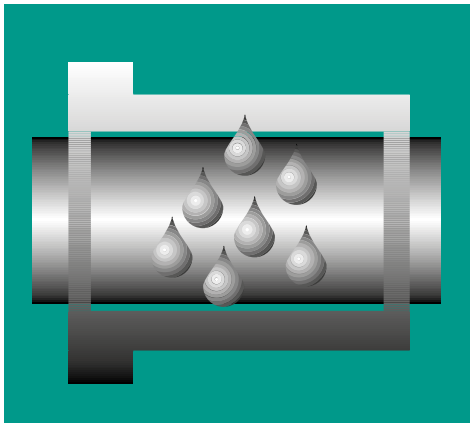

# Endurance runner with high media resistance

## Excellent coefficient of friction and wear

## iglidur® H1

**When to use it?**

- When extreme service life is required under the influence of temperature and humidity
- When low coefficient of friction at high temperature is important
- When aggressive cleaning is required
- For under bonnet applications

**When not to use it?**

- When high surface pressures occur
  ***iglidur® Z***
- When the best universal chemical resistance is required
  ***iglidur® X***
- When a cost-effective high-temperature plain bearing is required, not the ideal wear resistance
  ***iglidur® H2***
- When an FDA-compliant plain bearing with high temperature resistance is required
  ***iglidur® A500***



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# Bearing technology | Plain bearings | iglidur® H1

Ø
3.0-50.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## Endurance runner with high media resistance
## Excellent coefficient of friction and wear

iglidur® H1 is the first choice when long service life is required in extreme environmental conditions. Extreme wear resistance is coupled with excellent resistance to temperature and media - not only in the food and packaging industries or the automotive industry.

- High wear resistance in extreme ambient conditions
- Low coefficient of friction
- High temperature resistance
- For underbonnet applications
- Lubrication-free
- Chemical-resistant
- Maintenance-free

### Typical application areas

- Beverage industry
- Automation
- Packaging
- Textile industry
- Optical industry

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | ■■■■■ | + |
| Wear resistance at +90°C | – | ■■■■■ | + |
| Wear resistance at +150°C | – | ■■■■■ | + |
| Slide property | – | ■■■■□ | + |
| Wear resistance under water | – | ■■■■□ | + |
| Media resistance | – | ■■■■■ | + |
| Resistant to edge pressures | – | ■■□□□ | + |
| Resistant to shock and impact loads | – | ■■□□□ | + |
| Dirt resistance | – | ■■□□□ | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.53 | |
| Colour | | cream | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.1 | DIN 53495 |
| Max. moisture absorption | % weight | 0.3 | |
| Coefficient of friction, dynamic, against steel | μ | 0.06-0.20 | |
| pv value, max. (dry) | MPa · m/s | 0.80 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,800 | DIN 53457 |
| Flexural strength at +20°C | MPa | 55 | DIN 53452 |
| Compressive strength | MPa | 78 | |
| Max. permissible surface pressure (+20°C) | MPa | 80 | |
| Shore D hardness | | 77 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +200 | |
| Max. application temperature short-term | °C | +240 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 6 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{11}$ | DIN 53482 |

Table 01: Material properties

-40°C up to +200°C

80MPa

V-0

RoHS-II

ISO 3547-1

iglidur® H1 plain bearings have been specially developed for use under extreme environmental conditions. Their strengths are the extremely high wear resistance and the excellent coefficient of friction even in applications in which the bearing is exposed to extreme temperatures and/or aggressive chemicals. iglidur® H1 plain bearings can be used completely free of lubrication; in wet area applications, the surrounding medium acts as additional lubricant.

### Moisture absorption

The moisture absorption of iglidur® H1 plain bearings in ambient conditions is approximately 0.1% weight. The saturation limit submerged in water is 0.3% weight. Therefore iglidur® H1 is very well suited for use in wet environments.

### Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

### Radiation resistance

They are resistant up to a radiation intensity of $2 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® H1 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® H1 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® H1 at radial loads. Among the iglidur® H materials, iglidur® H1 material has the greatest flexibility. This must be considered for applications with high surface pressure or edge loads.

*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® H1

### Permissible surface speeds

Due to their excellent coefficient of friction, rotating surface speeds of up to 2.0m/s are possible with iglidur® H1 plain bearings in dry operation. Linear speeds up to 5.0m/s can be attained. The speeds stated in table 03 are limit values for the lowest bearing loads. With higher loads, the permitted speed drops with the extent of the load due to the limitations by the pv value.

*Surface speed, page 48*

### Temperature

iglidur® H1 is an extremely temperature-resistant material. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. In the case of iglidur® H1 in particular, however, this increase is very small. For temperatures over +80°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

The coefficient of friction alters similarly to the wear resistance with increasing load and surface speed (diagrams 04 and 05).

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® H1. The iglidur® H1 plain bearings display excellent wear behaviour in combination with a wide variety of shaft materials both in rotating and pivoting applications. On the 304 stainless steel shafts in particular, iglidur® H1 attains very low wear rates both in rotating and pivoting operations. Even on hard-anodised aluminium shafts, iglidur® H1 plain bearings attain long service life in rotating applications with low to medium loads.

*Shaft materials, page 56*

### Installation tolerances

iglidur® H1 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | + up to 0 |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | + up to – |
| Strong alkalines | + up to – |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | m/s | 2.0 | 1.0 | 5.0 |
| Short-term | m/s | 2.5 | 1.5 | 7.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.06-0.20 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | F10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.006 | +0.046 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.010 | +0.058 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.013 | +0.071 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.016 | +0.086 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.020 | +0.104 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.025 | +0.125 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.030 | +0.150 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | -0.036 | +0.176 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.043 | +0.203 | +0.000 | +0.100 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

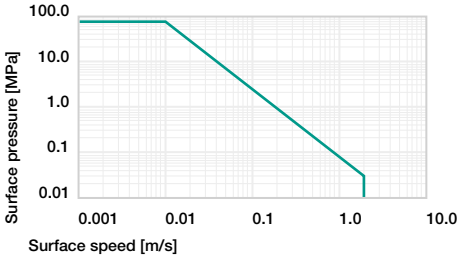



Diagram 01: Permissible pv values for iglidur® H1 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

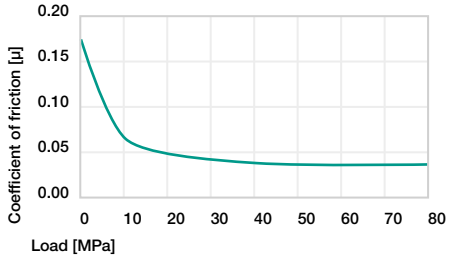



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

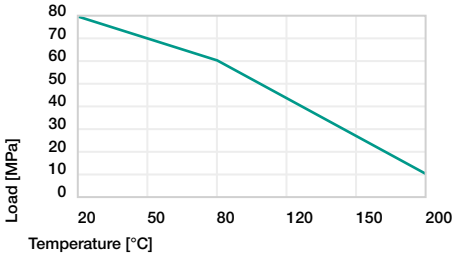



Diagram 02: Maximum recommended surface pressure as a function of temperature (80MPa at +20°C)

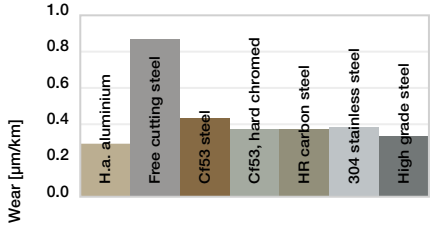



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

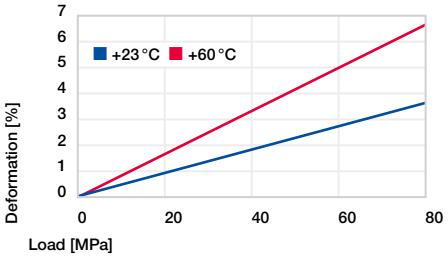



Diagram 03: Deformation under pressure and temperature

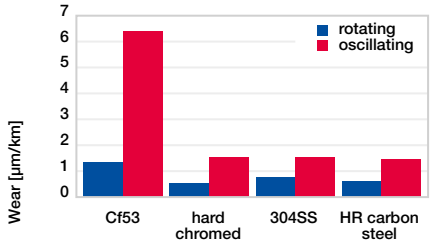



Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

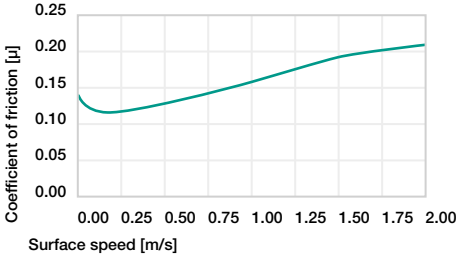
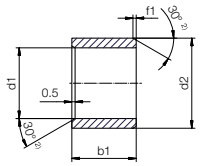



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

# Bearing technology | Plain bearings | iglidur® H1

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

Order example: H1SM-0304-05 – no minimum order quantity.
H1 iglidur® material S Cylindrical M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 3.0 | +0.006 +0.046 | 4.5 | 5.0 | **H1SM-0304-05** |
| 4.0 | +0.010 +0.058 | 5.5 | 4.0 | **H1SM-0405-04** |
| 4.0 | | 5.5 | 6.0 | **H1SM-0405-06** |
| 5.0 | | 7.0 | 5.0 | **H1SM-0507-05** |
| 5.0 | | 7.0 | 10.0 | **H1SM-0507-10** |
| 6.0 | | 8.0 | 6.0 | **H1SM-0608-06** |
| 6.0 | | 8.0 | 8.0 | **H1SM-0608-08** |
| 6.0 | | 8.0 | 10.0 | **H1SM-0608-10** |
| 8.0 | +0.013 +0.071 | 10.0 | 8.0 | **H1SM-0810-08** |
| 8.0 | | 10.0 | 10.0 | **H1SM-0810-10** |
| 8.0 | | 10.0 | 12.0 | **H1SM-0810-12** |
| 8.0 | | 10.0 | 15.0 | **H1SM-0810-15** |
| 10.0 | | 12.0 | 8.0 | **H1SM-1012-08** |
| 10.0 | | 12.0 | 10.0 | **H1SM-1012-10** |
| 10.0 | | 12.0 | 12.0 | **H1SM-1012-12** |
| 10.0 | | 12.0 | 15.0 | **H1SM-1012-15** |
| 10.0 | | 12.0 | 20.0 | **H1SM-1012-20** |
| 12.0 | +0.016 +0.086 | 14.0 | 10.0 | **H1SM-1214-10** |
| 12.0 | | 14.0 | 12.0 | **H1SM-1214-12** |
| 12.0 | | 14.0 | 15.0 | **H1SM-1214-15** |
| 12.0 | | 14.0 | 20.0 | **H1SM-1214-20** |
| 13.0 | | 15.0 | 10.0 | **H1SM-1315-10** |
| 13.0 | | 15.0 | 20.0 | **H1SM-1315-20** |
| 14.0 | | 16.0 | 15.0 | **H1SM-1416-15** |
| 14.0 | | 16.0 | 20.0 | **H1SM-1416-20** |
| 14.0 | | 16.0 | 25.0 | **H1SM-1416-25** |
| 15.0 | | 17.0 | 15.0 | **H1SM-1517-15** |
| 15.0 | | 17.0 | 20.0 | **H1SM-1517-20** |
| 15.0 | +0.016 +0.086 | 17.0 | 25.0 | **H1SM-1517-25** |
| 16.0 | | 18.0 | 15.0 | **H1SM-1618-15** |
| 16.0 | | 18.0 | 20.0 | **H1SM-1618-20** |
| 16.0 | | 18.0 | 25.0 | **H1SM-1618-25** |
| 18.0 | | 20.0 | 15.0 | **H1SM-1820-15** |
| 18.0 | | 20.0 | 20.0 | **H1SM-1820-20** |
| 18.0 | | 20.0 | 25.0 | **H1SM-1820-25** |
| 20.0 | +0.020 +0.104 | 23.0 | 10.0 | **H1SM-2023-10** |
| 20.0 | | 23.0 | 15.0 | **H1SM-2023-15** |
| 20.0 | | 23.0 | 20.0 | **H1SM-2023-20** |
| 20.0 | | 23.0 | 25.0 | **H1SM-2023-25** |
| 20.0 | | 23.0 | 30.0 | **H1SM-2023-30** |
| 22.0 | | 25.0 | 15.0 | **H1SM-2225-15** |
| 22.0 | | 25.0 | 20.0 | **H1SM-2225-20** |
| 22.0 | | 25.0 | 25.0 | **H1SM-2225-25** |
| 22.0 | | 25.0 | 30.0 | **H1SM-2225-30** |
| 24.0 | | 27.0 | 15.0 | **H1SM-2427-15** |
| 24.0 | | 27.0 | 20.0 | **H1SM-2427-20** |
| 24.0 | | 27.0 | 25.0 | **H1SM-2427-25** |
| 24.0 | | 27.0 | 30.0 | **H1SM-2427-30** |
| 25.0 | | 28.0 | 15.0 | **H1SM-2528-15** |
| 25.0 | | 28.0 | 20.0 | **H1SM-2528-20** |
| 25.0 | | 28.0 | 25.0 | **H1SM-2528-25** |
| 25.0 | | 28.0 | 30.0 | **H1SM-2528-30** |
| 28.0 | | 32.0 | 20.0 | **H1SM-2832-20** |
| 28.0 | | 32.0 | 25.0 | **H1SM-2832-25** |
| 28.0 | | 32.0 | 30.0 | **H1SM-2832-30** |
| 30.0 | | 34.0 | 30.0 | **H1SM-3034-30** |
| 30.0 | | 34.0 | 40.0 | **H1SM-3034-40** |

[3] After press-fit. *Testing methods, page 61*



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iglidur® H1
+200°C
80MPa

# Product range

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 32.0 | +0.025 +0.125 | 36.0 | 20.0 | **H1SM-3236-20** |
| 32.0 | | 36.0 | 30.0 | **H1SM-3236-30** |
| 32.0 | | 36.0 | 40.0 | **H1SM-3236-40** |
| 35.0 | | 39.0 | 20.0 | **H1SM-3539-20** |
| 35.0 | | 39.0 | 30.0 | **H1SM-3539-30** |
| 35.0 | | 39.0 | 40.0 | **H1SM-3539-40** |
| 35.0 | | 39.0 | 50.0 | **H1SM-3539-50** |
| 40.0 | | 44.0 | 20.0 | **H1SM-4044-20** |
| 40.0 | | 44.0 | 30.0 | **H1SM-4044-30** |
| 40.0 | | 44.0 | 40.0 | **H1SM-4044-40** |
| 40.0 | +0.025 +0.125 | 44.0 | 50.0 | **H1SM-4044-50** |
| 45.0 | | 50.0 | 20.0 | **H1SM-4550-20** |
| 45.0 | | 50.0 | 30.0 | **H1SM-4550-30** |
| 45.0 | | 50.0 | 40.0 | **H1SM-4550-40** |
| 45.0 | | 50.0 | 50.0 | **H1SM-4550-50** |
| 50.0 | | 55.0 | 20.0 | **H1SM-5055-20** |
| 50.0 | | 55.0 | 30.0 | **H1SM-5055-30** |
| 50.0 | | 55.0 | 40.0 | **H1SM-5055-40** |
| 50.0 | | 55.0 | 50.0 | **H1SM-5055-50** |
| 50.0 | | 55.0 | 60.0 | **H1SM-5055-60** |

[3] After press-fit. *Testing methods, page 61*

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including delivery times, prices, online tools
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**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

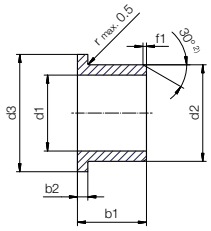
| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**

EN 09/2023

# Bearing technology | Plain bearings | iglidur® H1

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

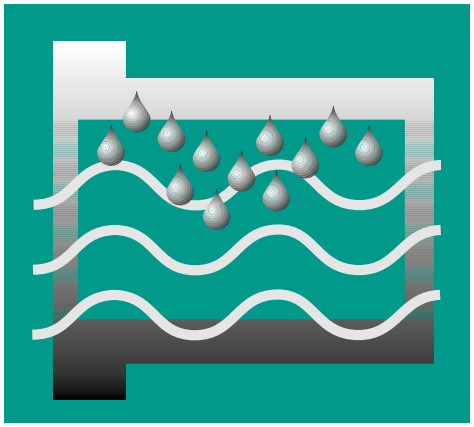
Dimensions according to ISO 3547-1 and special dimensions

Order example: H1FM-0304-05 – no minimum order quantity.
H1 iglidur® material F With flange M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 3.0 | +0.006 +0.046 | 4.5 | 7.5 | 5.0 | 0.75 | **H1FM-0304-05** |
| 4.0 | +0.010 +0.058 | 5.5 | 9.5 | 6.0 | 0.75 | **H1FM-0405-06** |
| 5.0 | +0.010 +0.058 | 7.0 | 11.0 | 5.0 | 1.00 | **H1FM-0507-05** |
| 6.0 | +0.013 +0.071 | 8.0 | 12.0 | 4.0 | 1.00 | **H1FM-0608-04** |
| 6.0 | +0.010 +0.058 | 8.0 | 12.0 | 6.0 | 1.00 | **H1FM-0608-06** |
| 6.0 | | 8.0 | 12.0 | 8.0 | 1.00 | **H1FM-0608-08** |
| 6.0 | | 8.0 | 12.0 | 10.0 | 1.00 | **H1FM-0608-10** |
| 8.0 | +0.013 +0.071 | 10.0 | 15.0 | 5.5 | 1.00 | **H1FM-0810-05** |
| 8.0 | | 10.0 | 15.0 | 6.5 | 1.00 | **H1FM-0810-065** |
| 8.0 | | 10.0 | 15.0 | 7.5 | 1.00 | **H1FM-0810-07** |
| 8.0 | | 10.0 | 15.0 | 9.5 | 1.00 | **H1FM-0810-09** |
| 8.0 | | 10.0 | 15.0 | 10.0 | 1.00 | **H1FM-0810-10** |
| 10.0 | | 12.0 | 18.0 | 7.0 | 1.00 | **H1FM-1012-07** |
| 10.0 | | 12.0 | 18.0 | 9.0 | 1.00 | **H1FM-1012-09** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **H1FM-1012-10** |
| 10.0 | | 12.0 | 18.0 | 12.0 | 1.00 | **H1FM-1012-12** |
| 10.0 | | 12.0 | 18.0 | 17.0 | 1.00 | **H1FM-1012-17** |
| 12.0 | +0.016 +0.086 | 14.0 | 20.0 | 7.0 | 1.00 | **H1FM-1214-07** |
| 12.0 | | 14.0 | 20.0 | 9.0 | 1.00 | **H1FM-1214-09** |
| 12.0 | | 14.0 | 20.0 | 12.0 | 1.00 | **H1FM-1214-12** |
| 12.0 | | 14.0 | 20.0 | 17.0 | 1.00 | **H1FM-1214-17** |
| 12.0 | | 14.0 | 20.0 | 20.0 | 1.00 | **H1FM-1214-20** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 14.0 | +0.016 +0.086 | 16.0 | 22.0 | 12.0 | 1.00 | **H1FM-1416-12** |
| 14.0 | | 16.0 | 22.0 | 17.0 | 1.00 | **H1FM-1416-17** |
| 15.0 | | 17.0 | 23.0 | 9.0 | 1.00 | **H1FM-1517-09** |
| 15.0 | | 17.0 | 23.0 | 12.0 | 1.00 | **H1FM-1517-12** |
| 15.0 | | 17.0 | 23.0 | 17.0 | 1.00 | **H1FM-1517-17** |
| 16.0 | | 18.0 | 24.0 | 12.0 | 1.00 | **H1FM-1618-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **H1FM-1618-17** |
| 16.0 | | 18.0 | 24.0 | 25.0 | 1.00 | **H1FM-1618-25** |
| 18.0 | | 20.0 | 26.0 | 12.0 | 1.00 | **H1FM-1820-12** |
| 18.0 | | 20.0 | 26.0 | 17.0 | 1.00 | **H1FM-1820-17** |
| 18.0 | | 20.0 | 26.0 | 22.0 | 1.00 | **H1FM-1820-22** |
| 20.0 | +0.020 +0.104 | 23.0 | 30.0 | 11.5 | 1.50 | **H1FM-2023-11** |
| 20.0 | | 23.0 | 30.0 | 16.5 | 1.50 | **H1FM-2023-16** |
| 20.0 | | 23.0 | 30.0 | 21.5 | 1.50 | **H1FM-2023-21** |
| 20.0 | | 23.0 | 30.0 | 30.0 | 1.50 | **H1FM-2023-30** |
| 25.0 | | 28.0 | 35.0 | 11.5 | 1.50 | **H1FM-2528-11** |
| 25.0 | | 28.0 | 35.0 | 16.5 | 1.50 | **H1FM-2528-16** |
| 25.0 | | 28.0 | 35.0 | 21.5 | 1.50 | **H1FM-2528-21** |
| 30.0 | | 34.0 | 42.0 | 16.0 | 2.00 | **H1FM-3034-16** |
| 30.0 | | 34.0 | 42.0 | 26.0 | 2.00 | **H1FM-3034-26** |
| 35.0 | +0.025 +0.125 | 39.0 | 47.0 | 16.0 | 2.00 | **H1FM-3539-16** |
| 35.0 | | 39.0 | 47.0 | 26.0 | 2.00 | **H1FM-3539-26** |
| 40.0 | | 44.0 | 52.0 | 30.0 | 2.00 | **H1FM-4044-30** |
| 40.0 | | 44.0 | 52.0 | 40.0 | 2.00 | **H1FM-4044-40** |
| 45.0 | | 50.0 | 58.0 | 50.0 | 2.00 | **H1FM-4550-50** |

[3] After press-fit. *Testing methods, page 61*



# Long service life under water

## High media resistance

## iglidur® H370

**When to use it?**

- For underwater applications
- When high temperature resistance is required
- When high mechanical loading and wear resistance is required
- When good chemical resistance is required

**When not to use it?**

- When mechanical reaming of the bore is necessary
  ***iglidur® M250***
- When high wear resistance in temperatures is required
  ***iglidur® H1***
- For use in dirty surroundings
  ***iglidur® Z***
- When a cost-effective, large-volume solution is required
  ***iglidur® H2***

# Bearing technology | Plain bearings | iglidur® H370

Ø
3.0-75.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## Long service life under water
## High media resistance

iglidur® H370 is the right solution for underwater applications. The bearings absorb extremely high loads, are resistant to chemicals and can be used at temperatures up to +200°C.

- Suitable for underwater applications
- Temperature-resistant from -40°C to +200°C
- Chemical-resistant
- Lubrication-free
- Maintenance-free

### Typical application areas

- Offshore
- Ship building
- Fluid technology
- Packaging
- Plant construction

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | ■■□□□ | + |
| Wear resistance at +90°C | – | ■■■□□ | + |
| Wear resistance at +150°C | – | ■■■■□ | + |
| Slide property | – | ■■■■□ | + |
| Wear resistance under water | – | ■■■■■ | + |
| Media resistance | – | ■■■■■ | + |
| Resistant to edge pressures | – | ■■■□□ | + |
| Resistant to shock and impact loads | – | ■■□□□ | + |
| Dirt resistance | – | ■■□□□ | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

-40°C up to +200°C

75MPa

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.66 | |
| Colour | | grey | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.1 | DIN 53495 |
| Max. moisture absorption | % weight | 0.1 | |
| Coefficient of friction, dynamic, against steel | μ | 0.07-0.17 | |
| pv value, max. (dry) | MPa · m/s | 0.74 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 11,100 | DIN 53457 |
| Flexural strength at +20°C | MPa | 135 | DIN 53452 |
| Compressive strength | MPa | 79 | |
| Max. permissible surface pressure (+20°C) | MPa | 75 | |
| Shore D hardness | | 82 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +200 | |
| Max. application temperature short-term | °C | +240 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.50 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 5 | DIN 53752 |
| **Electrical properties**[5] | | | |
| Specific transitional resistance | Ωcm | $< 10^5$ | DIN IEC 93 |
| Surface resistance | Ω | $< 10^5$ | DIN 53482 |

[5] The good conductivity of this material can favour the generation of corrosion on the metallic contact components.

**Table 01: Material properties**

iglidur® H370 is an advanced development of the iglidur® H series. The material is characterised by particularly low moisture absorption and clearly enhanced wear resistance. With regard to the mechanical and thermal characteristic values, iglidur® H370 shows the same features as iglidur® H.

### Moisture absorption

The moisture absorption of iglidur® H370 plain bearings is below 0.1% weight in ambient conditions. The saturation limit submerged in water is also 0.1% weight. For this reason, iglidur® H370 plain bearings are often used for underwater applications.

### Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

### Radiation resistance

iglidur® H370 withstands neutron and gamma particle radiation. Plain bearings made from iglidur® H370 are resistant up to a radiation intensity of $2 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® H370 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® H370 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® H370 under different loads. At the recommended maximum surface pressure of 75MPa the deformation is less than 2.5% at room temperature.
***Surface pressure, page 45***

# Bearing technology | Plain bearings | iglidur® H370

### Permissible surface speeds

The maximum permitted surface speed is dependent on whether the temperature at the bearing point becomes too high or not. iglidur® H370 is suitable for surface speeds of 1.2m/s (rotating) or 4m/s (linear). The maximum values stated in table 03 are valid only with minimum pressure loads and are often not attained in practice.

*Surface speed, page 48*

### Temperature

With increasing temperatures, the compressive strength of iglidur® H370 plain bearings decreases. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. For temperatures over +100°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

The coefficient of friction alters only little, like the wear resistance with increasing load and surface speed (diagram 04 and 05).

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® H370. For loads up to 2MPa in rotating applications, the hard-chromed shaft is the best material for the iglidur® H370 plain bearings. The high coefficient of wear with 304 stainless steel shafts, which due to their extremely ground surfaces are prone to the stick-slip effect, is striking. Despite same values in the lowest range, the HR carbon steel shaft shows already better values than Cf53 with loads of 2MPa. On the other hand, the 304 stainless steel shaft shows a clear advantage in pivoting movements.

*Shaft materials, page 56*

### Installation tolerances

iglidur® H370 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | + up to 0 |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | + up to – |
| Strong alkalines | + |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 1.2 | 0.8 | 4.0 |
| Short-term | **m/s** | 1.5 | 1.1 | 5.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.07-0.17 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | F10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.006 | +0.046 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.010 | +0.058 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.013 | +0.071 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.016 | +0.086 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.020 | +0.104 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.025 | +0.125 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.030 | +0.150 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | -0.036 | +0.176 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.043 | +0.203 | +0.000 | +0.100 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

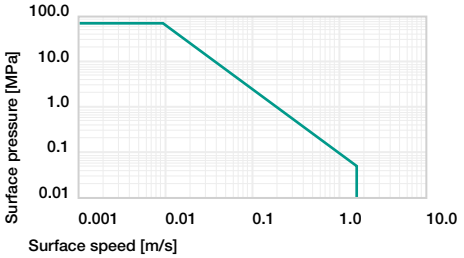



Diagram 01: Permissible pv values for iglidur® H370 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

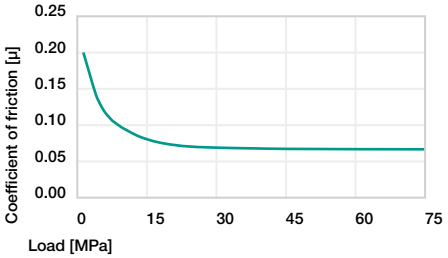



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

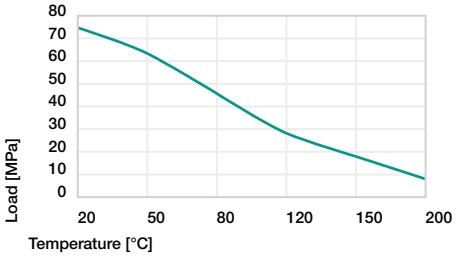



Diagram 02: Maximum recommended surface pressure as a function of temperature (75MPa at +20°C)

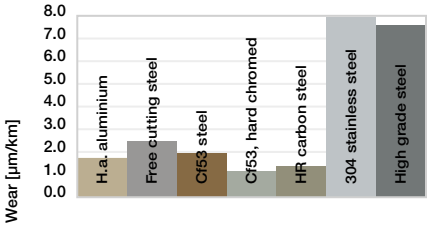



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

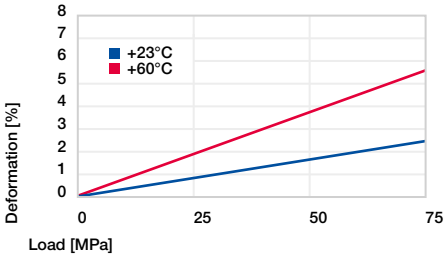



Diagram 03: Deformation under pressure and temperature

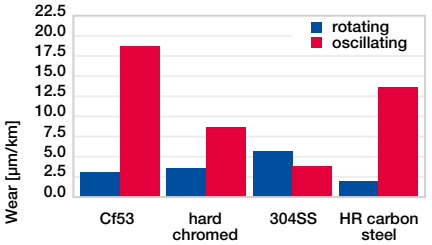



Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

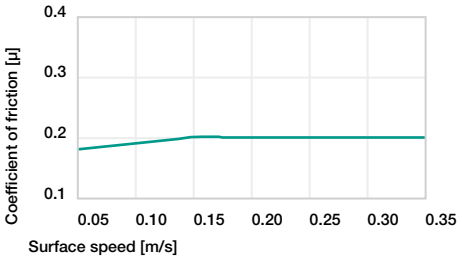
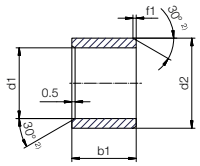



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

# Bearing technology | Plain bearings | iglidur® H370

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

Order example: H370SM-0304-03 – no minimum order quantity.
H370 iglidur® material S Cylindrical M Metric 03 Inner Ø d1 04 Outer Ø d2 03 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 3.0 | +0.006 +0.046 | 4.5 | 3.0 | **H370SM-0304-03** |
| 4.0 | +0.010 +0.058 | 5.5 | 4.0 | **H370SM-0405-04** |
| 4.0 | | 5.5 | 6.0 | **H370SM-0405-06** |
| 4.0 | | 5.5 | 12.0 | **H370SM-0405-12** |
| 5.0 | | 7.0 | 5.0 | **H370SM-0507-05** |
| 5.0 | | 7.0 | 10.0 | **H370SM-0507-10** |
| 6.0 | | 8.0 | 6.0 | **H370SM-0608-06** |
| 6.0 | | 8.0 | 8.0 | **H370SM-0608-08** |
| 6.0 | | 8.0 | 10.0 | **H370SM-0608-10** |
| 8.0 | +0.013 +0.071 | 10.0 | 8.0 | **H370SM-0810-08** |
| 8.0 | | 10.0 | 10.0 | **H370SM-0810-10** |
| 8.0 | | 10.0 | 12.0 | **H370SM-0810-12** |
| 8.0 | | 10.0 | 15.0 | **H370SM-0810-15** |
| 10.0 | | 12.0 | 8.0 | **H370SM-1012-08** |
| 10.0 | | 12.0 | 10.0 | **H370SM-1012-10** |
| 10.0 | | 12.0 | 12.0 | **H370SM-1012-12** |
| 10.0 | | 12.0 | 15.0 | **H370SM-1012-15** |
| 10.0 | | 12.0 | 20.0 | **H370SM-1012-20** |
| 12.0 | +0.016 +0.086 | 14.0 | 10.0 | **H370SM-1214-10** |
| 12.0 | | 14.0 | 12.0 | **H370SM-1214-12** |
| 12.0 | | 14.0 | 15.0 | **H370SM-1214-15** |
| 12.0 | | 14.0 | 20.0 | **H370SM-1214-20** |
| 13.0 | | 15.0 | 10.0 | **H370SM-1315-10** |
| 13.0 | | 15.0 | 20.0 | **H370SM-1315-20** |
| 14.0 | | 16.0 | 15.0 | **H370SM-1416-15** |
| 14.0 | | 16.0 | 20.0 | **H370SM-1416-20** |
| 14.0 | | 16.0 | 25.0 | **H370SM-1416-25** |
| 15.0 | | 17.0 | 15.0 | **H370SM-1517-15** |
| 15.0 | +0.016 +0.086 | 17.0 | 20.0 | **H370SM-1517-20** |
| 15.0 | | 17.0 | 25.0 | **H370SM-1517-25** |
| 16.0 | | 18.0 | 15.0 | **H370SM-1618-15** |
| 16.0 | | 18.0 | 20.0 | **H370SM-1618-20** |
| 16.0 | | 18.0 | 25.0 | **H370SM-1618-25** |
| 18.0 | | 20.0 | 15.0 | **H370SM-1820-15** |
| 18.0 | | 20.0 | 20.0 | **H370SM-1820-20** |
| 18.0 | | 20.0 | 25.0 | **H370SM-1820-25** |
| 20.0 | +0.020 +0.104 | 23.0 | 10.0 | **H370SM-2023-10** |
| 20.0 | | 23.0 | 15.0 | **H370SM-2023-15** |
| 20.0 | | 23.0 | 20.0 | **H370SM-2023-20** |
| 20.0 | | 23.0 | 25.0 | **H370SM-2023-25** |
| 20.0 | | 23.0 | 30.0 | **H370SM-2023-30** |
| 22.0 | | 25.0 | 15.0 | **H370SM-2225-15** |
| 22.0 | | 25.0 | 20.0 | **H370SM-2225-20** |
| 22.0 | | 25.0 | 25.0 | **H370SM-2225-25** |
| 22.0 | | 25.0 | 30.0 | **H370SM-2225-30** |
| 24.0 | | 27.0 | 15.0 | **H370SM-2427-15** |
| 24.0 | | 27.0 | 20.0 | **H370SM-2427-20** |
| 24.0 | | 27.0 | 25.0 | **H370SM-2427-25** |
| 24.0 | | 27.0 | 30.0 | **H370SM-2427-30** |
| 25.0 | | 28.0 | 15.0 | **H370SM-2528-15** |
| 25.0 | | 28.0 | 20.0 | **H370SM-2528-20** |
| 25.0 | | 28.0 | 25.0 | **H370SM-2528-25** |
| 25.0 | | 28.0 | 30.0 | **H370SM-2528-30** |
| 28.0 | | 32.0 | 20.0 | **H370SM-2832-20** |
| 28.0 | | 32.0 | 25.0 | **H370SM-2832-25** |
| 28.0 | | 32.0 | 30.0 | **H370SM-2832-30** |
| 30.0 | | 34.0 | 20.0 | **H370SM-3034-20** |

[3] After press-fit. *Testing methods, page 61*



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iglidur® H370
+200°C
75MPa

# Product range

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 30.0 | +0.020 +0.104 | 34.0 | 25.0 | **H370SM-3034-25** |
| 30.0 | | 34.0 | 30.0 | **H370SM-3034-30** |
| 30.0 | | 34.0 | 40.0 | **H370SM-3034-40** |
| 32.0 | +0.025 +0.125 | 36.0 | 20.0 | **H370SM-3236-20** |
| 32.0 | | 36.0 | 30.0 | **H370SM-3236-30** |
| 32.0 | | 36.0 | 40.0 | **H370SM-3236-40** |
| 35.0 | | 39.0 | 20.0 | **H370SM-3539-20** |
| 35.0 | | 39.0 | 30.0 | **H370SM-3539-30** |
| 35.0 | | 39.0 | 40.0 | **H370SM-3539-40** |
| 35.0 | | 39.0 | 50.0 | **H370SM-3539-50** |
| 40.0 | | 44.0 | 20.0 | **H370SM-4044-20** |
| 40.0 | | 44.0 | 30.0 | **H370SM-4044-30** |
| 40.0 | | 44.0 | 40.0 | **H370SM-4044-40** |
| 40.0 | +0.025 +0.125 | 44.0 | 50.0 | **H370SM-4044-50** |
| 45.0 | | 50.0 | 20.0 | **H370SM-4550-20** |
| 45.0 | | 50.0 | 30.0 | **H370SM-4550-30** |
| 45.0 | | 50.0 | 40.0 | **H370SM-4550-40** |
| 45.0 | | 50.0 | 50.0 | **H370SM-4550-50** |
| 50.0 | +0.000 +0.100 | 55.0 | 20.0 | **H370SM-5055-20** |
| 50.0 | | 55.0 | 30.0 | **H370SM-5055-30** |
| 50.0 | | 55.0 | 40.0 | **H370SM-5055-40** |
| 50.0 | | 55.0 | 50.0 | **H370SM-5055-50** |
| 50.0 | | 55.0 | 60.0 | **H370SM-5055-60** |
| 55.0 | +0.030 +0.150 | 60.0 | 26.0 | **H370SM-5560-26** |
| 60.0 | | 65.0 | 60.0 | **H370SM-6065-60** |
| 75.0 | | 80.0 | 60.0 | **H370SM-7580-60** |

[3] After press-fit. *Testing methods, page 61*

**Available from stock**
Detailed information about delivery time online.
www.igus.eu/24

**Order online**
including delivery times, prices, online tools
www.igus.eu/H370

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

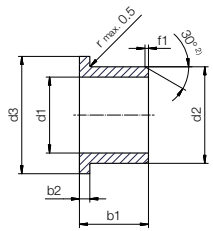
| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**

EN 09/2023

# Bearing technology | Plain bearings | iglidur® H370

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example: H370FM-0405-04 – no minimum order quantity.**
H370 iglidur® material F With flange M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 4.0 | +0.010 +0.058 | 5.5 | 9.5 | 4.0 | 0.75 | **H370FM-0405-04** |
| 5.0 | | 7.0 | 11.0 | 5.0 | 1.00 | **H370FM-0507-05** |
| 6.0 | | 8.0 | 12.0 | 4.0 | 1.00 | **H370FM-0608-04** |
| 6.0 | | 8.0 | 12.0 | 6.0 | 1.00 | **H370FM-0608-06** |
| 6.0 | | 8.0 | 12.0 | 8.0 | 1.00 | **H370FM-0608-08** |
| 8.0 | +0.013 +0.071 | 10.0 | 15.0 | 5.5 | 1.00 | **H370FM-0810-05** |
| 8.0 | | 10.0 | 15.0 | 6.0 | 1.00 | **H370FM-0810-06** |
| 8.0 | | 10.0 | 15.0 | 7.5 | 1.00 | **H370FM-0810-07** |
| 8.0 | | 10.0 | 15.0 | 9.5 | 1.00 | **H370FM-0810-09** |
| 8.0 | | 10.0 | 15.0 | 10.0 | 1.00 | **H370FM-0810-10** |
| 8.0 | | 10.0 | 15.0 | 15.0 | 1.00 | **H370FM-0810-15** |
| 10.0 | | 12.0 | 18.0 | 7.0 | 1.00 | **H370FM-1012-07** |
| 10.0 | | 12.0 | 18.0 | 9.0 | 1.00 | **H370FM-1012-09** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **H370FM-1012-10** |
| 10.0 | | 12.0 | 18.0 | 12.0 | 1.00 | **H370FM-1012-12** |
| 10.0 | | 12.0 | 18.0 | 14.5 | 1.00 | **H370FM-1012-145** |
| 10.0 | | 12.0 | 18.0 | 17.0 | 1.00 | **H370FM-1012-17** |
| 10.0 | | 12.0 | 18.0 | 20.0 | 1.00 | **H370FM-1012-20** |
| 12.0 | +0.016 +0.086 | 14.0 | 20.0 | 7.0 | 1.00 | **H370FM-1214-07** |
| 12.0 | | 14.0 | 20.0 | 9.0 | 1.00 | **H370FM-1214-09** |
| 12.0 | | 14.0 | 20.0 | 12.0 | 1.00 | **H370FM-1214-12** |
| 12.0 | | 14.0 | 20.0 | 15.0 | 1.00 | **H370FM-1214-15** |
| 12.0 | | 14.0 | 20.0 | 17.0 | 1.00 | **H370FM-1214-17** |
| 12.0 | | 14.0 | 20.0 | 20.0 | 1.00 | **H370FM-1214-20** |
| 14.0 | | 16.0 | 22.0 | 12.0 | 1.00 | **H370FM-1416-12** |
| 14.0 | | 16.0 | 22.0 | 17.0 | 1.00 | **H370FM-1416-17** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 15.0 | +0.016 +0.086 | 17.0 | 23.0 | 9.0 | 1.00 | **H370FM-1517-09** |
| 15.0 | | 17.0 | 23.0 | 12.0 | 1.00 | **H370FM-1517-12** |
| 15.0 | | 17.0 | 23.0 | 17.0 | 1.00 | **H370FM-1517-17** |
| 16.0 | | 18.0 | 24.0 | 10.0 | 1.00 | **H370FM-1618-10** |
| 16.0 | | 18.0 | 22.0 | 10.0 | 1.00 | **H370FM-161822-10** |
| 16.0 | | 18.0 | 24.0 | 12.0 | 1.00 | **H370FM-1618-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **H370FM-1618-17** |
| 16.0 | | 18.0 | 24.0 | 25.0 | 1.00 | **H370FM-1618-25** |
| 18.0 | | 20.0 | 26.0 | 12.0 | 1.00 | **H370FM-1820-12** |
| 18.0 | | 20.0 | 26.0 | 17.0 | 1.00 | **H370FM-1820-17** |
| 18.0 | | 20.0 | 26.0 | 22.0 | 1.00 | **H370FM-1820-22** |
| 20.0 | +0.020 +0.104 | 23.0 | 30.0 | 11.5 | 1.50 | **H370FM-2023-11** |
| 20.0 | | 23.0 | 30.0 | 16.5 | 1.50 | **H370FM-2023-16** |
| 20.0 | | 23.0 | 30.0 | 21.5 | 1.50 | **H370FM-2023-21** |
| 20.0 | | 23.0 | 30.0 | 30.0 | 1.50 | **H370FM-2023-30** |
| 22.0 | | 25.0 | 32.0 | 21.5 | 1.50 | **H370FM-222532-215** |
| 25.0 | | 28.0 | 35.0 | 11.5 | 1.50 | **H370FM-2528-11** |
| 25.0 | | 28.0 | 35.0 | 16.5 | 1.50 | **H370FM-2528-16** |
| 25.0 | | 28.0 | 35.0 | 21.5 | 1.50 | **H370FM-2528-21** |
| 25.0 | | 28.0 | 35.0 | 30.0 | 1.50 | **H370FM-2528-30** |
| 30.0 | | 34.0 | 42.0 | 16.0 | 2.00 | **H370FM-3034-16** |
| 30.0 | | 34.0 | 42.0 | 26.0 | 2.00 | **H370FM-3034-26** |
| 30.0 | | 34.0 | 42.0 | 40.0 | 2.00 | **H370FM-3034-40** |
| 35.0 | +0.025 +0.125 | 39.0 | 47.0 | 16.0 | 2.00 | **H370FM-3539-16** |
| 35.0 | | 39.0 | 47.0 | 26.0 | 2.00 | **H370FM-3539-26** |
| 40.0 | | 44.0 | 52.0 | 30.0 | 2.00 | **H370FM-4044-30** |

[3] After press-fit. *Testing methods, page 61*





# Product range

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 40.0 | +0.025 +0.125 | 44.0 | 52.0 | 40.0 | 2.00 | **H370FM-4044-40** |
| 45.0 | | 50.0 | 58.0 | 50.0 | 2.00 | **H370FM-4550-50** |
| 50.0 | | 55.0 | 63.0 | 50.0 | 2.00 | **H370FM-5055-50** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 60.0 | +0.030 | 65.0 | 73.0 | 50.0 | 2.00 | **H370FM-6065-50** |
| 70.0 | +0.150 | 75.0 | 83.0 | 50.0 | 2.00 | **H370FM-7075-50** |

[3] After press-fit. *Testing methods, page 61*

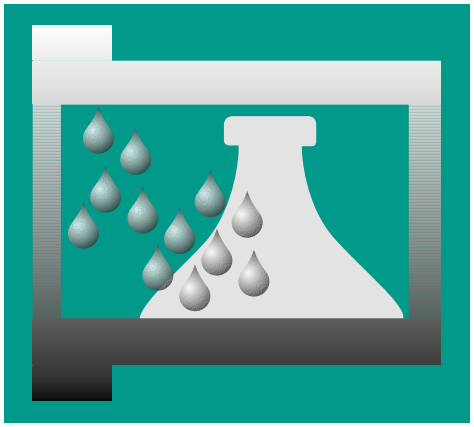
**Available from stock**
Detailed information about delivery time online.
www.igus.eu/24

**Order online**
including delivery times, prices, online tools
www.igus.eu/H370

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**



# The classic with high resistance to media and temperature

## Up to +200°C

## iglidur® H

**When to use it?**

- For underwater applications
- When high temperature resistance is required
- For high mechanical loading
- For applications in contact with chemicals

**When not to use it?**

- When extremely high wear resistance under water is required
  ***iglidur® H370***
- When the best universal resistance to chemicals is required
  ***iglidur® X***
- For the maximum compressive strength at higher temperatures
  ***iglidur® X, iglidur® Z***



EN 09/2023

# Bearing technology | Plain bearings | iglidur® H

Ø
3.0-70.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## The classic with high resistance to media and temperature
## Up to +200°C

Suitable for temperatures up to +200°C. Very low coefficient of friction when used with hardened shafts.

- Suitable for underwater applications
- High temperature resistance
- Chemical resistance
- Lubrication-free
- Maintenance-free

### Typical application areas

- Offshore
- Ship building
- Beverage industry
- Medical technology
- Mechatronics

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | | + |
| Wear resistance at +90°C | – | | + |
| Wear resistance at +150°C | – | | + |
| Slide property | – | | + |
| Wear resistance under water | - | | + |
| Media resistance | – | | + |
| Resistant to edge pressures | – | | + |
| Resistant to shock and impact loads | – | | + |
| Dirt resistance | – | | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.71 | |
| Colour | | grey | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.1 | DIN 53495 |
| Max. moisture absorption | % weight | 0.3 | |
| Coefficient of friction, dynamic, against steel | μ | 0.07-0.20 | |
| pv value, max. (dry) | MPa · m/s | 1.37 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 12,500 | DIN 53457 |
| Flexural strength at +20°C | MPa | 175 | DIN 53452 |
| Compressive strength | MPa | 81 | |
| Max. permissible surface pressure (+20°C) | MPa | 90 | |
| Shore D hardness | | 87 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +200 | |
| Max. application temperature short-term | °C | +240 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.60 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 4 | DIN 53752 |
| **Electrical properties**[5] | | | |
| Specific transitional resistance | Ωcm | $< 10^5$ | DIN IEC 93 |
| Surface resistance | Ω | $< 10^2$ | DIN 53482 |

[5] The good conductivity of this material can favour the generation of corrosion on the metallic contact components.

**Table 01: Material properties**

-40°C up to +200°C

90 MPa

V-0

RoHS-II

ISO 3547-1

iglidur® H is a fibre-reinforced thermoplastic material especially developed for applications in high atmospheric humidity or under water. Plain bearings made from iglidur® H can be used completely free of lubrication; in wet applications, the surrounding media acts as additional lubricant.

### Moisture absorption

The moisture absorption of iglidur® H plain bearings is below 0.1% weight in ambient conditions. The saturation limit submerged in water is 0.3% weight. iglidur® H is very well suited for use in wet environments.

### Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

### Radiation resistance

iglidur® H withstands neutron and gamma particle radiation. Plain bearings made from iglidur® H are resistant up to a radiation intensity of $2 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® H plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® H plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® H at radial loads. At the maximum recommended surface pressure of 90MPa the deformation is about 2.5% at room temperature.
***Surface pressure, page 45***

# Bearing technology | Plain bearings | iglidur® H

### Permissible surface speeds

The maximum permitted surface speed is dependent on whether the temperature at the bearing point becomes too high or not. iglidur® H is suitable for maximum surface speeds of 1.0m/s (rotating) and 3.0m/s (linear) in dry operation. Linear movements enable higher surface speeds, as a large area of the shaft contributes to the cooling.

***Surface speed, page 48***

### Temperature

With increasing temperatures, the compressive strength of iglidur® H plain bearings decreases. Diagram 02 shows this inverse relationship. The temperatures prevailing in the bearing system also have an influence on the wear. For temperatures over +120°C an additional securing is required.

***Application temperatures, page 53***
***Additional securing, page 53***

### Friction and wear

Both the wear resistance and the coefficient of friction change depending on the load. Interestingly, the coefficient of friction μ lowers slightly with the increase of surface speed at constant load (see diagram 04 and 05).

***Coefficient of friction and surfaces, page 51***
***Wear resistance, page 54***

### Shaft materials

Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® H. The iglidur® H plain bearings give different results when used in rotating and pivoting applications on different shaft materials. The Cf53 and HR carbon steel shafts give the best wear values in rotating applications, whereas the 304 stainless steel shafts (which are not so good for rotation) give the best results in pivoting applications. Hard-chromed shafts only give an advantage at low pressures when used with iglidur® H bearings.

***Shaft materials, page 56***

### Installation tolerances

iglidur® H plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

***Testing methods, page 61***

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | + up to 0 |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | + up to – |
| Strong alkalines | + |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

***Chemical table, page 1170***

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 1.0 | 0.7 | 3.0 |
| Short-term | **m/s** | 1.5 | 1.1 | 4.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.07-0.20 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | F10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.006 | +0.046 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.010 | +0.058 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.013 | +0.071 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.016 | +0.086 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.020 | +0.104 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.025 | +0.125 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.030 | +0.150 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | -0.036 | +0.176 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.043 | +0.203 | +0.000 | +0.100 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

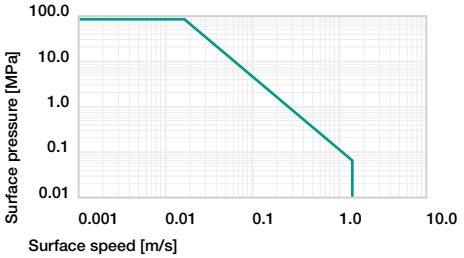



Diagram 01: Permissible pv values for iglidur® H plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

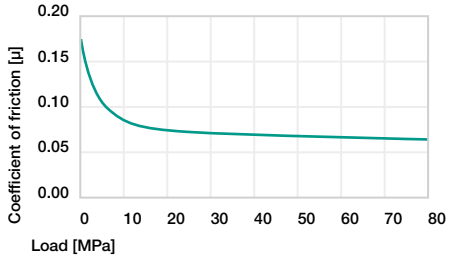



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

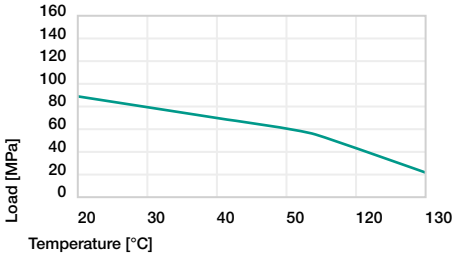



Diagram 02: Maximum recommended surface pressure as a function of temperature (90MPa at +20°C)

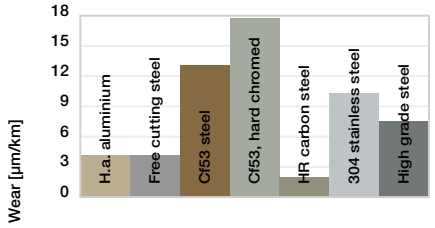



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

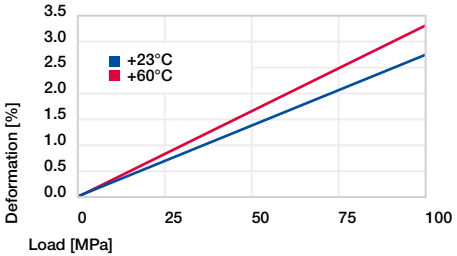



Diagram 03: Deformation under pressure and temperature

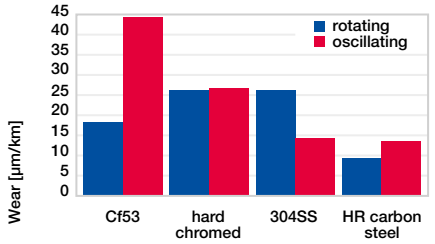



Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

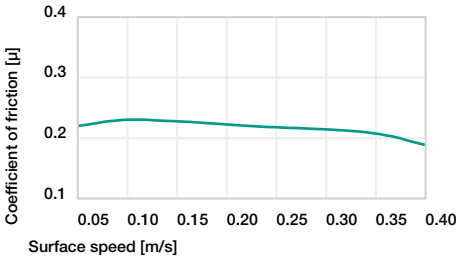
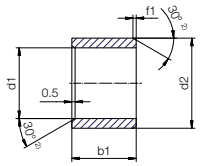



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

# Bearing technology | Plain bearings | iglidur® H

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example: HSM-0304-03 – no minimum order quantity.**
H iglidur® material S Cylindrical M Metric 03 Inner Ø d1 04 Outer Ø d2 03 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 3.0 | +0.006 +0.046 | 4.5 | 3.0 | **HSM-0304-03** |
| 4.0 | +0.010 +0.058 | 5.5 | 4.0 | **HSM-0405-04** |
| 5.0 | | 7.0 | 5.0 | **HSM-0507-05** |
| 6.0 | | 8.0 | 3.0 | **HSM-0608-03** |
| 6.0 | | 8.0 | 6.0 | **HSM-0608-06** |
| 8.0 | +0.013 +0.071 | 10.0 | 8.0 | **HSM-0810-08** |
| 8.0 | | 10.0 | 10.0 | **HSM-0810-10** |
| 10.0 | | 12.0 | 6.0 | **HSM-1012-06** |
| 10.0 | | 12.0 | 10.0 | **HSM-1012-10** |
| 12.0 | +0.016 +0.086 | 14.0 | 10.0 | **HSM-1214-10** |
| 12.0 | | 14.0 | 12.0 | **HSM-1214-12** |
| 12.0 | | 14.0 | 15.0 | **HSM-1214-15** |
| 12.0 | | 14.0 | 20.0 | **HSM-1214-20** |
| 14.0 | | 16.0 | 20.0 | **HSM-1416-20** |
| 15.0 | | 17.0 | 15.0 | **HSM-1517-15** |
| 16.0 | | 18.0 | 15.0 | **HSM-1618-15** |
| 16.0 | | 18.0 | 20.0 | **HSM-1618-20** |
| 16.0 | | 18.0 | 25.0 | **HSM-1618-25** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 18.0 | +0.016 +0.086 | 20.0 | 15.0 | **HSM-1820-15** |
| 18.0 | | 20.0 | 25.0 | **HSM-1820-25** |
| 20.0 | +0.020 +0.104 | 23.0 | 20.0 | **HSM-2023-20** |
| 20.0 | | 23.0 | 30.0 | **HSM-2023-30** |
| 22.0 | | 25.0 | 20.0 | **HSM-2225-20** |
| 25.0 | | 28.0 | 15.0 | **HSM-2528-15** |
| 25.0 | | 28.0 | 20.0 | **HSM-2528-20** |
| 30.0 | | 34.0 | 20.0 | **HSM-3034-20** |
| 30.0 | | 34.0 | 30.0 | **HSM-3034-30** |
| 30.0 | | 34.0 | 40.0 | **HSM-3034-40** |
| 32.0 | +0.025 +0.125 | 36.0 | 30.0 | **HSM-3236-30** |
| 35.0 | | 39.0 | 40.0 | **HSM-3539-40** |
| 40.0 | | 44.0 | 20.0 | **HSM-4044-20** |
| 40.0 | | 44.0 | 50.0 | **HSM-4044-50** |
| 45.0 | | 50.0 | 30.0 | **HSM-4550-30** |
| 50.0 | | 55.0 | 40.0 | **HSM-5055-40** |
| 55.0 | +0.030 +0.150 | 60.0 | 26.0 | **HSM-5560-26** |
| 60.0 | | 65.0 | 60.0 | **HSM-6065-60** |
| 70.0 | | 75.0 | 50.0 | **HSM-7075-50** |

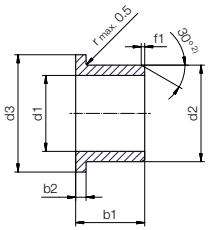
[3] After press-fit. *Testing methods, page 61*





# Bearing technology | Plain bearings | iglidur® H

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example: HFM-0405-04 – no minimum order quantity.**
H iglidur® material F With flange M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 4.0 | +0.010 +0.058 | 5.5 | 9.5 | 4.0 | 0.75 | **HFM-0405-04** |
| 5.0 | | 7.0 | 11.0 | 5.0 | 1.00 | **HFM-0507-05** |
| 5.0 | | 7.0 | 11.0 | 8.0 | 1.00 | **HFM-0507-08** |
| 6.0 | | 8.0 | 12.0 | 4.0 | 1.00 | **HFM-0608-04** |
| 6.0 | | 8.0 | 12.0 | 6.0 | 1.00 | **HFM-0608-06** |
| 6.0 | | 8.0 | 12.0 | 10.0 | 1.00 | **HFM-0608-10** |
| 8.0 | +0.013 +0.071 | 10.0 | 15.0 | 7.0 | 1.00 | **HFM-0810-07** |
| 8.0 | | 10.0 | 15.0 | 10.0 | 1.00 | **HFM-0810-10** |
| 8.0 | | 10.0 | 15.0 | 15.0 | 1.00 | **HFM-0810-15** |
| 10.0 | | 12.0 | 18.0 | 4.0 | 1.00 | **HFM-1012-04** |
| 10.0 | | 12.0 | 18.0 | 9.0 | 1.00 | **HFM-1012-09** |
| 10.0 | | 12.0 | 18.0 | 15.0 | 1.00 | **HFM-1012-15** |
| 10.0 | | 12.0 | 18.0 | 20.0 | 1.00 | **HFM-1012-20** |
| 12.0 | +0.016 +0.086 | 14.0 | 20.0 | 7.0 | 1.00 | **HFM-1214-07** |
| 12.0 | | 14.0 | 20.0 | 10.0 | 1.00 | **HFM-1214-10** |
| 12.0 | | 14.0 | 20.0 | 15.0 | 1.00 | **HFM-1214-15** |
| 14.0 | | 16.0 | 22.0 | 12.0 | 1.00 | **HFM-1416-12** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 15.0 | +0.016 +0.086 | 17.0 | 23.0 | 17.0 | 1.00 | **HFM-1517-17** |
| 16.0 | | 18.0 | 24.0 | 13.0 | 1.00 | **HFM-1618-13** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **HFM-1618-17** |
| 18.0 | | 20.0 | 26.0 | 17.0 | 1.00 | **HFM-1820-17** |
| 20.0 | +0.020 +0.104 | 23.0 | 30.0 | 7.0 | 1.50 | **HFM-2023-07** |
| 20.0 | | 23.0 | 30.0 | 16.5 | 1.50 | **HFM-2023-16** |
| 20.0 | | 23.0 | 30.0 | 30.0 | 1.50 | **HFM-2023-30** |
| 25.0 | | 28.0 | 35.0 | 30.0 | 1.50 | **HFM-2528-30** |
| 27.0 | | 30.0 | 38.0 | 20.0 | 1.50 | **HFM-2730-20** |
| 30.0 | | 34.0 | 42.0 | 40.0 | 2.00 | **HFM-3034-40** |
| 34.0 | +0.025 +0.125 | 38.0 | 46.0 | 13.0 | 2.00 | **HFM-3438-13** |
| 35.0 | | 39.0 | 47.0 | 26.0 | 2.00 | **HFM-3539-26** |
| 40.0 | | 44.0 | 52.0 | 40.0 | 2.00 | **HFM-4044-40** |
| 45.0 | | 50.0 | 58.0 | 50.0 | 2.00 | **HFM-4550-50** |
| 50.0 | | 55.0 | 63.0 | 50.0 | 2.00 | **HFM-5055-50** |
| 60.0 | +0.030 +0.150 | 65.0 | 73.0 | 50.0 | 2.00 | **HFM-6065-50** |
| 70.0 | | 75.0 | 83.0 | 50.0 | 2.00 | **HFM-7075-50** |

[3] After press-fit. *Testing methods, page 61*

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**Order online**
including delivery times, prices, online tools
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**Ordering note**
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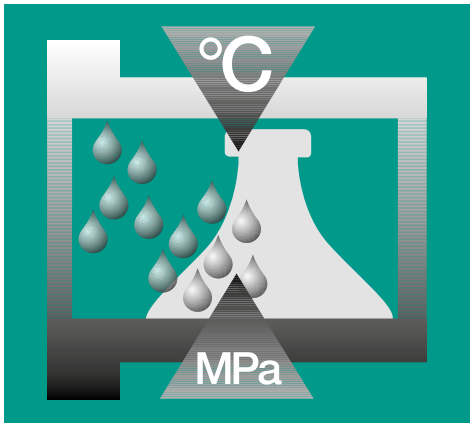
| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**




# High temperature endurance runner

## Extreme wear and media resistance up to +250°C

## iglidur® C500

**When to use it?**

- When an extremely media-resistant plain bearing with high flexibility is required
- When you need a highly wear-resistant and media-resistant plain bearing

**When not to use it?**

- When an FDA-compliant high-temperature plain bearing is required
  ***iglidur® A500***
- When a media-resistant, high-temperature plain bearing with the largest possible range of dimensions is required
  ***iglidur® X***



EN 09/2023

# Bearing technology | Plain bearings | iglidur® C500

Ø
6.0-40.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## High temperature endurance runner
## Extreme wear and media resistance up to +250°C

iglidur® C500 can be used up to +250°C and is extremely media-resistant (even in cleaning processes using hydrogen peroxide). It is also wear-resistant and has low coefficient of friction. Also suitable for various special designs. The colour shows the use under extreme environmental influences.

- High temperature resistance
- Resistant to water vapour
- Low coefficient of friction
- Lubrication-free
- High wear resistance
- High media resistance
- Maintenance-free

### Typical application areas

- Plant construction
- Valves
- Chemical industry
- Process technology

| Descriptive technical specifications | | |
|---|---|---|
| Wear resistance at +23°C | – | + |
| Wear resistance at +90°C | – | + |
| Wear resistance at +150°C | – | + |
| Slide property | – | + |
| Wear resistance under water | – | + |
| Media resistance | – | + |
| Resistant to edge pressures | – | + |
| Resistant to shock and impact loads | – | + |
| Dirt resistance | – | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.37 | |
| Colour | | magenta | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.3 | DIN 53495 |
| Max. moisture absorption | % weight | 0.5 | |
| Coefficient of friction, dynamic, against steel | μ | 0.07-0.19 | |
| pv value, max. (dry) | MPa · m/s | 0.70 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 3,300 | DIN 53457 |
| Flexural strength at +20°C | MPa | 100 | DIN 53452 |
| Compressive strength | MPa | 110 | |
| Max. permissible surface pressure (+20°C) | MPa | 80 | |
| Shore D hardness | | 80 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +250 | |
| Max. application temperature short-term | °C | +300 | |
| Min. application temperature | °C | -100 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 9 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{14}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{13}$ | DIN 53482 |

Table 01: Material properties

-100°C up to +250°C

80MPa

V-0

RoHS-II

ISO 3547-1

iglidur® C500 is a member of the family of extremely media and temperature-resistant iglidur® materials X, X6 and A500. This material is characterised by improved wear resistance and increased design freedom.

### Moisture absorption

The moisture absorption of iglidur® C500 plain bearings is below 0.3% weight in ambient conditions. The saturation limit submerged in water is 0.5% weight.

### Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

### Radiation resistance

iglidur® C500 withstands neutron and gamma particle radiation without detectable losses of its excellent mechanical properties. Plain bearings made from iglidur® C500 are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® C500 plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

### Mechanical properties

When temperatures increase, the compressive strength of iglidur® C500 plain bearings decreases. Diagram 02 shows this inverse relationship. However, at an operation temperature of +200°C the permissible surface pressure is close to 20MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® C500 under different loads. At the maximum recommended surface pressure of 80MPa, the deformation is less than 4.5%.

*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® C500

### Permissible surface speeds

The maximum recommended surface speed is based on the frictional heat generated at the bearing surface. The temperature should only be permitted to increase to a value that will ensure a sustainable use of the bearing with respect to wear and dimensional integrity. The maximum values stated in table 03 are valid only with minimum pressure loads and are often not attained in practice.

*Surface speed, page 48*

### Temperature

iglidur® C500 belongs to the most temperature resistant iglidur® materials. As in the case of all thermoplastics, the compressive strength of iglidur® C500 bearings decreases when temperatures rise. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. For temperatures over +130°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

The coefficient of friction and wear in iglidur® C500 are more favourable than in the other high temperature materials iglidur® X and A500. The coefficient of friction increases moderately as the sliding speed increases. The coefficient of friction initially drops rapidly to less than 0.1 under loads of up to approximately 20MPa, and then only marginally increases as loads continue to increase. The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. Ground surfaces with an average surface finish Ra of 0.6 to 0.8µm are ideal.

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

Diagram 06 shows a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® C500. Using the example of a rotating motion at 1MPa and a speed of 0.3m/s, it becomes apparent that iglidur® C500 has consistent wear characteristics across a variety of shaft types. This wear rate spikes in combination with free cutting steel, and, notably so, reduces in combination with HC aluminium. The wear under rotational loads is higher, specifically with increasing radial loads as compared to pivoting movements (diagram 07).

*Shaft materials, page 56*

### Installation tolerances

iglidur® C500 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances.

*Testing methods, page 61*

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | + |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | + |
| Strong alkalines | + |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | m/s | 0.9 | 0.7 | 2.4 |
| Short-term | m/s | 1.1 | 1.0 | 2.8 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction µ | 0.07-0.19 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | F10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.006 | +0.046 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.010 | +0.058 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.013 | +0.071 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.016 | +0.086 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.020 | +0.104 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.025 | +0.125 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.030 | +0.150 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | -0.036 | +0.176 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.043 | +0.203 | +0.000 | +0.100 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

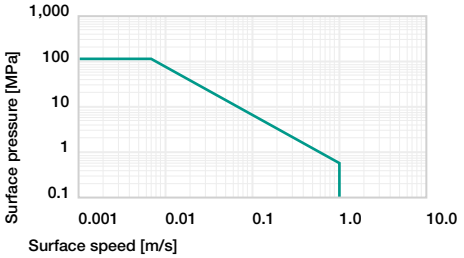



Diagram 01: Permissible pv values for iglidur® C500 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

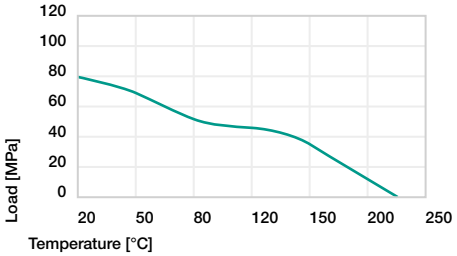



Diagram 02: Maximum recommended surface pressure as a function of temperature (80MPa at +20°C)

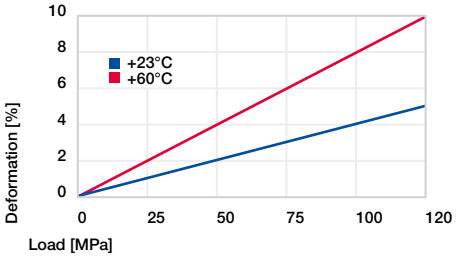



Diagram 03: Deformation under pressure and temperature

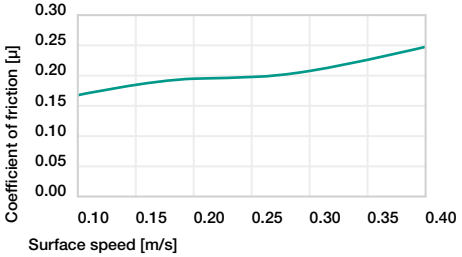



Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

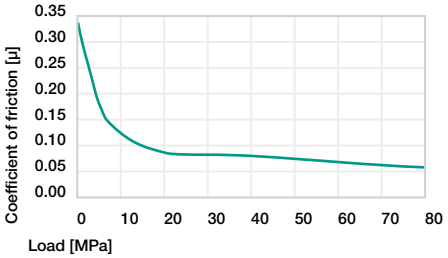



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

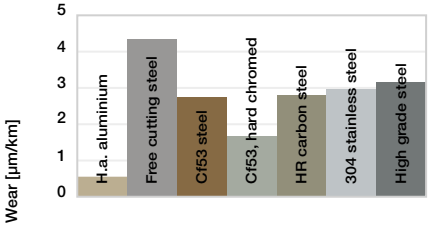



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

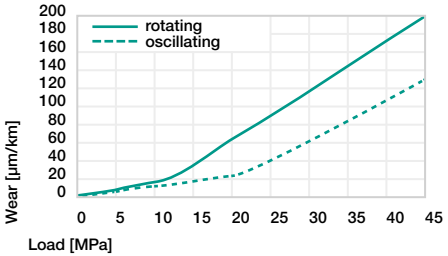
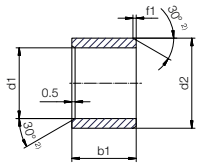



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

# Bearing technology | Plain bearings | iglidur® C500

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** C500SM-0608-06 – no minimum order quantity.
C500 iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 6.0 | +0.010 +0.058 | 8.0 | 6.0 | **C500SM-0608-06** |
| 8.0 | +0.013 +0.071 | 10.0 | 10.0 | **C500SM-0810-10** |
| 10.0 | | 12.0 | 10.0 | **C500SM-1012-10** |
| 12.0 | +0.016 +0.086 | 14.0 | 12.0 | **C500SM-1214-12** |
| 16.0 | | 18.0 | 15.0 | **C500SM-1618-15** |
| 20.0 | +0.020 +0.104 | 23.0 | 20.0 | **C500SM-2023-20** |
| 40.0 | +0.025 +0.125 | 44.0 | 30.0 | **C500SM-4044-30** |

[3] After press-fit. *Testing methods, page 61*

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| 10-24 | 100-199 | 1,000-2,499 |
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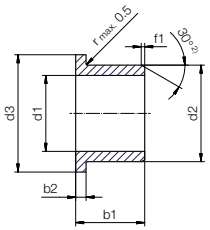
**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**



iglidur® C500
+250°C
80MPa

# Bearing technology | Plain bearings | iglidur® C500

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 6-12 | Ø 12-30 |
|---|---|---|
| f1 [mm] | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** C500FM-0608-06 – no minimum order quantity.
C500 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 6.0 | +0.010 +0.058 | 8.0 | 12.0 | 6.0 | 1.00 | **C500FM-0608-06** |
| 8.0 | +0.013 +0.071 | 10.0 | 15.0 | 10.0 | 1.00 | **C500FM-0810-10** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **C500FM-1012-10** |
| 12.0 | +0.016 +0.086 | 14.0 | 20.0 | 12.0 | 1.00 | **C500FM-1214-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **C500FM-1618-17** |
| 20.0 | +0.020 +0.104 | 23.0 | 30.0 | 21.5 | 1.50 | **C500FM-2023-21** |

[3] After press-fit. *Testing methods, page 61*

**Available from stock**
Detailed information about delivery time online.
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**Order online**
including delivery times, prices, online tools
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**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
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**No minimum order value.**
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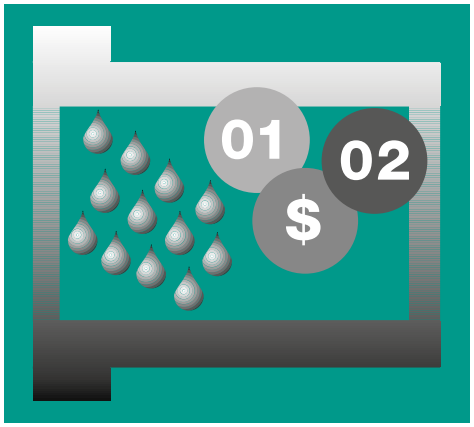


# The low-cost specialist for chemicals and temperatures

Up to +200°C, most capable under static load

## iglidur® H2

**When to use it?**

- For underwater applications
- When a cost-effective plain bearing for high temperatures is required
- For applications with fuels, oils, etc.

**When not to use it?**

- When the highest wear resistance is required
  ***iglidur® H1, iglidur® H4, iglidur® W300***
- When vibration dampening is necessary
  ***iglidur® B, iglidur® M250***
- When neither increased temperatures nor media contact occur
  ***iglidur® GLW***



EN 09/2023

# Bearing technology | Plain bearings | iglidur® H2

Ø
–

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## The low-cost specialist for chemicals and temperatures

Up to +200°C, most capable under static load

For applications with high temperature requirements. Can be conditionally used in dry operation; excellent properties with additional lubrication.

- Suitable for underwater applications
- Cost-effective
- Chemical resistance
- High temperature resistance
- Lubrication-free
- Maintenance-free

### Typical application areas

- Automotive industry
- Actuator
- Bicycle industry

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | | + |
| Wear resistance at +90°C | – | | + |
| Wear resistance at +150°C | – | | + |
| Slide property | – | | + |
| Wear resistance under water | – | | + |
| Media resistance | – | | + |
| Resistant to edge pressures | – | | + |
| Resistant to shock and impact loads | – | | + |
| Dirt resistance | – | | + |

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**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.72 | |
| Colour | | brown | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.1 | DIN 53495 |
| Max. moisture absorption | % weight | 0.2 | |
| Coefficient of friction, dynamic, against steel | μ | 0.07-0.30 | |
| pv value, max. (dry) | MPa · m/s | 0.58 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 10,300 | DIN 53457 |
| Flexural strength at +20°C | MPa | 210 | DIN 53452 |
| Compressive strength | MPa | 109 | |
| Max. permissible surface pressure (+20°C) | MPa | 110 | |
| Shore D hardness | | 88 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +200 | |
| Max. application temperature short-term | °C | +240 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 4 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{15}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{14}$ | DIN 53482 |

Table 01: Material properties

-40°C up to +200°C

110MPa

V-0

RoHS-II

In applications with iglidur® H2 plain bearings, economical aspects are in focus. It is the first time that it is possible to offer such a high-performance bearing for high volume applications with these technical advantages at such a low price: temperatures up to +200°C, permitted surface pressure up to 110N/mm², and excellent chemical resistance. The iglidur® H2 plain bearings are self-lubricating and suitable for all motions.

### Moisture absorption

The moisture absorption of iglidur® H2 plain bearings is below 0.1% weight in ambient conditions. The saturation limit submerged in water is 0.2% weight. iglidur® H2 is an ideal material for wet environments.

### Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

### Radiation resistance

iglidur® H2 withstands neutron and gamma particle radiation. Plain bearings made from iglidur® H2 are resistant up to a radiation intensity of $2 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® H2 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® H2 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® H2 at radial loads. At the recommended maximum surface pressure of 110MPa the deformation is less than 3% at room temperature. The values for tensile and compressive strength are higher than those of iglidur® H at room temperature.

*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® H2

### Permissible surface speeds

During the development of iglidur® H2, costs and mechanical stability were the main considerations. The permitted surface speeds of this bearing are rather low, which primarily permits an application with slow movements or in intermittent service.

*Surface speed, page 48*

### Temperature

iglidur® H2 is an extremely temperature-resistant material. The short-term maximum temperature permitted is +240°C and allows the use of iglidur® H2 plain bearings in applications where the bearings are not subjected to any additional load such as a paint drying process. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. For temperatures over +110°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

The coefficient of friction of iglidur® H2 plain bearings change with different surface speeds, loads and surface finishes, as indicated in the diagrams 04 and 05.

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

Regarding the wear resistance of combinations with iglidur® H2, it must be indicated once again that this bearing was developed for statically high mechanical stability. The wear resistance however does not attain, with none of the bearing-shaft combinations, the values of iglidur® H370 with the corresponding shaft. When the iglidur® H2 bearings are used, they should not be combined with hard-chromed shafts. Shafts made from Cf53 steel and 304 stainless steel are essentially better, as is found in diagrams 06 and 07.

*Shaft materials, page 56*

### Installation tolerances

iglidur® H2 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

### Product range

iglidur® H2 plain bearings are manufactured to special order. Please request iglidur® H2 plain bearings as an alternative to iglidur® H and iglidur® H4 bearings in high volume applications.

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | + up to 0 |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | 0 up to – |
| Strong alkalines | + |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | m/s | 0.9 | 0.6 | 2.5 |
| Short-term | m/s | 1.0 | 0.7 | 3.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.07-0.30 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | F10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.006 | +0.046 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.010 | +0.058 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.013 | +0.071 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.016 | +0.086 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.020 | +0.104 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.025 | +0.125 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.030 | +0.150 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | -0.036 | +0.176 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.043 | +0.203 | +0.000 | +0.100 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

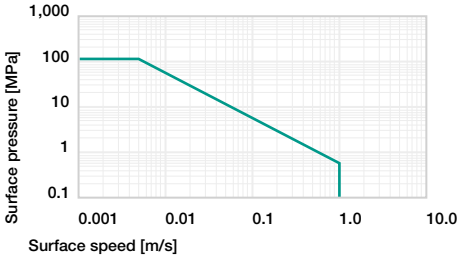



Diagram 01: Permissible pv values for iglidur® H2 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

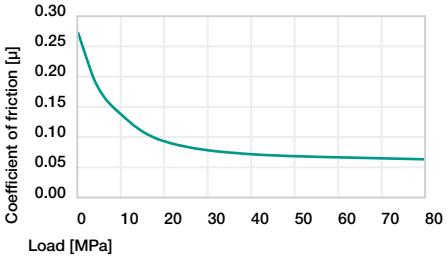



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

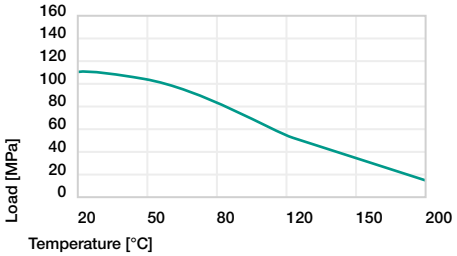



Diagram 02: Maximum recommended surface pressure as a function of temperature (110MPa at +20°C)

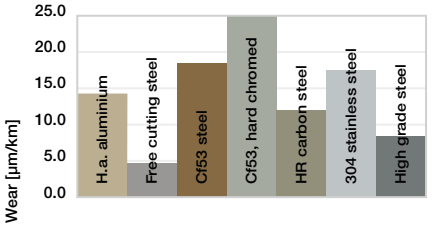



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

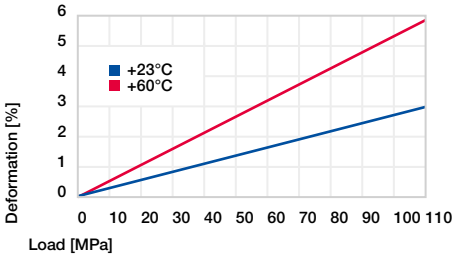



Diagram 03: Deformation under pressure and temperature

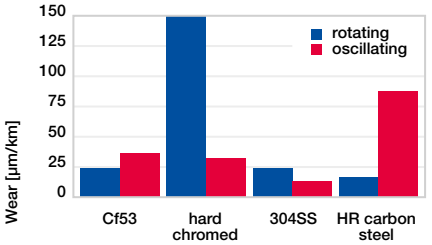



Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

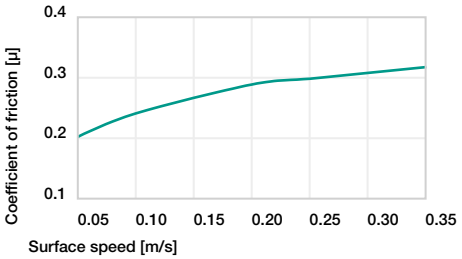
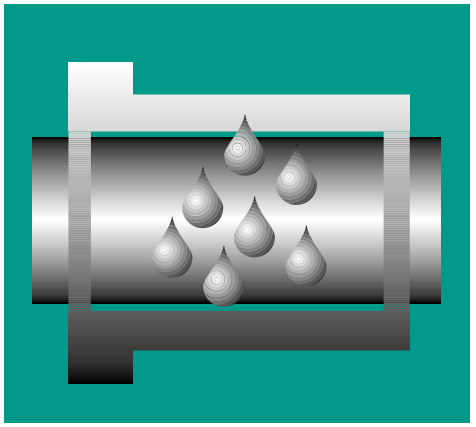



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa



# Chemical resistance

## Excellent coefficient of friction and wear

## iglidur® H3

**When to use it?**

- When extreme service life is required under the influence of temperature and humidity
- When low coefficient of friction at high temperature is important
- When aggressive cleaning is required
- For under bonnet applications

**When not to use it?**

- When high surface pressures occur
  ***iglidur® Z***
- When the best universal chemical resistance is required
  ***iglidur® X***
- When a cost-effective high-temperature plain bearing is required, not the ideal wear resistance
  ***iglidur® H2***
- When an FDA-compliant plain bearing with high temperature resistance is required
  ***iglidur® A500***



EN 09/2023

# Bearing technology | Plain bearings | iglidur® H3

Ø
3.0-50.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## Chemical resistance
## Excellent coefficient of friction and wear

iglidur® H3 is the first choice when long service life is required in extreme environmental conditions. Extreme wear resistance is coupled with excellent resistance to temperature and media - not only in the food and packaging industries or the automotive industry.

- More wear-resistant than iglidur® H1
- Low moisture absorption
- Resistant to many chemicals

### Typical application areas

- Beverage industry
- Automation
- Packaging
- Textile industry
- Optical industry

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | ■■■■□ | + |
| Wear resistance at +90°C | – | ■■■■□ | + |
| Wear resistance at +150°C | – | ■■■■□ | + |
| Slide property | – | ■■■■■ | + |
| Wear resistance under water | – | ■■□□□ | + |
| Media resistance | – | ■■■■■ | + |
| Resistant to edge pressures | – | ■■■□□ | + |
| Resistant to shock and impact loads | – | ■■■□□ | + |
| Dirt resistance | – | ■■■□□ | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.41 | |
| Colour | | grey | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.2 | DIN 53495 |
| Max. moisture absorption | % weight | 0.5 | |
| Coefficient of friction, dynamic, against steel | μ | 0.08-0.17 | |
| pv value, max. (dry) | MPa · m/s | 0.7 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,760 | DIN 53457 |
| Flexural strength at +20°C | MPa | 68 | DIN 53452 |
| Compressive strength | MPa | n.s. | |
| Max. permissible surface pressure (+20°C) | MPa | 40 | |
| Shore D hardness | | 75 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +200 | |
| Max. application temperature short-term | °C | +240 | |
| Min. application temperature | °C | up to -40 | |
| Thermal conductivity | W/m · K | 0.25 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 6 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | n.s. | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{12}$ | DIN 53482 |

Table 01: Material properties

-40°C up to +200°C

40MPa

V-0

RoHS-II

ISO 3547-1

iglidur® H3 plain bearings have been specially developed for use under extreme environmental conditions. Their strengths are the extremely high wear resistance and the excellent coefficient of friction even in applications in which the bearing is exposed to extreme temperatures and/or aggressive chemicals. iglidur® H3 plain bearings can be used completely free of lubrication; in wet area applications, the surrounding medium acts as additional lubricant.

### Moisture absorption

The moisture absorption of iglidur® H3 plain bearings in ambient conditions is approximately 0.2% weight. The saturation limit submerged in water is 0.5% weight. Therefore iglidur® H3 is very well suited for use in wet environments.

### Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

### Radiation resistance

Plain bearings made from iglidur® H3 are resistant up to a radiation intensity of $2 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® H3 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® H3 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® H3 at radial loads. Among the iglidur® H materials, iglidur® H3 material has the greatest flexibility. This must be considered for applications with high surface pressure or edge loads.

*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® H3

### Permissible surface speeds

Due to their excellent coefficient of friction, rotating surface speeds of up to 2.0m/s are possible with iglidur® H3 plain bearings in dry operation. Linear speeds up to 5.0m/s can be attained. The speeds stated in table 03 are limit values for the lowest bearing loads. With higher loads, the permitted speed drops with the extent of the load due to the limitations by the pv value.

*Surface speed, page 48*

### Temperature

iglidur® H3 is an extremely temperature-resistant material. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. In the case of iglidur® H3 in particular, however, this increase is very small. For temperatures over +80°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

The coefficient of friction alters similarly to the wear resistance with increasing load and surface speed (diagrams 04 and 05).

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® H3. The iglidur® H3 plain bearings display excellent wear behaviour in combination with a wide variety of shaft materials both in rotating and pivoting applications. On the 304 stainless steel shafts in particular, iglidur® H3 attains very low wear rates both in rotating and pivoting operations. Even on hard-anodised aluminium shafts, iglidur® H3 plain bearings attain long service life in rotating applications with low to medium loads.

*Shaft materials, page 56*

### Installation tolerances

iglidur® H3 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | + up to 0 |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | + up to – |
| Strong alkalines | + up to – |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | m/s | 1.0 | 0.7 | 4.0 |
| Short-term | m/s | 1.5 | 1.1 | 6.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.08-0.17 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | F10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.006 | +0.046 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.010 | +0.058 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.013 | +0.071 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.016 | +0.086 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.020 | +0.104 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.025 | +0.125 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.030 | +0.150 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | -0.036 | +0.176 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.043 | +0.203 | +0.000 | +0.100 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

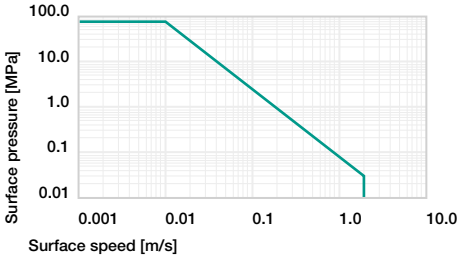



Diagram 01: Permissible pv values for iglidur® H3 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

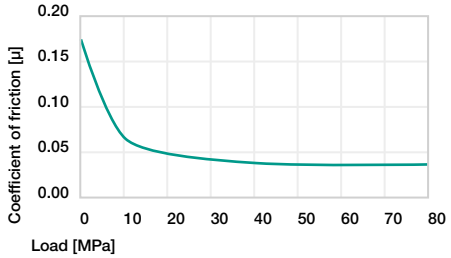



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

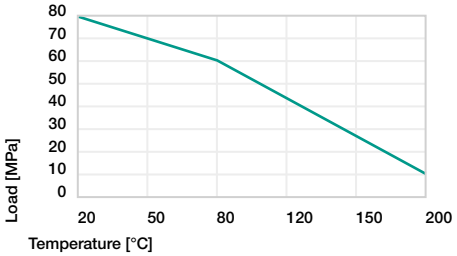



Diagram 02: Maximum recommended surface pressure as a function of temperature (80MPa at +20°C)

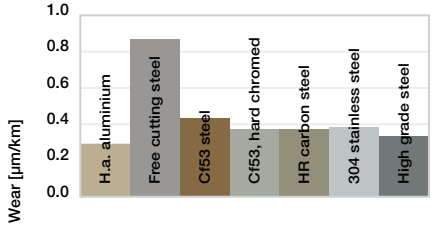



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

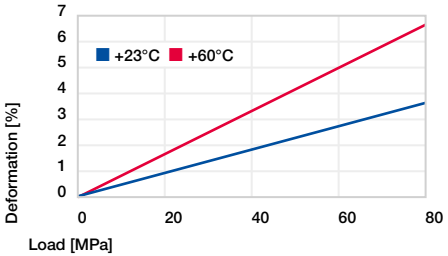



Diagram 03: Deformation under pressure and temperature

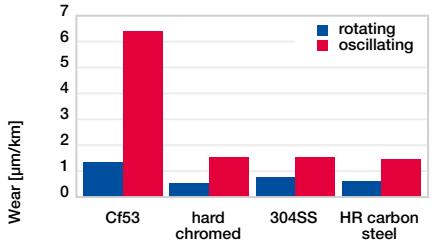



Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

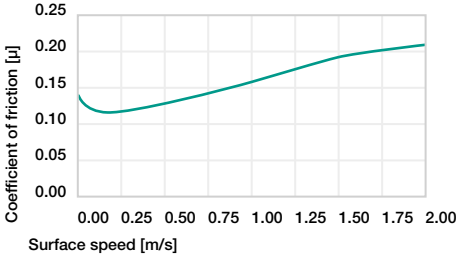
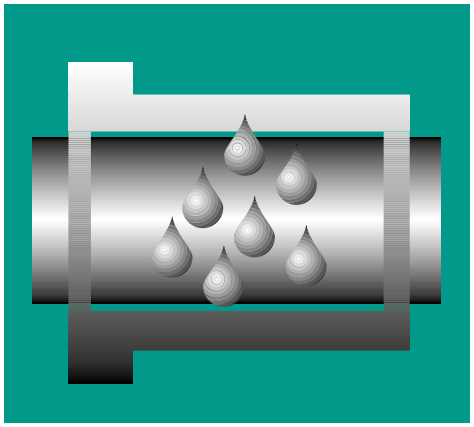



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa



# Resistant to temperature and chemicals

## Robust media resistance

## iglidur® H5

**When to use it?**

- When extreme service life is required under the influence of temperature and humidity
- When low coefficient of friction at high temperature is important
- When aggressive cleaning is required
- For under bonnet applications

**When not to use it?**

- When high surface pressures occur
  ***iglidur® Z***
- When the best universal chemical resistance is required
  ***iglidur® X***
- When a cost-effective high-temperature plain bearing is required, not the ideal wear resistance
  ***iglidur® H2***
- When an FDA-compliant plain bearing with high temperature resistance is required
  ***iglidur® A500***



EN 09/2023

# Bearing technology | Plain bearings | iglidur® H5

Ø
3.0-50.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## Resistant to temperature and chemicals
## Robust media resistance

iglidur® H5 was especially developed for the application in corrosive environments, in which high edge pressures and impact loads occur.

- Good media-resistance
- Resistant to impacts and shocks
- Resistant to edge pressures

**Typical application areas**

- Automotive industry
- Automation
- Packaging

| Descriptive technical specifications | | |
|---|---|---|
| Wear resistance at +23°C | – | + |
| Wear resistance at +90°C | – | + |
| Wear resistance at +150°C | – | + |
| Slide property | – | + |
| Wear resistance under water | – | + |
| Media resistance | – | + |
| Resistant to edge pressures | – | + |
| Resistant to shock and impact loads | – | + |
| Dirt resistance | – | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.41 | |
| Colour | | black | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.1 | DIN 53495 |
| Max. moisture absorption | % weight | 0.7 | |
| Coefficient of friction, dynamic, against steel | μ | 0.08-0.24 | |
| pv value, max. (dry) | MPa · m/s | 0.7 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 6,400 | DIN 53457 |
| Flexural strength at +20°C | MPa | 150 | DIN 53452 |
| Compressive strength | MPa | n.s. | |
| Max. permissible surface pressure (+20°C) | MPa | 80 | |
| Shore D hardness | | 72 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +200 | |
| Max. application temperature short-term | °C | +240 | |
| Min. application temperature | °C | up to -40 | |
| Thermal conductivity | W/m · K | 0.25 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 7 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | n.s. | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{12}$ | DIN 53482 |

Table 01: Material properties

-40°C up to +200°C

80MPa

V-0

RoHS-II

ISO 3547-1

iglidur® H5 plain bearings stand for high carrying capacity, good abrasion resistance and good temperature resistance, besides the obvious economic factors. Temperatures up to +200°C, permitted surface pressure up to 65MPa, and excellent chemical resistance are only some of the essential attributes. Solid lubricants reduce the coefficient of friction and support the wear resistance, which has been significantly improved compared to the iglidur® H3 plain bearings, which are also very cost-effective. iglidur® H5 plain bearings are suitable for all sliding surfaces.

**Moisture absorption**
The moisture absorption of iglidur® H5 plain bearings is below 0.1% weight in ambient conditions. The saturation limit submerged in water is 0.7% weight. iglidur® H5 is therefore an ideal material for wet environments.

**Vacuum**
In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

**Radiation resistance**
Plain bearings made from iglidur® H5 are resistant up to a radiation intensity of $2 \cdot 10^2$ Gy.

**Resistance to weathering**
iglidur® H5 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

**Mechanical properties**
With increasing temperatures, the compressive strength of iglidur® H5 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® H5 at radial loads.
*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® H5

### Permissible surface speeds

In contrast to the similarly cost-effective iglidur® H3 plain bearings, iglidur® H5 has a favourable coefficient of friction. This accounts for the higher permitted surface speeds that can be attained with these bearings. The speeds stated in table 03 are limit values for the lowest bearing loads. With higher loads, the permitted speed drops with the extent of the load due to the limitations by the pv value.

*Surface speed, page 48*

### Temperature

iglidur® H5 is an extremely temperature-resistant material. With increasing temperatures, the compressive strength of iglidur® H5 plain bearings decreases. When considering temperatures, the additional frictional heat in the bearing system must be taken into account. For temperatures over +80°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

The coefficient of friction of the iglidur® H5 plain bearings is very low (diagrams 04 and 05). Please note that a sliding surface with a rough surface finish will increase the friction.

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

With many of the suitable shaft materials, iglidur® H5 is the economical alternative to many other high-temperature bearings. The important thing is however the selection of the suitable shaft material. It cannot be generally stated that iglidur® H5 is suitable for use with hard or soft shafts. Tests have however shown that pivoting applications yield better wear data. In rotating applications, the wear increases markedly from 10MPa.

*Shaft materials, page 56*

### Installation tolerances

iglidur® H5 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | + up to 0 |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | 0 up to – |
| Strong alkalines | + |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 1.0 | 0.7 | 4.0 |
| Short-term | **m/s** | 1.5 | 1.1 | 6.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.08-0.24 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | F10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.006 | +0.046 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.010 | +0.058 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.013 | +0.071 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.016 | +0.086 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.020 | +0.104 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.025 | +0.125 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.030 | +0.150 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | -0.036 | +0.176 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.043 | +0.203 | +0.000 | +0.100 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit



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# Technical data

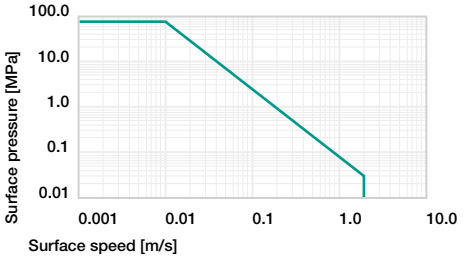


Diagram 01: Permissible pv values for iglidur® H5 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

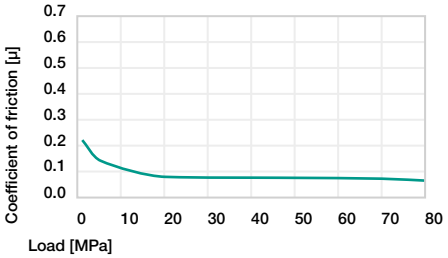


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

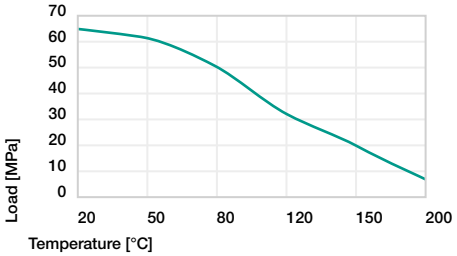


Diagram 02: Maximum recommended surface pressure as a function of temperature (65MPa at +20°C)

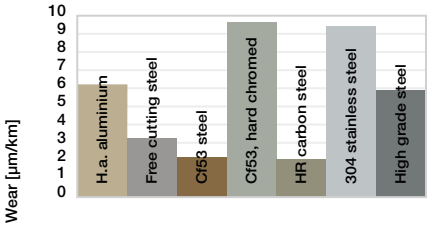


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

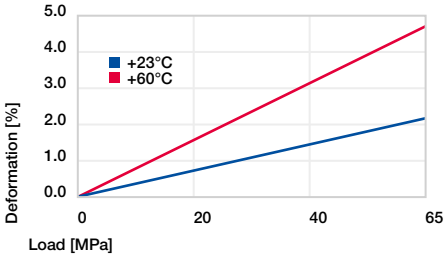


Diagram 03: Deformation under pressure and temperature

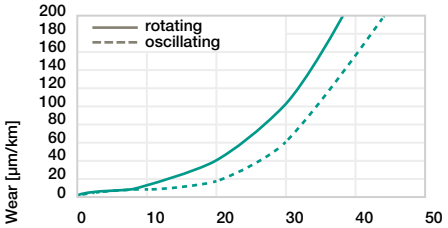


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

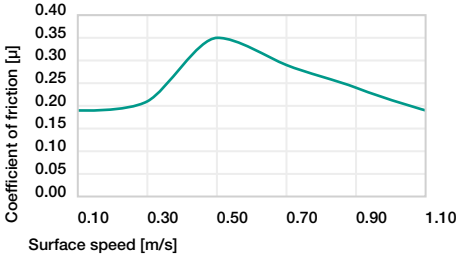


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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# Plain bearing materials for contact with food

## Plain bearing materials for contact with food

The iglidur® materials are most at home when they are not lubricated and the highest hygiene is required. Where is this more true than in food handling and processing?
This group comprises FDA-compliant materials for the most varied operating conditions in terms of moisture and temperature, including iglidur® T220, a material suitable even for the tobacco industry.

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert

### iglidur® A181
**The universal bearing for food contact**

| | | |
|---|---|---|
| Temperature [°C] [123] | +90 | – + |
| Surface pressure [MPa] [124] | 31 | – + |
| Coefficient of friction [µ] [125] | 0.18 | – + |
| Wear [µm/km] [125] | 0.48 | – + |
| Price index | – | + |

### iglidur® A350
**The endurance runner at higher temperatures in the food sector**

| | | |
|---|---|---|
| Temperature [°C] [123] | +180 | – + |
| Surface pressure [MPa] [124] | 60 | – + |
| Coefficient of friction [µ] [125] | 0.17 | – + |
| Wear [µm/km] [125] | 1.79 | – + |
| Price index | – | + |

### iglidur® A500
**The media and temperature specialist in the food sector**

| | | |
|---|---|---|
| Temperature [°C] [123] | +250 | – + |
| Surface pressure [MPa] [124] | 120 | – + |
| Coefficient of friction [µ] [125] | 0.36 | – + |
| Wear [µm/km] [125] | 4.10 | – + |
| Price index | – | + |

### iglidur® A180
**The all-rounder for food**

| | | |
|---|---|---|
| Temperature [°C] [123] | +90 | – + |
| Surface pressure [MPa] [124] | 28 | – + |
| Coefficient of friction [µ] [125] | 0.17 | – + |
| Wear [µm/km] [125] | 0.50 | – + |
| Price index | – | + |

[123] Upper long-term application temperature [124] Max. recommended surface pressure at +20°C [125] Best pairing for p = 1 MPa, v = 0.3m/s, rotating



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### iglidur® A200
**The "food-classic" for low duty**

| | | |
|---|---|---|
| Temperature [°C] [123] | +80 | – + |
| Surface pressure [MPa] [124] | 18 | – + |
| Coefficient of friction [µ] [125] | 0.45 | – + |
| Wear [µm/km] [125] | 1.62 | – + |
| Price index | – | + |

### iglidur® A160
**"Food" bearing with media resistance up to +90°C**

| | | |
|---|---|---|
| Temperature [°C] [123] | +90 | – + |
| Surface pressure [MPa] [124] | 14 | – + |
| Coefficient of friction [µ] [125] | 0.09 | – + |
| Wear [µm/km] [125] | 0.33 | – + |
| Price index | – | + |

### iglidur® UW160
**Suitable for contact with drinking water**

| | | |
|---|---|---|
| Temperature [°C] [123] | +90 | – + |
| Surface pressure [MPa] [124] | 20 | – + |
| Coefficient of friction [µ] [125] | 0.17 | – + |
| Wear [µm/km] [125] | 2.00 | – + |
| Price index | – | + |

### iglidur® T220
**For the tobacco industry**

| | | |
|---|---|---|
| Temperature [°C] [123] | +100 | – + |
| Surface pressure [MPa] [124] | 40 | – + |
| Coefficient of friction [µ] [125] | 0.36 | – + |
| Wear [µm/km] [125] | 0.80 | – + |

### iglidur® AX500
**Conductive and resistant**

| | | |
|---|---|---|
| Temperature [°C] [123] | +250 | – + |
| Surface pressure [MPa] [124] | 69 | – + |
| Coefficient of friction [µ] [125] | 0.22 | – + |
| Wear [µm/km] [125] | 0.24 | – + |
| Price index | – | + |

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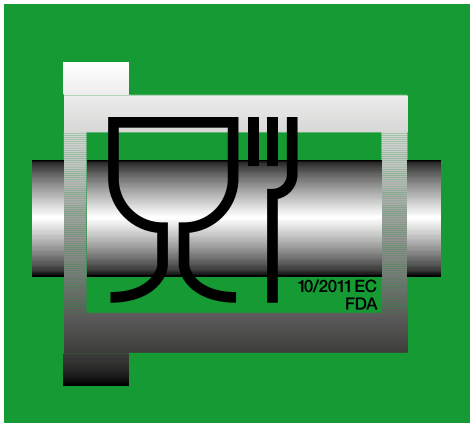



# The universal bearing for food contact

## Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

## iglidur® A181

**When to use it?**

- When FDA compliance is required
- When a material compliant in accordance with Regulation (EU) No. 10/2011 is required
- When an universal material suitable for direct contact with food is required

**When not to use it?**

- When Regulation (EU) No. 10/2011 and FDA compliance are not required
  ***iglidur® J***
- When continuous operating temperatures are higher than +90°C
  ***iglidur® A350***
- When a cost-effective universal plain bearing is required
  ***iglidur® G, iglidur® P***



EN 09/2023

# Bearing technology | Plain bearings | iglidur® A181

Ø
4.0-50.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## The universal bearing for food contact
## Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

The iglidur® A181 material is compliant with Regulation (EU) No. 10/2011 and also with FDA specifications. The blue colour also facilitates the "optical detectability" often desired in the food sector.

- Compliant with Regulation (EU) No. 10/2011
- FDA-compliant
- Universal installation
- High media resistance
- Wear-resistant
- Lubrication-free
- Maintenance-free

### Typical application areas

- Food industry
- Beverage technology
- Medical technology

| Descriptive technical specifications | | |
|---|---|---|
| Wear resistance at +23°C | – | + |
| Wear resistance at +90°C | – | + |
| Wear resistance at +150°C | – | + |
| Slide property | – | + |
| Wear resistance under water | – | + |
| Media resistance | – | + |
| Resistant to edge pressures | – | + |
| Resistant to shock and impact loads | – | + |
| Dirt resistance | – | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.38 | |
| Colour | | blue | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.2 | DIN 53495 |
| Max. moisture absorption | % weight | 1.3 | |
| Coefficient of friction, dynamic, against steel | μ | 0.10-0.21 | |
| pv value, max. (dry) | MPa · m/s | 0.31 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 1,913 | DIN 53457 |
| Flexural strength at +20°C | MPa | 48 | DIN 53452 |
| Compressive strength | MPa | 60 | |
| Max. permissible surface pressure (+20°C) | MPa | 31 | |
| Shore D hardness | | 76 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +90 | |
| Max. application temperature short-term | °C | +110 | |
| Min. application temperature | °C | -50 | |
| Thermal conductivity | W/m · K | 0.25 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 11 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{12}$ | DIN 53482 |

Table 01: Material properties

-50°C up to +90°C

31MPa

Due to their technical specifications and their conformity with the relevant regulations, iglidur® A181 plain bearings are predestined for applications in food technology. Compared to iglidur® A180 with regard to the mechanical properties, temperature and media resistance, iglidur® A181 is more suitable with respect to the wear resistance in most cases.

### Moisture absorption

The moisture absorption of iglidur® A181 plain bearings is approximately 0.2 % weight in standard climatic conditions. The saturation limit submerged in water is 1.3% weight. This must be taken into account for these types of applications.

### Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® A181 bearings.

### Radiation resistance

Plain bearings made from iglidur® A181 are resistant up to a radiation intensity of $2 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® A181 plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® A181 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® A181 at radial loads.
*Surface pressure, page 45*

### Permissible surface speeds

iglidur® A181 was developed for low surface speeds. Maximum speeds of up to 0.8m/s (rotating) and 3.5m/s (linear), respectively, are permissible during continuous dry operation. The given values in table 03 indicate the limits at which an increase up to the continuous permissible temperature occurs. This increase is a result of friction. In practice, though, this level is rarely reached, due to varying application conditions.
*Surface speed, page 48*

# Bearing technology | Plain bearings | iglidur® A181

### Temperature

The long-term upper temperature limit of +90°C permits the broad use in applications with direct contact with food. As shown in diagram 02, with increasing temperatures, the compressive strength decreases. When considering temperatures, the additional frictional heat in the bearing system must be taken into account. For temperatures over +60°C an additional securing is required.

***Application temperatures, page 53***
***Additional securing, page 53***

### Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagram 04 and 05). For iglidur® A181 plain bearings, the alteration of the coefficient of friction μ depends on surface speed and the shaft surface finish.

***Coefficient of friction and surfaces, page 51***
***Wear resistance, page 54***

### Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® A181. Particular attention is paid in the food industry to the corrosion-resistant shaft types. Diagram 06 shows that very low wear rates can be achieved in combination with these shafts. As with many of the iglidur® materials, wear rate increases with otherwise identical parameters in rotation (diagram 07).

***Shaft materials, page 56***

### Installation tolerances

iglidur® A181 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances.

***Testing methods, page 61***

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | 0 up to – |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | – |
| Strong alkalines | + up to 0 |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

***Chemical table, page 1170***

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 0.8 | 0.6 | 3.5 |
| Short-term | **m/s** | 1.2 | 1.0 | 5.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.10-0.21 | 0.08 | 0.03 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | E10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.014 | +0.054 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.020 | +0.068 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.025 | +0.083 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.032 | +0.102 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.040 | +0.124 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.050 | +0.150 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.060 | +0.180 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.072 | +0.212 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.085 | +0.245 | -0.100 | +0.000 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

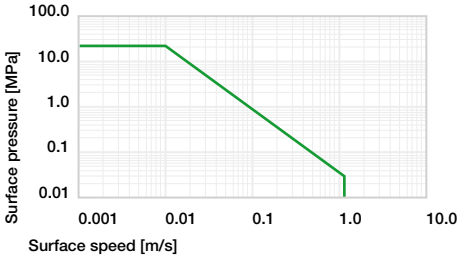



Diagram 01: Permissible pv values for iglidur® A181 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

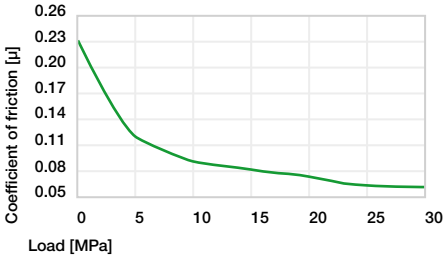



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

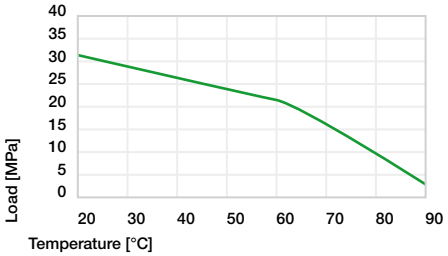



Diagram 02: Maximum recommended surface pressure as a function of temperature (31MPa at +20°C)

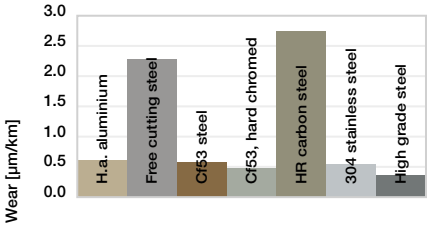



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

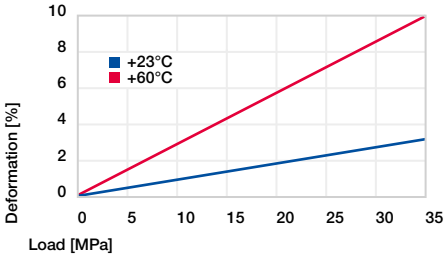



Diagram 03: Deformation under pressure and temperature

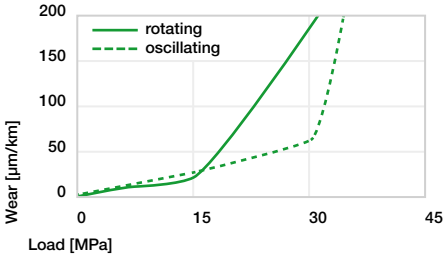



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

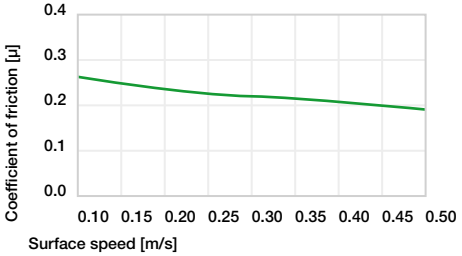
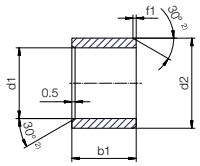



Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

# Bearing technology | Plain bearings | iglidur® A181

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

Order example: A181SM-0405-04 – no minimum order quantity.
A181 iglidur® material S Cylindrical M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 4.0 | +0.020 +0.068 | 5.5 | 4.0 | **A181SM-0405-04** |
| 4.0 | | 5.5 | 6.0 | **A181SM-0405-06** |
| 5.0 | | 7.0 | 5.0 | **A181SM-0507-05** |
| 5.0 | | 7.0 | 10.0 | **A181SM-0507-10** |
| 6.0 | | 8.0 | 6.0 | **A181SM-0608-06** |
| 6.0 | | 8.0 | 8.0 | **A181SM-0608-08** |
| 6.0 | | 8.0 | 10.0 | **A181SM-0608-10** |
| 8.0 | +0.025 +0.083 | 10.0 | 8.0 | **A181SM-0810-08** |
| 8.0 | | 10.0 | 10.0 | **A181SM-0810-10** |
| 8.0 | | 10.0 | 12.0 | **A181SM-0810-12** |
| 10.0 | | 12.0 | 8.0 | **A181SM-1012-08** |
| 10.0 | | 12.0 | 10.0 | **A181SM-1012-10** |
| 10.0 | | 12.0 | 12.0 | **A181SM-1012-12** |
| 10.0 | | 12.0 | 15.0 | **A181SM-1012-15** |
| 10.0 | | 12.0 | 20.0 | **A181SM-1012-20** |
| 12.0 | +0.032 +0.102 | 14.0 | 12.0 | **A181SM-1214-12** |
| 12.0 | | 14.0 | 15.0 | **A181SM-1214-15** |
| 12.0 | | 14.0 | 20.0 | **A181SM-1214-20** |
| 13.0 | | 15.0 | 10.0 | **A181SM-1315-10** |
| 13.0 | | 15.0 | 20.0 | **A181SM-1315-20** |
| 14.0 | | 16.0 | 15.0 | **A181SM-1416-15** |
| 14.0 | | 16.0 | 20.0 | **A181SM-1416-20** |
| 14.0 | | 16.0 | 25.0 | **A181SM-1416-25** |
| 15.0 | | 17.0 | 15.0 | **A181SM-1517-15** |
| 15.0 | | 17.0 | 20.0 | **A181SM-1517-20** |
| 15.0 | | 17.0 | 25.0 | **A181SM-1517-25** |
| 16.0 | | 18.0 | 15.0 | **A181SM-1618-15** |
| 16.0 | | 18.0 | 20.0 | **A181SM-1618-20** |
| 16.0 | | 18.0 | 25.0 | **A181SM-1618-25** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 18.0 | +0.032 +0.102 | 20.0 | 15.0 | **A181SM-1820-15** |
| 18.0 | | 20.0 | 20.0 | **A181SM-1820-20** |
| 18.0 | | 20.0 | 25.0 | **A181SM-1820-25** |
| 20.0 | +0.040 +0.124 | 23.0 | 10.0 | **A181SM-2023-10** |
| 20.0 | | 23.0 | 15.0 | **A181SM-2023-15** |
| 20.0 | | 23.0 | 20.0 | **A181SM-2023-20** |
| 20.0 | | 23.0 | 25.0 | **A181SM-2023-25** |
| 20.0 | | 23.0 | 30.0 | **A181SM-2023-30** |
| 22.0 | | 25.0 | 15.0 | **A181SM-2225-15** |
| 22.0 | | 25.0 | 20.0 | **A181SM-2225-20** |
| 22.0 | | 25.0 | 25.0 | **A181SM-2225-25** |
| 22.0 | | 25.0 | 30.0 | **A181SM-2225-30** |
| 24.0 | | 27.0 | 15.0 | **A181SM-2427-15** |
| 24.0 | | 27.0 | 20.0 | **A181SM-2427-20** |
| 24.0 | | 27.0 | 25.0 | **A181SM-2427-25** |
| 24.0 | | 27.0 | 30.0 | **A181SM-2427-30** |
| 25.0 | | 28.0 | 15.0 | **A181SM-2528-15** |
| 25.0 | | 28.0 | 20.0 | **A181SM-2528-20** |
| 25.0 | | 28.0 | 25.0 | **A181SM-2528-25** |
| 25.0 | | 28.0 | 30.0 | **A181SM-2528-30** |
| 28.0 | | 32.0 | 20.0 | **A181SM-2832-20** |
| 28.0 | | 32.0 | 20.0 | **A181SM-3034-20** |
| 28.0 | | 32.0 | 25.0 | **A181SM-2832-25** |
| 28.0 | | 32.0 | 30.0 | **A181SM-2832-30** |
| 30.0 | | 34.0 | 25.0 | **A181SM-3034-25** |
| 30.0 | | 34.0 | 30.0 | **A181SM-3034-30** |
| 30.0 | | 34.0 | 40.0 | **A181SM-3034-40** |
| 32.0 | +0.050 +0.150 | 36.0 | 20.0 | **A181SM-3236-20** |
| 32.0 | | 36.0 | 30.0 | **A181SM-3236-30** |

[3] After press-fit. *Testing methods, page 61*



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# Product range

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 32.0 | +0.050 +0.150 | 36.0 | 40.0 | **A181SM-3236-40** |
| 35.0 | | 39.0 | 20.0 | **A181SM-3539-20** |
| 35.0 | | 39.0 | 30.0 | **A181SM-3539-30** |
| 35.0 | | 39.0 | 40.0 | **A181SM-3539-40** |
| 35.0 | | 39.0 | 50.0 | **A181SM-3539-50** |
| 40.0 | | 44.0 | 20.0 | **A181SM-4044-20** |
| 40.0 | | 44.0 | 30.0 | **A181SM-4044-30** |
| 40.0 | | 44.0 | 40.0 | **A181SM-4044-40** |
| 40.0 | | 44.0 | 50.0 | **A181SM-4044-50** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 45.0 | +0.050 +0.150 | 50.0 | 20.0 | **A181SM-4550-20** |
| 45.0 | | 50.0 | 30.0 | **A181SM-4550-30** |
| 45.0 | | 50.0 | 40.0 | **A181SM-4550-40** |
| 45.0 | | 50.0 | 50.0 | **A181SM-4550-50** |
| 50.0 | | 55.0 | 20.0 | **A181SM-5055-20** |
| 50.0 | | 55.0 | 30.0 | **A181SM-5055-30** |
| 50.0 | | 55.0 | 40.0 | **A181SM-5055-40** |
| 50.0 | | 55.0 | 50.0 | **A181SM-5055-50** |
| 50.0 | | 55.0 | 60.0 | **A181SM-5055-60** |

[3] After press-fit. *Testing methods, page 61*

**Available from stock**
Detailed information about delivery time online.
www.igus.eu/24

**Order online**
including delivery times, prices, online tools
www.igus.eu/A181

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**

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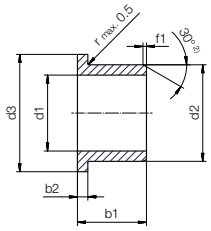
# Bearing technology | Plain bearings | iglidur® A181

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|
| f1 [mm] | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

Order example: A181FM-0608-04 – no minimum order quantity.
A181 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 04 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 12.0 | 4.0 | 1.00 | **A181FM-0608-04** |
| 6.0 | | 8.0 | 12.0 | 6.0 | 1.00 | **A181FM-0608-06** |
| 6.0 | | 8.0 | 12.0 | 8.0 | 1.00 | **A181FM-0608-08** |
| 8.0 | +0.025 +0.083 | 10.0 | 15.0 | 5.5 | 1.00 | **A181FM-0810-05** |
| 8.0 | | 10.0 | 15.0 | 7.5 | 1.00 | **A181FM-0810-07** |
| 8.0 | | 10.0 | 15.0 | 9.5 | 1.00 | **A181FM-0810-09** |
| 8.0 | | 10.0 | 15.0 | 10.0 | 1.00 | **A181FM-0810-10** |
| 10.0 | | 12.0 | 18.0 | 7.0 | 1.00 | **A181FM-1012-07** |
| 10.0 | | 12.0 | 18.0 | 9.0 | 1.00 | **A181FM-1012-09** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **A181FM-1012-10** |
| 10.0 | | 12.0 | 18.0 | 12.0 | 1.00 | **A181FM-1012-12** |
| 10.0 | | 12.0 | 18.0 | 17.0 | 1.00 | **A181FM-1012-17** |
| 12.0 | +0.032 +0.102 | 14.0 | 20.0 | 7.0 | 1.00 | **A181FM-1214-07** |
| 12.0 | | 14.0 | 20.0 | 9.0 | 1.00 | **A181FM-1214-09** |
| 12.0 | | 14.0 | 20.0 | 12.0 | 1.00 | **A181FM-1214-12** |
| 12.0 | | 14.0 | 20.0 | 17.0 | 1.00 | **A181FM-1214-17** |
| 14.0 | | 16.0 | 22.0 | 12.0 | 1.00 | **A181FM-1416-12** |
| 14.0 | | 16.0 | 22.0 | 17.0 | 1.00 | **A181FM-1416-17** |
| 15.0 | | 17.0 | 23.0 | 9.0 | 1.00 | **A181FM-1517-09** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 15.0 | +0.032 +0.102 | 17.0 | 23.0 | 12.0 | 1.00 | **A181FM-1517-12** |
| 15.0 | | 17.0 | 23.0 | 17.0 | 1.00 | **A181FM-1517-17** |
| 16.0 | | 18.0 | 24.0 | 12.0 | 1.00 | **A181FM-1618-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **A181FM-1618-17** |
| 18.0 | | 20.0 | 26.0 | 12.0 | 1.00 | **A181FM-1820-12** |
| 18.0 | | 20.0 | 26.0 | 17.0 | 1.00 | **A181FM-1820-17** |
| 18.0 | | 20.0 | 26.0 | 22.0 | 1.00 | **A181FM-1820-22** |
| 20.0 | +0.040 +0.124 | 23.0 | 30.0 | 11.5 | 1.50 | **A181FM-2023-11** |
| 20.0 | | 23.0 | 30.0 | 16.5 | 1.50 | **A181FM-2023-16** |
| 20.0 | | 23.0 | 30.0 | 21.5 | 1.50 | **A181FM-2023-21** |
| 25.0 | | 28.0 | 35.0 | 11.5 | 1.50 | **A181FM-2528-11** |
| 25.0 | | 28.0 | 35.0 | 16.5 | 1.50 | **A181FM-2528-16** |
| 25.0 | | 28.0 | 35.0 | 21.5 | 1.50 | **A181FM-2528-21** |
| 30.0 | | 34.0 | 42.0 | 16.0 | 2.00 | **A181FM-3034-16** |
| 30.0 | | 34.0 | 42.0 | 26.0 | 2.00 | **A181FM-3034-26** |
| 35.0 | | 39.0 | 47.0 | 16.0 | 2.00 | **A181FM-3539-16** |
| 35.0 | | 39.0 | 47.0 | 26.0 | 2.00 | **A181FM-3539-26** |
| 40.0 | | 44.0 | 52.0 | 30.0 | 2.00 | **A181FM-4044-30** |
| 40.0 | | 44.0 | 52.0 | 40.0 | 2.00 | **A181FM-4044-40** |
| 45.0 | | 50.0 | 58.0 | 50.0 | 2.50 | **A181FM-4550-50** |

[3] After press-fit. *Testing methods, page 61*



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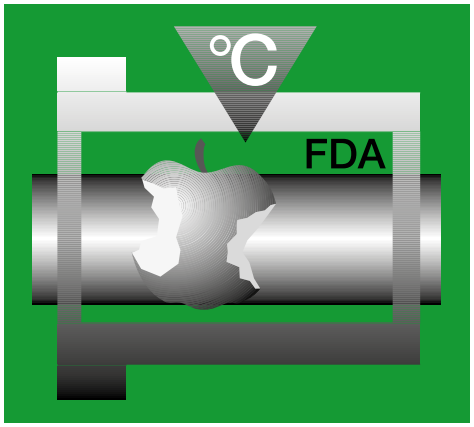


# The endurance runner at higher temperatures in the food sector

Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

**iglidur® A350**

**When to use it?**

- When FDA compliance is required
- When wear resistance and FDA-compliance are necessary at high loads
- When the bearing is used in acid environments

**When not to use it?**

- When temperatures are continuously higher than +180°C
  ***iglidur® A500***
- When the maximum wear resistance is necessary
  ***iglidur® J***
- When a cost-effective FDA-compliant plain bearing is required
  ***iglidur® A200, iglidur® A180***
- For high speeds
  ***iglidur® J***

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# Bearing technology | Plain bearings | iglidur® A350

Ø
4.0-50.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## The endurance runner at higher temperatures in the food sector

## Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

A universal plain bearing for use in the area of food and pharmaceutical industries. Composition of FDA-compliant materials allows the use in areas where other plain bearings cannot be used due to the contact with food. With good tribological and mechanical properties, iglidur® A350 plain bearings are suitable for all-round use in and around food machinery.

- Compliant with Regulation (EU) No. 10/2011
- FDA-compliant
- Temperature-resistant up to +180°C
- Suitable for medium and high loads
- Suitable for pivoting applications
- Lubrication-free
- Standard range from stock
- Suitable for rotating applications
- Maintenance-free

### Typical application areas

- Food industry
- Beverage technology
- Medical technology

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | | + |
| Wear resistance at +90°C | – | | + |
| Wear resistance at +150°C | – | | + |
| Slide property | – | | + |
| Wear resistance under water | – | | + |
| Media resistance | – | | + |
| Resistant to edge pressures | – | | + |
| Resistant to shock and impact loads | – | | + |
| Dirt resistance | – | | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.42 | |
| Colour | | blue | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.6 | DIN 53495 |
| Max. moisture absorption | % weight | 1.9 | |
| Coefficient of friction, dynamic, against steel | μ | 0.10-0.20 | |
| pv value, max. (dry) | MPa · m/s | 0.40 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,000 | DIN 53457 |
| Flexural strength at +20°C | MPa | 110 | DIN 53452 |
| Compressive strength | MPa | 78 | |
| Max. permissible surface pressure (+20°C) | MPa | 60 | |
| Shore D hardness | | 76 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +180 | |
| Max. application temperature short-term | °C | +210 | |
| Min. application temperature | °C | -100 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 8 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{11}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{11}$ | DIN 53482 |

Table 01: Material properties

-100 °C up to +180 °C

60MPa

V-0

FOOD

RoHS-II

ISO 3547-1

iglidur® A350 plain bearings are made for practically all loads in food and packaging machinery. Even high loads, often seen in lifting equipment, are taken easily and the bearings work flawlessly without any external lubrication.

### Moisture absorption

The moisture absorption of iglidur® A350 is low and can be ignored when using standard plain bearings. Even when saturated with water, iglidur® A350 does not absorb more than 1.9% weight of water (by weight).

### Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® A350 bearings.

### Radiation resistance

Plain bearings made from iglidur® A350 are resistant up to a radiation intensity of $2 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® A350 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

### Mechanical properties

When temperatures increase, the compressive strength of iglidur® A350 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® A350 under different loads. At the recommended maximum surface pressure of 60MPa the deformation is less than 5% at room temperature.
*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® A350

### Permissible surface speeds

iglidur® A350 plain bearings are suitable for low and medium speeds in rotating and oscillating applications. Good bearing support for linear movements is also possible with iglidur® A350. In the case of high surface speeds it should be tested whether iglidur® J or iglidur® L250 can be used, as the wear rate of these bearings is lower.

*Surface speed, page 48*

### Temperature

Its temperature resistance makes iglidur® A350 the ideal material for plain bearing used in the food area. For temperatures over +140°C an additional securing is required. The wear rate of iglidur® A350 plain bearings rises only little with higher temperatures. Tests have shown good wear results at +100°C on all tested shaft materials.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

The coefficient of friction of iglidur® A350 on a steel shaft is in the mid range (diagrams 04 and 05).

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

The corrosion-resistant steels are rather considered a natural choice for use in the food industry. The trials were therefore carried out especially on such materials. It has been shown that there is no clear favourite and 304 stainless steel, high grade steel and hard-chromed steel are all suitable. Hard-anodised aluminium is also well suited for both linear and rotational movements.

*Shaft materials, page 56*

### Installation tolerances

iglidur® A350 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | + |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + up to 0 |
| Strong acids | + |
| Strong alkalines | + |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 1.0 | 0.8 | 2.5 |
| Short-term | **m/s** | 1.2 | 0.9 | 3.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.10-0.20 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | F10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.006 | +0.046 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.010 | +0.058 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.013 | +0.071 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.016 | +0.086 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.020 | +0.104 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.025 | +0.125 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.030 | +0.150 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | -0.036 | +0.176 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.043 | +0.203 | +0.000 | +0.100 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

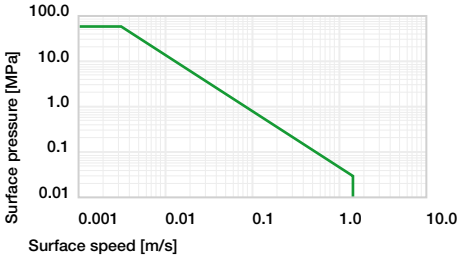



Diagram 01: Permissible pv values for iglidur® A350 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

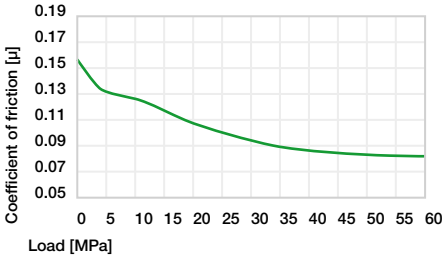



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

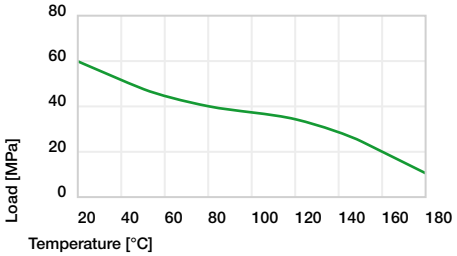



Diagram 02: Maximum recommended surface pressure as a function of temperature (60MPa at +20°C)

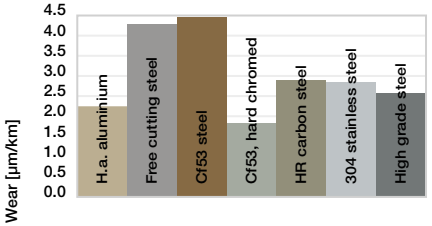



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

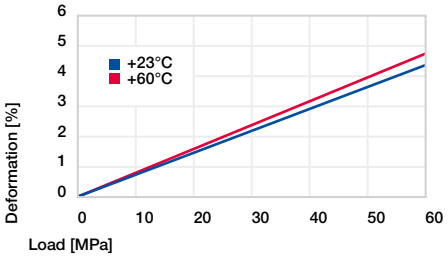



Diagram 03: Deformation under pressure and temperature

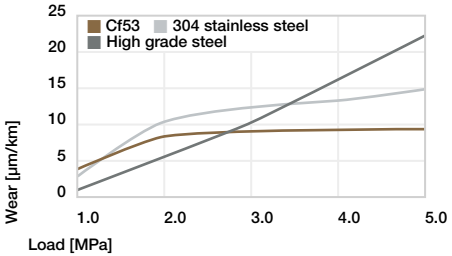



Diagram 07: Wear, rotating with different shaft materials, as a function of the load

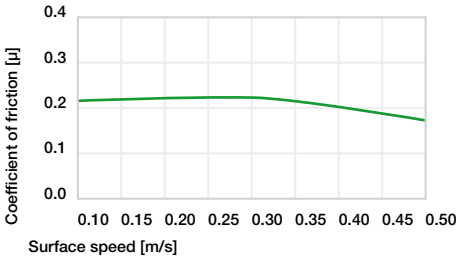
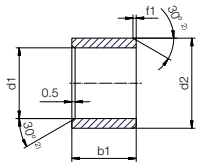



Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

# Bearing technology | Plain bearings | iglidur® A350

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example: A350SM-0405-04 – no minimum order quantity.**
A350 iglidur® material S Cylindrical M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 4.0 | +0.010 +0.058 | 5.5 | 4.0 | **A350SM-0405-04** |
| 4.0 | | 5.5 | 6.0 | **A350SM-0405-06** |
| 5.0 | | 7.0 | 5.0 | **A350SM-0507-05** |
| 5.0 | | 7.0 | 10.0 | **A350SM-0507-10** |
| 6.0 | | 8.0 | 6.0 | **A350SM-0608-06** |
| 6.0 | | 8.0 | 8.0 | **A350SM-0608-08** |
| 6.0 | | 8.0 | 10.0 | **A350SM-0608-10** |
| 8.0 | +0.013 +0.071 | 10.0 | 8.0 | **A350SM-0810-08** |
| 8.0 | | 10.0 | 10.0 | **A350SM-0810-10** |
| 8.0 | | 10.0 | 12.0 | **A350SM-0810-12** |
| 10.0 | | 12.0 | 8.0 | **A350SM-1012-08** |
| 10.0 | | 12.0 | 10.0 | **A350SM-1012-10** |
| 10.0 | | 12.0 | 12.0 | **A350SM-1012-12** |
| 10.0 | | 12.0 | 15.0 | **A350SM-1012-15** |
| 10.0 | | 12.0 | 20.0 | **A350SM-1012-20** |
| 12.0 | +0.016 +0.086 | 14.0 | 10.0 | **A350SM-1214-10** |
| 12.0 | | 14.0 | 12.0 | **A350SM-1214-12** |
| 12.0 | | 14.0 | 15.0 | **A350SM-1214-15** |
| 12.0 | | 14.0 | 20.0 | **A350SM-1214-20** |
| 13.0 | | 15.0 | 10.0 | **A350SM-1315-10** |
| 13.0 | | 15.0 | 20.0 | **A350SM-1315-20** |
| 14.0 | | 16.0 | 15.0 | **A350SM-1416-15** |
| 14.0 | | 16.0 | 20.0 | **A350SM-1416-20** |
| 14.0 | | 16.0 | 25.0 | **A350SM-1416-25** |
| 15.0 | | 17.0 | 15.0 | **A350SM-1517-15** |
| 15.0 | | 17.0 | 20.0 | **A350SM-1517-20** |
| 15.0 | | 17.0 | 25.0 | **A350SM-1517-25** |
| 16.0 | | 18.0 | 15.0 | **A350SM-1618-15** |
| 16.0 | | 18.0 | 20.0 | **A350SM-1618-20** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 16.0 | +0.016 +0.086 | 18.0 | 25.0 | **A350SM-1618-25** |
| 18.0 | | 20.0 | 15.0 | **A350SM-1820-15** |
| 18.0 | | 20.0 | 20.0 | **A350SM-1820-20** |
| 18.0 | | 20.0 | 25.0 | **A350SM-1820-25** |
| 20.0 | +0.020 +0.104 | 23.0 | 10.0 | **A350SM-2023-10** |
| 20.0 | | 23.0 | 15.0 | **A350SM-2023-15** |
| 20.0 | | 23.0 | 20.0 | **A350SM-2023-20** |
| 20.0 | | 23.0 | 25.0 | **A350SM-2023-25** |
| 20.0 | | 23.0 | 30.0 | **A350SM-2023-30** |
| 22.0 | | 25.0 | 15.0 | **A350SM-2225-15** |
| 22.0 | | 25.0 | 20.0 | **A350SM-2225-20** |
| 22.0 | | 25.0 | 25.0 | **A350SM-2225-25** |
| 22.0 | | 25.0 | 30.0 | **A350SM-2225-30** |
| 24.0 | | 27.0 | 15.0 | **A350SM-2427-15** |
| 24.0 | | 27.0 | 20.0 | **A350SM-2427-20** |
| 24.0 | | 27.0 | 25.0 | **A350SM-2427-25** |
| 24.0 | | 27.0 | 30.0 | **A350SM-2427-30** |
| 24.0 | | 28.0 | 30.0 | **A350SM-2428-30** |
| 25.0 | | 28.0 | 15.0 | **A350SM-2528-15** |
| 25.0 | | 28.0 | 20.0 | **A350SM-2528-20** |
| 25.0 | | 28.0 | 25.0 | **A350SM-2528-25** |
| 25.0 | | 28.0 | 30.0 | **A350SM-2528-30** |
| 28.0 | | 32.0 | 20.0 | **A350SM-2832-20** |
| 28.0 | | 32.0 | 25.0 | **A350SM-2832-25** |
| 28.0 | | 32.0 | 30.0 | **A350SM-2832-30** |
| 30.0 | | 34.0 | 20.0 | **A350SM-3034-20** |
| 30.0 | | 34.0 | 25.0 | **A350SM-3034-25** |
| 30.0 | | 34.0 | 30.0 | **A350SM-3034-30** |
| 30.0 | | 34.0 | 40.0 | **A350SM-3034-40** |

[3] After press-fit. *Testing methods, page 61*



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# Product range

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 32.0 | +0.025 +0.125 | 36.0 | 20.0 | **A350SM-3236-20** |
| 32.0 | | 36.0 | 30.0 | **A350SM-3236-30** |
| 32.0 | | 36.0 | 40.0 | **A350SM-3236-40** |
| 35.0 | | 39.0 | 20.0 | **A350SM-3539-20** |
| 35.0 | | 39.0 | 30.0 | **A350SM-3539-30** |
| 35.0 | | 39.0 | 40.0 | **A350SM-3539-40** |
| 35.0 | | 39.0 | 50.0 | **A350SM-3539-50** |
| 40.0 | | 44.0 | 20.0 | **A350SM-4044-20** |
| 40.0 | | 44.0 | 30.0 | **A350SM-4044-30** |
| 40.0 | | 44.0 | 40.0 | **A350SM-4044-40** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 40.0 | +0.025 +0.125 | 44.0 | 50.0 | **A350SM-4044-50** |
| 45.0 | | 50.0 | 20.0 | **A350SM-4550-20** |
| 45.0 | | 50.0 | 30.0 | **A350SM-4550-30** |
| 45.0 | | 50.0 | 40.0 | **A350SM-4550-40** |
| 45.0 | | 50.0 | 50.0 | **A350SM-4550-50** |
| 50.0 | | 55.0 | 20.0 | **A350SM-5055-20** |
| 50.0 | | 55.0 | 30.0 | **A350SM-5055-30** |
| 50.0 | | 55.0 | 40.0 | **A350SM-5055-40** |
| 50.0 | | 55.0 | 50.0 | **A350SM-5055-50** |
| 50.0 | | 55.0 | 60.0 | **A350SM-5055-60** |

[3] After press-fit. *Testing methods, page 61*

**Available from stock**
Detailed information about delivery time online.
www.igus.eu/24

**Order online**
including delivery times, prices, online tools
www.igus.eu/A350

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

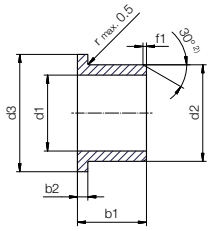
| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**

EN 09/2023

# Bearing technology | Plain bearings | iglidur® A350

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

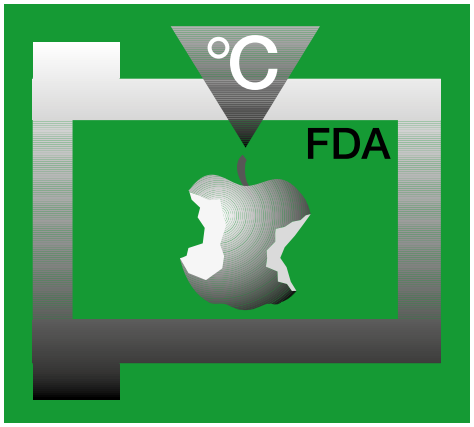
Dimensions according to ISO 3547-1 and special dimensions

Order example: A350FM-0507-05 – no minimum order quantity.
A350 iglidur® material F With flange M Metric 05 Inner Ø d1 07 Outer Ø d2 05 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 5.0 | | 7.0 | 11.0 | 5.0 | 1.00 | **A350FM-0507-05** |
| 6.0 | +0.010 | 8.0 | 12.0 | 4.0 | 1.00 | **A350FM-0608-04** |
| 6.0 | +0.058 | 8.0 | 12.0 | 6.0 | 1.00 | **A350FM-0608-06** |
| 6.0 | | 8.0 | 12.0 | 8.0 | 1.00 | **A350FM-0608-08** |
| 8.0 | | 10.0 | 15.0 | 5.5 | 1.00 | **A350FM-0810-05** |
| 8.0 | | 10.0 | 15.0 | 7.5 | 1.00 | **A350FM-0810-07** |
| 8.0 | | 10.0 | 15.0 | 9.5 | 1.00 | **A350FM-0810-09** |
| 10.0 | | 10.0 | 15.0 | 10.0 | 1.00 | **A350FM-0810-10** |
| 10.0 | +0.013 | 12.0 | 18.0 | 7.0 | 1.00 | **A350FM-1012-07** |
| 10.0 | +0.071 | 12.0 | 18.0 | 9.0 | 1.00 | **A350FM-1012-09** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **A350FM-1012-10** |
| 10.0 | | 12.0 | 18.0 | 12.0 | 1.00 | **A350FM-1012-12** |
| 10.0 | | 12.0 | 18.0 | 17.0 | 1.00 | **A350FM-1012-17** |
| 12.0 | | 14.0 | 20.0 | 7.0 | 1.00 | **A350FM-1214-07** |
| 12.0 | | 14.0 | 20.0 | 9.0 | 1.00 | **A350FM-1214-09** |
| 12.0 | +0.016 | 14.0 | 20.0 | 12.0 | 1.00 | **A350FM-1214-12** |
| 12.0 | +0.086 | 14.0 | 20.0 | 17.0 | 1.00 | **A350FM-1214-17** |
| 14.0 | | 16.0 | 22.0 | 12.0 | 1.00 | **A350FM-1416-12** |
| 14.0 | | 16.0 | 22.0 | 17.0 | 1.00 | **A350FM-1416-17** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 15.0 | | 17.0 | 23.0 | 9.0 | 1.00 | **A350FM-1517-09** |
| 15.0 | | 17.0 | 23.0 | 12.0 | 1.00 | **A350FM-1517-12** |
| 15.0 | | 17.0 | 23.0 | 17.0 | 1.00 | **A350FM-1517-17** |
| 16.0 | +0.016 | 18.0 | 24.0 | 12.0 | 1.00 | **A350FM-1618-12** |
| 16.0 | +0.086 | 18.0 | 24.0 | 17.0 | 1.00 | **A350FM-1618-17** |
| 18.0 | | 20.0 | 26.0 | 12.0 | 1.00 | **A350FM-1820-12** |
| 18.0 | | 20.0 | 26.0 | 17.0 | 1.00 | **A350FM-1820-17** |
| 20.0 | | 23.0 | 30.0 | 11.5 | 1.50 | **A350FM-2023-11** |
| 20.0 | | 23.0 | 30.0 | 16.5 | 1.50 | **A350FM-2023-16** |
| 20.0 | | 23.0 | 30.0 | 21.5 | 1.50 | **A350FM-2023-21** |
| 25.0 | +0.020 | 28.0 | 35.0 | 11.5 | 1.50 | **A350FM-2528-11** |
| 25.0 | +0.104 | 28.0 | 35.0 | 16.5 | 1.50 | **A350FM-2528-16** |
| 25.0 | | 28.0 | 35.0 | 21.5 | 1.50 | **A350FM-2528-21** |
| 30.0 | | 34.0 | 42.0 | 16.0 | 2.00 | **A350FM-3034-16** |
| 30.0 | | 34.0 | 42.0 | 26.0 | 2.00 | **A350FM-3034-26** |
| 35.0 | | 39.0 | 47.0 | 16.0 | 2.00 | **A350FM-3539-16** |
| 35.0 | +0.025 | 39.0 | 47.0 | 26.0 | 2.00 | **A350FM-3539-26** |
| 40.0 | +0.125 | 44.0 | 52.0 | 30.0 | 2.00 | **A350FM-4044-30** |
| 40.0 | | 44.0 | 52.0 | 40.0 | 2.00 | **A350FM-4044-40** |
| 45.0 | | 50.0 | 58.0 | 50.0 | 2.00 | **A350FM-4550-50** |

[3] After press-fit. *Testing methods, page 61*




# The media and temperature specialist in the food sector

Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

**iglidur® A500**

**When to use it?**

- When FDA compliance is required
- When a high chemical resistance is required
- Abrasion-resistant
- Temperature-resistant from -100°C to +250°C

**When not to use it?**

- When the highest wear resistance is required
  ***iglidur® X6, iglidur® Z***
- When no resistance to temperature or chemicals is required
  ***iglidur® A180, iglidur® A200***
- When a cost-effective universal plain bearing is required
  ***iglidur® G, iglidur® P***

# Bearing technology | Plain bearings | iglidur® A500

Ø
4.0-50.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## The media and temperature specialist in the food sector

Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

Plain bearings made from iglidur® A500 can be exposed to extremely high temperatures and are suitable for direct contact with food (FDA-compliant).

- Compliant with Regulation (EU) No. 10/2011
- FDA-compliant
- Temperature-resistant from -100°C to +250°C
- Chemical-resistant
- Lubrication-free
- Maintenance-free

### Typical application areas

- Food industry
- Beverage technology
- Medical technology

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | ■■□□□ | + |
| Wear resistance at +90°C | – | ■■□□□ | + |
| Wear resistance at +150°C | – | ■■■□□ | + |
| Slide property | – | ■■□□□ | + |
| Wear resistance under water | – | ■■■■□ | + |
| Media resistance | – | ■■■■■ | + |
| Resistant to edge pressures | – | ■■■■□ | + |
| Resistant to shock and impact loads | – | ■■■■□ | + |
| Dirt resistance | – | ■■■□□ | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.28 | |
| Colour | | brown | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.3 | DIN 53495 |
| Max. moisture absorption | % weight | 0.5 | |
| Coefficient of friction, dynamic, against steel | μ | 0.26-0.41 | |
| pv value, max. (dry) | MPa · m/s | 0.28 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 3,600 | DIN 53457 |
| Flexural strength at +20°C | MPa | 140 | DIN 53452 |
| Compressive strength | MPa | 118 | |
| Max. permissible surface pressure (+20°C) | MPa | 120 | |
| Shore D hardness | | 83 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +250 | |
| Max. application temperature short-term | °C | +300 | |
| Min. application temperature | °C | -100 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 9 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{14}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{13}$ | DIN 53482 |

Table 01: Material properties

-100°C up to +250°C

120MPa

Plain bearings made from iglidur® A500 can be used at high temperatures and are permitted for use in direct contact with food (FDA-compliant). They exhibit an exceptionally good chemical resistance and are suitable for heavy-duty use in and around machinery for the food industry. Though iglidur® A500 is a soft material, it possesses an excellent compressive strength even at high temperatures.

### Moisture absorption

The moisture absorption of iglidur® A500 plain bearings is only 0.5% weight after saturation in water.

### Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

### Radiation resistance

Plain bearings made from iglidur® A500 are resistant up to a radiation intensity of $2 \cdot 10^5$ Gy.

### Resistance to weathering

iglidur® A500 plain bearings are resistant to weathering. The material properties are significantly affected. Discolouration occurs. Practical tests under real application conditions are strongly recommended.

### Mechanical properties

When temperatures increase, the compressive strength of iglidur® A500 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 02 shows the maximum recommended surface pressure of the bearing as a function of the temperature. The combination of high stability and high flexibility acts very positively during vibrations and edge loads. As the wear of the plain bearing rapidly escalates from pressures of 10 to 20MPa, we recommend a particularly accurate testing of the application above these limits.
*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® A500

### Permissible surface speeds

iglidur® A500 also permits high surface speeds due to its high temperature resistance. The coefficient of friction rises however by these high speeds leading to a higher heating up of the bearing. Tests show that plain bearings made from iglidur® A500 are more wear-resistant in the case of pivoting movements, and the permissible pv values are also higher in pivoting applications.

***Surface speed, page 48***

### Temperature

iglidur® A500 plain bearings can be used at temperatures up to +300°C for short periods. When temperatures increase, the compressive strength of iglidur® A500 plain bearings decreases. Diagram 02 shows this inverse relationship. The temperatures prevailing in the bearing system also have an influence on the wear. For temperatures over +130°C an additional securing is required.

***Application temperatures, page 53***
***Additional securing, page 53***

### Friction and wear

The coefficient of friction is dependent on the load that acts on the bearing (diagrams 04 and 05).

***Coefficient of friction and surfaces, page 51***
***Wear resistance, page 54***

### Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® A500. The combination "iglidur® A500/hard-chromed shaft" clearly stands out in rotating application. Up to about 2.0MPa, the wear of this combination remains largely independent of load. In pivoting applications with Cf53 shafts, the wear resistance is better than in rotations under equal load. If the shaft material you plan on using is not shown in these test results, please contact us.

***Shaft materials, page 56***

### Installation tolerances

iglidur® A500 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

***Testing methods, page 61***

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | + |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | + |
| Strong alkalines | + |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

***Chemical table, page 1170***

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 0.6 | 0.4 | 1.0 |
| Short-term | **m/s** | 1.0 | 0.7 | 2.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.26-0.41 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | F10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.006 | +0.046 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.010 | +0.058 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.013 | +0.071 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.016 | +0.086 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.020 | +0.104 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.025 | +0.125 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.030 | +0.150 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | -0.036 | +0.176 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.043 | +0.203 | +0.000 | +0.100 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

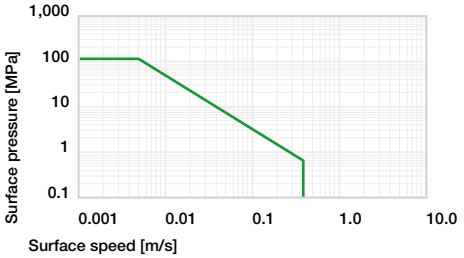



Diagram 01: Permissible pv values for iglidur® A500 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

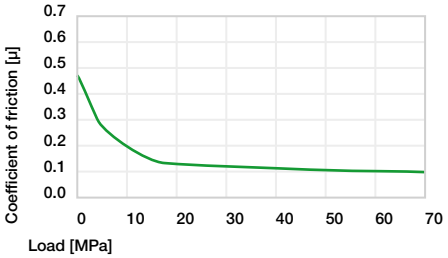



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

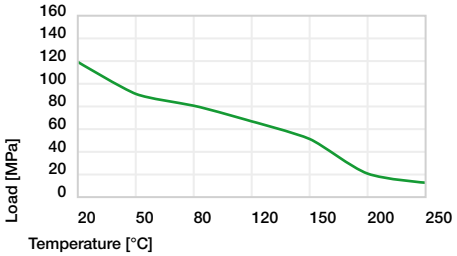



Diagram 02: Maximum recommended surface pressure as a function of temperature (120MPa at +20°C)

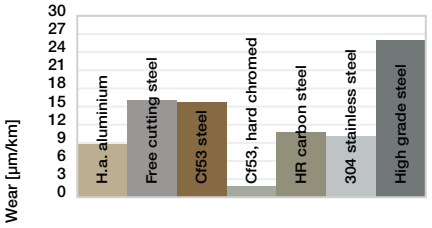



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

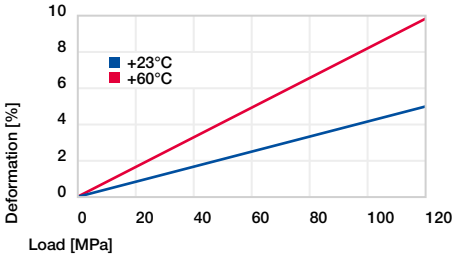



Diagram 03: Deformation under pressure and temperature

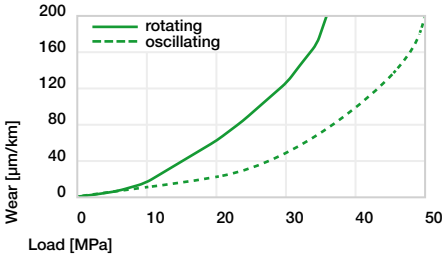



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

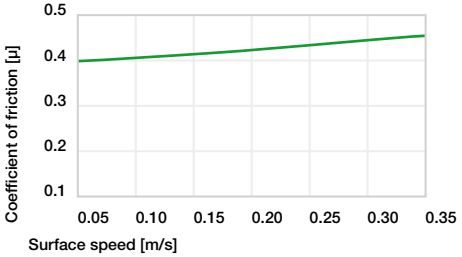
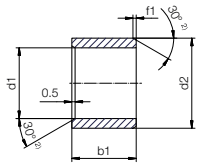



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

# Bearing technology | Plain bearings | iglidur® A500

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

Order example: A500SM-0405-04 – no minimum order quantity.
A500 iglidur® material S Cylindrical M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 4.0 | +0.010 +0.058 | 5.5 | 4.0 | **A500SM-0405-04** |
| 4.0 | | 5.5 | 6.0 | **A500SM-0405-06** |
| 5.0 | | 7.0 | 5.0 | **A500SM-0507-05** |
| 5.0 | | 7.0 | 10.0 | **A500SM-0507-10** |
| 6.0 | | 8.0 | 6.0 | **A500SM-0608-06** |
| 6.0 | | 8.0 | 8.0 | **A500SM-0608-08** |
| 6.0 | | 8.0 | 10.0 | **A500SM-0608-10** |
| 8.0 | +0.013 +0.071 | 10.0 | 6.0 | **A500SM-0810-06** |
| 8.0 | | 10.0 | 8.0 | **A500SM-0810-08** |
| 8.0 | | 10.0 | 10.0 | **A500SM-0810-10** |
| 8.0 | | 10.0 | 12.0 | **A500SM-0810-12** |
| 10.0 | | 12.0 | 8.0 | **A500SM-1012-08** |
| 10.0 | | 12.0 | 10.0 | **A500SM-1012-10** |
| 10.0 | | 12.0 | 12.0 | **A500SM-1012-12** |
| 10.0 | | 12.0 | 15.0 | **A500SM-1012-15** |
| 10.0 | | 12.0 | 20.0 | **A500SM-1012-20** |
| 12.0 | +0.016 +0.086 | 14.0 | 10.0 | **A500SM-1214-10** |
| 12.0 | | 14.0 | 12.0 | **A500SM-1214-12** |
| 12.0 | | 14.0 | 15.0 | **A500SM-1214-15** |
| 12.0 | | 14.0 | 20.0 | **A500SM-1214-20** |
| 12.0 | | 15.0 | 15.0 | **A500SM-1215-15** |
| 13.0 | | 15.0 | 10.0 | **A500SM-1315-10** |
| 13.0 | | 15.0 | 20.0 | **A500SM-1315-20** |
| 14.0 | | 16.0 | 15.0 | **A500SM-1416-15** |
| 14.0 | | 16.0 | 16.0 | **A500SM-1416-16** |
| 14.0 | | 16.0 | 20.0 | **A500SM-1416-20** |
| 14.0 | | 16.0 | 25.0 | **A500SM-1416-25** |
| 15.0 | | 17.0 | 15.0 | **A500SM-1517-15** |
| 15.0 | | 17.0 | 20.0 | **A500SM-1517-20** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 15.0 | +0.016 +0.086 | 17.0 | 25.0 | **A500SM-1517-25** |
| 16.0 | | 18.0 | 15.0 | **A500SM-1618-15** |
| 16.0 | | 18.0 | 20.0 | **A500SM-1618-20** |
| 16.0 | | 18.0 | 25.0 | **A500SM-1618-25** |
| 18.0 | | 20.0 | 15.0 | **A500SM-1820-15** |
| 18.0 | | 20.0 | 20.0 | **A500SM-1820-20** |
| 18.0 | | 20.0 | 25.0 | **A500SM-1820-25** |
| 20.0 | +0.020 +0.104 | 23.0 | 10.0 | **A500SM-2023-10** |
| 20.0 | | 23.0 | 15.0 | **A500SM-2023-15** |
| 20.0 | | 23.0 | 20.0 | **A500SM-2023-20** |
| 20.0 | | 23.0 | 25.0 | **A500SM-2023-25** |
| 20.0 | | 23.0 | 30.0 | **A500SM-2023-30** |
| 22.0 | | 25.0 | 15.0 | **A500SM-2225-15** |
| 22.0 | | 25.0 | 20.0 | **A500SM-2225-20** |
| 22.0 | | 25.0 | 25.0 | **A500SM-2225-25** |
| 22.0 | | 25.0 | 30.0 | **A500SM-2225-30** |
| 24.0 | | 27.0 | 15.0 | **A500SM-2427-15** |
| 24.0 | | 27.0 | 20.0 | **A500SM-2427-20** |
| 24.0 | | 27.0 | 25.0 | **A500SM-2427-25** |
| 24.0 | | 27.0 | 30.0 | **A500SM-2427-30** |
| 25.0 | | 28.0 | 15.0 | **A500SM-2528-15** |
| 25.0 | | 28.0 | 20.0 | **A500SM-2528-20** |
| 25.0 | | 28.0 | 25.0 | **A500SM-2528-25** |
| 25.0 | | 28.0 | 30.0 | **A500SM-2528-30** |
| 28.0 | | 32.0 | 20.0 | **A500SM-2832-20** |
| 28.0 | | 32.0 | 25.0 | **A500SM-2832-25** |
| 28.0 | | 32.0 | 30.0 | **A500SM-2832-30** |
| 30.0 | | 34.0 | 20.0 | **A500SM-3034-20** |
| 30.0 | | 34.0 | 25.0 | **A500SM-3034-25** |

[3] After press-fit. *Testing methods, page 61*



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iglidur® A500
+250°C
120MPa

# Product range

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 30.0 | +0.020 +0.104 | 34.0 | 30.0 | **A500SM-3034-30** |
| 30.0 | | 34.0 | 40.0 | **A500SM-3034-40** |
| 32.0 | +0.025 +0.125 | 36.0 | 20.0 | **A500SM-3236-20** |
| 32.0 | | 36.0 | 30.0 | **A500SM-3236-30** |
| 32.0 | | 36.0 | 40.0 | **A500SM-3236-40** |
| 35.0 | | 39.0 | 20.0 | **A500SM-3539-20** |
| 35.0 | | 39.0 | 30.0 | **A500SM-3539-30** |
| 35.0 | | 39.0 | 40.0 | **A500SM-3539-40** |
| 35.0 | | 39.0 | 50.0 | **A500SM-3539-50** |
| 40.0 | | 44.0 | 20.0 | **A500SM-4044-20** |
| 40.0 | | 44.0 | 30.0 | **A500SM-4044-30** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 40.0 | +0.025 +0.125 | 44.0 | 40.0 | **A500SM-4044-40** |
| 40.0 | | 44.0 | 50.0 | **A500SM-4044-50** |
| 45.0 | | 50.0 | 20.0 | **A500SM-4550-20** |
| 45.0 | | 50.0 | 30.0 | **A500SM-4550-30** |
| 45.0 | | 50.0 | 40.0 | **A500SM-4550-40** |
| 45.0 | | 50.0 | 50.0 | **A500SM-4550-50** |
| 50.0 | | 55.0 | 20.0 | **A500SM-5055-20** |
| 50.0 | | 55.0 | 30.0 | **A500SM-5055-30** |
| 50.0 | | 55.0 | 40.0 | **A500SM-5055-40** |
| 50.0 | | 55.0 | 50.0 | **A500SM-5055-50** |
| 50.0 | | 55.0 | 60.0 | **A500SM-5055-60** |

[3] After press-fit. *Testing methods, page 61*

**Available from stock**
Detailed information about delivery time online.
www.igus.eu/24

**Order online**
including delivery times, prices, online tools
www.igus.eu/A500

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**

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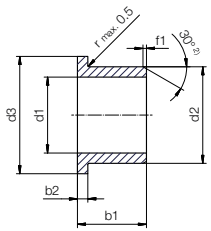
# Bearing technology | Plain bearings | iglidur® A500

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

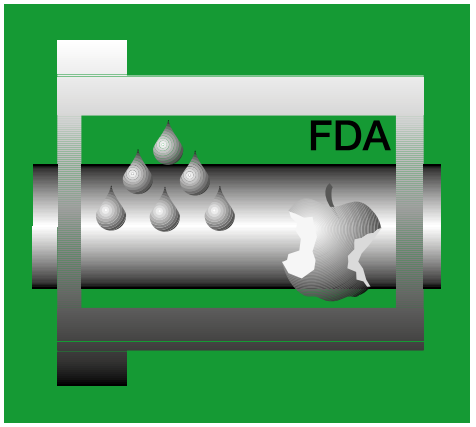
Dimensions according to ISO 3547-1 and special dimensions

Order example: A500FM-0405-04 – no minimum order quantity.
A500 iglidur® material F With flange M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 4.0 | +0.010 +0.058 | 5.5 | 9.5 | 4.0 | 0.75 | **A500FM-0405-04** |
| 4.0 | | 8.0 | 12.0 | 6.0 | 2.00 | **A500FM-0408-06** |
| 6.0 | | 8.0 | 12.0 | 4.0 | 1.00 | **A500FM-0608-04** |
| 6.0 | | 8.0 | 12.0 | 6.0 | 1.00 | **A500FM-0608-06** |
| 6.0 | | 8.0 | 12.0 | 8.0 | 1.00 | **A500FM-0608-08** |
| 8.0 | +0.013 +0.071 | 10.0 | 15.0 | 5.5 | 1.00 | **A500FM-0810-05** |
| 8.0 | | 10.0 | 15.0 | 7.5 | 1.00 | **A500FM-0810-07** |
| 8.0 | | 10.0 | 15.0 | 9.5 | 1.00 | **A500FM-0810-09** |
| 8.0 | | 10.0 | 15.0 | 10.0 | 1.00 | **A500FM-0810-10** |
| 10.0 | | 12.0 | 18.0 | 7.0 | 1.00 | **A500FM-1012-07** |
| 10.0 | | 12.0 | 18.0 | 9.0 | 1.00 | **A500FM-1012-09** |
| 10.0 | | 12.0 | 18.0 | 12.0 | 1.00 | **A500FM-1012-12** |
| 10.0 | | 12.0 | 18.0 | 15.0 | 1.00 | **A500FM-1012-15** |
| 10.0 | | 12.0 | 18.0 | 17.0 | 1.00 | **A500FM-1012-17** |
| 12.0 | +0.016 +0.086 | 14.0 | 20.0 | 7.0 | 1.00 | **A500FM-1214-07** |
| 12.0 | | 14.0 | 20.0 | 9.0 | 1.00 | **A500FM-1214-09** |
| 12.0 | | 14.0 | 20.0 | 12.0 | 1.00 | **A500FM-1214-12** |
| 12.0 | | 14.0 | 20.0 | 13.0 | 1.00 | **A500FM-1214-13** |
| 12.0 | | 14.0 | 20.0 | 15.0 | 1.00 | **A500FM-1214-15** |
| 12.0 | | 14.0 | 20.0 | 17.0 | 1.00 | **A500FM-1214-17** |
| 14.0 | | 16.0 | 22.0 | 12.0 | 1.00 | **A500FM-1416-12** |
| 14.0 | | 16.0 | 22.0 | 17.0 | 1.00 | **A500FM-1416-17** |
| 15.0 | | 17.0 | 23.0 | 9.0 | 1.00 | **A500FM-1517-09** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 15.0 | +0.016 +0.086 | 17.0 | 23.0 | 12.0 | 1.00 | **A500FM-1517-12** |
| 15.0 | | 17.0 | 23.0 | 17.0 | 1.00 | **A500FM-1517-17** |
| 16.0 | | 18.0 | 24.0 | 12.0 | 1.00 | **A500FM-1618-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **A500FM-1618-17** |
| 18.0 | | 20.0 | 26.0 | 12.0 | 1.00 | **A500FM-1820-12** |
| 18.0 | | 20.0 | 26.0 | 17.0 | 1.00 | **A500FM-1820-17** |
| 18.0 | | 20.0 | 26.0 | 22.0 | 1.00 | **A500FM-1820-22** |
| 20.0 | +0.020 +0.104 | 23.0 | 30.0 | 11.5 | 1.50 | **A500FM-2023-11** |
| 20.0 | | 23.0 | 30.0 | 16.5 | 1.50 | **A500FM-2023-16** |
| 20.0 | | 23.0 | 30.0 | 21.5 | 1.50 | **A500FM-2023-21** |
| 25.0 | | 28.0 | 35.0 | 11.5 | 1.50 | **A500FM-2528-11** |
| 25.0 | | 28.0 | 35.0 | 16.5 | 1.50 | **A500FM-2528-16** |
| 25.0 | | 28.0 | 35.0 | 21.5 | 1.50 | **A500FM-2528-21** |
| 30.0 | | 34.0 | 42.0 | 16.0 | 2.00 | **A500FM-3034-16** |
| 30.0 | | 34.0 | 42.0 | 26.0 | 2.00 | **A500FM-3034-26** |
| 30.0 | | 34.0 | 42.0 | 40.0 | 2.00 | **A500FM-3034-40** |
| 35.0 | +0.025 +0.125 | 39.0 | 47.0 | 16.0 | 2.00 | **A500FM-3539-16** |
| 35.0 | | 39.0 | 47.0 | 26.0 | 2.00 | **A500FM-3539-26** |
| 35.0 | | 39.0 | 47.0 | 40.0 | 2.00 | **A500FM-3539-40** |
| 40.0 | | 44.0 | 52.0 | 30.0 | 2.00 | **A500FM-4044-30** |
| 40.0 | | 44.0 | 52.0 | 40.0 | 2.00 | **A500FM-4044-40** |
| 45.0 | | 50.0 | 58.0 | 50.0 | 2.00 | **A500FM-4550-50** |

[3] After press-fit. *Testing methods, page 61*




# The all-rounder for food
## FDA-compliant
## iglidur® A180

**When to use it?**
- When the bearings have direct contact with food
- When FDA compliance is required
- When a low noise level is required
- When low moisture absorption is fundamental

**When not to use it?**
- When the maximum wear resistance is necessary
  ***iglidur® J***
- When temperatures are continuously higher than +80°C
  ***iglidur® A350, iglidur® A500***
- When a cost-effective universal plain bearing is required
  ***iglidur® G, iglidur® P***


EN 09/2023

# Bearing technology | Plain bearings | iglidur® A180

Ø
6.0-30.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## The all-rounder for food
## FDA-compliant

FDA-compliant material for applications with low to medium loads in immediate environments of (or contact with) food or drugs, as well as humidity.

- FDA-compliant
- Compliant with Regulation (EU) No. 10/2011
- High media resistance
- Suitable for wet environments
- High wear resistance
- Lubrication-free
- Maintenance-free

### Typical application areas

- Food industry
- Beverage technology
- Medical technology

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | ■■■□□ | + |
| Wear resistance at +90°C | – | ■□□□□ | + |
| Wear resistance at +150°C | – | ■□□□□ | + |
| Slide property | – | ■■■□□ | + |
| Wear resistance under water | – | ■■□□□ | + |
| Media resistance | – | ■■■■□ | + |
| Resistant to edge pressures | – | ■■■■□ | + |
| Resistant to shock and impact loads | – | ■■■■□ | + |
| Dirt resistance | – | ■■■■□ | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.46 | |
| Colour | | white | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.2 | DIN 53495 |
| Max. moisture absorption | % weight | 1.3 | |
| Coefficient of friction, dynamic, against steel | μ | 0.05-0.23 | |
| pv value, max. (dry) | MPa · m/s | 0.31 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,300 | DIN 53457 |
| Flexural strength at +20°C | MPa | 88 | DIN 53452 |
| Compressive strength | MPa | 78 | |
| Max. permissible surface pressure (+20°C) | MPa | 28 | |
| Shore D hardness | | 76 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +90 | |
| Max. application temperature short-term | °C | +110 | |
| Min. application temperature | °C | -50 | |
| Thermal conductivity | W/m · K | 0.25 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 11 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{11}$ | DIN 53482 |

Table 01: Material properties

-50°C up to +90°C

28MPa

Plain bearings made from iglidur® A180 are suitable for application in direct contact with food. They are the ideal solution for bearing points on machines for the food and packaging industry, medical equipment manufacturing, small household appliances, etc. Even where wet cleaning contact occurs, the iglidur® A180 is characterised by the lowest moisture absorption.

### Moisture absorption

The moisture absorption of iglidur® A180 plain bearings is approximately 0.2 % weight in standard climatic conditions. The saturation limit submerged in water is 1.3% weight. This must be taken into account for these types of applications.

### Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® A180 bearings.

### Radiation resistance

Plain bearings made from iglidur® A180 are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® A180 plain bearings are resistant to weathering. The material properties are significantly affected. Severe discolouration occurs. Applications with this material under weathering conditions are not recommended.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® A180 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® A180 at radial loads. At the maximum recommended surface pressure of 28MPa, the deformation is less than 2.5%. A plastic deformation can be negligible up to this value. However, it is also dependent on the service time.
***Surface pressure, page 45***

# Bearing technology | Plain bearings | iglidur® A180

### Permissible surface speeds

iglidur® A180 was developed for low surface speeds. The given values in table 03 indicate the limits at which an increase up to the continuous permissible temperature occurs. This increase is a result of friction. In practice, though, this level is rarely reached due to varying application conditions.

*Surface speed, page 48*

### Temperature

The iglidur® A180 plain bearings can be used at temperatures up to +110°C for short periods. With increasing temperatures, the compressive strength of iglidur® A180 plain bearings decreases. Diagram 02 shows this inverse relationship. The temperatures prevailing in the bearing system also have an influence on the wear. For temperatures over +60°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagram 04 and 05). The coefficient of friction decreases with increasing load.

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

Diagram 06 shows a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® A180. The combination "iglidur® A180 against hard-anodised aluminium shaft" clearly stands out. It attains good to excellent wear rates also with other shafts. With Cf53 shafts, the higher wear in pivoting applications is exemplary compared to rotating applications (diagram 07).

*Shaft materials, page 56*

### Installation tolerances

iglidur® A180 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | 0 up to – |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | – |
| Strong alkalines | + up to 0 |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | m/s | 0.8 | 0.6 | 3.5 |
| Short-term | m/s | 1.2 | 1.0 | 5.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.05-0.23 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | E10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.014 | +0.054 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.020 | +0.068 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.025 | +0.083 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.032 | +0.102 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.040 | +0.124 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.050 | +0.150 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.060 | +0.180 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.072 | +0.212 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.085 | +0.245 | -0.100 | +0.000 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

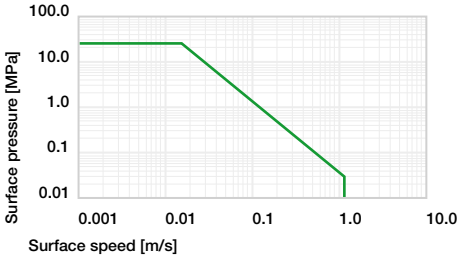



Diagram 01: Permissible pv values for iglidur® A180 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

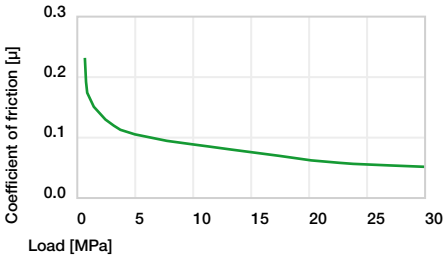



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

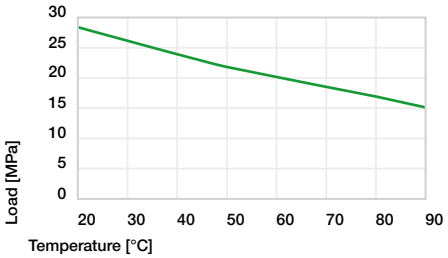



Diagram 02: Maximum recommended surface pressure as a function of temperature (28MPa at +20°C)

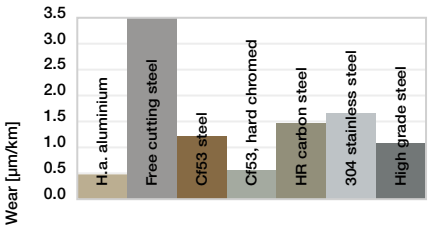



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

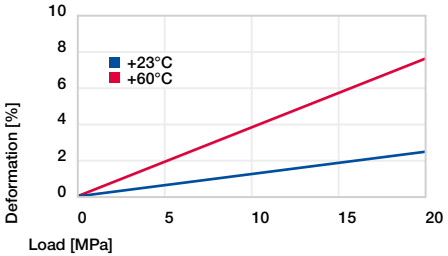



Diagram 03: Deformation under pressure and temperature

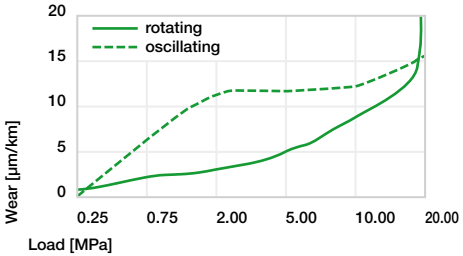



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

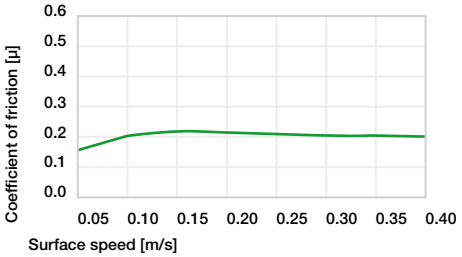
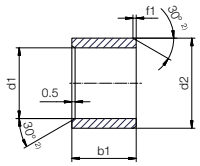



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

# Bearing technology | Plain bearings | iglidur® A180

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 6-12 | Ø 12-30 |
|---|---|---|
| f1 [mm] | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** A180SM-0608-10 – no minimum order quantity.
A180 iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 10 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 10.0 | **A180SM-0608-10** |
| 8.0 | +0.025 +0.083 | 10.0 | 10.0 | **A180SM-0810-10** |
| 10.0 | | 12.0 | 10.0 | **A180SM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 15.0 | **A180SM-1214-15** |
| 16.0 | | 18.0 | 15.0 | **A180SM-1618-15** |
| 20.0 | +0.040 +0.124 | 23.0 | 20.0 | **A180SM-2023-20** |
| 25.0 | | 28.0 | 30.0 | **A180SM-2528-30** |
| 30.0 | | 34.0 | 20.0 | **A180SM-3034-20** |

[3] After press-fit. *Testing methods, page 61*

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**Order online**
including delivery times, prices, online tools
www.igus.eu/A180

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

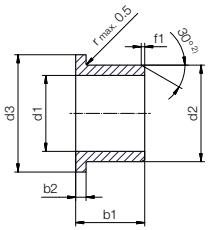
**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**



iglidur® A180
+90°C
28MPa

# Bearing technology | Plain bearings | iglidur® A180

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 |
|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** A180FM-0608-06 – no minimum order quantity.
A180 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 12.0 | 6.0 | 1.00 | **A180FM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 15.0 | 10.0 | 1.00 | **A180FM-0810-10** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **A180FM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 20.0 | 15.0 | 1.00 | **A180FM-1214-15** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **A180FM-1618-17** |
| 20.0 | +0.040 +0.124 | 23.0 | 30.0 | 21.5 | 1.50 | **A180FM-2023-21** |
| 25.0 | | 28.0 | 35.0 | 21.5 | 1.50 | **A180FM-2528-21** |
| 30.0 | | 34.0 | 42.0 | 26.0 | 2.00 | **A180FM-3034-26** |

[3] After press-fit. *Testing methods, page 61*

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including delivery times, prices, online tools
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**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**

# The "food-classic" for low duty

## FDA-compliant

## iglidur® A200

**When to use it?**

- Suitable for contact with food
- When a low noise level is required
- When dirt needs to become embedded
- When FDA compliance is required

**When not to use it?**

- When the maximum wear resistance is necessary
  ***iglidur® W300***
- When temperatures are continuously higher than +80°C
  ***iglidur® A350, iglidur® A500***
- When a cost-effective universal plain bearing is required
  ***iglidur® G***
- For operations in wet environments
  ***iglidur® A180***



EN 09/2023

# Bearing technology | Plain bearings | iglidur® A200

Ø
1.0-32.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## The "food-classic" for low duty
## FDA-compliant

FDA-compliant material for applications with low to medium loads in immediate environs of (or contact) with food or drugs.

- FDA-compliant
- Suitable for contact with food
- Suitable for low surface speeds
- Lubrication-free
- Standard range from stock
- Maintenance-free
- Thrust washers available only in imperial sizes, from page 1147

### Typical application areas

- Food industry

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | ■■□□□ | + |
| Wear resistance at +90°C | – | ■□□□□ | + |
| Wear resistance at +150°C | – | ■□□□□ | + |
| Slide property | – | ■■□□□ | + |
| Wear resistance under water | – | ■□□□□ | + |
| Media resistance | – | ■■□□□ | + |
| Resistant to edge pressures | – | ■■■■■ | + |
| Resistant to shock and impact loads | – | ■■■■□ | + |
| Dirt resistance | – | ■■■■□ | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.14 | |
| Colour | | white | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 1.5 | DIN 53495 |
| Max. moisture absorption | % weight | 7.6 | |
| Coefficient of friction, dynamic, against steel | μ | 0.10-0.40 | |
| pv value, max. (dry) | MPa · m/s | 0.09 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,500 | DIN 53457 |
| Flexural strength at +20°C | MPa | 116 | DIN 53452 |
| Compressive strength | MPa | 54 | |
| Max. permissible surface pressure (+20°C) | MPa | 18 | |
| Shore D hardness | | 81 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +80 | |
| Max. application temperature short-term | °C | +170 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 10 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{13}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{12}$ | DIN 53482 |

Table 01: Material properties

-40 °C up to +80 °C

18MPa

V-2

FOOD

RoHS-II

ISO 2795

Plain bearings made from iglidur® A200 are suitable for application in direct contact with food. Hence they are the ideal solution for bearing requirements in machines for the food industry, medical equipment manufacturing, for small equipment for households, etc. As the incorporation of solid lubricants is dispensed with in favour of food compatibility, the thermoplastic composition of iglidur® A200 is especially adjusted for abrasion resistance. In addition the iglidur® A200 is characterised by its capacity to embed dirt and by its quiet operating behaviour. The good wear properties, dirt resistance and the possibility for dry operation allow to replace elaborately sealed, lubricated bearings for little costs.

### Moisture absorption

The humidity absorption of iglidur® A200 bearings amounts to about 1.5% weight in standard climatic conditions. The saturation limit submerged in water is 7.6% weight. This must be taken into account for these types of applications.

### Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

### Radiation resistance

Plain bearings made from iglidur® A200 are resistant up to a radiation intensity of $1 \cdot 10^4$ Gy.

### Resistance to weathering

iglidur® A200 plain bearings are resistant to weathering. The material properties are significantly affected. Severe discolouration occurs. Applications with this material under weathering conditions are not recommended.

### Mechanical properties

When temperatures increase, the compressive strength of iglidur® A200 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® A200 under different loads. At the maximum recommended surface pressure of 18MPa, the deformation is less than 2%. A plastic deformation can be negligible up to this value. However, it is also dependent on the service time.
***Surface pressure, page 45***

# Bearing technology | Plain bearings | iglidur® A200

### Permissible surface speeds

iglidur® A2000 was developed for low surface speeds. The given values in table 03 indicate the limits at which an increase up to the continuous permissible temperature occurs. This increase is a result of friction. In practice, though, this level is rarely reached due to varying application conditions.

*Surface speed, page 48*

### Temperature

iglidur® A200 plain bearings can be used at temperatures up to +170°C for short periods. The temperatures prevailing in the bearing system also have an influence on the wear. For temperatures over +50°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05).

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® A200. In pivoting applications below a load of 2MPa, the wear of iglidur® A200 plain bearings is higher than in rotating applications with equal load. Here the HR carbon steel shaft is a positive exception.

*Shaft materials, page 56*

### Installation tolerances

iglidur® A200 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the D11 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

| Chemicals | Resistance |
|---|---|
| Alcohols | + up to 0 |
| Diluted acids | 0 up to – |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | – |
| Strong alkalines | 0 |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 0.8 | 0.6 | 2.0 |
| Short-term | **m/s** | 1.5 | 1.1 | 3.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.10-0.40 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | D11 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.020 | +0.080 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.030 | +0.105 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.040 | +0.130 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.050 | +0.160 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.065 | +0.195 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.080 | +0.240 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.100 | +0.290 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.120 | +0.340 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.145 | +0.395 | -0.100 | +0.000 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit



EN 09/2023

iglidur® A200
+80°C
18MPa

# Technical data

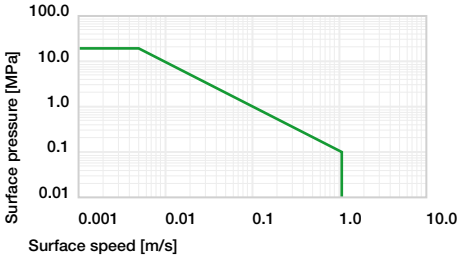


Diagram 01: Permissible pv values for iglidur® A200 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

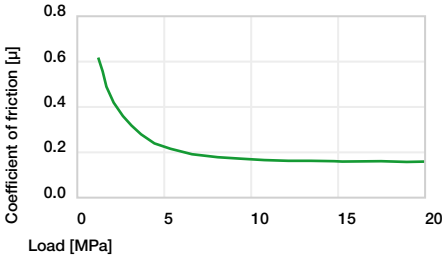


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

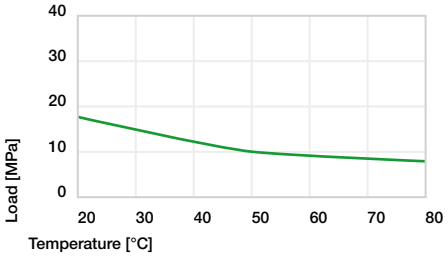


Diagram 02: Maximum recommended surface pressure as a function of temperature (18MPa at +20°C)

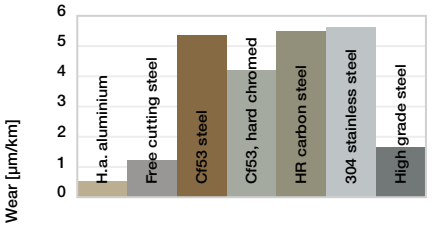


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

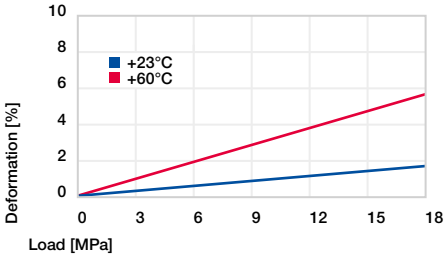


Diagram 03: Deformation under pressure and temperature

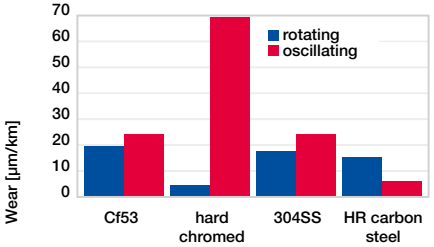


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

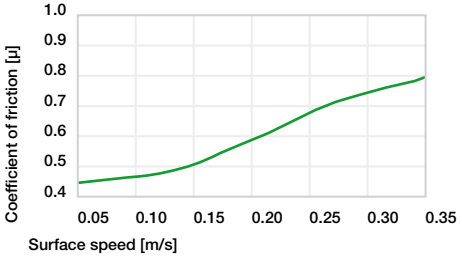


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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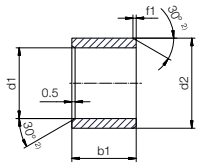
# Bearing technology | Plain bearings | iglidur® A200

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 2795 and special dimensions

Order example: ASM-0103-02 – no minimum order quantity.
A200 iglidur® material S Cylindrical M Metric 01 Inner Ø d1 03 Outer Ø d2 02 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 1.0 | +0.020 +0.080 | 3.0 | 2.0 | ASM-0103-02 |
| 1.5 | | 4.0 | 2.0 | ASM-0104-02 |
| 2.0 | | 5.0 | 2.0 | ASM-0205-02 |
| 2.0 | | 5.0 | 3.0 | ASM-0205-03 |
| 2.5 | | 6.0 | 3.0 | ASM-0206-03 |
| 3.0 | | 5.0 | 3.0 | ASM-0305-03 |
| 3.0 | | 5.0 | 4.0 | ASM-0305-04 |
| 3.0 | | 6.0 | 3.0 | ASM-0306-03 |
| 3.0 | | 6.0 | 4.0 | ASM-0306-04 |
| 4.0 | +0.030 +0.105 | 7.0 | 3.0 | ASM-0407-03 |
| 4.0 | | 7.0 | 4.0 | ASM-0407-04 |
| 4.0 | | 7.0 | 6.0 | ASM-0407-06 |
| 4.0 | | 8.0 | 6.0 | ASM-0408-06 |
| 5.0 | | 8.0 | 4.0 | ASM-0508-04 |
| 5.0 | | 8.0 | 5.0 | ASM-0508-05 |
| 5.0 | | 8.0 | 8.0 | ASM-0508-08 |
| 5.0 | | 9.0 | 5.0 | ASM-0509-05 |
| 5.0 | | 9.0 | 8.0 | ASM-0509-08 |
| 6.0 | | 8.0 | 10.0 | ASM-0608-10 |
| 6.0 | | 9.0 | 6.0 | ASM-0609-06 |
| 6.0 | | 10.0 | 4.0 | ASM-0610-04 |
| 6.0 | | 10.0 | 6.0 | ASM-0610-06 |
| 6.0 | | 10.0 | 10.0 | ASM-0610-10 |
| 6.0 | | 12.0 | 6.0 | ASM-0612-06 |
| 6.0 | | 12.0 | 10.0 | ASM-0612-10 |
| 7.0 | +0.040 +0.130 | 10.0 | 5.0 | ASM-0710-05 |
| 7.0 | | 10.0 | 8.0 | ASM-0710-08 |
| 8.0 | | 10.0 | 6.0 | ASM-0810-06 |
| 8.0 | | 10.0 | 8.0 | ASM-0810-08 |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 8.0 | +0.040 +0.130 | 10.0 | 10.0 | ASM-0810-10 |
| 8.0 | | 11.0 | 8.0 | ASM-0811-08 |
| 8.0 | | 11.0 | 12.0 | ASM-0811-12 |
| 8.0 | | 12.0 | 6.0 | ASM-0812-06 |
| 8.0 | | 12.0 | 8.0 | ASM-0812-08 |
| 8.0 | | 12.0 | 10.0 | ASM-0812-10 |
| 8.0 | | 12.0 | 12.0 | ASM-0812-12 |
| 8.0 | | 14.0 | 6.0 | ASM-0814-06 |
| 8.0 | | 14.0 | 10.0 | ASM-0814-10 |
| 9.0 | | 12.0 | 14.0 | ASM-0912-14 |
| 10.0 | | 12.0 | 10.0 | ASM-1012-10 |
| 10.0 | | 14.0 | 6.0 | ASM-1014-06 |
| 10.0 | | 14.0 | 8.0 | ASM-1014-08 |
| 10.0 | | 14.0 | 10.0 | ASM-1014-10 |
| 10.0 | | 14.0 | 16.0 | ASM-1014-16 |
| 10.0 | | 16.0 | 6.0 | ASM-1016-06 |
| 10.0 | | 16.0 | 10.0 | ASM-1016-10 |
| 10.0 | | 16.0 | 16.0 | ASM-1016-16 |
| 12.0 | +0.050 +0.160 | 14.0 | 20.0 | ASM-1214-20 |
| 12.0 | | 16.0 | 15.0 | ASM-1216-15 |
| 12.0 | | 16.0 | 20.0 | ASM-1216-20 |
| 12.0 | | 18.0 | 8.0 | ASM-1218-08 |
| 12.0 | | 18.0 | 10.0 | ASM-1218-10 |
| 12.0 | | 18.0 | 15.0 | ASM-1218-15 |
| 12.0 | | 18.0 | 20.0 | ASM-1218-20 |
| 14.0 | | 16.0 | 10.0 | ASM-1416-10 |
| 14.0 | | 16.0 | 15.0 | ASM-1416-15 |
| 14.0 | | 16.0 | 20.0 | ASM-1416-20 |
| 14.0 | | 20.0 | 10.0 | ASM-1420-10 |

[3] After press-fit. *Testing methods, page 61*



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# Product range

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 14.0 | +0.050 +0.160 | 20.0 | 15.0 | ASM-1420-15 |
| 14.0 | | 20.0 | 20.0 | ASM-1420-20 |
| 15.0 | | 17.0 | 10.0 | ASM-1517-10 |
| 15.0 | | 17.0 | 15.0 | ASM-1517-15 |
| 15.0 | | 21.0 | 10.0 | ASM-1521-10 |
| 15.0 | | 21.0 | 15.0 | ASM-1521-15 |
| 15.0 | | 21.0 | 20.0 | ASM-1521-20 |
| 16.0 | | 18.0 | 12.0 | ASM-1618-12 |
| 16.0 | | 18.0 | 20.0 | ASM-1618-20 |
| 16.0 | | 20.0 | 20.0 | ASM-1620-20 |
| 16.0 | | 20.0 | 25.0 | ASM-1620-25 |
| 16.0 | | 22.0 | 12.0 | ASM-1622-12 |
| 16.0 | | 22.0 | 15.0 | ASM-1622-15 |
| 16.0 | | 22.0 | 16.0 | ASM-1622-16 |
| 16.0 | | 22.0 | 20.0 | ASM-1622-20 |
| 16.0 | | 22.0 | 25.0 | ASM-1622-25 |
| 18.0 | | 24.0 | 12.0 | ASM-1824-12 |
| 18.0 | | 24.0 | 20.0 | ASM-1824-20 |
| 18.0 | | 24.0 | 30.0 | ASM-1824-30 |
| 20.0 | +0.065 +0.195 | 23.0 | 15.0 | ASM-2023-15 |
| 20.0 | | 23.0 | 20.0 | ASM-2023-20 |
| 20.0 | | 25.0 | 15.0 | ASM-2025-15 |
| 20.0 | | 25.0 | 20.0 | ASM-2025-20 |
| 20.0 | | 25.0 | 30.0 | ASM-2025-30 |
| 20.0 | | 26.0 | 15.0 | ASM-2026-15 |
| 20.0 | | 26.0 | 20.0 | ASM-2026-20 |
| 20.0 | | 26.0 | 30.0 | ASM-2026-30 |
| 22.0 | | 26.0 | 15.0 | ASM-2226-15 |
| 22.0 | | 28.0 | 10.0 | ASM-2228-10 |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 22.0 | +0.065 +0.195 | 28.0 | 15.0 | ASM-2228-15 |
| 22.0 | | 28.0 | 20.0 | ASM-2228-20 |
| 22.0 | | 28.0 | 30.0 | ASM-2228-30 |
| 24.0 | | 30.0 | 15.0 | ASM-2430-15 |
| 24.0 | | 30.0 | 20.0 | ASM-2430-20 |
| 24.0 | | 30.0 | 30.0 | ASM-2430-30 |
| 25.0 | | 28.0 | 12.0 | ASM-2528-12 |
| 25.0 | | 28.0 | 20.0 | ASM-2528-20 |
| 25.0 | | 30.0 | 20.0 | ASM-2530-20 |
| 25.0 | | 30.0 | 30.0 | ASM-2530-30 |
| 25.0 | | 30.0 | 40.0 | ASM-2530-40 |
| 25.0 | | 32.0 | 20.0 | ASM-2532-20 |
| 25.0 | | 32.0 | 30.0 | ASM-2532-30 |
| 25.0 | | 32.0 | 40.0 | ASM-2532-40 |
| 26.0 | | 30.0 | 20.0 | ASM-2630-20 |
| 26.0 | | 32.0 | 30.0 | ASM-2632-30 |
| 27.0 | | 34.0 | 20.0 | ASM-2734-20 |
| 27.0 | | 34.0 | 30.0 | ASM-2734-30 |
| 27.0 | | 34.0 | 40.0 | ASM-2734-40 |
| 28.0 | | 33.0 | 20.0 | ASM-2833-20 |
| 28.0 | | 36.0 | 20.0 | ASM-2836-20 |
| 28.0 | | 36.0 | 30.0 | ASM-2836-30 |
| 28.0 | | 36.0 | 40.0 | ASM-2836-40 |
| 30.0 | | 38.0 | 20.0 | ASM-3038-20 |
| 30.0 | | 38.0 | 30.0 | ASM-3038-30 |
| 30.0 | | 38.0 | 40.0 | ASM-3038-40 |
| 32.0 | +0.080 +0.240 | 40.0 | 20.0 | ASM-3240-20 |
| 32.0 | | 40.0 | 30.0 | ASM-3240-30 |
| 32.0 | | 40.0 | 40.0 | ASM-3240-40 |

[3] After press-fit. *Testing methods, page 61*

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|---|---|---|
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| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

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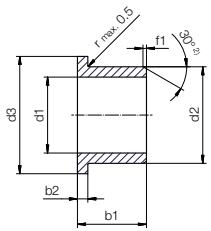
# Bearing technology | Plain bearings | iglidur® A200

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

**Chamfer in relation to d1**

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 2795 and special dimensions

**Order example: AFM-0103-02 – no minimum order quantity.**
A200 iglidur® material F With flange M Metric 01 Inner Ø d1 03 Outer Ø d2 02 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 1.0 | +0.020 +0.080 | 3.0 | 5.0 | 2.0 | 1.00 | **AFM-0103-02** |
| 1.5 | | 4.0 | 6.0 | 2.0 | 1.00 | **AFM-0104-02** |
| 2.0 | | 5.0 | 8.0 | 3.0 | 1.50 | **AFM-0205-03** |
| 2.5 | | 6.0 | 9.0 | 3.0 | 1.50 | **AFM-0206-03** |
| 3.0 | | 6.0 | 9.0 | 4.0 | 1.50 | **AFM-0306-04** |
| 4.0 | +0.030 +0.105 | 8.0 | 12.0 | 4.0 | 2.00 | **AFM-0408-04** |
| 4.0 | | 8.0 | 12.0 | 6.0 | 2.00 | **AFM-0408-06** |
| 5.0 | | 7.0 | 11.0 | 5.0 | 1.00 | **AFM-0507-05** |
| 5.0 | | 9.0 | 13.0 | 5.0 | 2.00 | **AFM-0509-05** |
| 5.0 | | 9.0 | 13.0 | 6.0 | 2.00 | **AFM-0509-06** |
| 5.0 | | 9.0 | 13.0 | 8.0 | 2.00 | **AFM-0509-08** |
| 6.0 | | 10.0 | 14.0 | 4.0 | 2.00 | **AFM-0610-04** |
| 6.0 | | 10.0 | 14.0 | 6.0 | 2.00 | **AFM-0610-06** |
| 6.0 | | 10.0 | 14.0 | 10.0 | 2.00 | **AFM-0610-10** |
| 6.0 | | 12.0 | 14.0 | 6.0 | 3.00 | **AFM-0612-06** |
| 6.0 | | 12.0 | 14.0 | 10.0 | 3.00 | **AFM-0612-10** |
| 7.0 | +0.040 +0.130 | 11.0 | 15.0 | 8.0 | 2.00 | **AFM-0711-08** |
| 8.0 | | 11.0 | 13.0 | 8.0 | 2.00 | **AFM-0811-08** |
| 8.0 | | 12.0 | 16.0 | 6.0 | 2.00 | **AFM-0812-06** |
| 8.0 | | 12.0 | 16.0 | 8.0 | 2.00 | **AFM-0812-08** |
| 8.0 | | 12.0 | 16.0 | 12.0 | 2.00 | **AFM-0812-12** |
| 8.0 | | 12.0 | 16.0 | 22.0 | 2.00 | **AFM-0812-22** |
| 8.0 | | 14.0 | 18.0 | 6.0 | 3.00 | **AFM-0814-06** |
| 8.0 | | 14.0 | 18.0 | 10.0 | 3.00 | **AFM-0814-10** |
| 9.0 | | 14.0 | 19.0 | 6.0 | 2.00 | **AFM-0914-06** |
| 9.0 | | 14.0 | 19.0 | 10.0 | 2.00 | **AFM-0914-10** |
| 9.0 | | 14.0 | 19.0 | 14.0 | 2.00 | **AFM-0914-14** |
| 10.0 | | 16.0 | 22.0 | 6.0 | 3.00 | **AFM-1016-06** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 10.0 | +0.040 +0.130 | 16.0 | 22.0 | 8.0 | 3.00 | **AFM-1016-08** |
| 10.0 | | 16.0 | 22.0 | 10.0 | 3.00 | **AFM-1016-10** |
| 10.0 | | 16.0 | 20.0 | 10.0 | 3.00 | **AFM-101620-10** |
| 10.0 | | 16.0 | 22.0 | 16.0 | 3.00 | **AFM-1016-16** |
| 12.0 | +0.050 +0.160 | 14.0 | 20.0 | 12.0 | 1.00 | **AFM-1214-12** |
| 12.0 | | 18.0 | 24.0 | 8.0 | 3.00 | **AFM-1218-08** |
| 12.0 | | 18.0 | 22.0 | 10.0 | 3.00 | **AFM-1218-10** |
| 12.0 | | 18.0 | 24.0 | 12.0 | 3.00 | **AFM-1218-12** |
| 12.0 | | 18.0 | 22.0 | 15.0 | 3.00 | **AFM-1218-15** |
| 12.0 | | 18.0 | 22.0 | 20.0 | 3.00 | **AFM-1218-20** |
| 14.0 | | 20.0 | 25.0 | 10.0 | 3.00 | **AFM-1420-10** |
| 14.0 | | 20.0 | 25.0 | 15.0 | 3.00 | **AFM-1420-15** |
| 14.0 | | 20.0 | 25.0 | 20.0 | 3.00 | **AFM-1420-20** |
| 15.0 | | 21.0 | 27.0 | 10.0 | 3.00 | **AFM-1521-10** |
| 15.0 | | 21.0 | 27.0 | 15.0 | 3.00 | **AFM-1521-15** |
| 15.0 | | 21.0 | 27.0 | 20.0 | 3.00 | **AFM-1521-20** |
| 15.0 | | 21.0 | 27.0 | 25.0 | 3.00 | **AFM-1521-25** |
| 16.0 | | 22.0 | 28.0 | 12.0 | 3.00 | **AFM-1622-12** |
| 16.0 | | 22.0 | 28.0 | 15.0 | 3.00 | **AFM-1622-15** |
| 16.0 | | 22.0 | 28.0 | 20.0 | 3.00 | **AFM-1622-20** |
| 16.0 | | 22.0 | 28.0 | 25.0 | 3.00 | **AFM-1622-25** |
| 18.0 | | 24.0 | 30.0 | 12.0 | 3.00 | **AFM-1824-12** |
| 18.0 | | 24.0 | 30.0 | 18.0 | 3.00 | **AFM-1824-18** |
| 18.0 | | 24.0 | 30.0 | 20.0 | 3.00 | **AFM-1824-20** |
| 18.0 | | 24.0 | 30.0 | 30.0 | 3.00 | **AFM-1824-30** |
| 20.0 | +0.065 +0.195 | 26.0 | 32.0 | 15.0 | 3.00 | **AFM-2026-15** |
| 20.0 | | 26.0 | 32.0 | 20.0 | 3.00 | **AFM-2026-20** |
| 20.0 | | 26.0 | 32.0 | 30.0 | 3.00 | **AFM-2026-30** |

[3] After press-fit. *Testing methods, page 61*





# Product range

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 22.0 | +0.065 +0.195 | 28.0 | 34.0 | 15.0 | 3.00 | **AFM-2228-15** |
| 22.0 | | 28.0 | 34.0 | 20.0 | 3.00 | **AFM-2228-20** |
| 22.0 | | 28.0 | 34.0 | 30.0 | 3.00 | **AFM-2228-30** |
| 24.0 | | 30.0 | 36.0 | 15.0 | 3.00 | **AFM-2430-15** |
| 24.0 | | 30.0 | 36.0 | 20.0 | 3.00 | **AFM-2430-20** |
| 24.0 | | 30.0 | 36.0 | 30.0 | 3.00 | **AFM-2430-30** |
| 25.0 | | 32.0 | 38.0 | 20.0 | 4.00 | **AFM-2532-20** |
| 25.0 | | 32.0 | 38.0 | 30.0 | 4.00 | **AFM-2532-30** |
| 25.0 | | 32.0 | 38.0 | 40.0 | 4.00 | **AFM-2532-40** |
| 27.0 | | 34.0 | 40.0 | 20.0 | 4.00 | **AFM-2734-20** |
| 27.0 | | 34.0 | 40.0 | 30.0 | 4.00 | **AFM-2734-30** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 27.0 | +0.065 +0.195 | 34.0 | 40.0 | 40.0 | 4.00 | **AFM-2734-40** |
| 28.0 | | 36.0 | 42.0 | 20.0 | 4.00 | **AFM-2836-20** |
| 28.0 | | 36.0 | 42.0 | 30.0 | 4.00 | **AFM-2836-30** |
| 28.0 | | 36.0 | 42.0 | 40.0 | 4.00 | **AFM-2836-40** |
| 30.0 | | 38.0 | 44.0 | 20.0 | 4.00 | **AFM-3038-20** |
| 30.0 | | 38.0 | 44.0 | 30.0 | 4.00 | **AFM-3038-30** |
| 30.0 | | 38.0 | 44.0 | 40.0 | 4.00 | **AFM-3038-40** |
| 32.0 | +0.080 +0.240 | 40.0 | 46.0 | 20.0 | 4.00 | **AFM-3240-20** |
| 32.0 | | 40.0 | 46.0 | 30.0 | 4.00 | **AFM-3240-30** |
| 32.0 | | 40.0 | 46.0 | 40.0 | 4.00 | **AFM-3240-40** |

[3] After press-fit. *Testing methods, page 61*

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including delivery times, prices, online tools
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| Discount scaling | | |
|---|---|---|
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| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**

# Food bearing with media resistance up to +90°C

## Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

## iglidur® A160

**When to use it?**

- When a plain bearing with maximum media resistance is required
- When a cost-effective plain bearing with high media resistance is required
- When a material compliant in accordance with Regulation (EU) No. 10/2011 is required

**When not to use it?**

- When a universal material for the food industry is required
  ***iglidur® A180, iglidur® A181***
- When a media-resistant plain bearing is required for applications at more than +90°C
  ***iglidur® A500, iglidur® X***
- When a low-cost material with high wear resistance is required for dry operation
  ***iglidur® R***

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# Bearing technology | Plain bearings | iglidur® A160

Ø
6.0-20.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## Food bearing with media resistance up to +90°C

Compliant with Regulation (EU) No. 10/2011 and FDA guidelines

iglidur® A160 offers maximum media resistance in the medium temperature range and is therefore a true low-cost iglidur®. The profile of properties is completed by the suitability for applications in the food industry.

- Compliant with Regulation (EU) No. 10/2011
- FDA-compliant
- High media resistance
- Cost-effective
- Lubrication-free
- Maintenance-free

### Typical application areas

- Food industry
- Beverage technology
- Medical technology

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | ■■■□□ | + |
| Wear resistance at +90°C | – | ■□□□□ | + |
| Wear resistance at +150°C | – | ■□□□□ | + |
| Slide property | – | ■■■■□ | + |
| Wear resistance under water | – | ■■■□□ | + |
| Media resistance | – | ■■■■□ | + |
| Resistant to edge pressures | – | ■■■□□ | + |
| Resistant to shock and impact loads | – | ■■■■□ | + |
| Dirt resistance | – | ■■■■□ | + |

**Online product finder**
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# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.00 | |
| Colour | | blue | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.1 | DIN 53495 |
| Max. moisture absorption | % weight | 0.1 | |
| Coefficient of friction, dynamic, against steel | μ | 0.09-0.19 | |
| pv value, max. (dry) | MPa · m/s | 0.25 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 1,151 | DIN 53457 |
| Flexural strength at +20°C | MPa | 19 | DIN 53452 |
| Compressive strength | MPa | 37 | |
| Max. permissible surface pressure (+20°C) | MPa | 14 | |
| Shore D hardness | | 60 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +90 | |
| Max. application temperature short-term | °C | +100 | |
| Min. application temperature | °C | -50 | |
| Thermal conductivity | W/m · K | 0.30 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 11 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{12}$ | DIN 53482 |

Table 01: Material properties

-50°C up to +90°C

15MPa

iglidur® A160 plain bearings are characterised by extreme media resistance at a low cost. Tribologically optimised, the material can be used in temperatures up to +90°C and also conforms to demands of the food processing sector. The profile of properties is completed by the "optical detectability", i.e. the blue colour, often required in the industry.

### Moisture absorption

The moisture absorption of iglidur® A160 plain bearings in ambient conditions is approximately 0.1% weight. The saturation limit submerged in water is also approximately 0.1% weight.

### Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® A160 bearings.

### Radiation resistance

Plain bearings made from iglidur® A160 are resistant up to a radiation intensity of $1 \cdot 10^5$ Gy.

### Resistance to weathering

iglidur® A160 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

### Mechanical properties

When temperatures increase, the compressive strength of iglidur® A160 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® A160 under different loads. Plastic deformation is minimal up to a radial load of 15MPa. However, it is also dependent on the service time.

***Surface pressure, page 45***

# Bearing technology | Plain bearings | iglidur® A160

### Permissible surface speeds

iglidur® A160 was developed for low surface speeds. Maximum speeds of up to 0.5m/s (rotating) and 2.0m/s (linear), respectively, are permissible during continuous dry operation. The given values in table 03 indicate the limits at which an increase up to the continuous permissible temperature occurs. This increase is a result of friction. In practice, though, this level is rarely reached, due to varying application conditions.

***Surface speed, page 48***

### Temperature

The temperatures prevailing in the bearing system also have an influence on the wear. For temperatures over +60°C an additional securing is required.

***Application temperatures, page 53***
***Additional securing, page 53***

### Friction and wear

Coefficient of friction and wear resistance are dependent on the application parameters (diagrams 04 and 05). For iglidur® A160 plain bearings, altering the coefficient of friction μ as a function of surface speed has less effect. The coefficient of friction decreases with increasing load. Surface finishes (Ra) of the shaft between 0.6-0.7μm are ideal.

***Coefficient of friction and surfaces, page 51***
***Wear resistance, page 54***

### Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® A160. For rotational applications with low loads, the most interesting, media and corrosion-resistant shaft materials 304 stainless steel, high grade steel and hard-chromed steel reveal themselves as particularly good mating partners. On high grade steel shafts, however, the wear increases the fastest with the load (diagram 06). With Cf53 shafts, the wear in pivoting applications is exemplary compared to rotating applications. In rotation the wear, as with many other iglidur® materials, is higher than when pivoting (diagram 07).

***Shaft materials, page 56***

### Installation tolerances

iglidur® A160 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances.

***Testing methods, page 61***

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | + |
| Diluted alkalines | + |
| Fuels | + up to 0 |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | + |
| Strong alkalines | + |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

***Chemical table, page 1170***

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 0.5 | 0.4 | 2.0 |
| Short-term | **m/s** | 0.7 | 0.6 | 3.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.09-0.19 | 0.08 | 0.03 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | E10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.014 | +0.054 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.020 | +0.068 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.025 | +0.083 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.032 | +0.102 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.040 | +0.124 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.050 | +0.150 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.060 | +0.180 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.072 | +0.212 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.085 | +0.245 | -0.100 | +0.000 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

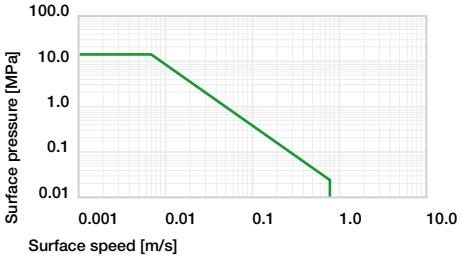



Diagram 01: Permissible pv values for iglidur® A160 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

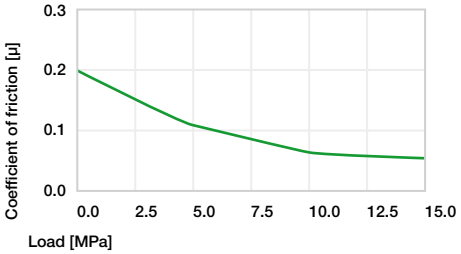



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

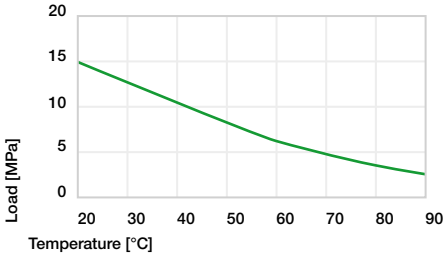



Diagram 02: Maximum recommended surface pressure as a function of temperature (15MPa at +20°C)

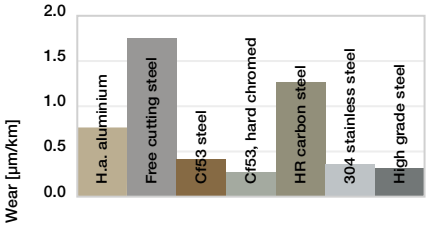



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

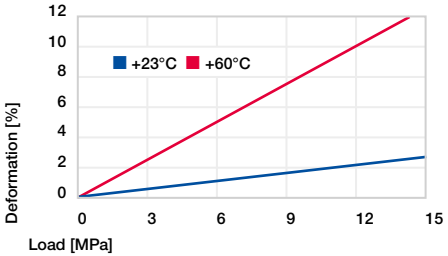



Diagram 03: Deformation under pressure and temperature

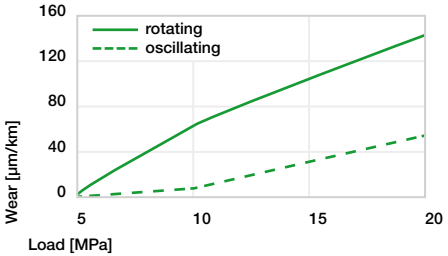



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

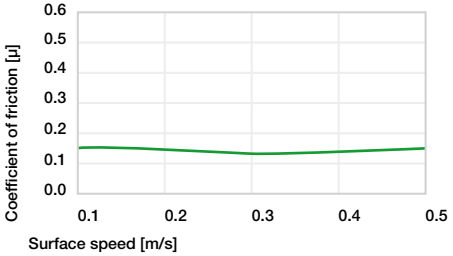
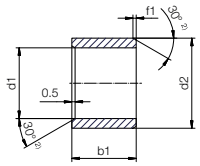



Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

# Bearing technology | Plain bearings | iglidur® A160

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 6-12 | Ø 12-30 |
|---|---|---|
| f1 [mm] | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example: A160SM-0608-06 – no minimum order quantity.**
A160 iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 6.0 | **A160SM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 10.0 | **A160SM-0810-10** |
| 10.0 | | 12.0 | 10.0 | **A160SM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 12.0 | **A160SM-1214-12** |
| 16.0 | | 18.0 | 15.0 | **A160SM-1618-15** |
| 20.0 | +0.040 +0.124 | 23.0 | 20.0 | **A160SM-2023-20** |

[3] After press-fit. *Testing methods, page 61*

**Available from stock**
Detailed information about delivery time online.
www.igus.eu/24

**Order online**
including delivery times, prices, online tools
www.igus.eu/A160

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

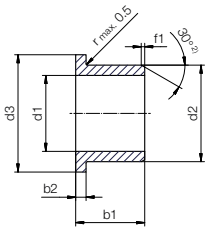
**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**



iglidur® A160
+90°C
15MPa

# Bearing technology | Plain bearings | iglidur® A160

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 6-12 | Ø 12-30 |
|---|---|---|
| f1 [mm] | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example: A160FM-0608-06 – no minimum order quantity.**
A160 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 12.0 | 6.0 | 1.00 | **A160FM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 15.0 | 10.0 | 1.00 | **A160FM-0810-10** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **A160FM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 20.0 | 12.0 | 1.00 | **A160FM-1214-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **A160FM-1618-17** |
| 20.0 | +0.040 +0.124 | 23.0 | 30.0 | 21.5 | 1.50 | **A160FM-2023-21** |

[3] After press-fit. *Testing methods, page 61*

**Available from stock**
Detailed information about delivery time online.
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**Order online**
including delivery times, prices, online tools
www.igus.eu/A160

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**

# Suitable for contact with drinking water

## KTW-compliant

## iglidur® UW160

**When to use it?**

- When a KTW-compliant material is required
- When a wear-resistant material for continuous operation in liquid is required

**When not to use it?**

- When a recurring media-resistant plain bearing with intermittent dry operation is required

  ***iglidur® A160***
- When a media and temperature-resistant universal plain bearing is required

  ***iglidur® X***
- When a standard plain bearing is required for use in a moist environment

  ***iglidur® P***



EN 09/2023

# Bearing technology | Plain bearings | iglidur® UW160

Ø 3.0-10.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## Suitable for contact with drinking water
KTW-compliant

iglidur® UW160 is tribologically optimised for continuous operation in liquid media. Its superior media resistance not only permits uses with potable water contact.

- Suitable for applications in liquids
- Suitable for contact with drinking water (KTW-compliant)
- High media resistance
- Lubrication-free
- Maintenance-free

### Typical application areas

- Fluid technology
- Pumps
- Water meters

| Descriptive technical specifications | | |
|---|---|---|
| Wear resistance at +23°C | – | + |
| Wear resistance at +90°C | – | + |
| Wear resistance at +150°C | – | + |
| Slide property | – | + |
| Wear resistance under water | – | + |
| Media resistance | – | + |
| Resistant to edge pressures | – | + |
| Resistant to shock and impact loads | – | + |
| Dirt resistance | – | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.04 | |
| Colour | | grey | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.1 | DIN 53495 |
| Max. moisture absorption | % weight | 0.1 | |
| Coefficient of friction, dynamic, against steel | μ | 0.17-0.31 | |
| pv value, max. (dry) | MPa · m/s | 0.22 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 1,349 | DIN 53457 |
| Flexural strength at +20°C | MPa | 22 | DIN 53452 |
| Compressive strength | MPa | 32 | |
| Max. permissible surface pressure (+20°C) | MPa | 20 | |
| Shore D hardness | | 60 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +90 | |
| Max. application temperature short-term | °C | +100 | |
| Min. application temperature | °C | -50 | |
| Thermal conductivity | W/m · K | 0.50 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 18 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{12}$ | DIN 53482 |

Table 01: Material properties

-50°C up to +90°C

15MPa

iglidur® UW160 was developed quite specifically with regard to maximum wear resistance in media-based continuous operation. In such applications, low radial loads and medium temperatures usually occur. The suitability for contact with drinking water and very good durability complete the profile of properties.

### Moisture absorption

The moisture absorption of iglidur® UW160 plain bearings in ambient conditions is approximately 0.1% weight. The saturation limit submerged in water is 0.1% weight.

### Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® UW160 bearings.

### Radiation resistance

Plain bearings made from iglidur® UW160 are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® UW160 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

### Mechanical properties

When temperatures increase, the compressive strength of iglidur® UW160 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® UW160 under different loads.
***Surface pressure, page 45***

# Bearing technology | Plain bearings | iglidur® UW160

### Permissible surface speeds

The maximum recommended surface speed is based on the frictional heat generated at the bearing surface. The temperature should only be permitted to increase to a value that will ensure a sustainable use of the bearing with respect to wear and dimensional integrity. The maximum values specified in table 03 are for the dry operation. In media-based application, sometimes significantly higher speeds are achieved due to reduced heat generation depending on the installation.

*Surface speed, page 48*

### Temperature

iglidur® UW160 was developed for use in liquid media in the normal and medium temperature range. As in the case of all thermoplastics, the compression strength of iglidur® UW160 decreases when temperatures rise. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. For temperatures over +70°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagram 04 and 05). The influence of surface speed and surface finish of the shaft on the friction coefficient is low, but with increasing radial load the coefficient of friction decreases significantly, mainly in the range of up to 7.5MPa.

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® UW160. In the example of a rotational movement with radial loads of 1MPa and a speed of 0.3m/s, it becomes clear that iglidur® UW160 achieves good coefficient of wear with the most varied shafts. It is also clear that there are better iglidur® materials for dry operation. As with many other iglidur® materials in dry operation, diagram 07 shows the significantly higher wear in rotation than in pivoting with otherwise identical parameters.

*Shaft materials, page 56*

### Installation tolerances

iglidur® UW160 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances.

*Testing methods, page 61*

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | + |
| Diluted alkalines | + |
| Fuels | + up to 0 |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | + |
| Strong alkalines | + |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | m/s | 0.3 | 0.3 | 1.0 |
| Short-term | m/s | 0.5 | 0.4 | 2.5 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.17-0.31 | 0.08 | 0.03 | 0.03 |

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | E10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.014 | +0.054 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.020 | +0.068 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.025 | +0.083 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.032 | +0.102 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.040 | +0.124 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.050 | +0.150 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.060 | +0.180 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.072 | +0.212 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.085 | +0.245 | -0.100 | +0.000 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

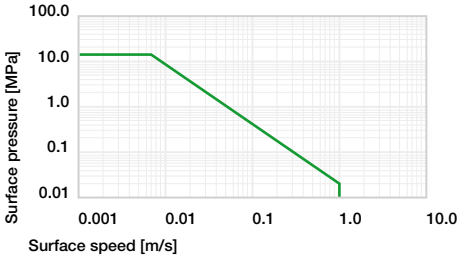



Diagram 01: Permissible pv values for iglidur® UW160 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

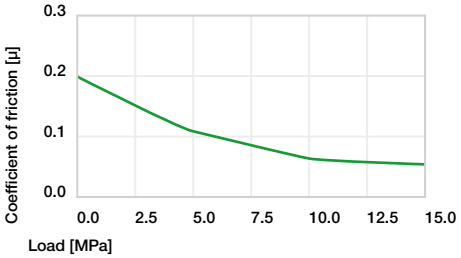



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

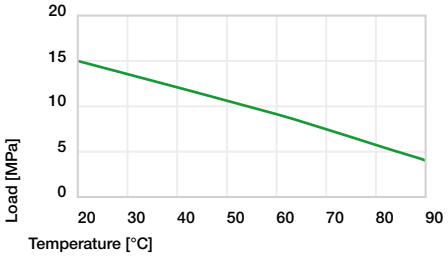



Diagram 02: Maximum recommended surface pressure as a function of temperature (15MPa at +20°C)

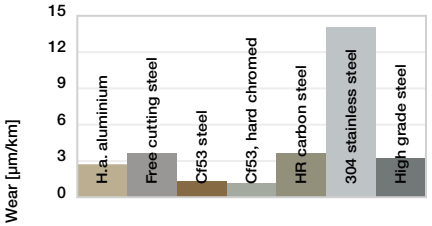



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

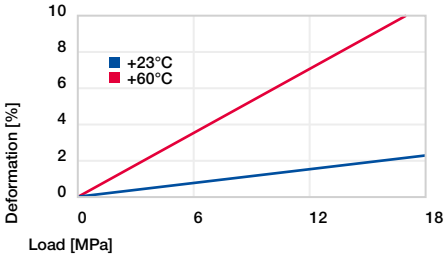



Diagram 03: Deformation under pressure and temperature

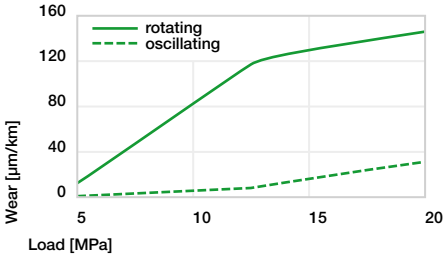



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

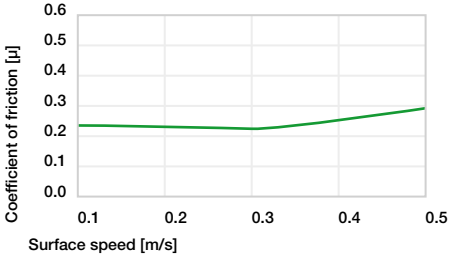
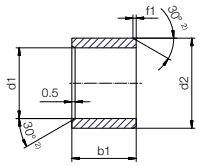



Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

# Bearing technology | Plain bearings | iglidur® UW160

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 |
|---|---|---|
| f1 [mm] | 0.3 | 0.5 |

Dimensions according to ISO 3547-1 and special dimensions

Order example: UW160SM-0304-03 – no minimum order quantity.
UW160 iglidur® material S Cylindrical M Metric 03 Inner Ø d1 04 Outer Ø d2 03 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 3.0 | +0.014 +0.054 | 4.0 | 3.0 | **UW160SM-0304-03** |
| 4.0 | | 5.0 | 4.0 | **UW160SM-0405-04** |
| 5.0 | +0.020 +0.068 | 7.0 | 5.0 | **UW160SM-0507-05** |
| 6.0 | | 8.0 | 6.0 | **UW160SM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 10.0 | **UW160SM-0810-10** |
| 10.0 | | 12.0 | 10.0 | **UW160SM-1012-10** |

[3] After press-fit. *Testing methods, page 61*

**Available from stock**
Detailed information about delivery time online.
www.igus.eu/24

**Order online**
including delivery times, prices, online tools
www.igus.eu/UW160

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

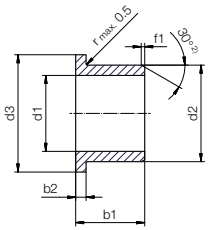
**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**





# Bearing technology | Plain bearings | iglidur® UW160

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 |
|---|---|---|
| f1 [mm] | 0.3 | 0.5 |

Dimensions according to ISO 3547-1 and special dimensions

Order example: UW160FM-0304-05 – no minimum order quantity.
UW160 iglidur® material F With flange M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 3.0 | +0.014 +0.054 | 4.5 | 7.5 | 5.0 | 0.75 | **UW160FM-0304-05** |
| 4.0 | | 5.5 | 9.5 | 6.0 | 0.75 | **UW160FM-0405-06** |
| 5.0 | +0.020 +0.068 | 7.0 | 11.0 | 7.0 | 1.00 | **UW160FM-0507-07** |
| 6.0 | | 8.0 | 12.0 | 6.0 | 1.00 | **UW160FM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 14.0 | 10.0 | 1.00 | **UW160FM-0810-10** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **UW160FM-1012-10** |

[3] After press-fit. *Testing methods, page 61*

**Available from stock**
Detailed information about delivery time online.
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**Order online**
including delivery times, prices, online tools
www.igus.eu/UW160

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**

# For the tobacco industry
## FDA-compliant
## iglidur® T220

**When to use it?**

- When you need a bearing free from non-permitted materials in the tobacco industry
- When FDA compliance is required

**When not to use it?**

- When high surface pressures occur
  ***iglidur® Z***
- When a cost-effective all-round plain bearing is required
  ***iglidur® G, iglidur® M250***
- When the highest wear resistance at low pressures is required
  ***iglidur® J***

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# Bearing technology | Plain bearings | iglidur® T220

Ø
–

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## For the tobacco industry
## FDA-compliant

Plain bearings that constitute only materials "recommended" for the tobacco industry. They are free from carcinogenic additives like, for instance, PTFE.

- Free from banned ingredients as requested by main manufacturers of tobacco products
- FDA-compliant
- Lubrication-free
- Maintenance-free

### Typical application areas

- Tobacco industry

| Descriptive technical specifications | | |
|---|---|---|
| Wear resistance at +23°C | – | + |
| Wear resistance at +90°C | – | + |
| Wear resistance at +150°C | – | + |
| Slide property | – | + |
| Wear resistance under water | – | + |
| Media resistance | – | + |
| Resistant to edge pressures | – | + |
| Resistant to shock and impact loads | – | + |
| Dirt resistance | – | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.28 | |
| Colour | | white | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.3 | DIN 53495 |
| Max. moisture absorption | % weight | 0.5 | |
| Coefficient of friction, dynamic, against steel | μ | 0.20-0.32 | |
| pv value, max. (dry) | MPa · m/s | 0.28 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 1,800 | DIN 53457 |
| Flexural strength at +20°C | MPa | 65 | DIN 53452 |
| Compressive strength | MPa | 55 | |
| Max. permissible surface pressure (+20°C) | MPa | 40 | |
| Shore D hardness | | 76 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +100 | |
| Max. application temperature short-term | °C | +160 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 11 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{10}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{10}$ | DIN 53482 |

Table 01: Material properties

-40°C up to +100°C

40MPa

iglidur® T220 is a special material for applications in the tobacco processing industry. It fulfils the demands of the tobacco industry (engineering database). The material is free of undesirable or banned ingredients, as requested by reputed manufacturers from 2004 onward.

### Moisture absorption

The humidity absorption of iglidur® T220 bearings amounts to about 0.3% weight in standard climatic conditions. The saturation limit submerged in water is 0.5% weight. These values are so low that consideration of expansion by moisture absorption is only required under extreme circumstances.

### Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® T220 bearings.

### Radiation resistance

Plain bearings made from iglidur® T220 are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® T220 plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® T220 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

iglidur® T220 plain bearings can be stressed up to the permitted limit of 40MPa, the elastic deformation is less than 2% at room temperature. The permitted load is limited by higher temperatures (diagram 03).

***Surface pressure, page 45***

# Bearing technology | Plain bearings | iglidur® T220

### Permissible surface speeds

The maximum speeds of iglidur® T220 plain bearings when rotating continuously is 0.4 m/s. The friction and the associated temperature increase limit the permissible speeds. From this it follows that intermittent service or in linear movements, higher speeds can be attained.

*Surface speed, page 48*

### Temperature

The flexibility of the bearings depends on the temperature. Even temperatures as low as +60°C lead to a considerable increase in flexibility. For temperatures over +50°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

By the observance of the tobacco processing industry specifications, the coefficient of friction and wear of iglidur® T220 plain bearings remain behind those of the best iglidur® plain bearings. The coefficient of friction decreases with the load and increases only slightly with higher speeds.

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

Diagram 06 shows a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® T220. Diagram 07 shows that the bearings react with a heavy increase in wear when the load is increased. Therefore care should be taken to maintain the loads under 5MPa through adequate dimensioning of the bearing.

*Shaft materials, page 56*

### Installation tolerances

iglidur® T220 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

### Product range

iglidur® T220 plain bearings are manufactured to special order.

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | 0 |
| Diluted alkalines | – |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | – |
| Strong acids | – |
| Strong alkalines | – |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 0.4 | 0.3 | 1.0 |
| Short-term | **m/s** | 1.0 | 0.7 | 2.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.20-0.32 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | E10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.014 | +0.054 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.020 | +0.068 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.025 | +0.083 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.032 | +0.102 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.040 | +0.124 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.050 | +0.150 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.060 | +0.180 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.072 | +0.212 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.085 | +0.245 | -0.100 | +0.000 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

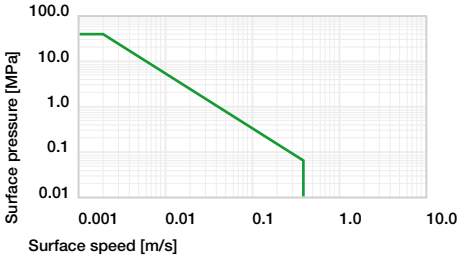


Diagram 01: Permissible pv values for iglidur® T220 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

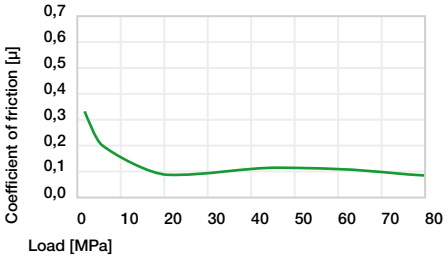


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

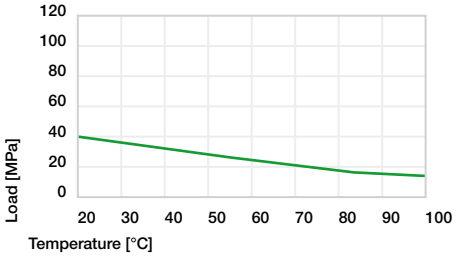


Diagram 02: Maximum recommended surface pressure as a function of temperature (40MPa at +20°C)

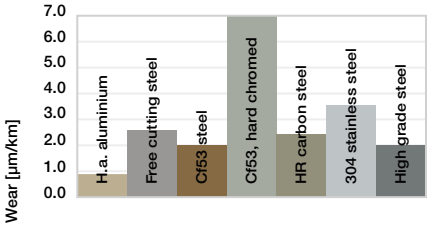


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

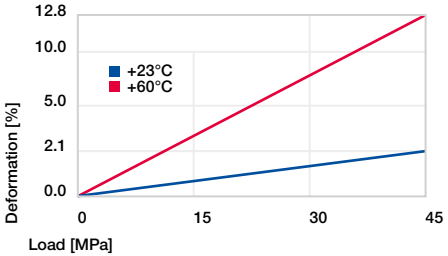


Diagram 03: Deformation under pressure and temperature

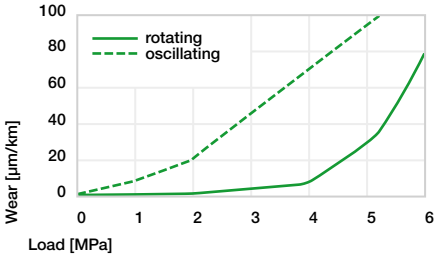


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

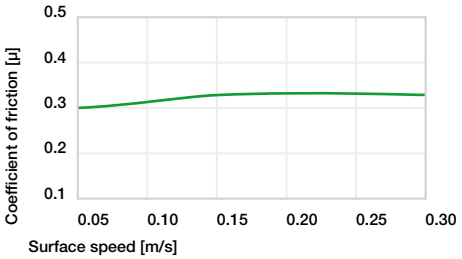


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

# Conductive and resistant

## ESD material for high temperatures and food contact

## iglidur® AX500

**When to use it?**

- When an extremely media-resistant plain bearing with high flexibility is required
- When you need a highly wear-resistant and media-resistant plain bearing

**When not to use it?**

- When an FDA-compliant high-temperature plain bearing is required
  ***iglidur® A500***
- When a media-resistant, high-temperature plain bearing with the largest possible range of dimensions is required
  ***iglidur® X***



EN 09/2023

# Bearing technology | Plain bearings | iglidur® AX500

Ø 6.0-40.0mm

Also available as:

Bar stock, round bar Page 743

Bar stock, plate Page 773

tribo-tape liner Page 781

Guide rings Page 641

Two hole flange bearings Page 667

Moulded special parts Page 696

igubal® spherical balls Page 993

## Conductive and resistant
## ESD material for high temperatures and food contact

iglidur® AX500 is a further development of iglidur® A500, a long-term endurance material. The special feature of AX500 is that it is a conductive material. In addition, AX500 has an even lower coefficient of wear than its predecessor. The material was specially developed for the food industry and can therefore be used in contact with food products.

- Compliant with EU Regulation 10/2011 EC
- Temperature-resistant from -100°C to +250°C
- Chemical-resistant
- Lubrication and maintenance-free
- Standard range from stock

### Typical application areas

- Beverage industry
- Food industry
- Medical technology

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | ■■□□□ | + |
| Wear resistance at +90°C | – | ■■□□□ | + |
| Wear resistance at +150°C | – | ■■■□□ | + |
| Slide property | – | ■■□□□ | + |
| Wear resistance under water | – | ■■■■□ | + |
| Media resistance | – | ■■■■■ | + |
| Resistant to edge pressures | – | ■■■■□ | + |
| Resistant to shock and impact loads | – | ■■■■□ | + |
| Dirt resistance | – | ■■■□□ | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.55 | |
| Colour | | black | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.1 | DIN 53495 |
| Max. moisture absorption | % weight | 0.3 | |
| Coefficient of friction, dynamic, against steel | μ | 0.08-0.22 | |
| pv value, max. (dry) | MPa · m/s | 0.9 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 6,170 | DIN 53457 |
| Flexural strength at +20°C | MPa | 115 | DIN 53452 |
| Compressive strength | MPa | n.s. | |
| Max. permissible surface pressure (+20°C) | MPa | 69 | |
| Shore D hardness | | 81 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +250 | |
| Max. application temperature short-term | °C | +300 | |
| Min. application temperature | °C | up to -100 | |
| Thermal conductivity | W/m · K | 0.26 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 9 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | n.s. | DIN IEC 93 |
| Surface resistance | Ω | $10^5$ - $10^{11}$ | DIN 53482 |

Table 01: Material properties

-100°C up to +250°C

69MPa

V-1

FOOD

RoHS-II

ISO 3547-1

iglidur® AX500 is a member of the family of extremely media and temperature-resistant iglidur® materials X, X6 and A500. This material is characterised by improved wear resistance and increased design freedom.

### Moisture absorption
The moisture absorption of iglidur® AX500 plain bearings is below 0.3% weight in ambient conditions. The saturation limit submerged in water is 0.5% weight.

### Vacuum
In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

### Radiation resistance
iglidur® AX500 withstands neutron and gamma particle radiation without detectable losses of its excellent mechanical properties. Plain bearings made from iglidur® AX500 are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering
iglidur® AX500 plain bearings are resistant to weathering The material properties are slightly affected. Discolouration occurs.

### Mechanical properties
When temperatures increase, the compressive strength of iglidur® AX500 plain bearings decreases. Diagram 02 shows this inverse relationship. However, at an operation temperature of +200°C the permissible surface pressure is close to 20MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® AX500 under different loads. At the maximum recommended surface pressure of 69MPa, the deformation is less than 4.5%.

*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® AX500

### Permissible surface speeds

The maximum recommended surface speed is based on the frictional heat generated at the bearing surface. The temperature should only be permitted to increase to a value that will ensure a sustainable use of the bearing with respect to wear and dimensional integrity. The maximum values stated in table 03 are valid only with minimum pressure loads and are often not attained in practice.

*Surface speed, page 48*

### Temperature

iglidur® AX500 belongs to the most temperature resistant iglidur® materials. As in the case of all thermoplastics, the compressive strength of iglidur® AX500 bearings decreases when temperatures rise. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. For temperatures over +130°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

The coefficient of friction and wear in iglidur® AX500 are more favourable than in the other high temperature materials iglidur® X and A500. The coefficient of friction increases moderately as the sliding speed increases. The coefficient of friction initially drops rapidly to less than 0.1 under loads of up to approximately 20MPa, and then only marginally increases as loads continue to increase. The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. Ground surfaces with an average surface finish Ra of 0.6 to 0.8µm are ideal.

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

Diagram 06 shows a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® AX500. Using the example of a rotating motion at 1MPa and a speed of 0.3m/s, it becomes apparent that iglidur® AX500 has consistent wear characteristics across a variety of shaft types. This wear rate spikes in combination with free cutting steel, and, notably so, reduces in combination with HC aluminium. The wear under rotational loads is higher, specifically with increasing radial loads as compared to pivoting movements (diagram 07).

*Shaft materials, page 56*

### Installation tolerances

iglidur® AX500 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances.

*Testing methods, page 61*

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | + |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | 0 up to – |
| Strong alkalines | + |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | m/s | 1.0 | 0.4 | 2.0 |
| Short-term | m/s | 1.5 | 0.6 | 3.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction µ | 0.08-0.22 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | F10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.006 | +0.046 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.010 | +0.058 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.013 | +0.071 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.016 | +0.086 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.020 | +0.104 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.025 | +0.125 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.030 | +0.150 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | -0.036 | +0.176 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.043 | +0.203 | +0.000 | +0.100 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit



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# Technical data

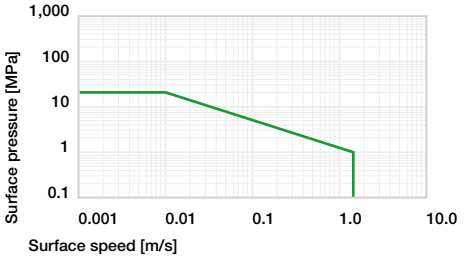


Diagram 01: Permissible pv values for AX500 plain bearings with a wall thickness of 1mm, dry operation against a steel shaft, at +20°C, mounted in a steel housing

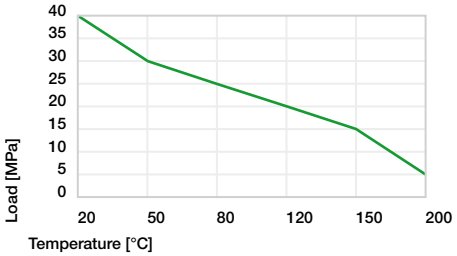


Diagram 02: Maximum recommended surface pressure as a function of temperature (80MPa at +20°C)

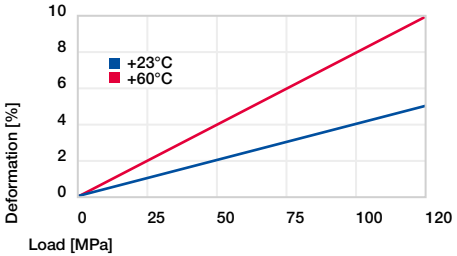


Diagram 03: Deformation under pressure and temperature

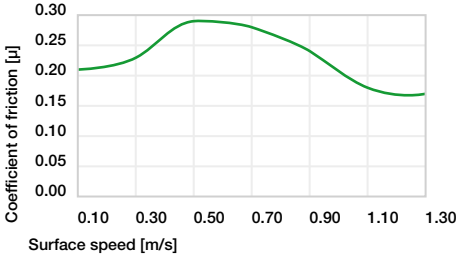


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

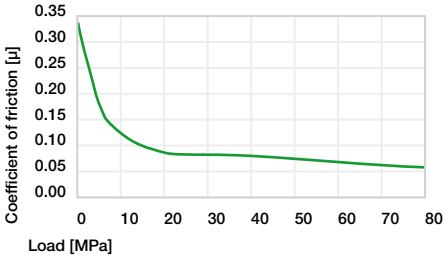


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

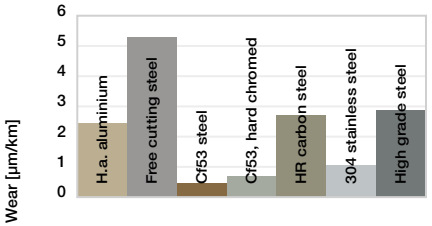


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

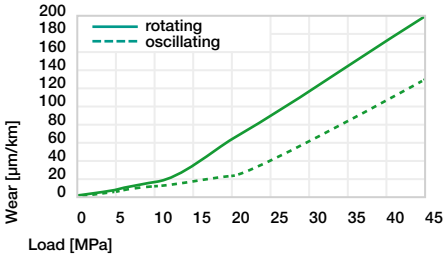


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

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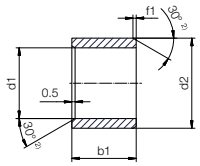
# Bearing technology | Plain bearings | iglidur® AX500

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

Order example: AX500SM-0608-06 - no minimum order quantity.
AX500 iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 6.0 | +0.010 +0.058 | 8.0 | 6.0 | **AX500SM-0608-06** |
| 8.0 | +0.013 +0.071 | 10.0 | 10.0 | **AX500SM-0810-10** |
| 10.0 | | 12.0 | 10.0 | **AX500SM-1012-10** |
| 12.0 | +0.016 +0.086 | 14.0 | 12.0 | **AX500SM-1214-12** |
| 16.0 | | 18.0 | 15.0 | **AX500SM-1618-15** |
| 16.0 | | 18.0 | 20.0 | **AX500SM-1618-20** |
| 16.0 | | 18.0 | 25.0 | **AX500SM-1618-25** |
| 20.0 | +0.020 +0.104 | 23.0 | 20.0 | **AX500SM-2023-20** |

[3] After press-fit. *Testing methods, page 61*

**Available from stock**
Detailed information about delivery time online.
www.igus.eu/24

**Order online**
including delivery times, prices, online tools
www.igus.eu/AX500

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

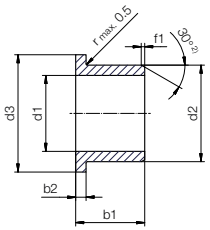
**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**





# Bearing technology | Plain bearings | iglidur® AX500

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 6-12 | Ø 12-30 |
|---|---|---|
| f1 [mm] | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

Order example: AX500SM-0608-06 - no minimum order quantity.
AX500 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 6.0 | +0.010 +0.058 | 8.0 | 12.0 | 8.0 | 1.00 | **AX500FM-0608-06** |
| 8.0 | +0.013 +0.071 | 10.0 | 15.0 | 9.5 | 1.00 | **AX500FM-0810-10** |
| 10.0 | | 12.0 | 18.0 | 9.0 | 1.00 | **AX500FM-1012-10** |
| 12.0 | +0.016 +0.086 | 14.0 | 20.0 | 12.0 | 1.00 | **AX500FM-1214-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **AX500FM-1618-17** |
| 20.0 | +0.020 +0.104 | 23.0 | 30.0 | 21.5 | 1.50 | **AX500FM-2023-21** |

[3] After press-fit. *Testing methods, page 61*

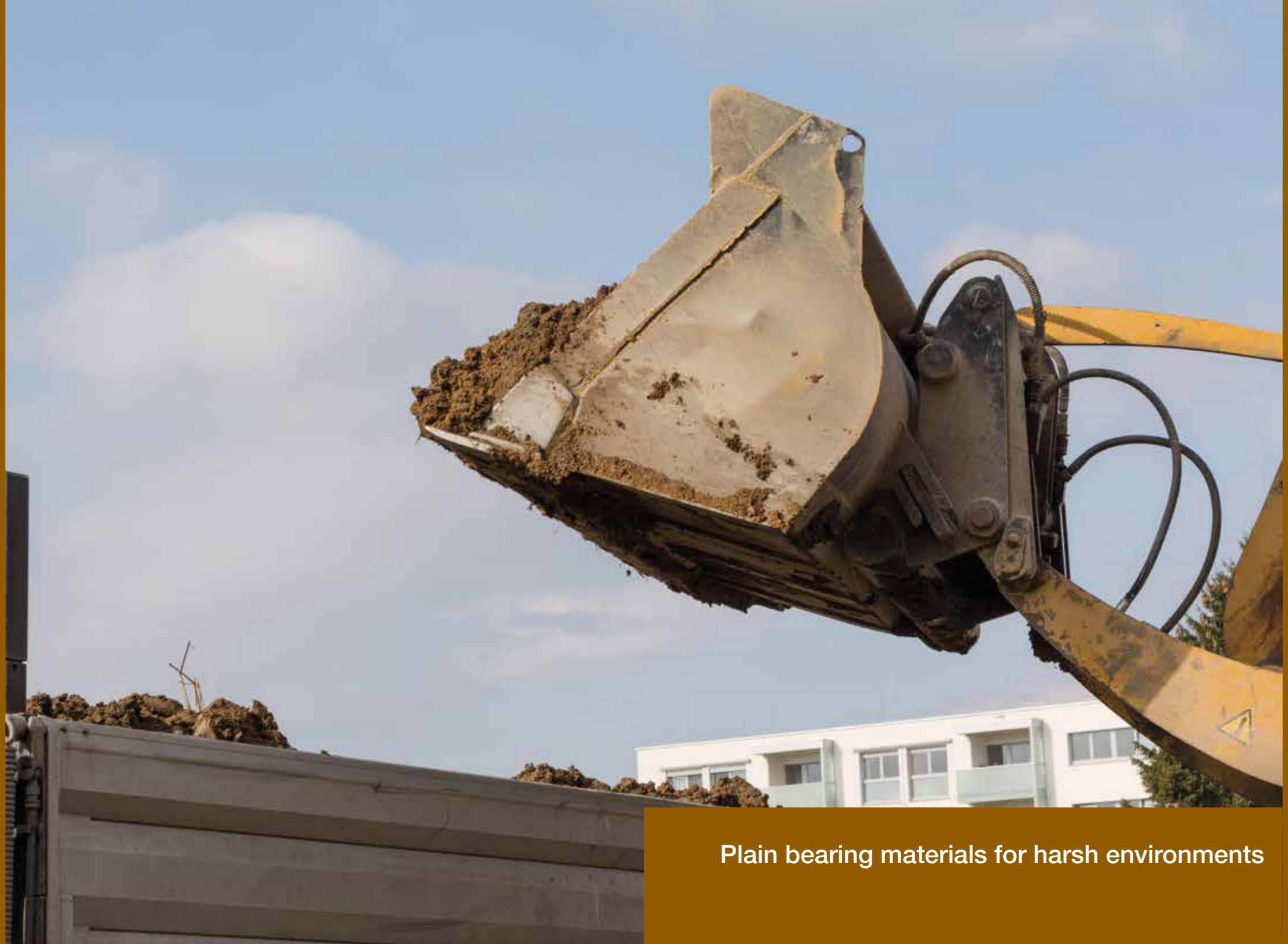
**Available from stock**
Detailed information about delivery time online.
www.igus.eu/24

**Order online**
including delivery times, prices, online tools
www.igus.eu/AX500

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**



# Plain bearing materials for harsh environments

## Plain bearing materials for harsh environments

The iglidur® plain bearings for high load combine high wear resistance with the ability to withstand high (static) loads, shocks and edge loads.
Within these properties they all have their own special strengths. Harsh environments mean radial surface pressure starting from 30MPa up to more than 100MPa (100MPa means 1,000kg on a 10 x 10mm plain bearing)

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert

**iglidur® Q2**
**The durable heavy-duty bearing**

| | | |
|---|---|---|
| Temperature [°C] [123] | +130 | – + |
| Surface pressure [MPa] [124] | 120 | – + |
| Coefficient of friction [µ] [125] | 0.17 | – + |
| Wear [µm/km] [125] | 1.50 | – + |
| Price index | – | + |

**iglidur® Q3E**
**Cost-effective heavy-duty bearing**

| | | |
|---|---|---|
| Temperature [°C] [123] | +100 | – + |
| Surface pressure [MPa] [124] | 135 | – + |
| Coefficient of friction [µ] [125] | 0.17 | – + |
| Wear [µm/km] [125] | 1.50 | – + |
| Price index | – | + |

**iglidur® Q**
**The peak of stability**

| | | |
|---|---|---|
| Temperature [°C] [123] | +135 | – + |
| Surface pressure [MPa] [124] | 100 | – + |
| Coefficient of friction [µ] [125] | 0.19 | – + |
| Wear [µm/km] [125] | 1.90 | – + |
| Price index | - | + |

**iglidur® Q290**
**Heavy-duty on soft shafts**

| | | |
|---|---|---|
| Temperature [°C] [123] | +140 | – + |
| Surface pressure [MPa] [124] | 55 | – + |
| Coefficient of friction [µ] [125] | 0.12 | – + |
| Wear [µm/km] [125] | 0.48 | – + |
| Price index | – | + |

[123] Upper long-term application temperature [124] Max. recommended surface pressure at +20°C [125] Best pairing for p = 1 MPa, v = 0.3m/s, rotating



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**iglidur® M210**
**For medium-sized loads**

| | | |
|---|---|---|
| Temperature [°C] [123] | +100 | – + |
| Surface pressure [MPa] [124] | 50 | – + |
| Coefficient of friction [µ] [125] | 0.18 | – + |
| Wear [µm/km] [125] | 0.38 | – + |
| Price index | – | + |

**iglidur® M260**
**For heavy duty**

| | | |
|---|---|---|
| Temperature [°C] [123] | +120 | – + |
| Surface pressure [MPa] [124] | 40 | – + |
| Coefficient of friction [µ] [125] | 0.16 | – + |
| Wear [µm/km] [125] | 0.11 | – + |
| Price index | – | + |

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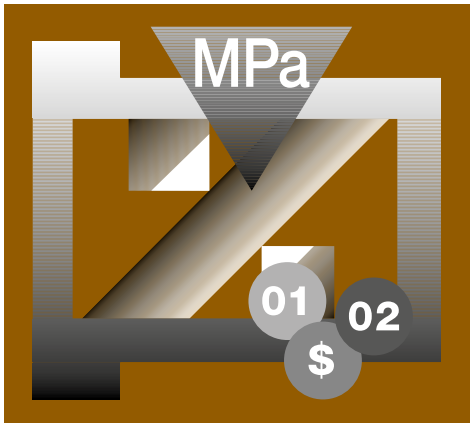


# The durable heavy-duty bearing

## Combined wear resistance and compressive strength at high loads

## iglidur® Q2

**When to use it?**

- When high dynamic loads occur
- When dirt occurs in addition to high shock and impact loads
- For highly loaded pivoting movements

**When not to use it?**

- When only static loads occur
  ***iglidur® X, iglidur® H2***
- When high pv values occur in conjunction with high speeds
  ***iglidur® Z***
- When a cost-effective all-round plain bearing is required
  ***iglidur® G***
- When soft shafts are in use
  ***iglidur® W300***



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# Bearing technology | Plain bearings | iglidur® Q2

Ø
4.0-120.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## The durable heavy-duty bearing

Combined wear resistance and compressive strength at high loads

Where previous iglidur® bearing solutions are limited within the scope of extreme loads and strong impact forces, the iglidur® Q2 starts. Made for heavy-duty pivoting applications under extreme conditions.

- Wear-resistant
- Good price-performance ratio
- Lubrication-free
- Maintenance-free
- High rigidity
- Suitable for high loads

### Typical application areas

- Agricultural engineering
- Utility and construction vehicles
- Mechanical engineering

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | ■■■□□ | + |
| Wear resistance at +90°C | – | ■■□□□ | + |
| Wear resistance at +150°C | – | ■■□□□ | + |
| Slide property | – | ■■■□□ | + |
| Wear resistance under water | – | ■□□□□ | + |
| Media resistance | – | ■■■□□ | + |
| Resistant to edge pressures | – | ■■■■■ | + |
| Resistant to shock and impact loads | – | ■■■■■ | + |
| Dirt resistance | – | ■■■■■ | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.46 | |
| Colour | | beige-brown | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 1.1 | DIN 53495 |
| Max. moisture absorption | % weight | 4.6 | |
| Coefficient of friction, dynamic, against steel | μ | 0.22-0.42 | |
| pv value, max. (dry) | MPa · m/s | 0.70 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 8,370 | DIN 53457 |
| Flexural strength at +20°C | MPa | 240 | DIN 53452 |
| Compressive strength | MPa | 130 | |
| Max. permissible surface pressure (+20°C) | MPa | 120 | |
| Shore D hardness | | 80 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +130 | |
| Max. application temperature short-term | °C | +200 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 8 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{13}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{11}$ | DIN 53482 |

Table 01: Material properties

-40°C up to +130°C

120MPa

iglidur® Q2 plain bearings represent high load capacities and good abrasion resistance at high loads. The price-performance ratio is outstanding. Solid lubricants reduce the coefficient of friction and improve the resistance to wear, which was markedly improved as compared to other iglidur® plain bearings, especially for heavily loaded pivoting applications.

### Moisture absorption

The moisture absorption of iglidur® Q2 plain bearings in ambient conditions is approximately 1.1% weight. The saturation limit submerged in water is 4.6% weight. This must be taken into account for these types of applications.

### Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

### Radiation resistance

Plain bearings made from iglidur® Q2 are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® Q2 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® Q2 plain bearings decreases. Diagram 02 shows this inverse relationship. With the long-term permitted application temperature of +130°C, the permitted surface pressure still amounts to 20MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® Q2 at radial loads.
***Surface pressure, page 45***

# Bearing technology | Plain bearings | iglidur® Q2

### Permissible surface speeds

Typical applications for iglidur® Q2 plain bearings are pivoting movements under high loads at comparatively low speeds. However, relatively high speeds are still attainable. The speeds stated in table 03 are limit values for the lowest bearing loads. With higher loads, the permitted speed drops with the extent of the load due to the limitations by the pv value.

***Surface speed, page 48***

### Temperature

iglidur® Q2 is an extremely temperature-resistant material. The long-term upper temperature limit of +130°C permits the broad use in applications typical for the agricultural, utility vehicle or construction equipment sectors. With increasing temperatures, the compressive strength of iglidur® Q2 plain bearings decreases. For temperatures over +70°C an additional securing is required. When considering temperatures, the additional frictional heat in the bearing system must be taken into account.

***Application temperatures, page 53***
***Additional securing, page 53***

### Friction and wear

The coefficient of friction of iglidur® Q2 is low. Please note that a sliding surface with a rough surface finish will increase the friction. The highest coefficient of friction occur at Ra = 1µm. Surface finishes (Ra) of the shaft between 0.1-0.4µm are ideal. Furthermore, the coefficient of friction of iglidur® Q2 plain bearings largely depends on the speed and load. As the surface speed increases, the coefficient of friction will quickly increase as well. However, as the load is reduced, the coefficient of friction initially drops significantly, then moderately.

***Coefficient of friction and surfaces, page 51***
***Wear resistance, page 54***

### Shaft materials

In high load applications, we generally recommend the use of hardened shafts. Furthermore, even at low to medium loads, iglidur® Q2 will attain increased service life with "hard" shafts as compared to "soft" shafts. But for low load applications, the results are outstanding with free cutting steel as well. For high loads, the wear in pivoting applications is much lower than for rotation. If the shaft material you plan on using is not shown in these test results, please contact us.

***Shaft materials, page 56***

### Installation tolerances

iglidur® Q2 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

***Testing methods, page 61***

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | 0 up to – |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | – |
| Strong alkalines | 0 |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

***Chemical table, page 1170***

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 1.0 | 0.7 | 4.0 |
| Short-term | **m/s** | 2.0 | 1.4 | 5.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction µ | 0.22-0.42 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | E10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.014 | +0.054 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.020 | +0.068 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.025 | +0.083 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.032 | +0.102 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.040 | +0.124 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.050 | +0.150 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.060 | +0.180 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.072 | +0.212 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.085 | +0.245 | -0.100 | +0.000 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

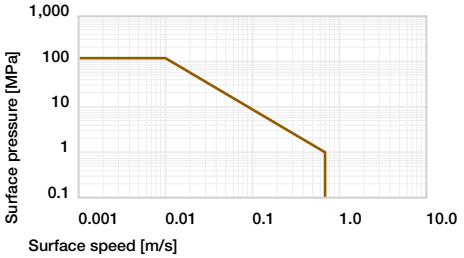



Diagram 01: Permissible pv values for iglidur® Q2 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

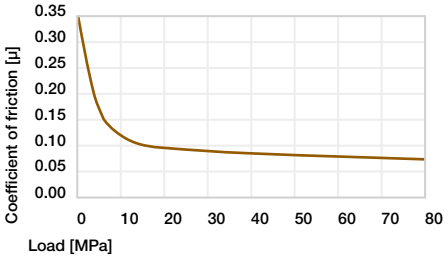



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

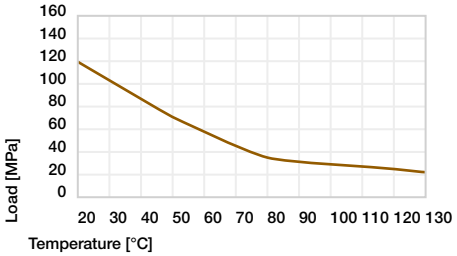



Diagram 02: Maximum recommended surface pressure as a function of temperature (120MPa at +20°C)

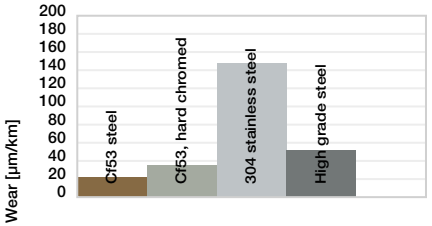



Diagram 06: Wear, pivoting with different shaft materials, pressure p = 45MPa, v = 0.01m/s

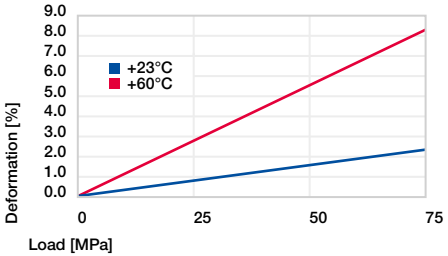



Diagram 03: Deformation under pressure and temperature

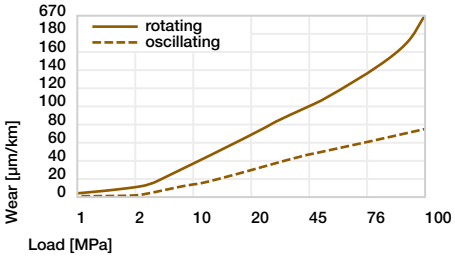



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

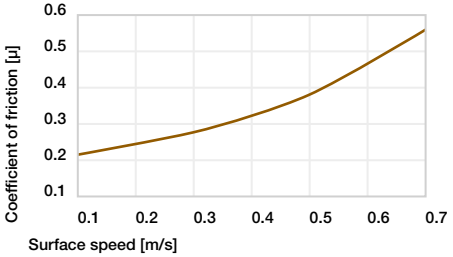
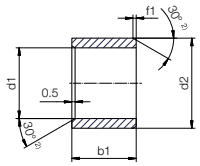



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

# Bearing technology | Plain bearings | iglidur® Q2

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

Order example: Q2SM-0405-04 – no minimum order quantity.
Q2 iglidur® material S Cylindrical M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 4.0 | +0.020 +0.068 | 5.5 | 4.0 | Q2SM-0405-04 |
| 4.0 | | 5.5 | 6.0 | Q2SM-0405-06 |
| 5.0 | | 7.0 | 5.0 | Q2SM-0507-05 |
| 5.0 | | 7.0 | 10.0 | Q2SM-0507-10 |
| 6.0 | | 8.0 | 6.0 | Q2SM-0608-06 |
| 6.0 | | 8.0 | 8.0 | Q2SM-0608-08 |
| 6.0 | | 8.0 | 10.0 | Q2SM-0608-10 |
| 8.0 | +0.025 +0.083 | 10.0 | 8.0 | Q2SM-0810-08 |
| 8.0 | | 10.0 | 10.0 | Q2SM-0810-10 |
| 8.0 | | 10.0 | 12.0 | Q2SM-0810-12 |
| 10.0 | | 12.0 | 8.0 | Q2SM-1012-08 |
| 10.0 | | 12.0 | 10.0 | Q2SM-1012-10 |
| 10.0 | | 12.0 | 12.0 | Q2SM-1012-12 |
| 10.0 | | 12.0 | 15.0 | Q2SM-1012-15 |
| 10.0 | | 12.0 | 20.0 | Q2SM-1012-20 |
| 12.0 | +0.032 +0.102 | 14.0 | 10.0 | Q2SM-1214-10 |
| 12.0 | | 14.0 | 12.0 | Q2SM-1214-12 |
| 12.0 | | 14.0 | 15.0 | Q2SM-1214-15 |
| 12.0 | | 14.0 | 20.0 | Q2SM-1214-20 |
| 13.0 | | 15.0 | 10.0 | Q2SM-1315-10 |
| 13.0 | | 15.0 | 20.0 | Q2SM-1315-20 |
| 14.0 | | 16.0 | 15.0 | Q2SM-1416-15 |
| 14.0 | | 16.0 | 20.0 | Q2SM-1416-20 |
| 14.0 | | 16.0 | 25.0 | Q2SM-1416-25 |
| 15.0 | | 17.0 | 15.0 | Q2SM-1517-15 |
| 15.0 | | 17.0 | 20.0 | Q2SM-1517-20 |
| 15.0 | | 17.0 | 25.0 | Q2SM-1517-25 |
| 16.0 | | 18.0 | 15.0 | Q2SM-1618-15 |
| 16.0 | | 18.0 | 20.0 | Q2SM-1618-20 |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 16.0 | +0.032 +0.102 | 18.0 | 25.0 | Q2SM-1618-25 |
| 18.0 | | 20.0 | 15.0 | Q2SM-1820-15 |
| 18.0 | | 20.0 | 20.0 | Q2SM-1820-20 |
| 18.0 | | 20.0 | 25.0 | Q2SM-1820-25 |
| 20.0 | +0.040 +0.124 | 23.0 | 10.0 | Q2SM-2023-10 |
| 20.0 | | 23.0 | 15.0 | Q2SM-2023-15 |
| 20.0 | | 23.0 | 20.0 | Q2SM-2023-20 |
| 20.0 | | 23.0 | 25.0 | Q2SM-2023-25 |
| 20.0 | | 23.0 | 30.0 | Q2SM-2023-30 |
| 22.0 | | 25.0 | 15.0 | Q2SM-2225-15 |
| 22.0 | | 25.0 | 20.0 | Q2SM-2225-20 |
| 22.0 | | 25.0 | 25.0 | Q2SM-2225-25 |
| 22.0 | | 25.0 | 30.0 | Q2SM-2225-30 |
| 24.0 | | 27.0 | 15.0 | Q2SM-2427-15 |
| 24.0 | | 27.0 | 20.0 | Q2SM-2427-20 |
| 24.0 | | 27.0 | 25.0 | Q2SM-2427-25 |
| 24.0 | | 27.0 | 30.0 | Q2SM-2427-30 |
| 25.0 | | 28.0 | 15.0 | Q2SM-2528-15 |
| 25.0 | | 28.0 | 20.0 | Q2SM-2528-20 |
| 25.0 | | 28.0 | 25.0 | Q2SM-2528-25 |
| 25.0 | | 28.0 | 30.0 | Q2SM-2528-30 |
| 28.0 | | 32.0 | 30.0 | Q2SM-2832-30 |
| 30.0 | | 34.0 | 20.0 | Q2SM-3034-20 |
| 30.0 | | 34.0 | 25.0 | Q2SM-3034-25 |
| 30.0 | | 34.0 | 30.0 | Q2SM-3034-30 |
| 30.0 | | 34.0 | 40.0 | Q2SM-3034-40 |
| 30.0 | | 35.0 | 40.0 | Q2SM-3035-40 |
| 32.0 | +0.050 +0.150 | 36.0 | 20.0 | Q2SM-3236-20 |
| 32.0 | | 36.0 | 30.0 | Q2SM-3236-30 |

[3] After press-fit. *Testing methods, page 61*



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iglidur® Q2
+130°C
120MPa

# Product range

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 32.0 | +0.050 +0.150 | 36.0 | 40.0 | Q2SM-3236-40 |
| 32.0 | | 40.0 | 40.0 | Q2SM-3240-40 |
| 35.0 | | 39.0 | 20.0 | Q2SM-3539-20 |
| 35.0 | | 39.0 | 30.0 | Q2SM-3539-30 |
| 35.0 | | 39.0 | 40.0 | Q2SM-3539-40 |
| 35.0 | | 39.0 | 50.0 | Q2SM-3539-50 |
| 40.0 | | 44.0 | 20.0 | Q2SM-4044-20 |
| 40.0 | | 44.0 | 30.0 | Q2SM-4044-30 |
| 40.0 | | 44.0 | 40.0 | Q2SM-4044-40 |
| 40.0 | | 44.0 | 50.0 | Q2SM-4044-50 |
| 45.0 | | 50.0 | 20.0 | Q2SM-4550-20 |
| 45.0 | | 50.0 | 30.0 | Q2SM-4550-30 |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 45.0 | +0.050 +0.150 | 50.0 | 40.0 | Q2SM-4550-40 |
| 45.0 | | 50.0 | 50.0 | Q2SM-4550-50 |
| 50.0 | | 55.0 | 20.0 | Q2SM-5055-20 |
| 50.0 | | 55.0 | 30.0 | Q2SM-5055-30 |
| 50.0 | | 55.0 | 40.0 | Q2SM-5055-40 |
| 50.0 | | 55.0 | 50.0 | Q2SM-5055-50 |
| 50.0 | | 55.0 | 60.0 | Q2SM-5055-60 |
| 60.0 | +0.060 +0.180 | 65.0 | 60.0 | Q2SM-6065-60 |
| 65.0 | | 70.0 | 60.0 | Q2SM-6570-60 |
| 70.0 | | 75.0 | 60.0 | Q2SM-7075-60 |
| 75.0 | | 80.0 | 40.0 | Q2SM-7580-40 |

[3] After press-fit. *Testing methods, page 61*

**Available from stock**
Detailed information about delivery time online.
www.igus.eu/24

**Order online**
including delivery times, prices, online tools
www.igus.eu/Q2

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**

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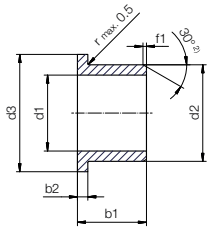
# Bearing technology | Plain bearings | iglidur® Q2

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

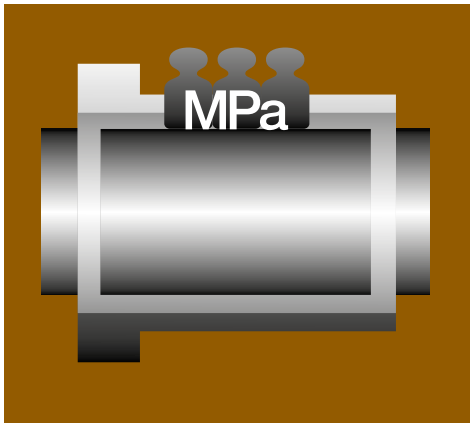
Dimensions according to ISO 3547-1 and special dimensions

Order example: Q2FM-0507-05 – no minimum order quantity.
Q2 iglidur® material F With flange M Metric 05 Inner Ø d1 07 Outer Ø d2 05 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 5.0 | | 7.0 | 11.0 | 5.0 | 1.00 | **Q2FM-0507-05** |
| 6.0 | +0.020 | 8.0 | 12.0 | 4.0 | 1.00 | **Q2FM-0608-04** |
| 6.0 | +0.068 | 8.0 | 12.0 | 6.0 | 1.00 | **Q2FM-0608-06** |
| 6.0 | | 8.0 | 12.0 | 8.0 | 1.00 | **Q2FM-0608-08** |
| 8.0 | | 10.0 | 15.0 | 3.0 | 1.00 | **Q2FM-0810-03** |
| 8.0 | | 10.0 | 15.0 | 5.5 | 1.00 | **Q2FM-0810-05** |
| 8.0 | | 10.0 | 15.0 | 7.5 | 1.00 | **Q2FM-0810-07** |
| 8.0 | | 10.0 | 15.0 | 9.5 | 1.00 | **Q2FM-0810-09** |
| 8.0 | +0.025 | 10.0 | 15.0 | 10.0 | 1.00 | **Q2FM-0810-10** |
| 10.0 | +0.083 | 12.0 | 18.0 | 7.0 | 1.00 | **Q2FM-1012-07** |
| 10.0 | | 12.0 | 18.0 | 9.0 | 1.00 | **Q2FM-1012-09** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **Q2FM-1012-10** |
| 10.0 | | 12.0 | 18.0 | 12.0 | 1.00 | **Q2FM-1012-12** |
| 10.0 | | 12.0 | 18.0 | 17.0 | 1.00 | **Q2FM-1012-17** |
| 12.0 | | 14.0 | 20.0 | 7.0 | 1.00 | **Q2FM-1214-07** |
| 12.0 | | 14.0 | 20.0 | 9.0 | 1.00 | **Q2FM-1214-09** |
| 12.0 | | 14.0 | 20.0 | 12.0 | 1.00 | **Q2FM-1214-12** |
| 12.0 | | 14.0 | 20.0 | 17.0 | 1.00 | **Q2FM-1214-17** |
| 14.0 | | 16.0 | 22.0 | 5.0 | 1.00 | **Q2FM-1416-05** |
| 14.0 | +0.032 | 16.0 | 22.0 | 12.0 | 1.00 | **Q2FM-1416-12** |
| 14.0 | +0.102 | 16.0 | 22.0 | 17.0 | 1.00 | **Q2FM-1416-17** |
| 15.0 | | 17.0 | 23.0 | 9.0 | 1.00 | **Q2FM-1517-09** |
| 15.0 | | 17.0 | 23.0 | 12.0 | 1.00 | **Q2FM-1517-12** |
| 15.0 | | 17.0 | 23.0 | 17.0 | 1.00 | **Q2FM-1517-17** |
| 16.0 | | 18.0 | 24.0 | 12.0 | 1.00 | **Q2FM-1618-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **Q2FM-1618-17** |
| 18.0 | | 20.0 | 26.0 | 12.0 | 1.00 | **Q2FM-1820-12** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 18.0 | +0.032 | 20.0 | 26.0 | 17.0 | 1.00 | **Q2FM-1820-17** |
| 18.0 | +0.102 | 20.0 | 26.0 | 22.0 | 1.00 | **Q2FM-1820-22** |
| 20.0 | | 23.0 | 30.0 | 11.5 | 1.50 | **Q2FM-2023-11** |
| 20.0 | | 23.0 | 30.0 | 12.0 | 1.50 | **Q2FM-2023-12** |
| 20.0 | | 23.0 | 30.0 | 16.5 | 1.50 | **Q2FM-2023-16** |
| 20.0 | | 23.0 | 30.0 | 21.5 | 1.50 | **Q2FM-2023-21** |
| 25.0 | +0.040 | 28.0 | 35.0 | 11.5 | 1.50 | **Q2FM-2528-11** |
| 25.0 | +0.124 | 28.0 | 35.0 | 16.5 | 1.50 | **Q2FM-2528-16** |
| 25.0 | | 28.0 | 35.0 | 21.5 | 1.50 | **Q2FM-2528-21** |
| 30.0 | | 34.0 | 42.0 | 16.0 | 2.00 | **Q2FM-3034-16** |
| 30.0 | | 34.0 | 42.0 | 26.0 | 2.00 | **Q2FM-3034-26** |
| 30.0 | | 34.0 | 42.0 | 37.0 | 2.00 | **Q2FM-3034-37** |
| 30.0 | | 34.0 | 42.0 | 40.0 | 2.00 | **Q2FM-3034-40** |
| 35.0 | | 39.0 | 47.0 | 16.0 | 2.00 | **Q2FM-3539-16** |
| 35.0 | | 39.0 | 47.0 | 26.0 | 2.00 | **Q2FM-3539-26** |
| 35.0 | | 39.0 | 47.0 | 40.0 | 2.00 | **Q2FM-3539-40** |
| 40.0 | +0.050 | 44.0 | 52.0 | 30.0 | 2.00 | **Q2FM-4044-30** |
| 40.0 | +0.150 | 44.0 | 52.0 | 40.0 | 2.00 | **Q2FM-4044-40** |
| 45.0 | | 50.0 | 58.0 | 50.0 | 2.00 | **Q2FM-4550-50** |
| 50.0 | | 55.0 | 63.0 | 10.0 | 2.00 | **Q2FM-5055-10** |
| 50.0 | | 55.0 | 63.0 | 50.0 | 2.00 | **Q2FM-5055-50** |
| 60.0 | +0.060 | 65.0 | 73.0 | 60.0 | 2.00 | **Q2FM-6065-60** |
| 80.0 | +0.180 | 85.0 | 93.0 | 100.0 | 2.50 | **Q2FM-8085-100** |
| 100.0 | +0.072 +0.212 | 105.0 | 125.0 | 90.0 | 2.50 | **Q2FM-100105125-90** |
| 120.0 | +0.085 +0.245 | 125.0 | 145.0 | 90.0 | 2.50 | **Q2FM-120125145-90** |

[3] After press-fit. *Testing methods, page 61*




# Cost-effective heavy-duty bearing

## Robust and dimensionally stable iglidur® Q3E

**When to use it?**

- When a wear-resistant plain bearing at loads up to 130MPa is required
- When a robust and dirt-resistant plain bearing is required
- When a plain bearing with dimensional stability is required

**When not to use it?**

- When a plain bearing with the highest possible media resistance is required
  ***iglidur® X***
- With high rotational speeds
  ***iglidur® J, iglidur® L250***
- When a universal standard plain bearing for occasional movements is required
  ***iglidur® G***

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# Bearing technology | Plain bearings | iglidur® Q3E

Ø
20.0-60.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## Cost-effective heavy-duty bearing
## Robust and dimensionally stable

With extreme loads, even high-tech polymers reach their limits. Therefore iglidur® Q3E offers a completely new multi-component design and is able to carry even extreme loads. In addition, thanks to optimised injection moulding technology, it is more cost-effective than comparable fibre composites.

- Lubrication-free
- Wear-resistant up to 130MPa dynamic load
- Resistant to dirt
- Corrosion-free

### Typical application areas

- Agricultural machinery
- Construction machinery industry
- Utility and construction vehicles
- Hoisting technology

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | ■■■□□ | + |
| Wear resistance at +90°C | – | ■■□□□ | + |
| Wear resistance at +150°C | – | ■■□□□ | + |
| Slide property | – | ■■■□□ | + |
| Wear resistance under water | – | ■□□□□ | + |
| Media resistance | – | ■■■□□ | + |
| Resistant to edge pressures | – | ■■■■■ | + |
| Resistant to shock and impact loads | – | ■■■■■ | + |
| Dirt resistance | – | ■■■■■ | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.46-1.69 | |
| Colour sliding layer | | black | |
| Colour supporting layer | | black | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 1.5 | DIN 53495 |
| Max. moisture absorption | % weight | 5.0 | |
| Coefficient of friction, dynamic, against steel | μ | 0.22-0.42 | |
| pv value, max. (dry) | MPa · m/s | 0.70 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | n.s. | DIN 53457 |
| Flexural strength at +20°C[171)] | MPa | 235 | DIN 53452 |
| Compressive strength | MPa | n.s. | |
| Max. permissible surface pressure (+20°C) | MPa | 135 | |
| Shore D hardness | | 80 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +100 | |
| Max. application temperature short-term | °C | +140 | |
| Min. application temperature | °C | -30 | |
| Thermal conductivity | | n.s. | |
| Coefficient of thermal expansion | | n.s. | |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | > $10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | > $10^{12}$ | DIN 53482 |

[171)] Valid for the outer shell of the bearing

**Table 01: Material properties**

-30 °C up to +100 °C

135MPa

The iglidur® Q3E plain bearings defy dirt at the heaviest loads due to their robust design.

### Moisture absorption

The humidity absorption of iglidur® Q3E bearings amounts to about 1.5% weight in standard climatic conditions. The saturation limit submerged in water is 5.0% weight. This must be taken into account for these types of applications.

### Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

### Radiation resistance

Plain bearings made from iglidur® Q3E are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® Q3E plain bearings have not yet been tested for their resistance to weathering. Please consult igus® if you're planning to use them outdoors.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® Q3E plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® Q3E at radial loads.
***Surface pressure, page 45***

### Permissible surface speeds

Typical applications for iglidur® Q3E plain bearings are pivoting movements under high loads at comparatively low speeds. However, relatively high speeds are still attainable. The speeds stated in table 03 are limit values for the lowest bearing loads. With higher loads, the permitted speed drops with the extent of the load due to the limitations by the pv value.
***Surface speed, page 48***

# Bearing technology | Plain bearings | iglidur® Q3E

### Temperature

iglidur® Q3E is an extremely temperature-resistant material. The long-term upper temperature limit of +100°C permits the broad use.in applications typical for the agricultural, utility vehicle or construction equipment sectors. With increasing temperatures, the compressive strength of iglidur® Q3E plain bearings decreases. For temperatures over +75°C an additional securing is required. When considering temperatures, the additional frictional heat in the bearing system must be taken into account.

***Application temperatures, page 53***
***Additional securing, page 53***

### Friction and wear

The coefficient of friction alters similarly to the wear resistance with increasing load and surface speed (diagrams 04 and 05).

***Coefficient of friction and surfaces, page 51***
***Wear resistance, page 54***

### Shaft materials

In high load applications, we generally recommend the use of hardened shafts. Furthermore, even at low to medium loads, iglidur® Q3E will attain increased service life with "hard" shafts as compared to "soft" shafts. But for low load applications, the results are outstanding with free cutting steel as well. For high loads, the wear in pivoting applications is much lower than for rotation. If the shaft material you plan on using is not shown in these test results, please contact us.

***Shaft materials, page 56***

### Installation tolerances

iglidur® Q3E plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. The tolerances are based on class E11. After installing in a nominal size housing, the inner diameter of the bearings is adjusted according to the specifications in the product range.

***Testing methods, page 61***

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | 0 up to – |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | – |
| Strong alkalines | 0 |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

***Chemical table, page 1170***

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 1.0 | 0.7 | 4.0 |
| Short-term | **m/s** | 2.0 | 1.4 | 5.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.22-0.42 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | E11 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.014 | +0.074 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.020 | +0.095 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.025 | +0.115 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.032 | +0.142 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.040 | +0.170 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.050 | +0.210 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.060 | +0.250 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.072 | +0.292 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.085 | +0.335 | -0.100 | +0.000 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

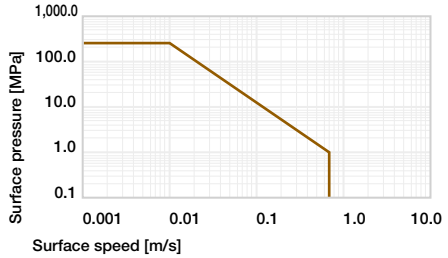



Diagram 01: Permissible pv values for iglidur® Q3E with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

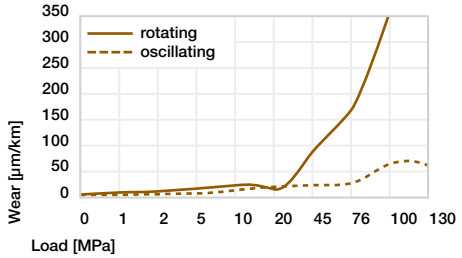



Diagram 05: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

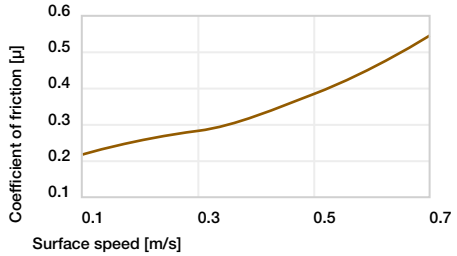



Diagram 02: Coefficient of friction as a function of the surface speed, p = 0.75MPa

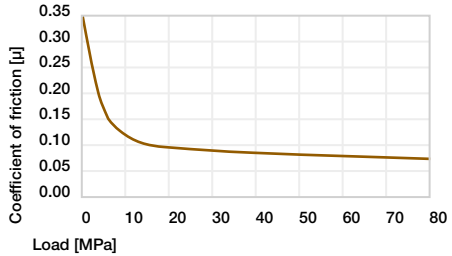



Diagram 03: Coefficient of friction as a function of the pressure, v = 0.01m/s

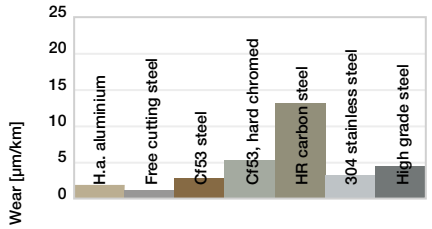
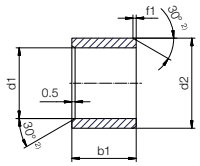



Diagram 04: Wear, pivoting with different shaft materials, p = 1MPa, v = 0.3m/s

# Bearing technology | Plain bearings | iglidur® Q3E

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 12-30 | Ø > 30 |
|---|---|---|
| f1 [mm] | 0.8 | 1.2 |

**Order example:** Q3ESM-2025-20 – no minimum order quantity.
Q3E iglidur® material S Cylindrical M Metric 20 Inner Ø d1 25 Outer Ø d2 20 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 20.0 | +0.040 +0.164 | 25.0 | 20.0 | **Q3ESM-2025-20** |
| 25.0 | | 30.0 | 30.0 | **Q3ESM-2530-30** |
| 30.0 | +0.050 +0.190 | 35.0 | 30.0 | **Q3ESM-3035-30** |
| 35.0 | | 40.0 | 40.0 | **Q3ESM-3540-40** |
| 40.0 | | 45.0 | 40.0 | **Q3ESM-4045-40** |
| 45.0 | | 50.0 | 50.0 | **Q3ESM-4550-50** |
| 50.0 | +0.060 +0.220 | 55.0 | 50.0 | **Q3ESM-5055-50** |
| 60.0 | | 65.0 | 60.0 | **Q3ESM-6065-60** |

[3] After press-fit. *Testing methods, page 61*

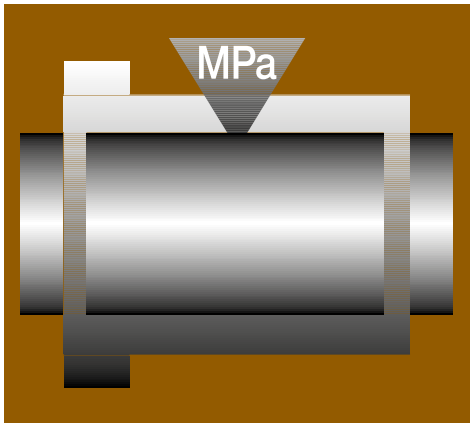
**Available from stock**
Detailed information about delivery time online.
www.igus.eu/24

**Order online**
including delivery times, prices, online tools
www.igus.eu/Q3E

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**




# The peak of stability

## Long service life at medium to high loads

## iglidur® Q

**When to use it?**
- For pivoting applications
- For excellent wear resistance, especially for extreme loads
- For extreme pv values
- When dirt-resistant bearings is required

**When not to use it?**
- For underwater applications
  ***iglidur® H370***
- When temperatures are constantly higher than +135°C
  ***iglidur® H, iglidur® X, iglidur® Z***
- In situations involving high edge loads or strong impact loads
  ***iglidur® Q2***

# Bearing technology | Plain bearings | iglidur® Q

Ø
6.0-90.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## The peak of stability
## Long service life at medium to high loads

iglidur® Q is the cost-effective solution for heavy-duty cycles with extreme loads. Plain bearings made from this material can be used in all types of motion, but is best suited for pivoting applications.

- Very wear-resistant
- Very high pv values
- Low coefficient of friction
- Resistant to dirt
- Lubrication-free
- Standard range from stock
- Maintenance-free

### Typical application areas

- Construction machinery industry
- Sheet metal industry
- Agricultural machines
- Railway technology
- Doors and gates

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | ■■■■□ | + |
| Wear resistance at +90°C | – | ■■■□□ | + |
| Wear resistance at +150°C | – | ■■□□□ | + |
| Slide property | – | ■■■■□ | + |
| Wear resistance under water | – | ■□□□□ | + |
| Media resistance | – | ■■■□□ | + |
| Resistant to edge pressures | – | ■■■□□ | + |
| Resistant to shock and impact loads | – | ■■■□□ | + |
| Dirt resistance | – | ■■■□□ | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

-40°C up to +135°C

100MPa

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.40 | |
| Colour | | black | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.9 | DIN 53495 |
| Max. moisture absorption | % weight | 4.9 | |
| Coefficient of friction, dynamic, against steel | μ | 0.05-0.15 | |
| pv value, max. (dry) | MPa · m/s | 0.55 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 4,500 | DIN 53457 |
| Flexural strength at +20°C | MPa | 120 | DIN 53452 |
| Compressive strength | MPa | 89 | |
| Max. permissible surface pressure (+20°C) | MPa | 100 | |
| Shore D hardness | | 83 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +135 | |
| Max. application temperature short-term | °C | +155 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.23 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 5 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{15}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{12}$ | DIN 53482 |

Table 01: Material properties

iglidur® Q plain bearings were developed especially for extreme loads. Under high loads, iglidur® Q figures among the iglidur® materials that display the best wear resistance. From a radial load of 25MPa, even plain bearings made from the abrasion-resistant iglidur® W300 are exceeded. Specific solid lubricants, precisely integrated into the material, ensure that the maintenance-free dry operation is guaranteed under any load.

### Moisture absorption

The moisture absorption of iglidur® Q plain bearings in ambient conditions is approximately 0.9% weight. The saturation limit submerged in water is 4.9% weight. This must be taken into account for these types of applications.

### Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® Q bearings.

### Radiation resistance

Plain bearings made from iglidur® Q are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® Q plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® Q plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

iglidur® Q is a material used when high pv values are reached with high loads. Diagram 03 shows the elastic deformation of iglidur® Q at radial loads. At the maximum recommended surface pressure of 100MPa, the deformation is less than 3%.

*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® Q

### Permissible surface speeds

Under extreme radial loads, the iglidur® Q plain bearings can reach the maximum pv values which are possible during dry operation with plain bearings. Although iglidur® Q plain bearings have the greatest advantages under high loads and at low speeds, high surface speeds are also attainable due to the excellent coefficient of friction of these bearings. The given values in table 03 indicate the limits at which an increase up to the continuous permissible temperature occurs. This increase is a result of friction.

*Surface speed, page 48*

### Temperature

Plain bearings made from iglidur® Q retain their excellent wear resistance even at high temperatures. For temperatures over +50°C an additional securing is required. It should also be noted that the coefficient of friction increases considerably at temperatures above approximately +100°C.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

Many plastic bearings feature decreasing coefficient of friction with increasing pressure in dry operation. iglidur® Q goes further than most, under high pressures the material gives excellent low coefficient of friction (diagrams 04 and 05).

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® Q. The strengths offered by iglidur® heavy-duty materials become clear from 30MPa. iglidur® Q stands out in particular. Other heavy-duty materials such as iglidur® Q2 and TX1 only offer the best performances in terms of wear when subjected to even higher loads. iglidur® Q offers strikingly good wear properties on many different shaft materials.

*Shaft materials, page 56*

### Installation tolerances

iglidur® Q plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

| Chemicals | Resistance |
|---|---|
| Alcohols | + up to 0 |
| Diluted acids | 0 up to – |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | – |
| Strong alkalines | 0 |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 1.0 | 0.7 | 5.0 |
| Short-term | **m/s** | 2.0 | 1.4 | 6.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.05-0.15 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | E10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.014 | +0.054 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.020 | +0.068 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.025 | +0.083 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.032 | +0.102 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.040 | +0.124 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.050 | +0.150 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.060 | +0.180 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.072 | +0.212 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.085 | +0.245 | -0.100 | +0.000 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

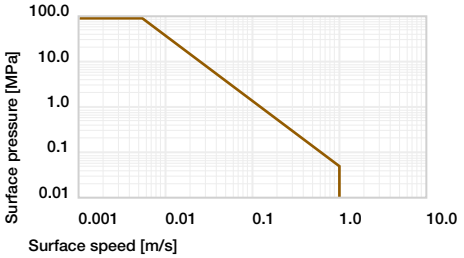



Diagram 01: Permissible pv values for iglidur® Q plain bearing with a wall thickness of 1 mm dry operation against a steel shaft at +20°C, mounted in a steel housing

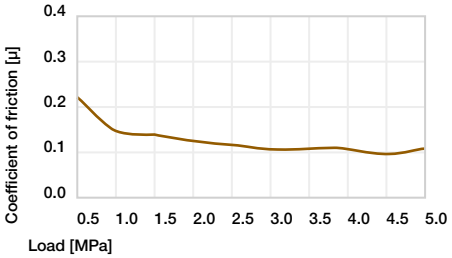



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

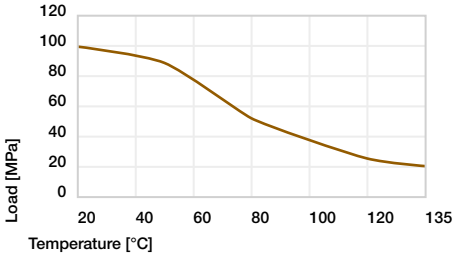



Diagram 02: Maximum recommended surface pressure as a function of temperature (100MPa at +20°C)

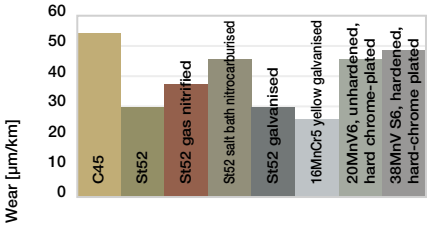



Diagram 06: wear, pivoting with different shaft materials, pressure p = 30MPa, v = 0.01m/s

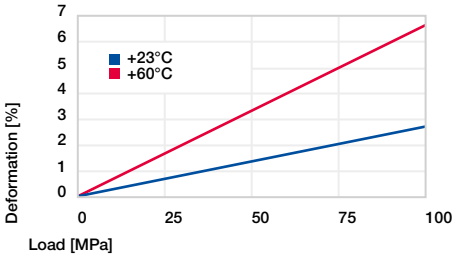



Diagram 03: Deformation under pressure and temperature

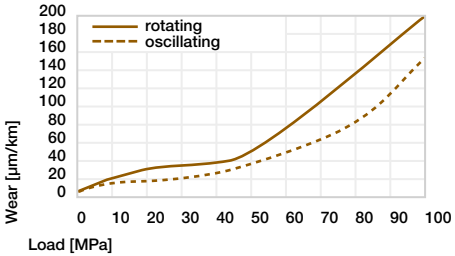



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

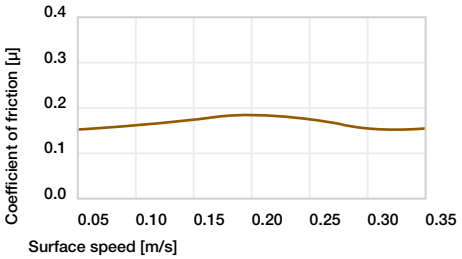
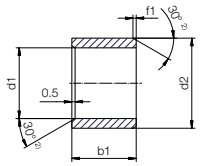



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

# Bearing technology | Plain bearings | iglidur® Q

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example: QSM-0608-10 – no minimum order quantity.**
Q iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 10 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 10.0 | **QSM-0608-10** |
| 8.0 | +0.025 +0.083 | 10.0 | 8.0 | **QSM-0810-08** |
| 10.0 | | 12.0 | 10.0 | **QSM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 10.0 | **QSM-1214-10** |
| 12.0 | | 14.0 | 20.0 | **QSM-1214-20** |
| 16.0 | | 18.0 | 8.0 | **QSM-1618-08** |
| 16.0 | | 18.0 | 12.5 | **QSM-1618-12** |
| 16.0 | | 18.0 | 20.0 | **QSM-1618-20** |
| 18.0 | | 20.0 | 20.0 | **QSM-1820-20** |
| 20.0 | +0.040 +0.124 | 22.0 | 15.0 | **QSM-2022-15** |
| 20.0 | | 23.0 | 15.0 | **QSM-2023-15** |
| 20.0 | | 23.0 | 20.0 | **QSM-2023-20** |
| 20.0 | | 23.0 | 25.0 | **QSM-2023-25** |
| 20.0 | | 23.0 | 30.0 | **QSM-2023-30** |
| 25.0 | | 28.0 | 25.0 | **QSM-2528-25** |
| 25.0 | | 28.0 | 48.0 | **QSM-2528-48** |
| 30.0 | | 34.0 | 20.0 | **QSM-3034-20** |
| 30.0 | | 34.0 | 35.0 | **QSM-3034-35** |
| 30.0 | | 34.0 | 40.0 | **QSM-3034-40** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 35.0 | +0.050 +0.150 | 39.0 | 15.0 | **QSM-3539-15** |
| 35.0 | | 39.0 | 30.0 | **QSM-3539-30** |
| 35.0 | | 39.0 | 35.0 | **QSM-3539-35** |
| 35.0 | | 39.0 | 50.0 | **QSM-3539-50** |
| 40.0 | | 44.0 | 30.0 | **QSM-4044-30** |
| 40.0 | | 44.0 | 40.0 | **QSM-4044-40** |
| 40.0 | | 44.0 | 47.0 | **QSM-4044-47** |
| 45.0 | | 50.0 | 25.2 | **QSM-4550-252** |
| 45.0 | | 50.0 | 50.0 | **QSM-4550-50** |
| 50.0 | | 55.0 | 50.0 | **QSM-5055-50** |
| 50.0 | | 55.0 | 60.0 | **QSM-5055-60** |
| 50.0 | | 55.0 | 80.0 | **QSM-5055-80** |
| 55.0 | +0.060 +0.180 | 60.0 | 50.0 | **QSM-5560-50** |
| 60.0 | | 65.0 | 50.0 | **QSM-6065-50** |
| 65.0 | | 70.0 | 34.0 | **QSM-6570-34** |
| 70.0 | | 75.0 | 50.0 | **QSM-7075-50** |
| 75.0 | | 80.0 | 40.0 | **QSM-7580-40** |
| 80.0 | | 85.0 | 60.0 | **QSM-8085-60** |
| 90.0 | +0.072 +0.212 | 95.0 | 50.0 | **QSM-9095-50** |

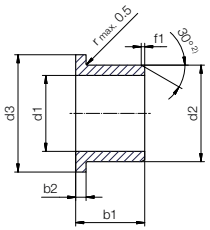
[3] After press-fit. *Testing methods, page 61*





# Bearing technology | Plain bearings | iglidur® Q

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example: QFM-0608-03 – no minimum order quantity.**
Q iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 03 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 12.0 | 3.0 | 1.00 | **QFM-0608-03** |
| 6.0 | | 8.0 | 12.0 | 4.0 | 1.00 | **QFM-0608-04** |
| 6.0 | | 8.0 | 12.0 | 8.0 | 1.00 | **QFM-0608-08** |
| 8.0 | +0.025 +0.083 | 10.0 | 15.0 | 5.5 | 1.00 | **QFM-0810-05** |
| 8.0 | | 10.0 | 15.0 | 6.0 | 1.00 | **QFM-0810-06** |
| 10.0 | | 12.0 | 15.0 | 3.5 | 1.00 | **QFM-101215-035** |
| 10.0 | | 12.0 | 18.0 | 6.0 | 1.00 | **QFM-1012-06** |
| 10.0 | | 12.0 | 15.0 | 8.0 | 1.00 | **QFM-101215-08** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **QFM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 20.0 | 8.0 | 1.00 | **QFM-1214-08** |
| 12.0 | | 14.0 | 20.0 | 12.0 | 1.00 | **QFM-1214-12** |
| 12.0 | | 14.0 | 20.0 | 20.0 | 1.00 | **QFM-1214-20** |
| 14.0 | | 16.0 | 22.0 | 12.0 | 1.00 | **QFM-1416-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **QFM-1618-17** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 18.0 | +0.032 | 20.0 | 26.0 | 5.0 | 1.00 | **QFM-182026-051** |
| 18.0 | +0.102 | 20.0 | 26.0 | 12.0 | 1.00 | **QFM-1820-12** |
| 20.0 | +0.040 +0.124 | 23.0 | 30.0 | 21.5 | 1.50 | **QFM-2023-21** |
| 25.0 | | 28.0 | 35.0 | 21.5 | 1.50 | **QFM-2528-21** |
| 26.0 | | 29.0 | 35.0 | 5.0 | 1.50 | **QFM-2629-05** |
| 27.0 | | 30.0 | 38.0 | 20.0 | 1.50 | **QFM-2730-20** |
| 30.0 | | 34.0 | 42.0 | 37.0 | 2.00 | **QFM-3034-37** |
| 35.0 | +0.050 +0.150 | 39.0 | 47.0 | 26.0 | 2.00 | **QFM-3539-26** |
| 35.0 | | 39.0 | 50.0 | 35.0 | 2.00 | **QFM-353950-35** |
| 40.0 | | 44.0 | 52.0 | 14.0 | 2.00 | **QFM-4044-14** |
| 40.0 | | 44.0 | 52.0 | 40.0 | 2.00 | **QFM-4044-40** |
| 50.0 | | 55.0 | 63.0 | 10.0 | 2.00 | **QFM-5055-10** |
| 50.0 | | 55.0 | 63.0 | 50.0 | 2.00 | **QFM-5055-50** |
| 60.0 | +0.060 +0.180 | 65.0 | 78.0 | 50.0 | 2.00 | **QFM-6065-50** |
| 70.0 | | 75.0 | 83.0 | 50.0 | 2.00 | **QFM-7075-50** |

[3] After press-fit. *Testing methods, page 61*

**Available from stock**
Detailed information about delivery time online.
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**Order online**
including delivery times, prices, online tools
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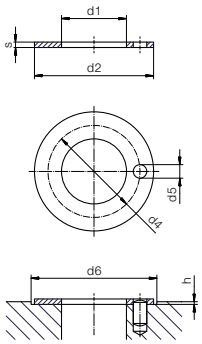
**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**

# Bearing technology | Plain bearings | iglidur® Q

## Thrust washer (form T)




Dimensions according to ISO 3547-1 and special dimensions

Order example: QTM-2842-015 – no minimum order quantity.
Q iglidur® material T Thrust washer M Metric 28 Inner Ø d1 42 Outer Ø d2 015 Height s

| d1 | d2 | d4 | d5 | h | d6 | Øs | Part No. |
|---|---|---|---|---|---|---|---|
| +0.25 | -0.25 | -0.12<br>+0.12 | +0.375<br>+0.125 | +0.2/-0.2 | +0.12 | -0.05 | |
| [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | |
| 28 | 42 | 35 | 4 | 1 | 42 | 1.5 | **QTM-2842-015** |
| 32 | 54 | [4] | 4 | 1 | 54 | 1.5 | **QTM-3254-015** |

[4] Design without fixing hole

**Available from stock**
Detailed information about delivery time online.
www.igus.eu/24

**Order online**
including delivery times, prices, online tools
www.igus.eu/Q

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**



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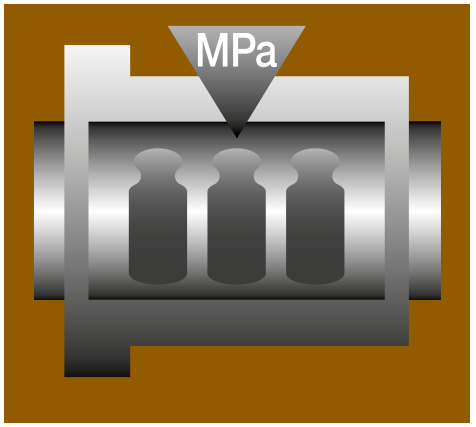



# Heavy-duty on soft shafts

## For medium to high loads, especially on soft shafts

## iglidur® Q290

**When to use it?**
- When a long-lasting plain bearing is required for tough operating conditions (agricultural equipment, construction machinery, etc.) with medium to high dynamic loads on "soft" shafts

**When not to use it?**
- When permanent static loads higher than 55MPa occur
  ***iglidur® G, iglidur® Q, iglidur® Q2***
- When an very wear-resistant plain bearing is required on "soft" shafts for minor loads
  ***iglidur® J, iglidur® J3***
- When continuous operating temperatures are higher than +140°C
  ***iglidur® J350, iglidur® Z***

EN 09/2023

# Bearing technology | Plain bearings | iglidur® Q290

Ø 20.0-
80.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## Heavy-duty on soft shafts

For medium to high loads, especially on soft shafts

iglidur® Q290 shows outstanding service life in tough pivoting applications, as they are frequently found in agricultural machinery, especially on "soft" coated shafts (e.g. galvanised). The wear on the shafts is minimal.

- Recommended for soft shafts
- Suitable for high edge pressures
- Temperature-resistant up to +140°C
- Good price-performance ratio
- Lubrication-free
- Maintenance-free

### Typical application areas

- Agricultural engineering
- Utility and construction vehicles

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | ■■■■□ | + |
| Wear resistance at +90°C | – | ■■■□□ | + |
| Wear resistance at +150°C | – | ■■□□□ | + |
| Slide property | – | ■■■■□ | + |
| Wear resistance under water | – | ■□□□□ | + |
| Media resistance | – | ■■■□□ | + |
| Resistant to edge pressures | – | ■■■■■ | + |
| Resistant to shock and impact loads | – | ■■■■■ | + |
| Dirt resistance | – | ■■■■■ | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

-40°C up to +140°C

55MPa

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.27 | |
| Colour | | black | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 3 | DIN 53495 |
| Max. moisture absorption | % weight | 9.3 | |
| Coefficient of friction, dynamic, against steel | μ | 0.14-0.26 | |
| pv value, max. (dry) | MPa · m/s | 0.70 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 3,074 | DIN 53457 |
| Flexural strength at +20°C | MPa | 97 | DIN 53452 |
| Compressive strength | MPa | 68 | |
| Max. permissible surface pressure (+20°C) | MPa | 55 | |
| Shore D hardness | | 80 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +140 | |
| Max. application temperature short-term | °C | +180 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 7 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{12}$ | DIN 53482 |

Table 01: Material properties

iglidur® Q290 plain bearings do not have the highest static load capacity within the iglidur® product range, instead the material shows its strengths at medium to high dynamic loads: outstanding service life is achieved for tough pivoting applications, e.g. in agricultural or construction machinery, and especially on "soft" shafts, for both the shafts and bearings!

### Moisture absorption

The humidity absorption of iglidur® Q290 bearings amounts to about 0.3% weight in standard climatic conditions. The saturation limit submerged in water is 9.3% weight.

### Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

### Radiation resistance

Plain bearings made from iglidur® Q290 are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® Q290 plain bearings are resistant to weathering. The material properties are significantly affected. Severe discolouration occurs. Applications with this material under weathering conditions are not recommended.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® Q290 plain bearings decreases. Diagram 02 shows this inverse relationship. At the short-term permitted application temperature of +180°C, the permitted surface pressure is still 10MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® Q290 under different loads. These high elastic deformation values, even for loads of more than 50MPa, contribute significantly to the long service life under tough environmental conditions such as edge loads, collisions and impacts.

*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® Q290

### Permissible surface speeds

Typical applications for iglidur® Q290 plain bearings are pivoting movements under medium to high loads at comparatively low speeds. However, relatively high speeds are still attainable. The speeds shown in table 03 are threshold values for low bearing loads. They do not provide any indication of the wear resistance under these parameters.

*Surface speed, page 48*

### Temperature

The long-term upper temperature limit of +140°C permits the broad use in applications typical for the agricultural, utility vehicle or construction equipment sectors. For temperatures over +80°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

Please note that a sliding surface with a rough surface finish will increase the friction. The coefficient of friction of iglidur® Q290 increases as the speed increases (diagram 04). In contrast, the coefficient of friction drops continually with the radial load, as illustrated by diagram 05.

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

Generally, the use of hardened shafts is recommended for higher loads starting at approximately 10MPa. This is, however, often not the case in practice, especially in connection with corrosion-resistant coating methods. Thus, the iglidur® Q290 material has a lot of importance in such applications. Diagram 08 shows this very clearly in connection with galvanised shafts. The special suitability for pivoting applications is shown in diagram 07.

*Shaft materials, page 56*

### Installation tolerances

iglidur® Q290 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

| Chemicals | Resistance |
|---|---|
| Alcohols | + up to 0 |
| Diluted acids | 0 up to – |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | – |
| Strong alkalines | + up to 0 |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 0.8 | 0.6 | 1.0 |
| Short-term | **m/s** | 2.0 | 1.4 | 2.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.14-0.26 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | E10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.014 | +0.054 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.020 | +0.068 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.025 | +0.083 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.032 | +0.102 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.040 | +0.124 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.050 | +0.150 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.060 | +0.180 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.072 | +0.212 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.085 | +0.245 | -0.100 | +0.000 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit



iglidur® Q290
+140°C
55MPa

# Technical data

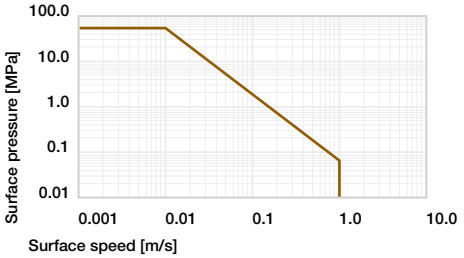



Diagram 01: Permissible pv values for iglidur® Q290 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

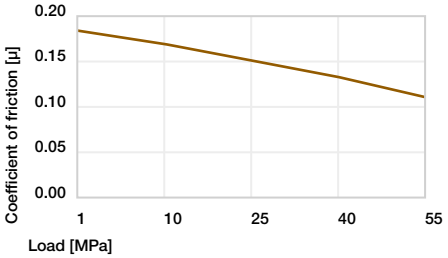



Diagram 05: Coefficient of friction as a function of the load, v = 0.01m/s against Cf53

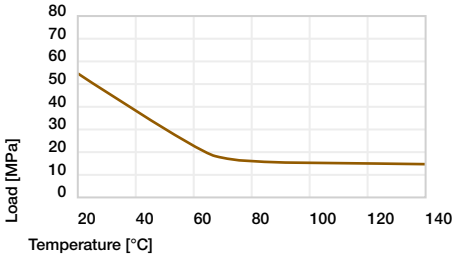



Diagram 02: Maximum recommended surface pressure as a function of temperature (55MPa at +20°C)

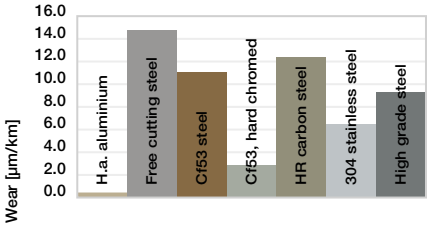



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

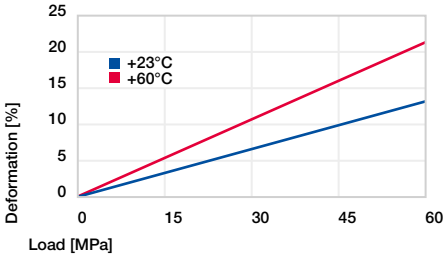



Diagram 03: Deformation under pressure and temperature

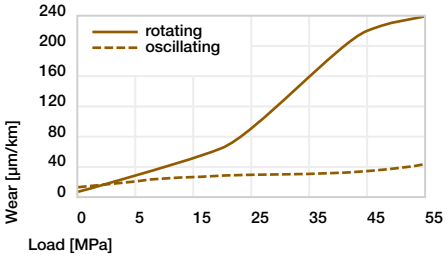



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

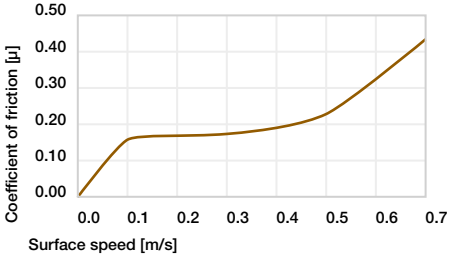



Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

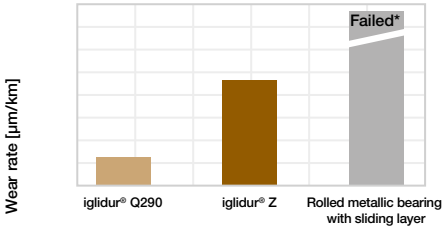
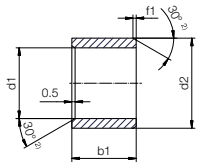



Diagram 08: Wear, pivoting applications on galvanised shafts, p >50MPa, v = 0.01m/s

* Shaft St52 galvanised. Cycle frequency 60,000. Tested with bearing diameter 20mm and 20mm length. The force in the test was 30,400N

# Bearing technology | Plain bearings | iglidur® Q290

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| | | |
|---|---|---|
| d1 [mm] | Ø 12-30 | Ø > 30 |
| f1 [mm] | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example: Q290SM-2023-20 – no minimum order quantity.**
Q290 iglidur® material S Cylindrical M Metric 20 Inner Ø d1 23 Outer Ø d2 20 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 20.0 | +0.040 +0.124 | 23.0 | 20.0 | **Q290SM-2023-20** |
| 25.0 | | 28.0 | 30.0 | **Q290SM-2528-30** |
| 30.0 | | 34.0 | 30.0 | **Q290SM-3034-30** |
| 30.0 | | 34.0 | 40.0 | **Q290SM-3034-40** |
| 35.0 | +0.050 +0.150 | 39.0 | 30.0 | **Q290SM-3539-30** |
| 35.0 | | 39.0 | 40.0 | **Q290SM-3539-40** |
| 35.0 | | 39.0 | 50.0 | **Q290SM-3539-50** |
| 40.0 | | 44.0 | 40.0 | **Q290SM-4044-40** |
| 50.0 | | 55.0 | 50.0 | **Q290SM-5055-50** |
| 60.0 | +0.060 +0.180 | 65.0 | 60.0 | **Q290SM-6065-60** |
| 65.0 | | 70.0 | 60.0 | **Q290SM-6570-60** |
| 70.0 | | 75.0 | 60.0 | **Q290SM-7075-60** |
| 80.0 | | 85.0 | 100.0 | **Q290SM-8085-100** |

[3] After press-fit. *Testing methods, page 61*

**Available from stock**
Detailed information about delivery time online.
www.igus.eu/24

**Order online**
including delivery times, prices, online tools
www.igus.eu/Q290

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**



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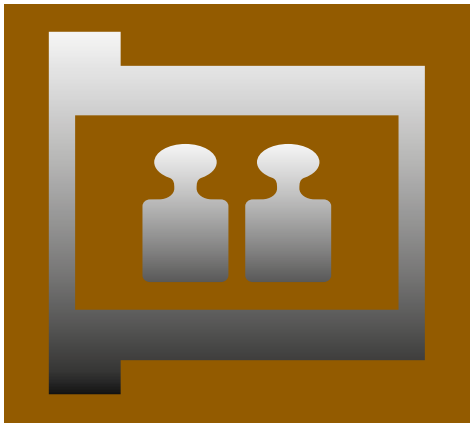

# For medium-sized loads

## Low coefficient of friction and wear on almost every shaft

## iglidur® M210

**When to use it?**
- When a universal plain bearing for use in a wet environment is required
- When a wear-resistant plain bearing for pivoting applications at medium loads is required
- When edge loads and shocks occur
- When the surface pressure of iglidur® J is insufficient

**When not to use it?**
- When a universal plain bearing with the largest possible range of dimensions is required
  ***iglidur® G***
- When a plain bearing for highly loaded pivoting applications is required
  ***iglidur® Q, iglidur® Q2***
- When temperatures are higher than +100°C
  ***iglidur® G, iglidur® J350***

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# Bearing technology | Plain bearings | iglidur® M210

Ø
20.0-60.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## For medium-sized loads

## Low coefficient of friction and wear on almost every shaft

iglidur® M210 was specifically developed for the application for medium pivoting loads. Special attention was paid during development to ensure the material can be used for injection-moulded thick-walled bearings. Therefore iglidur® M210 is well-suited for applications in which thick-walled bearings are used or replaced, which are at the same robust.

- Good wear resistance at room temperature
- Excellent friction coefficients
- Low moisture absorption
- Extremely resistant to edge pressure
- Resistant to shocks and impact
- Resistant to dirt and dust
- Fogging behaviour according to DIN 75201-B

### Typical application areas

- Agricultural engineering
- Mechanical engineering
- Furniture / Industrial design
- Textile industry

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | ■■■■□ | + |
| Wear resistance at +90°C | – | ■■■■□ | + |
| Wear resistance at +150°C | – | ■■■□□ | + |
| Slide property | – | ■■■■■ | + |
| Wear resistance under water | – | ■■■□□ | + |
| Media resistance | – | ■■■□□ | + |
| Resistant to edge pressures | – | ■■■■■ | + |
| Resistant to shock and impact loads | – | ■■■■■ | + |
| Dirt resistance | – | ■■■■■ | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.40 | |
| Colour | | black | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.3 | DIN 53495 |
| Max. moisture absorption | % weight | 0.5 | |
| Coefficient of friction, dynamic, against steel | μ | 0.08-0.20 | |
| pv value, max. (dry) | MPa · m/s | 0.5 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,200 | DIN 53457 |
| Flexural strength at +20°C | MPa | 65 | DIN 53452 |
| Compressive strength | MPa | 50 | |
| Max. permissible surface pressure (+20°C) | MPa | 50 | |
| Shore D hardness | | 75 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +100 | |
| Max. application temperature short-term | °C | +160 | |
| Min. application temperature | °C | up to -40 | |
| Thermal conductivity | W/m · K | 0.25 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 8 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | n.s. | |
| Surface resistance | Ω | $> 10^{11}$ | DIN 53482 |

Table 01: Material properties

-40°C up to +100°C

50MPa

iglidur® M210 plain bearings provide the user with versatile all-round bearings, which have proven to have above average service life, primarily in pivoting applications at medium loads of up to 20MPa.

### Moisture absorption

The humidity absorption of iglidur® M210 bearings amounts to about 0.3 % weight in standard climatic conditions. The saturation limit submerged in water is 0.5% weight. This low moisture absorption is well below the values of iglidur® G.

### Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

### Radiation resistance

Plain bearings made from iglidur® M210 have limited use under radioactive radiation. They are resistant up to a radiation intensity of 3 - $10^2$ Gy.

### Resistance to weathering

iglidur® M210 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® M210 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® M210 as a function of radial pressure. At the recommended maximum surface pressure of 50MPa the deformation is less than 3% at room temperature.

*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® M210

### Permissible surface speeds

Plain bearings made from iglidur® M210 are maintenance-free, they are developed for low to medium surface speeds. The maximum values given in table 03 can only be achieved at a very low surface pressure. The maximum speed given is the speed at which an increase up to the continuous use temperature occurs due to friction.

*Surface speed, page 48*

### Temperature

Also thanks to its maximum long-term application temperature of +100°C, iglidur® M210 is suitable for a wide range of applications. If even higher temperatures are required, iglidur® G is also available with a max. long-term application temperature of +130°C. The temperatures prevailing in the bearing system also have an influence on the wear. The wear rises with increasing temperatures. For temperatures over +50°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05).

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® M210. For rotational movements at radial loads below 1MPa, iglidur® M210 has generally very low wear. Wear is only significantly higher in combination with HR carbon steel shafts. Generally, rotational wear will be higher than for a pivoting application of equal load. This is only reversed at loads above 25MPa (diagram 07).

*Shaft materials, page 56*

### Installation tolerances

iglidur® M210 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the D11 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | 0 |
| Diluted alkalines | – |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | – |
| Strong acids | – |
| Strong alkalines | – |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | m/s | 1.5 | 0.7 | 8.0 |
| Short-term | m/s | 2.0 | 1.4 | 4.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.08-0.20 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | D11 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.020 | +0.080 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.030 | +0.105 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.040 | +0.130 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.050 | +0.160 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.065 | +0.195 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.080 | +0.240 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.100 | +0.290 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.120 | +0.340 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.145 | +0.395 | -0.100 | +0.000 |

Table 05: Important tolerances for plain bearings according to ISO 2795 after press-fit





# Technical data

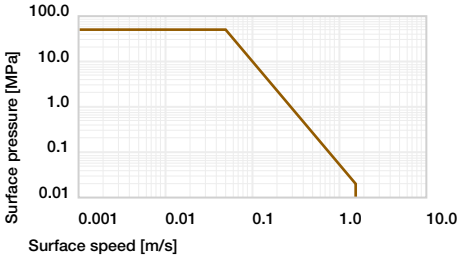



Diagram 01: Permissible pv values for iglidur® M210 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

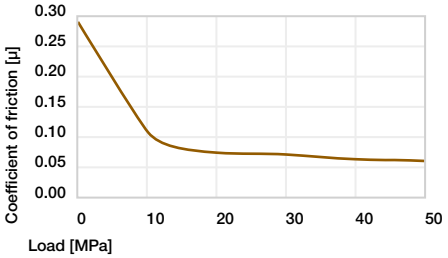



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

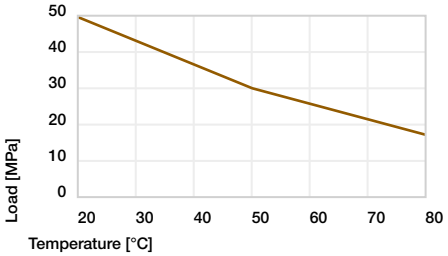



Diagram 02: Maximum recommended surface pressure as a function of temperature (50MPa at +20°C)

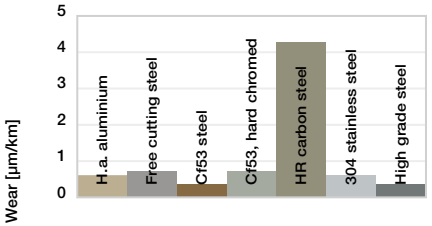



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

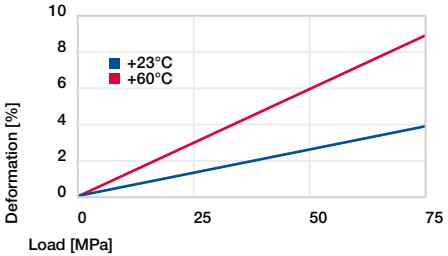



Diagram 03: Deformation under pressure and temperature

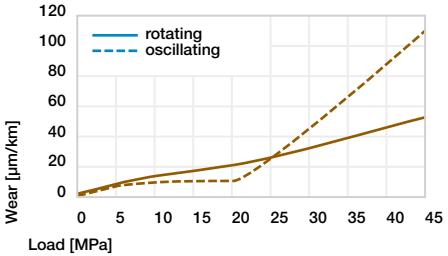



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

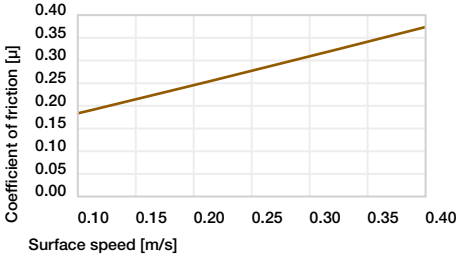
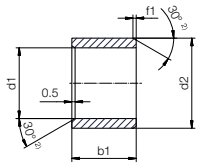



Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

# Bearing technology | Plain bearings | iglidur® M210

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 2795 and special dimensions

**Order example: M210SM-2024-25 - no minimum order quantity.**
M210 iglidur® material S Cylindrical M Metric 20 Inner Ø d1 24 Outer Ø d2 25 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 20.0 | +0.040 +0.124 | 24.0 | 25.0 | **M210SM-2024-25** |
| 20.0 | +0.040 +0.124 | 28.0 | 20.0 | **M210SM-2028-20** |
| 30.0 | +0.040 +0.124 | 36.0 | 30.0 | **M210SM-3036-30** |
| 40.0 | +0.050 +0.150 | 50.0 | 40.0 | **M210SM-4050-40** |
| 60.0 | +0.060 +0.180 | 70.0 | 60.0 | **M210SM-6070-60** |

[3] After press-fit. *Testing methods, page 61*

**Available from stock**
Detailed information about delivery time online.
www.igus.eu/24

**Order online**
including delivery times, prices, online tools
www.igus.eu/M210

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**



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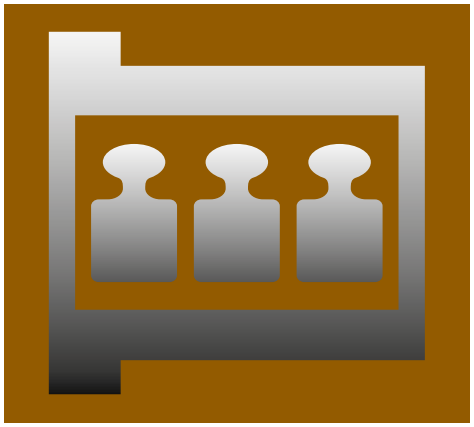


# For heavy duty

## Wear-resistant at medium temperatures and loads

## iglidur® M260

**When to use it?**
- When polymer shafts are used
- When the temperature rating of iglidur® J is not sufficient
- When a plain bearing with low coefficient of friction is required
- When high wear resistance is required at medium loads
- When good liquid media resistance is required

**When not to use it?**
- When high surface pressures occur
  ***iglidur® Z***
- When permanent temperatures exceed +120°C
  ***iglidur® J350***
- When universal wear resistance is required
  ***iglidur® J***

EN 09/2023

# Bearing technology | Plain bearings | iglidur® M260

Ø
20.0-60.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## For heavy duty
## Wear-resistant at medium temperatures and loads

iglidur® M260 was specially developed for the application in harsh environments. Special attention was paid during development to ensure the material can be used for injection-moulded thick-walled bearings. Therefore iglidur® M260 is well-suited for applications in which thick-walled bearings are used or replaced, which are at the same robust.

- Excellent coefficient of friction
- Low moisture absorption

### Typical application areas

- Automation
- Plant construction
- Test engineering and quality assurance
- Robotics industry
- Electronics industry

| Descriptive technical specifications | | |
|---|---|---|
| Wear resistance at +23°C | – | + |
| Wear resistance at +90°C | – | + |
| Wear resistance at +150°C | – | + |
| Slide property | – | + |
| Wear resistance under water | – | + |
| Media resistance | – | + |
| Resistant to edge pressures | – | + |
| Resistant to shock and impact loads | – | + |
| Dirt resistance | – | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.35 | |
| Colour | | black | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.2 | DIN 53495 |
| Max. moisture absorption | % weight | 0.4 | |
| Coefficient of friction, dynamic, against steel | μ | 0.08-0.16 | |
| pv value, max. (dry) | MPa · m/s | 0.35 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,200 | DIN 53457 |
| Flexural strength at +20°C | MPa | 60 | DIN 53452 |
| Compressive strength | MPa | 50 | |
| Max. permissible surface pressure (+20°C) | MPa | 40 | |
| Shore D hardness | | 77 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +120 | |
| Max. application temperature short-term | °C | +140 | |
| Min. application temperature | °C | up to -100 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 13 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | n.s. | |
| Surface resistance | Ω | $> 10^{10}$ | DIN 53482 |

Table 01: Material properties

-100 °C to +120 °C

40MPa

V-2

RoHS-II

ISO 2795

Similar to the classic, iglidur® J, iglidur® M260 is an endurance runner with outstanding wear behaviour, but provides increased reserves at its long-term application temperature of +120°C.

### Moisture absorption

The moisture absorption of iglidur® M260 plain bearings in ambient conditions is approximately 0.2% weight. The saturation limit submerged in water is 0.4% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

### Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® M260 bearings.

### Radiation resistance

They are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® M260 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® M260 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® M260 as a function of radial pressure. At the recommended maximum surface pressure of 40MPa the deformation is less than 2.5% at room temperature. A possible deformation could be, among others, dependant on the duty cycle of the load.

*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® M260

### Permissible surface speeds

iglidur® M260 has been developed for low to medium surface speeds. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

***Surface speed, page 48***

### Temperature

The temperatures prevailing in the bearing system also have an influence on the wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +80°C. For temperatures over +80°C an additional securing is required.

***Application temperatures, page 53***
***Additional securing, page 53***

### Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the load. The coefficient of friction decreases considerably with increasing loads, whereas a slight increase in surface speed causes an increase of the coefficient of friction (Diagram 04 and 05).

***Coefficient of friction and surfaces, page 51***
***Wear resistance, page 54***

### Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. For iglidur® M260 a ground surface with an average surface finish Ra = 0.8μm is recommended. Diagram 06 shows a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® M260. It is important to notice that with increasing loads, the recommended hardness of the shaft increases. The "soft" shafts tend to wear more easily and thus increase the wear of the overall system, if the loads exceed 2MPa. The comparison of rotating and pivoting movements in diagram 07 makes it very clear that iglidur® M260 plain bearings are most suited for rotating operation.

***Shaft materials, page 56***

### Installation tolerances

iglidur® M260 plain bearings are standard bearings for shafts with h tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the D11 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

***Testing methods, page 61***

| Chemicals | Resistance |
|---|---|
| Alcohols | + up to 0 |
| Diluted acids | – |
| Diluted alkalines | + up to 0 |
| Fuels | – |
| Greases, oils without additives | 0 up to – |
| Hydrocarbons | + |
| Strong acids | – |
| Strong alkalines | + up to 0 |

**All data given at room temperature [+20°C]**

**Table 02: Chemical resistance**

***Chemical table, page 1170***

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 1.5 | 0.7 | 8.0 |
| Short-term | **m/s** | 2.0 | 1.4 | 4.0 |

**Table 03: Maximum surface speeds**

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.08-0.16 | 0.09 | 0.04 | 0.04 |

**Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)**

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | D11 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.020 | +0.080 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.030 | +0.105 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.040 | +0.130 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.050 | +0.160 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.065 | +0.195 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.080 | +0.240 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.100 | +0.290 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.120 | +0.340 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.145 | +0.395 | -0.100 | +0.000 |

**Table 05: Important tolerances for plain bearings according to ISO 2795 after press-fit**





# Technical data

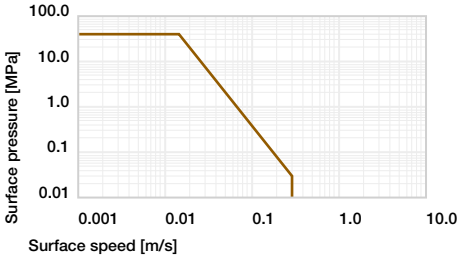



**Diagram 01: Permissible pv values for iglidur® M260 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing**

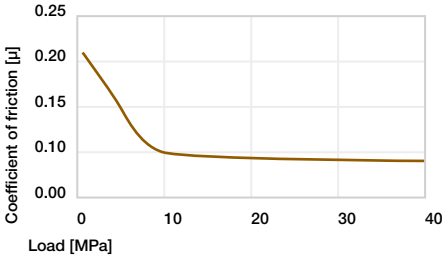



**Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s**

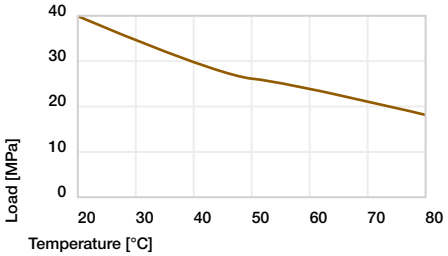



**Diagram 02: Maximum recommended surface pressure as a function of temperature (40MPa at +20°C)**

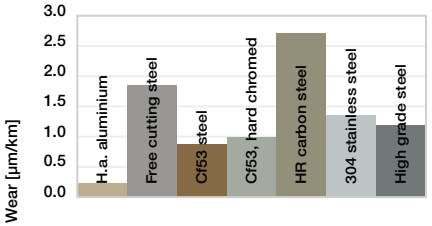



**Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s**

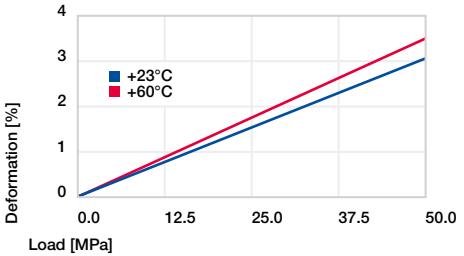



**Diagram 03: Deformation under pressure and temperature**

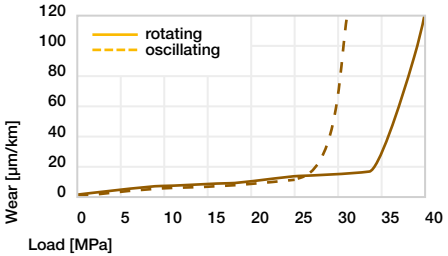



**Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load**

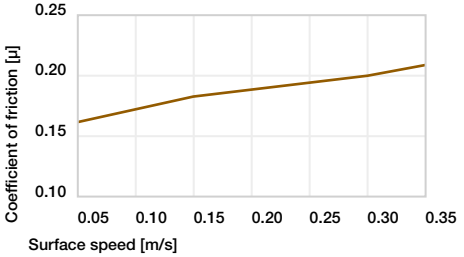
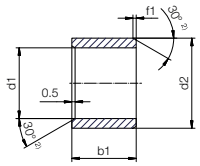



**Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa**

# Bearing technology | Plain bearings | iglidur® M260

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 |
|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 |

Dimensions according to ISO 2795 and special dimensions

**Order example: M260SM-2024-25 - no minimum order quantity.**
M260 iglidur® material S Cylindrical M Metric 20 Inner Ø d1 24 Outer Ø d2 25 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 20.0 | +0.040 +0.124 | 24.0 | 25.0 | **M260SM-2024-25** |
| 20.0 | +0.040 +0.124 | 28.0 | 20.0 | **M260SM-2028-20** |
| 30.0 | +0.040 +0.124 | 36.0 | 30.0 | **M260SM-3036-30** |
| 40.0 | +0.050 +0.150 | 50.0 | 40.0 | **M260SM-4050-40** |
| 60.0 | +0.060 +0.180 | 70.0 | 60.0 | **M260SM-6070-60** |

[3] After press-fit. *Testing methods, page 61*

**Available from stock**
Detailed information about delivery time online.
www.igus.eu/24

**Order online**
including delivery times, prices, online tools
www.igus.eu/M260

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**


EN 09/2023

# Plain bearing materials for heavy-duty applications

## Plain bearing materials for heavy-duty applications

The igutex® plain bearings for high load combine high wear resistance with the ability to withstand high (static) loads, shocks and edge loads.
For special mechanical strength, igutex® bearings are woven from fibre composites enabling even higher strength than fibre-reinforced injection-moulded bearings made of thermoplastics.

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert

**igutex® TX1**
**The robust all-rounder**

| | | |
|---|---|---|
| Temperature [°C] [123] | +120 | – + |
| Surface pressure [MPa] [124] | 200 | – + |
| Coefficient of friction [µ] [125] | 0.37 | – + |
| Wear [µm/km] [125] | 7.10 | – + |
| Price index | | – + |

**igutex® TX2**
**The technical shafts specialist**

| | | |
|---|---|---|
| Temperature [°C] [123] | +130 | – + |
| Surface pressure [MPa] [124] | 180 | – + |
| Coefficient of friction [µ] [125] | 0.31 | – + |
| Wear [µm/km] [125] | 5.80 | – + |
| Price index | | – + |

**igutex® TX3**
**The endurance runner for the highest loads**

| | | |
|---|---|---|
| Temperature [°C] [123] | +130 | – + |
| Surface pressure [MPa] [124] | 180 | – + |
| Coefficient of friction [µ] [125] | 0.28 | – + |
| Wear [µm/km] [125] | 2.00 | – + |
| Price index | | – + |

[123] Upper long-term application temperature [124] Max. recommended surface pressure at +20°C [125] Best pairing for p = 1 MPa, v = 0.3m/s, rotating



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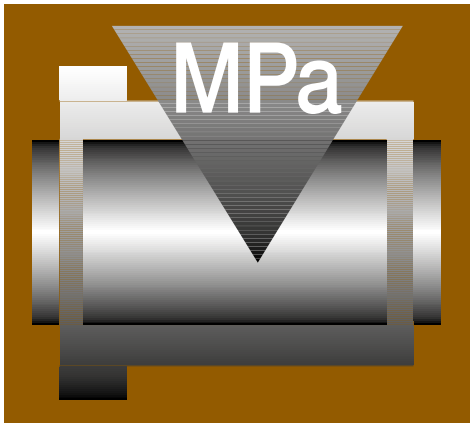



# The robust all-rounder
## For pivoting applications under extreme loads
## igutex® TX1

**When to use it?**
- When very high permanent static loads occur
- For highly loaded pivoting movements
- When not only high loads but also high temperatures and media resistance are required

**When not to use it?**
- When loads of far less than 75MPa occur
  ***iglidur® G, iglidur® Q2, iglidur® Q***
- For rotational movements during continuous operation
  ***iglidur® W300, iglidur® Z, iglidur® G***
- For high-temperature applications with average load levels
  ***iglidur® X, iglidur® J350, iglidur® H***

EN 09/2023

# Bearing technology | Plain bearings | igutex® TX1

Ø 20.0-
80.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## The robust all-rounder
## For pivoting applications under extreme loads

Outstanding rigidity and durability especially under high radial loads during pivoting operations characterise the plain bearings in the new igutex® TX1 series. Thanks to the closed-loop wound structure, excellent dimensional stability is achieved in cases of major forces and impacts.

- Suitable for static loads up to 200MPa
- Wear-resistant
- High media resistance
- Lubrication-free
- Suitable for dynamic loads up to 140MPa
- Maintenance-free
- High rigidity

### Typical application areas

- Agricultural engineering
- Utility and construction vehicles
- Heavy equipments

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 2.10 | |
| Colour | | grey-green | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.2 | DIN 53495 |
| Max. moisture absorption | % weight | 0.5 | |
| **Mechanical properties** | | | |
| Max. permissible surface pressure (+20°C) | MPa | 200 | |
| Shore D hardness | | 94 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +120 | |
| Max. application temperature short-term | °C | +170 | |
| Min. application temperature | °C | -60 | |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | > 1 x $10^{11}$ | DIN IEC 93 |
| Surface resistance | Ω | > 1 x $10^{13}$ | DIN 53482 |

Table 01: Material properties

-60°C up to
+120°C

200MPa

igutex® TX1 plain bearings represent very high load capacity with high radial loads and good abrasion resistance. The special design not only ensures excellent dimensional stability due to the long-fibre winding but also allows lubrication and maintenance-free operation thanks to solid lubricants. Dirt and media resistance round off the list of properties.

### Permissible surface speeds

Typical applications for igutex® TX1 plain bearings are pivoting movements under high loads at comparatively low speeds.
*Table 03*

### Temperature

igutex® TX1 is an extremely temperature-resistant material. The long-term upper temperature limit of +120°C permits the broad use in applications typical for the agricultural, utility vehicle or construction equipment sectors. The press-in and press-out forces of igutex® TX1 plain bearings are very high over the entire temperature range. As a result, additional axial securing is usually not necessary. Although these forces remain very high, a certain decrease can be observed at temperatures above +100°C and, in some cases axial securing is therefore recommended above this temperature.

### Friction and wear

Please note that a sliding surface with a rough surface finish will increase the friction. Shafts that are too smooth also increase the coefficient of friction of the bearing. Surface finishes (Ra) of the shaft between 0.4-0.7µm are ideal. Furthermore, the coefficient of friction of igutex® TX1 plain bearings largely depends on the speed and load. As the surface speed increases, the coefficient of friction will quickly increase as well. With increasing load, the coefficient of friction however decreases continuously.

### Shaft materials

In high load applications, we generally recommend the use of hardened shafts. This particularly applies when using igutex® TX1. However, acceptable wear rates are also achieved on soft shafts with heavy-duty pivoting of less than 100MPa.
*Shaft materials, page 56*

### Installation tolerances

igutex® TX1 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance.

# Bearing technology | Plain bearings | igutex® TX1

| Chemicals | Resistance |
|---|---|
| Alcohols | 0 |
| Diluted acids | + |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | – |
| Strong alkalines | – |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating |
|---|---|---|---|
| Long-term | **m/s** | 0.4 | 0.2 |
| Short-term | **m/s** | 0.9 | 0.5 |

Table 03: Maximum surface speeds

| Ø d1 [mm] | Housing H7 [mm] | | Plain bearings [mm] | | Shaft h9 [mm] | |
|---|---|---|---|---|---|---|
| 20-40 | +0.000 | +0.021 | +0.020 | +0.150 | -0.052 | +0.000 |
| > 40-70 | +0.000 | +0.025 | +0.025 | +0.175 | -0.062 | +0.000 |
| > 70-80 | +0.000 | +0.030 | +0.050 | +0.200 | -0.074 | +0.000 |

Table 04: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

| Hardness* | Roughness |
|---|---|
| > 55hrc | Ra 0.2 - 1.4µ |

* Lower hardness can reduce the service life

Table 05: Hardness and roughness





# Technical data

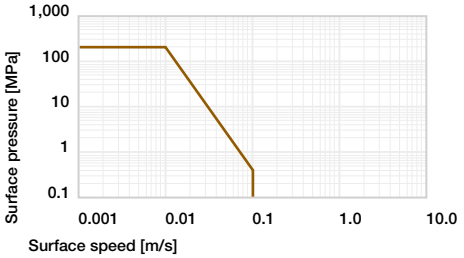



Diagram 01: Permissible pv values for igutex® TX1 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

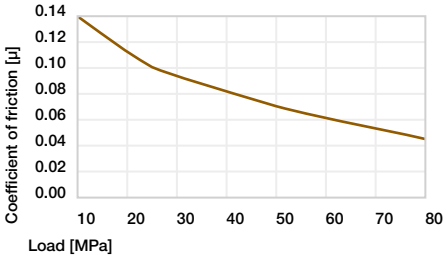



Diagram 03: Coefficient of friction as a function of the pressure, v = 0.01m/s

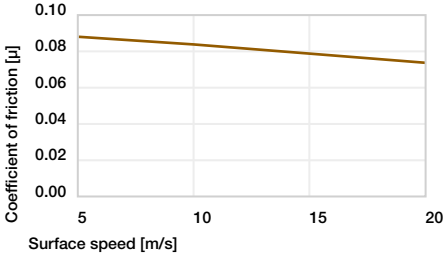



Diagram 02: Coefficient of friction as a function of the surface speed, p = 1MPa

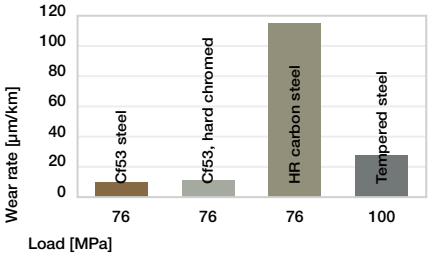



Diagram 04: Wear, rotating with different shaft materials, pressure, v = 0.01m/s

# Bearing technology | Plain bearings | igutex® TX1

## Sleeve bearings (form S)

[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

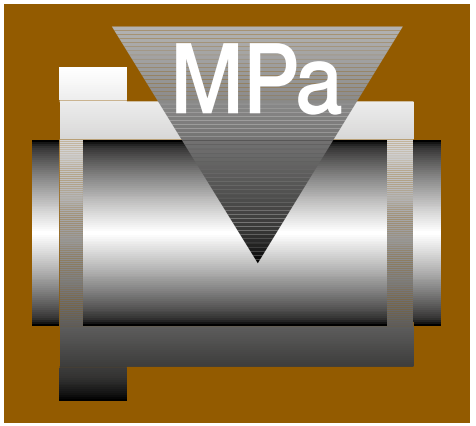
| d1 [mm] | Ø 12 – 30 | Ø >30 |
|---|---|---|
| f1 [mm] | 0.8 | 1.2 |

Dimensions according to ISO 2795 and special dimensions

Order example: TX1SM-2025-20 – no minimum order quantity.
TX1 igutex® material S Cylindrical M Metric 20 Inner Ø d1 25 Outer Ø d2 20 Total length b1

| d1 [mm] | d1 Tolerance[38] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 20.0 | +0.020 +0.150 | 25.0 | 20.0 | **TX1SM-2025-20** |
| 20.0 | | 25.0 | 30.0 | **TX1SM-2025-30** |
| 20.0 | | 25.0 | 40.0 | **TX1SM-2025-40** |
| 20.0 | | 30.0 | 30.0 | **TX1SM-2030-30** |
| 25.0 | | 30.0 | 20.0 | **TX1SM-2530-20** |
| 25.0 | | 30.0 | 30.0 | **TX1SM-2530-30** |
| 25.0 | | 30.0 | 40.0 | **TX1SM-2530-40** |
| 30.0 | | 35.0 | 30.0 | **TX1SM-3035-30** |
| 30.0 | | 35.0 | 40.0 | **TX1SM-3035-40** |
| 30.0 | | 40.0 | 40.0 | **TX1SM-3040-40** |
| 40.0 | | 45.0 | 40.0 | **TX1SM-4045-40** |
| 40.0 | +0.025 +0.175 | 50.0 | 50.0 | **TX1SM-4050-50** |
| 50.0 | | 55.0 | 50.0 | **TX1SM-5055-50** |
| 50.0 | | 60.0 | 60.0 | **TX1SM-5060-60** |
| 60.0 | | 65.0 | 60.0 | **TX1SM-6065-60** |
| 60.0 | | 70.0 | 80.0 | **TX1SM-6070-80** |
| 70.0 | | 75.0 | 60.0 | **TX1SM-7075-60** |
| 70.0 | +0.050 +0.200 | 80.0 | 100.0 | **TX1SM-7080-100** |
| 80.0 | | 85.0 | 100.0 | **TX1SM-8085-100** |
| 80.0 | | 90.0 | 100.0 | **TX1SM-8090-100** |

[38] After press-fit of the bearing in a housing with nominal dimension




# The technical shafts specialist

## Wear-resistant under extreme loads

## igutex® TX2

**When to use it?**

- When very high permanent static loads occur
- For highly loaded pivoting movements
- When not only high loads but also high temperatures and media resistance are required

**When not to use it?**

- When loads of far less than 75MPa occur
  ***iglidur® G, iglidur® Q2, iglidur® Q***
- For rotational movements during continuous operation
  ***iglidur® W300, iglidur® Z, iglidur® G***
- For high-temperature applications with average load levels
  ***iglidur® X, iglidur® J350, iglidur® H***

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# Bearing technology | Plain bearings | igutex® TX2

Ø 20.0-
80.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## The technical shafts specialist
## Wear-resistant under extreme loads

The new igutex® TX2 bearings were developed for use in particularly heavily loaded applications. The high-strength, wound structure with integrated solid lubricants ensures low-friction and maintenance-free operation - without any external lubrication.

- Particularly low wear in heavy-duty areas
- Up to three and a half times the wear resistance of igutex® TX1
- Good coefficient of wear and therefore a long service life

### Typical application areas

- Agricultural engineering
- Utility and construction vehicles
- Heavy equipments

Online product finder
www.igus.eu/iglidur-finder

Online service life calculation
www.igus.eu/iglidur-expert





# Technical data

-60°C up to +130°C

180MPa

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.77 | |
| Colour sliding layer | | black | |
| Colour supporting layer | | reddish brown | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 1.0 | DIN 53495 |
| Max. moisture absorption | % weight | 1.3 | |
| **Mechanical properties** | | | |
| Max. permissible surface pressure (+20°C) | MPa | 180 | |
| Shore D hardness | | 91 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +130 | |
| Max. application temperature short-term | °C | +140 | |
| Min. application temperature | °C | -60 | |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | insulating | DIN IEC 93 |
| Surface resistance | Ω | insulating | DIN 53482 |

Table 01: Material properties

igutex® TX2 plain bearings represent very high load capacity with high radial loads and good abrasion resistance. The special design not only ensures excellent dimensional stability due to the long-fibre winding but also allows lubrication and maintenance-free operation thanks to solid lubricants. Dirt and media resistance round off the list of properties.

### Permissible surface speeds

Typical applications for igutex® TX2 plain bearings are pivoting movements under high loads at comparatively low speeds.
*Table 03*

### Temperature

igutex® TX2 is an extremely temperature-resistant material. The long-term upper temperature limit of +130°C permits the broad use in applications typical for the agricultural, utility vehicle or construction equipment sectors. The press-in and press-out forces of igutex® TX2 plain bearings are very high over the entire temperature range. As a result, additional axial securing is usually not necessary. Although these forces remain very high, a certain decrease can be observed at temperatures above +100°C and, in some cases axial securing is therefore recommended above this temperature.

### Friction and wear

Please note that a sliding surface with a rough surface finish will increase the friction. Shafts that are too smooth also increase the coefficient of friction of the bearing. Surface finishes (Ra) of the shaft between 0.4-0.7µm are ideal. Furthermore, the coefficient of friction of igutex® TX2 plain bearings largely depends on the speed and load. As the surface speed increases, the coefficient of friction will quickly increase as well. With increasing load, the coefficient of friction however decreases continuously.

### Shaft materials

In high load applications, we generally recommend the use of hardened shafts. This particularly applies when using igutex® TX2. However, acceptable wear rates are also achieved on soft shafts with heavy-duty pivoting of less than 100MPa.
*Shaft materials, page 56*

### Installation tolerances

igutex® TX2 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance.

# Bearing technology | Plain bearings | igutex® TX2

| Chemicals | Resistance |
|---|---|
| Alcohols | 0 |
| Diluted acids | + |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | – |
| Strong alkalines | – |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating |
|---|---|---|---|
| Long-term | **m/s** | 0.7 | 0.4 |
| Short-term | **m/s** | 1.0 | 0.7 |

Table 03: Maximum surface speeds

| Ø d1 [mm] | Housing H7 [mm] | | Plain bearings [mm] | | Shaft h9 [mm] | |
|---|---|---|---|---|---|---|
| 20-40 | +0.000 | +0.021 | +0.020 | +0.150 | -0.052 | +0.000 |
| > 40-70 | +0.000 | +0.025 | +0.025 | +0.175 | -0.062 | +0.000 |
| > 70-80 | +0.000 | +0.030 | +0.050 | +0.200 | -0.074 | +0.000 |

Table 04: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

| Hardness* | Roughness |
|---|---|
| > 55hrc | Ra 0.2 - 1.0µ |

* Lower hardness can reduce the service life

Table 05: Hardness and roughness



igutex® TX2
+130°C
180MPa

# Technical data

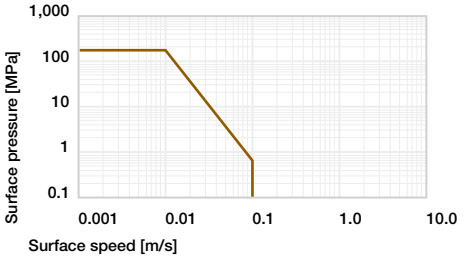



Diagram 01: Permissible pv values for igutex® TX2 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

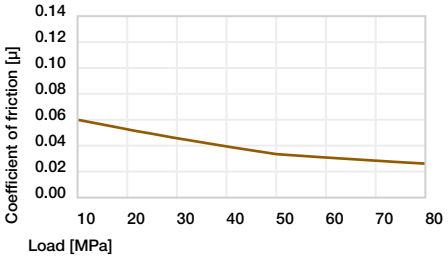



Diagram 03: Coefficient of friction as a function of the pressure, v = 0.01m/s

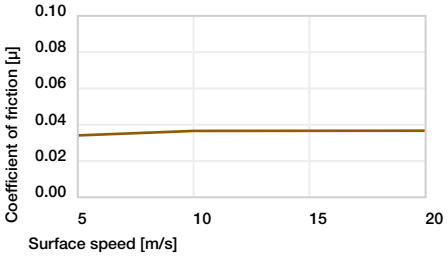



Diagram 02: Coefficient of friction as a function of the surface speed, p = 1MPa

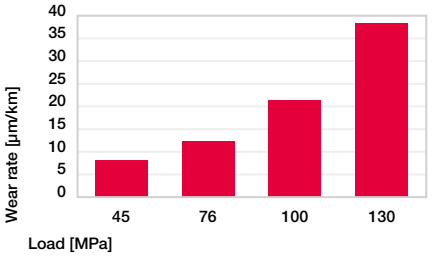
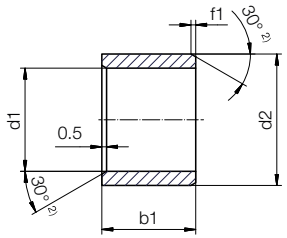



Diagram 04: Wear for oscillating applications with steel shaft material Cf53, hard-chromed, v = 0.01m/s

# Bearing technology | Plain bearings | igutex® TX2

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

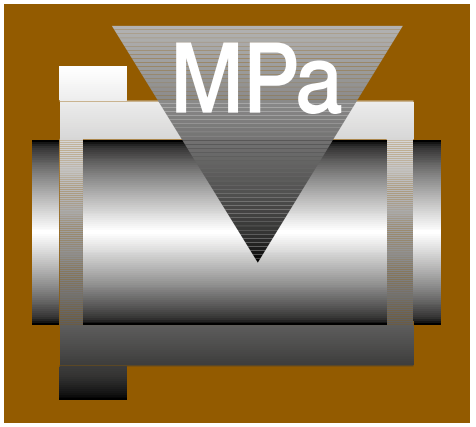
| d1 [mm] | Ø 12 – 30 | Ø >30 |
|---|---|---|
| f1 [mm] | 0.8 | 1.2 |

Dimensions according to ISO 2795 and special dimensions

Order example: TX2SM-2025-20 - no minimum order quantity.
TX2 igutex® material S Cylindrical M Metric 20 Inner Ø d1 25 Outer Ø d2 20 Total length b1

| d1 [mm] | d1 Tolerance[38] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 20.0 | +0.020 +0.150 | 25.0 | 20.0 | TX2SM-2025-20 |
| 20.0 | | 25.0 | 30.0 | TX2SM-2025-30 |
| 20.0 | | 25.0 | 40.0 | TX2SM-2025-40 |
| 20.0 | | 30.0 | 30.0 | TX2SM-2030-30 |
| 25.0 | | 30.0 | 20.0 | TX2SM-2530-20 |
| 25.0 | | 30.0 | 30.0 | TX2SM-2530-30 |
| 25.0 | | 30.0 | 40.0 | TX2SM-2530-40 |
| 30.0 | | 35.0 | 30.0 | TX2SM-3035-30 |
| 30.0 | | 35.0 | 40.0 | TX2SM-3035-40 |
| 30.0 | | 40.0 | 40.0 | TX2SM-3040-40 |
| 40.0 | | 45.0 | 40.0 | TX2SM-4045-40 |
| 40.0 | +0.025 +0.175 | 50.0 | 50.0 | TX2SM-4050-50 |
| 50.0 | | 55.0 | 50.0 | TX2SM-5055-50 |
| 50.0 | | 60.0 | 60.0 | TX2SM-5060-60 |
| 60.0 | | 65.0 | 60.0 | TX2SM-6065-60 |
| 60.0 | | 70.0 | 80.0 | TX2SM-6070-80 |
| 70.0 | | 75.0 | 60.0 | TX2SM-7075-60 |
| 70.0 | +0.050 +0.200 | 80.0 | 100.0 | TX2SM-7080-100 |
| 80.0 | | 85.0 | 100.0 | TX2SM-8085-100 |
| 80.0 | | 90.0 | 100.0 | TX2SM-8090-100 |

[38] After press-fit of the bearing in a housing with nominal dimension




# The endurance runner for the highest loads

## For pivoting applications under extreme loads

## igutex® TX3

**When to use it?**

- When very high permanent static loads occur
- For highly loaded pivoting movements
- When not only high loads but also high temperatures and media resistance are required

**When not to use it?**

- When loads of far less than 100MPa occur
  ***iglidur® G, iglidur® Q2, iglidur® Q***
- For rotational movements during continuous operation
  ***iglidur® W300, iglidur® Z, iglidur® G***
- For high-temperature applications with average load levels
  ***iglidur® X, iglidur® J350, iglidur® H***

# Bearing technology | Plain bearings | igutex® TX3

Ø 20.0-
80.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## The endurance runner for the highest loads
For pivoting applications under extreme loads

Outstanding rigidity and durability especially under high radial loads during pivoting operations characterise the plain bearings in the new igutex® TX3 series. Thanks to the closed-loop wound structure, excellent dimensional stability is achieved in cases of major forces and impacts.

- Low wear rates in dry operation under extreme conditions
- No lubrication and maintenance
- Tested in the igus® test laboratory at up to 100MPa and pivoting of 0.01m/s
- Long service life due to low wear; no additional lubrication required

### Typical application areas

- Agricultural engineering
- Utility and construction vehicles
- Heavy equipments

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.9 | |
| Colour | | black | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.1 | DIN 53495 |
| Max. moisture absorption | % weight | 0.1 | |
| **Mechanical properties** | | | |
| Max. permissible surface pressure (+20°C) | MPa | 180 | |
| Shore D hardness | | 91 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +130 | |
| Max. application temperature short-term | °C | +140 | |
| Min. application temperature | °C | -60 | |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | insulating | DIN IEC 93 |
| Surface resistance | Ω | insulating | DIN 53482 |

Table 01: Material properties

-60°C up to
+130°C

180MPa

igutex® TX3 plain bearings represent very high load capacity with high radial loads and good abrasion resistance. The special design not only ensures excellent dimensional stability due to the long-fibre winding but also allows lubrication and maintenance-free operation thanks to solid lubricants. Dirt and media resistance round off the list of properties.

### Permissible surface speeds

Typical applications for igutex® TX3 plain bearings are pivoting movements under high loads at comparatively low speeds.
*Table 03*

### Temperature

igutex® TX3 is an extremely temperature-resistant material. The long-term upper temperature limit of +130°C permits the broad use in applications typical for the agricultural, utility vehicle or construction equipment sectors. The press-in and press-out forces of igutex® TX3 plain bearings are very high over the entire temperature range. As a result, additional axial securing is usually not necessary. Although these forces remain very high, a certain decrease can be observed at temperatures above +100°C and, in some cases axial securing is therefore recommended above this temperature.

### Friction and wear

Please note that a sliding surface with a rough surface finish will increase the friction. Shafts that are too smooth also increase the coefficient of friction of the bearing. Surface finishes (Ra) of the shaft between 0.4-0.7µm are ideal. Furthermore, the coefficient of friction of igutex® TX3 plain bearings largely depends on the speed and load. As the surface speed increases, the coefficient of friction will quickly increase as well. With increasing load, the coefficient of friction however decreases continuously.

### Shaft materials

In high load applications, we generally recommend the use of hardened shafts. This particularly applies when using igutex® TX3. However, acceptable wear rates are also achieved on soft shafts with heavy-duty pivoting of less than 100MPa.
*Shaft materials, page 56*

### Installation tolerances

igutex® TX3 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance.

# Bearing technology | Plain bearings | igutex® TX3

| Chemicals | Resistance |
|---|---|
| Alcohols | 0 |
| Diluted acids | + |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | – |
| Strong alkalines | – |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating |
|---|---|---|---|
| Long-term | **m/s** | 0.7 | 0.4 |
| Short-term | **m/s** | 1.0 | 0.7 |

Table 03: Maximum surface speeds

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | [mm] | | h9 [mm] | |
| 20-40 | +0.000 | +0.021 | +0.020 | +0.150 | -0.052 | +0.000 |
| > 40-70 | +0.000 | +0.025 | +0.025 | +0.175 | -0.062 | +0.000 |
| > 70-80 | +0.000 | +0.030 | +0.050 | +0.200 | -0.074 | +0.000 |

Table 04: Important tolerances for plain bearings according to ISO 3547-1 after press-fit

| Hardness* | Roughness |
|---|---|
| > 55hrc | Ra 0.2 - 1.4µ |

* Lower hardness can reduce the service life

Table 05: Hardness and roughness





# Technical data

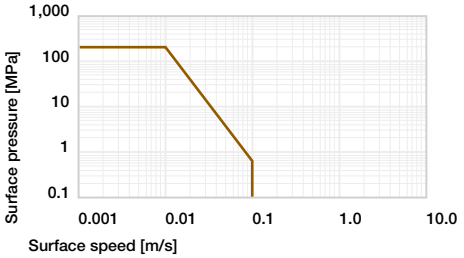



Diagram 01: Permissible pv values for igutex® TX3 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

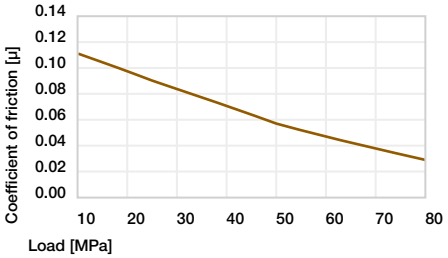



Diagram 03: Coefficient of friction as a function of the pressure, v = 0.01m/s

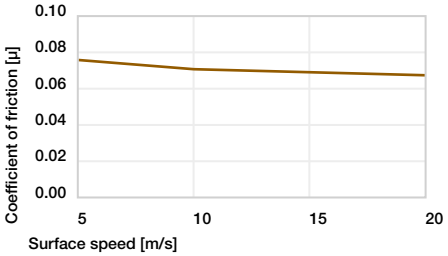



Diagram 02: Coefficient of friction as a function of the surface speed, p = 1MPa

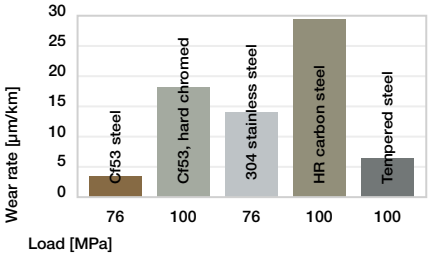
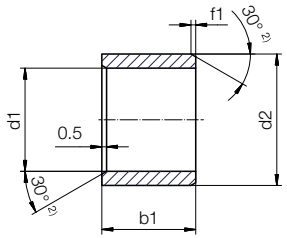



Diagram 04: Wear, rotating with different shaft materials, pressure, v = 0.01m/s

# Bearing technology | Plain bearings | igutex® TX3

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 12 – 30 | Ø >30 |
|---|---|---|
| f1 [mm] | 0.8 | 1.2 |

Dimensions according to ISO 2795 and special dimensions

Order example: TX3SM-2025-20 - no minimum order quantity.
TX3 igutex® material S Cylindrical M Metric 20 Inner Ø d1 25 Outer Ø d2 20 Total length b1

| d1 [mm] | d1 Tolerance[38] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 20.0 | +0.020 +0.150 | 25.0 | 20.0 | TX3SM-2025-20 |
| 20.0 | | 25.0 | 30.0 | TX3SM-2025-30 |
| 20.0 | | 25.0 | 40.0 | TX3SM-2025-40 |
| 20.0 | | 30.0 | 30.0 | TX3SM-2030-30 |
| 25.0 | | 30.0 | 20.0 | TX3SM-2530-20 |
| 25.0 | | 30.0 | 30.0 | TX3SM-2530-30 |
| 25.0 | | 30.0 | 40.0 | TX3SM-2530-40 |
| 30.0 | | 35.0 | 30.0 | TX3SM-3035-30 |
| 30.0 | | 35.0 | 40.0 | TX3SM-3035-40 |
| 30.0 | | 40.0 | 40.0 | TX3SM-3040-40 |
| 40.0 | | 45.0 | 40.0 | TX3SM-4045-40 |
| 40.0 | +0.025 +0.175 | 50.0 | 50.0 | TX3SM-4050-50 |
| 50.0 | | 55.0 | 50.0 | TX3SM-5055-50 |
| 50.0 | | 60.0 | 60.0 | TX3SM-5060-60 |
| 60.0 | | 65.0 | 60.0 | TX3SM-6065-60 |
| 60.0 | | 70.0 | 80.0 | TX3SM-6070-80 |
| 70.0 | | 75.0 | 60.0 | TX3SM-7075-60 |
| 70.0 | +0.050 +0.200 | 80.0 | 100.0 | TX3SM-7080-100 |
| 80.0 | | 85.0 | 100.0 | TX3SM-8085-100 |
| 80.0 | | 90.0 | 100.0 | TX3SM-8090-100 |

[38] After press-fit of the bearing in a housing with nominal dimension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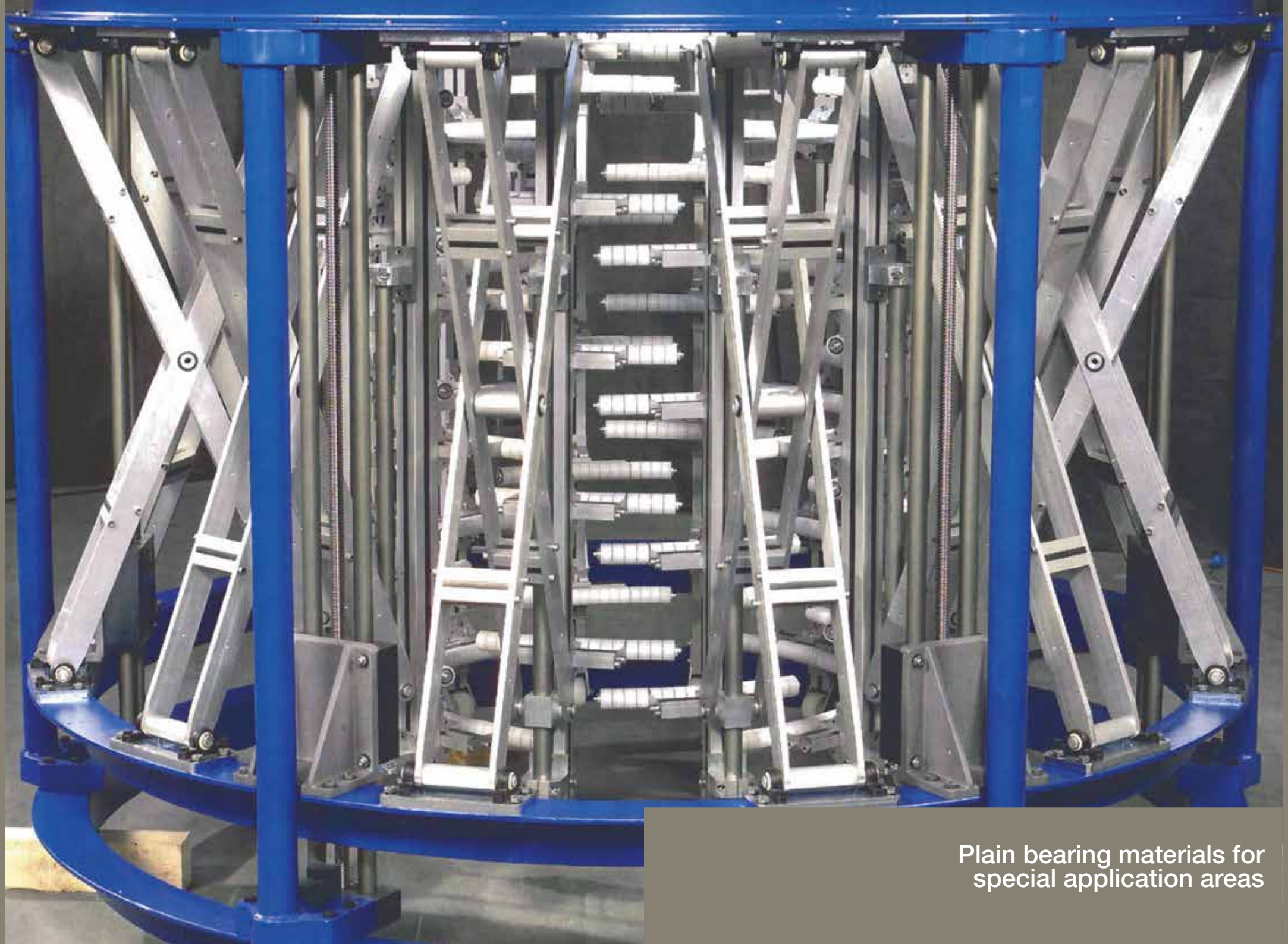

# Plain bearing materials for special application areas

## Plain bearing materials for special application areas

This group brings together the iglidur® materials for very special cases. Those who have not yet found a suitable bearing, will find it here.
Electrical conductivity, free from PTFE and silicone or fast rotation under water: one iglidur® material for all requirements.

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert

**iglidur® F**
**Electrically conductive**

| | | |
|---|---|---|
| Temperature [°C] [123] | +140 | – + |
| Surface pressure [MPa] [124] | 105 | – + |
| Coefficient of friction [µ] [125] | 0.37 | – + |
| Wear [µm/km] [125] | 1.00 | – + |
| Price index | – | + |

**iglidur® F2**
**ESD-compatible all-rounder**

| | | |
|---|---|---|
| Temperature [°C] [123] | +120 | – + |
| Surface pressure [MPa] [124] | 47 | – + |
| Coefficient of friction [µ] [125] | 0.16 | – + |
| Wear [µm/km] [125] | 1.53 | – + |
| Price index | – | + |

**iglidur® H4**
**The automotive standard**

| | | |
|---|---|---|
| Temperature [°C] [123] | +200 | – + |
| Surface pressure [MPa] [124] | 65 | – + |
| Coefficient of friction [µ] [125] | 0.21 | – + |
| Wear [µm/km] [125] | 2.10 | – + |
| Price index | – | + |

**iglidur® UW**
**For fast rotation under water**

| | | |
|---|---|---|
| Temperature [°C] [123] | +90 | – + |
| Surface pressure [MPa] [124] | 40 | – + |
| Coefficient of friction [µ] [125] | 0.24 | – + |
| Wear [µm/km] [125] | 1.80 | – + |
| Price index | – | + |

**iglidur® J UV**
**For continuous direct sunlight**

| | | |
|---|---|---|
| Temperature [°C] [123] | +90 | – + |
| Surface pressure [MPa] [124] | 34 | – + |
| Coefficient of friction [µ] [125] | 0.19 | – + |
| Wear [µm/km] [125] | 0.25 | – + |
| Price index | – | + |

[123] Upper long-term application temperature [124] Max. recommended surface pressure at +20°C [125] Best pairing for p = 1 MPa, v = 0.3m/s, rotating



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**iglidur® N54**
**The biopolymer**

| | | |
|---|---|---|
| Temperature [°C] [123] | +80 | – + |
| Surface pressure [MPa] [124] | 36 | – + |
| Coefficient of friction [µ] [125] | 0.14 | – + |
| Wear [µm/km] [125] | 0.20 | – + |
| Price index | – | + |

**iglidur® G V0**
**Low-cost all-rounder for fire protection**

| | | |
|---|---|---|
| Temperature [°C] [123] | +130 | – + |
| Surface pressure [MPa] [124] | 75 | – + |
| Coefficient of friction [µ] [125] | 0.20 | – + |
| Wear [µm/km] [125] | 2.10 | – + |
| Price index | – | + |

**iglidur® J2**
**Versatile and cost-effective**

| | | |
|---|---|---|
| Temperature [°C] [123] | +90 | – + |
| Surface pressure [MPa] [124] | 46 | – + |
| Coefficient of friction [µ] [125] | 0.18 | – + |
| Wear [µm/km] [125] | 5.00 | – + |
| Price index | – | + |

**iglidur® AB**
**The first antibacterial iglidur® plain bearing**

| | | |
|---|---|---|
| Temperature [°C] [123] | +70 | – + |
| Surface pressure [MPa] [124] | 25 | – + |
| Coefficient of friction [µ] [125] | 0.18 | – + |
| Wear [µm/km] [125] | 1.00 | - + |
| Price index | – | + |

**iglidur® RW370**
**For the rail industry, complies with DIN EN 45545 HL3, R22/R23**

| | | |
|---|---|---|
| Temperature [°C] [123] | +170 | – + |
| Surface pressure [MPa] [124] | 75 | – + |
| Coefficient of friction [µ] [125] | 0.13 | – + |
| Wear [µm/km] [125] | 1.15 | – + |
| Price index | – | + |

**iglidur® B**
**The variable one**

| | | |
|---|---|---|
| Temperature [°C] [123] | +100 | – + |
| Surface pressure [MPa] [124] | 40 | – + |
| Coefficient of friction [µ] [125] | 0.27 | – + |
| Wear [µm/km] [125] | 1.72 | – + |
| Price index | – | + |

**iglidur® C**
**Free from PTFE and silicone**

| | | |
|---|---|---|
| Temperature [°C] [123] | +90 | – + |
| Surface pressure [MPa] [124] | 40 | – + |
| Coefficient of friction [µ] [125] | 0.23 | – + |
| Wear [µm/km] [125] | 1.73 | – + |
| Price index | – | + |

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# Electrically conductive
## Pressure-resistant
## iglidur® F

**When to use it?**

- When the bearing should be electrically conductive
- For high static loads

**When not to use it?**

- When mechanical reaming of the bore is necessary
  ***iglidur® M250***
- When the highest wear resistance is required
  ***iglidur® W300***
- When very low coefficient of friction in dry operation is required
  ***iglidur® J***
- For underwater applications
  ***iglidur® H370***
- When a universal plain bearing is required
  ***iglidur® G***


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# Bearing technology | Plain bearings | iglidur® F

Ø
2.0-70.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## Electrically conductive
## Pressure-resistant

Outstanding rigidity and hardness as well as high conductivity: iglidur® F plain bearings can only be used in dry operations to a limited extent, but offer their fully mechanical benefits when lubricated with oil and grease.

- Electrically conductive
- High compressive strength
- High temperature resistance
- High pv values
- Chemical-resistant

### Typical application areas

- Textile industry
- Automotive industry

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | | + |
| Wear resistance at +90°C | – | | + |
| Wear resistance at +150°C | – | | + |
| Slide property | – | | + |
| Wear resistance under water | – | | + |
| Media resistance | – | | + |
| Resistant to edge pressures | – | | + |
| Resistant to shock and impact loads | – | | + |
| Dirt resistance | – | | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

-40°C up to +140°C

105MPa

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.25 | |
| Colour | | black | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 1.8 | DIN 53495 |
| Max. moisture absorption | % weight | 8.4 | |
| Coefficient of friction, dynamic, against steel | μ | 0.10-0.39 | |
| pv value, max. (dry) | MPa · m/s | 0.34 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 11,600 | DIN 53457 |
| Flexural strength at +20°C | MPa | 260 | DIN 53452 |
| Compressive strength | MPa | 98 | |
| Max. permissible surface pressure (+20°C) | MPa | 105 | |
| Shore D hardness | | 84 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +140 | |
| Max. application temperature short-term | °C | +180 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.65 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 12 | DIN 53752 |
| **Electrical properties**[5] | | | |
| Specific transitional resistance | Ωcm | $< 10^3$ | DIN IEC 93 |
| Surface resistance | Ω | $< 10^2$ | DIN 53482 |

[5] The good conductivity of this material can favour the generation of corrosion on the metallic contact components.

**Table 01: Material properties**

When plain bearings need to be electrically conductive, especially in applications that should keep out static, iglidur® F is the right choice. Moreover, the iglidur® F plain bearings are extremely pressure-resistant. At room temperature, they could be statically loaded up to 105MPa.

### Moisture absorption

The moisture absorption of iglidur® F plain bearings in ambient conditions is approximately 1.8% weight. The saturation limit submerged in water is 8.4% weight. This must be taken into account for these types of applications.

### Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® F bearings.

### Radiation resistance

Plain bearings made from iglidur® F are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® F plain bearings have limited resistance to weathering. The material properties are affected. Discolouration occurs. Practical tests under real application conditions are recommended.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® F plain bearings decreases. Diagram 02 shows this inverse relationship. With the long-term permitted application temperature of +140°C, the permitted surface pressure still amounts to 50MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® F at radial loads. At the recommended maximum surface pressure of 105MPa the deformation is less than 3% at room temperature. A plastic deformation can be negligible up to this value. However, it is also dependent on the service time.

*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® F

### Permissible surface speeds

The maximum permitted surface speeds are based on the operation period and the type of motion. A plain bearing is the most stressed in long-term rotating motions. Here, the maximum speed for iglidur® F plain bearings is 0.8 m/s. The speeds stated in table 03 are limit values for the lowest bearing loads. In practice, though, this level is rarely reached due to varying application conditions.

*Surface speed, page 48*

### Temperature

The ambient temperatures strongly influence the properties of plain bearings. With increasing temperatures, the compressive strength of iglidur® F plain bearings decreases. The wear also increases. For temperatures over +105°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

In dry operation, the coefficient of friction of iglidur® F plain bearings is not as favourable as those of many other iglidur® materials. However iglidur® plain bearings can be lubricated without any problems, and iglidur® F bearings attain excellent results among the lubricated iglidur® bearings.

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® F. In the lowest load range, the hard-chromed shafts prove to be the most suitable shaft in rotating applications with iglidur® F bearings.

*Shaft materials, page 56*

### Installation tolerances

iglidur® F plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). After being assembled into a nominal size housing, the inner diameter automatically adjusts to the D11 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

| Chemicals | Resistance |
|---|---|
| Alcohols | + up to 0 |
| Diluted acids | 0 up to – |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | – |
| Strong alkalines | + up to 0 |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 0.8 | 0.6 | 3.0 |
| Short-term | **m/s** | 1.5 | 1.1 | 6.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.10-0.39 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | D11 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.020 | +0.080 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.030 | +0.105 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.040 | +0.130 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.050 | +0.160 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.065 | +0.195 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.080 | +0.240 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.100 | +0.290 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.120 | +0.340 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.145 | +0.395 | -0.100 | +0.000 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

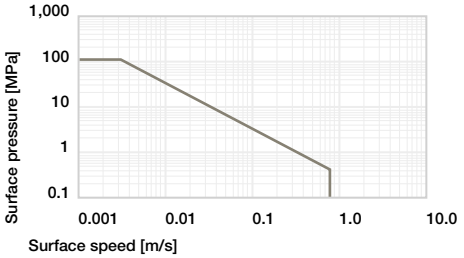



Diagram 01: Permissible pv values for iglidur® F plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

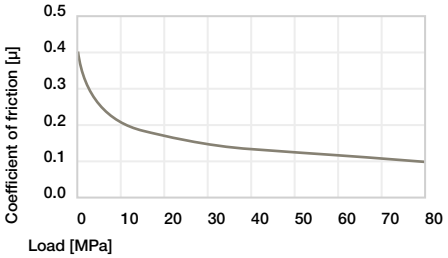



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

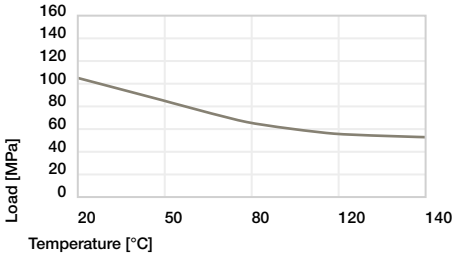



Diagram 02: Maximum recommended surface pressure as a function of temperature (150MPa at +20°C)

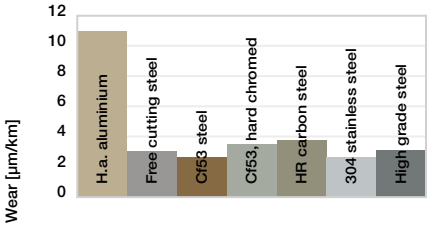



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

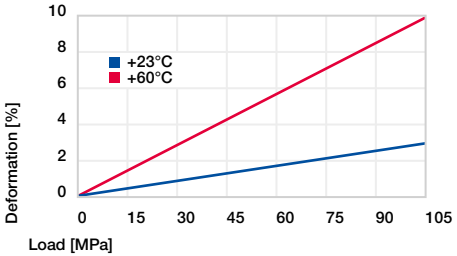



Diagram 03: Deformation under pressure and temperature

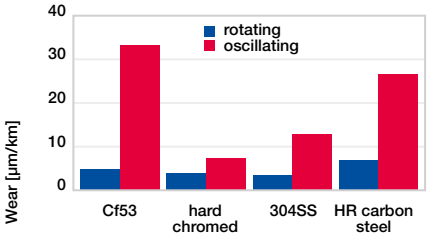



Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

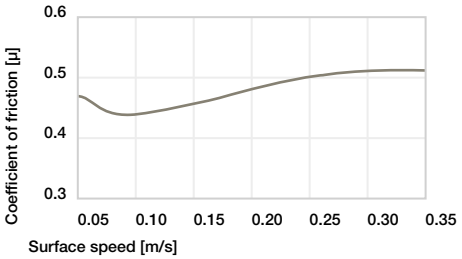
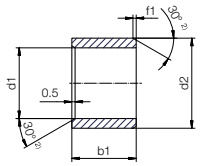



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

# Bearing technology | Plain bearings | iglidur® F

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** FSM-0203-03 – no minimum order quantity.
F iglidur® material S Cylindrical M Metric 02 Inner Ø d1 03 Outer Ø d2 03 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 2.0 | +0.020 +0.080 | 3.5 | 3.0 | **FSM-0203-03** |
| 3.0 | | 4.5 | 3.0 | **FSM-0304-03** |
| 4.0 | +0.030 +0.105 | 5.5 | 4.0 | **FSM-0405-04** |
| 5.0 | | 7.0 | 5.0 | **FSM-0507-05** |
| 5.0 | | 7.0 | 8.0 | **FSM-0507-08** |
| 6.0 | | 8.0 | 6.0 | **FSM-0608-06** |
| 6.0 | | 8.0 | 8.0 | **FSM-0608-08** |
| 6.0 | | 8.0 | 10.0 | **FSM-0608-10** |
| 6.0 | | 8.0 | 13.8 | **FSM-0608-13** |
| 7.0 | +0.040 +0.130 | 9.0 | 10.0 | **FSM-0709-10** |
| 7.0 | | 9.0 | 12.0 | **FSM-0709-12** |
| 8.0 | | 10.0 | 8.0 | **FSM-0810-08** |
| 8.0 | | 10.0 | 10.0 | **FSM-0810-10** |
| 8.0 | | 10.0 | 15.0 | **FSM-0810-15** |
| 10.0 | | 12.0 | 6.0 | **FSM-1012-06** |
| 10.0 | | 12.0 | 9.0 | **FSM-1012-09** |
| 10.0 | | 12.0 | 10.0 | **FSM-1012-10** |
| 12.0 | +0.050 +0.160 | 14.0 | 10.0 | **FSM-1214-10** |
| 12.0 | | 14.0 | 15.0 | **FSM-1214-15** |
| 13.0 | | 15.0 | 20.0 | **FSM-1315-20** |
| 14.0 | | 16.0 | 15.0 | **FSM-1416-15** |
| 15.0 | | 17.0 | 15.0 | **FSM-1517-15** |
| 15.0 | | 17.0 | 20.0 | **FSM-1517-20** |
| 16.0 | | 18.0 | 15.0 | **FSM-1618-15** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 18.0 | +0.050 +0.160 | 20.0 | 12.0 | **FSM-1820-12** |
| 18.0 | | 20.0 | 15.0 | **FSM-1820-15** |
| 18.0 | | 20.0 | 20.0 | **FSM-1820-20** |
| 20.0 | +0.065 +0.195 | 22.0 | 14.5 | **FSM-2022-14** |
| 20.0 | | 22.0 | 20.0 | **FSM-2022-20** |
| 20.0 | | 23.0 | 15.0 | **FSM-2023-15** |
| 20.0 | | 23.0 | 20.0 | **FSM-2023-20** |
| 22.0 | | 25.0 | 15.0 | **FSM-2225-15** |
| 25.0 | | 28.0 | 20.0 | **FSM-2528-20** |
| 28.0 | | 32.0 | 20.0 | **FSM-2832-20** |
| 28.0 | | 32.0 | 30.0 | **FSM-2832-30** |
| 30.0 | | 34.0 | 20.0 | **FSM-3034-20** |
| 30.0 | | 34.0 | 30.0 | **FSM-3034-30** |
| 30.0 | | 34.0 | 40.0 | **FSM-3034-40** |
| 32.0 | +0.080 +0.240 | 36.0 | 30.0 | **FSM-3236-30** |
| 35.0 | | 39.0 | 30.0 | **FSM-3539-30** |
| 35.0 | | 39.0 | 40.0 | **FSM-3539-40** |
| 40.0 | | 44.0 | 30.0 | **FSM-4044-30** |
| 40.0 | | 44.0 | 50.0 | **FSM-4044-50** |
| 45.0 | | 50.0 | 50.0 | **FSM-4550-50** |
| 50.0 | | 55.0 | 40.0 | **FSM-5055-40** |
| 55.0 | +0.100 | 60.0 | 50.0 | **FSM-5560-50** |
| 60.0 | +0.290 | 65.0 | 60.0 | **FSM-6065-60** |

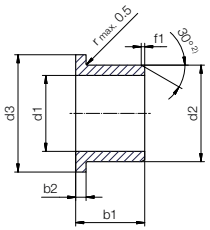
[3] After press-fit. *Testing methods, page 61*





# Bearing technology | Plain bearings | iglidur® F

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** FFM-0405-04 – no minimum order quantity.
F iglidur® material F With flange M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 4.0 | +0.030 +0.105 | 5.5 | 9.5 | 4.0 | 0.75 | **FFM-0405-04** |
| 4.0 | | 5.5 | 9.5 | 6.0 | 0.75 | **FFM-0405-06** |
| 5.0 | | 7.0 | 11.0 | 5.0 | 1.00 | **FFM-0507-05** |
| 6.0 | | 8.0 | 12.0 | 6.0 | 1.00 | **FFM-0608-06** |
| 6.0 | | 8.0 | 12.0 | 8.0 | 1.00 | **FFM-0608-08** |
| 8.0 | +0.040 +0.130 | 10.0 | 15.0 | 6.0 | 1.00 | **FFM-0810-06** |
| 8.0 | | 10.0 | 15.0 | 9.0 | 1.00 | **FFM-0810-09** |
| 10.0 | | 12.0 | 18.0 | 6.0 | 1.00 | **FFM-1012-06** |
| 10.0 | | 12.0 | 18.0 | 8.0 | 1.00 | **FFM-1012-08** |
| 10.0 | | 12.0 | 18.0 | 9.0 | 1.00 | **FFM-1012-09** |
| 10.0 | | 12.0 | 18.0 | 15.0 | 1.00 | **FFM-1012-15** |
| 10.0 | | 12.0 | 18.0 | 18.0 | 1.00 | **FFM-1012-18** |
| 12.0 | +0.050 +0.160 | 14.0 | 20.0 | 9.0 | 1.00 | **FFM-1214-09** |
| 12.0 | | 14.0 | 20.0 | 12.0 | 1.00 | **FFM-1214-12** |
| 14.0 | | 16.0 | 22.0 | 12.0 | 1.00 | **FFM-1416-12** |
| 14.0 | | 16.0 | 22.0 | 17.0 | 1.00 | **FFM-1416-17** |
| 15.0 | | 17.0 | 23.0 | 12.0 | 1.00 | **FFM-1517-12** |

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 15.0 | +0.050 +0.160 | 17.0 | 23.0 | 17.0 | 1.00 | **FFM-1517-17** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **FFM-1618-17** |
| 18.0 | | 20.0 | 26.0 | 12.0 | 1.00 | **FFM-1820-12** |
| 18.0 | | 20.0 | 26.0 | 17.0 | 1.00 | **FFM-1820-17** |
| 20.0 | +0.065 +0.195 | 23.0 | 30.0 | 21.0 | 1.50 | **FFM-2023-21** |
| 25.0 | | 28.0 | 35.0 | 21.0 | 1.50 | **FFM-2528-21** |
| 30.0 | | 34.0 | 42.0 | 26.0 | 2.00 | **FFM-3034-26** |
| 32.0 | +0.080 +0.240 | 36.0 | 45.0 | 26.0 | 2.00 | **FFM-3236-26** |
| 35.0 | | 39.0 | 47.0 | 6.0 | 2.00 | **FFM-3539-06** |
| 35.0 | | 39.0 | 47.0 | 16.0 | 2.00 | **FFM-3539-16** |
| 35.0 | | 39.0 | 47.0 | 26.0 | 2.00 | **FFM-3539-26** |
| 40.0 | | 44.0 | 52.0 | 30.0 | 2.00 | **FFM-4044-30** |
| 40.0 | | 44.0 | 52.0 | 40.0 | 2.00 | **FFM-4044-40** |
| 45.0 | | 50.0 | 58.0 | 50.0 | 2.00 | **FFM-4550-50** |
| 50.0 | | 55.0 | 63.0 | 10.0 | 2.00 | **FFM-5055-10** |
| 50.0 | | 55.0 | 63.0 | 40.0 | 2.00 | **FFM-5055-40** |
| 60.0 | +0.100 | 65.0 | 73.0 | 40.0 | 2.00 | **FFM-6065-40** |
| 70.0 | +0.290 | 75.0 | 83.0 | 40.0 | 2.00 | **FFM-7075-40** |

[3] After press-fit. *Testing methods, page 61*

# ESD-compatible all-rounder:
## Electrically conductive
## iglidur® F2

**When to use it?**

- When the bearing should be electrically discharging
- When a universal plain bearing is required

**When not to use it?**

- When a universal plain bearing without electrostatic discharge capacity is required
  ***iglidur® G, iglidur® P***
- For underwater use
  ***iglidur® H370***
- When the highest wear resistance is required
  ***iglidur® J, iglidur® W300***



EN 09/2023

# Bearing technology | Plain bearings | iglidur® F2

Ø
5.0-20.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## ESD-compatible all-rounder:
## Electrically conductive

iglidur® F2 helps to prevent the build-up of electrostatic charges. Good resistance to media and temperature, suitable even in wet conditions due to low moisture absorption and good universal coefficient of wear pave the way for a wide range of applications.

- Used to prevent electro-static charges
- Suitable for wet environments
- Lubrication-free
- Maintenance-free

### Typical application areas

- Mechanical engineering
- Jig construction
- Industrial handling

| Descriptive technical specifications | | |
|---|---|---|
| Wear resistance at +23°C | – | + |
| Wear resistance at +90°C | – | + |
| Wear resistance at +150°C | – | + |
| Slide property | – | + |
| Wear resistance under water | – | + |
| Media resistance | – | + |
| Resistant to edge pressures | – | + |
| Resistant to shock and impact loads | – | + |
| Dirt resistance | – | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.52 | |
| Colour | | black | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.2 | DIN 53495 |
| Max. moisture absorption | % weight | 0.4 | |
| Coefficient of friction, dynamic, against steel | μ | 0.16-0.22 | |
| pv value, max. (dry) | MPa · m/s | 0.31 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 7,418 | DIN 53457 |
| Flexural strength at +20°C | MPa | 93 | DIN 53452 |
| Compressive strength | MPa | 61 | |
| Max. permissible surface pressure (+20°C) | MPa | 47 | |
| Shore D hardness | | 72 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +120 | |
| Max. application temperature short-term | °C | +165 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.61 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 5 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $< 10^9$ | DIN IEC 93 |
| Surface resistance | Ω | $< 10^9$ | DIN 53482 |

Table 01: Material properties

-40°C up to +120°C

47MPa

The prevention of electrostatic charge is an important requirement in many application areas. At the same time other technical application parameters such as wear resistance, media and temperature resistance, suitability in a wet environment etc. cannot be neglected. iglidur® F2 with its wide range of properties constitutes another universal bearing for numerous "ESD-suitable" applications.

### Moisture absorption

The moisture absorption of iglidur® F2 plain bearings in ambient conditions is approximately 0.2% weight. The saturation limit submerged in water is 0.4% weight.

### Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® F2 bearings.

### Radiation resistance

Plain bearings made from iglidur® F2 are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® F2 plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® F2 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® F2 at radial loads. A plastic deformation can be negligible up to this value. However, it is also dependent on the service time.
***Surface pressure, page 45***

# Bearing technology | Plain bearings | iglidur® F2

### Permissible surface speeds

The maximum permitted surface speeds are based on the operation period and the type of motion. A plain bearing is the most stressed in long-term rotating motions. Here, the maximum speed for iglidur® F2 plain bearings is 0.8m/s. In practice, though, this level is rarely reached due to varying application conditions.

*Surface speed, page 48*

### Temperature

The ambient temperatures strongly influence the properties of plain bearings. With increasing temperatures, the compressive strength of iglidur® F2 plain bearings decreases. Diagram 02 shows this inverse relationship. For temperatures over +70°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

Coefficient of friction and wear resistance are dependent on the application parameters (diagrams 04 and 05).

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

Diagram 06 shows a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® F2. In the lower region of the load, free cutting steel and hard-anodised aluminium shafts, as well as HR carbon steel and hard-chromed steel shafts prove to be the most favourable in rotating applications with iglidur® F2 plain bearings with respect to wear. Diagram 07 shows significantly less wear in rotation compared to pivoting movements over the entire load range.

*Shaft materials, page 56*

### Installation tolerances

iglidur® F2 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances.

*Testing methods, page 61*

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | 0 |
| Diluted alkalines | – |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | – |
| Strong acids | – |
| Strong alkalines | – |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | m/s | 0.8 | 0.7 | 3.0 |
| Short-term | m/s | 1.4 | 1.1 | 5.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.16-0.22 | 0.01 | 0.05 | 0.03 |

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | E10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.014 | +0.054 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.020 | +0.068 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.025 | +0.083 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.032 | +0.102 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.040 | +0.124 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.050 | +0.150 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.060 | +0.180 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.072 | +0.212 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.085 | +0.245 | -0.100 | +0.000 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

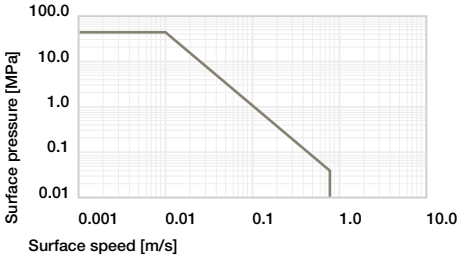



Diagram 01: Permissible pv values for iglidur® F2 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

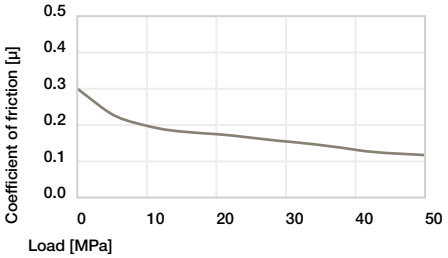



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

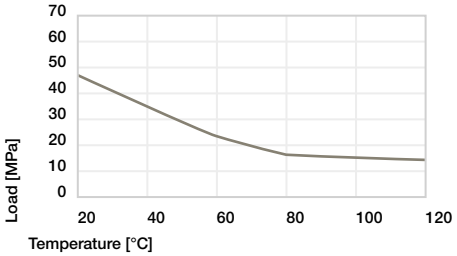



Diagram 02: Maximum recommended surface pressure as a function of temperature (47MPa at +20°C)

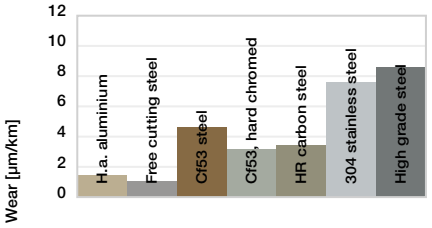



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

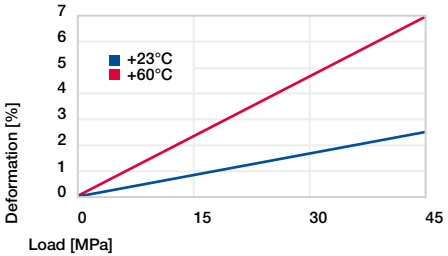



Diagram 03: Deformation under pressure and temperature

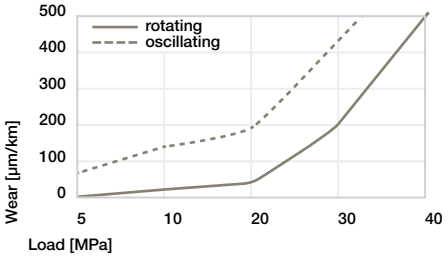



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

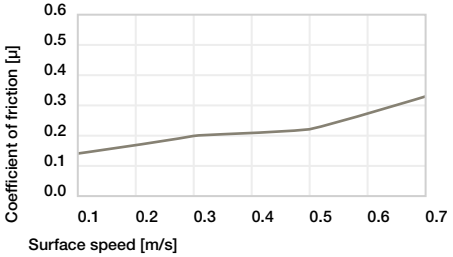
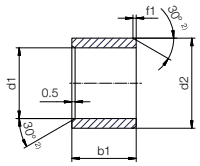



Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

# Bearing technology | Plain bearings | iglidur® F2

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 |
|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** F2SM-0507-10 – **no minimum order quantity.**
F2 iglidur® material S Cylindrical M Metric 05 Inner Ø d1 07 Outer Ø d2 10 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 5.0 | +0.020 +0.068 | 7.0 | 10.0 | **F2SM-0507-10** |
| 6.0 | | 8.0 | 6.0 | **F2SM-0608-06** |
| 7.0 | +0.025 +0.083 | 9.0 | 10.0 | **F2SM-0709-10** |
| 8.0 | | 10.0 | 10.0 | **F2SM-0810-10** |
| 10.0 | | 12.0 | 10.0 | **F2SM-1012-10** |
| 10.0 | | 12.0 | 15.0 | **F2SM-1012-15** |
| 12.0 | +0.032 +0.102 | 14.0 | 12.0 | **F2SM-1214-12** |
| 16.0 | | 18.0 | 15.0 | **F2SM-1618-15** |
| 20.0 | +0.040 +0.124 | 23.0 | 20.0 | **F2SM-2023-20** |

[3] After press-fit. *Testing methods, page 61*

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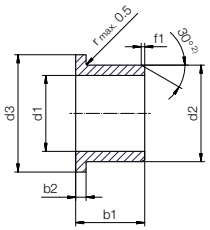
**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**



iglidur® F2
+120°C
47MPa

# Bearing technology | Plain bearings | iglidur® F2

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 |
|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** F2FM-0608-06 – **no minimum order quantity.**
F2 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 12.0 | 6.0 | 1.00 | **F2FM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 15.0 | 10.0 | 1.00 | **F2FM-0810-10** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **F2FM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 20.0 | 12.0 | 1.00 | **F2FM-1214-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **F2FM-1618-17** |
| 20.0 | +0.040 +0.124 | 23.0 | 30.0 | 21.5 | 1.50 | **F2FM-2023-21** |

[3] After press-fit. *Testing methods, page 61*

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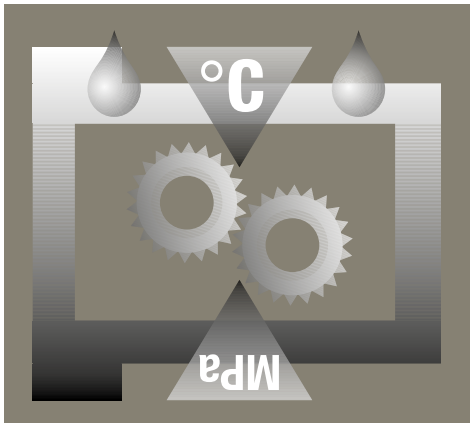


# The automotive standard

## Up to +200°C, media-resistant

## iglidur® H4

**When to use it?**

- For application with fuels, oils, etc.
- When high wear resistance is required
- For low coefficient of friction
- For high temperature resistance from -40°C to +200°C
- For high chemical resistance

**When not to use it?**

- For underwater use
  ***iglidur® H370***
- When a cost-effective universal plain bearing is required
  ***iglidur® G***
- When a temperature and media-resistant plain bearing for static applications is required
  ***iglidur® H2***



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# Bearing technology | Plain bearings | iglidur® H4

Ø
4.0-40.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## The automotive standard
## Up to +200°C, media-resistant

Cost-effective high-temperature material with good dry-operation properties and "engine compartment resistance".

- Low coefficient of friction
- High wear resistance
- Temperature-resistant from -40°C to +200°C
- Chemical-resistant
- Lubrication-free
- Maintenance-free

### Typical application areas

- Automotive industry
- Automation
- Packaging

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | | + |
| Wear resistance at +90°C | – | | + |
| Wear resistance at +150°C | – | | + |
| Slide property | – | | + |
| Wear resistance under water | – | | + |
| Media resistance | – | | + |
| Resistant to edge pressures | – | | + |
| Resistant to shock and impact loads | – | | + |
| Dirt resistance | – | | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.79 | |
| Colour | | brown | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.1 | DIN 53495 |
| Max. moisture absorption | % weight | 0.2 | |
| Coefficient of friction, dynamic, against steel | μ | 0.08-0.25 | |
| pv value, max. (dry) | MPa · m/s | 0.70 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 7,500 | DIN 53457 |
| Flexural strength at +20°C | MPa | 120 | DIN 53452 |
| Compressive strength | MPa | 50 | |
| Max. permissible surface pressure (+20°C) | MPa | 65 | |
| Shore D hardness | | 80 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +200 | |
| Max. application temperature short-term | °C | +240 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 5 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{13}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{12}$ | DIN 53482 |

Table 01: Material properties

-40°C up to +200°C

65MPa

V-0

RoHS-II

ISO 3547-1

iglidur® H4 plain bearings stand for high carrying capacity, good abrasion resistance and good temperature resistance, besides the obvious economic factors. Temperatures up to +200°C, permitted surface pressure up to 65MPa, and excellent chemical resistance are only some of the essential attributes. Solid lubricants reduce the coefficient of friction and support the wear resistance, which has been significantly improved compared to the iglidur® H2 plain bearings, which are also very cost-effective. iglidur® H4 plain bearings are suitable for all sliding surfaces.

### Moisture absorption

The moisture absorption of iglidur® H4 plain bearings is below 0.1% weight in ambient conditions. The saturation limit submerged in water is 0.2% weight. iglidur® H4 is therefore an ideal material for wet environments.

### Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is generally possible.

### Radiation resistance

Plain bearings made from iglidur® H4 are resistant up to a radiation intensity of $2 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® H4 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® H4 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® H4 at radial loads.
*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® H4

### Permissible surface speeds

In contrast to the similarly cost-effective iglidur® H2 plain bearings, iglidur® H4 has a favourable coefficient of friction. This accounts for the higher permitted surface speeds that can be attained with these bearings. The speeds stated in table 03 are limit values for the lowest bearing loads. With higher loads, the permitted speed drops with the extent of the load due to the limitations by the pv value.

*Surface speed, page 48*

### Temperature

iglidur® H4 is an extremely temperature-resistant material. With increasing temperatures, the compressive strength of iglidur® H4 plain bearings decreases. When considering temperatures, the additional frictional heat in the bearing system must be taken into account. For temperatures over +110°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

The coefficient of friction of the iglidur® H4 plain bearings is very low (diagrams 04 and 05). Please note that a sliding surface with a rough surface finish will increase the friction.

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

With many of the suitable shaft materials, iglidur® H4 is the economical alternative to many other high-temperature bearings. The important thing is however the selection of the suitable shaft material. It cannot be generally stated that iglidur® H4 is suitable for use with hard or soft shafts. Tests have however shown that pivoting applications yield better wear data. In rotating applications, the wear increases markedly from 10MPa.

*Shaft materials, page 56*

### Installation tolerances

iglidur® H4 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | + up to 0 |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | 0 up to – |
| Strong alkalines | + |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | m/s | 1.0 | 0.7 | 1.0 |
| Short-term | m/s | 1.5 | 1.1 | 2.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.08-0.25 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | F10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.006 | +0.046 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.010 | +0.058 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.013 | +0.071 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.016 | +0.086 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.020 | +0.104 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.025 | +0.125 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.030 | +0.150 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | -0.036 | +0.176 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.043 | +0.203 | +0.000 | +0.100 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit



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# Technical data

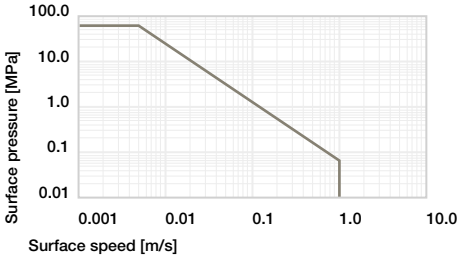


Diagram 01: Permissible pv values for iglidur® H4 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

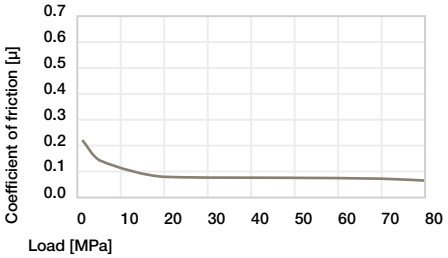


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

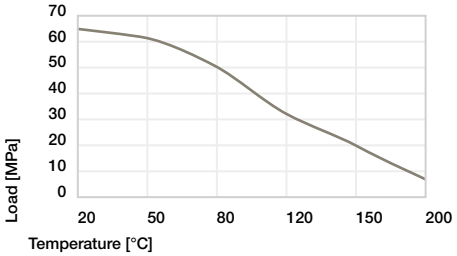


Diagram 02: Maximum recommended surface pressure as a function of temperature (65MPa at +20°C)

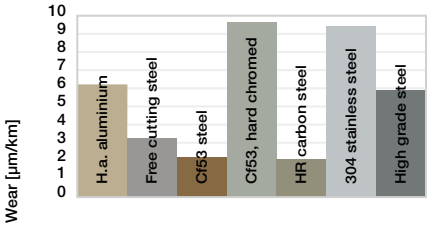


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

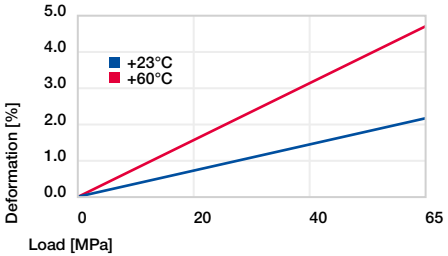


Diagram 03: Deformation under pressure and temperature

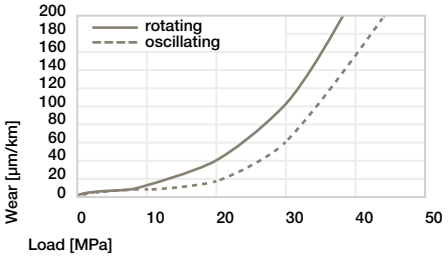


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

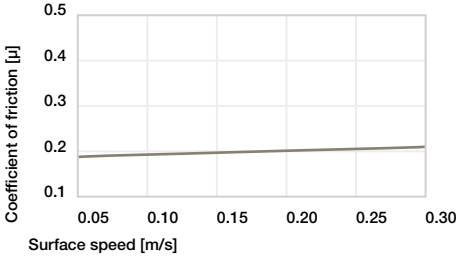


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

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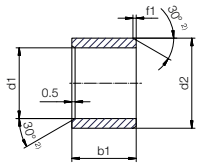
# Bearing technology | Plain bearings | iglidur® H4

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** H4SM-0405-04 – **no minimum order quantity.**
H4 iglidur® material S Cylindrical M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 4.0 | +0.010 +0.058 | 5.5 | 4.0 | **H4SM-0405-04** |
| 6.0 | | 8.0 | 8.0 | **H4SM-0608-08** |
| 8.0 | +0.013 +0.071 | 10.0 | 10.0 | **H4SM-0810-10** |
| 8.0 | | 10.0 | 20.0 | **H4SM-0810-20** |
| 16.0 | +0.016 +0.086 | 18.0 | 20.0 | **H4SM-1618-20** |
| 18.0 | | 20.0 | 15.0 | **H4SM-1820-15** |
| 20.0 | +0.020 +0.104 | 22.0 | 15.0 | **H4SM-2022-15** |
| 39.0 | +0.025 +0.125 | 43.0 | 40.0 | **H4SM-3943-40** |

[3] After press-fit. *Testing methods, page 61*

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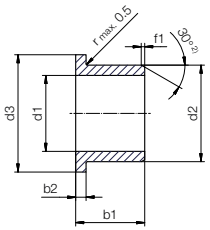
iglidur® H4
+200°C
65MPa

# Bearing technology | Plain bearings | iglidur® H4

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** H4FM-0405-04 – **no minimum order quantity.**
H4 iglidur® material F With flange M Metric 04 Inner Ø d1 05 Outer Ø d2 04 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 4.0 | +0.010 +0.058 | 5.5 | 9.5 | 4.0 | 0.75 | **H4FM-0405-04** |
| 6.0 | | 8.0 | 12.0 | 8.0 | 1.00 | **H4FM-0608-08** |
| 6.0 | | 10.0 | 12.0 | 20.0 | 1.00 | **H4FM-060810-20** |
| 8.0 | +0.013 +0.071 | 10.0 | 15.0 | 10.0 | 1.00 | **H4FM-0810-10** |
| 10.0 | | 12.0 | 18.0 | 5.0 | 1.00 | **H4FM-1012-05** |
| 10.0 | | 12.0 | 18.0 | 12.0 | 1.00 | **H4FM-1012-12** |
| 10.0 | | 12.0 | 18.0 | 25.0 | 1.00 | **H4FM-101218-25** |
| 12.0 | +0.016 +0.086 | 14.0 | 20.0 | 12.0 | 1.00 | **H4FM-1214-12** |
| 15.0 | | 17.0 | 23.0 | 12.0 | 1.00 | **H4FM-1517-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **H4FM-1618-17** |
| 18.0 | | 20.0 | 26.0 | 17.0 | 1.00 | **H4FM-1820-17** |
| 20.0 | +0.020 +0.104 | 23.0 | 30.0 | 21.5 | 1.50 | **H4FM-2023-21** |
| 25.0 | | 28.0 | 35.0 | 21.5 | 1.50 | **H4FM-2528-21** |
| 30.0 | | 34.0 | 40.0 | 30.0 | 2.00 | **H4FM-3034-30** |
| 40.0 | +0.030 +0.150 | 44.0 | 52.0 | 40.0 | 2.00 | **H4FM-4044-40** |

[3] After press-fit. *Testing methods, page 61*

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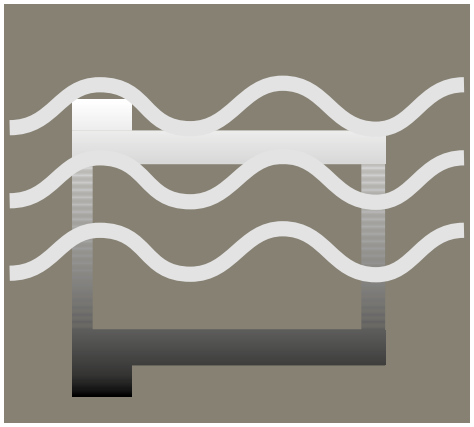
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**



# For fast rotation under water

## Extreme wear resistance in liquid under continuous operation

## iglidur® UW

**When to use it?**

- For underwater applications and in liquid media
- For low loads
- For high rotational speeds
- For extreme wear resistance in media-lubricated continuous operation

**When not to use it?**

- When continuous operating temperatures are higher than +90°C
  ***iglidur® UW500***
- When high loads occur
  ***iglidur® H370, iglidur® UW500, iglidur® X***
- When only dry operation is feasible
  ***iglidur® J***



EN 09/2023

# Bearing technology | Plain bearings | iglidur® UW

Ø
3.0-20.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## For fast rotation under water

Extreme wear resistance in liquid under continuous operation

The best iglidur® plain bearing for underwater applications. The first choice for pumping applications.

- Suitable for underwater applications
- For fast and constant rotation
- Long service life
- Lubrication-free
- Maintenance-free

### Typical application areas

- Fluid technology
- Pumps

| Descriptive technical specifications | | |
|---|---|---|
| Wear resistance at +23°C | – | + |
| Wear resistance at +90°C | – | + |
| Wear resistance at +150°C | – | + |
| Slide property | – | + |
| Wear resistance under water | – | + |
| Media resistance | – | + |
| Resistant to edge pressures | – | + |
| Resistant to shock and impact loads | – | + |
| Dirt resistance | – | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert



EN 09/2023



# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.52 | |
| Colour | | black | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.2 | DIN 53495 |
| Max. moisture absorption[6] | % weight | 0.8 | |
| Coefficient of friction, dynamic, against steel | μ | 0.15-0.35 | |
| pv value, max. (dry) | MPa · m/s | 0.11 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 9,600 | DIN 53457 |
| Flexural strength at +20°C | MPa | 90 | DIN 53452 |
| Compressive strength | MPa | 70 | |
| Max. permissible surface pressure (+20°C) | MPa | 40 | |
| Shore D hardness | | 78 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +90 | |
| Max. application temperature short-term | °C | +110 | |
| Min. application temperature | °C | -50 | |
| Thermal conductivity | W/m · K | 0.60 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 6 | DIN 53752 |
| **Electrical properties[5]** | | | |
| Specific transitional resistance | Ωcm | $< 10^5$ | DIN IEC 93 |
| Surface resistance | Ω | $< 10^5$ | DIN 53482 |

[5] The good conductivity of this material can favour the generation of corrosion on the metallic contact components.

[6] All results were obtained under laboratory conditions with demineralised water. For application with direct water contact, we recommend tests under real application conditions.

**Table 01: Material properties**

-50°C up to +90°C

40MPa

iglidur® UW was developed for underwater applications in which the maximum temperatures are lower than +100°C. For application temperatures above this limit, the plain bearings made from iglidur® UW500 are available. Though iglidur® UW was developed for application in liquids, it is also suitable for dry operation. This one is particularly important in applications that call for both dry and wet operations. These applications can be seen often in practice. The features of the bearings made from iglidur® UW described in this section apply to the dry operation. Unless it is expressly mentioned otherwise.

### Moisture absorption

The moisture absorption of iglidur® UW plain bearings in ambient conditions is approximately 0.2% weight. The saturation limit submerged in water is 0.8% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

### Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

### Radiation resistance

Plain bearings made from iglidur® UW are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® UW plain bearings have limited resistance to weathering. The material properties are affected. Discolouration occurs. Practical tests under real application conditions are recommended.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® UW plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

Diagram 03 shows the elastic deformation of iglidur® UW under different loads. At the maximum recommended surface pressure of 40MPa, the deformation is less than 1%.

***Surface pressure, page 45***

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# Bearing technology | Plain bearings | iglidur® UW

### Permissible surface speeds

iglidur® UW is very good in both wet and dry operation. Due to hydrodynamic lubrication at high speeds, surface speeds far above 2m/s can be achieved. The iglidur® UW plain bearings can be used in dry operation at speeds of up to 1.5m/s for short periods.

*Surface speed, page 48*

### Temperature

As stated earlier, iglidur® UW plain bearings are required for use in the low temperature range. As the liquid usually dissipates heat in underwater applications the temperature of the liquid is very important. For temperatures over +80°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

The surface finish of the shafts should not be extremely smooth in order to prevent a high adhesion effect and the related increase of the coefficient of friction. Please contact us for the specifications of shaft surface finishes in underwater applications.

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® UW. For low loads with rotation, the combinations achieve the best coefficient of wear with high grade steel and 304 stainless steel. The conditions shift with increasing loads. It is also important to note that the wear rate increases significantly from loads > 5MPa.

*Shaft materials, page 56*

### Installation tolerances

iglidur® UW plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | 0 up to – |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | – |
| Strong alkalines | + up to 0 |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 0.5 | 0.4 | 2.0 |
| Short-term | **m/s** | 1.5 | 1.1 | 3.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.15-0.35 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | E10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.014 | +0.054 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.020 | +0.068 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.025 | +0.083 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.032 | +0.102 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.040 | +0.124 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.050 | +0.150 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.060 | +0.180 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.072 | +0.212 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.085 | +0.245 | -0.100 | +0.000 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

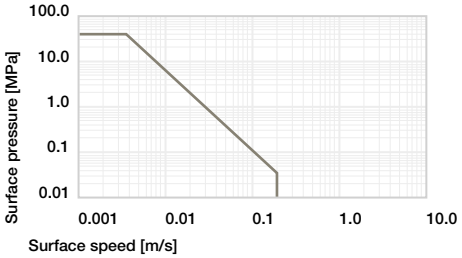



Diagram 01: Permissible pv values for iglidur® UW plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

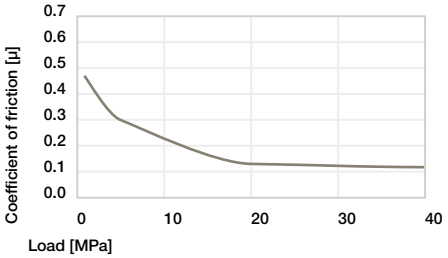



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

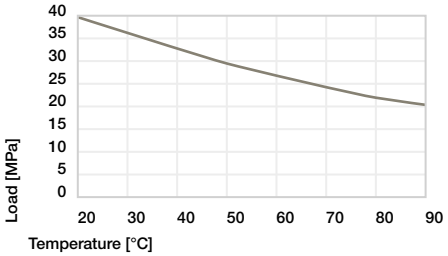



Diagram 02: Maximum recommended surface pressure as a function of temperature (40MPa at +20°C)

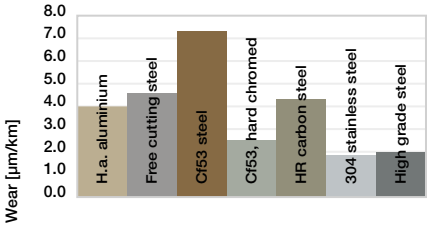



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

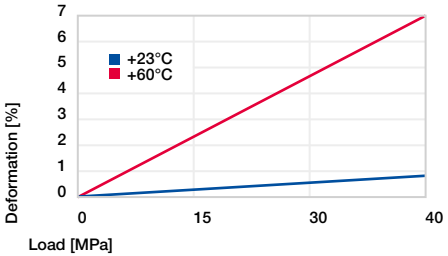



Diagram 03: Deformation under pressure and temperature

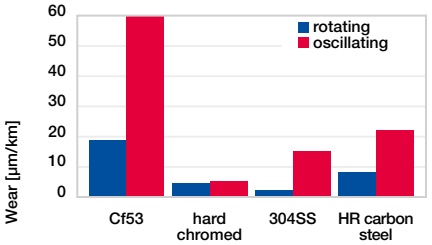



Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

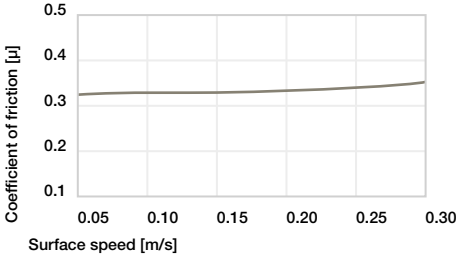
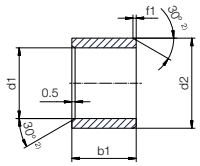



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

# Bearing technology | Plain bearings | iglidur® UW

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 |
|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** UWSM-0304-05 – **no minimum order quantity.**
UW iglidur® material S Cylindrical M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 3.0 | +0.014 +0.054 | 4.5 | 5.0 | **UWSM-0304-05** |
| 4.0 | +0.020 +0.068 | 5.5 | 6.0 | **UWSM-0405-06** |
| 5.0 | | 7.0 | 8.0 | **UWSM-0507-08** |
| 6.0 | | 8.0 | 8.0 | **UWSM-0608-08** |
| 8.0 | +0.025 +0.083 | 10.0 | 10.0 | **UWSM-0810-10** |
| 10.0 | | 12.0 | 10.0 | **UWSM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 12.0 | **UWSM-1214-12** |
| 16.0 | | 18.0 | 12.0 | **UWSM-1618-12** |
| 18.0 | | 20.0 | 15.0 | **UWSM-1820-15** |

[3] After press-fit. *Testing methods, page 61*

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**Order online**
including delivery times, prices, online tools
www.igus.eu/UW

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

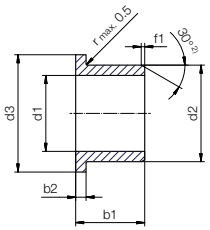
**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**





# Bearing technology | Plain bearings | iglidur® UW

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 |
|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** UWFM-0304-05 – **no minimum order quantity.**
UW iglidur® material F With flange M Metric 03 Inner Ø d1 04 Outer Ø d2 05 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 3.0 | +0.014 +0.054 | 4.5 | 7.5 | 5.0 | 0.75 | **UWFM-0304-05** |
| 4.0 | +0.020 +0.068 | 5.5 | 9.5 | 6.0 | 0.75 | **UWFM-0405-06** |
| 5.0 | | 7.0 | 11.0 | 5.0 | 1.00 | **UWFM-0507-05** |
| 6.0 | | 8.0 | 12.0 | 6.0 | 1.00 | **UWFM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 15.0 | 10.0 | 1.00 | **UWFM-0810-10** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **UWFM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 20.0 | 12.0 | 1.00 | **UWFM-1214-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **UWFM-1618-17** |
| 20.0 | +0.040 +0.124 | 23.0 | 30.0 | 21.5 | 1.50 | **UWFM-2023-21** |

[3] After press-fit. *Testing methods, page 61*

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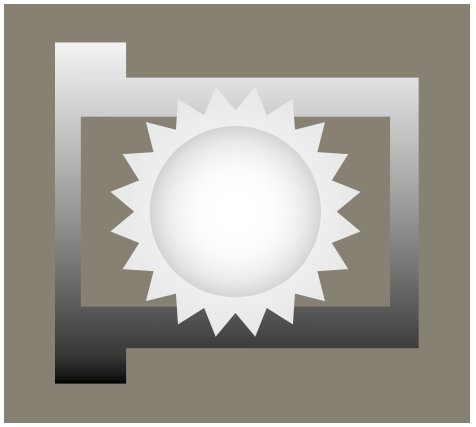
**Order online**
including delivery times, prices, online tools
www.igus.eu/UW

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**



# For continuous direct sunlight

## Permanently UV-resistant with properties comparable to iglidur® J

## iglidur® J UV

**When to use it?**

- When high UV resistance is required
- When a wear-resistant material is required
- When an optimisation of the long-term mechanical properties is required

**When not to use it?**

- When high pressures occur
  ***iglidur® G***
- When temperatures higher than +120 °C occur
  ***iglidur® G, iglidur® X***
- When a cost-effective plain bearing for occasional movements is necessary
  ***iglidur® G***



EN 09/2023

# Bearing technology | Plain bearings | iglidur® J UV

Ø
6.0-20.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## For continuous direct sunlight

Permanently UV-resistant with properties comparable to iglidur® J

Today, plain bearings appear as special shapes for special uses, in some instances of which they are exposed to UV radiation for long periods of time. igus® has therefore developed a new material: iglidur® J UV.

- UV-stabilised
- Long-term mechanical properties improved
- High wear resistance

### Typical application areas

- Solar technology
- Outdoor applications

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | ■■■■■ | + |
| Wear resistance at +90°C | – | ■■■■■ | + |
| Wear resistance at +150°C | – | ■□□□□ | + |
| Slide property | – | ■■■■■ | + |
| Wear resistance under water | – | ■■■□□ | + |
| Media resistance | – | ■■■■□ | + |
| Resistant to edge pressures | – | ■■■■□ | + |
| Resistant to shock and impact loads | – | ■■■■□ | + |
| Dirt resistance | – | ■■■■□ | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.49 | |
| Colour | | black | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.3 | |
| Max. moisture absorption | % weight | 1.3 | |
| Coefficient of friction, dynamic, against steel | μ | 0.08-0.19 | |
| pv value, max. (dry) | MPa · m/s | 0.30 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,400 | |
| Flexural strength at +20°C | MPa | 72 | |
| Compressive strength | MPa | n.s. | |
| Max. permissible surface pressure (+20°C) | MPa | 34 | |
| Shore D hardness | | 74 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +90 | |
| Max. application temperature short-term | °C | +120 | |
| Min. application temperature | °C | -50 | |
| Thermal conductivity | W/m · K | 0.30 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 10 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{13}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{13}$ | DIN 53482 |

Table 01: Material properties

-50°C up to +90°C

35MPa

One main advantage of iglidur® J UV plain bearings is the low coefficient of friction in dry operation. The material is resistant to UV radiation and retains its sliding properties.

### Moisture absorption

The moisture absorption of iglidur® J UV plain bearings in ambient conditions is approximately 0.3% weight. The saturation limit submerged in water is 1.3% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

### Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® J UV bearings.

### Radiation resistance

Plain bearings made from iglidur® J UV are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® J UV plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

### Mechanical properties

When temperatures increase, the compressive strength of iglidur® J UV plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

With a maximum recommended surface pressure of 35MPa, iglidur® J UV plain bearings are not suitable for extreme loads. Diagram 03 shows the elastic deformation of iglidur® J UV at radial loads.

*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® J UV

### Permissible surface speeds

The low coefficient of friction and no stick-slip tendency of iglidur® J UV plain bearings are particularly important at very low speeds. However, iglidur® J UV can also be used for high speeds of over 1m/s. In both cases the static friction is very low and stick slip does not occur. The maximum values shown in table 03 can only be achieved at low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

***Surface speed, page 48***

### Temperature

In the case of a permissible long-term application temperature of +90°C, iglidur® J UV will even withstand +120°C for short periods. The wear rises with increasing temperatures. For temperatures over +60°C an additional securing is required.

***Application temperatures, page 53***
***Additional securing, page 53***

### Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the surface speed and load (diagrams 04 and 05).

***Coefficient of friction and surfaces, page 51***
***Wear resistance, page 54***

### Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. With increasing shaft surface finish, the coefficient of friction also increases. For iglidur® J UV a ground surface with an average surface finish Ra = 0.8μm is recommended. Diagram 06 and 07 display a summary of the results of tests with different shaft materials executed with plain bearings made of iglidur® J UV. When compared to most other iglidur® materials, iglidur® J UV plain bearings have very low wear results at low loads compared with all shaft materials tested. Also, for increasing loads up to 5 MPa, the wear resistance of iglidur® J UV plain bearings is excellent. If the shaft material you plan on using is not shown in these test results, please contact us.

***Shaft materials, page 56***

### Installation tolerances

iglidur® J UV plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

***Testing methods, page 61***

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | 0 up to – |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | – |
| Strong alkalines | + up to 0 |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

***Chemical table, page 1170***

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 1.5 | 1.1 | 8.0 |
| Short-term | **m/s** | 2.2 | 1.7 | 12.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.08-0.19 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | E10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.014 | +0.054 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.020 | +0.068 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.025 | +0.083 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.032 | +0.102 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.040 | +0.124 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.050 | +0.150 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.060 | +0.180 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.072 | +0.212 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.085 | +0.245 | -0.100 | +0.000 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

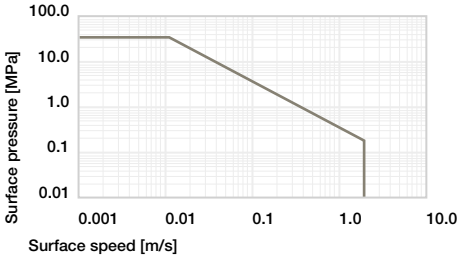



Diagram 01: Permissible pv values for iglidur® J UV plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

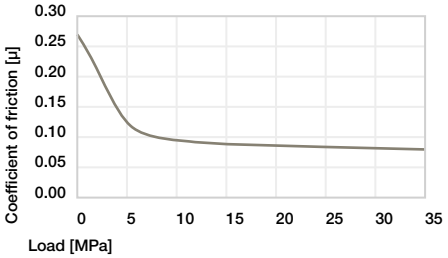



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

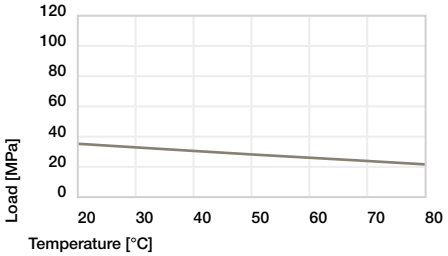



Diagram 02: Maximum recommended surface pressure as a function of temperature (35MPa at +20°C)

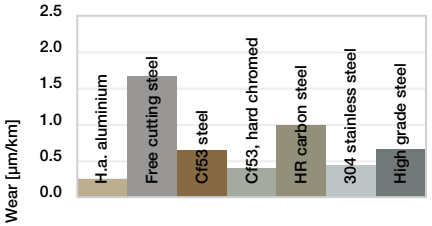



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

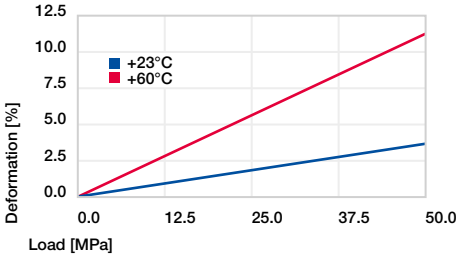



Diagram 03: Deformation under pressure and temperature

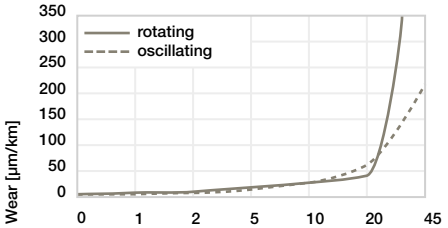



Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2MPa

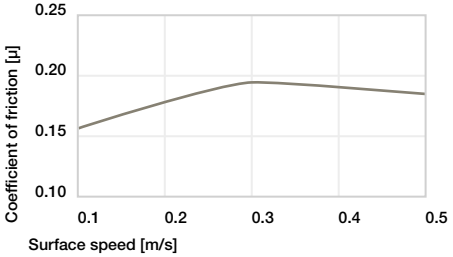
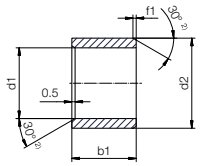



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

# Bearing technology | Plain bearings | iglidur® J UV

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 |
|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** JUVSM-0608-08 **– no minimum order quantity.**
J UV iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 08 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 8.0 | **JUVSM-0608-08** |
| 8.0 | | 10.0 | 12.0 | **JUVSM-0810-12** |
| 10.0 | +0.025 +0.083 | 12.0 | 12.0 | **JUVSM-1012-12** |
| 12.0 | +0.030 +0.102 | 14.0 | 12.0 | **JUVSM-1214-12** |
| 16.0 | | 18.0 | 15.0 | **JUVSM-1618-15** |
| 20.0 | +0.040 +0.124 | 23.0 | 20.0 | **JUVSM-2023-20** |

[3] After press-fit. *Testing methods, page 61*

**Available from stock**
Detailed information about delivery time online.
www.igus.eu/24

**Order online**
including delivery times, prices, online tools
www.igus.eu/JUV

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

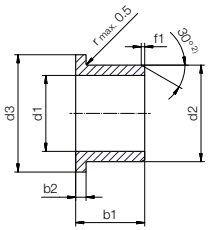
**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**





# Bearing technology | Plain bearings | iglidur® J UV

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 |
|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** JUVFM-0608-08 **– no minimum order quantity.**
J UV iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 08 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 12.0 | 8.0 | 1.00 | **JUVFM-0608-08** |
| 8.0 | | 10.0 | 15.0 | 9.5 | 1.00 | **JUVFM-0810-09** |
| 10.0 | +0.025 +0.083 | 12.0 | 18.0 | 12.0 | 1.00 | **JUVFM-1012-12** |
| 12.0 | +0.030 +0.102 | 14.0 | 20.0 | 12.0 | 1.00 | **JUVFM-1214-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **JUVFM-1618-17** |
| 20.0 | +0.040 +0.124 | 23.0 | 30.0 | 21.5 | 1.50 | **JUVFM-2023-21** |

[3] After press-fit. *Testing methods, page 61*

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including delivery times, prices, online tools
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**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

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| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**

# The biopolymer

## Based on renewable resources

## iglidur® N54

**When to use it?**

- For applications with infrequent movement at low to medium loads
- At static loads
- When the environmental impact of a product needs to be optimised

**When not to use it?**

- When a universal standard plain bearing is required
  ***iglidur® G***
- When dealing with high motion frequencies and continuous operation
  ***iglidur® J***
- When dealing with high temperatures
  ***iglidur® J350***



EN 09/2023

# Bearing technology | Plain bearings | iglidur® N54

Ø
6.0-20.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## The biopolymer
## Based on renewable resources

Based on 54 % renewable resources, this material also meets high technical requirements.

- Based on renewable resources
- Universal installation
- Lubrication-free
- Maintenance-free

### Typical application areas

- Consumer products
- General mechanical engineering
- Furniture industry
- Industrial design

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | | + |
| Wear resistance at +90°C | – | | + |
| Wear resistance at +150°C | – | | + |
| Slide property | – | | + |
| Wear resistance under water | - | | + |
| Media resistance | – | | + |
| Resistant to edge pressures | – | | + |
| Resistant to shock and impact loads | – | | + |
| Dirt resistance | – | | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.13 | |
| Colour | | green | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 1.6 | DIN 53495 |
| Max. moisture absorption | % weight | 3.6 | |
| Coefficient of friction, dynamic, against steel | μ | 0.15-0.23 | |
| pv value, max. (dry) | MPa · m/s | 0.50 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 1,800 | DIN 53457 |
| Flexural strength at +20°C | MPa | 70 | DIN 53452 |
| Compressive strength | MPa | 30 | |
| Max. permissible surface pressure (+20°C) | MPa | 36 | |
| Shore D hardness | | 74 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +80 | |
| Max. application temperature short-term | °C | +120 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 9 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{13}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{11}$ | DIN 53482 |

Table 01: Material properties

-40 °C up to +80 °C

36MPa

iglidur® N54 is the first iglidur® material based largely on biopolymers. In addition to the proven lubrication-free properties of all iglidur® materials, this is one further contribution to positive environmental stewardship. The low coefficient of friction in conjunction with long service life ensure that this material has a permanent place in the iglidur® product range.

### Moisture absorption

The moisture absorption of JUVFM-0608-08 plain bearings is below 1.6% weight in ambient conditions. The saturation limit submerged in water is 3.6% weight.

### Vacuum

In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

### Radiation resistance

Plain bearings made from iglidur® N54 have limited use under radioactive radiation. They are resistant up to a radiation intensity of $1 \cdot 10^4$ Gy.

### Resistance to weathering

iglidur® N54 plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® N54 plain bearings decreases. Diagram 02 shows this inverse relationship. With the long-term permitted application temperature of +80°C, the permitted surface pressure still amounts to 10MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® N54 at radial loads.
*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® N54

### Permissible surface speeds

Although the typical applications of iglidur® N54 plain bearings are generally in the area of intermittent operation, the maximum attainable speeds can be quite high, depending on the type of motion. The speeds stated in table 03 are limit values for the lowest bearing loads. With higher loads, the permitted speed drops with the extent of the load due to the limitations by the pv value.

***Surface speed, page 48***

### Temperature

The short-term permissible temperature limit is +120°C, which allows the use of iglidur® N54 plain bearings in all applications involving elevated ambient temperatures. With increasing temperatures, the compressive strength of iglidur® N54 plain bearings decreases. When considering temperatures, the additional frictional heat in the bearing system must be taken into account. For temperatures over +60°C an additional securing is required.

***Application temperatures, page 53***
***Additional securing, page 53***

### Friction and wear

The coefficient of friction of iglidur® N54 is low. Please note that a sliding surface with a rough surface finish will increase the friction. Surface finishes (Ra) of the shaft between 0.1-0.4µm are ideal. The coefficient of friction of iglidur® N54 plain bearings is only marginally dependent on the surface speed. The influence of the load is greater; an increase in load lowers the coefficient of friction to as low as 0.8.

***Coefficient of friction and surfaces, page 51***
***Wear resistance, page 54***

### Shaft materials

It is important to select a suitable shaft material. As a rule, iglidur® N54 is suitable for use with hard or soft shafts, but "hard" shaft surfaces tend to give better service life. Starting at loads of 1MPa, wear increases measurably and continuously. If the shaft material you plan on using is not shown in these test results, please contact us.

***Shaft materials, page 56***

### Installation tolerances

iglidur® N54 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

***Testing methods, page 61***

| Chemicals | Resistance |
|---|---|
| Alcohols | + up to 0 |
| Diluted acids | 0 up to + |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | – |
| Strong alkalines | 0 |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

***Chemical table, page 1170***

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 0.8 | 0.6 | 1.0 |
| Short-term | **m/s** | 1.5 | 1.1 | 2.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction µ | 0.15-0.23 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | E10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.014 | +0.054 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.020 | +0.068 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.025 | +0.083 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.032 | +0.102 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.040 | +0.124 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.050 | +0.150 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.060 | +0.180 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.072 | +0.212 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.085 | +0.245 | -0.100 | +0.000 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

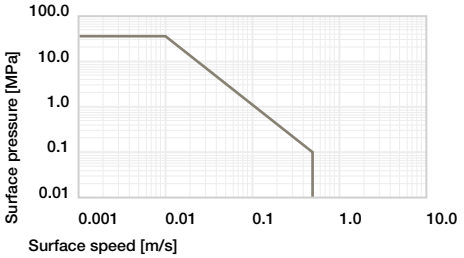



Diagram 01: Permissible pv values for iglidur® N54 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

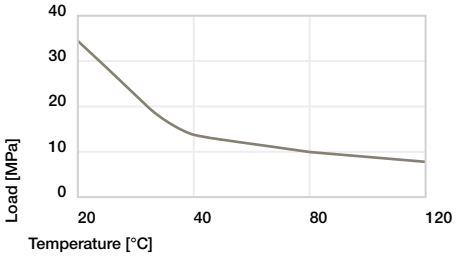



Diagram 02: Maximum recommended surface pressure as a function of temperature (36MPa at +20°C)

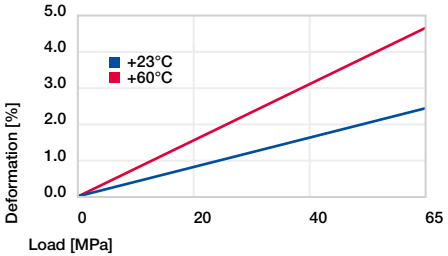



Diagram 03: Deformation under pressure and temperature

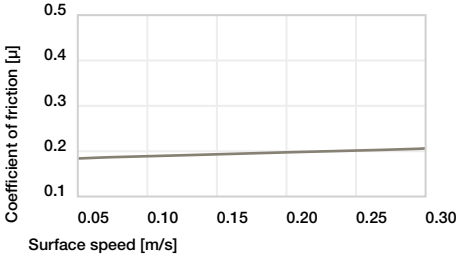



Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

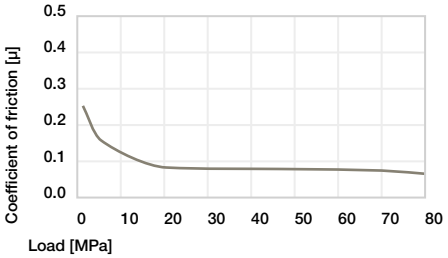



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

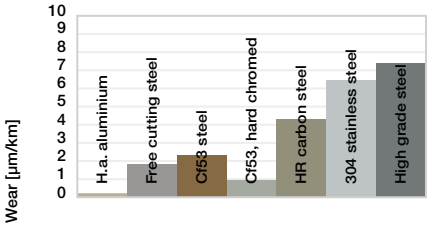



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

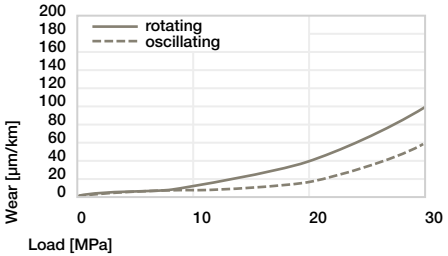
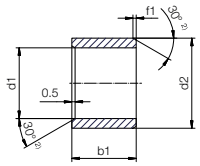



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

# Bearing technology | Plain bearings | iglidur® N54

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 6-12 | Ø 12-30 |
|---|---|---|
| f1 [mm] | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** N54SM-0608-06 **– no minimum order quantity.**
N54 iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 6.0 | **N54SM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 10.0 | **N54SM-0810-10** |
| 10.0 | | 12.0 | 10.0 | **N54SM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 12.0 | **N54SM-1214-12** |
| 16.0 | | 18.0 | 15.0 | **N54SM-1618-15** |
| 20.0 | +0.040 +0.124 | 23.0 | 20.0 | **N54SM-2023-20** |

[3] After press-fit. *Testing methods, page 61*

**Available from stock**
Detailed information about delivery time online.
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**Order online**
including delivery times, prices, online tools
www.igus.eu/N54

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
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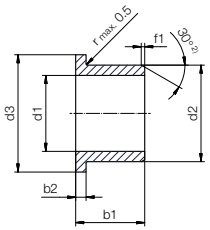
# Bearing technology | Plain bearings | iglidur® N54

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 6-12 | Ø 12-30 |
|---|---|---|
| f1 [mm] | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** N54FM-0608-06 **– no minimum order quantity.**
N54 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 12.0 | 6.0 | 1.00 | **N54FM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 15.0 | 10.0 | 1.00 | **N54FM-0810-10** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **N54FM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 20.0 | 12.0 | 1.00 | **N54FM-1214-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **N54FM-1618-17** |
| 20.0 | +0.040 +0.124 | 23.0 | 30.0 | 21.5 | 1.50 | **N54FM-2023-21** |

[3] After press-fit. *Testing methods, page 61*

**Available from stock**
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**Order online**
including delivery times, prices, online tools
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**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**

# Low-cost all-rounder for fire protection

## UL94 V0 rating

## iglidur® G V0

**When to use it?**

- When a UL94 V0 classified plain bearing for normal environmental conditions is required
- When an economic UL94 V0 classified plain bearing is required

**When not to use it?**

- When a UL94 V0 classified plain bearing for high-temperature applications is required
  ***iglidur® X***
- When a standard plain bearing without having to meet special fire codes is required
  ***iglidur® G***



EN 09/2023

# Bearing technology | Plain bearings | iglidur® G V0

Ø
6.0-40.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## Low-cost all-rounder for fire protection
UL94 V0 rating

The material achieves the UL94 V0 rating and is therefore perfectly suited for applications with stringent fire protection regulations (vehicle and aircraft interiors, building interior systems, etc.). Other properties are similar to the all-rounder material iglidur® G.

- UL94 V0-compliant
- High wear resistance
- Universal installation
- Lubrication-free
- Maintenance-free

### Typical application areas

- Passenger seats
- Elevators
- Escalators
- Control cabinets
- Hinges

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | | + |
| Wear resistance at +90°C | – | | + |
| Wear resistance at +150°C | – | | + |
| Slide property | – | | + |
| Wear resistance under water | – | | + |
| Media resistance | – | | + |
| Resistant to edge pressures | – | | + |
| Resistant to shock and impact loads | – | | + |
| Dirt resistance | – | | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.53 | |
| Colour | | black | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.7 | DIN 53495 |
| Max. moisture absorption | % weight | 4.0 | |
| Coefficient of friction, dynamic, against steel | μ | 0.07-0.20 | |
| pv value, max. (dry) | MPa · m/s | 0.50 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 7,900 | DIN 53457 |
| Flexural strength at +20°C | MPa | 140 | DIN 53452 |
| Compressive strength | MPa | 100 | |
| Max. permissible surface pressure (+20°C) | MPa | 75 | |
| Shore D hardness | | 80 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +130 | |
| Max. application temperature short-term | °C | +210 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.25 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 9 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{11}$ | DIN 53482 |

Table 01: Material properties

-40°C up to +130°C

75MPa

V-0

RoHS-II

ISO 3547-1

iglidur® G V0 is the first iglidur® material with a UL94 V0 rating for universal use in the normal temperature range. All other iglidur® materials with V0 rating are part of the high-temperature segment. The general mechanical and thermal properties are largely comparable to the all-rounder, iglidur® G.

### Moisture absorption
The moisture absorption of iglidur® G V0 plain bearings in ambient conditions is approximately 0.7% weight. The saturation limit submerged in water is 4.0% weight. This must be taken into account for these types of applications.

### Vacuum
In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® G V0 bearings.

### Radiation resistance
Plain bearings made from iglidur® G V0 are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering
iglidur® G V0 plain bearings are resistant to weathering. The material properties are slightly affected. Discolouration occurs.

### Mechanical properties
When temperatures increase, the compressive strength of iglidur® G V0 plain bearings decreases. Diagram 02 shows this inverse relationship. With the long-term permitted application temperature of +130°C, the permitted surface pressure still amounts to 35MPa. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® G V0 under different loads. The plastic deformation is minimal up to a pressure of approximately 100MPa. However, it is also dependent on the service time.
*Surface pressure, page 45*

### Permissible surface speeds
iglidur® G V0 has been developed for low to medium surface speeds. The maximum values shown in table 03 can only be achieved at low pressures. In practice, though, this level is rarely reached due to varying application conditions.
*Surface speed, page 48*

# Bearing technology | Plain bearings | iglidur® G V0

### Temperature

The ambient temperatures strongly influence the properties of plain bearings. The short-term maximum temperature permitted is +210°C and allows the use of iglidur® G V0 plain bearings in applications where the bearings are not subjected to any additional load such as a paint drying process. The temperatures prevailing in the bearing system also have an influence on the wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +120°C. For temperatures over +100°C an additional securing is required.

***Application temperatures, page 53***
***Additional securing, page 53***

### Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the load. The coefficient of friction decreases considerably with increasing loads, whereas a slight increase in surface speed causes an increase of the coefficient of friction. This relationship explains the excellent results of iglidur® G V0 plain bearings for high loads and low speeds (diagrams 04 and 05).

***Coefficient of friction and surfaces, page 51***
***Wear resistance, page 54***

### Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. For iglidur® G V0 a ground surface with an average surface finish Ra = 0.6-0.8μm is recommended. Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® G V0. It is important to notice that with increasing loads, the recommended hardness of the shaft increases. The "soft" shafts tend to wear themselves and thus increase the wear of the overall system. If the loads exceed 2MPa it is important to recognise that the wear rate (the gradient of the curves) clearly decreases with the hard shaft materials. The comparison of rotation and pivoting shows that iglidur® G V0 provides advantages in pivoting movements (diagram 07). If the shaft material you plan on using is not shown in these test results, please contact us.

***Shaft materials, page 56***

### Installation tolerances

iglidur® G V0 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances.

***Testing methods, page 61***

| Chemicals | Resistance |
|---|---|
| Alcohols | + up to 0 |
| Diluted acids | 0 up to – |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | – |
| Strong alkalines | 0 |

**All data given at room temperature [+20°C]**

**Table 02: Chemical resistance**

***Chemical table, page 1170***

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 1.0 | 0.7 | 4.0 |
| Short-term | **m/s** | 2.0 | 1.4 | 5.0 |

**Table 03: Maximum surface speeds**

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.07-0.20 | 0.09 | 0.04 | 0.04 |

**Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)**

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| **Ø d1 [mm]** | **H7 [mm]** | | **E10 [mm]** | | **h9 [mm]** | |
| 0-3 | +0.000 | +0.010 | +0.014 | +0.054 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.020 | +0.068 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.025 | +0.083 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.032 | +0.102 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.040 | +0.124 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.050 | +0.150 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.060 | +0.180 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.072 | +0.212 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.085 | +0.245 | -0.100 | +0.000 |

**Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit**





# Technical data

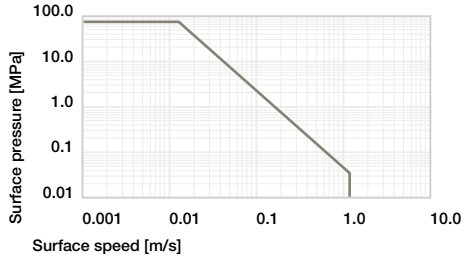



**Diagram 01: Permissible pv values for iglidur® G V0 plain bearing with a wall thickness of 1 mm dry operation against a steel shaft at +20°C, mounted in a steel housing.**

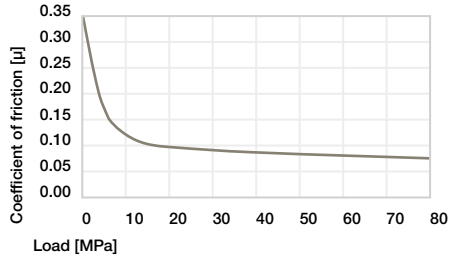



**Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s**

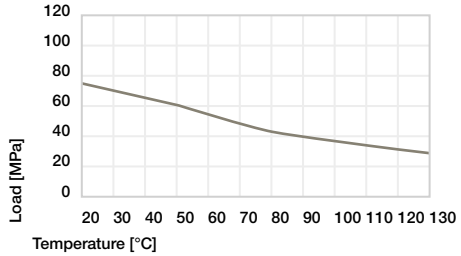



**Diagram 02: Maximum recommended surface pressure as a function of temperature (75MPa at +20°C)**

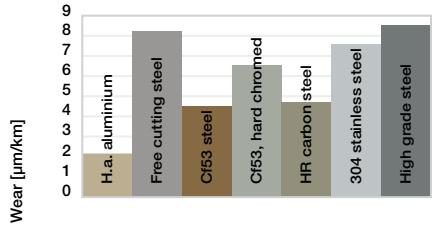



**Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s**

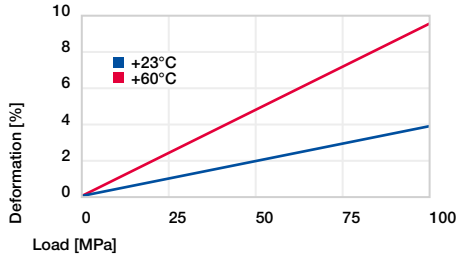



**Diagram 03: Deformation under pressure and temperature**

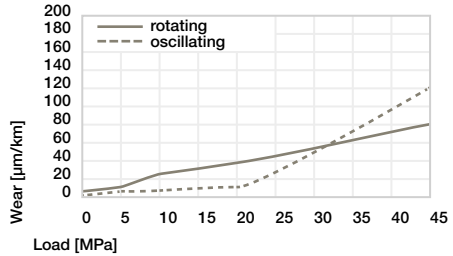



**Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load**

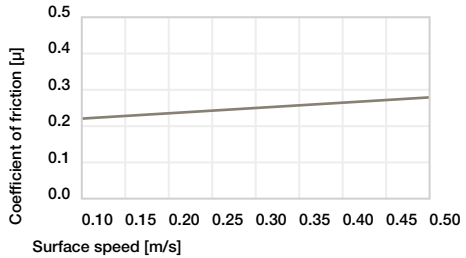
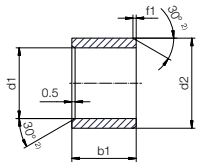



**Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa**

# Bearing technology | Plain bearings | iglidur® G V0

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** GV0SM-0608-06 – no minimum order quantity.
G V0 iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 6.0 | **GV0SM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 10.0 | **GV0SM-0810-10** |
| 10.0 | | 12.0 | 8.0 | **GV0SM-1012-08** |
| 10.0 | | 12.0 | 9.0 | **GV0SM-1012-09** |
| 10.0 | | 12.0 | 10.0 | **GV0SM-1012-10** |
| 10.0 | | 12.0 | 15.0 | **GV0SM-1012-15** |
| 10.0 | | 12.0 | 17.0 | **GV0SM-1012-17** |
| 12.0 | +0.032 +0.102 | 14.0 | 12.0 | **GV0SM-1214-12** |
| 16.0 | | 18.0 | 15.0 | **GV0SM-1618-15** |
| 20.0 | +0.040 +0.124 | 23.0 | 20.0 | **GV0SM-2023-20** |
| 25.0 | | 28.0 | 20.0 | **GV0SM-2528-20** |
| 30.0 | | 34.0 | 30.0 | **GV0SM-3034-30** |
| 35.0 | +0.050 +0.150 | 39.0 | 40.0 | **GV0SM-3539-40** |
| 40.0 | | 44.0 | 40.0 | **GV0SM-4044-40** |

[3] After press-fit. *Testing methods, page 61*

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| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
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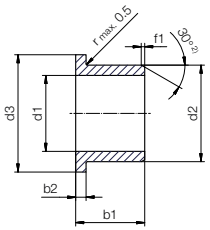
# Bearing technology | Plain bearings | iglidur® G V0

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|---|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 | 1.2 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** GV0FM-0608-06 – no minimum order quantity.
G V0 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 12.0 | 6.0 | 1.00 | **GV0FM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 15.0 | 10.0 | 1.00 | **GV0FM-0810-10** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **GV0FM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 20.0 | 12.0 | 1.00 | **GV0FM-1214-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **GV0FM-1618-17** |
| 20.0 | +0.040 +0.124 | 23.0 | 30.0 | 21.5 | 1.50 | **GV0FM-2023-21** |
| 25.0 | | 28.0 | 35.0 | 21.0 | 1.50 | **GV0FM-2528-21** |
| 30.0 | | 34.0 | 42.0 | 37.0 | 2.00 | **GV0FM-3034-37** |
| 35.0 | +0.050 +0.150 | 39.0 | 47.0 | 36.0 | 2.00 | **GV0FM-3539-36** |
| 40.0 | | 44.0 | 52.0 | 40.0 | 2.00 | **GV0FM-4044-40** |

[3] After press-fit. *Testing methods, page 61*

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including delivery times, prices, online tools
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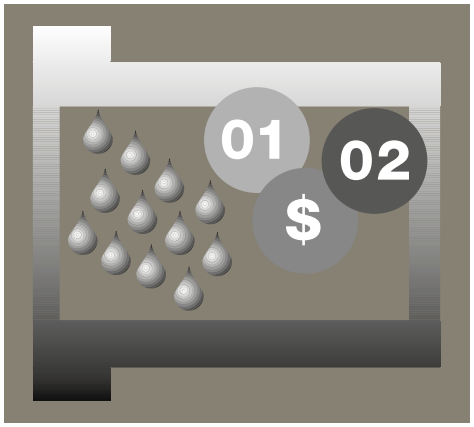
**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**




# Versatile and cost-effective

## For applications with infrequent movement or continuous lubrication

## iglidur® J2

**When to use it?**

- When low moisture absorption and good media resistance is required for static load
- When a cost-effective plain bearing is required for use in a wet environment with low pv values
- When there is basic lubrication of the plain bearing

**When not to use it?**

- When a wear-resistant plain bearing is required for continuous dry operation
  ***iglidur® J3***
- When low moisture absorption and media resistance play a minor role
  ***iglidur® M250***
- When a resistance to high temperatures and chemicals is required
  ***iglidur® X***



EN 09/2023

# Bearing technology | Plain bearings | iglidur® J2

Ø
6.0-25.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## Versatile and cost-effective

For applications with infrequent movement or continuous lubrication

iglidur® J2 has good universal media resistance, comparable to that of iglidur® J and similar materials. The mechanical specifications in sporadically moving applications are better, but in comparison there are significant reductions in friction and wear. Like all iglidur® materials, iglidur® J2 is PFOA-free.

- Robust
- Cost-effective
- High media resistance
- Lubrication-free
- Maintenance-free

### Typical application areas

- Jig construction
- Industrial handling

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | | + |
| Wear resistance at +90°C | – | | + |
| Wear resistance at +150°C | – | | + |
| Slide property | – | | + |
| Wear resistance under water | – | | + |
| Media resistance | – | | + |
| Resistant to edge pressures | – | | + |
| Resistant to shock and impact loads | – | | + |
| Dirt resistance | – | | + |

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**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.44 | |
| Colour | | light yellow | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.2 | DIN 53495 |
| Max. moisture absorption | % weight | 1.3 | |
| Coefficient of friction, dynamic, against steel | μ | 0.11-0.27 | |
| pv value, max. (dry) | MPa · m/s | 0.23 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 3,605 | DIN 53457 |
| Flexural strength at +20°C | MPa | 101 | DIN 53452 |
| Compressive strength | MPa | 77 | |
| Max. permissible surface pressure (+20°C) | MPa | 46 | |
| Shore D hardness | | 74 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +90 | |
| Max. application temperature short-term | °C | +110 | |
| Min. application temperature | °C | -50 | |
| Thermal conductivity | W/m · K | 0.25 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 7 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{13}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{12}$ | DIN 53482 |

Table 01: Material properties

-50°C up to +90°C

46MPa

With respect to its general mechanical and thermal specifications, iglidur® J2 is directly comparable to our classic, iglidur® J. Therefore the iglidur® J2 is superior to iglidur® J with respect to the mechanical properties, such as maximum recommended surface pressure. However, wear resistance is reduced in dry operation.

### Moisture absorption

The moisture absorption of iglidur® J2 plain bearings in ambient conditions is approximately 0.2% weight. The saturation limit submerged in water is 1.3% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

### Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® J2 bearings.

### Radiation resistance

Plain bearings made from iglidur® J2 are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® J2 plain bearings have limited resistance to weathering. The material properties are affected. Discolouration occurs. Practical tests under real application conditions are recommended.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® J2 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® J2 at radial loads. A possible deformation could be, among others, dependant on the duty cycle of the load.
***Surface pressure, page 45***

# Bearing technology | Plain bearings | iglidur® J2

### Permissible surface speeds

iglidur® J2 is mainly suitable for low surface speeds in dry operation, but the specified values shown in table 03 can only be achieved at very low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

*Surface speed, page 48*

### Temperature

The temperatures prevailing in the bearing system also have an influence on the wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +90°C. For temperatures over +60°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

Coefficient of friction and wear resistance are dependent on the application parameters (diagrams 04 and 05).

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. Diagram 06 shows results of testing different shafts. Diagram 06 shows that iglidur® J2 delivers good coefficient of wear especially with free cutting steel in rotation at 1MPa. In dry operation, the coefficient of wear is sometimes significantly higher on other shafts. Unlike many other iglidur® materials, the wear rate in pivoting is slightly higher compared to the rate in rotation with otherwise identical parameters (diagram 07).

*Shaft materials, page 56*

### Installation tolerances

iglidur® J2 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. In relation to the installation tolerance, the inner diameter changes with the absorption of humidity.

*Testing methods, page 61*

| Chemicals | Resistance |
|---|---|
| Alcohols | + |
| Diluted acids | 0 up to – |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | – |
| Strong alkalines | + up to 0 |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | m/s | 0.8 | 0.7 | 3.0 |
| Short-term | m/s | 1.9 | 1.1 | 5.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.11-0.27 | 0.08 | 0.07 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | E10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.014 | +0.054 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.020 | +0.068 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.025 | +0.083 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.032 | +0.102 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.040 | +0.124 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.050 | +0.150 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.060 | +0.180 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.072 | +0.212 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.085 | +0.245 | -0.100 | +0.000 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

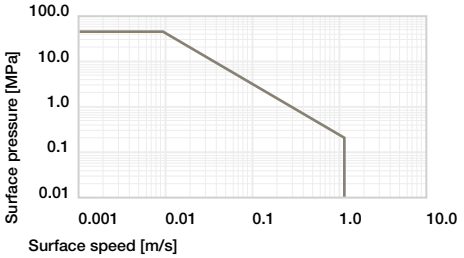



Diagram 01: Permissible pv values for iglidur® J2 plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

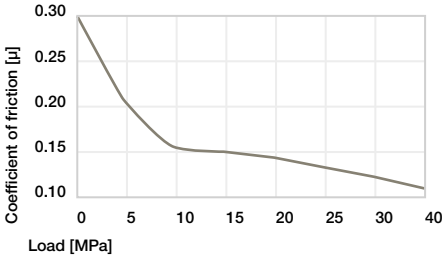



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

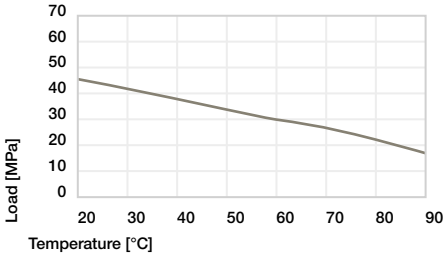



Diagram 02: Maximum recommended surface pressure as a function of temperature (46MPa at +20°C)

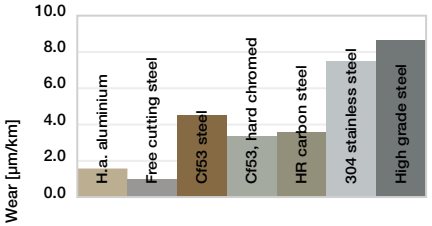



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

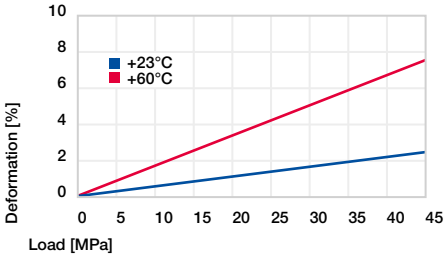



Diagram 03: Deformation under pressure and temperature

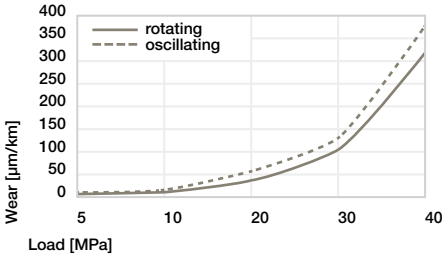



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

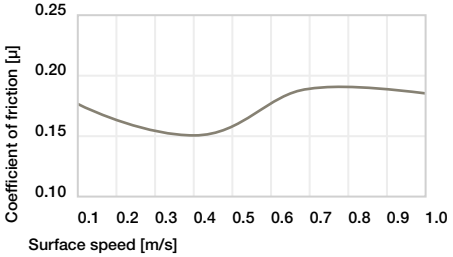
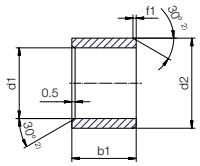



Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

# Bearing technology | Plain bearings | iglidur® J2

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 6-12 | Ø 12-30 |
|---|---|---|
| f1 [mm] | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** J2SM-0608-06 **– no minimum order quantity.**
J2 iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 6.0 | **J2SM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 10.0 | **J2SM-0810-10** |
| 10.0 | | 12.0 | 10.0 | **J2SM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 12.0 | **J2SM-1214-12** |
| 16.0 | | 18.0 | 15.0 | **J2SM-1618-15** |
| 20.0 | +0.040 +0.124 | 23.0 | 20.0 | **J2SM-2023-20** |
| 25.0 | | 28.0 | 20.0 | **J2SM-2528-20** |

[3] After press-fit. *Testing methods, page 61*

**Available from stock**
Detailed information about delivery time online.
www.igus.eu/24

**Order online**
including delivery times, prices, online tools
www.igus.eu/J2

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

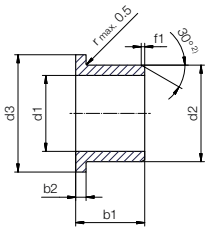
**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**



iglidur® J2
+90°C
46MPa

# Bearing technology | Plain bearings | iglidur® J2

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 6-12 | Ø 12-30 |
|---|---|---|
| f1 [mm] | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** J2FM-0608-06 **– no minimum order quantity.**
J2 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 12.0 | 6.0 | 1.00 | **J2FM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 15.0 | 10.0 | 1.00 | **J2FM-0810-10** |
| 10.0 | | 12.0 | 18.0 | 10.0 | 1.00 | **J2FM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 20.0 | 12.0 | 1.00 | **J2FM-1214-12** |
| 16.0 | | 18.0 | 24.0 | 17.0 | 1.00 | **J2FM-1618-17** |
| 20.0 | +0.040 +0.124 | 23.0 | 30.0 | 21.5 | 1.50 | **J2FM-2023-21** |

[3] After press-fit. *Testing methods, page 61*

**Available from stock**
Detailed information about delivery time online.
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**Order online**
including delivery times, prices, online tools
www.igus.eu/J2

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
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**No minimum order value.**
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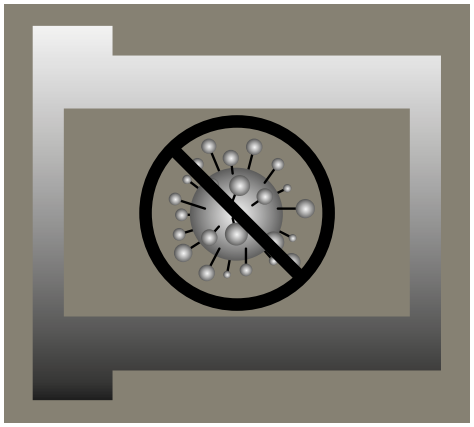
**Free shipping within Germany for orders above €150.**



# The first antibacterial iglidur® plain bearing

According to ISO 22 196:2011

# iglidur® AB

**When to use it?**

- When bearing points must meet high hygienic standards
- When a universal plain bearing for manual applications is required
- When a plain bearing for low to medium loads is required

**When not to use it?**

- When a wear-resistant plain bearing is required for continuous dry operation
  ***iglidur® J3***
- When a plain bearing that conforms with Regulation (EU) No. 10/2011 and/or the FDA requirements for repeated contact with food is required
  ***iglidur® A181, iglidur® A350***
- When a plain bearing with the highest possible media resistance is required
  ***iglidur® X***

EN 09/2023

EN 09/2023

# Bearing technology | Plain bearings | iglidur® AB

Ø
6.0-20.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## The first antibacterial iglidur® plain bearing
According to ISO 22 196:2011

Plain bearings made from iglidur® AB help to reduce the bacteria in bearing points that are difficult to access.

- Antibacterial
- Universal installation
- High media resistance
- Lubrication-free
- Maintenance-free

### Typical application areas

- Medical technology
- Laboratory technology
- Ventilation systems
- Sanitary furniture and equipment
- Bearings of patient and care furniture

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | | + |
| Wear resistance at +90°C | – | | + |
| Wear resistance at +150°C | – | | + |
| Slide property | – | | + |
| Wear resistance under water | – | | + |
| Media resistance | – | | + |
| Resistant to edge pressures | – | | + |
| Resistant to shock and impact loads | – | | + |
| Dirt resistance | – | | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.11 | |
| Colour | | yellow | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.8 | ISO 175 |
| Max. moisture absorption | % weight | 1.6 | ISO 62 |
| Coefficient of friction, dynamic, against steel | μ | 0.18-0.31 | |
| pv value, max. (dry) | MPa · m/s | 0.25 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 1,850 | DIN EN ISO 178 |
| Flexural strength at +20°C | MPa | 50 | DIN EN ISO 178 |
| Compressive strength | MPa | 40 | |
| Max. permissible surface pressure (+20°C) | MPa | 25 | |
| Shore D hardness | | 70 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +70 | |
| Max. application temperature short-term | °C | +140 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 10 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $>10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | $>10^{12}$ | DIN 53482 |

Table 01: Material properties

-40°C up to +70°C

25MPa

HB

RoHS-II

ISO 3547-1

iglidur® AB was specifically developed for applications in areas with high hygiene requirements. Often such applications are manually operated pivots (doors, medical furniture, etc.). The material reduces the level of bacterial contamination but - like all "anti-bacterial" materials - is not a substitute for adequate hygienic measures.

### Moisture absorption

The moisture absorption of iglidur® AB plain bearings in ambient conditions is approximately 0.8% weight. The saturation limit submerged in water is 1.6% weight.

### Vacuum

In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® AB bearings.

### Radiation resistance

Plain bearings made from iglidur® AB are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® AB plain bearings have limited resistance to weathering. The material properties are affected. Discolouration occurs. Practical tests under real application conditions are recommended.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® AB plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® AB at radial loads. A possible deformation could be, among others, dependant on the duty cycle of the load.
*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® AB

### Permissible surface speeds

iglidur® AB is mainly suitable for low surface speeds in dry operation, but the specified values shown in table 03 can only be achieved at very low pressures. At the given speeds, friction can cause a temperature increase to maximum permissible levels. In practice, though, this level is rarely reached due to varying application conditions.

***Surface speed, page 48***

### Temperature

The temperatures prevailing in the bearing system also have an influence on the wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +60°C. For temperatures over +50°C an additional securing is required.

***Application temperatures, page 53***
***Additional securing, page 53***

### Friction and wear

Coefficient of friction and wear resistance are dependent on the application parameters (diagrams 04 and 05).

***Coefficient of friction and surfaces, page 51***
***Wear resistance, page 54***

### Shaft materials

The friction and wear are also dependent, to a large degree, on the mating partner. Shafts that are too smooth increase both the coefficient of friction and the wear of the bearing. Diagram 06 shows results of testing different shafts. When rotating at a load of 1MPa, the wear on all tested shafts is very similar. Only the hard-anodised aluminium shafts cause a noticeable increase in the wear. As illustrated in diagram 07, the wear rate from pivoting and rotational movements at loads in increasing levels is also quite similar if the remaining parameters are identical.

***Shaft materials, page 56***

### Installation tolerances

iglidur® AB plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the E10 tolerances. In relation to the installation tolerance, the inner diameter changes with the absorption of humidity. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

***Testing methods, page 61***

| Chemicals | Resistance |
|---|---|
| Alcohols | + up to 0 |
| Diluted acids | 0 up to – |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | – |
| Strong alkalines | 0 |

**All data given at room temperature [+20°C]**

**Table 02: Chemical resistance**

***Chemical table, page 1170***

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 0.7 | 0.5 | 1.0 |
| Short-term | **m/s** | 1.0 | 0.7 | 1.8 |

**Table 03: Maximum surface speeds**

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.18-0.31 | 0.09 | 0.04 | 0.04 |

**Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)**

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | E10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.014 | +0.054 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.020 | +0.068 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.025 | +0.083 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.032 | +0.102 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.040 | +0.124 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.050 | +0.150 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.060 | +0.180 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.072 | +0.212 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.085 | +0.245 | -0.100 | +0.000 |

**Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit**





# Technical data

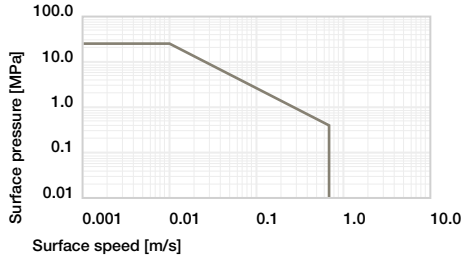



**Diagram 01: Permissible pv values for iglidur® AB plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.**

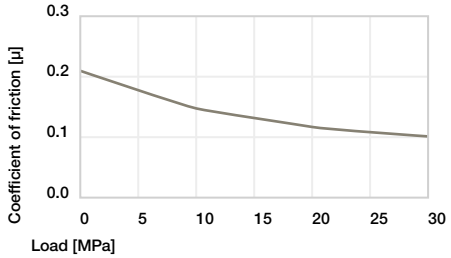



**Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s**

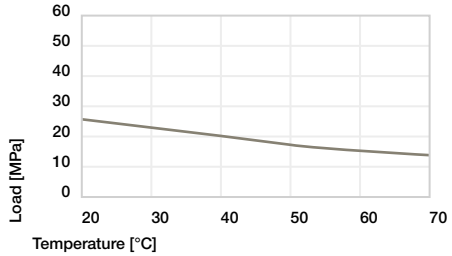



**Diagram 02: Maximum recommended surface pressure as a function of temperature (25MPa at +20°C)**

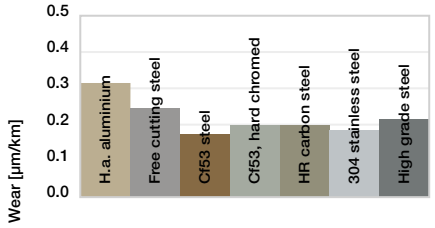



**Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s**

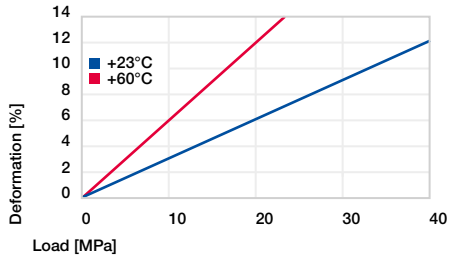



**Diagram 03: Deformation under pressure and temperature**

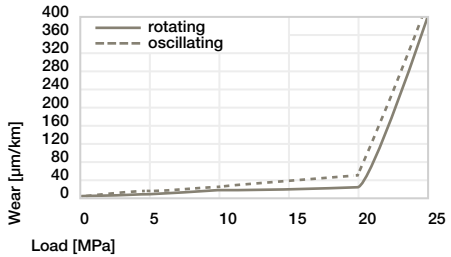



**Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load**

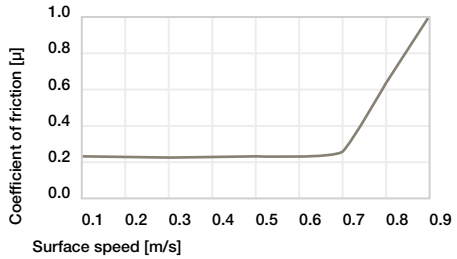
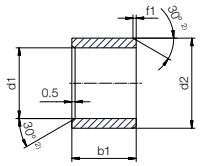



**Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa**

# Bearing technology | Plain bearings | iglidur® AB

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 |
|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** ABSM-0608-06 – **no minimum order quantity.**
AB iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 6.0 | **ABSM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 10.0 | **ABSM-0810-10** |
| 10.0 | | 12.0 | 10.0 | **ABSM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 15.0 | **ABSM-1214-15** |
| 15.0 | | 17.0 | 15.0 | **ABSM-1517-15** |
| 20.0 | +0.040 +0.124 | 23.0 | 20.0 | **ABSM-2023-20** |

[3] After press-fit. *Testing methods, page 61*

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including delivery times, prices, online tools
www.igus.eu/AB

**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
| 1-9 | 50-99 | 500-999 |
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

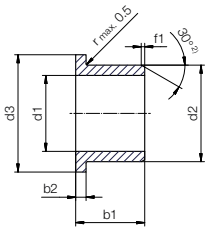
**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**



iglidur® AB
+70°C
25MPa

# Bearing technology | Plain bearings | iglidur® AB

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 1-6 | Ø 6-12 | Ø 12-30 |
|---|---|---|---|
| f1 [mm] | 0.3 | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** ABFM-0608-08 – **no minimum order quantity.**
AB iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 08 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 12.0 | 8.0 | 1.00 | **ABFM-0608-08** |
| 8.0 | +0.025 +0.083 | 10.0 | 15.0 | 9.5 | 1.00 | **ABFM-0810-09** |
| 10.0 | | 12.0 | 18.0 | 12.0 | 1.00 | **ABFM-1012-12** |
| 12.0 | +0.032 +0.102 | 14.0 | 20.0 | 12.0 | 1.00 | **ABFM-1214-12** |
| 15.0 | | 17.0 | 23.0 | 12.0 | 1.00 | **ABFM-1517-12** |
| 20.0 | +0.040 +0.124 | 23.0 | 30.0 | 21.5 | 1.50 | **ABFM-2023-21** |

[3] After press-fit. *Testing methods, page 61*

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**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
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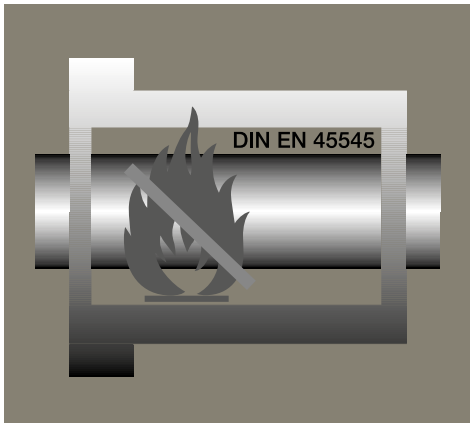
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**




# For the rail industry, complies with DIN EN 45545 HL3, R22/R23

## Wear-resistant for rail technology

## iglidur® RW370

**When to use it?**

- For applications in rail technology where suitability according to DIN EN 45545 is required
- For high wear resistance at low to medium pressures
- When a low coefficient of friction in dry operation is requested
- Low moisture absorption

**When not to use it?**

- When high pressure loads occur and suitability according to DIN EN 45545 is not required
  ***iglidur® G, iglidur® W300***
- When temperatures higher than +190°C occur
  ***iglidur® G, iglidur® Z***
- When a cost-effective plain bearing for occasional movements is necessary
  ***iglidur® G***



EN 09/2023

# Bearing technology | Plain bearings | iglidur® RW370

Ø
6.0-20.0mm

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## For the rail industry, complies with DIN EN 45545 HL3, R22/R23

## Wear-resistant for rail technology

The first iglidur® material that fulfills the European fire safety standard for rail vehicles is suitable for many wear-stressed applications in railway technology due to its very complete property profile.

- Complies with the European fire protection standard DIN EN 45545 HL3 requirement set R22/R23
- Flame-retardant
- High wear resistance
- Low coefficient of friction
- Lubrication and maintenance-free

### Typical application areas

- Door guides and hinges
- Rotating joint
- Entrance staircases
- Seat table mechanisms

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | | + |
| Wear resistance at +90°C | – | | + |
| Wear resistance at +150°C | – | | + |
| Slide property | – | | + |
| Wear resistance under water | – | | + |
| Media resistance | – | | + |
| Resistant to edge pressures | – | | + |
| Resistant to shock and impact loads | – | | + |
| Dirt resistance | – | | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.34 | |
| Colour | | beige | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.25 | ISO 175 |
| Max. moisture absorption | % weight | 1.2 | ISO 62 |
| Coefficient of friction, dynamic, against steel | μ | 0.13-0.17 | |
| pv value, max. (dry) | MPa · m/s | 1.20 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,997 | DIN EN ISO 178 |
| Flexural strength at +20°C | MPa | 100 | DIN EN ISO 178 |
| Compressive strength | MPa | 129 | |
| Max. permissible surface pressure (+20°C) | MPa | 75 | |
| Shore D hardness | | 80 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +170 | |
| Max. application temperature short-term | °C | +190 | |
| Min. application temperature | °C | -50 | |
| Thermal conductivity | W/m · K | 0.22 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 5 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $>10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{12}$ | DIN 53482 |

Table 01: Material properties

-50 °C up to +170 °C

75MPa

V-0

RoHS-II

ISO 3547-1

iglidur® RW370 was specially developed for the fire protection requirements in railway technology. It fulfils the specification of DIN EN 45545. Plain bearings made of iglidur® RW370 are used primarily in door systems, seat adjustments and joints, as well as hinges.

### Moisture absorption

The moisture absorption of iglidur® RW370 plain bearings is below 0.25% weight in ambient conditions. The saturation limit submerged in water is 1.2% weight.

### Vacuum

In vacuum, the moisture content is released as vapour. Due to its low moisture absorption, use in a vacuum is possible.

### Radiation resistance

Plain bearings made from iglidur® RW370 are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering

iglidur® RW370 plain bearings are continuously resistant to weathering. The material properties are only slightly affected. Possible discolourations are only superficial.

### Mechanical properties

With increasing temperatures, the compressive strength of iglidur® RW370 plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® RW370 under different loads. A possible deformation could be, among others, dependant on the duty cycle of the load.
*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® RW370

### Permissible surface speeds

Although the typical applications of iglidur® RW370 plain bearings are generally in the area of intermittent operation, the maximum attainable speeds can be quite high, depending on the type of motion. The speeds stated in table 03 are limit values for the lowest bearing loads. With higher loads, the permitted speed drops with the extent of the load due to the limitations by the pv value.

***Surface speed, page 48***

### Temperature

The short-term permissible temperature limit is +190°C, which allows the use of iglidur® RW370 plain bearings in all applications involving elevated ambient temperatures. With increasing temperatures, the compressive strength of iglidur® RW370 plain bearings decreases. When considering temperatures, the additional frictional heat in the bearing system must be taken into account. For temperatures over +120°C an additional securing is required.

***Application temperatures, page 53***
***Additional securing, page 53***

### Friction and wear

The excellent coefficient of friction level of iglidur® RW370 in dry operation decreases with speed, to a value of 1.1m/s. Diagram 04 shows this with respect to a steel shaft. Above a speed of 1.25 m/s the coefficient of friction increases significantly as the load limit of the material is reached.

***Coefficient of friction and surfaces, page 51***
***Wear resistance, page 54***

### Shaft materials

Diagram 06 and 07 display a summary of the test results with different shaft materials conducted with plain bearings made from iglidur® RW370. At a surface pressure of 0.3m/s and 1MPa, shafts made of hard-anodised aluminium and hard-chromed Cf53 are the most suitable glide surfaces. Shafts made from 304 stainless steel or high grade steel also show good results. If the shaft material you plan on using is not shown in these test results, please contact us.

***Shaft materials, page 56***

### Installation tolerances

iglidur® RW370 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, in standard cases the inner diameter automatically adjusts to the F10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

***Testing methods, page 61***

| Chemicals | Resistance |
|---|---|
| Alcohols | + up to 0 |
| Diluted acids | + |
| Diluted alkalines | + |
| Fuels | + up to 0 |
| Greases, oils without additives | + |
| Hydrocarbons | – |
| Strong acids | – |
| Strong alkalines | – |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

***Chemical table, page 1170***

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 0.9 | 0.6 | 2.5 |
| Short-term | **m/s** | 1.0 | 0.8 | 2.6 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.13-0.17 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | F10 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.006 | +0.046 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.010 | +0.058 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.013 | +0.071 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.016 | +0.086 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.020 | +0.104 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.025 | +0.125 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.030 | +0.150 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | -0.036 | +0.176 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.043 | +0.203 | +0.000 | +0.100 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

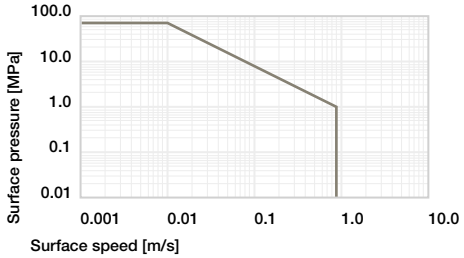



Diagram 01: Permissible pv values for iglidur® RW370 with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing

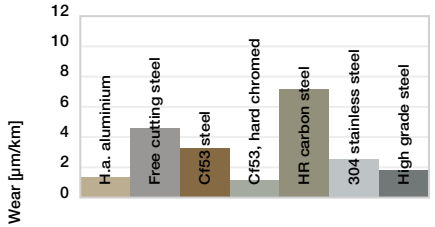



Diagram 05: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

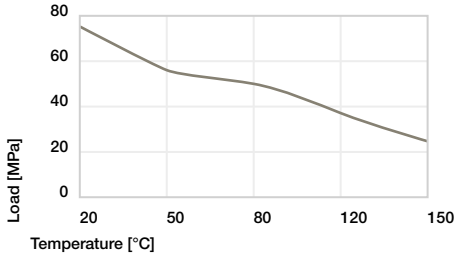



Diagram 02: Maximum recommended surface pressure as a function of temperature (75MPa at +20°C)

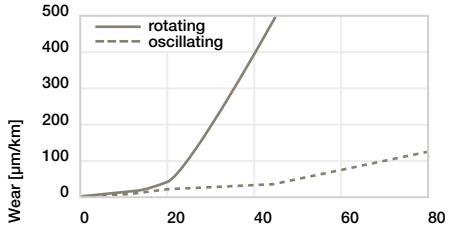



Diagram 06: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

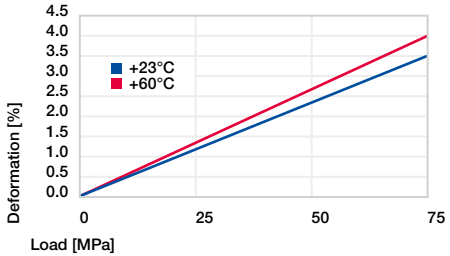



Diagram 03: Deformation under pressure and temperature

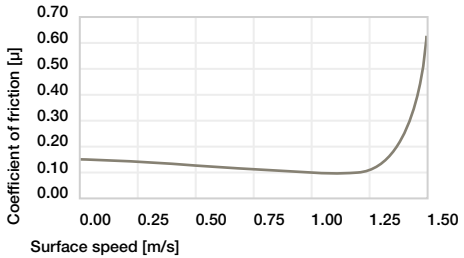
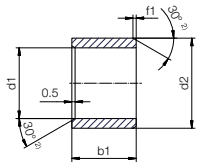



Diagram 04: Coefficient of friction as a function of the surface speed, p = 1MPa

# Bearing technology | Plain bearings | iglidur® RW370

## Sleeve bearings (form S)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 6-12 | Ø 12-30 |
|---|---|---|
| f1 [mm] | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** RW370SM-0608-06 **– no minimum order quantity.**
RW370 iglidur® material S Cylindrical M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | b1 h13 [mm] | Part No. |
|---|---|---|---|---|
| 6.0 | +0.010 +0.058 | 8.0 | 6.0 | **RW370SM-0608-06** |
| 8.0 | +0.013 +0.071 | 10.0 | 10.0 | **RW370SM-0810-10** |
| 10.0 | | 12.0 | 10.0 | **RW370SM-1012-10** |
| 12.0 | +0.016 +0.086 | 14.0 | 12.0 | **RW370SM-1214-12** |
| 16.0 | | 18.0 | 15.0 | **RW370SM-1618-15** |
| 20.0 | +0.020 +0.104 | 23.0 | 20.0 | **RW370SM-2023-20** |

[3] After press-fit. *Testing methods, page 61*

**Available from stock**
Detailed information about delivery time online.
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| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

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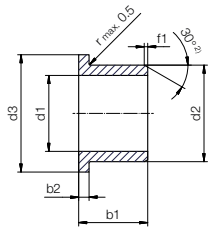
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**



iglidur®
RW370
+170°C
75MPa

# Bearing technology | Plain bearings | iglidur® RW370

## Flange bearings (form F)




[2] Thickness < 0.6mm: chamfer = 20°

Chamfer in relation to d1

| d1 [mm] | Ø 6-12 | Ø 12-30 |
|---|---|---|
| f1 [mm] | 0.5 | 0.8 |

Dimensions according to ISO 3547-1 and special dimensions

**Order example:** RW370FM-0608-06 **– no minimum order quantity.**
RW370 iglidur® material F With flange M Metric 06 Inner Ø d1 08 Outer Ø d2 06 Total length b1

| d1 [mm] | d1 Tolerance[3] | d2 [mm] | d3 d13[3] [mm] | b1 h13 [mm] | b2 h13 [mm] | Part No. |
|---|---|---|---|---|---|---|
| 6.0 | +0.010 +0.058 | 8.0 | 12.0 | 6.0 | 1.00 | **RW370FM-0608-06** |
| 8.0 | +0.013 +0.071 | 10.0 | 15.0 | 9.5 | 1.00 | **RW370FM-0810-09** |
| 10.0 | | 12.0 | 18.0 | 9.0 | 1.00 | **RW370FM-1012-09** |
| 12.0 | +0.016 +0.086 | 14.0 | 20.0 | 12.0 | 1.00 | **RW370FM-1214-12** |
| 16.0 | | 18.0 | 24.0 | 12.0 | 1.00 | **RW370FM-1517-12** |
| 20.0 | +0.020 +0.104 | 23.0 | 30.0 | 21.5 | 1.50 | **RW370FM-2023-20** |

[3] After press-fit. *Testing methods, page 61*

**Available from stock**
Detailed information about delivery time online.
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**Order online**
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**Ordering note**
Our prices are scaled according to order quantities, current prices can be found online.

| Discount scaling | | |
|---|---|---|
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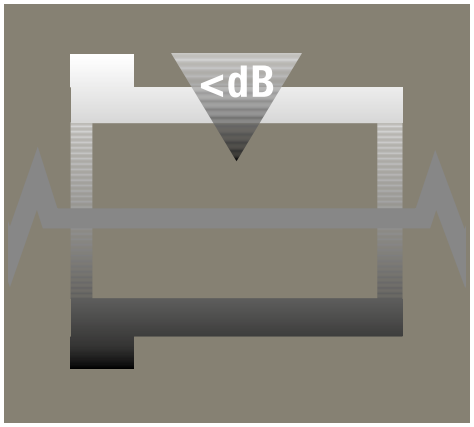
| 10-24 | 100-199 | 1,000-2,499 |
| 25-49 | 200-499 | 2,500-4,999 |

**No minimum order value.**
**No low-quantity surcharges.**
**Free shipping within Germany for orders above €150.**




# The variable one

## For simple bearing applications

## iglidur® B

**When to use it?**

- When maximum vibration dampening is required
- When sealing function has to be integrated
- When high edge loads occur

**When not to use it?**

- In applications with high atmospheric humidity
  ***iglidur® J***
- When a cost-effective universal plain bearing is required
  ***iglidur® R***
- When the highest wear resistance is required
  ***iglidur® J***



EN 09/2023

# Bearing technology | Plain bearings | iglidur® B

Ø
–

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## The variable one
## For simple bearing applications

Vibration dampening is the predominant feature of the iglidur® B material, which are also well-suited for edge loads at low pressure.

- Elimination of noise
- High flexibility
- Sealing function possible
- Lubrication-free
- Maintenance-free

| Descriptive technical specifications | | |
|---|---|---|
| Wear resistance at +23°C | – | + |
| Wear resistance at +90°C | – | + |
| Wear resistance at +150°C | – | + |
| Slide property | – | + |
| Wear resistance under water | – | + |
| Media resistance | – | + |
| Resistant to edge pressures | – | + |
| Resistant to shock and impact loads | – | + |
| Dirt resistance | – | + |

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**Online service life calculation**
www.igus.eu/iglidur-expert



EN 09/2023

iglidur® B
+100°C
40MPa

# Technical data

-40°C up to +100°C

40MPa

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.15 | |
| Colour | | grey | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 1 | DIN 53495 |
| Max. moisture absorption | % weight | 6.3 | |
| Coefficient of friction, dynamic, against steel | μ | 0.18-0.28 | |
| pv value, max. (dry) | MPa · m/s | 0.15 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 1,800 | DIN 53457 |
| Flexural strength at +20°C | MPa | 55 | DIN 53452 |
| Compressive strength | MPa | 20 | |
| Max. permissible surface pressure (+20°C) | MPa | 40 | |
| Shore D hardness | | 69 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +100 | |
| Max. application temperature short-term | °C | +130 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 12 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{10}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{9}$ | DIN 53482 |

**Table 01: Material properties**

The compressive strength of the iglidur® B plain bearings is on the one hand low, but on the other, is an important property of the bearing. They are mainly used where vibration dampening and acoustic separation are required.

### Moisture absorption
The moisture absorption of iglidur® B plain bearings in ambient conditions is approximately 1% weight. The saturation limit submerged in water is 6.3% weight. This must be taken into account for these types of applications.

### Vacuum
In vacuum, any present moisture is released as vapour. Use in vacuum is only possible with dehumidified iglidur® B bearings.

### Radiation resistance
Plain bearings made from iglidur® B are resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

### Resistance to weathering
iglidur® B plain bearings have limited resistance to weathering. The material properties are affected. Discolouration occurs. Practical tests under real application conditions are recommended.

### Mechanical properties
With increasing temperatures, the compressive strength of iglidur® B plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® B at radial loads. At the maximum recommended surface pressure of 40MPa the deformation is about 5.3%.
***Surface pressure, page 45***

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# Bearing technology | Plain bearings | iglidur® B

### Permissible surface speeds

iglidur® B plain bearings can be continuously used up to 0.7m/s in rotating applications. The frictional heat provides the speed limits. In practice, though, this level is rarely reached due to varying application conditions.

*Surface speed, page 48*

### Temperature

The maximum long-term application temperature is +100°C. For temperatures over +50°C an additional securing is required. The wear resistance also decreases exponentially from +70°C upwards.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

The coefficient of friction increases slightly with the speed and decreases with the load. Surface finishes (Ra) of the shaft between 0.4-0.6µm are ideal. As far as the bearing load is not too high, the attained coefficient of wear is pretty good. An increase in load results in a disproportionate increase in abrasion.

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

The influence of the shaft is not very large on the wear resistance. Diagram 06 and 07 clarify that very similar wear data are attained with different shaft materials.

*Shaft materials, page 56*

### Installation tolerances

iglidur® B plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the D11 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

### Product range

iglidur® B plain bearings are manufactured to special order.

| Chemicals | Resistance |
|---|---|
| Alcohols | + up to 0 |
| Diluted acids | 0 up to – |
| Diluted alkalines | – |
| Fuels | – |
| Greases, oils without additives | – |
| Hydrocarbons | – |
| Strong acids | – |
| Strong alkalines | – |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 0.7 | 0.5 | 2.0 |
| Short-term | **m/s** | 1.0 | 0.7 | 3.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction µ | 0.18-0.28 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1µm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | D11 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.020 | +0.080 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.030 | +0.105 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.040 | +0.130 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.050 | +0.160 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.065 | +0.195 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.080 | +0.240 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.100 | +0.290 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.120 | +0.340 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.145 | +0.395 | -0.100 | +0.000 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

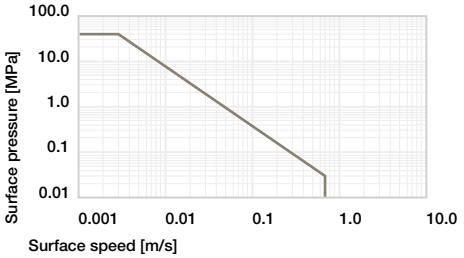



Diagram 01: Permissible pv values for iglidur® B plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

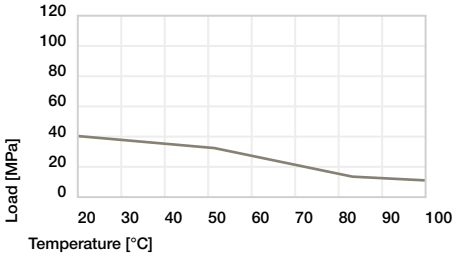



Diagram 02: Maximum recommended surface pressure as a function of temperature (40MPa at +20°C)

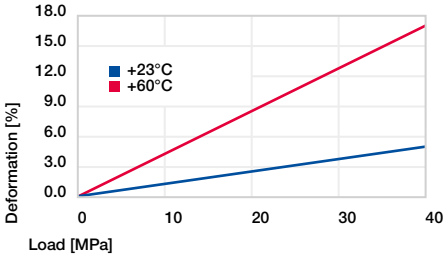



Diagram 03: Deformation under pressure and temperature

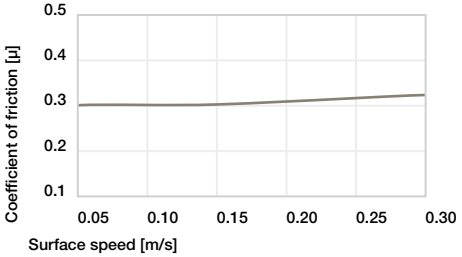



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

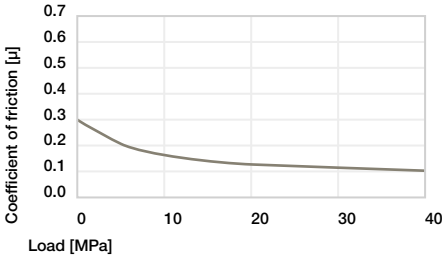



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

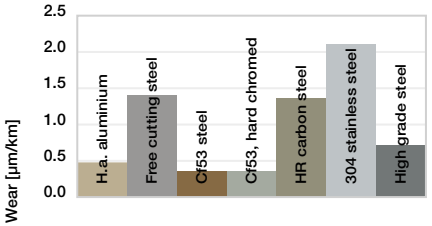



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

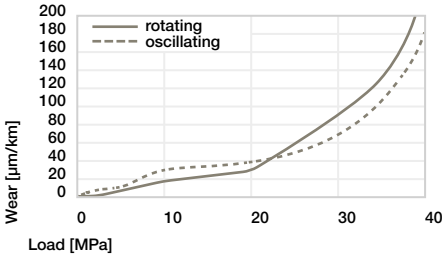
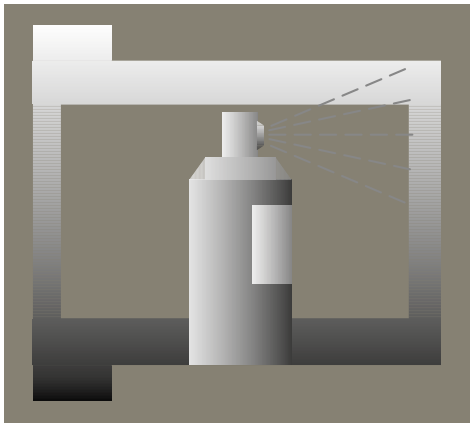



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load



# Free from PTFE and silicone

## For simple applications

## iglidur® C

**When to use it?**

- When PTFE and silicone are not allowed in your application
- For applications with low speed
- When dirt-resistant bearings is required
- When maintenance-free, self-lubricating bearings is required

**When not to use it?**

- When the highest wear resistance is required
  ***iglidur® W300***
- When lowest coefficient of friction is required
  ***iglidur® J, iglidur® L250***
- When a cost-effective option is requested
  ***iglidur® M250***
- When low moisture absorption is required
  ***iglidur® R***



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# Bearing technology | Plain bearings | iglidur® C

Ø
–

Also available as:

Bar stock, round bar
Page 743

Bar stock, plate
Page 773

tribo-tape liner
Page 781

Guide rings
Page 641

Two hole flange bearings
Page 667

Moulded special parts
Page 696

igubal® spherical balls
Page 993

## Free from PTFE and silicone
For simple applications

Although iglidur® C dispenses with the use of PTFE and silicone as lubricants, the bearings still have excellent wear resistance under low loads.

- Maintenance-free dry operation
- High wear resistance
- Lubrication-free
- Maintenance-free

| Descriptive technical specifications | | | |
|---|---|---|---|
| Wear resistance at +23°C | – | ■■□□□ | + |
| Wear resistance at +90°C | – | ■□□□□ | + |
| Wear resistance at +150°C | – | ■□□□□ | + |
| Slide property | – | ■■□□□ | + |
| Wear resistance under water | – | ■□□□□ | + |
| Media resistance | – | ■■□□□ | + |
| Resistant to edge pressures | – | ■■■□□ | + |
| Resistant to shock and impact loads | – | ■■■□□ | + |
| Dirt resistance | – | ■■■□□ | + |

**Online product finder**
www.igus.eu/iglidur-finder

**Online service life calculation**
www.igus.eu/iglidur-expert





# Technical data

| General properties | | | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.10 | |
| Colour | | off white | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 1 | DIN 53495 |
| Max. moisture absorption | % weight | 6.9 | |
| Coefficient of friction, dynamic, against steel | μ | 0.17-0.25 | |
| pv value, max. (dry) | MPa · m/s | 0.10 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 1,900 | DIN 53457 |
| Flexural strength at +20°C | MPa | 60 | DIN 53452 |
| Compressive strength | MPa | 30 | |
| Max. permissible surface pressure (+20°C) | MPa | 40 | |
| Shore D hardness | | 72 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. application temperature long-term | °C | +90 | |
| Max. application temperature short-term | °C | +130 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 15 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | $> 10^{10}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{9}$ | DIN 53482 |

Table 01: Material properties

-40°C up to +90°C

40MPa

Plain bearings made from iglidur® C were developed especially for applications where the use of PTFE and silicon is not possible. Such applications can be found in electronics, tobacco and beverages industry and in many painting processes. Keywords like paint compatibility and silicon-free make the further employment of this material reasonable.

### Moisture absorption
The moisture absorption of iglidur® C plain bearings is only 6.9% weight after saturation in water. This must be taken into account for these types of applications.

### Vacuum
In vacuum, any present moisture is released as vapour. The use in vacuum is only possible to a limited extent.

### Radiation resistance
Plain bearings made from iglidur® C are resistant up to a radiation intensity of $2 \cdot 10^4$ Gy.

### Resistance to weathering
iglidur® C plain bearings have limited resistance to weathering. The material properties are affected. Discolouration occurs. Practical tests under real application conditions are recommended.

### Mechanical properties
With increasing temperatures, the compressive strength of iglidur® C plain bearings decreases. Diagram 02 shows this inverse relationship. The maximum recommended surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.
Diagram 03 shows the elastic deformation of iglidur® C at radial loads. The high flexibility makes the bearing suitable for vibrations and edge loads.
*Surface pressure, page 45*

# Bearing technology | Plain bearings | iglidur® C

### Permissible surface speeds

Although important solid lubricants were intentionally not used in the development of iglidur® C, the plain bearings are very wear-resistant and are therefore also suitable for continuous movements at medium surface speeds. Despite it being possible to temporarily attain rotational speeds of up to 1.5m/s, the main applications should nevertheless involve speeds of less than 0.5m/s.

*Surface speed, page 48*

### Temperature

The iglidur® C plain bearings can be used at temperatures up to +130°C for short periods. However no real loads are possible at this temperature. It therefore makes sense to limit the temperature to around +80°C to +90°C. For temperatures over +40°C an additional securing is required.

*Application temperatures, page 53*
*Additional securing, page 53*

### Friction and wear

The coefficient of friction of the iglidur® C plain bearing is dependent to a large degree on the surface finish of the shaft. The wear of the bearing is very good in applications with rotating or pivoting movements with low loads.

*Coefficient of friction and surfaces, page 51*
*Wear resistance, page 54*

### Shaft materials

Diagram 06 clearly shows how important the most "suitable" shaft can be. Although all shown results of these rotation experiments can be understood as very good, the difference is sometimes significant. This difference increases still further with increasing loads.

*Shaft materials, page 56*

### Installation tolerances

iglidur® C plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for press-fit into a housing machined to a H7 tolerance. After being assembled into a nominal size housing, the inner diameter automatically adjusts to the D11 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

*Testing methods, page 61*

### Product range

iglidur® C plain bearings are manufactured to special order.

| Chemicals | Resistance |
|---|---|
| Alcohols | + up to 0 |
| Diluted acids | 0 up to – |
| Diluted alkalines | + |
| Fuels | + |
| Greases, oils without additives | + |
| Hydrocarbons | + |
| Strong acids | – |
| Strong alkalines | 0 |

All data given at room temperature [+20°C]

Table 02: Chemical resistance

*Chemical table, page 1170*

| | | Rotating | Oscillating | linear |
|---|---|---|---|---|
| Long-term | **m/s** | 1.0 | 0.7 | 2.0 |
| Short-term | **m/s** | 1.5 | 1.1 | 3.0 |

Table 03: Maximum surface speeds

| | Dry | Greases | Oil | Water |
|---|---|---|---|---|
| Coefficient of friction μ | 0.17-0.25 | 0.09 | 0.04 | 0.04 |

Table 04: Coefficient of friction against steel (Ra = 1μm, 50HRC)

| | Housing | | Plain bearings | | Shaft | |
|---|---|---|---|---|---|---|
| Ø d1 [mm] | H7 [mm] | | D11 [mm] | | h9 [mm] | |
| 0-3 | +0.000 | +0.010 | +0.020 | +0.080 | -0.025 | +0.000 |
| > 3-6 | +0.000 | +0.012 | +0.030 | +0.105 | -0.030 | +0.000 |
| > 6-10 | +0.000 | +0.015 | +0.040 | +0.130 | -0.036 | +0.000 |
| > 10-18 | +0.000 | +0.018 | +0.050 | +0.160 | -0.043 | +0.000 |
| > 18-30 | +0.000 | +0.021 | +0.065 | +0.195 | -0.052 | +0.000 |
| > 30-50 | +0.000 | +0.025 | +0.080 | +0.240 | -0.062 | +0.000 |
| > 50-80 | +0.000 | +0.030 | +0.100 | +0.290 | -0.074 | +0.000 |
| > 80-120 | +0.000 | +0.035 | +0.120 | +0.340 | -0.087 | +0.000 |
| > 120-180 | +0.000 | +0.040 | +0.145 | +0.395 | -0.100 | +0.000 |

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit





# Technical data

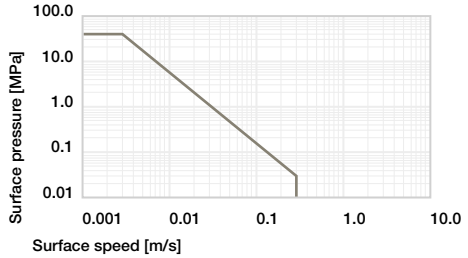



Diagram 01: Permissible pv values for iglidur® C plain bearing with a wall thickness of 1mm dry operation against a steel shaft at +20°C, mounted in a steel housing.

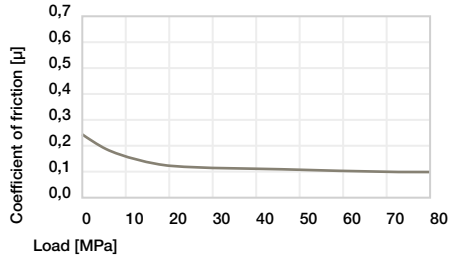



Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01m/s

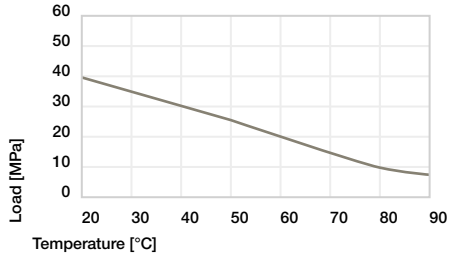



Diagram 02: Maximum recommended surface pressure as a function of temperature (40MPa at +20°C)

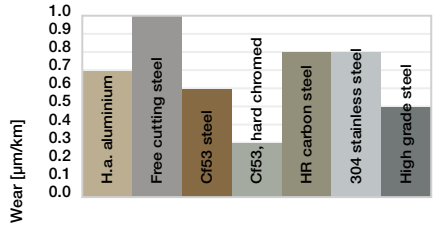



Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1MPa, v = 0.3m/s

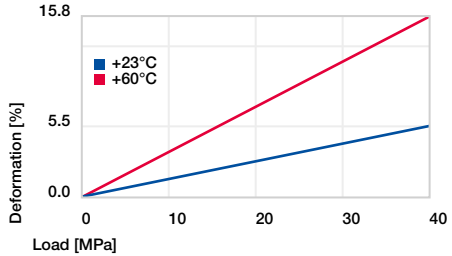



Diagram 03: Deformation under pressure and temperature

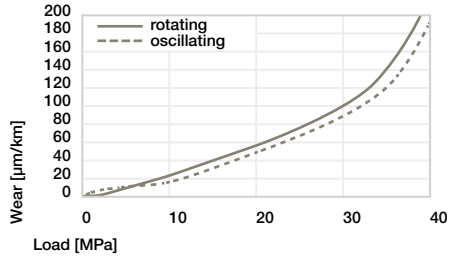



Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the load

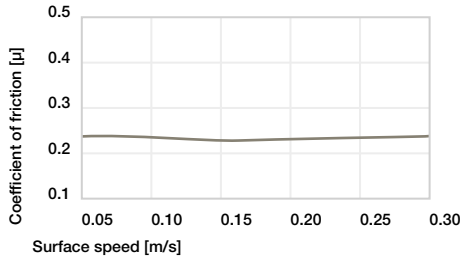
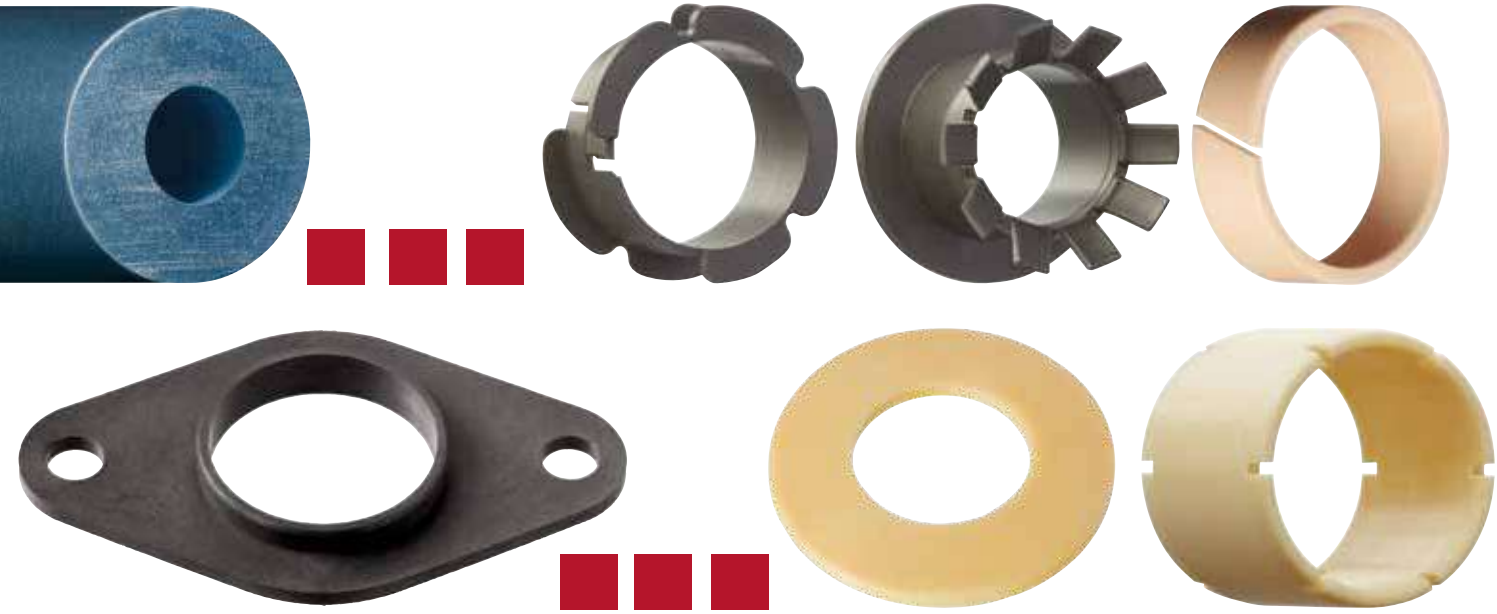



Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75MPa

# iglidur®

## Other products



# ...plastics

# iglidur® - other designs | Product overview

## iglidur® guide rings and clip bearings

**An alternative to PTFE tape:**
Guide rings
▶ **Page 641**

**Easy to install, security with the double flange design:**
Clip bearings
▶ **Page 645**

**Easy to install due to split design:**
Split bearings
▶ **Page 656**

**With anti-rotation feature:**
Split bearings
▶ **Page 657**

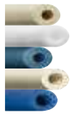
## iglidur® guide rings and clip bearings

**Press in and fold down:**
Flanged bearings
▶ **Page 658**

**Press and plug:**
Double flange bearings
▶ **Page 659**

**Join and snap into place:**
Special solution
Clip On
▶ **Page 660**

## iglidur® solutions for special applications



**For precise conveying:**
Knife edge rollers
▶ **Page 661**

**Secured by screws:**
Two hole flange bearings
▶ **Page 667**

**With pre-load:**
Two hole flange bearings
▶ **Page 670**

**Zero clearance and rattle-free:** Pre-loaded plain bearings
▶ **Page 671**

## iglidur® solutions for special applications

**Cushion and dampen:**
Disc springs polysorb
▶ **Page 675**

**For all shaft surfaces and materials:**
iglidur® PEP
▶ **Page 679**

**Position and seal:**
Lip seal bearings
▶ **Page 683**

New

**Plain bearings with felt seal**
▶ **Page 687**

## igus® Service

New

**iglidur® coatings:**
High-performance polymers for coating
▶ **Page 691**

**Quick and individual:**
Customised special parts – print2mold®, FastLine
▶ **Page 695**

# iglidur® guide rings

- Easy installation
- Cost-effective
- More wear-resistant than PTFE strips
- Higher load capacity
- Standard range from stock

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# iglidur® guide rings | Advantages

## Easy and cost-effective: iglidur® guide rings

- Easy installation
- Cost-effective
- More wear-resistant than PTFE strips
- Higher load capacity
- Maintenance-free

## iglidur® guide rings

Some things can actually be very easy: replace complex stamped PTFE strips with a single clip-on ring, for example in cylinders, control valves and fittings. In addition to the standard iglidur® J range, it is also possible to configure your required guide ring from the entire iglidur® bearing range.

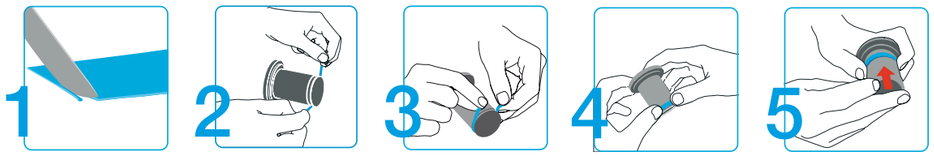
### When to use it?

- When guide rings with excellent wear properties are required
- When simple assembly is of great importance
- When high edge loads occur
- When tailor-made solutions based on iglidur® materials are required

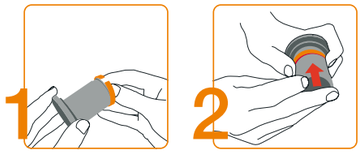
### When not to use it?

- When the guide rings should also act as a seal
- When different diameters should be covered by one part

### Alternative solutions:




### With iglidur®:





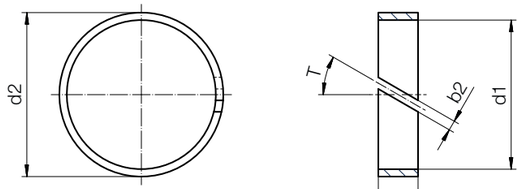

EN 09/2023

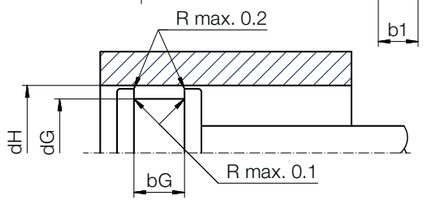


# iglidur® guide rings | Product range

## iglidur® J guide rings, from stock

iglidur® J is our all-round material when it comes to an outstanding running performance and low coefficient of friction on the broadest range of shafts. The flexibility of iglidur® J enables the typical assembly expected with guide rings using the push over/clip on method. Good media resistance rounds off the range of properties.



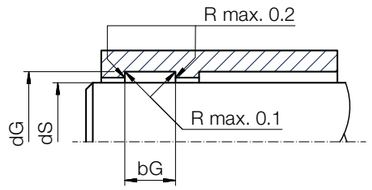

Installation recommendation for piston

| Dimensions [mm] | dG (h tolerance) | dH (H tolerance) | bG |
|---|---|---|---|
| Nominal size | dG = d1 | dH = d2 | bG = b1 +0.2 |

### Order key

| Type | Dimensions [mm] |
|---|---|
| J PR M | -06 08-00-010-060 |

| iglidur® material | Guide ring | Metric | Inner Ø | Outer Ø | Slot angle | Slot width | Length |
|---|---|---|---|---|---|---|---|




Installation recommendation for housing

| Dimensions [mm] | dS (h tolerance) | dG (H tolerance) | bG |
|---|---|---|---|
| Nominal size | dS = d1 | dG = d2 | bG = b1 +0.2 |

### Dimensions [mm]

| d1 | d2 | b1 h13 | b2 ±0.5 | T [°] | Part No. |
|---|---|---|---|---|---|
| 6 | 8 | 6 | 1.0 | 0 | JPRM-0608-00-010-060[167] |
| 8 | 10 | 10 | 1.0 | 0 | JPRM-0810-00-010-100[167] |
| 10 | 12 | 5.4 | 2.5 | 20 | JPRM-1012-20-025-054 |
| 12 | 14 | 5.4 | 2.5 | 20 | JPRM-1214-20-025-054 |
| 13 | 15 | 5.4 | 2.5 | 20 | JPRM-1315-20-025-054 |
| 14 | 16 | 5.4 | 2.5 | 20 | JPRM-1416-20-025-054 |
| 14 | 16 | 10 | 1.0 | 20 | JPRM-1416-20-010-100 |
| 16 | 18 | 5.4 | 2.5 | 20 | JPRM-1618-20-025-054 |
| 17 | 22 | 5.4 | 2.5 | 25 | JPRM-1722-25-025-054 |
| 20 | 23 | 5.4 | 2.5 | 20 | JPRM-2023-20-025-054 |
| 25 | 28 | 5.4 | 2.5 | 20 | JPRM-2528-20-025-054 |
| 28 | 32 | 10 | 1.0 | 20 | JPRM-2832-20-010-100 |
| 28 | 32 | 20 | 1.0 | 20 | JPRM-2832-20-010-200 |
| 28 | 33 | 5.4 | 2.5 | 25 | JPRM-2833-25-025-054 |
| 30 | 34 | 5.4 | 2.5 | 20 | JPRM-3034-20-025-054 |
| 35 | 39 | 5.4 | 2.5 | 20 | JPRM-3539-20-025-054 |
| 35 | 40 | 5.4 | 2.5 | 25 | JPRM-3540-25-025-054 |

[167] Straight slot

| d1 | d2 | b1 h13 | b2 ±0.5 | T [°] | Part No. |
|---|---|---|---|---|---|
| 40 | 44 | 5.4 | 2.5 | 20 | JPRM-4044-20-025-054 |
| 45 | 50 | 5.4 | 2.5 | 20 | JPRM-4550-20-025-054 |
| 45 | 50 | 10 | 2.0 | 0 | JPRM-4550-00-020-100[167] |
| 50 | 55 | 5.4 | 2.5 | 20 | JPRM-5055-20-025-054 |
| 50 | 55 | 10 | 2.0 | 0 | JPRM-5055-00-020-100[167] |
| 58 | 63 | 9.5 (–0.22) | 2.5 | 25 | JPRM-5863-25-025-095 |
| 60 | 65 | 5.4 | 2.5 | 20 | JPRM-6065-20-025-054 |
| 70 | 75 | 5.4 | 2.5 | 20 | JPRM-7075-20-025-054 |

More Information about iglidur® material and technical data
iglidur® J ▶ Page 163

**Max. +90°C**
**min. -50°C**

**Ø 6 - 70mm**
More dimensions upon request

**Available from stock**
Detailed information about delivery time online.

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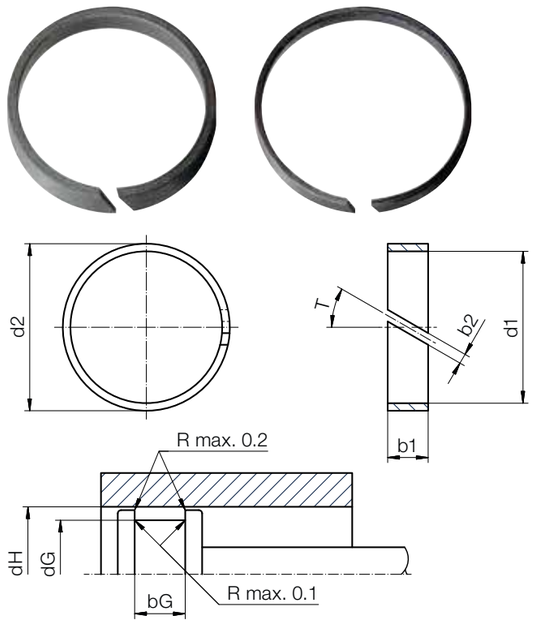
# iglidur® guide rings | Product range

## Guide rings as desired

In addition to the stock range of iglidur® J guide rings, you can also select your required guide ring on the basis of the entire iglidur® bearing range.
Use the entire iglidur® plain bearing range and choose the material best suited to your application. Your guide ring will be delivered within 10 days - to your requirements.

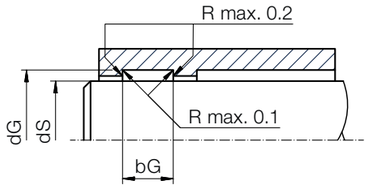



### Order key

| Type | Dimensions [mm] |
|---|---|

☐ PRM-☐☐-☐

| iglidur® required material | Guide ring | Metric | Required inner Ø | Required outer Ø | Required length |
|---|---|---|---|---|---|




**Installation recommendation for piston**

| Dimensions [mm] | dG (h tolerance) | dH (H tolerance) | bG |
|---|---|---|---|
| Nominal size | dG = d1 | dH = d2 | bG = b1 +0.2 |

**Installation recommendation for housing**

| Dimensions [mm] | dS (h tolerance) | dG (H tolerance) | bG |
|---|---|---|---|
| Nominal size | dS = d1 | dG = d2 | bG = b1 +0.2 |

**Our material recommendations for special requirements:**

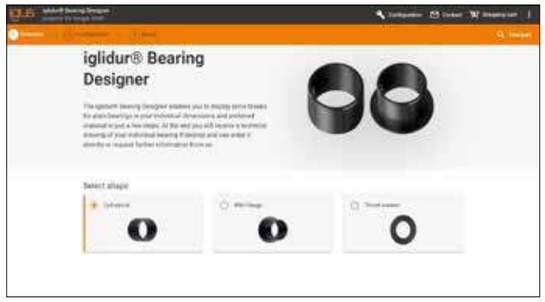
- **iglidur® A181: FDA-compliant ▶ Page 401**
- **iglidur® J350: >+90°C ▶ Page 203**
- **iglidur® H1: Temperatures up to +200°C ▶ Page 345**

In addition to mechanical processing of existing iglidur® plain bearings to guide rings, we also develop custom-made guide ring solutions for your volume requirements. Please contact us, we will support you with your design and create an appropriate proposal.

### iglidur® guide rings product finder

**Material selection and individual dimensions made easy.** With just a few clicks, the guide ring finder can find the optimum iglidur® material and select the appropriate dimensions from the standard catalogue range in order to define a guide ring in a customised width.

**▶ www.igus.eu/IBD**



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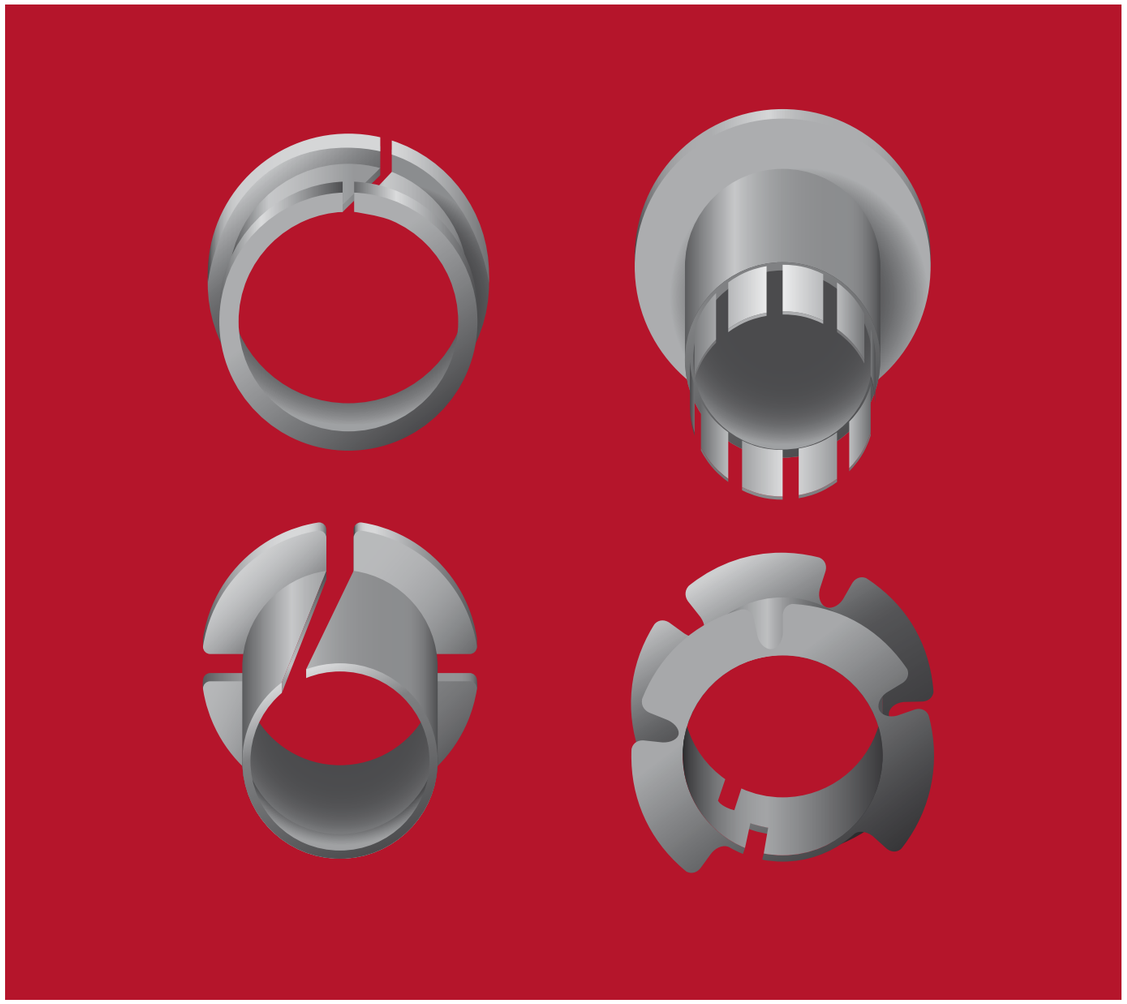

# iglidur® - clip bearings

- Easy installation
- Abrasion-resistant
- Predictable service life
- Custom versions possible
- Lubrication and maintenance-free
- Standard range from stock

EN 09/2023

## Solutions for stamped sheet metal

**iglidur® clip bearings:**
Captive with double flange
▶ **From page 652**

**iglidur® split bearings:**
Easy assembly due to lateral slot, also with anti-rotation feature
▶ **From page 656**

**iglidur® flanged bearings:**
Press in and fold down
▶ **From page 658**

**iglidur® double flange bearings:**
Press and plug
▶ **From page 659**

Special solution
**iglidur® Clip On:**
Join and snap into place
▶ **From page 660**

# iglidur® clip bearings for fitting shafts

iglidur® clip bearings are designed specifically for fitting shafts through sheet metal. For this reason, the bearings have flanges located on both ends. The plain bearings are secured in the sheet metal plate on both sides after fitting.
The clip bearings have an angled slot which allows them to be fitted from one side. After fitting, the bearing expands and forms a lining for the hole in the metal plate. The shaft prevents the clip bearing from falling out the housing. Even during linear movement, the plain bearing cannot slide out.

- Lateral slot for easy installation
- Lubrication and maintenance-free
- Good adaptability to punched holes
- Abrasion-resistant
- Smooth operation
- For rotating and linear movements

### Typical application areas

- Automotive industry
- Mechanical engineering
- Jig construction

**Available from stock**
Detailed information about delivery time online.

**Max. +80°C**
**min. -40°C**

**Material: iglidur® M250**
**6 types**
**Ø 3 - 25mm**
More dimensions upon request

**Imperial dimensions available**
▶ **From page 1150**





## Material properties

| General properties | Unit | iglidur® M250 | iglidur® K230 | iglidur® K250 | iglidur® A230 | Testing method |
|---|---|---|---|---|---|---|
| Density | g/cm³ | 1.14 | 1.36 | 1.19 | 1.20 | |
| Colour | | dark grey | dark grey | black | blue | |
| Max. moisture absorption at +23°C and 50% r.h. | % weight | 1.4 | 0.8 | 0.3 | 0.3 | DIN 53495 |
| Max. moisture absorption | % weight | 7.6 | 2.9 | 3.6 | 2.5 | |
| Coefficient of sliding friction, dynamic against steel | μ | 0.18 - 0.40 | – | – | – | |
| pv value, max. (dry) | MPa · m/s | 0.12 | – | – | – | |
| **Mechanical properties** | | | | | | |
| Flexural modulus | MPa | 2,700 | 1,600 | 2,975 | 1,530 | DIN 53457 |
| Flexural strength at +20°C | MPa | 112 | 40 | 79 | 53 | DIN 53452 |
| Compressive strength | MPa | 52 | 40 | – | – | |
| Max. recommended surface pressure (+20°C) | MPa | 20 | 38 | 35 | 18 | |
| Shore D hardness | | 79 | 68 | 70 | 73 | DIN 53505 |
| **Physical and thermal properties** | | | | | | |
| Max. continuous application temperature | °C | +80 | +110 | +90 | +110 | |
| Max. short-term application temperature | °C | +170 | +130 | +110 | +130 | |
| Min. application temperature | °C | -40 | -30 | -50 | -30 | |
| Thermal conductivity | W/m · K | 0.24 | 0.25 | 0.25 | 0.25 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 10 | 11 | – | 13 | DIN 53752 |
| **Electrical properties** | | | | | | |
| Specific volume resistance | Ωcm | $> 10^{13}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{11}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{12}$ | DIN 53482 |

**Table 01: Material properties table**

# iglidur® clip bearings | Product overview

### iglidur® clip bearings
- Easy to fit due to clip-on feature
- Increased security with the double flange design
- Abrasion-resistant

▶ **From page 652**

### iglidur® split bearings (clips2)
- Easy to fit
- Tolerance compensation with angled slot
- Low bearing clearance, high precision

▶ **From page 656**

### iglidur® flanged bearings
- Easy installation
- Press-fit
- Axial load on both sides
- Compensation of tolerances of the sheet metal

▶ **From page 658**

### iglidur® double flange bearings
- Easy to fit due to clip-on feature
- Large flange surfaces
- Two identical large flange surfaces

▶ **From page 659**

### Special solution iglidur® Clip On
- The disc is snapped onto the flanged bearing with undercuts
- Compensation of axial clearance
- Pre-assembly possible
- Combination of conductive and non-conductive materials

▶ **From page 660**



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# iglidur® clip bearings | Application examples

**Prescription printer: precise and effective**
This prescription printer for pharmacies fits into the limited space in a cash register. Absolute accuracy is required for a precise typeface. The ink cartridge holder slides on the metal guide rod, using two iglidur® J plain bearings, and two additional guides on the sheet metal edge help keep the application parallel. The guide rod was mounted with igus® MCM clip bearings.

**Sweet nectar with clip bearings**
The honeycombs are pierced with needles so that the honey can flow out of them when they are spun around. To ensure that the needles hit all the combs, the frame must shift a few millimetres linearly. Easy-to-clean, cost-effective iglidur® clip bearings and iglidur® fixed flange bearings are used for this.

**Weatherproof plain bearings for radiator mascot**
By using wear-resistant iglidur® clip bearings, the lowering mechanism for radiator mascots on luxury cars could be improved. Their advantages are the consistent flange thickness and the high wear resistance in various environmental conditions such as cold, heat or fine sand.

## General properties

The clip bearings have an angled slot which allows the bearings to be fitted from one side. After fitting, the bearing expands and forms a lining for the hole in the metal plate. The shaft prevents the clip bearing from falling out the housing. Even during linear movement, the bearing cannot slide out. iglidur® clip bearings are made from wear-resistant material iglidur® M250.
iglidur® M250 is a plain bearing material with strong wear resistance at average loads. The plain bearings are self-lubricating and can be used dry. If required the plain bearings can also be lubricated. The material iglidur® M250 is resistant to all common lubricants.

## Mechanical properties

The permissible static surface pressure of iglidur® M250 at room temperature is 20MPa. Due to the possibility of high tolerances in the housing hole, the clip bearing has a high compressive strength even for punched holes.
For bearing surfaces that are very small, the vibration dampening properties and the resistance to edge pressure are especially important.

▶ iglidur® M250, **Page 111**

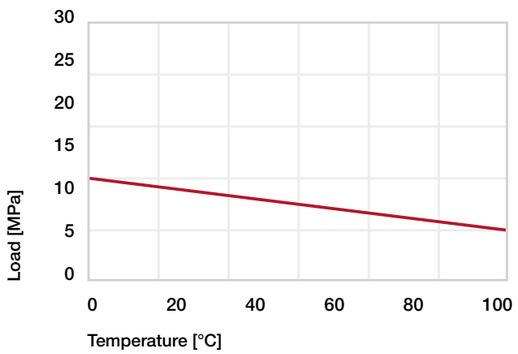



**Diagram 01: Maximum recommended surface pressure as a function of temperature (20MPa at +20°C)**

## Permissible surface speeds

Clip bearings are extremely wear-resistant in slow rotating, oscillating, and linear movements. The maximum surface speeds for the different movements are the same as for the material iglidur® M250 (table 01).
With lubrication the permissible surface speeds can be increased.

▶ Surface speed, **page 48**

| m/s | Rotating | Oscillating | linear |
|---|---|---|---|
| Long-term | 0.8 | 0.6 | 2.5 |
| Short-term | 2 | 1.4 | 5 |

**Table 01: Maximum surface speeds**

## Temperatures

For operating temperatures up to +80°C iglidur® clip bearings display high wear resistance. Even in the cold, the plain bearings remain elastic and abrasion-resistant.

▶ Application temperatures, **page 53**

| iglidur® M250 | Application temperature |
|---|---|
| Minimum | -40°C |
| Max. long-term | +80°C |
| Maximum, short-term | +170°C |

**Table 02: temperature limits**



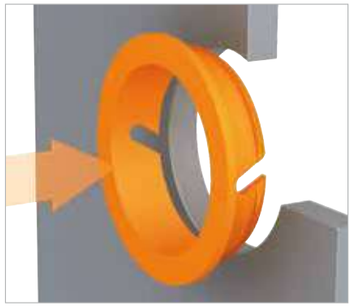
iglidur® clip bearings | Technical data



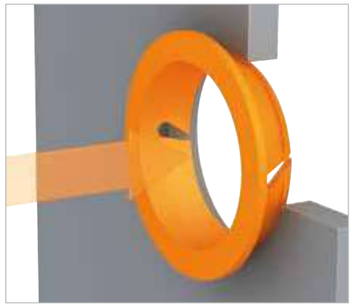
## Assembly

For installation, the plain bearings are pressed together on the side with the large flange. The angled slot makes the bearing spiral shaped so that it can be placed easily into the metal plate. The slot also compensates for expansions of the circumference. In this way, a tight clearance is possible with the clip bearings. The bearing clearance is dimensioned in such a way that in a housing hole with a nominal diameter, a shaft made with the same nominal diameter turns easily. The clip bearings should be fitted into a housing with a "H" class tolerance, up to H13. The clip bearing can also rotate within the housing hole.

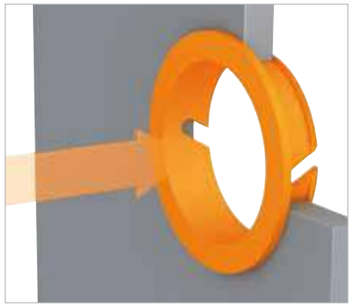
**Fitting:**



**Simple axial press in**



**Axial safety through the second flange**



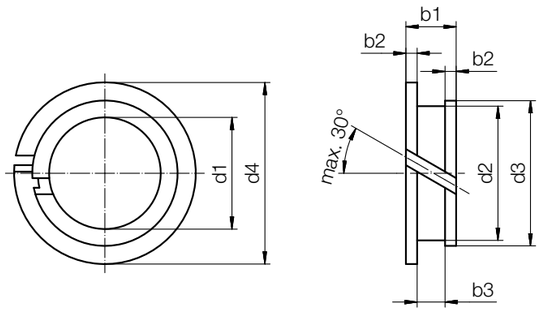
**Easy installation via clip on mechanism**

Please contact us if you need this special solution for your application. We will help you with your design, drawing on the experience that we have with a large number of custom bearing solutions.

# iglidur® clip bearings | Product range

## Clip bearings for sheet metals - captive with double flange

Image exemplary




### Order key

| Type | Dimensions [mm] |
|---|---|
| M C M | -03-02 |

iglidur® material | Form | Metric | Inner Ø | Metal sheet thickness

**Material:**
iglidur® M250 ▶ Page 111

**Imperial dimensions available**
▶ From page 1149

### Dimensions [mm]

| d1 D11[7] | d2 | d3 | d4 | b1 +0.20 | b2 -0.10 | b3 | Part No. |
|---|---|---|---|---|---|---|---|
| 3 | 4.2 | 4.8 | 6.0 | 3.2 | 0.6 | 2.0 | **MCM-03-02** |
| 3 | 4.2 | 4.8 | 6.0 | 4.2 | 0.6 | 3.0 | **MCM-03-03** |
| 4 | 5.2 | 5.9 | 7.0 | 3.2 | 0.6 | 2.0 | **MCM-04-02** |
| 4 | 5.2 | 5.9 | 7.0 | 4.2 | 0.6 | 3.0 | **MCM-04-03** |
| 5 | 6.2 | 6.8 | 8.0 | 3.2 | 0.6 | 2.0 | **MCM-05-02** |
| 5 | 6.2 | 6.8 | 8.0 | 4.2 | 0.6 | 3.0 | **MCM-05-03** |
| 6 | 7.2 | 7.8 | 11.0 | 2.7 | 0.6 | 1.5 | **MCM-06-015** |
| 6 | 7.2 | 7.8 | 11.0 | 3.2 | 0.6 | 2.0 | **MCM-06-02** |
| 6 | 7.2 | 7.8 | 11.0 | 4.2 | 0.6 | 3.0 | **MCM-06-03** |
| 6 | 7.2 | 7.8 | 11.0 | 5.2 | 0.6 | 4.0 | **MCM-06-04** |
| 7 | 9.0 | 9.8 | 13.0 | 4.6 | 0.8 | 3.0 | **MCM-07-03** |
| 8 | 9.6 | 10.4 | 13.0 | 3.6 | 0.8 | 2.0 | **MCM-08-02** |
| 8 | 9.6 | 10.4 | 13.0 | 4.6 | 0.8 | 3.0 | **MCM-08-03** |
| 8 | 9.6 | 13.0 | 10.4 | 5.6 | 0.8 | 4.0 | **MCM-08-04** |
| 9 | 10.6 | 11.4 | 14.0 | 3.6 | 0.8 | 2.0 | **MCM-09-02** |
| 10 | 11.6 | 12.4 | 15.0 | 3.6 | 0.8 | 2.0 | **MCM-10-02** |
| 10 | 11.6 | 12.4 | 15.0 | 4.1 | 0.8 | 2.5 | **MCM-10-025** |

| d1 D11[7] | d2 | d3 | d4 | b1 +0.20 | b2 -0.10 | b3 | Part No. |
|---|---|---|---|---|---|---|---|
| 10 | 11.6 | 12.4 | 15.0 | 4.6 | 0.8 | 3.0 | **MCM-10-03** |
| 10 | 11.6 | 12.4 | 15 | 5.6 | 0.8 | 4.0 | **MCM-10-04** |
| 10 | 11.6 | 12.4 | 15 | 9.6 | 0.8 | 8.0 | **MCM-10-08** |
| 12 | 13.6 | 14.4 | 17 | 3.6 | 0.8 | 2.0 | **MCM-12-02** |
| 12 | 13.6 | 14.4 | 17 | 4.35 | 0.8 | 2.75 | **MCM-12-025** |
| 12 | 13.6 | 14.4 | 17 | 4.6 | 0.8 | 3.0 | **MCM-12-03** |
| 12 | 13.6 | 14.4 | 17 | 5.1 | 0.8 | 3.5 | **MCM-12-035** |
| 12 | 13.6 | 14.4 | 17 | 5.6 | 0.8 | 4.0 | **MCM-12-04** |
| 12 | 13.6 | 14.4 | 17 | 6.4 | 0.8 | 4.8 | **MCM-12-045** |
| 14 | 15.6 | 16.4 | 19 | 4.6 | 0.8 | 3.0 | **MCM-14-03** |
| 16 | 17.6 | 18.4 | 21 | 3.6 | 0.8 | 2.0 | **MCM-16-02** |
| 16 | 17.6 | 18.4 | 21 | 4.6 | 0.8 | 3.0 | **MCM-16-03** |
| 18 | 20.0 | 21.0 | 23 | 4.0 | 1.0 | 2.4 | **MCM-18-02** |
| 18 | 20.0 | 21.0 | 23 | 5.0 | 1.0 | 3.0 | **MCM-18-03** |
| 20 | 22.0 | 23.0 | 25 | 5.0 | 1.0 | 3.0 | **MCM-20-03** |
| 25 | 27.0 | 28.0 | 30 | 5.0 | 1.0 | 3.0 | **MCM-25-03** |
| 25 | 27.0 | 28.0 | 30 | 8.0 | 1.0 | 6.0 | **MCM-25-06** |

[7] d1 value is measured with a plug gauge after fitting into a reference housing d2 (+0.005). Please see D11 tolerances table ▶ Page 62

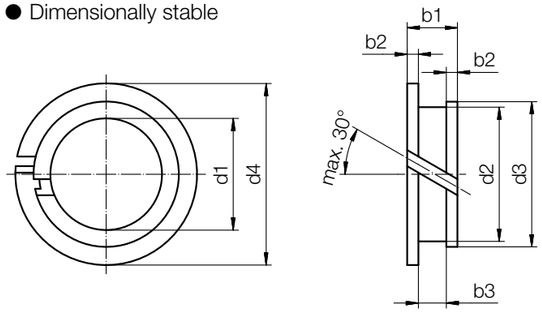




# iglidur® clip bearings | Product range New

## Clip bearings for e-coating processes

- High temperature resistance
- e-coating
- Dimensionally stable




### Order key

| Type | Dimensions [mm] |
|---|---|
| K250 C M | -05-02 |

iglidur® material | Form | Metric | Inner Ø | Metal sheet thickness

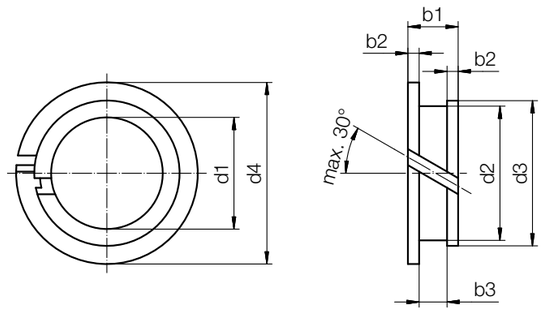
**Material:**
iglidur® K250 ▶ Page 1188

### Dimensions [mm]

| d1 | d2 D11 | d3 | d4 | b2 | b1 | Part No. |
|---|---|---|---|---|---|---|
| 5 | 6.2 | 6.8 | 8.0 | 0.6 | 3.2 | **K250CM-05-02** New |
| 6 | 7.2 | 7.8 | 11.0 | 0.6 | 4.2 | **K250CM-06-03** New |
| 8 | 9.6 | 10.4 | 13.0 | 0.8 | 4.6 | **K250CM-08-03** New |
| 10 | 11.6 | 12.4 | 15.0 | 0.8 | 4.6 | **K250CM-10-03** New |
| 12 | 13.6 | 14.4 | 17.0 | 0.8 | 4.6 | **K250CM-12-03** New |

# iglidur® clip bearings | Product range New

## Clip bearings for sheet metal in the food industry




### Order key

| Type | Dimensions [mm] | | | |
|---|---|---|---|---|
| A230 C M-05-02 | | | | |
| iglidur® material | Form | Metric | Inner Ø | Metal sheet thickness |

**Material:**
iglidur® A230 ▶ Page 1188

- FDA and EU10/2011 compliant
- Visually detectable
- Low moisture absorption
- Suitable for use in the food industry and medical technology

### Dimensions [mm]

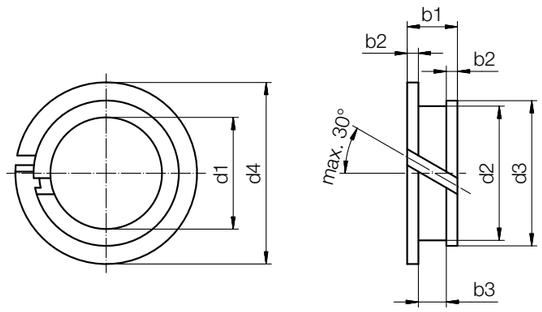
| d1 | d2 D11 | d3 | d4 | b2 | b1 | Part No. |
|---|---|---|---|---|---|---|
| 5 | 6.2 | 6.8 | 8.0 | 0.6 | 3.2 | **A230CM-05-02** New |
| 6 | 7.2 | 7.8 | 11.0 | 0.6 | 4.2 | **A230CM-06-03** New |
| 8 | 9.6 | 10.4 | 13.0 | 0.8 | 4.6 | **A230CM-08-03** New |
| 10 | 11.6 | 12.4 | 15.0 | 0.8 | 4.6 | **A230CM-10-03** New |
| 12 | 13.6 | 14.4 | 17.0 | 0.8 | 4.6 | **A230CM-12-03** New |





# iglidur® clip bearings | Product range

## Clip bearing with low coefficient of friction and wear




### Order key

| Type | Dimensions [mm] | | | |
|---|---|---|---|---|
| K230 C M-05-02 | | | | |
| iglidur® material | Form | Metric | Inner Ø | Metal sheet thickness |

**Material:**
iglidur® K230 ▶ Page 1187

These clip bearings are made of wear-resistant iglidur® high-performance polymers and are designed specifically for fitting shafts through sheet metal. With this specific clip bearing design, a locating spigot is utilised to enable fitting into less precise holes and housings. The new iglidur® K230 material offers a lower moisture absorption and even more flexibility compared to the iglidur® M250 clip bearings.

- Lubrication and maintenance-free
- Low moisture absorption
- Temperature resistance
- Chemical resistance
- Corrosion-resistant

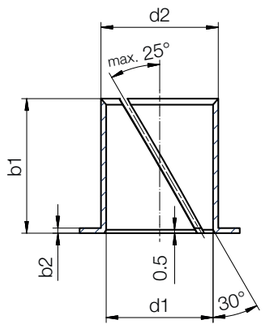
### Dimensions [mm]

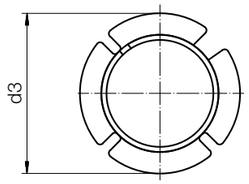
| d1 | d2 D11 | d3 | d4 | b2 | b1 | Part No. |
|---|---|---|---|---|---|---|
| 5 | 6.2 | 6.8 | 8.0 | 0.6 | 3.2 | **K230CM-05-02** New |
| 6 | 7.2 | 7.8 | 11.0 | 0.6 | 4.2 | **K230CM-06-03** New |
| 8 | 9.6 | 10.4 | 13.0 | 0.8 | 4.6 | **K230CM-08-03** New |
| 10 | 11.6 | 12.4 | 15.0 | 0.8 | 4.6 | **K230CM-10-03** New |
| 12 | 13.6 | 14.4 | 17.0 | 0.8 | 4.6 | **K230CM-12-03** New |

# iglidur® clip bearings | Product range

## Split bearings (clips2) - easy assembly

Image exemplary




r = max. 0.5mm

### Order key

| Type | Dimensions [mm] |
|---|---|
| M Y M | -04-04 |

iglidur® material | Form | Metric | Inner Ø | Total length

Material:
iglidur® M250 ▶ Page 111
With anti-rotation feature ▶ Page 657

Imperial dimensions available
▶ From page 1150

### Dimensions [mm]

| d1 | d1 tolerance[7] | d2[9] | d3 | b1 | b2 | Part No. |
|---|---|---|---|---|---|---|
| | | | ±0.40 | -0.40 | -0.13 | |
| 4 | +0.025 +0.075 | 5.2 | 7.0 | 4.0 | 0.6 | **MYM-04-04** |
| 5 | +0.025 +0.075 | 6.2 | 8.0 | 5.0 | 0.6 | **MYM-05-05** |
| 6 | +0.025 +0.075 | 7.2 | 9.5 | 6.0 | 0.6 | **MYM-06-06** |
| 8 | +0.025 +0.075 | 9.6 | 12.0 | 8.0 | 0.8 | **MYM-08-08** |
| 10 | +0.025 +0.075 | 11.6 | 15.0 | 10.0 | 0.8 | **MYM-10-10** |
| 12 | +0.025 +0.075 | 13.6 | 18.0 | 12.0 | 0.8 | **MYM-12-12** |
| 14 | +0.025 +0.075 | 15.6 | 21.0 | 14.0 | 0.8 | **MYM-14-14** |
| 16 | +0.025 +0.075 | 17.6 | 24.0 | 16.0 | 0.8 | **MYM-16-16** |
| 20 | +0.025 +0.075 | 21.6 | 30.0 | 16.0 | 0.8 | **MYM-20-16** |
| 20 | +0.025 +0.075 | 21.6 | 30.0 | 20.0 | 0.8 | **MYM-20-20** |
| 25 | +0.025 +0.075 | 27.4 | 37.5 | 25.0 | 1.2 | **MYM-25-25** |

[7] d1 value is measured with a plug gauge after fitting into a reference housing d2 (+0.005)
[9] Recommended housing hole tolerance: H9

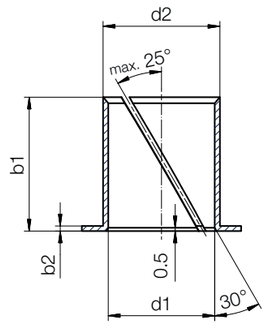


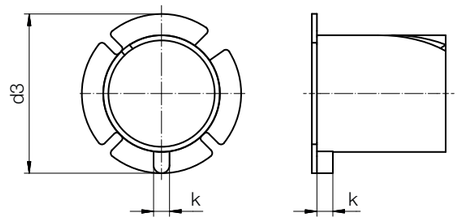


# iglidur® clip bearings | Product range

## Split bearings with anti-rotation feature

Image exemplary




### Order key

| Type | Dimensions [mm] | Option |
|---|---|---|
| M Y M- | 04 - 04 | -K |

iglidur® material | Form | Metric | Inner Ø | Total length | Anti-rotation feature

Material:
iglidur® M250 ▶ Page 111

Imperial dimensions available
▶ From page 1150

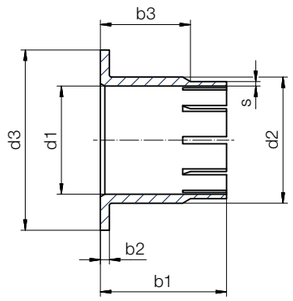
### Dimensions [mm]

| d1 | d1 tolerance[8] | d2[9] | d3 | b1 | b2 | k | Part No. |
|---|---|---|---|---|---|---|---|
| | | | ±0.40 | -0.40 | -0.13 | | |
| 4 | +0.025 +0.075 | 5.20 | 7.00 | 4.00 | 0.60 | 1.0 | **MYM-04-04-K** |
| 5 | +0.025 +0.075 | 6.20 | 8.00 | 5.00 | 0.60 | 1.0 | **MYM-05-05-K** |
| 6 | +0.025 +0.075 | 7.20 | 9.50 | 6.00 | 0.60 | 1.5 | **MYM-06-06-K** |
| 10 | +0.025 +0.075 | 11.60 | 15.00 | 10.00 | 0.80 | 2.0 | **MYM-10-10-K** |
| 14 | +0.025 +0.075 | 15.60 | 21.00 | 14.00 | 0.80 | 3.0 | **MYM-14-14-K** |

[8] d1 value is measured with a plug gauge after fitting into a reference housing d2 (+0.005)
[9] Recommended housing hole tolerance: H9

# iglidur® clip bearings | Product range

## Flanged bearings - press in and fold down




### Order key

| Type | Dimensions [mm] |
|---|---|
| M K M-1012-10 | |

iglidur® material | Form | Metric | Inner Ø | Outer Ø | Metal sheet thickness

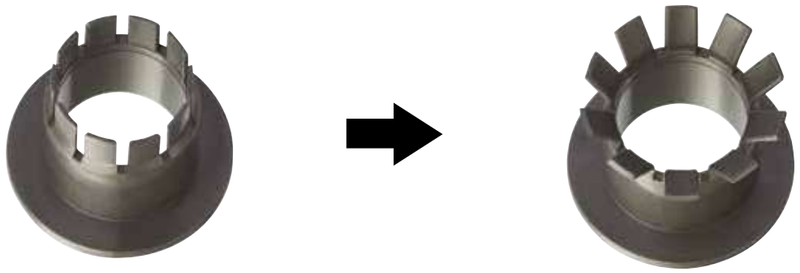
Material:
iglidur® M250 ▶ Page 111

### Sample dimension [mm]

| d1 | d1 tolerance[3] | d2 | d3 | b1 | b2 | b3 | Øs | Part No. |
|---|---|---|---|---|---|---|---|---|
| | E10 | | d13 | h13 | h13 | +0.1/+0.7 | ±0.1 | |
| 10 | +0.025 +0.083 | 12 | 18 | 14 | 1 | 10 | 0.4 | **MKM-1012-10** |

[3] After press-fit; testing methods ▶ Page 61

### Fitting:



Press-fit, fold down, ready: axial load on both sides

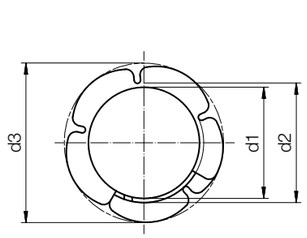
Please contact us if you need a custom-made double flange bearing for your application. We will help you with your design, drawing on the experience that we have with a large number of custom bearing solutions.

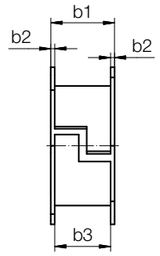




# iglidur® clip bearings | Product range

## Double flange bearings - press and plug




### Order key

| Type | Dimensions [mm] |
|---|---|
| M D M-1213-06 | |

iglidur® material | Form | Metric | Inner Ø | Outer Ø | Metal sheet thickness

Material:
iglidur® M250 ▶ Page 111

### Sample dimension [mm]

| d1 | d1 tolerance[8] | d2 | d3 | b1 | b2 | b3 | Part No. |
|---|---|---|---|---|---|---|---|
| 12 | +0.050 +0.160 | 13 | 16.5 | 7 | 0.5 | 6.0 | **MDM-1213-06** |

[8] d1 value is measured with a plug gauge after fitting into a reference housing d2 (+0.005)

### Fitting:

Please contact us if you need a custom-made double flange bearing for your application. We will help you with your design, drawing on the experience that we have with a large number of custom bearing solutions.

# iglidur® special solutions | Product range

## iglidur® Clip On - Join and snap into place

### The solution for all applications in stamped sheet metal retainers

iglidur® Clip On are frequently used in seat and convertible top systems and multi-joint hinges. iglidur® Clip On bearings facilitate captive assembly even in punched sheet metal/ steering arms with limited fine blanking content.

- Compensation of axial clearance
- Pre-assembly possible
- Electrically conductive materials are available
- Pressure-resistant materials up to 80MPa

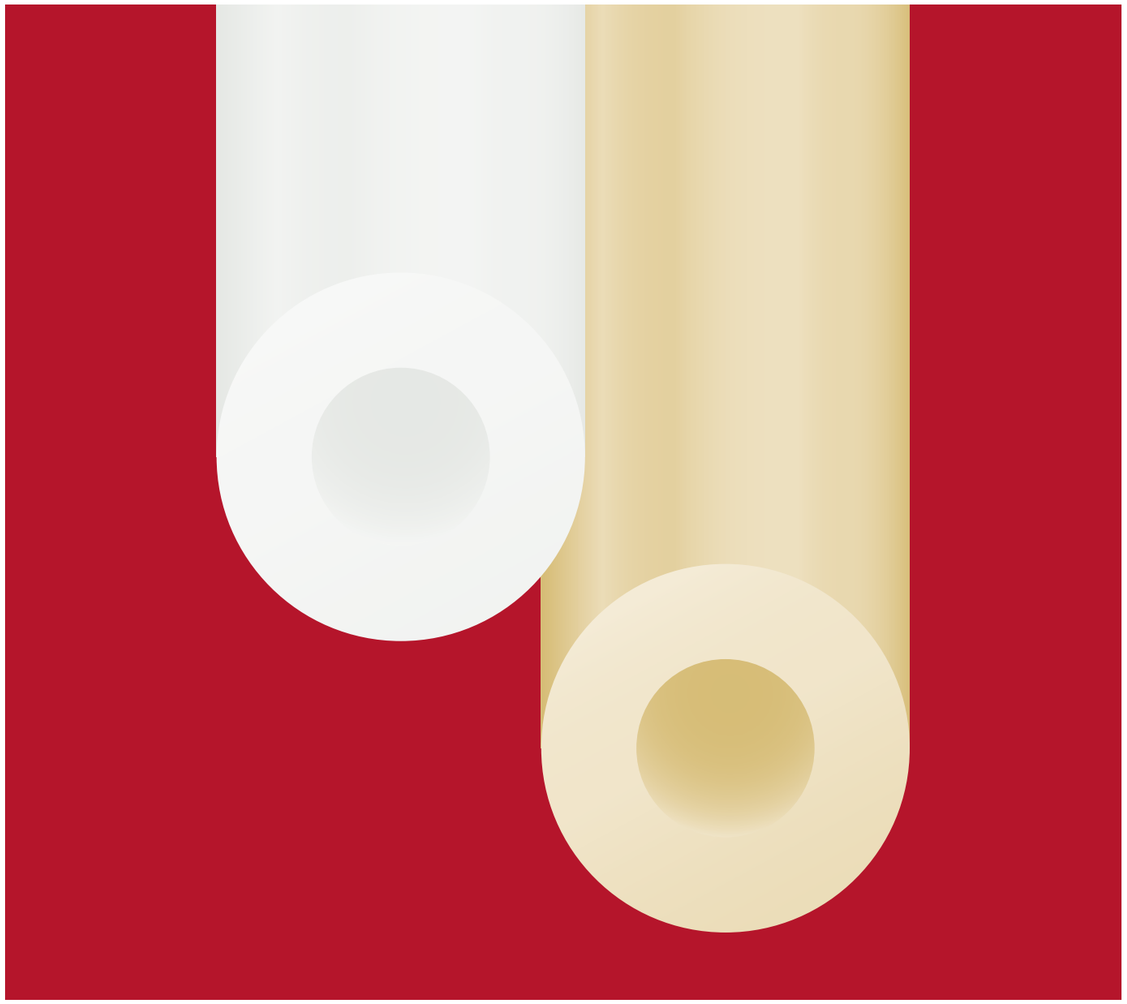
The Clip On bearings can also be produced from electrically conductive iglidur® RN89, thus permitting e-coating.

**Material:**
**iglidur® M250 ▶ Page 111**
**iglidur® RN89 ▶ Page 1192**

**Fitting:**
The disc is clipped onto the flange bushing with undercuts.

Please contact us if you need this special solution for your application. We will help you with your design, drawing on the experience that we have with a large number of custom bearing solutions.



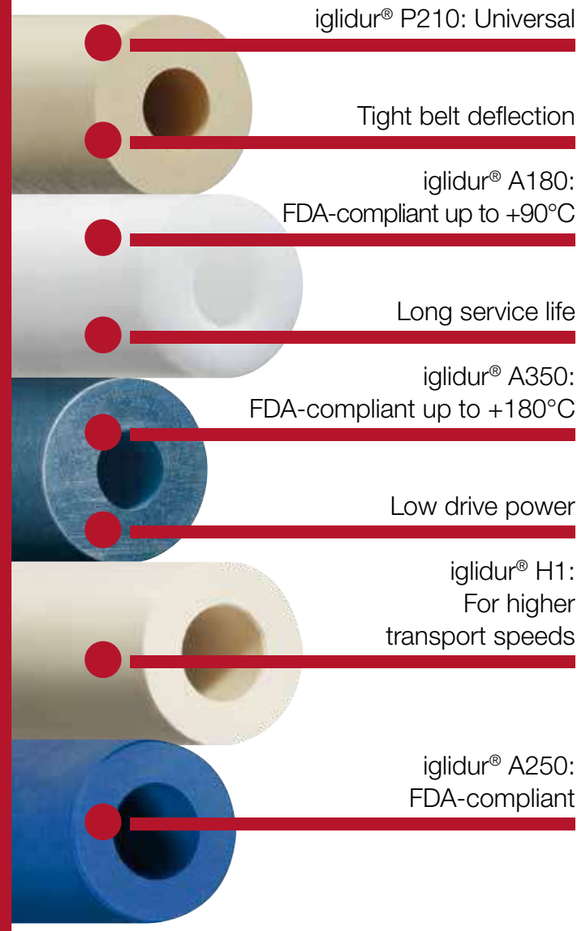


# iglidur® knife edge rollers

- 100% lubrication-free
- Low drive power
- Tight belt deflection
- Long service life of the belt
- Cost-effective
- Long service life
- Standard range from stock

# iglidur® knife edge rollers | Advantages

## Lubrication-free and precise deflection of conveyor belts




# iglidur® knife edge rollers

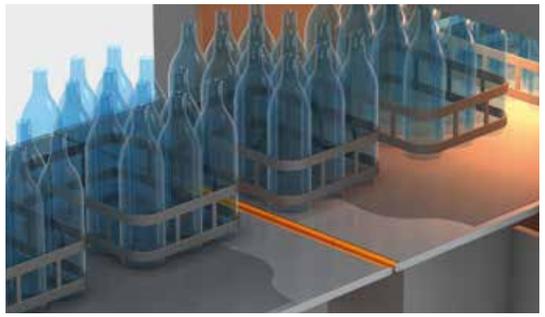
igus® has developed its own knife-edge rollers to deflect conveyor belts in materials handling applications. The iglidur® solution is characterised by tight belt deflection and a low level of required drive power.

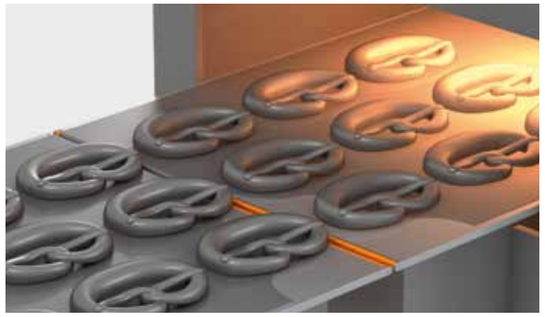
**When to use it?**

- When a lubrication-free deflection of conveyor belt is required
- When a precise guiding is required
- When a cost-effective and lightweight solution is required

**When not to use it?**

- In constant high speed belt
- When high forces are applied on the belts
- When a static knife edge is required





**Available from stock**
Detailed information about delivery time online.

**Depending on material:**
**iglidur® P210: -40°C up to+100°C**
**iglidur® A180: -50°C up to+90°C**
**iglidur® A350: -100°C up to+180°C**
**iglidur® H1: -40°C up to+200°C**

**4 materials**
**Ø 9 - 20mm**
More dimensions upon request



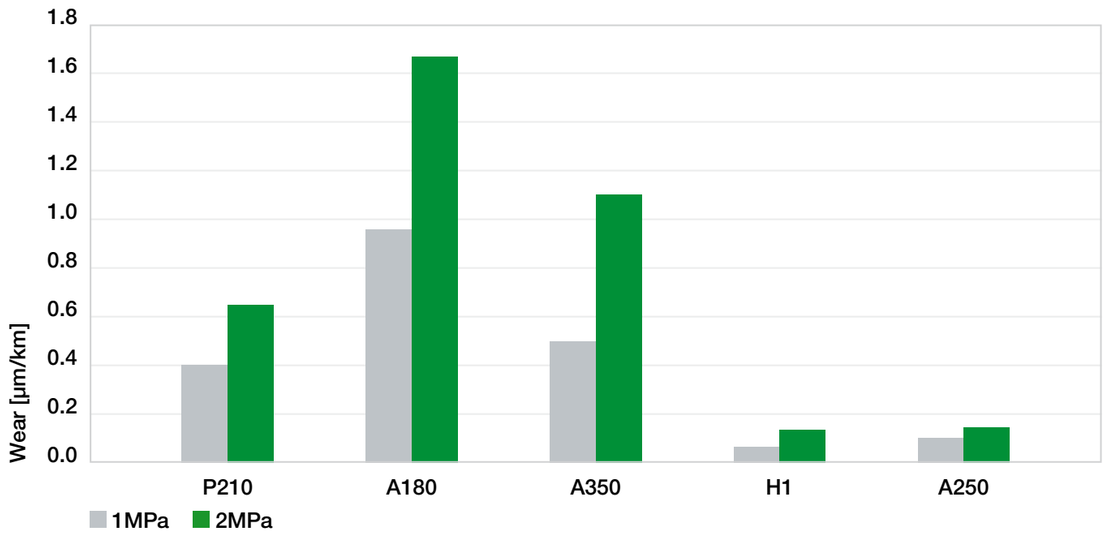


# iglidur® knife edge rollers | Technical data

## Material properties

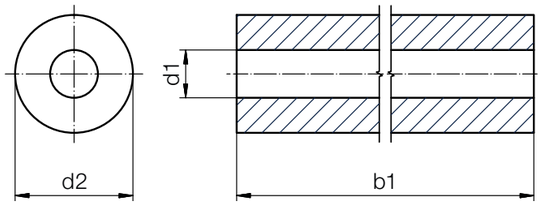
| General properties | Unit | iglidur® P210 | iglidur® A180 | iglidur® A350 | iglidur® H1 | iglidur® A250 | Testing method |
|---|---|---|---|---|---|---|---|
| Density | g/cm³ | 1.40 | 1.46 | 1.42 | 1.53 | 1.34 | |
| Colour | | yellow | white | blue | cream | blue | |
| Max. moisture absorption at +23°C and 50% r.h. | % weight | 0.3 | 0.2 | 0.6 | 0.1 | 0.3 | DIN 53495 |
| Max. moisture absorption | % weight | 0.5 | 1.3 | 1.9 | 0.3 | 4.2 | |
| Coefficient of sliding friction, dynamic against steel | μ | 0.07 - 0.19 | 0.05 - 0.23 | 0.1 - 0.2 | 0.06 - 0.20 | n.s. | |
| pv value, max. (dry) | MPa · m/s | 0.4 | 0.31 | 0.4 | 0.8 | n.s. | |
| **Mechanical properties** | | | | | | | |
| Flexural modulus | MPa | 2,500 | 2,300 | 2,000 | 2,800 | 2,540 | DIN 53457 |
| Flexural strength at +20°C | MPa | 70 | 88 | 110 | 55 | 84 | DIN 53452 |
| Compressive strength | MPa | 50 | 78 | 78 | 78 | n.s. | |
| Max. recommended surface pressure (+20°C) | MPa | 50 | 28 | 60 | 80 | 34 | |
| Shore D hardness | | 75 | 76 | 76 | 77 | 74 | DIN 53505 |
| **Physical and thermal properties** | | | | | | | |
| Max. long-term application temperature | °C | +100 | +90 | +180 | +200 | +90 | |
| Max. short-term application temperature | °C | +160 | +110 | +210 | +240 | +180 | |
| Min. application temperature | °C | -40 | -50 | -100 | -40 | -40 | |
| Thermal conductivity | W/m · K | 0.25 | 0.25 | 0.24 | 0.24 | n.s. | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 8 | 11 | 8 | 6 | n.s. | DIN 53752 |
| **Electrical properties** | | | | | | | |
| Specific transitional resistance | Ωcm | $> 10^{12}$ | $> 10^{12}$ | $> 10^{11}$ | $> 10^{12}$ | $> 10^{11}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{11}$ | $> 10^{11}$ | $> 10^{11}$ | $> 10^{11}$ | $> 10^{11}$ | DIN 53482 |

**Table 01: Material properties table**




**Wear comparison; 0.3m/s; 304 SS shaft; 1MPa and 2MPa**

# iglidur® knife edge rollers | Product range




- For particularly tight belt deflection
- No production contamination caused by lubricants
- Hygienic design without ball or needle rollers
- Easy to clean
- Suitable for direct contact with food
- Resistant to temperature and chemicals

## Order key

| Type | | | Dimensions [mm] | | |
|---|---|---|---|---|---|
| P210 | RL | M- | 03 | 09- | 50 |
| iglidur® material | Roller | Metric | Inner Ø | Outer Ø | Total length |

Options:
iglidur® material
**P210:** iglidur® P210
**A180:** iglidur® A180
**A350:** iglidur® A350
**H1:** iglidur® H1

### Knife edge rollers made from iglidur® P210 - universal, up to +100°C

| d1 +0.1 [mm] | d2[147] ±0.1 [mm] | b1 -0.3 [mm] | Part No. |
|---|---|---|---|
| 3.1 | 9.0 | 50.0 | P210RLM-0309-50 |
| 4.1 | 9.0 | 50.0 | P210RLM-0409-50 |
| 5.1 | 11.0 | 70.0 | P210RLM-0511-70 |
| 5.1 | 14.0 | 70.0 | P210RLM-0514-70 |
| 6.1 | 12.0 | 70.0 | P210RLM-0612-70 |
| 6.1 | 14.0 | 70.0 | P210RLM-0614-70 |
| 8.1 | 12.0 | 70.0 | P210RLM-0812-70 |
| 8.1 | 14.0 | 70.0 | P210RLM-0814-70 |
| 8.1 | 16.0 | 77.0 | P210RLM-0816-77 |
| 8.1 | 18.0 | 70.0 | P210RLM-0818-70 |
| 10.1 | 20.0 | 70.0 | P210RLM-1020-70 |

### Knife edge rollers made from iglidur® A180 - FDA-compliant, up to +90°C

| d1 +0.1 [mm] | d2[147] ±0.1 [mm] | b1 -0.3 [mm] | Part No. |
|---|---|---|---|
| 3.1 | 9.0 | 50.0 | A180RLM-0309-50 |
| 4.1 | 9.0 | 50.0 | A180RLM-0409-50 |
| 5.1 | 11.0 | 70.0 | A180RLM-0511-70 |
| 5.1 | 14.0 | 70.0 | A180RLM-0514-70 |
| 6.1 | 12.0 | 70.0 | A180RLM-0612-70 |
| 6.1 | 14.0 | 70.0 | A180RLM-0614-70 |
| 8.1 | 12.0 | 70.0 | A180RLM-0812-70 |
| 8.1 | 14.0 | 70.0 | A180RLM-0814-70 |
| 8.1 | 18.0 | 70.0 | A180RLM-0818-70 |
| 10.1 | 20.0 | 70.0 | A180RLM-1020-70 |

[147] Measured with gauge

### Knife edge rollers made from iglidur® A250 - wear-resistant conveyor belt support, up to +90°C

| d1 +0.1 [mm] | d2[147] ±0.1 [mm] | b1 -0.3 [mm] | Part No. | |
|---|---|---|---|---|
| 4.1 | 9.0 | 50.0 | A250RLM-0409-50 | New |
| 6.1 | 12.0 | 70.0 | A250RLM-0612-70 | New |
| 8.1 | 12.0 | 70.0 | A250RLM-0812-70 | New |
| 8.1 | 14.0 | 70.0 | A250RLM-0814-70 | New |
| 8.1 | 16.0 | 70.0 | A250RLM-0816-70 | New |

### Knife edge rollers made from iglidur® A350 - FDA-compliant, up to +180°C

| d1 +0.1 [mm] | d2[147] ±0.1 [mm] | b1 -0.3 [mm] | Part No. |
|---|---|---|---|
| 3.1 | 9.0 | 50.0 | A350RLM-0309-50 |
| 6.1 | 12.0 | 70.0 | A350RLM-0612-70 |
| 6.1 | 14.0 | 70.0 | A350RLM-0614-70 |
| 8.1 | 18.0 | 70.0 | A350RLM-0818-70 |

### Knife edge rollers made from iglidur® H1 for higher transport speeds, up to +200°C

| d1 +0.1 [mm] | d2[147] ±0.1 [mm] | b1 -0.3 [mm] | Part No. |
|---|---|---|---|
| 3.1 | 9.0 | 50.0 | H1RLM-0309-50 |
| 4.1 | 9.0 | 50.0 | H1RLM-0409-50 |
| 5.1 | 11.0 | 70.0 | H1RLM-0511-70 |
| 6.1 | 12.0 | 70.0 | H1RLM-0612-70 |
| 6.1 | 14.0 | 70.0 | H1RLM-0614-70 |
| 8.1 | 12.0 | 70.0 | H1RLM-0812-70 |
| 8.1 | 14.0 | 70.0 | H1RLM-0814-70 |

[147] Measured with gauge

## Notes





EN 09/2023

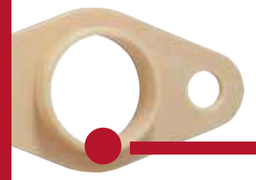
# iglidur® two hole flange bearing

- Very good wear resistance
- Maintenance-free dry operation
- Lightweight
- Standard range from stock

# iglidur® two hole flange bearings | Advantages

## Maintenance-free dry operation

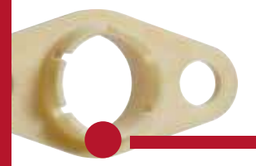
**iglidur® G:**
Standard material for all-round applications



**iglidur® J:**
Material for low wear

**iglidur® X:**
Material for high temperature applications

**iglidur® A180**
Material for use in the food sector



**iglidur® J:**
Two hole flanged bearing with preload

## iglidur® - maintenance-free two hole flange bearings

With this design it is possible to use iglidur® high performance plain bearings in locations where recommended housing hole tolerances are not possible. Due to the design of the bearing, high loads are possible although there is a minimal precision requirement of the housing.

- Very good wear resistance
- Lightweight
- Lubrication-free

### Assembly

For low radial loads, it is sufficient to mount iglidur® two hole flange bearings on one surface simply with two bolts. For higher radial loads, it advisable to support the iglidur® two hole flange bearing in a housing or boss. For this hole, large tolerances are permitted, since it serves only as additional support for the iglidur® two hole flange bearing. In order to achieve higher radial loads in the bearings, the iglidur® two hole flange bearing can be press-fit into a recommended housing hole with H7 tolerances. The additional bolts ensure the fit of the bearing in the housing.

**Available from stock**
Detailed information about delivery time online.

**Depending on material:**

| | |
|---|---|
| iglidur® G: | -40°C up to+130°C |
| iglidur® J: | -50°C up to+90°C |
| iglidur® X: | -100°C up to+250°C |
| iglidur® A180: | -50°C up to+90°C |

**Material properties:**


| | |
|---|---|
| iglidur® G | ▶ Page 85 |
| iglidur® J | ▶ Page 163 |
| iglidur® X | ▶ Page 291 |
| iglidur® A180 | ▶ Page 425 |


**Ø 10 - 35mm**
More dimensions upon request



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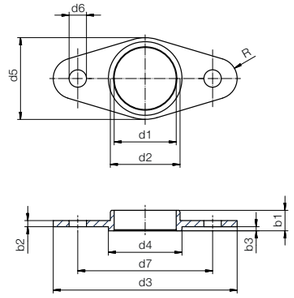
# iglidur® two hole flange bearings | Product range

## Two hole flange bearings




**Order key**

| Type | Dimensions [mm] |
|---|---|
| G FL - 10 | |

iglidur® material | Two hole flange bearings | Inner Ø

Options:
iglidur® material
**G:** iglidur® G
**J:** iglidur® J
**X:** iglidur® X
**A180:** iglidur® A180

### Dimensions [mm]

| d1 | d1 tolerance[3)] | d2[13)] | d3 | d4 | d5 | d6 | d7 | b1 | b2 | b3 | R (±0.2) | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | +0.025 +0.083 | 12 | 30 | 14 | 15 | 4.5 | 22 | 6 | 2 | 1 | 4 | **GFL-10** |
| 12 | +0.032 +0.102 | 14 | 36 | 16 | 18 | 4.5 | 26 | 6 | 2 | 1 | 4.5 | **GFL-12** |
| 14 | +0.032 +0.102 | 16 | 42 | 18 | 21 | 5.5 | 30 | 6 | 2 | 1 | 5 | **GFL-14** |
| 16 | +0.032 +0.102 | 18 | 48 | 20 | 24 | 5.5 | 34 | 6 | 2 | 1 | 5.5 | **GFL-16** |
| 18 | +0.032 +0.102 | 20 | 54 | 22 | 27 | 6.5 | 39 | 6 | 2 | 1 | 7 | **GFL-18** |
| 20 | +0.040 +0.124 | 23 | 60 | 26 | 30 | 6.5 | 44 | 10 | 3 | 2 | 7 | **GFL-20** |
| 25 | +0.040 +0.124 | 28 | 75 | 30 | 35 | 6.5 | 55 | 10 | 3 | 2 | 8.5 | **GFL-25** |
| 30 | +0.040 +0.124 | 34 | 90 | 36 | 40 | 8.5 | 66 | 10 | 3 | 2 | 10 | **GFL-30** |
| 35 | +0.050 +0.150 | 39 | 95 | 41 | 55 | 8.5 | 77 | 10 | 3 | 2 | 12 | **GFL-35** |
| 10 | +0.025 +0.083 | 12 | 30 | 14 | 15 | 4.5 | 22 | 6 | 2 | 1 | 4 | **JFL-10** |
| 12 | +0.032 +0.102 | 14 | 36 | 16 | 18 | 4.5 | 26 | 6 | 2 | 1 | 4.5 | **JFL-12** |
| 14 | +0.032 +0.102 | 16 | 42 | 18 | 21 | 5.5 | 30 | 6 | 2 | 1 | 5 | **JFL-14** |
| 16 | +0.032 +0.102 | 18 | 48 | 20 | 24 | 5.5 | 34 | 6 | 2 | 1 | 5.5 | **JFL-16** |
| 20 | +0.040 +0.124 | 23 | 60 | 26 | 30 | 6.5 | 44 | 10 | 3 | 2 | 7 | **JFL-20** |
| 25 | +0.040 +0.124 | 28 | 75 | 30 | 35 | 6.5 | 55 | 10 | 3 | 2 | 8.5 | **JFL-25** |
| 30 | +0.040 +0.124 | 34 | 90 | 36 | 40 | 8.5 | 66 | 10 | 3 | 2 | 10 | **JFL-30** |
| 35 | +0.050 +0.150 | 39 | 95 | 41 | 55 | 8.5 | 77 | 10 | 3 | 2 | 12 | **JFL-35** |
| 10 | +0.013 +0.071 | 12 | 30 | 14 | 15 | 4.5 | 22 | 6 | 2 | 1 | 4 | **XFL-10** |
| 12 | +0.016 +0.086 | 14 | 36 | 16 | 18 | 4.5 | 26 | 6 | 2 | 1 | 4.5 | **XFL-12** |
| 14 | +0.016 +0.086 | 16 | 42 | 18 | 21 | 5.5 | 30 | 6 | 2 | 1 | 5 | **XFL-14** |
| 16 | +0.016 +0.086 | 18 | 48 | 20 | 24 | 5.5 | 34 | 6 | 2 | 1 | 5.5 | **XFL-16** |
| 20 | +0.020 +0.104 | 23 | 60 | 26 | 30 | 6.5 | 44 | 10 | 3 | 2 | 7 | **XFL-20** |
| 25 | +0.020 +0.104 | 28 | 75 | 30 | 35 | 6.5 | 55 | 10 | 3 | 2 | 8.5 | **XFL-25** |
| 30 | +0.020 +0.104 | 34 | 90 | 36 | 40 | 8.5 | 66 | 10 | 3 | 2 | 10 | **XFL-30** |
| 35 | +0.025 +0.125 | 39 | 95 | 41 | 55 | 8.5 | 77 | 10 | 3 | 2 | 12 | **XFL-35** |
| 10 | +0.025 +0.083 | 12 | 30 | 14 | 15 | 4.5 | 22 | 6 | 2 | 1 | 4 | **A180FL-10** |
| 12 | +0.032 +0.102 | 14 | 36 | 16 | 18 | 4.5 | 26 | 6 | 2 | 1 | 4.5 | **A180FL-12** |
| 16 | +0.032 +0.102 | 18 | 48 | 20 | 24 | 5.5 | 34 | 6 | 2 | 1 | 5.5 | **A180FL-16** |
| 20 | +0.040 +0.124 | 23 | 60 | 26 | 30 | 6.5 | 44 | 10 | 3 | 2 | 7 | **A180FL-20** |
| 25 | +0.040 +0.124 | 28 | 75 | 30 | 35 | 6.5 | 55 | 10 | 3 | 2 | 8.5 | **A180FL-25** |
| 30 | +0.040 +0.124 | 34 | 90 | 36 | 40 | 8.5 | 66 | 10 | 3 | 2 | 10 | **A180FL-30** |
| 35 | +0.050 +0.150 | 39 | 95 | 41 | 55 | 8.5 | 77 | 10 | 3 | 2 | 12 | **A180FL-35** |

[3)] After press-fit. Testing methods ▶ Page 57 [13)] Press-fit in H7 tolerance housing hole

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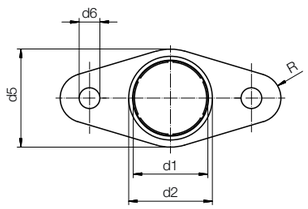
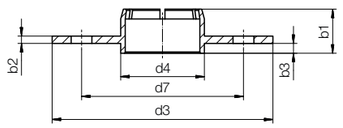
# iglidur® two hole flange bearings | Advantages

## Two hole flanged bearing with preload

- Corrosion-resistant
- Self-lubricating due to incorporated solid lubricants
- Long service life thanks to high-performance polymers




### Order key

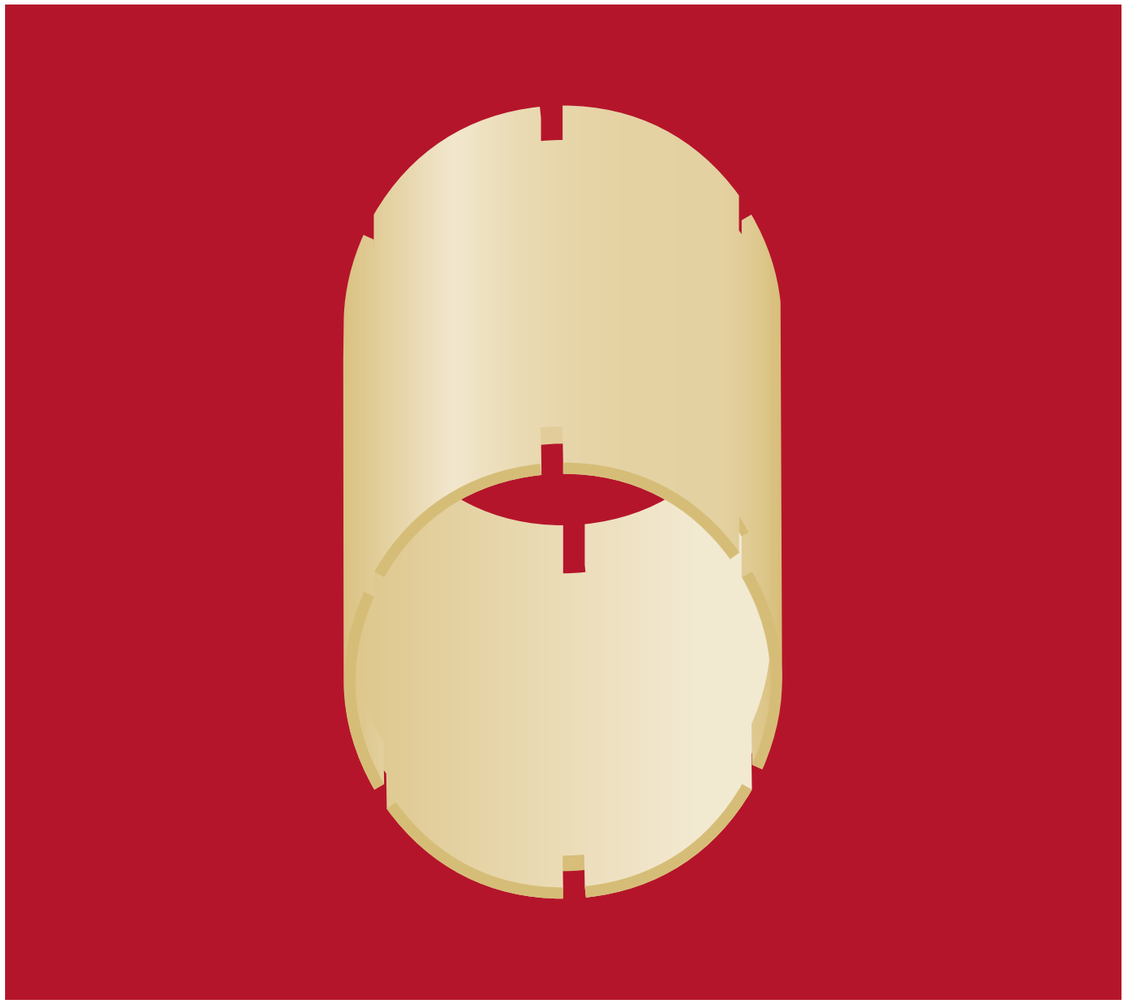
| Type | Dimensions [mm] |
|---|---|
| J V FL - 10 | |

- J: iglidur® material
- V: Pre-loaded
- FL: Two hole flange bearings
- 10: Inner Ø

iglidur® material
iglidur® J

### Dimensions [mm]

| d1 | d1 tolerance | d2 | d3 | d4 | d5 | d6 | d7 | b1 | b2 | b3 | R (±0.2) | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | +0.025 +0.083 | 12 | 30 | 12 | 15 | 4.5 | 22 | 9 | 2.0 | 3 | 4.0 | **JVFL-10** |
| 12 | +0.032 +0.102 | 14 | 36 | 14 | 18 | 4.5 | 26 | 10 | 2.0 | 4 | 4.5 | **JVFL-12** |
| 16 | +0.032 +0.102 | 18 | 48 | 18 | 24 | 5.5 | 34 | 11 | 2.5 | 4 | 5.5 | **JVFL-16** |
| 20 | +0.040 +0.124 | 23 | 60 | 23 | 30 | 6.5 | 44 | 13 | 3.0 | 5 | 7.0 | **JVFL-20** |



# iglidur® clearance-free pre-loaded plain bearings

Radial and axial pre-load

Zero clearance in unloaded condition

Material: iglidur® J

Maintenance-free and predictable service life

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# iglidur® JVSM/JVFM | Advantages

**Zero-clearance and rattle-free - pre-loaded iglidur® J plain bearing**

Clearance-free and pre-loaded bearings

Zero clearance in unloaded condition

Maintenance-free and predictable service life

## iglidur® clearance-free pre-loaded plain bearings

iglidur® JVSM and JVFM plain bearings are clearance-free in unloaded condition due to the axial and/or radial pre-load. The iglidur® J material possesses extremely low coefficient of friction in dry operation and a very low stick-slip effect. Ideal for "antivibration mounting" of pedal box bearings, etc.

**When to use it?**

- When a radial and/or axial pre-load of plain bearings is required
- When a rattle-free bearing in the unloaded state is required
- When you need a clearance-free feel

**When not to use it?**

- When a plain bearing solution with reduced clearance is needed ▶ Please contact us
- When the pre-load has to withstand high radial forces
- When total zero clearance feature is required at high loads

**Available from stock**
Detailed information about delivery time online.

**Material:**
**iglidur® J ▶ Page 163**

**Max. +90°C**
**min. -50°C**

**2 types**
**Ø 6 - 20mm**
More dimensions upon request

**Imperial dimensions available**
**▶ From page 1151**



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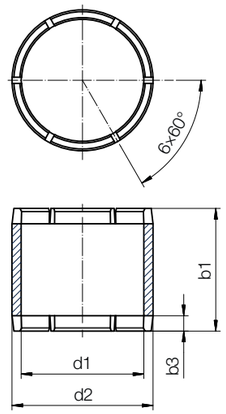
# iglidur® JVSM/JVFM | Product range

**Pre-loaded sleeve plain bearings**




**Order key**

| Type | | | | Dimensions [mm] | | |
|---|---|---|---|---|---|---|
| J | V | S | M- | 06 | 08- | 06 |
| iglidur® material | pre-tensioned | Form | Metric | Inner Ø | Outer Ø | Total length |

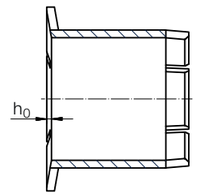
Options:
Form:
S: sleeve
F: with flange

**Dimensions [mm]**

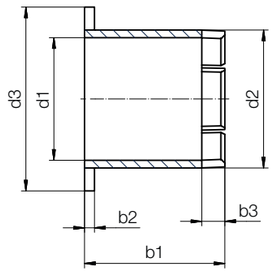
| d1 | d1 tolerance[14] E10 | d2 | b1 h13 | b3 | Part No. |
|---|---|---|---|---|---|
| 6.0 | +0.020 +0.068 | 8.0 | 6.0 | 2.0 | **JVSM-0608-06** |
| 8.0 | +0.025 +0.083 | 10.0 | 8.0 | 2.0 | **JVSM-0810-08** |
| 10.0 | +0.025 +0.083 | 12.0 | 10.0 | 2.0 | **JVSM-1012-10** |
| 12.0 | +0.032 +0.102 | 14.0 | 12.0 | 2.0 | **JVSM-1214-12** |
| 14.0 | +0.032 +0.102 | 16.0 | 14.0 | 2.0 | **JVSM-1416-14** |
| 15.0 | +0.032 +0.102 | 17.0 | 15.0 | 2.5 | **JVSM-1517-15** |
| 18.0 | +0.032 +0.102 | 20.0 | 18.0 | 2.5 | **JVSM-1820-18** |
| 20.0 | +0.040 +0.124 | 23.0 | 20.0 | 2.5 | **JVSM-2023-20** |

[14] d1 measured after press-fit in housing hole. d2 H7 within the measurement plane

## Pre-loaded sleeve plain bearings with flange




r = max. 0.5mm




**Dimensions [mm]**

| d1 | d1 tolerance[14] E10 | d2 | d3 | b1 h13 | b2 | b3 | $h_0$ ±0.1 | Part No. |
|---|---|---|---|---|---|---|---|---|
| 8 | +0.025 +0.083 | 10 | 15 | 10 | 1.0 | 2.0 | 0.44 | **JVFM-0810-10** |
| 10 | +0.025 +0.083 | 12 | 18 | 10 | 1.0 | 2.0 | 0.53 | **JVFM-1012-10** |
| 12 | +0.032 +0.102 | 14 | 20 | 12 | 1.0 | 2.0 | 0.53 | **JVFM-1214-12** |
| 14 | +0.032 +0.102 | 16 | 22 | 12 | 1.0 | 2.0 | 0.53 | **JVFM-1416-12** |
| 15 | +0.032 +0.102 | 17 | 23 | 15 | 1.0 | 2.5 | 0.53 | **JVFM-1517-15** |
| 18 | +0.032 +0.102 | 20 | 26 | 11 | 1.0 | 2.5 | 0.53 | **JVFM-1820-11** |
| 18 | +0.032 +0.102 | 20 | 26 | 18 | 1.0 | 2.5 | 0.53 | **JVFM-1820-18** |
| 20 | +0.040 +0.124 | 23 | 30 | 20 | 1.5 | 2.5 | 0.62 | **JVFM-2023-20** |

[14] d1 measured after press-fit in housing hole. d2 H7 within the measurement plane

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## Notes





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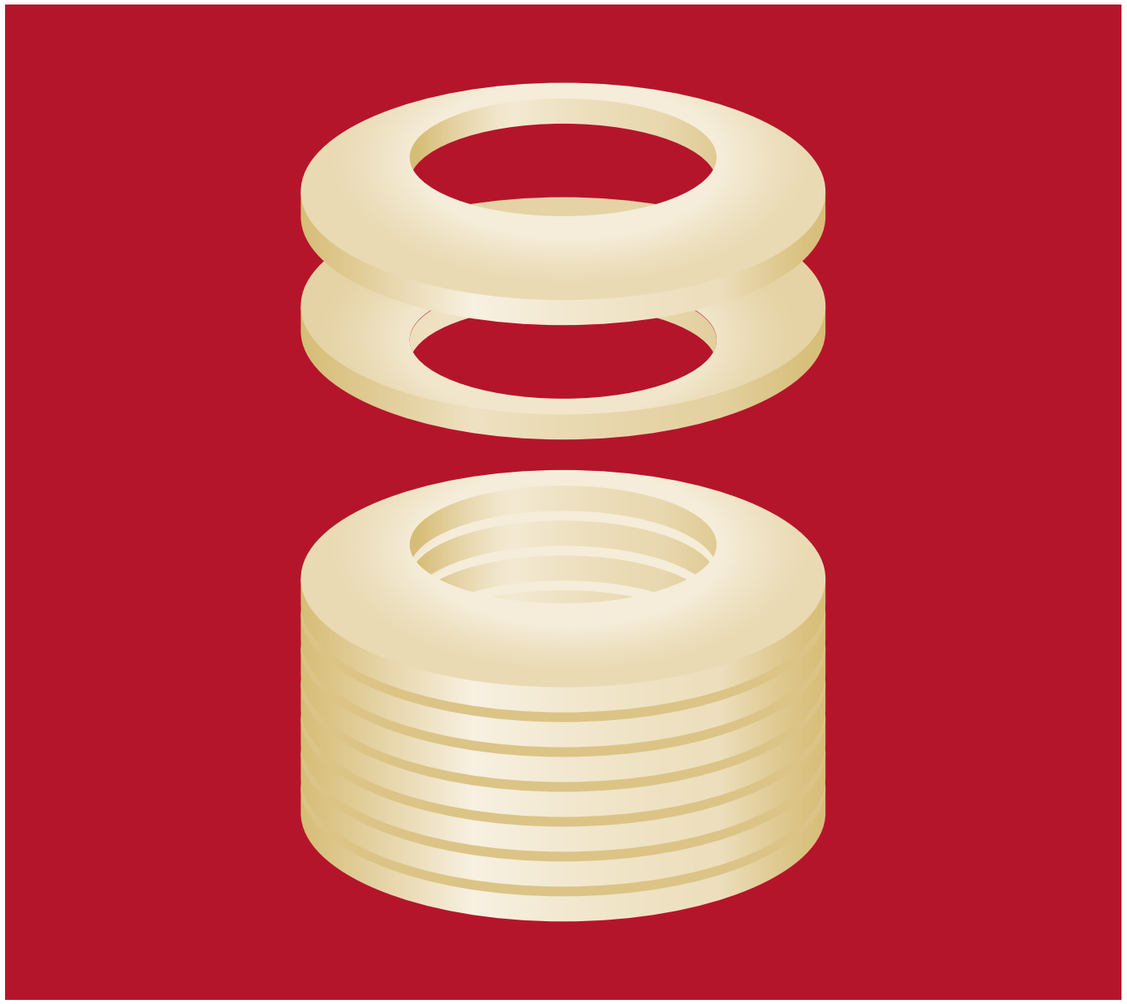
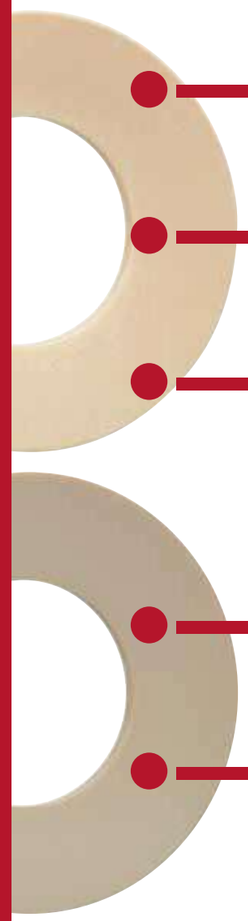


# polysorb disc springs

- Compensation for axial clearances and manufacturing tolerances
- Vibration dampening
- Noise dampening
- Corrosion-free
- Lightweight
- Electrical and thermal insulation
- Standard range from stock

# polysorb | Advantages

## Cushion and dampen: plastic disc springs



iglidur® J: standard material for many applications

Compensation of axial clearance and manufacturing tolerances

Vibration dampening

iglidur® A500: High temperature material

Lightweight

## polysorb disc springs

Disc springs are discs that can be axially loaded, which are concave in the axial direction. Disc springs require less space than other spring types and are especially suitable for designs that do not require a high spring length.

**When to use it?**

- When an application requires disc spring characteristics which are only possible in metal at a considerable expense (slot design)
- For compensation of axial clearances and manufacturing tolerances
- For vibration dampening
- For noise reduction
- When a non-magnetic material is required
- For electrical and thermal insulation

**When not to use it?**

- When constant spring forces are necessary over a wide temperature range
- When high spring forces are required

**Available upon request**
Detailed information about delivery time online.

**Material properties:**
iglidur® J ▶ Page 163
iglidur® A500 ▶ Page 417

**Depending on material:**
iglidur® J: -50°C up to+90°C
iglidur® A500: -100°C up to+250°C

**1 type, 2 materials**
Ø 5 - 20mm
More dimensions upon request



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# polysorb | Technical data

### General properties

The spring deflection of the disc spring is relatively small. Therefore a number of disc springs are combined in practice. Disc springs that are alternately stacked increase the spring length proportionally to the amount of springs. In order to increase the force, the disc springs can be parallel stacked to form a spring unit.

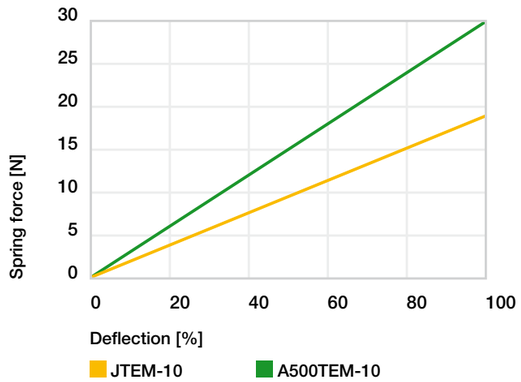



**Diagram 01: Spring force [N] as a function of percental deflection measured with size 10**

The force-deformation curves of polysorb disc springs are approximately linear.

### Chemical resistance

polysorb disc springs are resistant to a variety of chemicals. iglidur® A500 has a higher resistance than iglidur® J.

| Chemicals | Resistance | |
|---|---|---|
| | iglidur® J | iglidur® A500 |
| Alcohols | + | + |
| Hydrocarbons | + | + |
| Greases, oils without additives | + | + |
| Fuels | + | + |
| Diluted acids | 0 to – | + |
| Strong acids | – | + |
| Diluted alkalines | + | + |
| Strong alkalines | + to 0 | + |

**+ resistant 0 conditionally resistant – not resistant**
**All data given at room temperature [+20°C]**
**Table 01: Chemical resistance**

### Moisture absorption

Low humidity absorption means that they can be used in wet or humid environments.
polysorb disc springs absorb moisture and in the process the mechanical properties change. However, in the worst application case – a long-term use in water – polysorb disc springs still have a high spring force.

| iglidur® | Standard environment 20°C/50% r.h. | Saturated in water |
|---|---|---|
| J | 18 | 15 |
| A500 | 24 | 23 |

**Table 02: Spring force [N] as a function of the absorbed moisture**

### Temperatures

Increased temperatures reduce the rigidity of polymers. polysorb disc springs made from iglidur® J (JTEM-10) still have a maximum spring force of 8N at the maximum permissible temperature of +90°C. The spring force against ambient temperature is shown in diagram 02.

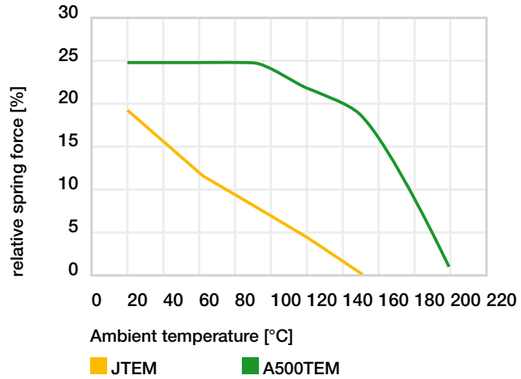


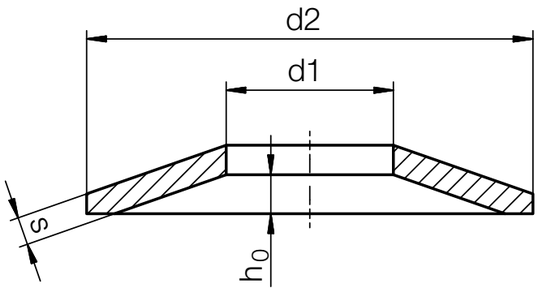

**Diagram 02: Effect of ambient temperature on the spring force**

# polysorb | Product range

## Plastic disc springs

iglidur® J

iglidur® A500




Dimensions based on DIN 2093

### Order key

| Type | Dimensions [mm] |
|---|---|
| ☐ T E M | -05 |

iglidur® material | Thrust washer style | "Elastic spring" | Metric | Inner Ø

Options:
iglidur® material
iglidur® J
for low wear
iglidur® A500
for high temperature applications requiring FDA-compliance

**Material:**
iglidur® J ▶ Page 163
iglidur® A500 ▶ Page 417

### Dimensions [mm]

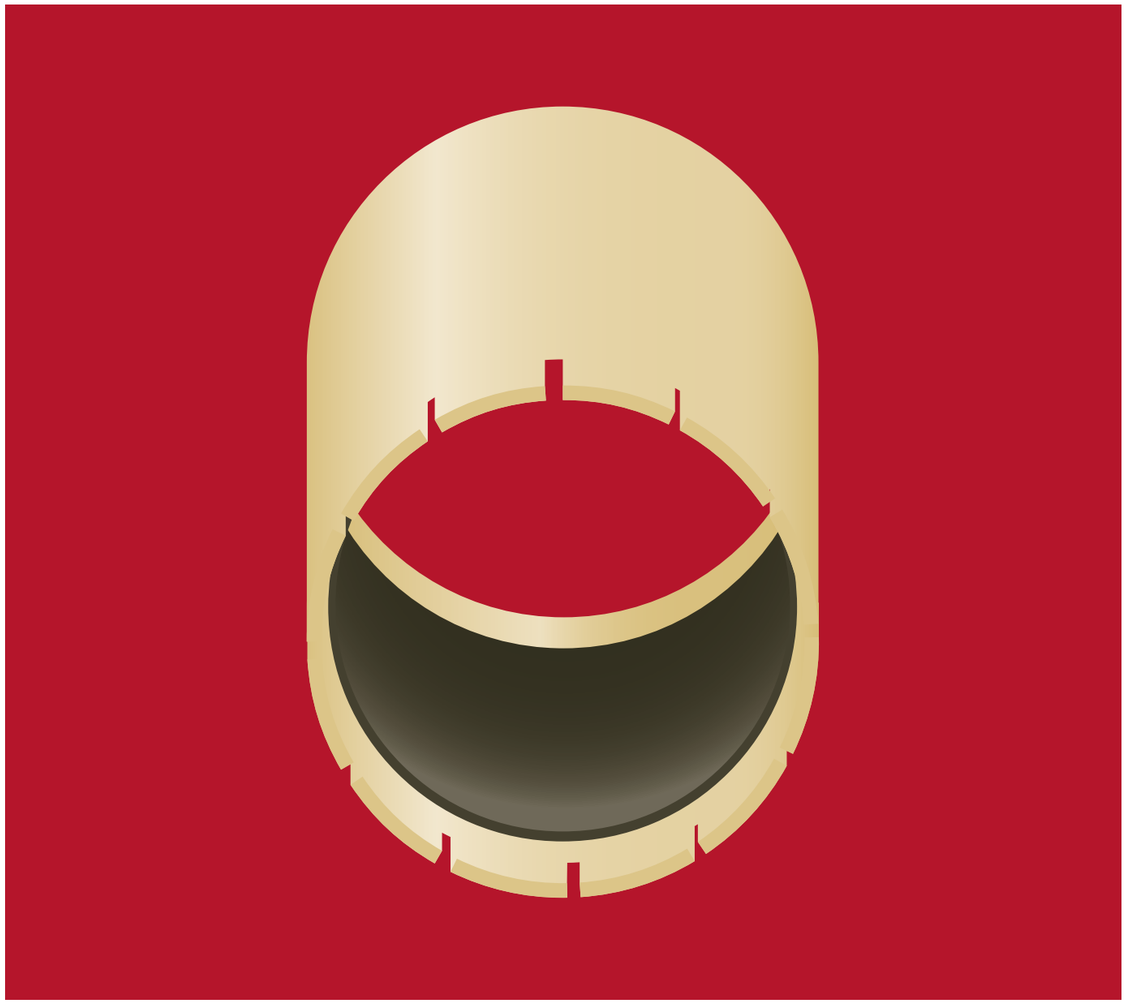
| d1 | d2 | Øs | $h_0$ | Standard values: Spring lengths and forces $F_{1.0}$ iglidur® J [N] | $F_{1.0}$ iglidur® A500 [N] | Weight [g] | Part No.[15] |
|---|---|---|---|---|---|---|---|
| 5.2 | 10.0 | 0.5 | 0.25 | 5 | 8 | 0.04 | ☐ TEM-05 |
| 6.2 | 12.5 | 0.7 | 0.30 | 10 | 15 | 0.11 | ☐ TEM-06 |
| 8.2 | 16.0 | 0.9 | 0.35 | 16 | 24 | 0.20 | ☐ TEM-08 |
| 10.2 | 20.0 | 1.1 | 0.45 | 24 | 35 | 0.33 | ☐ TEM-10 |
| 12.2 | 25.0 | 1.5 | 0.55 | 45 | 70 | 0.85 | ☐ TEM-12 |
| 16.3 | 31.5 | 1.75 | 0.70 | 65 | 85 | 1.44 | ☐ TEM-16 |
| 20.4 | 40.0 | 2.25 | 0.90 | 130 | 150 | 3.10 | ☐ TEM-20 |

The standard values for the spring lengths and forces are rounded mean values.

[15] Material: iglidur® J: JTEM, standard
iglidur® A500: A500TEM, high temperature and chemical resistance

**Symbols and units:**

F = Force [N]
$h_0$ = Maximum spring displacement [mm]
$F_{1.0}$ = Spring force 100% displacement [N]



# iglidur® PEP multi-component bearings

- Can be used with any shaft material
- Cost-effective
- Easy installation
- Low coefficient of friction
- Standard range from stock

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# iglidur® PEP | Advantages

**For all shaft surfaces and materials**

- Can be used with any shaft material
- Cost-effective
- Easy installation
- Low coefficient of friction

## iglidur® PEP multi-component bearings

In standard plain bearing solutions, the shaft has a critical part to play, as important as the bearing itself. With the iglidur® PEP bearings, igus® is forging new trail with this enclosed and maintenance-free plain bearing design.

### When to use it?

- When a cost-effective plastic plain bearing system is required
- When independence from the shaft material and shaft surface is required
- For the protection of expensive and sensitive shafts

### When not to use it?

- For high surface speeds
  ▶iglidur® J, page163
- At high loads
  ▶ iglidur® G, page 85
  ▶ iglidur® Q, page 491
- At high temperatures
  ▶ iglidur® V400, page 319
  ▶ iglidur® X, page 291
  ▶ iglidur® Z, page 301
- When low clearance bearings are required
  ▶ iglidur® P, page 135
  ▶ iglidur® X, page 291

**Available from stock**
Detailed information about delivery time online.

**Material:**
**iglidur® J ▶ Page 163**

**Max. +90°C**
**min. -50°C**

**1 type**
**Ø 6 - 20mm**
More dimensions upon request

**Imperial dimensions available**
**▶ From page 1151**





# iglidur® PEP | Technical data

### General properties

Maintenance-free plain bearings are generally described as being able to slide on the shaft without any additional coating and/or lubrication. It is evident that shaft materials are as important as the plain bearing itself. igus® is forging a new path with a plain bearing that is self-contained and maintenance-free.
iglidur® PEP is an innovative design for lubrication-free plastic plain bearing systems with an inner and outer ring. The special feature; the sliding surface is the inner ring, and for the first, time shaft materials and shaft surfaces are not a concern. Even threads, rust and scratches do not affect the performance or reliability. With the control over the sliding surface and through considerable testing, the long-term behaviour of the bearing system can be predicted precisely. Similar to ball bearings, the inner ring turns with the shaft in the plastic PEP plain bearing.Relative movements of the shaft with respect to the bearing are eliminated. This protects the shaft surface from wear and saves costs. An additional benefit; even the most sensitive or unusual materials can be used as the rotating shaft with this polymer plain bearing. Due to the bearing materials used, the PEP plastic bearing is totally corrosion-free.

### Wear resistance

For loads up to 5N/mm² the wear test results are compelling. Here PEP plastic bearings obtain values that are comparable to most wear-resistant metal-backed bearing systems. This is a very positive result, when you consider the reduced costs compared with the required shaft surface finish which is demanded by traditional bearings. The consistently low coefficient of friction is also an advantage to the user. Since the running surfaces are fixed, the tribological data can be calculated. The coefficient of friction of the lubrication-free PEP bearings is no longer based on the shaft materials or surface properties. If necessary, the coefficient of friction can be reduced further with a small amount of lubricant.

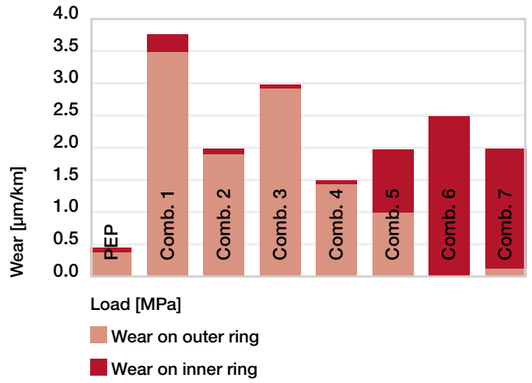



**Diagram 01: Wear experiments of different material combinations, p = 0.75MPa, v = 0.3m/s**

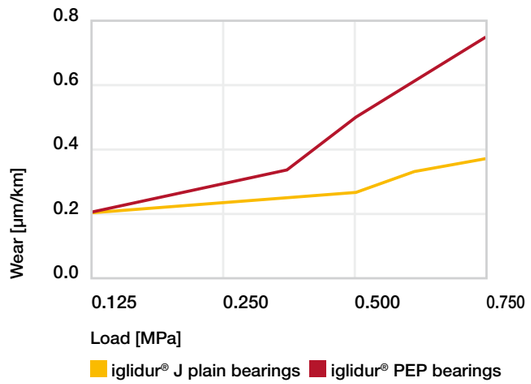


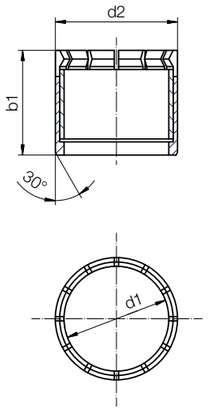

**Diagram 02: Wear of iglidur® PEP bearings as a function of the load, v = 0.3m/s**

### Assembly

The installation of the PEP plain bearing could not be easier or faster. The bearings are manufactured to be press-fitted into a recommended housing hole of H7 tolerance. Then, the shaft is inserted and fits tightly onto the inner ring. The inner bearing is clipped into the outer ring. This design makes it possible to pull the shaft out without removing the inner ring.

# iglidur® PEP | Product range

## Sleeve bearings




### Order key

| Type | Dimensions [mm] |
|---|---|

**PEP S M-0610-10**

iglidur® material | Form | Metric | Inner Ø | Outer Ø | Total length

Material:
iglidur® J ▶ Page 163

Imperial dimensions available
▶ From page 1151

### Dimensions [mm]

| d1 | d2 | b1 | Part No. |
|---|---|---|---|
| 6 | 10 | 10 | PEPSM-0610-10 |
| 8 | 12 | 12 | PEPSM-0812-12 |
| 10 | 14 | 12 | PEPSM-1014-12 |
| 12 | 16 | 15 | PEPSM-1216-15 |
| 16 | 20 | 20 | PEPSM-1620-20 |
| 20 | 23 | 20 | PEPSM-2023-20 |

# iglidur® lip seal bearings

- Polymer bearing with integrated radial shaft seal
- Seals against the rotating shaft
- Reduced space requirement and easy, fast installation
- Can be manufactured with different types of seal
- High temperature option available (VDSM)

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# iglidur® lip seal bearings | Advantages

## Position and seal: plastic bearing with clip-on shaft seal

- Seals against the rotating shaft
- Reduced space requirement
- Quick, simple assembly
- Can be manufactured with different types of seal
- High temperature option available (made of iglidur® V400)

## iglidur® lip seal bearings

Easy and quick to fit polymer plain bearing made of iglidur® J (JDSM) or iglidur® V400 (VDSM) with an integrated rotary lip seal, which protects against dust, dirt, and all depressurised liquids.

### When to use it?

- When the ingress of dirt and water spray should be prevented
- When only a small installation space is available in the axial direction
- When an existing seal should be integrated in a plain bearing

### When not to use it?

- When pressurised media should be sealed
- When a permanent tensioned seal is required

**Available upon request**
Detailed information about delivery time online.

**Material properties:**
iglidur® J ▶ Page 163
iglidur® V400 ▶ Page 319

**Depending on material:**
iglidur® J: -50°C up to +90°C
iglidur® V400: -50°C up to +200°C

**1 type, 2 materials**
**Ø 10mm**
More dimensions upon request



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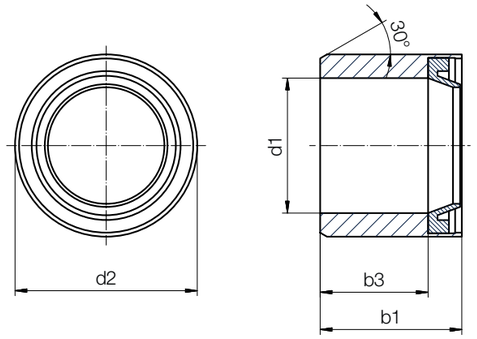
# iglidur® lip seal bearings | Product range

## Lip seal sleeve bearings (form S)

JDSM

VDSM




### Order key

| Type | Dimensions [mm] | | | | | |
|---|---|---|---|---|---|---|
| ☐ D | S | M | -1015 | -14 | | |
| iglidur® material | Seal | Form | Metric | Inner Ø | Outer Ø | Total length |

**Material:**
iglidur® J ▶ Page 163
iglidur® V400 ▶ Page 319

### Dimensions [mm]

| d1 | d1 tolerance[3] | d2 | b1 | b3 | f | Part No. |
|---|---|---|---|---|---|---|
| E11 | | Ø | h13 | | | |
| 10 | +0.025 +0.135 | 15 | 14 | 10 | 1 | **JDSM-1015-14** |
| 10 | +0.025 +0.135 | 15 | 14 | 10 | 1 | **VDSM-1015-14** |

[3] After press-fit. Testing methods ▶ Page 61

Please contact us if you want to combine your seal with an iglidur® plain bearing.
We will support you with the design, will check the integration and create an appropriate proposal.

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## Notes





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# Plain bearings with felt seal

Maintenance-free

High running performance

Shafts are protected against wear even more effectively as dirt cannot ingress the bearing point

# iglidur® SG03 | Advantages New

## Clean bearings even in applications with dirt and dust

Maintenance-free

High running performance

The shaft is protected against wear even more effectively as dirt cannot ingress the bearing point

Sleeve heavy-duty plain bearing iglidur® TX2

## Plain bearings with felt seal

The felt seal for SG03 plain bearing prevents the ingress of dirt and dust into the bearing point and thus protects the bearing itself and the shaft against wear and premature failure.

**When to use it?**

- When the ingress of dirt should be prevented
- When a 2 in 1 solution (bearing and seal) is required

**When not to use it?**

- When liquid seal is required
- When high axial forces act on the flange

**Available from stock**

Detailed information about delivery time online.
Sleeve bearing upon request

**Material properties:**

iglidur® G ▶ Page 85
iglidur® P210 ▶ Page 121
iglidur® Q2 ▶ Page 477



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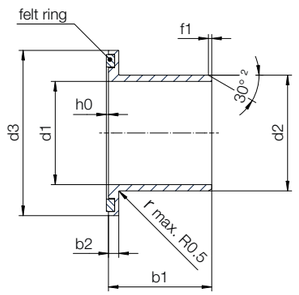
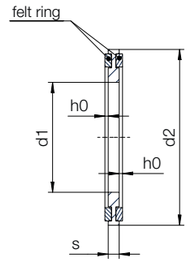
# iglidur® SG03 | Product range New

## For flanged bearings and thrust washers

Flanged bearings

Thrust washers




### Order key

| Type | Dimensions [mm] |
|---|---|
| ☐ F M-20 | 26-20-SG03-050 |

| iglidur® material | Form | Metric | Inner Ø | Outer Ø | Total length | Felt seal | Cap |
|---|---|---|---|---|---|---|---|

Options:

☐ = iglidur® material
iglidur® G - the classic all-rounder
iglidur® P210 - specialist for pivoting etc.
iglidur® Q2 - the durable heavy-duty bearing

### Flanged bearings dimensions [mm]

| d1 | d2 | d3 | b2 | b1 | Part No. |
|---|---|---|---|---|---|
| 20 | 26 | 34 | 1.5 | 20 | ☐ FM-2026-20-SG03-050 New |
| 25 | 28 | 40 | 2.5 | 25 | ☐ FM-2528-25-SG03-050 New |
| 30 | 34 | 45 | 2.5 | 30 | ☐ FM-3034-30-SG03-050 New |
| 35 | 39 | 50 | 2.5 | 35 | ☐ FM-3539-35-SG03-050 New |
| 40 | 44 | 55 | 2.5 | 40 | ☐ FM-4044-40-SG03-050 New |

### Thrust washers dimensions [mm]

| d1 | d2 | b1 | Part No. |
|---|---|---|---|
| 20 | 26 | 20 | ☐ TM-2036-025-SG03-050 New |
| 25 | 28 | 25 | ☐ TM-2540-025-SG03-050 New |
| 30 | 34 | 30 | ☐ TM-3045-025-SG03-050 New |
| 35 | 39 | 35 | ☐ TM-3550-025-SG03-050 New |
| 40 | 44 | 40 | ☐ TM-4055-025-SG03-050 New |

## Notes





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# iglidur® coatings

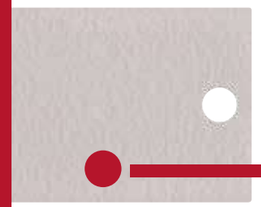
Easy coating of metallic components

Good coefficient of wear and therefore a long service life

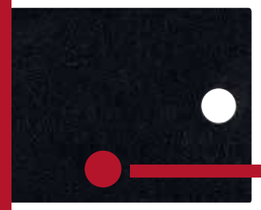
The perfect coating for your application

# iglidur® IC | Advantages New

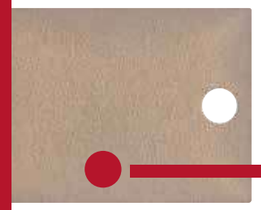
## iglidur® IC coating materials



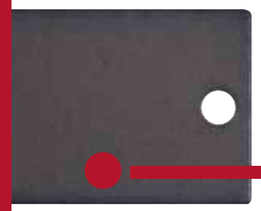
**IC-01:**
High wear resistance and durability in white



**IC-02:**
High wear resistance and durability in black

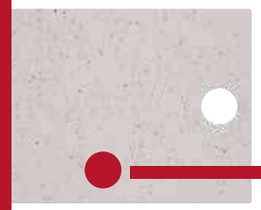


**IC-03:**
Good wear resistance



**IC-04:**
For high temperatures up to +300°C

**IC-05:**
Food approved, compliant within FDA and EU10/2011



**IC-06:**
Low coefficient of friction

## iglidur® coatings

iglidur® coating is a tribologically optimised polymer in powder form that can be applied to electrically conductive components by means of powder coating. Like all iglidur® materials, iglidur® coating powders are tribologically optimised and offer excellent coefficient of friction and wear. With this method, you also protect heavily stressed surfaces from wear – without any additional components.

- Reduced friction coefficients
- Abrasion-resistant surface
- Self-lubricating due to incorporated solid lubricants

### When to use it?

- For a simple and flexible way to reduce friction
- To protect the surface
- To avoid additional lubrication

### When not to use it?

- In unprotected outdoor application
- In an underwater application
- For a thick wear layer

### Available from stock

Detailed information about delivery time online.



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# iglidur® IC | Product range New

## Coating materials iglidur® IC

Available as powder from stock

Coated with iglidur® IC-05
Image exemplary

### Order key

Type

**IC-01-☐**

| iglidur® coating | Material | Package size |
|---|---|---|

Options:
☐ = Available packaging sizes, 1kg, 2kg, 10kg

### Technical data

| iglidur® | Colour | Max. application temperature [°C] | Part No. |
|---|---|---|---|
| IC-01 | white | +90 | IC-01-☐ New |
| IC-02 | black | +90 | IC-02-☐ New |
| IC-03 | yellow | +140 | IC-03-☐ New |
| IC-04 | grey | +300 | IC-04-☐ New |
| IC-05 | blue | +80 | IC-05-☐ New |
| IC-06 | cream | +140 | IC-06-☐ New |

**Order example: IC-01-10KG - high-performance polymer iglidur® IC-01 in a 10kg bag**

### We will coat your component for you

Send us your metallic component. We will coat it for you with our iglidur® high-performance polymers and send it back to you.

▶ **www.igus.eu/coating-tool**

# Notes





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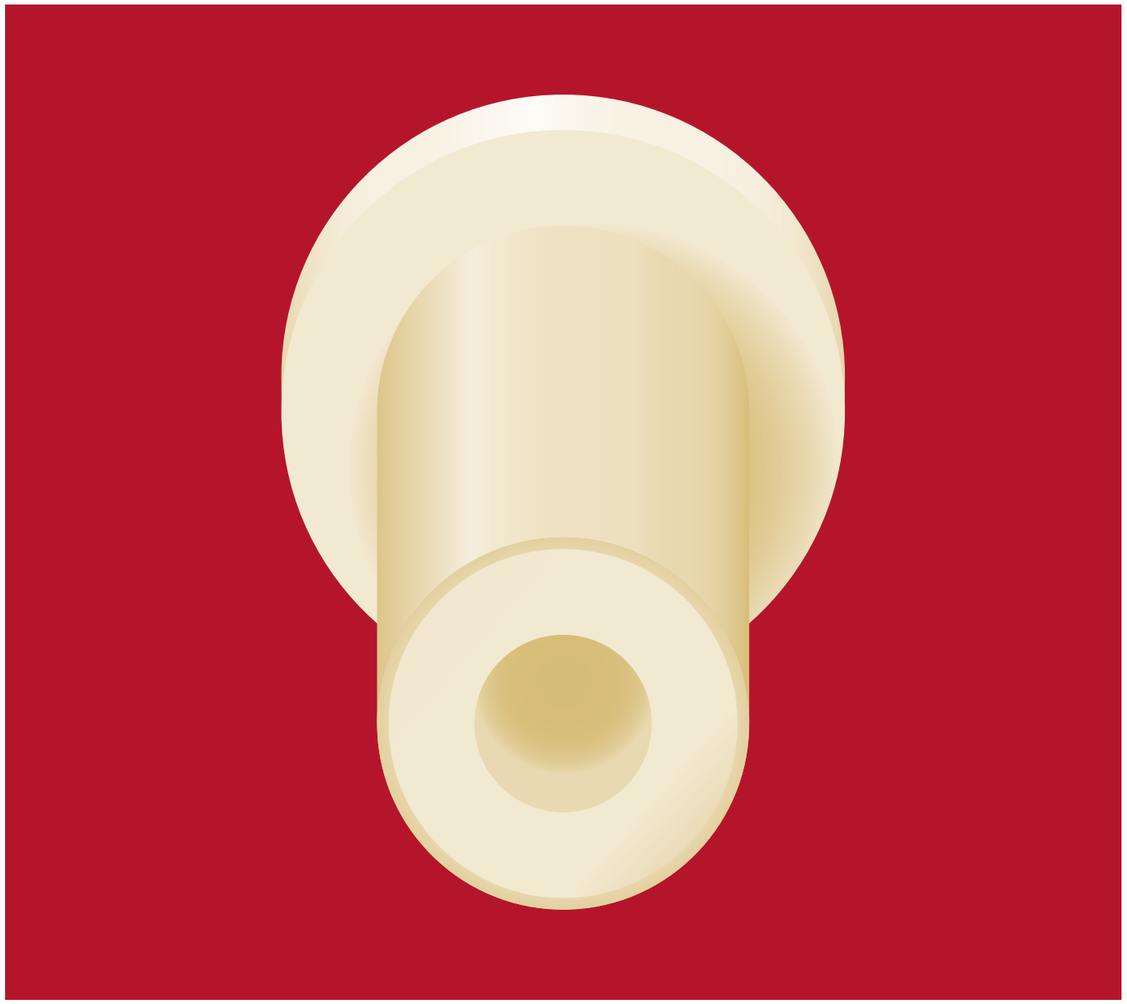


# print2mold® - custom-made parts manufactured by injection moulding

- Cost-effective prototypes and series production
- Original iglidur® tribo materials
- Tailored to your application
- Delivery time from 3 days
- For quantities ranging from a few hundred to several million

# Plain bearings | Customised injection-moulded parts

## Customised & cost-effective:
## Your plastic plain bearing in the required design, material and quantity

*"Show me the plastic part that gives you a problem. I'll provide you with a solution!"*

With this idea, Günter Blase founded igus® over 50 years ago, and it still holds true today: hence, customer-specific series solutions are part of our daily work just like catalogue parts.

**Your igus® plastic plain bearings:**

- Customised parts from 3 days delivery time
- Service life predicted in advance
- From 1 piece to several million pieces: Always the appropriate manufacturing process
- All iglidur® materials possible
- New development of specific materials possible
- Joint dimensioning and design coordination

▶ www.igus.eu/special-design

### Custom manufactured

With this service, there are two different methods: first, custom-made plastic parts can be produced with 3D-printed injection moulds and second, with the aid of machined aluminium tools.
In the 3D printing process, users can choose their custom-made part from over 50 different iglidur® tribological materials optimised for friction and wear. The material of the 3D-printed mould is tailored to withstand the high temperatures and pressure prevailing in injection moulding. You can produce from just one piece up to 500 parts, prototypes or small batches from a 3D-printed injection mould.
For batches between 200 and 2,000 pieces, the injection moulded part can also be produced with an aluminium tool. This lean manufacturing method also saves the user time and money here: aluminium tools are also lower cost and faster to produce than steel moulds, as no lengthy hardening is required.

### In 3 steps to your individual plain bearing

**1. Submit an enquiry**
Fill in the form with some basic information: quantity and requirement, such as food contact, dirt resistance, low wear etc. and upload the CAD files, for example. After one of our specialists has contacted you for a consultation, you will receive a quotation.

**2. We produce your required component**
Upon order, igus® starts the production process.

**3. You receive your product**
Your required component is ready to ship and delivered quickly.

Send a request: ▶ **www.igus.eu/specialbearings-enquiry**



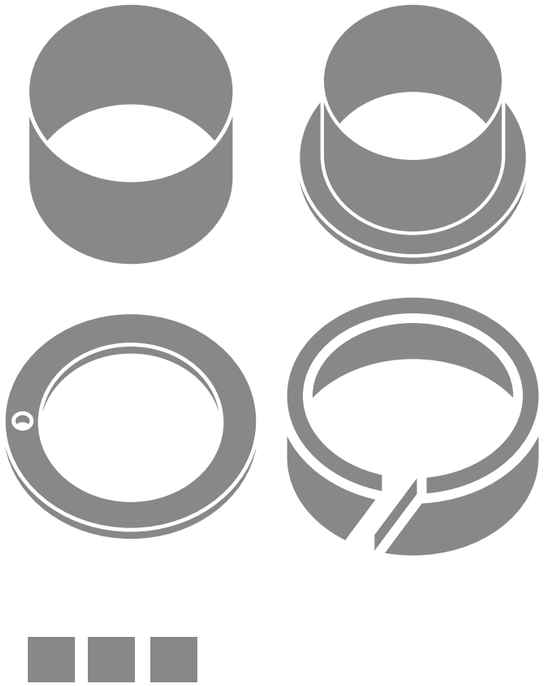


# Plain bearings | iglidur® FastLine service New

## Configured in seconds, injection-moulded within seven days

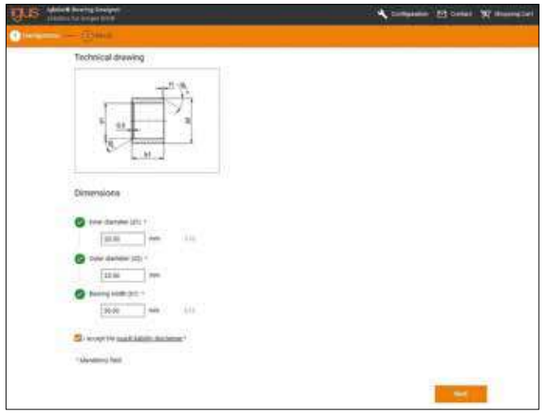
With the igus® FastLine service, you receive customised injection-moulded plain bearings and thrust washers in a maximum of seven days. Apart from the immediate price indication, the iglidur® plain bearing designer shows you the manufacturing costs of our other production methods. Should your desired plain bearings already be available in our standard product range, they will be included in the price comparison as well. That way, you can always keep an eye on the best price.

- Receive injection-moulded plain bearings with special dimensions in a maximum of 7 days
- Everything from one source: from the injection mould to the completed plain bearing

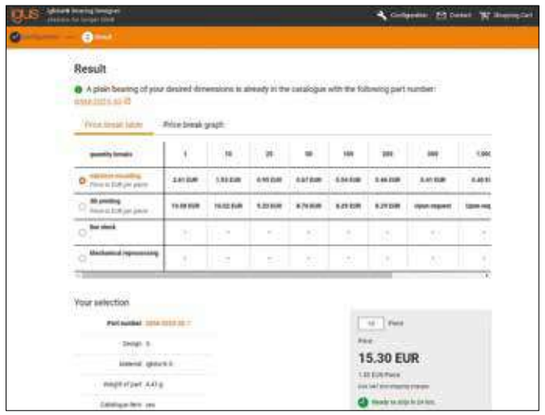


**Immediately available: sleeve bearings, flanged bearings, thrust washers, guide rings, clip bearings and knife edge rollers**

**Select the design**



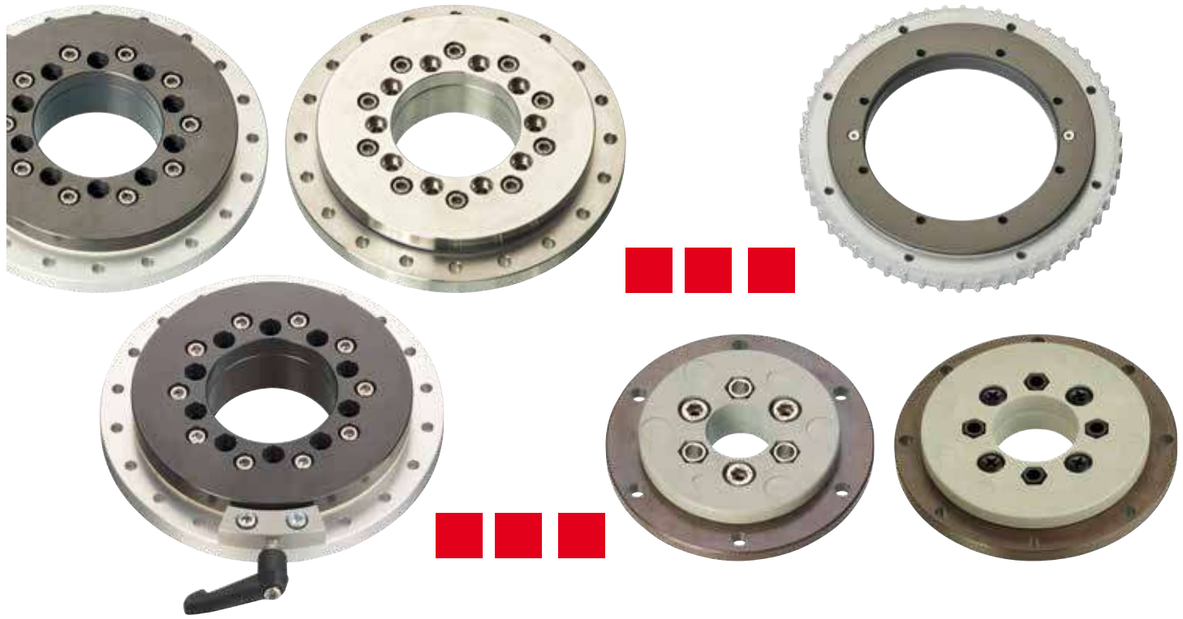

**Enter the dimensions**




**Order**

# iglidur®

## Slewing rings



# ...plastics

# iglidur® PRT | Product overview

## iglidur® PRT - polymer slewing rings, standard

**High torsional rigidity:**

Type 01
▶ Page 710

**Compact, lightweight and cost-effective:**

Type 04
▶ Page 711

## iglidur® PRT - polymer slewing rings, tooth profile

**With outer drive ring:**

Type 01
▶ Page 712

**With tooth profile:**

Type 04
▶ Page 713

New

**With inner drive ring:**

Type 04
▶ Page 714

## iglidur® PRT - polymer slewing rings

**With angle stop:**

Type 01
▶ Page 716

New

**With angle stop:**

Type 04
▶ Page 717

**Manual clamp:**

Type 01
▶ Page 718

New

**Manual clamp:**

Type 04
▶ Page 719

New

**With snap mechanism:**

Type 04
▶ Page 720

New

**With locking device:**

Type 04
▶ Page 721

## iglidur® PRT - polymer slewing rings, modular system

**Special geometries and accessories**

▶ Page 722

**With assembled drive pin:**

Type 04
▶ Page 724

New

**With switching sensor:**

Type 01 i.Sense
▶ Page 725

**Spacer rings:**

Type 01
▶ Page 726

New

**Spacer rings:**

Type 04
▶ Page 727

New

**Black Edition:**

Type 04
▶ Page 728

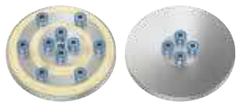
**Slot nut profile:**

Type 04
▶ Page 729

**Installation solutions:**

Type 04
▶ Page 730

## iglidur® PRT - polymer slewing rings, modular system



**Hygienic design:**

Type 04
▶ Page 731

New

**Felt cover:**

Type 04
▶ Page 732

New

**Position indicator:**

Type 04
▶ Page 733

New

**For the smallest applications:**

Type 04
▶ Page 734

**Lightweight:**

Type 02
▶ Page 735

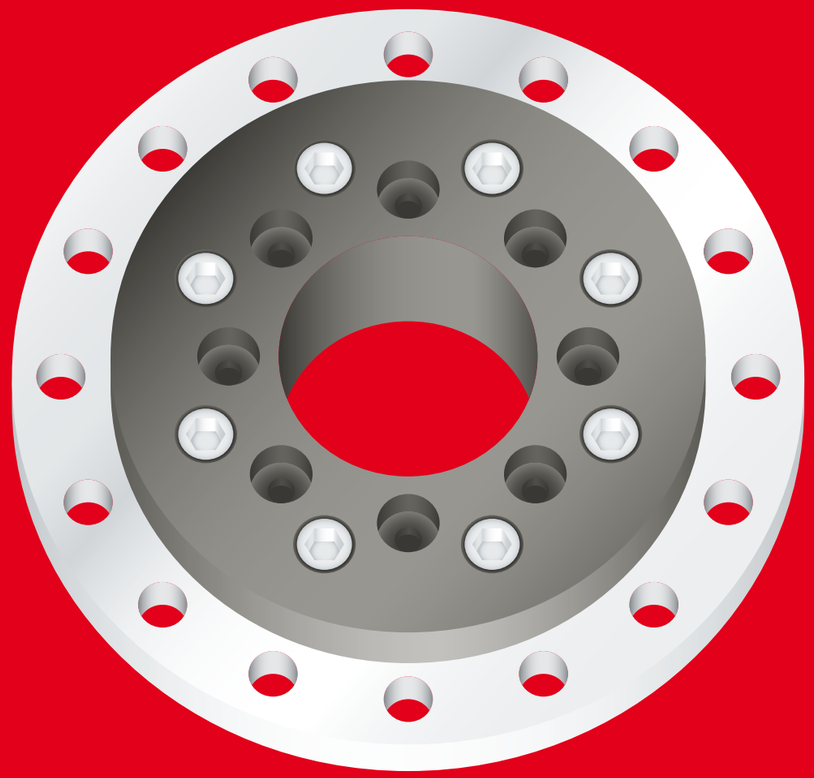
**Low-cost:**

Type 03
▶ Page 736

New

**Sliding element replacement kits:**

Type 01 and 04
▶ Page 737



# iglidur® PRT - polymer slewing rings

- Completely maintenance-free
- Easy to install replaceable sliding pads
- High wear resistance
- For high loads and high stiffness
- Stainless steel versions available
- Extensive accessories
- Standard range from stock

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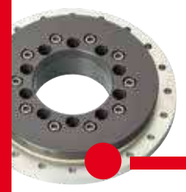
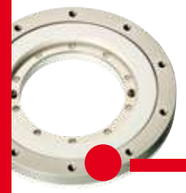
## Maintenance-free slewing rings



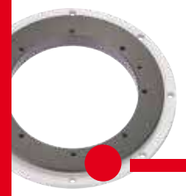
**Type 01:**
High torsional rigidity

**Type 01 with gear teeth:**
With outer drive ring

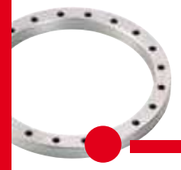
**Type 02:**
Lightweight



**Type 03:**
Cost-effective



**Type 04:**
Compact, lightweight and cost-effective



**Extensive accessories:**
Special geometries and accessories

**Universal sliding elements:**
Customise your own slewing ring systems

# Polymer slewing ring bearings

iglidur® PRT slewing rings are ready-to-install rotary joints for lubrication-free dry operation. The design is not based on metallic rollers or balls, but on maintenance-free sliding elements made of the proven tribologically optimised iglidur® materials in combination with rings made of lightweight anodised aluminium or stainless steel. These iglidur® materials are universally applicable. They can be used in applications with high temperatures, moisture or chemical contact, for example.

- Completely maintenance-free
- Easy to install replaceable sliding pads
- High wear resistance
- For high loads and high stiffness
- Stainless steel versions available
- Extensive accessories

### Typical application areas

- Conveyors and automation
- Stage and lighting technology
- Assembly stations

**Available from stock**
**Stainless steel version upon request**
Detailed information about delivery time online.

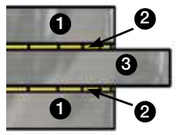
**Price breaks online**
No minimum order value. No minimum order quantity

**Max. +180°C**
**min. -50°C**

**4 types**
**Ø 20 - 300mm**

**Service life calculation**
**▶ www.igus.eu/prt-expert**

**Design slewing ring**




1. **Type 01 and 04:** Hard anodised aluminium, or 316 stainless steel
   **Type 02:** iglidur® J4 or A180
2. **Type 01 and 04:** iglidur® J or H1
3. **Type 01, 02 and 04:** Anodised aluminium or 316 stainless steel



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**Rotating digital flip chart**
The compact design of the PRT-02-30 makes it the ideal solution for the rotating digital flip chart. Thanks to ready-to-install delivery and easy assembly. In addition, due to the plastic sliding elements made of iglidur® material, maintenance work is no longer necessary after installation.

**Personal robot**
The PRT slewing ring bearing makes the robot's rear axis lubrication-free and maintenance-free. In addition, the service life of the PRT for use in robots was calculated in advance and far exceeds the design requirements.

**Assembly table with slewing ring bearing**
The PRT-01-30-TO-AT10 has proven to be the optimum solution due to its ready-to-install delivery with the AT10 belt profile. Precise and automatic rotation of the assembly table is made possible. Due to the plastic sliding elements made of iglidur® material, no maintenance work is required after installation.

## Slewing ring general properties

### Type 01

| Properties | Unit | -20 | -30 | -50 | -60 | -100 | -150 | -200 | -300 |
|---|---|---|---|---|---|---|---|---|---|
| Weight | [kg] | 0.2 | 0.4 | 1.0 | 1.1 | 1.3 | 2.2 | 3.2 | 7.6 |
| Axial load, static | [N] | 15,000 | 27,000 | 40,000 | 50,000 | 55,000 | 80,000 | 100,000 | 150,000 |
| Axial load, dynamic | [N] | 4,000 | 7,000 | 10,000 | 15,000 | 16,000 | 25,000 | 30,000 | 90,000 |
| Radial load, static | [N] | 2,300 | 5,000 | 8,000 | 10,000 | 16,000 | 25,000 | 35,000 | 45,000 |
| Radial load, dynamic | [N] | 600 | 1,500 | 2,500 | 3,000 | 5,000 | 8,000 | 10,000 | 27,000 |
| Rotating speed, dry operation | [1/min] | 300 | 250 | 200 | 200 | 150 | 100 | 80 | 50 |
| Max. permissible tilting moment | [Nm] | 100 | 200 | 600 | 800 | 1,500 | 2,000 | 3,800 | 5,000 |

### Type 02

| Properties | Unit | -20-AL | -20-ES | -20-LC | -20-P | -30-AL | -30-ES | -30-LC | -30-P |
|---|---|---|---|---|---|---|---|---|---|
| Weight | [g] | 105 | 202 | 87 | 72 | 200 | 363 | 167 | 145 |
| Axial load, static | [N] | 13,000 | 13,000 | 13,000 | 13,000 | 25,000 | 25,000 | 25,000 | 25,000 |
| Axial load, dynamic | [N] | 4,000 | 4,000 | 4,000 | 4,000 | 7,000 | 7,000 | 7,000 | 7,000 |
| Radial load, static | [N] | 2,000 | 2,000 | 2,000 | 2,000 | 2,500 | 2,500 | 2,500 | 2,500 |
| Radial load, dynamic | [N] | 500 | 500 | 500 | 500 | 700 | 700 | 700 | 700 |
| Rotating speed, dry operation | [1/min] | 250 | 250 | 250 | 250 | 200 | 200 | 180 | 180 |
| Max. permissible tilting moment | [Nm] | 60 | 60 | 40 | 40 | 100 | 100 | 50 | 50 |

| Properties | Unit | -50-AL | -50-ES | -50-LC | -50-P | -60-AL | -60-ES |
|---|---|---|---|---|---|---|---|
| Weight | [g] | 440 | 747 | 380 | 338 | 700 | 1,322 |
| Axial load, static | [N] | 35,000 | 35,000 | 35,000 | 35,000 | 45,000 | 45,000 |
| Axial load, dynamic | [N] | 9,000 | 9,000 | 9,000 | 9,000 | 12,000 | 12,000 |
| Radial load, static | [N] | 5,000 | 5,000 | 5,000 | 5,000 | 10,000 | 10,000 |
| Radial load, dynamic | [N] | 1,200 | 1,200 | 1,200 | 1,200 | 2,800 | 2,800 |
| Rotating speed, dry operation | [1/min] | 120 | 120 | 120 | 120 | 120 | 120 |
| Max. permissible tilting moment | [Nm] | 120 | 120 | 100 | 100 | 200 | 200 |

### Type 03

| Properties | Unit | -80 |
|---|---|---|
| Weight | [kg] | 0.47 |
| Axial load, static (compressive force direction) | [N] | 45,000 |
| Axial load, static (tensile force direction) [154)] | [N] | 5,000 |
| Axial load, dynamic (compressive force direction) | [N] | 12,000 |
| Axial load, dynamic (tensile force direction) [154)] | [N] | 1,200 |
| Radial load, static | [N] | 4,000 |
| Radial load, dynamic | [N] | 1,000 |
| Rotating speed, dry operation | [1/min] | 120 |
| Max. permissible tilting moment [154)] | [Nm] | 120 |

Axial clearance 0.7mm, radial clearance 0.9mm

[154)] Only when the PRT is fitted onto a flat, stable surface





### Type 04

| Properties | Unit | -20 | -30 | -50 | -60 | -100 | -150 | -200 | -300 |
|---|---|---|---|---|---|---|---|---|---|
| Weight | [g] | n.s. | n.s. | 225 | 250 | 370 | 530 | 680 | 990 |
| Axial load, static | [N] | 5,000 | 8,000 | 12,000 | 14,000 | 20,000 | 27,000 | 35,000 | 48,000 |
| Axial load, dynamic | [N] | 1,500 | 2,000 | 3,000 | 4,000 | 5,000 | 7,500 | 9,000 | 12,000 |
| Radial load, static | [N] | 1,000 | 1,500 | 2,500 | 3,000 | 5,500 | 6,500 | 8,000 | 10,000 |
| Radial load, dynamic | [N] | 300 | 400 | 750 | 900 | 1,500 | 1,900 | 2,500 | 3,500 |
| Rotating speed, dry operation | [1/min] | 300 | 250 | 200 | 190 | 135 | 100 | 80 | 50 |
| Max. permissible tilting moment | [Nm] | 30 | 60 | 200 | 250 | 450 | 650 | 875 | 1,200 |

### Assembly data type 01 - 04

| | Unit | Surface in the bolting area |
|---|---|---|
| Flatness | [mm] | 0.05 |
| Hardness | HBW[185)] | Min. 50 |

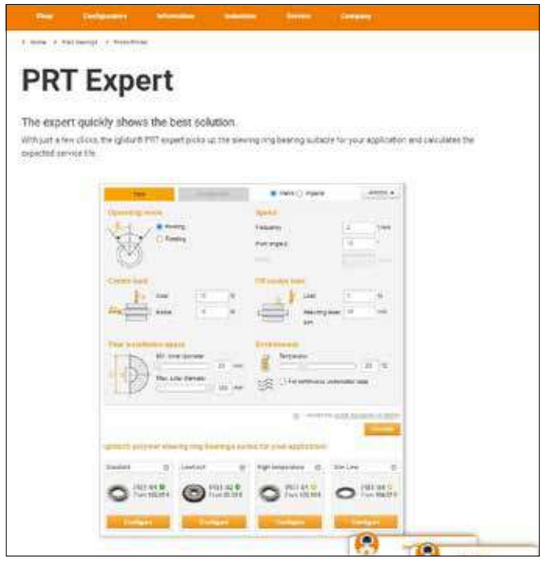
[185)] Valid at max. load

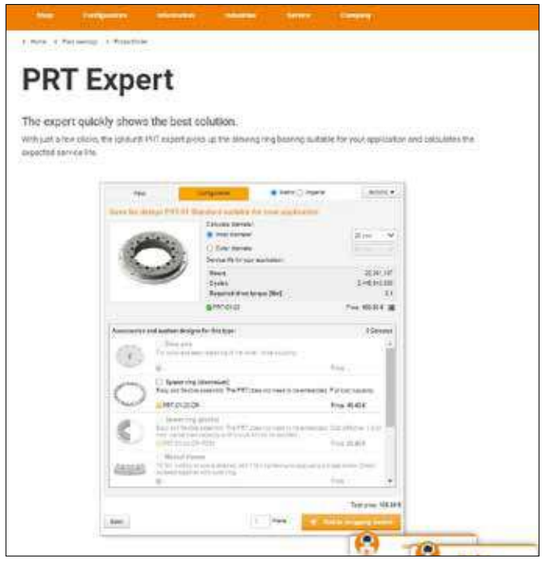
### Configurator for slewing rings

The most common criteria for selecting an iglidur® PRT slewing ring bearing are firstly the loads and torques to be supported and secondly the installation space available and the minimum central implementation distance required.

The suitable sizes and types are selected on the basis of this data and the speed and their service life is calculated.

▶ www.igus.eu/prt-expert



## Type 01

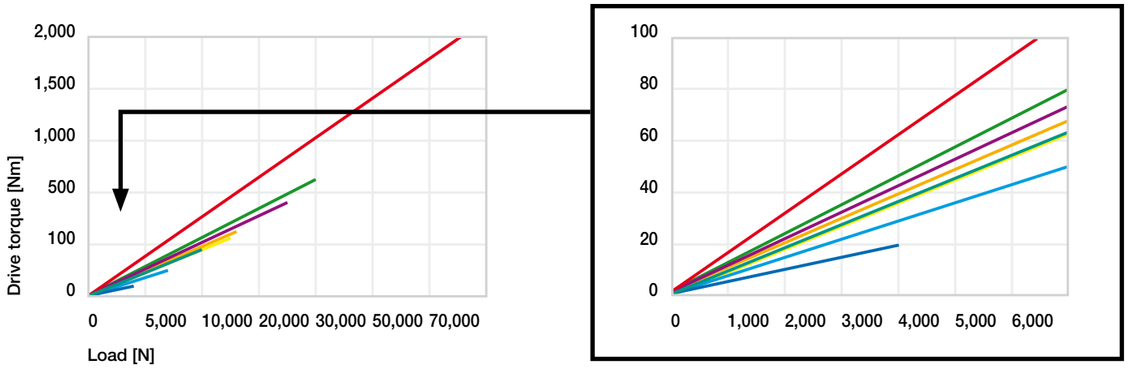



Diagram 01: Required drive torque versus applied load

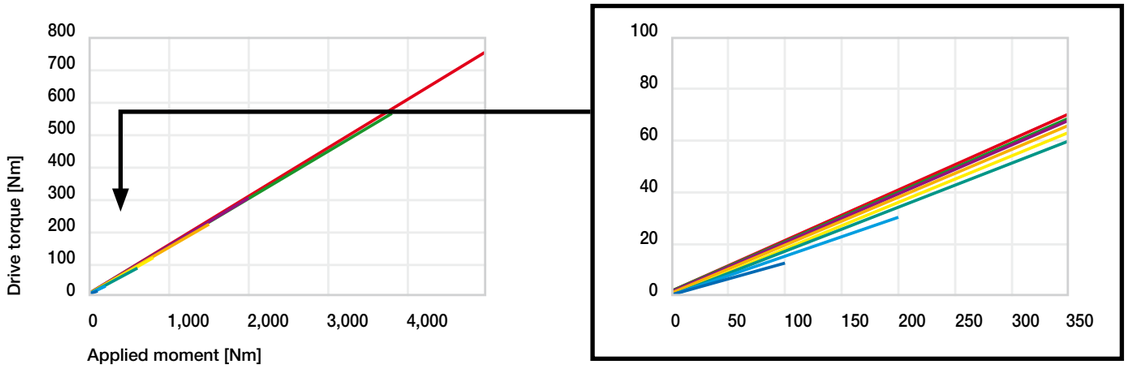



Diagram 02: Required drive torque versus applied moment

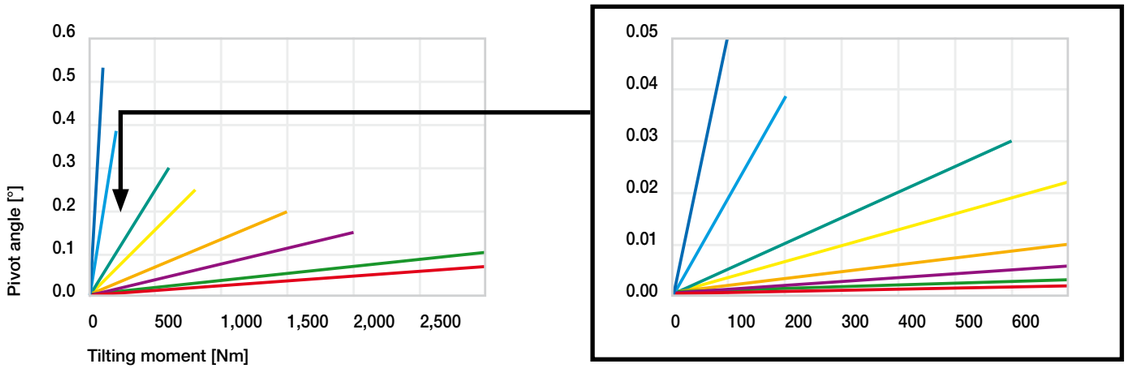



Diagram 03: Deflection versus applied tilting moment

PRT-01-20 PRT-01-30 PRT-01-50 PRT-01-60
PRT-01-100 PRT-01-150 PRT-01-200 PRT-01-300

All load values assume the PRT is assembled with cap head screws (strength class 8.8) on the outside pitch circle diameter of the collar clamp. For the assembly (using strength class 8.8 screws) of the PRT, the screws have to be inserted to a minimum thread depth of 2xd in every hole location in the outer ring. All data can be used for both lateral and horizontal assembly (including overhead installation).





## Type 04

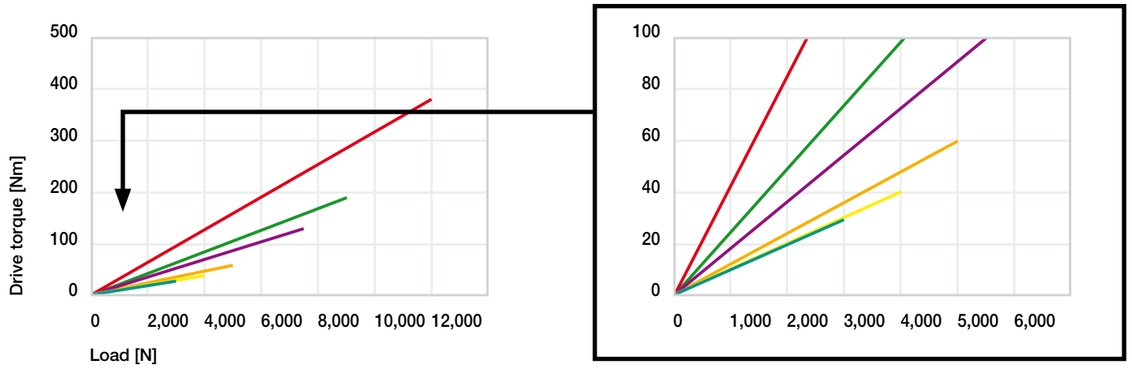



Diagram 01: Required drive torque versus applied load

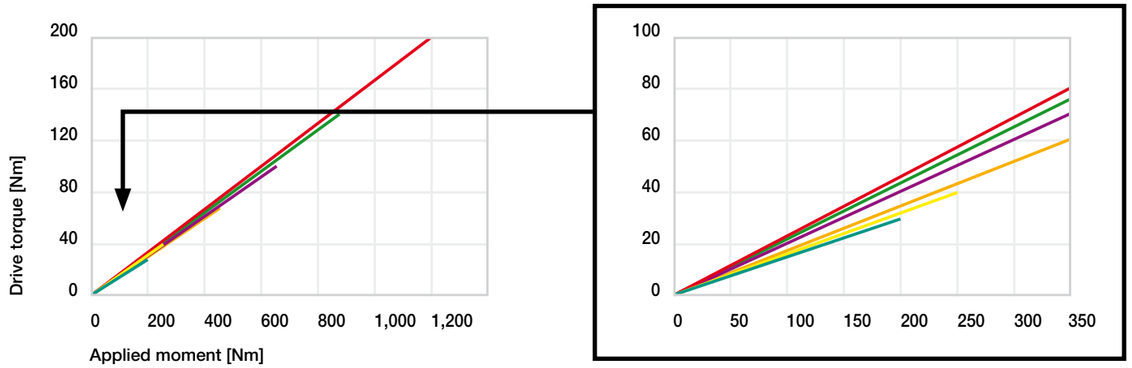



Diagram 02: Required drive torque versus applied moment

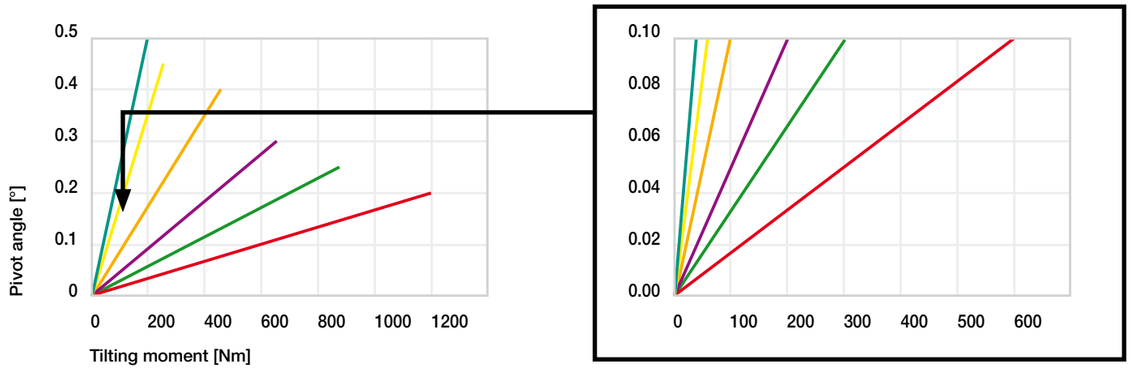
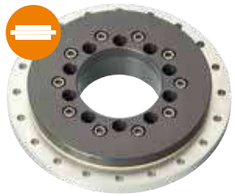



Diagram 03: Deflection versus applied tilting moment

PRT-04-50 PRT-04-60 PRT-04-100
PRT-04-150 PRT-04-200 PRT-04-300

# iglidur® PRT | Product range

## Slewing rings, high rigidity - type 01



Standard

Stainless steel version

- Aluminium or stainless steel body (upon request)
- Replaceable maintenance-free sliding elements made of iglidur® J (Standard) ▶ **Page 163**, iglidur® H1 (for temperatures up to +180°C) ▶**Page 345**, iglidur® F2 (ESD-compliant) ▶**Page 553** or iglidur® A180 (FDA-compliant) ▶**Page 425**

### Order key

| Type | Size | Options |
|---|---|---|
| PRT-01- | 30 | -ES-H1 |

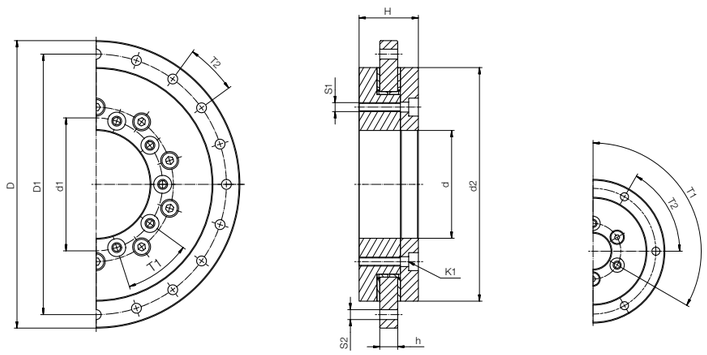
Slewing ring | Type | Inner Ø [mm] | Housing material | Sliding elements

Options:

**Housing material**
Blank: Aluminium
ES: 316 stainless steel

**Sliding elements**
Blank: iglidur® J
H1: iglidur® H1, high temperature
F2: iglidur® F2, ESD-compliant (only in conjunction with stainless steel)
A180: iglidur® A180, FDA-compliant

**Accessories**
▶ From page 718




### Dimensions [mm]

| D[10] | D1 | d1 | d | d2 ±0.2 | H | h | T1 | T2 | S1 | S2 | K1 for screw | R1 | R2 | B | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80 | 70 | 31 | 20 | 60 | 24 | 8 | 6 x 60° | 6 x 60° | M4 | 4.5 | DIN 7984 M4 | 30 | 20 | 3.5 | **PRT-01-20-☐** |
| 100 | 91 | 42.5 | 30 | 82 | 29 | 10 | 8 x 45° | 8 x 45° | M4 | 4.5 | DIN 7984 M4 | 41 | 29 | 4.5 | **PRT-01-30-☐** |
| 150 | 135 | 65 | 50 | 120 | 33 | 10 | 8 x 45° | 16 x 22,5° | M6 | 6.6 | ISO 4762 M6 | 60 | 46.5 | 4.5 | **PRT-01-50-☐** |
| 160 | 145 | 74 | 60 | 130 | 33 | 10 | 10 x 36° | 20 x 18° | M5 | 5.5 | ISO 4762 M5 | 65 | 51.5 | 4.5 | **PRT-01-60-☐** |
| 185 | 170 | 112 | 100 | 160 | 34 | 12 | 12 x 30° | 16 x 22,5° | M5 | 5.5 | ISO 4762 M5 | 80 | 69 | 5.5 | **PRT-01-100-☐** |
| 250 | 235 | 165 | 150 | 220 | 35 | 12 | 12 x 30° | 16 x 22,5° | M5 | 5.5 | ISO 4762 M5 | 110 | 96.5 | 5.5 | **PRT-01-150-☐** |
| 300 | 285 | 215 | 200 | 274 | 38 | 15 | 12 x 30° | 16 x 22,5° | M6 | 6.6 | ISO 4762 M6 | 137 | 124 | 7.0 | **PRT-01-200-☐** |
| 450 | 430 | 320 | 300 | 410 | 42 | 15 | 12 x 30° | 16 x 22,5° | M8 | 9.0 | DIN 7984 M8 | 205 | 186.6 | 7.0 | **PRT-01-300-☐** |

[10] Tolerance according to DIN ISO 2768 mK

All stainless steel versions upon request



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iglidur® PRT

# iglidur® PRT | Product range

## Slewing rings, compact, lightweight and cost-effective - type 04

Standard

Stainless steel version

- Available with diameters from 20mm to 300mm
- 60% lighter and 50% more compact compared to PRT-01
- 20% more cost-effective compared to PRT-01
- Wear-resistant, lubrication-free and maintenance-free iglidur® sliding elements

### Order key

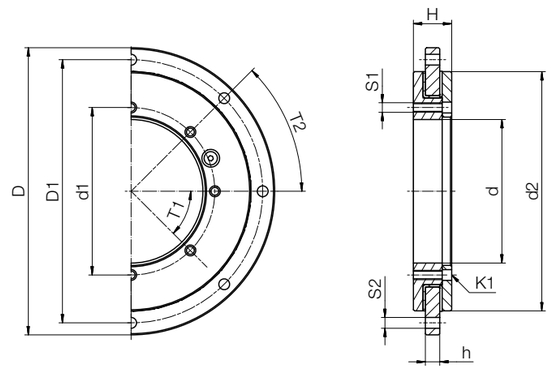
| Type | Size | Options |
|---|---|---|
| PRT-04- | 50 | -ES-H1 |

Slewing ring | Type | Inner Ø [mm] | Housing material | Sliding elements

Options:

**Housing material**
Blank: Aluminium
ES: 316 stainless steel

**Sliding elements**
Blank: iglidur® J
H1: iglidur® H1, high temperature
F2: iglidur® F2, ESD-compliant (only in conjunction with stainless steel)
A180: iglidur® A180, FDA-compliant




### Dimensions [mm]

| D | D1 | d1 | d | d2 | H | h | T1 | T2 | S1 | S2 | K1 for screw | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80 | 70 | 30 | 20 | 60 | 16 | 6 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-20-☐** New |
| 90 | 80 | 40 | 30 | 70 | 16 | 6 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-30-☐** New |
| 110 | 100 | 60 | 50 | 90 | 16 | 6 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-50-☐** |
| 120 | 110 | 70 | 60 | 100 | 16 | 6 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-60-☐** |
| 160 | 150 | 110 | 100 | 140 | 16 | 6 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-100-☐** |
| 210 | 200 | 160 | 150 | 190 | 16 | 6 | 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-150-☐** |
| 260 | 250 | 210 | 200 | 240 | 16 | 6 | 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-200-☐** |
| 360 | 350 | 310 | 300 | 340 | 16 | 6 | 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-300-☐** |

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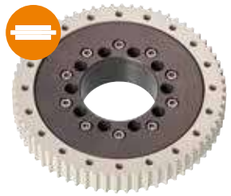
# iglidur® PRT | Product range

## Slewing rings with gear teeth - type 01



Standard

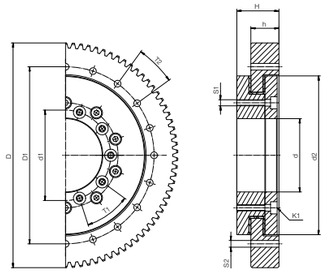
Stainless steel version

- 4 standards for outer rings are available
  - A classic spur gearing according to DIN3967
  - Commercially available belt profiles: T10, AT10, HTD8M
- The inner ring is fixed and the outer ring is driven
- The specially widened outer ring supports product transport
- Outer ring available in stainless steel as an option (suffix "-ES")

### Order key

| Type | Size | Options |
|---|---|---|
| PRT-01- | 30 | -TO-...-ES |

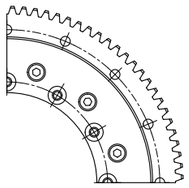
Slewing ring | Type | Inner Ø [mm] | Outer drive ring | Tooth profile type | Stainless steel version



### Dimensions [mm]

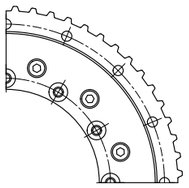
| D | d1 | d | d2 | h | T1 | T2 | S1 | S2 | K1 for screw | R1 | R2 | B | H | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 70 | 31.0 | 20 | 60 | 18 | 6x60° | 6x60° | M4 | 4.5 | DIN 7984 M4 | 30 | 20.0 | 3.5 | (26.0) | **PRT-01-20-TO-...** |
| 91 | 42.5 | 30 | 82 | 21 | 8x45° | 8x45° | M4 | 4.5 | DIN 7984 M4 | 41 | 29.0 | 4.5 | (30.5) | **PRT-01-30-TO-...** |
| 135 | 65.0 | 50 | 120 | 10 | 8x45° | 16x22.5° | M6 | 6.6 | ISO 4762 M6 | 60 | 46.5 | 4.5 | (33.0) | **PRT-01-50-TO-...** |
| 145 | 74.0 | 60 | 130 | 23 | 10x36° | 20x18° | M5 | 5.5 | ISO 4762 M5 | 65 | 51.5 | 4.5 | (34.5) | **PRT-01-60-TO-...** |
| 170 | 112.0 | 100 | 160 | 25 | 12x30° | 16x22.5° | M5 | 5.5 | ISO 4762 M5 | 80 | 69.0 | 5.5 | (36.0) | **PRT-01-100-TO-...** |
| 235 | 165.0 | 150 | 220 | 25 | 12x30° | 16x22.5° | M5 | 5.5 | ISO 4762 M5 | 110 | 96.5 | 5.5 | (36.5) | **PRT-01-150-TO-...** |
| 285 | 215.0 | 200 | 274 | 30 | 12x30° | 16x22.5° | M6 | 7.0 | ISO 4762 M6 | 137 | 124.0 | 7.0 | (41.5) | **PRT-01-200-TO-...** |
| 430 | 320.0 | 300 | 410 | 30 | 12x30° | 16x22.5° | M8 | 9.0 | DIN 7984 M8 | 205 | 186.5 | 8.5 | (43.5) | **PRT-01-300-TO-...** |

### Spur gearing ST



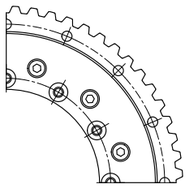
| D | m Module | z Number of teeth | Part No. add-on |
|---|---|---|---|
| (88) | – | 42 | **...-ST** |
| (112) | 2 | 54 | **...-ST** |
| (160) | 2 | 78 | **...-ST** |
| (184) | 2 | 90 | **...-ST** |
| (196) | 2 | 96 | **...-ST** |
| (256) | 2 | 126 | **...-ST** |
| (308) | 2 | 152 | **...-ST** |
| (462) | 3 | 152 | **...-ST** |

### Toothed belt profile AT10



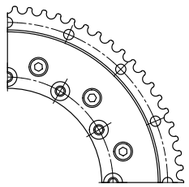
| D | z Number of teeth | Part No. add-on |
|---|---|---|
| (87.25) | 28 | **...-AT10** |
| (106.4) | 34 | **...-AT10** |
| (157.3) | 50 | **...-AT10** |
| (163.8) | 52 | **...-AT10** |
| (189.2) | 60 | **...-AT10** |
| (252.9) | 80 | **...-AT10** |
| (303.9) | 96 | **...-AT10** |
| (456.7) | 144 | **...-AT10** |

### Toothed belt profile T10



| D | z Number of teeth | Part No. add-on |
|---|---|---|
| (87.25) | 28 | **...-T10** |
| (106.4) | 34 | **...-T10** |
| (157.3) | 50 | **...-T10** |
| (163.8) | 52 | **...-T10** |
| (189.2) | 60 | **...-T10** |
| (252.9) | 80 | **...-T10** |
| (303.9) | 96 | **...-T10** |
| (456.7) | 144 | **...-T10** |

### Toothed belt profile HTD5M (-20)/HTD8M



| D | z Number of teeth | Part No. add-on |
|---|---|---|
| (81.25) | 52 | **...-HTD5M** |
| (110.7) | 44 | **...-HTD8M** |
| (161.6) | 64 | **...-HTD8M** |
| (166.7) | 66 | **...-HTD8M** |
| (187.1) | 74 | **...-HTD8M** |
| (253.3) | 100 | **...-HTD8M** |
| (304.3) | 120 | **...-HTD8M** |
| (457.1) | 180 | **...-HTD8M** |



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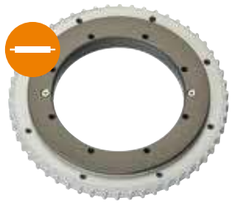
# iglidur® PRT | Product range

## Slewing rings with gear teeth - type 04



AT10

T10

HTD5M

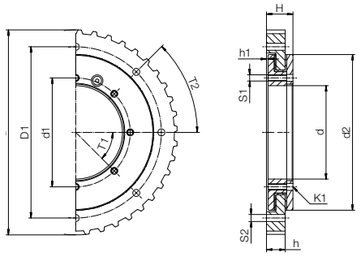
ST

- Easy replacement and extension: modular construction kit design
- Driving the easy way with gear profiles
- Adjustable with manual clamps

### Order key

| Type | Size | Options |
|---|---|---|
| PRT-04- | 50 | -TO-... |

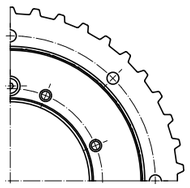
Slewing ring | Type | Inner Ø [mm] | Outer drive ring | Tooth profile type



### Dimensions [mm]

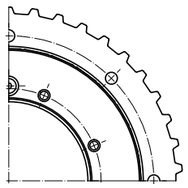
| D | d1 | d | d2 | H | h1 | h | T1 | T2 | S1 | S2 | K1 for screw | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **With gear profile** | | | | | | | | | | | | |
| 100 | 60 | 50 | 90 | 17 | 1 | 12 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-50-TO-...** |
| 110 | 70 | 60 | 100 | 17 | 1 | 12 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-60-TO-...** |
| 150 | 110 | 100 | 140 | 17 | 1 | 12 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-100-TO-...** |
| 200 | 160 | 150 | 190 | 17 | 1 | 12 | 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-150-TO-...** |
| 250 | 210 | 200 | 240 | 17 | 1 | 12 | 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-200-TO-...** |
| 350 | 310 | 300 | 340 | 17 | 1 | 12 | 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-300-TO-...** |

### Toothed belt profile AT10



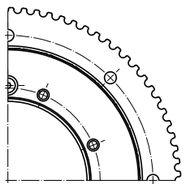
| D | z Number of teeth | Part No. add-on |
|---|---|---|
| 118.9 | 38 | **...-AT10** |
| 131.7 | 42 | **...-AT10** |
| 169.9 | 54 | **...-AT10** |
| 220.8 | 70 | **...-AT10** |
| 271.7 | 86 | **...-AT10** |
| 370.4 | 117 | **...-AT10** |

### Toothed belt profile T10



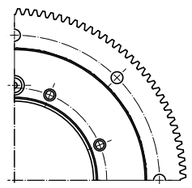
| D | z Number of teeth | Part No. add-on |
|---|---|---|
| 118.9 | 38 | **...-T10** |
| 131.7 | 42 | **...-T10** |
| 169.9 | 54 | **...-T10** |
| 220.8 | 70 | **...-T10** |
| 271.7 | 86 | **...-T10** |
| 370.4 | 117 | **...-T10** |

### Toothed belt profile HTD5M



| D | z Number of teeth | Part No. add-on |
|---|---|---|
| 120 | 38 | **...-HTD5M** |
| 131 | 42 | **...-HTD5M** |
| 170.9 | 54 | **...-HTD5M** |
| 221.8 | 70 | **...-HTD5M** |
| 271.2 | 86 | **...-HTD5M** |
| 371.4 | 117 | **...-HTD5M** |

### Spur gearing ST



| D | z Number of teeth | Module | Part No. add-on |
|---|---|---|---|
| 120 | 118 | 1 | **...-ST** |
| 130 | 128 | 1 | **...-ST** |
| 170 | 168 | 1 | **...-ST** |
| 220 | 218 | 1 | **...-ST** |
| 270 | 268 | 1 | **...-ST** |
| 370 | 368 | 1 | **...-ST** |

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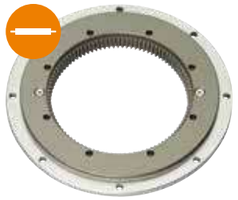
# iglidur® PRT | Product range New

## Slewing rings with inner drive ring - type 04



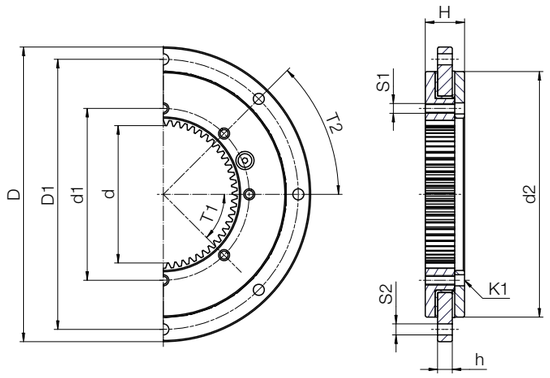
TI-ST

### Order key

| Type | Size | Options |
|---|---|---|
| PRT-04- | 50 | - TI -ST |

Slewing ring | Type | Inner Ø [mm] | Inner gear teeth | Tooth profile type

- Easy replacement and extension: modular construction kit design
- Inner drive teeth




### Dimensions [mm]

| D | D1 | d1 | d | d2 | H | h | z | Part No. |
|---|---|---|---|---|---|---|---|---|
| 110 | 100 | 60 | 46 | 90 | 16 | 6 | 48 | PRT-04-50-TI-ST New |
| 120 | 110 | 70 | 56 | 100 | 16 | 6 | 58 | PRT-04-60-TI-ST New |
| 160 | 150 | 110 | 96 | 140 | 16 | 6 | 98 | PRT-04-100-TI-ST New |
| 210 | 200 | 160 | 146 | 190 | 16 | 6 | 148 | PRT-04-150-TI-ST New |
| 260 | 250 | 210 | 196 | 240 | 16 | 6 | 198 | PRT-04-200-TI-ST New |
| 360 | 350 | 310 | 296 | 340 | 16 | 6 | 298 | PRT-04-300-TI-ST New |

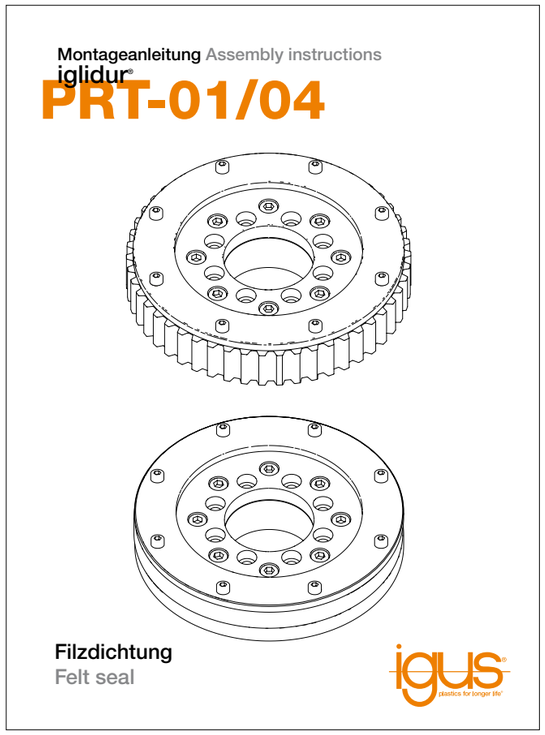
| T1 | T2 | S1 | S2 | K1 for screw | Module | Part No. |
|---|---|---|---|---|---|---|
| 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | 1 | PRT-04-50-TI-ST New |
| 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | 1 | PRT-04-60-TI-ST New |
| 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | 1 | PRT-04-100-TI-ST New |
| 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | Ø 4.5 | 1 | PRT-04-150-TI-ST New |
| 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | Ø 4.5 | 1 | PRT-04-200-TI-ST New |
| 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | Ø 4.5 | 1 | PRT-04-300-TI-ST New |





# iglidur® PRT | Product range New

## Felt Cover - high efficient sealing



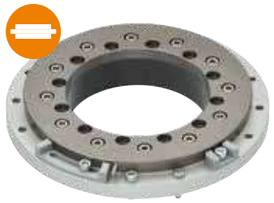

The felt cover was developed for applications in particularly harsh environments where heavy loads, dirt and dust occur. The felt cover extends the PRT slewing ring service life.

PRT felt seal ▶ **Page 732**

Assembly instructions available in the download area ▶ www.igus.eu/prt-assembly

# iglidur® PRT | Product range

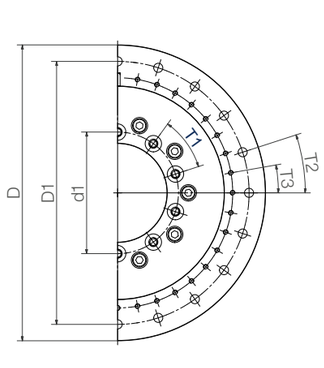
## Slewing rings with angle stop - type 01

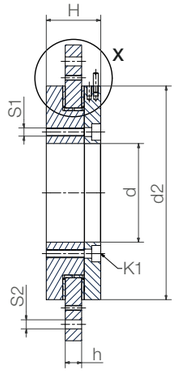


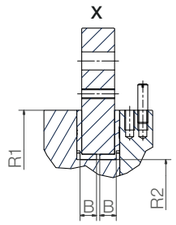
### Order key

| Type | Size | Options |
|---|---|---|
| PRT-01- | 20 | -AA |
| Slewing ring | Type | Inner Ø [mm] | Angle stop |

- Quick adjustment of the stop
- Load ratings identical to standard type 01




### Dimensions [mm]

| D[10] | D1 | d1 | d | d2 ±0.2 | H | h | T1 | T2 | S1 | S2 | K1 for screw | R1 | R2 | B | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80 | 70 | 31.0 | 20 | 60 | 24 | 8 | 6 x 60° | 6 x 60° | M4 | 4.5 | DIN 7984 M4 | 30 | 20 | 3.5 | **PRT-01-20-AA** |
| 100 | 91 | 42.5 | 30 | 82 | 29 | 10 | 8 x 45° | 8 x 45° | M4 | 4.5 | DIN 7984 M4 | 41 | 29 | 4.5 | **PRT-01-30-AA** |
| 150 | 135 | 65.0 | 50 | 120 | 33 | 10 | 8 x 45° | 16 x 22,5° | M6 | 6.6 | ISO 4762 M6 | 60 | 46.5 | 4.5 | **PRT-01-50-AA** |
| 160 | 145 | 74.0 | 60 | 130 | 33 | 10 | 10 x 36° | 20 x 18° | M5 | 5.5 | ISO 4762 M5 | 65 | 51.5 | 4.5 | **PRT-01-60-AA** |
| 185 | 170 | 112.0 | 100 | 160 | 34 | 12 | 12 x 30° | 16 x 22,5° | M5 | 5.5 | ISO 4762 M5 | 80 | 69 | 5.5 | **PRT-01-100-AA** |
| 250 | 235 | 165.0 | 150 | 220 | 35 | 12 | 12 x 30° | 16 x 22,5° | M5 | 5.5 | ISO 4762 M5 | 110 | 96.5 | 5.5 | **PRT-01-150-AA** |
| 300 | 285 | 215.0 | 200 | 274 | 38 | 15 | 12 x 30° | 16 x 22,5° | M6 | 6.6 | ISO 4762 M6 | 137 | 124 | 7.0 | **PRT-01-200-AA** |
| 450 | 430 | 320.0 | 300 | 410 | 42 | 15 | 12 x 30° | 16 x 22,5° | M8 | 9.0 | DIN 7984 M8 | 205 | 186.6 | 7.0 | **PRT-01-300-AA** |

[10] Tolerance according to DIN ISO 2768 mK



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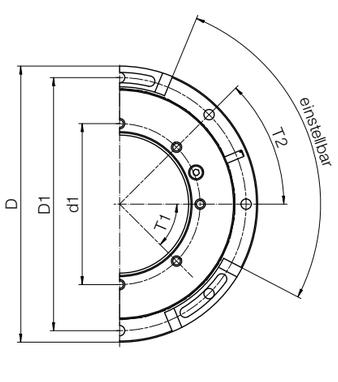
# iglidur® PRT | Product range New

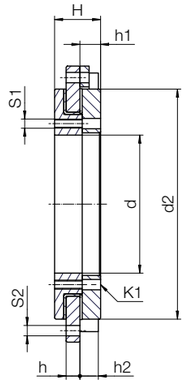
## Slewing rings with angle stop - type 04

### Order key

| Type | Size | Options |
|---|---|---|
| PRT-04- | 50 | -TS |
| Slewing ring | Type | Inner Ø [mm] | Angle stop |

- Already successfully in use for years with PRT-01
- Compact design means 60% less weight compared to the PRT-01 series




### Dimensions [mm]

| D | D1 | d1 | d | d2 | H | h | h1 | h2 | Part No. | |
|---|---|---|---|---|---|---|---|---|---|---|
| 110 | 100 | 60 | 50 | 90 | 20 | 6 | 9 | 8 | **PRT-04-50-TS** | New |
| 120 | 110 | 70 | 60 | 100 | 20 | 6 | 9 | 8 | **PRT-04-60-TS** | New |
| 160 | 150 | 110 | 100 | 140 | 20 | 6 | 9 | 8 | **PRT-04-100-TS** | New |
| 210 | 200 | 160 | 150 | 190 | 20 | 6 | 9 | 8 | **PRT-04-150-TS** | New |
| 260 | 250 | 210 | 200 | 240 | 20 | 6 | 9 | 8 | **PRT-04-200-TS** | New |
| 360 | 350 | 310 | 300 | 340 | 20 | 6 | 9 | 8 | **PRT-04-300-TS** | New |

| T1 | T2 | S1 | S2 | K1 for screw | Part No. | |
|---|---|---|---|---|---|---|
| 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-50-TS** | New |
| 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-60-TS** | New |
| 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-100-TS** | New |
| 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-150-TS** | New |
| 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-200-TS** | New |
| 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-300-TS** | New |

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# iglidur® PRT | Product range

## Manual clamp - type 01

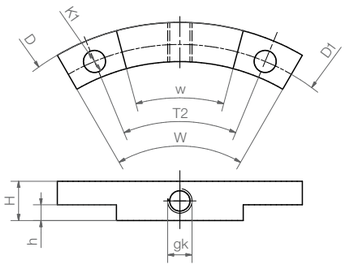
- With 1Nm screw torque, a holding torque up to 10Nm is possible
- Easy to screw onto outer ring

### Order key

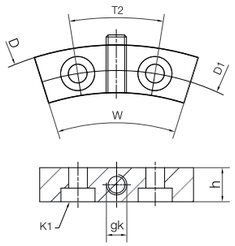
| Type | Size |
|---|---|
| PRT-HK | -30-K |

| Slewing ring | Manual clamp | Inner Ø [mm] | Manual clamp |
|---|---|---|---|

Options:
Blank: Threaded pin
K: Manual clamp




PRT-HK-20/30




PRT-HK-50/60/100/150/200/300

PRT-HK-60

PRT-HK-60-K

PRT with fitted manual clamp

### Dimensions [mm]

| D | D1 | T2 | K1 for screw | H | h | gk | W | Part No. |
|---|---|---|---|---|---|---|---|---|
| 80 | 70 | 60.0° | Ø 4.5 | 7 | 3.2 | M5 | 90° | **PRT-HK-20** |
| 100 | 91 | 45.0° | Ø 4.5 | 8 | 3.2 | M5 | 60° | **PRT-HK-30** |
| 150 | 135 | 22.5° | Ø 11.0 | – | 10 | M6 | 40° | **PRT-HK-50** |
| 160 | 145 | 18.0° | Ø 10.0 | – | 10 | M6 | 35° | **PRT-HK-60** |
| 205 | 185 | 22.5° | Ø 10.0 | – | 10 | M6 | 40° | **PRT-HK-100**[12)] |
| 210 | 200 | 22.5° | Ø 10.0 | – | 10 | M6 | 35° | **PRT-HK-150** |
| 320 | 300 | 22.5° | Ø 11.0 | – | 10 | M6 | 40° | **PRT-HK-200**[12)] |
| 360 | 350 | 22.5° | Ø 15.0 | – | 12 | M6 | 30° | **PRT-HK-300** |

[12)] To be connected only with enlarged outer ring





# iglidur® PRT | Product range New

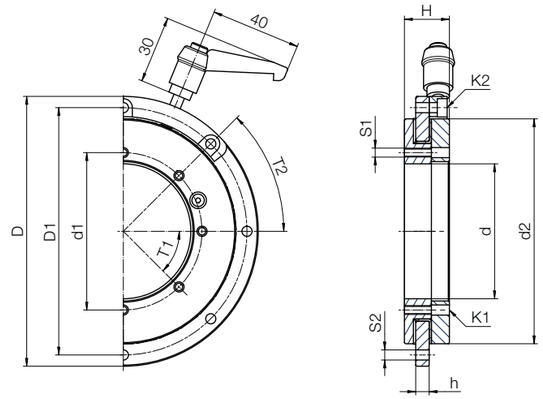
## Manual clamp - type 04

- Securing against unintentional adjustment
- Easy to fit
- Part of the extensive PRT modular system
- With 1Nm screw torque, a holding torque up to 10Nm is possible

### Order key

| Type | Size | Options |
|---|---|---|
| PRT-04- | 20 | -HK |

| Slewing ring | Type | Inner Ø [mm] | Manual clamp |
|---|---|---|---|




### Dimensions [mm]

| D | D1 | d | d1 | d2 | H | h | T1 | T2 | S1 | S2 H13 | K1 H13 | Part No. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80 | 70 | 20 | 30 | 60 | 20 | 6 | 8 x 45° | 8 x 45° | M4 | 4.5 | 4.5 | **PRT-04-20-HK** | New |
| 90 | 80 | 30 | 40 | 70 | 20 | 6 | 8 x 45° | 8 x 45° | M4 | 4.5 | 4.5 | **PRT-04-30-HK** | New |
| 110 | 100 | 50 | 60 | 90 | 20 | 6 | 8 x 45° | 8 x 45° | M4 | 4.5 | 4.5 | **PRT-04-50-HK** | New |
| 120 | 110 | 60 | 70 | 100 | 20 | 6 | 8 x 45° | 8 x 45° | M4 | 4.5 | 4.5 | **PRT-04-60-HK** | New |
| 160 | 150 | 100 | 110 | 140 | 20 | 6 | 8 x 45° | 8 x 45° | M4 | 4.5 | 4.5 | **PRT-04-100-HK** | New |
| 210 | 200 | 150 | 160 | 190 | 20 | 6 | 16 x 22,5° | 16 x 22,5° | M4 | 4.5 | 4.5 | **PRT-04-150-HK** | New |
| 260 | 250 | 200 | 210 | 240 | 20 | 6 | 16 x 22,5° | 16 x 22,5° | M4 | 4.5 | 4.5 | **PRT-04-200-HK** | New |
| 360 | 350 | 300 | 310 | 340 | 20 | 6 | 16 x 22,5° | 16 x 22,5° | M4 | 4.5 | 4.5 | **PRT-04-300-HK** | New |

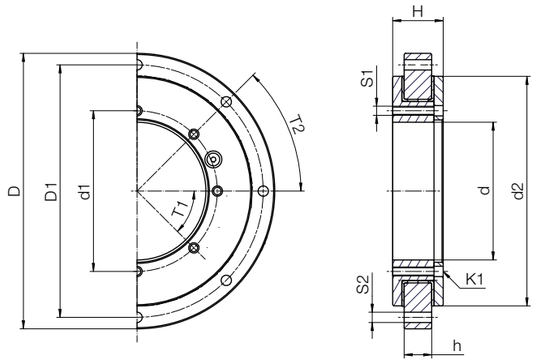
# iglidur® PRT | Product range New

## Slewing rings with snap mechanism - type 04

- Repeatable defined location points
- Can also be ideally combined with the optional T-slot plate for your assembly table, for example
- Slewing ring with defined latching points; can be released with a force of 30N (+-2N)
- Standard versions have locking points every 90°
- Locking points can be individually defined

### Order key

| Type | Size | Options |
|---|---|---|
| PRT-04- | 50 | -R |
| Slewing ring / Type | Inner Ø [mm] | Locking mechanism |




### Dimensions [mm]

| D | D1 | d1 | d | d2 | H | h | T1 | T2 | S1 | S2 | K1 | Part No. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | -0.1/-0.5 | | | | | | | for screw | | |
| 80 | 70 | 30 | 20 | 60 | 22 | 12 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | M4 | **PRT-04-20-R** | New |
| 90 | 80 | 40 | 30 | 70 | 22 | 12 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | M4 | **PRT-04-30-R** | New |
| 110 | 100 | 60 | 50 | 90 | 22 | 12 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | M4 | **PRT-04-50-R** | New |
| 120 | 110 | 70 | 60 | 100 | 22 | 12 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | M4 | **PRT-04-60-R** | New |
| 160 | 150 | 110 | 100 | 140 | 22 | 12 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | M4 | **PRT-04-100-R** | New |
| 210 | 200 | 160 | 150 | 190 | 22 | 12 | 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | M4 | **PRT-04-150-R** | New |
| 260 | 250 | 210 | 200 | 240 | 22 | 12 | 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | M4 | **PRT-04-200-R** | New |
| 360 | 350 | 310 | 300 | 340 | 22 | 12 | 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | M4 | **PRT-04-300-R** | New |



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iglidur® PRT

# iglidur® PRT | Product range New

## Slewing rings with locking device - type 04

PRT-04_xx_ART

PRT-04_xx_ART-PD

PRT-04_xx_ART-U

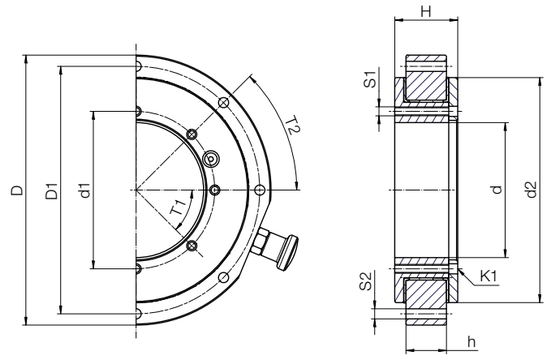
PRT-04_xx_ART-RC

### Order key

| Type | Size | Options |
|---|---|---|
| PRT-04- | 50 | -ART-☐ |
| Slewing ring / Type | Inner Ø [mm] | Locking device / Design |

Options:
☐ = Suffix
PD: With locking mechanism and position monitoring
U: With locking mechanism and universal adapter
RC: With locking mechanism and remote trigger

- Easy and quick release by hand or remote trigger
- Available with electronic closing control mechanism or with universal adapter for custom solutions




### Dimensions [mm]

| D1 | D1 | d | d1 | Ø d2 | H | h | T1 | T2 | S1 | S2 | K1 | Part No. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | H13 | H13 | | |
| 80 | 70 | 20 | 30 | 60 | 28 | 6 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | 4.5 | **PRT-04-20-ART-☐** | New |
| 90 | 80 | 30 | 40 | 70 | 28 | 6 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | 4.5 | **PRT-04-30-ART-☐** | New |
| 110 | 100 | 50 | 60 | 90 | 28 | 6 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | 4.5 | **PRT-04-50-ART-☐** | New |
| 120 | 110 | 60 | 70 | 100 | 28 | 6 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | 4.5 | **PRT-04-60-ART-☐** | New |
| 160 | 150 | 100 | 110 | 140 | 28 | 6 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | 4.5 | **PRT-04-100-ART-☐** | New |
| 210 | 200 | 150 | 160 | 190 | 28 | 6 | 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | 4.5 | **PRT-04-150-ART-☐** | New |
| 260 | 250 | 200 | 210 | 240 | 16 | 6 | 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | 4.5 | **PRT-04-200-ART-☐** | New |
| 360 | 350 | 300 | 310 | 340 | 16 | 6 | 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | 4.5 | **PRT-04-300-ART-☐** | New |

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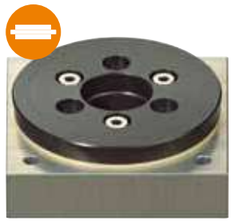
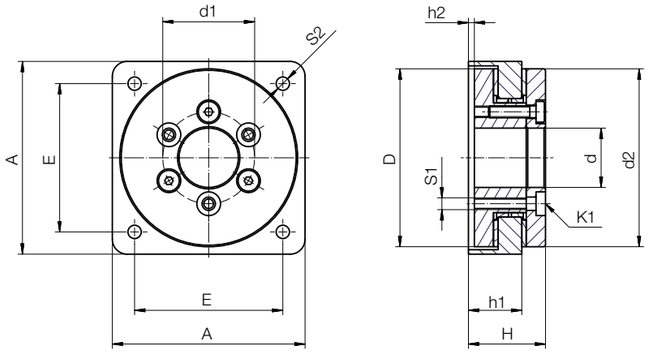
# iglidur® PRT | Product range

## Type 01

### Slewing rings with square flange for direct mounting on flat surfaces



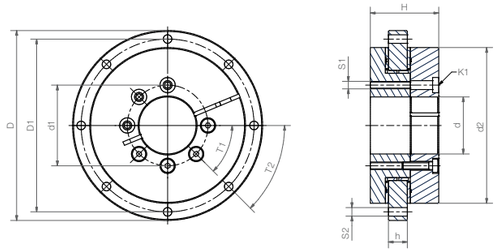



- No through-hole necessary
- No separate spacer ring
- Fix with only 4 screws

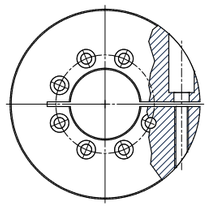
### Dimensions [mm]

| d | d1 | d2 | D | A | E | H | h1 | h2 | T1 | S1 | S2 | K1 for screw | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 31.0 | 60 | 62 | 65 | 50 | 26.0 | 18 | 2.0 | 6 x 60° | M4 | 4.5 | DIN 7984 M4 | **PRT-01-20-SQ** |
| 30 | 42.5 | 82 | 84 | 85 | 65 | 30.5 | 21 | 1.5 | 8 x 45° | M4 | 4.5 | DIN 7984 M4 | **PRT-01-30-SQ** |
| 50 | 65.0 | 120 | 122 | 125 | 100 | 34.5 | 23 | 1.5 | 8 x 45° | M6 | 6.6 | ISO 4762 M6 | **PRT-01-50-SQ** |

### Slewing rings with collar clamp



**Slewing ring with PRT-01-30-C collar clamp**



**Collar clamp for PRT-01-30-C**

Slewing ring PRT-01-30 with collar clamp for 30h7 tolerance shafts.

- For simple handling designs
- Quick and easy assembly
- Max. tightening torque: 5Nm

### Dimensions [mm]

| D | D1 | d1 | d | d2 | H | h | T1 | T2 | S1 | S2 | K1 for screw | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80 | 70 | 31 | 20 | 60 | 32.5 | 8 | 4 x 60° | 6 x 60° | M4 | 4.5 | DIN 7984 M4 | **PRT-01-20-C** |
| 100 | 91 | 42.5 | 30 | 82 | 36.0 | 10 | 6 x 45° | 8 x 45° | M4 | 4.5 | DIN 7984 M4 | **PRT-01-30-C** |

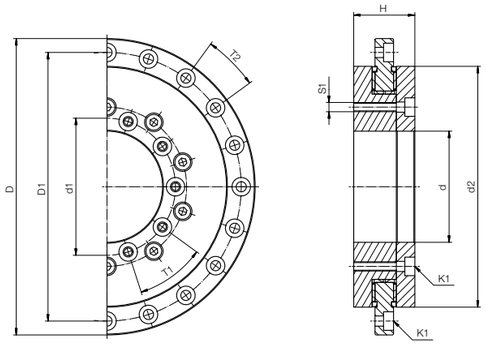




iglidur® PRT | Product range

Type 01

### Slewing rings with seal (-D: one-sided, -DD: both-sided)



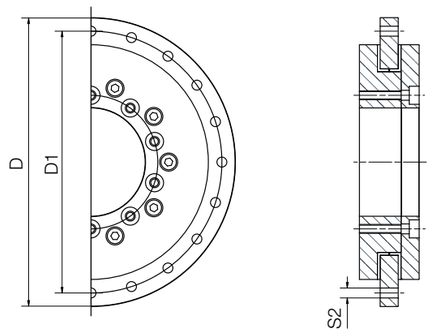
- For use in extremely dirty environments
- High wear resistance
- For high loads and high stiffness

### Dimensions [mm]

| D[10)] | D1 | d1 | d | d2 ±0.2 | H | h | T1 | T2 | S1 | S2 | K1 for screw | R1 | R2 | B | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 160 | 145 | 74 | 60 | 130 | 33 | 10 | 10 x 36° | 20 x 18° | M5 | 5.5 | ISO 4762 M5 | 65 | 51.5 | 4.5 | **PRT-01-60-D/DD** |
| 185 | 170 | 112 | 100 | 160 | 34 | 12 | 12 x 30° | 16 x 22,5° | M5 | 5.5 | ISO 4762 M5 | 80 | 69 | 5.5 | **PRT-01-100-D/DD** |

**[10)] Tolerance according to DIN ISO 2768 mK**

### Slewing rings with enlarged outer ring




- Easy to install replaceable sliding pads
- High wear resistance
- For high loads and high stiffness

### Dimensions [mm] - other dimensions similar to standard type PRT-01 ▶ Page 710

| D | D1 | S2 | Part No.[11)] |
|---|---|---|---|
| 205 | 185 | 5.5 | **PRT-01-100-M-ARG** |
| 205 | 185 | M6 | **PRT-01-100-M-ARGG** |
| 205 | 185 | 5.5 | **PRT-01-100-M-ARGS** |
| 320 | 300 | 7.0 | **PRT-01-200-M-ARG** |
| 320 | 300 | M8 | **PRT-01-200-M-ARGG** |
| 320 | 300 | 7.0 | **PRT-01-200-M-ARGS** |

**[11)] Ending: -G standard hole, -GG threaded hole or -GS counterbore**

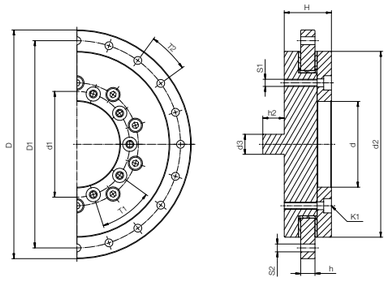
# iglidur® PRT | Product range

## PRT with assembled drive pin - type 04

- Easy to install and replaceable sliding elements
- High wear resistance
- For high loads and high stiffness
- Housing made of aluminium

### Order key

| Type | Size | Options |
|---|---|---|
| PRT-01- | 60 | -DP |
| Slewing ring | Type | Inner Ø [mm] | Drive pin |

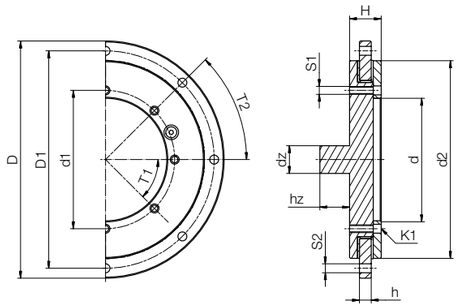


### Dimensions [mm]

| D | D1 | d1 | d | d2 | d2- Tolerance | H | h | T1 | T2 | S1 | S2 | K1 | R1 | R2 | B | h2 | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 160 | 145 | 74 | 60 | 130 | ±0.2 | 33 | 10 | 10 x 36° | 20 x 18° | M5 | 5.5 | M5 | 65 | 51.5 | 4.5 | 15 | **PRT-01-60-DP** |

## PRT with assembled drive pin - type 04

- Easy replacement and extension: modular construction kit design
- Driving the easy way with drive pin for couplings
- Adjustable with manual clamps



### Dimensions [mm]

| D | D1 | d1 | d | d2 | dz | hz | H | h | T1 | T2 | S1 | S2 | K1 for screw | Part No. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **With DrivePin** | | | | | | | | | | | | | | | |
| 80 | 70 | 30 | 22 | 60 | 14 h6 | 15 | 16 | 6 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-20-DP** | New |
| 90 | 80 | 40 | 32 | 70 | 14 h6 | 15 | 16 | 6 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-30-DP** | New |
| 110 | 100 | 60 | 52 | 90 | 14 h6 | 15 | 16 | 6 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-50-DP** | |
| 120 | 110 | 70 | 62 | 100 | 14 h6 | 15 | 16 | 6 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-60-DP** | |
| 160 | 150 | 110 | 102 | 140 | 14 h6 | 15 | 16 | 6 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-100-DP** | |
| 210 | 200 | 160 | 152 | 190 | 14 h6 | 15 | 16 | 6 | 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-150-DP** | |
| 260 | 250 | 210 | 202 | 240 | 14 h6 | 15 | 16 | 6 | 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-200-DP** | |
| 360 | 350 | 310 | 302 | 340 | 14 h6 | 15 | 16 | 6 | 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-300-DP** | |



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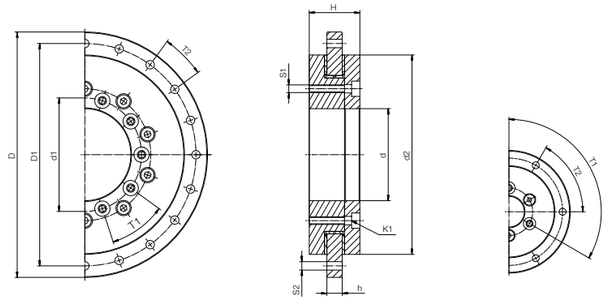
# iglidur® PRT | Product range New

## Slewing ring bearing with switching sensor - type 01 i.Sense

- No unplanned machine downtime
- Early information about bearing wear prevents the assembly from damage

### Order key

| Type | Size | Options |
|---|---|---|
| PRT-01- | 30 | -PR.W-DS |
| Slewing ring | Type | Inner Ø [mm] | Wear monitoring |



### Dimensions [mm]

| D[10] | D1 | d1 | d | d2 ±0.2 | H | h | T1 | T2 | Part No. | |
|---|---|---|---|---|---|---|---|---|---|---|
| 80 | 70 | 31 | 20 | 60 | 24 | 8 | 3 x 120° | 6 x 60° | **PRT-01-20-PR.W-DS** | New |
| 100 | 91 | 42.5 | 30 | 82 | 29 | 10 | 4 x 90° | 8 x 45° | **PRT-01-30-PR.W-DS** | New |
| 150 | 135 | 65 | 50 | 120 | 33 | 10 | 8 x 45° | 16 x 22,5° | **PRT-01-50-PR.W-DS** | New |
| 160 | 145 | 74 | 60 | 130 | 33 | 10 | 10 x 36° | 20 x 18° | **PRT-01-60-PR.W-DS** | New |
| 185 | 170 | 112 | 100 | 160 | 34 | 12 | 12 x 30° | 16 x 22,5° | **PRT-01-100-PR.W-DS** | New |
| 250 | 235 | 165 | 150 | 220 | 35 | 12 | 12 x 30° | 16 x 22,5° | **PRT-01-150-PR.W-DS** | New |
| 300 | 285 | 215 | 200 | 274 | 38 | 15 | 12 x 30° | 16 x 22,5° | **PRT-01-200-PR.W-DS** | New |
| 450 | 430 | 320 | 300 | 410 | 42 | 15 | 12 x 30° | 16 x 22,5° | **PRT-01-300-PR.W-DS** | New |

| S1 | S2 | K1 for screw | R1 | R2 | B | Part No. | |
|---|---|---|---|---|---|---|---|
| M4 | 4.5 | DIN 7984 M4 | 30 | 20.0 | 3.5 | **PRT-01-20-PR.W-DS** | New |
| M4 | 4.5 | DIN 7984 M4 | 41 | 29.0 | 4.5 | **PRT-01-30-PR.W-DS** | New |
| M6 | 6.6 | ISO 4762 M6 | 60 | 46.5 | 4.5 | **PRT-01-50-PR.W-DS** | New |
| M5 | 5.5 | ISO 4762 M5 | 65 | 51.5 | 4.5 | **PRT-01-60-PR.W-DS** | New |
| M5 | 5.5 | ISO 4762 M5 | 80 | 69.0 | 5.5 | **PRT-01-100-PR.W-DS** | New |
| M5 | 5.5 | ISO 4762 M5 | 110 | 96.5 | 5.5 | **PRT-01-150-PR.W-DS** | New |
| M6 | 6.6 | ISO 4762 M6 | 137 | 124.0 | 7.0 | **PRT-01-200-PR.W-DS** | New |
| M8 | 9.0 | DIN 7984 M8 | 205 | 186.6 | 7.0 | **PRT-01-300-PR.W-DS** | New |

[10] Tolerance according to DIN ISO 2768 mK

Available upon request

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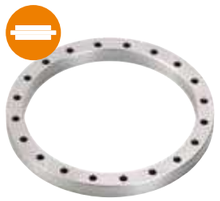
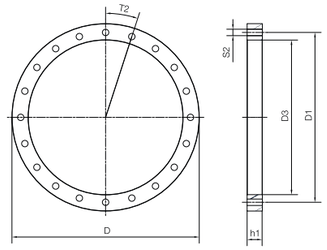
# iglidur® PRT | Product range

## Spacer rings made from anodised aluminium or polymer - type 01



Aluminium

Plastic (POM)



PRT with mounted spacer ring

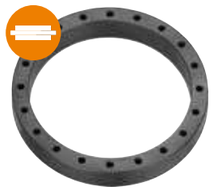
- Easy installation
- Can be combined with all sizes

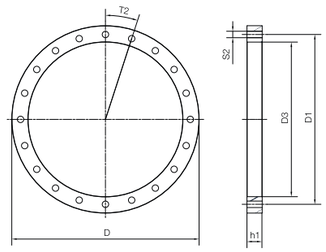
### Dimensions [mm]

| D | D1 | T2 | S2 | D3 | h1 | Part No.[39] |
|---|---|---|---|---|---|---|
| 80 | 70 | 6 x 60° | 4.5 | 62 | 10 | **PRT-01-20-DR** |
| 100 | 91 | 8 x 45° | 4.5 | 84 | 11 | **PRT-01-30-DR** |
| 150 | 135 | 16 x 22,5° | 6.6 | 122 | 13 | **PRT-01-50-DR** |
| 160 | 145 | 20 x 18° | 5.5 | 132 | 13 | **PRT-01-60-DR** |
| 185 | 170 | 16 x 22,5° | 5.5 | 162 | 13 | **PRT-01-100-DR** |
| 250 | 235 | 16 x 22,5° | 5.5 | 222 | 13 | **PRT-01-150-DR** |
| 300 | 285 | 16 x 22,5° | 7.0 | 276 | 13 | **PRT-01-200-DR** |
| 450 | 430 | 16 x 22,5° | 9.0 | 412 | 15 | **PRT-01-300-DR** |

[39] **Please add suffix "-POM" for plastic version (not available for sizes 150 and 300)**

## Spacer ring for heavy duty applications - type 01





PRT with mounted HD spacer ring

- Steel version to avoid distortion during installation
- iglidur® PRT modular system: can be combined with all sizes
- Corrosion-resistant

### Dimensions [mm]

| D | D1 | T2 | S2 | D3 ±0.2 | h1 | Part No. |
|---|---|---|---|---|---|---|
| 80 | 70 | 6 × 60° | 4.5 | 62 | 20 | **PRT-01-20-DR-HD** |
| 100 | 91 | 8 × 45° | 4.5 | 84 | 22 | **PRT-01-30-DR-HD** |
| 150 | 135 | 16 x 22,5° | 6.6 | 122 | 26 | **PRT-01-50-DR-HD** |
| 160 | 145 | 20 × 18° | 5.5 | 132 | 26 | **PRT-01-60-DR-HD** |
| 185 | 170 | 16 × 22.5° | 5.5 | 162 | 26 | **PRT-01-100-DR-HD** |
| 250 | 235 | 16 × 22.5° | 5.5 | 222 | 26 | **PRT-01-150-DR-HD** |
| 300 | 285 | 16 × 22.5° | 7.0 | 276 | 26 | **PRT-01-200-DR-HD** |
| 450 | 430 | 16 × 22.5° | 9.0 | 412 | 30 | **PRT-01-300-DR-HD** |





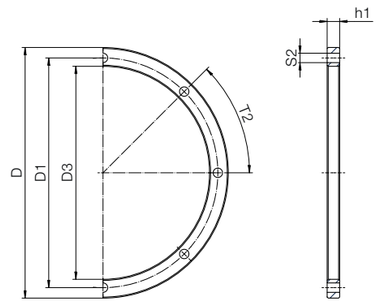
# iglidur® PRT | Product range New

## Spacer rings made from anodised aluminium or polymer - type 01

- Allows easy installation of slewing ring bearings on surfaces
- Part of the extensive modular system

### Order key

| Type | Size | Options |
|---|---|---|
| PRT-04- | 20 | -DR |
| Slewing ring | Type | Inner Ø [mm] | Spacer ring |




### Dimensions [mm]

| D | D1 | T2 | S2 | D3 | h1 | Part No. |
|---|---|---|---|---|---|---|
| 80 | 70 | 8 x 45° | 4.5 | 62 | 6 | **PRT-04-20-DR** New |
| 90 | 80 | 8 x 45° | 4.5 | 72 | 6 | **PRT-04-30-DR** New |
| 110 | 100 | 8 x 45° | 4.5 | 92 | 6 | **PRT-04-50-DR** New |
| 120 | 110 | 8 x 45° | 4.5 | 102 | 6 | **PRT-04-60-DR** New |
| 160 | 150 | 8 x 45° | 4.5 | 142 | 6 | **PRT-04-100-DR** New |
| 210 | 200 | 16 x 22,5° | 4.5 | 192 | 6 | **PRT-04-150-DR** New |
| 260 | 250 | 16 x 22,5° | 4.5 | 242 | 6 | **PRT-04-200-DR** New |
| 360 | 350 | 16 x 22,5° | 4.5 | 342 | 6 | **PRT-04-300-DR** New |

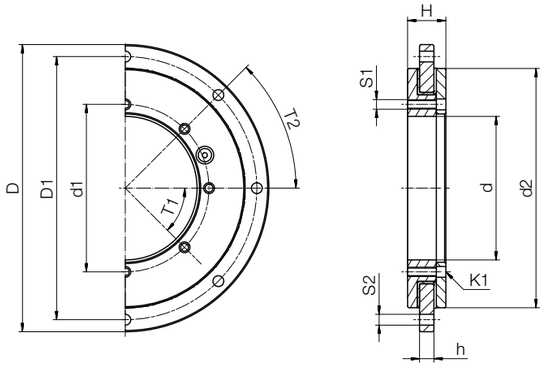
# iglidur® PRT | Product range

## Black Edition - type 04

- Available with diameters from 20mm to 300mm
- 60% lighter and 50% more compact compared to PRT-01
- 20% more cost-effective compared to PRT-01
- Wear-resistant, lubrication-free and maintenance-free iglidur® sliding elements
- Black anodised coating anti-reflect. Black Edition for visible parts

### Order key

| Type | Size | Options |
|---|---|---|
| PRT-04- | 50 | -BE |
| Slewing ring | Type | Inner Ø [mm] | Black Edition |




### Dimensions [mm]

| D | D1 | d1 | d | d2 | H | h | T1 | T2 | S1 | S2 | K1 for screw | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80 | 70 | 30 | 20 | 60 | 16 | 6 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-20-BE** New |
| 90 | 80 | 40 | 30 | 70 | 16 | 6 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-30-BE** New |
| 110 | 100 | 60 | 50 | 90 | 16 | 6 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-50-BE** |
| 120 | 110 | 70 | 60 | 100 | 16 | 6 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-60-BE** |
| 160 | 150 | 110 | 100 | 140 | 16 | 6 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-100-BE** |
| 210 | 200 | 160 | 150 | 190 | 16 | 6 | 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-150-BE** |
| 260 | 250 | 210 | 200 | 240 | 16 | 6 | 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-200-BE** |
| 360 | 350 | 310 | 300 | 340 | 16 | 6 | 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | Ø 4.5 | **PRT-04-300-BE** |





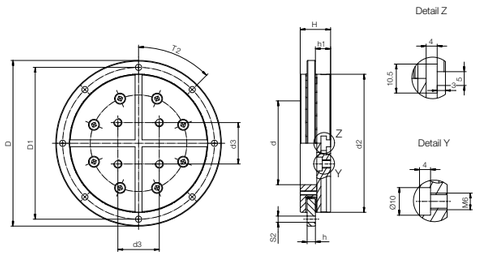
# iglidur® PRT | Product range

## Slot nut profile - type 04

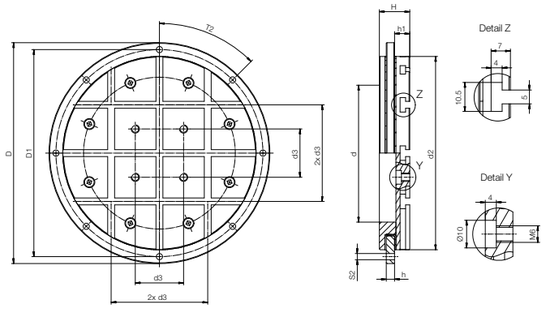
- Fast assembly
- Easy positioning with no additional holes

### Order key

| Type | Size | Options |
|---|---|---|
| PRT-04- | 50 | -T |
| Slewing ring | Type | Inner Ø [mm] | Slot nuts |




Slot nut profile up to size 60




Slot nut profile from size 100

### Dimensions [mm]

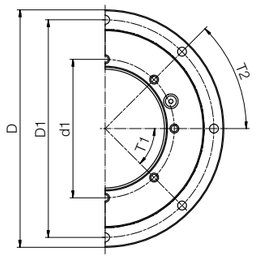
| D | D1 | d1 | d | d2 | H | h | h1 | T2 | S2 | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|
| 80 | 70 | 30 | 20 | 60 | 22 | 6 | 11 | 8 × 45° | Ø 4.5 | **PRT-04-20-T** New |
| 90 | 80 | 40 | 30 | 70 | 22 | 6 | 11 | 8 × 45° | Ø 4.5 | **PRT-04-30-T** New |
| 110 | 100 | 60 | 50 | 90 | 22 | 6 | 11 | 8 × 45° | Ø 4.5 | **PRT-04-50-T** |
| 120 | 110 | 70 | 60 | 100 | 22 | 6 | 11 | 8 × 45° | Ø 4.5 | **PRT-04-60-T** |
| 160 | 150 | 110 | 100 | 140 | 22 | 6 | 11 | 8 × 45° | Ø 4.5 | **PRT-04-100-T** |
| 210 | 200 | 160 | 150 | 190 | 22 | 6 | 11 | 16 × 22.5° | Ø 4.5 | **PRT-04-150-T** |
| 260 | 250 | 210 | 200 | 240 | 22 | 6 | 11 | 16 × 22.5° | Ø 4.5 | **PRT-04-200-T** |
| 360 | 350 | 310 | 300 | 340 | 22 | 6 | 11 | 16 × 22.5° | Ø 4.5 | **PRT-04-300-T** |

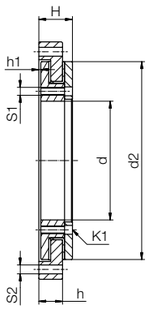
# iglidur® PRT | Product range

## Installation solutions - type 04

With outer spacer ring

With large outer support ring




### Order key

| Type | Size | Options |
|---|---|---|
| PRT-04- | 50 | -M4 |
| Slewing ring | Type | Inner Ø [mm] / Thread |

- Maintenance-free and wear-resistant
- Easy installation
- Replaceable sliding elements

### Dimensions [mm]

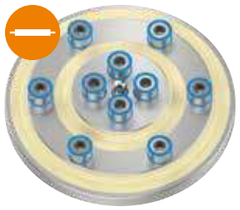
| D | D1 | d1 | d | d2 | H | h1 | h | T1 | T2 | S1 | S2 | K1 for screw | Part No. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **With M4 thread in outer ring** | | | | | | | | | | | | | | |
| 80 | 70 | 30 | 20 | 60 | 16 | – | 6 | 8 × 45° | 8 × 45° | M4 | M4 | Ø 4.5 | PRT-04-20-M4 | New |
| 90 | 80 | 40 | 30 | 70 | 16 | – | 6 | 8 × 45° | 8 × 45° | M4 | M4 | Ø 4.5 | PRT-04-30-M4 | New |
| 110 | 100 | 60 | 50 | 90 | 16 | – | 6 | 8 × 45° | 8 × 45° | M4 | M4 | Ø 4.5 | PRT-04-50-M4 | |
| 120 | 110 | 70 | 60 | 100 | 16 | – | 6 | 8 × 45° | 8 × 45° | M4 | M4 | Ø 4.5 | PRT-04-60-M4 | |
| 160 | 150 | 110 | 100 | 140 | 16 | – | 6 | 8 × 45° | 8 × 45° | M4 | M4 | Ø 4.5 | PRT-04-100-M4 | |
| 210 | 200 | 160 | 150 | 190 | 16 | – | 6 | 16 × 22.5° | 16 × 22.5° | M4 | M4 | Ø 4.5 | PRT-04-150-M4 | |
| 260 | 250 | 210 | 200 | 240 | 16 | – | 6 | 16 × 22.5° | 16 × 22.5° | M4 | M4 | Ø 4.5 | PRT-04-200-M4 | |
| 360 | 350 | 310 | 300 | 340 | 16 | – | 6 | 16 × 22.5° | 16 × 22.5° | M4 | M4 | Ø 4.5 | PRT-04-300-M4 | |
| **With enlarged outer ring** | | | | | | | | | | | | | | |
| 80 | 70 | 30 | 20 | 60 | 16 | – | 6 | 8 × 45° | 6 × 60° | M4 | Ø 4.5 | Ø 4.5 | PRT-04-20-G | New |
| 100 | 91 | 40 | 30 | 70 | 16 | – | 6 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | PRT-04-30-G | New |
| 150 | 135 | 60 | 50 | 90 | 16 | – | 6 | 8 × 45° | 16 × 22.5° | M4 | Ø 6.6 | Ø 4.5 | PRT-04-50-G | |
| 160 | 145 | 70 | 60 | 100 | 16 | – | 6 | 8 × 45° | 20 × 18° | M4 | Ø 5.5 | Ø 4.5 | PRT-04-60-G | |
| 185 | 170 | 110 | 100 | 140 | 16 | – | 6 | 8 × 45° | 16 × 22.5° | M4 | Ø 4.5 | Ø 4.5 | PRT-04-100-G | |
| 250 | 235 | 160 | 150 | 190 | 16 | – | 6 | 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | Ø 4.5 | PRT-04-150-G | |
| 300 | 285 | 210 | 200 | 240 | 16 | – | 6 | 16 × 22.5° | 16 × 22.5° | M4 | Ø 5.5 | Ø 4.5 | PRT-04-200-G | |
| 450 | 430 | 310 | 300 | 340 | 16 | – | 6 | 16 × 22.5° | 16 × 22.5° | M4 | Ø 9.0 | Ø 4.5 | PRT-04-300-G | |
| **With outer spacer ring** | | | | | | | | | | | | | | |
| 80 | 70 | 30 | 20 | 60 | 17 | 1 | 12 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | PRT-04-20-DRI | New |
| 90 | 80 | 40 | 30 | 70 | 17 | 1 | 12 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | PRT-04-30-DRI | New |
| 110 | 100 | 60 | 50 | 90 | 17 | 1 | 12 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | PRT-04-50-DRI | |
| 120 | 110 | 70 | 60 | 100 | 17 | 1 | 12 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | PRT-04-60-DRI | |
| 160 | 150 | 110 | 100 | 140 | 17 | 1 | 12 | 8 × 45° | 8 × 45° | M4 | Ø 4.5 | Ø 4.5 | PRT-04-100-DRI | |
| 210 | 200 | 160 | 150 | 190 | 17 | 1 | 12 | 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | Ø 4.5 | PRT-04-150-DRI | |
| 260 | 250 | 210 | 200 | 240 | 17 | 1 | 12 | 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | Ø 4.5 | PRT-04-200-DRI | |
| 360 | 350 | 310 | 300 | 340 | 17 | 1 | 12 | 16 × 22.5° | 16 × 22.5° | M4 | Ø 4.5 | Ø 4.5 | PRT-04-300-DRI | |





# iglidur® PRT | Product range New

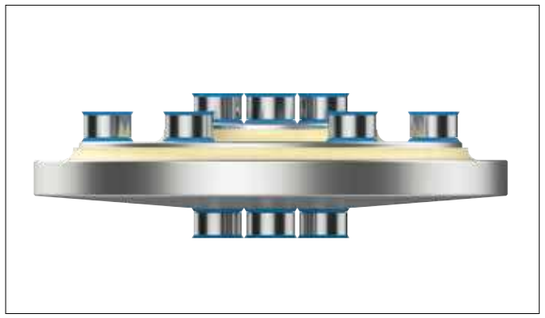
## Hygienic design



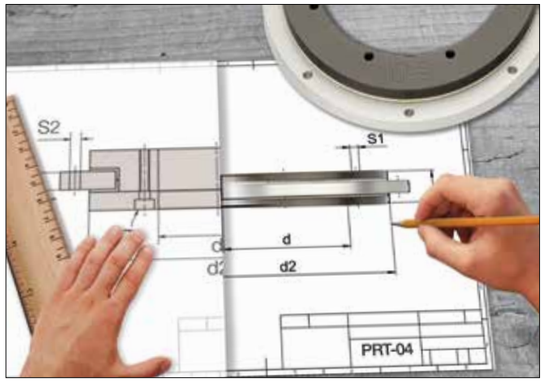
- Easy to clean according to hygienic design guidelines
- With certified hygienic design screws
- Low dead space design, even on the seals
- FDA-compliant seals

The slewing rings with hygienic design are used in special machine construction and designed to your requirements. Contact us!
▶ **www.igus.eu/prt-enquiry**

**Easy to clean: PRT hygienic design for the beverage industry**



**PRT made of stainless steel with hygienic design seals**

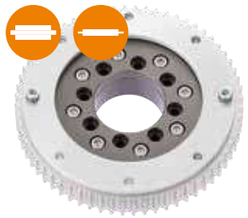



If you cannot find the right product in our constantly growing range, simply contact us. We would be happy to help you designing your slewing ring bearing.

By entering a few parameters regarding installation space, load, speed and environment, we configure the right bearing for your application.

# iglidur® PRT | Product range New

## Felt cover for PRT slewing ring bearing - type 01 and 04

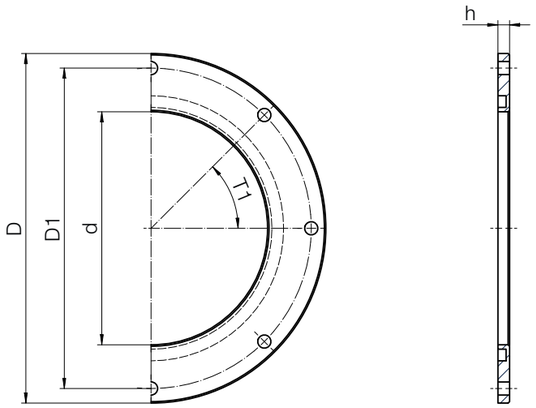


- Prevents dirt from reaching the sliding elements
- For all 01 and 04 series sizes
- Part of the extensive PRT modular system
- No additional lubricants necessary
- For all PRT series

### Order key

| Type | Size | Options |
|---|---|---|
| PRT-□- | 20 | -SG |
| Slewing ring | Type | Inner Ø [mm] | Felt seal |

Options:
01: Type 01
04: Type 04




### Dimensions [mm]

| D | D1 | d | h | T1 | Part No. | |
|---|---|---|---|---|---|---|
| 80 | 70 | 20 | 4 | 8 x 45° | PRT-□-20-SG | New |
| 90 | 80 | 30 | 4 | 8 x 45° | PRT-□-30-SG | New |
| 110 | 100 | 50 | 4 | 8 x 45° | PRT-□-50-SG | New |
| 120 | 110 | 60 | 4 | 8 x 45° | PRT-□-60-SG | New |
| 160 | 150 | 100 | 4 | 8 x 45° | PRT-□-100-SG | New |
| 210 | 200 | 150 | 4 | 16 x 22,5° | PRT-□-150-SG | New |
| 260 | 250 | 200 | 4 | 16 x 22,5° | PRT-□-200-SG | New |
| 360 | 350 | 300 | 4 | 16 x 22,5° | PRT-□-300-SG | New |

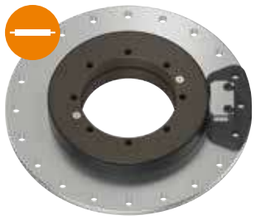
Assembly instructions available in the download area ▶ www.igus.eu/prt-assembly





# iglidur® PRT | Product range New

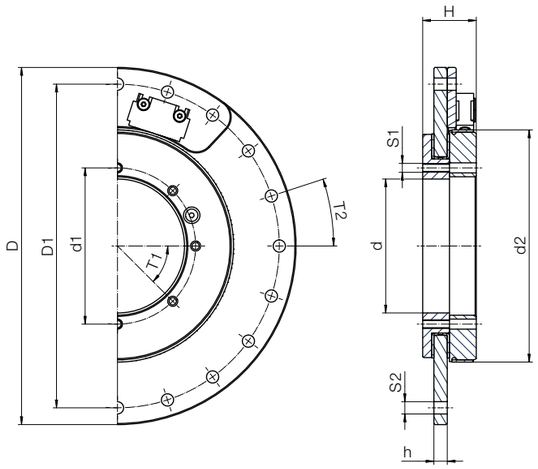
## PRT with position indicator - type 04



- Exact detection of the rotation angle
- Part of the extensive PRT modular system

### Order key

| Type | Size | Options |
|---|---|---|
| PRT-04- | 60 | -AM |
| Slewing ring | Type | Inner Ø [mm] | Position indicator |



### Dimensions [mm]

| D | D1 | d | d1 | d2 | H | h | T1 | T2 | S1 | S2 H13 | K1 H13 | Weight [g] | Part No. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 150 | 135 | 70 | 70 | 104 | 24 | 6 | 8 x 45° | 8 x 45° | M4 | 4.5 | 4.5 | 4.5 | PRT-04-60-AM | New |

# iglidur® PRT | Product range New

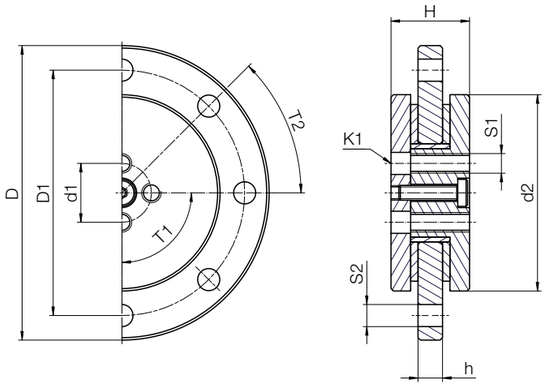
## Slewing rings for the smallest applications - type 04

- Tight tolerances
- Suitable for smallest installation space
- Robust and lightweight

### Order key

| Type | Size | Options |
|---|---|---|
| PRT-04- | 00 | -PL |
| Slewing ring | Type | Inner Ø [mm] | Preload |

Option:
PL:
Pre-load version




### Dimensions [mm]

| D | D1 | d1 | Ø d2 | H | h | T1 | T2 | S1 | S2 H13 | K1 H13 | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 60 | 50 | 12 | 40 | 16 | 5 | 90° | 8 x 45° | M4 | 4.5 | 4.5 | **PRT-04-00-PL** New |







# iglidur® PRT | Product range

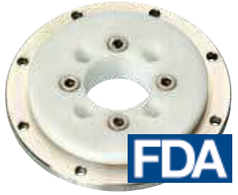
## Slewing rings, lightweight - type 02

Standard

Stainless steel version

Low-cost version

Solid plastic design




FDA-compliant

- Slewing rings with extremely light weight
- Outer ring made from anodised aluminium, 316 stainless steel (upon request) or iguton G
- Collar clamps made from iglidur® J4 or FDA-compliant iglidur® A180
- 30% lighter than standard -AL type

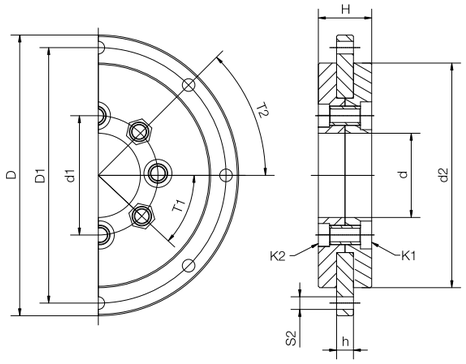
### Order key

| Type | Size | Options | |
|---|---|---|---|
| PRT-02- | 20 | -AL | -A180 |
| Slewing ring | Type | Inner Ø [mm] | Housing material | Collar clamps |

Options:

**Housing material**
AL: Aluminium
ES: 316 stainless steel
LC: Low-cost
P: Solid plastic

**Collar clamps**
Blank: iglidur® J4
A180: iglidur® A180, FDA-compliant




### Dimensions [mm]

| D[10] | D1 | d1 | d | d2 | H | h | T1 | T2 | S2 | K1 for screw | K2 for screw nut | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 80 | 70 | 31 | 20 | 60 | 16 | 5 | 6 x 60° | 6 x 60° | 4.5 | DIN 6912 M5 | ISO 4035 M5 | **PRT-02-20-** ☐ |
| 100 | 91 | 42.5 | 30 | 80 | 19 | 6 | 8 x 45° | 8 x 45° | 4.5 | DIN 7984 M5 | ISO 4035 M5 | **PRT-02-30-** ☐ |
| 150 | 135 | 65 | 50 | 120 | 20 | 6 | 16 x 22,5° | 8 x 45° | 6.6 | Through hole 6.5 mm | | **PRT-02-50-** ☐ |
| 160 | 145 | 86.0 | 60 | 130 | 30 | 10 | 12 x 30° | 20 x 18° | 5.5 | Counterbore Ø16 and 6.5 deep | | **PRT-02-60-** ☐ [116] |

[10] Tolerance according to DIN ISO 2768 mK
[116] Only available with body made from aluminium and stainless steel
Please add suffix "-A180" for FDA-compliant version

All stainless steel versions upon request

# iglidur® PRT | Product range

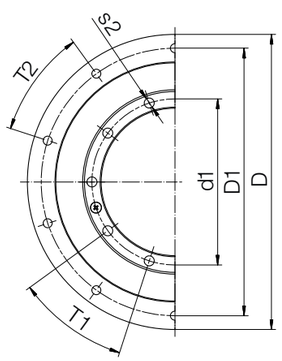
## Slewing rings in low-cost design - type 03

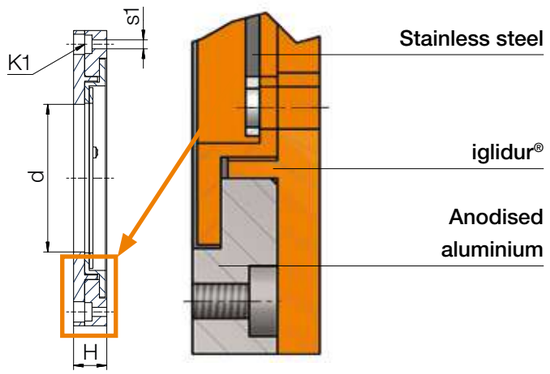
### Order key

| Type | Size |
|---|---|
| PRT-03- | 80 |
| Slewing ring | Type / Inner Ø [mm] |

iglidur® PRT slewing rings in a low-cost design. Through consistent downsizing, an additional design has been created that relies even more on plastic.

- Maintenance-free and lubrication-free
- Cost-effective and lightweight
- Reduced space requirement
- Ready-to-fit
- For temperatures from 0 to +60°C




### Dimensions [mm]

| D | D1 | d1 | d | H | T1 | T2 | s1 | s2 | K1 for screw | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|
| 160 | 145 | 90 | 80 | 18 | 10 x 36° | 10 x 36° | M6 | 5.5 | DIN 7984 M5 | **PRT-03-80** |



EN 09/2023

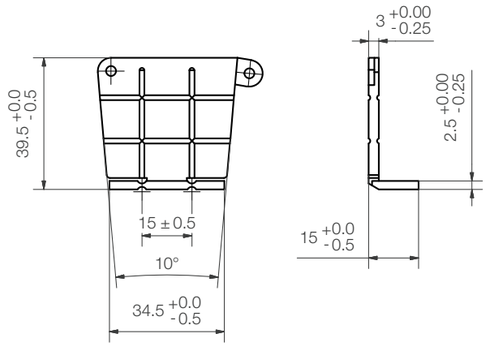


# iglidur® PRT | Product range

## Universal sliding elements for type 01 and 04

### Customise your own slewing ring systems

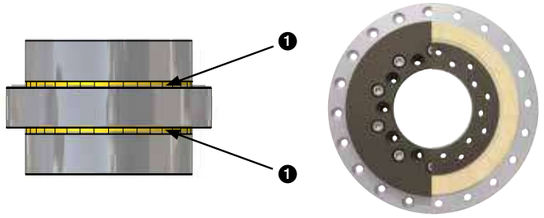
Using the versatile iglidur® PRT universal sliding elements, large slewing ring systems can be tailored to the type 01.




- Made from the proven iglidur® J ▶ **Page 163**
- Slewing ring bearings possible from 0.5 up to 5 metres
- Robust and resistant to dirt
- Corrosion-free and resistant to liquids

Part No.
**JRS-500S/45S**

**Basic structure of type 01:**




**1 Sliding elements made from iglidur® J**

## Replacement kit for type 01 and 04

### Wear-resistant parts easily replaceable

The PRT sliding element replacement kit for the PRT-01 and PRT-04 series allows you to replace worn sliding elements with new ones. They extend the service life of your PRT slewing ring bearings and protect the environment. Assembly instructions available in the download area ▶ **www.igus.eu/prt-assembly**

**Order example:**
**PRT-01-20-KIT-J:** Replacement kit for PRT slewing rings, type 01, inner diameter 20mm, sliding elements material iglidur® J

**iglidur® A180**
- Complies with Food and Drug Administration (FDA) regulations for contact with food

**iglidur® F2**
- ESD-compliant
- Electrically conductive

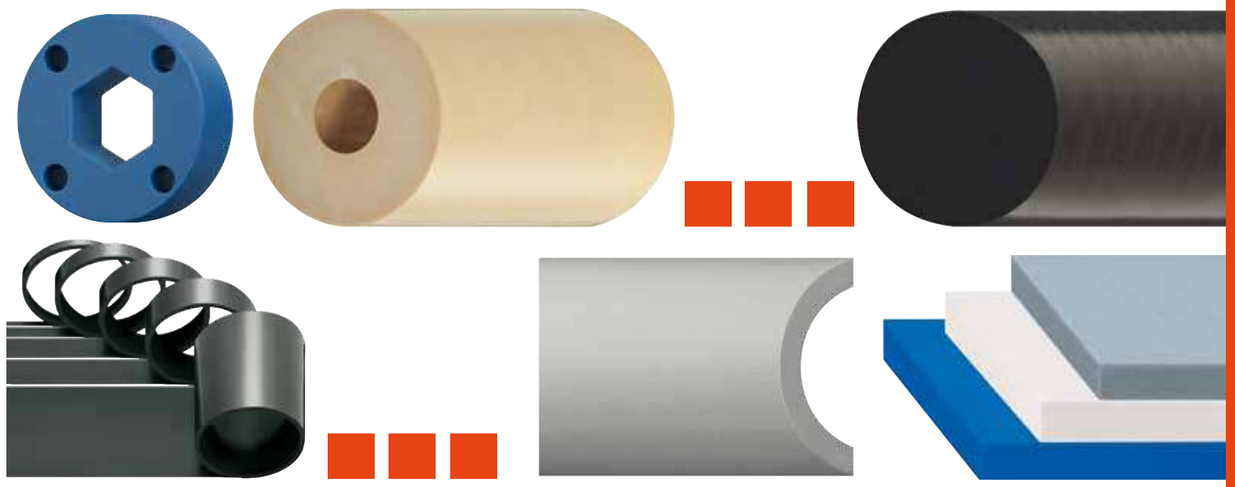
**iglidur® H1**
- Resistance to chemicals and high temperatures
- Well suited to pivoting movements

**iglidur® J**
- Low coefficient of friction during dry operation
- Low moisture absorption
- Low particle emission

EN 09/2023

# iglidur®

Plastic rod, CNC service,
profiles and liners



# ...plastics

# iglidur® bar stock | Product overview

## iglidur® round bars - all-rounder

iglidur® M250:
Excellent vibration dampening
▶ Page 754

iglidur® P210: Good coefficient of friction and wear: on almost every shaft
▶ Page 754

iglidur® J4:
Cost-effective and wear-resistant
▶ Page 755

New

iglidur® RN289: Impact-resistant, media-resistant and good for edge loads
▶ Page 755

New

iglidur® B160:
Low coefficient of friction
▶ Page 756

## Endurance runner

iglidur® J:
The versatile endurance runner
▶ Page 756

iglidur® W300:
The classic endurance runner up to 30MPa
▶ Page 757

iglidur® J3:
Specialist for pivoting and pulsating loads
▶ Page 757

## Endurance runner

iglidur® J350: Endurance runner with high dimensional stability at high temperature
▶ Page 758

iglidur® J260:
Ideal for plastic shafts
▶ Page 758

iglidur® R:
Low-cost material
▶ Page 759

iglidur® J200:
Specially for aluminium shafts
▶ Page 759

iglidur® E7:
Ideal for pivoting movement
▶ Page 760

iglidur® JB:
Extremely wear-resistant in black
▶ Page 760

New

iglidur® RN44:
Cost-effective and wear-resistant
▶ Page 761

## High temperatures

iglidur® X:
The chemical and temperature specialist
▶ Page 761

## High temperatures

iglidur® HSD350:
All-rounder for steam sterilisation
▶ Page 762

## High media resistance

iglidur® H1:
Endurance runner with high media resistance
▶ Page 762

iglidur® H3: Tough, wear-resistant, durable
▶ Page 763

iglidur® C500:
For extreme ambient conditions
▶ Page 763

## Contact with food

iglidur® A181: The all-rounder for food, FDA and EU 10/2011-compliant
▶ Page 764

iglidur® A350: The FDA-compliant endurance runner at high temperatures
▶ Page 764

iglidur® A500:
The media and temperature specialist in the food sector
▶ Page 765

iglidur® A180:
The all-rounder for food
▶ Page 765

## Contact with food

iglidur® A160: "Food" material with high media resistance up to +90°C
▶ Page 766

New

iglidur® A250:
Wear-resistant for the food industry
▶ Page 766

New

iglidur® AC500:
For high temperatures up to +250°C
▶ Page 767

iglidur® UW160:
For contact with drinking water
▶ Page 767

iglidur® T220:
For the tobacco industry
▶ Page 768

## Special application areas

iglidur® J2:
Versatile and cost-effective
▶ Page 768

iglidur® RW370: For the rail industry, flame-retardant, complies with DIN EN 45545 HL3, R22/R23
▶ Page 769

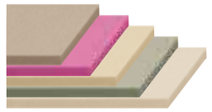
## iglidur® hollow bars

iglidur® J:
The versatile endurance runner
▶ Page 770

## iglidur® sheets, plates, plate strips

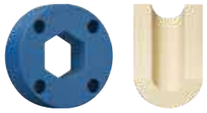
iglidur® sheets
in thicknesses of 2-6mm
▶ Page 772

iglidur® plates
in thicknesses of 10-40mm
▶ Page 774



iglidur® plate strips with a fixed width of 160mm
▶ Page 776

## Special parts & profiles



Special parts & profiles:
Online services
▶ Page 779

## iglidur® tribo-tape

Material iglidur® A160:
FDA-compliant
▶ Page 786

Material iglidur® B160:
For use in visible areas
▶ Page 787

Material iglidur® W160:
Lubrication-free tribo-tape in white - hardly any wear
▶ Page 788

Material iglidur® V400:
Extremely high wear resistance
▶ Page 789



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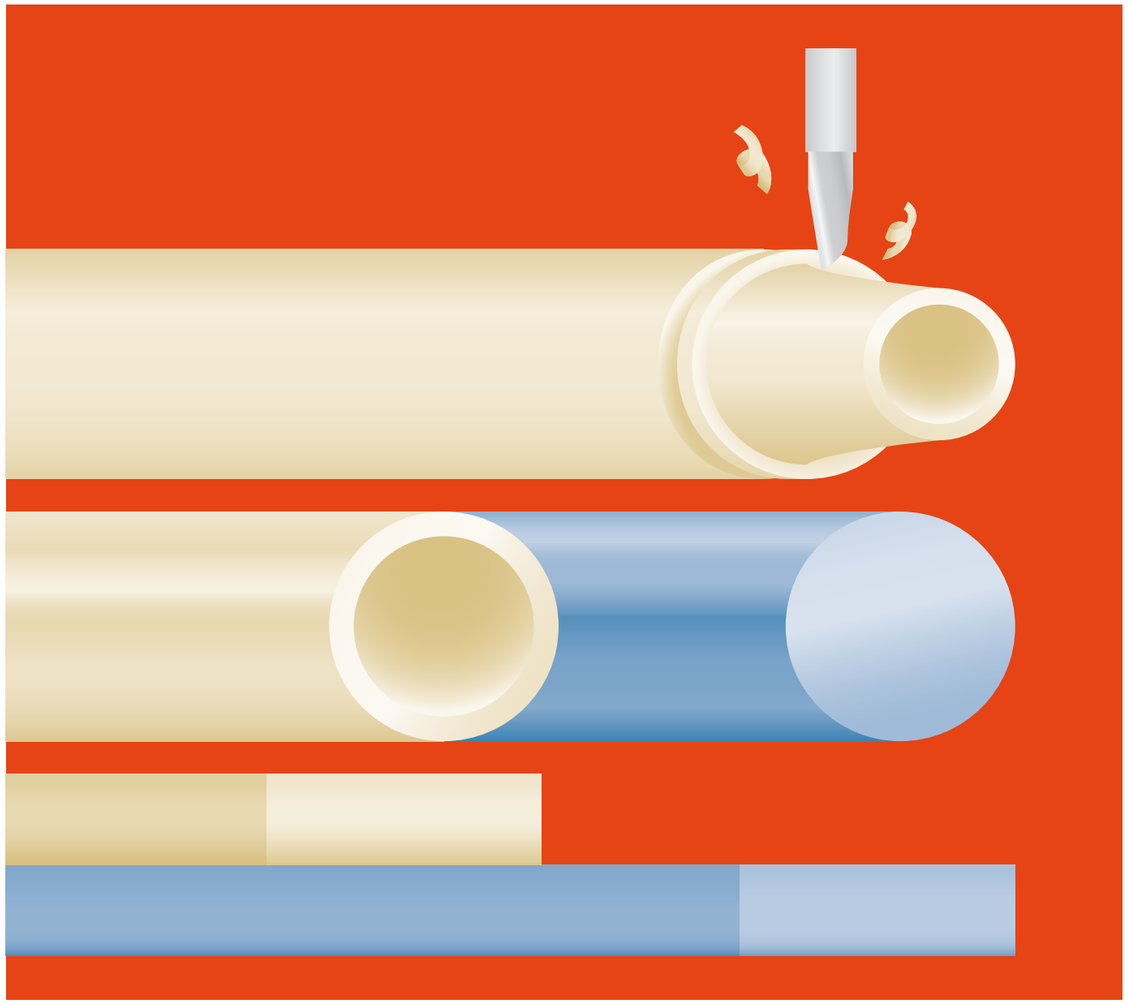


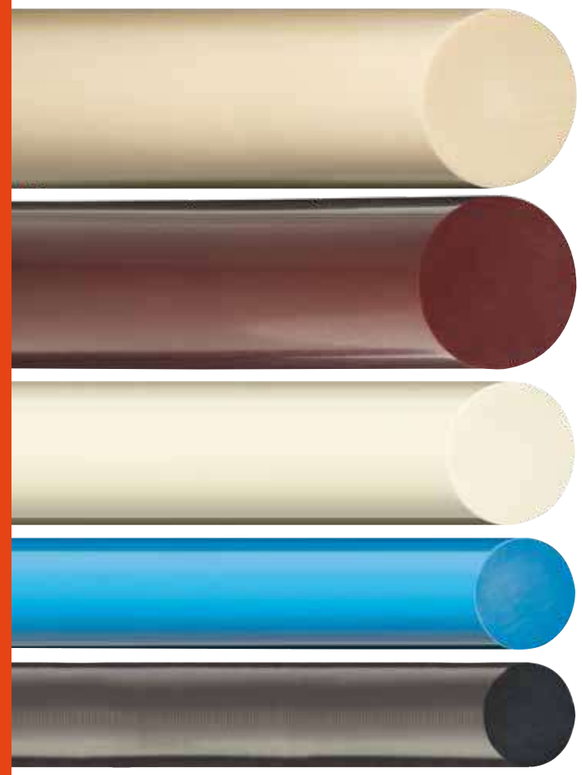
# iglidur® bar stock

- Round bars, hollow bars, plates and sheets
- Standard range from stock
- Cut to required size
- CNC components with no minimum order quantity
- Maintenance-free and predictable
- Profiles to your specifications

EN 09/2023

EN 09/2023

**Large selection for all applications**



# Bar made of technical plastics

All iglidur® materials have been specially developed for dynamic applications. They are self-lubricating and characterised by a low coefficient of friction. Due to its properties, every material becomes a specialist for a specific application. For example, there is suitable iglidur® bar material for almost every application from high-temperature to seawater, from food to automotive.
The selection of available bar is as diverse as the selection of materials. A wide range of plates, round and hollow bars in various dimensions is available from stock. You can either machine our bar yourself or you can use our CNC service and we will produce high-precision CNC components for you according to your specifications. Use our express service and your components will be ready to ship within three days.
Another service is the extrusion of customer-specific profiles from a wide variety of iglidur® high-performance polymers. Talk to us, and we would be happy to advise you on your project.

- Wide range of tribologically optimised plastic bar stock
- Bar stock from stock or customer-specific CNC components in 3 to 5 days
- Easy to machine - ask for our machining tips
- Lubrication and maintenance-free
- Service life can now also be calculated for machined plain bearings
- No minimum order value
- No minimum order quantity

**Available from stock**
Detailed information about delivery time online.
Further materials and dimensions upon request.

**Operation temperatures:**
**-50°C up to +90°C (standard iglidur® J)**
**-100°C up to +250°C (depending on material)**

igus® is constantly expanding its range of available materials and dimensions. The current range can be found here:
▶ **www.igus.eu/barstock**

Online CNC service for individual turned and machined parts:
▶ **www.igus.eu/cnc-service**

**Service life calculation**
▶ **www.igus.eu/barstock-expert**



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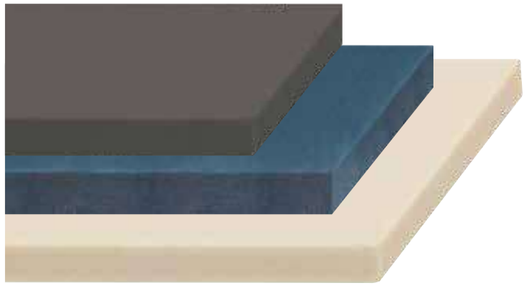
**Round bars and plates for free design**

**iglidur® round bars**
- Currently 28 iglidur® materials to choose from
- Outer diameter 10-100mm
- Excellent wear rates and coefficient of friction

▶ **From page 754**

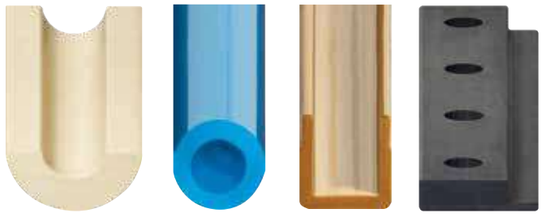
**iglidur® hollow bars**
- Large outer diameters 110-150mm
- Low wear against different shaft materials

▶ **From page 770**



**iglidur® plates**
- Versatile application options
- Plate thickness 2-40mm

▶ **From page 776**



**iglidur® profiles**
- Wear-resistant industrial profiles according to customer specifications

▶ **From page 780**

**Online CNC service**
- Improved calculation, ease of use and new features
- Multi-part upload, graduated pricing, feasibility analysis and a much simplified order processing

▶ **From page 779**

EN 09/2023

# iglidur® materials | Technical properties - quick selection

| iglidur® | M250 | P210 | J4 | RN289 | B160 | J | W300 | J3 | J350 | J260 | R | J200 | E7 | JB | RN44 | X | HSD350 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Descriptive technical specifications** | | | | | | | | | | | | | | | | | |
| Wear resistance at +23°C | ■■□□□ | ■■■■□ | ■■■□□ | ■■■□□ | ■■■■□ | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■□ | ■■■□□ | ■■■□□ | ■■■□□ | ■■■■■ | ■■■■■ | ■■■□□ | ■□□□□ | ■■■■□ |
| Wear resistance at +90°C | ■■■□□ | ■■■■□ | ■■□□□ | ■■□□□ | ■■□□□ | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ | ■■□□□ | ■□□□□ | ■■□□□ | ■■■■■ | ■■■■■ | ■□□□□ | ■■■□□ | ■■■■■ |
| Wear resistance at +150°C | ■□□□□ | ■■■□□ | ■□□□□ | ■□□□□ | ■□□□□ | ■□□□□ | ■□□□□ | ■□□□□ | ■■■■■ | ■■□□□ | ■□□□□ | ■■□□□ | ■□□□□ | ■□□□□ | ■□□□□ | ■■■■■ | ■■■□□ |
| Slide property | ■■□□□ | ■■■■■ | ■■■■□ | ■□□□□ | ■■■■■ | ■■■■■ | ■■■■□ | ■■■■■ | ■■■■□ | ■■■■□ | ■■■□□ | ■■■■□ | ■■■■■ | ■■■■■ | ■■■□□ | ■■■□□ | ■■■■■ |
| Wear resistance under water | ■□□□□ | ■■■□□ | ■■□□□ | ■□□□□ | ■■■■□ | ■■■□□ | ■□□□□ | ■■■□□ | ■■■□□ | ■■□□□ | ■□□□□ | ■■□□□ | ■■■□□ | ■■■□□ | ■□□□□ | ■■■■■ | ■■■□□ |
| Media resistance | ■■■□□ | ■■■□□ | ■■■■□ | ■■■■□ | ■■■■□ | ■■■■□ | ■■□□□ | ■■■■□ | ■■■■□ | ■■■■□ | ■■■■□ | ■■■■□ | ■■■■□ | ■■■■□ | ■■■■□ | ■■■■■ | ■■■■■ |
| Resistant to edge pressures | ■■■■■ | ■■■■■ | ■■■■□ | ■■■■■ | ■■■□□ | ■■■■□ | ■■■■■ | ■■■□□ | ■■■□□ | ■■■□□ | ■■■■□ | ■■■■□ | ■■■■□ | ■■■■□ | ■■■■□ | ■■□□□ | ■■■■□ |
| Resistant to shock and impact loads | ■■■■■ | ■■■■■ | ■■■■□ | ■■■■■ | ■■■■□ | ■■■■□ | ■■■■■ | ■■■□□ | ■■■□□ | ■■■□□ | ■■■■□ | ■■■■□ | ■■■■□ | ■■■■□ | ■■■■□ | ■■□□□ | ■■■■□ |
| Dirt resistance | ■■■■■ | ■■■■□ | ■■■□□ | ■■■□□ | ■■■■□ | ■■■■□ | ■■■■□ | ■■■□□ | ■■■□□ | ■■■□□ | ■■■■□ | ■■■□□ | ■■■■□ | ■■■■□ | ■■■■□ | ■■□□□ | ■■■□□ |
| Price index[141)] | ■■□□□ | ■■□□□ | ■□□□□ | ■□□□□ | ■□□□□ | ■■□□□ | ■■□□□ | ■■□□□ | ■■■□□ | ■■□□□ | ■□□□□ | ■■■□□ | ■■□□□ | ■□□□□ | ■□□□□ | ■■■■■ | ■■□□□ |
| For high loads (>60MPa) | | | | | | | | | ● | | | | | | | ● | |
| Electrically conductive | | | | | | | | | | | | | | | | ● | |
| **Approvals and standards** | | | | | | | | | | | | | | | | | |
| FDA-compliant | | | | | | | | | | | | | | | | | |
| EU 10/2011-compliant | | | | | | | | | | | | | | | | | |
| Fire class in accordance with UL-94 | V-2 | HB | F | HB | HB | HB | HB | HB | V-0 | V-2 | HB | HB | HB | HB | HB | V-0 | V-0 |
| Mould test DIN EN ISO 846 | | | | | | | | | ● | | | | | | | ● | |
| Fogging DIN 75201-B | ● | | | | | | | | | | | | | | | | |
| **Availabilities / variants** | | | | | | | | | | | | | | | | | |
| Bar stock, round material | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Bar stock, hollow bars | | | | | | ● | | | | | | | | | | | |
| Bar stock, sheet | | | | | | ● | | | | | | | | | | | |
| Bar stock, plate | | | | ● | ● | ● | | | | | | | | ● | ● | | |
| Bar stock, plate strips | | | ● | | | ● | ● | | ● | | | | ● | | | ● | |

[141)] **Price index**

- **Low price category**
- **Medium price category**
- **Highest price category**

# iglidur® materials | Technical properties - quick selection

| iglidur® | H1 | H3 | C500 | A181 | A350 | A500 | A180 | A160 | A250 | AC500 | AD500 | UW160 | T220 | J2 | RW370 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Descriptive technical specifications** | | | | | | | | | | | | | | | |
| Wear resistance at +23°C | ■■■■ | ■■■■ | ■■■■□ | ■■■■□ | ■■■□□ | ■■□□□ | ■■■□□ | ■■■□□ | ■■■■□ | ■■■■□ | ■■□□□ | ■■■□□ | ■■□□□ | ■■□□□ | ■■■□□ |
| Wear resistance at +90°C | ■■■■ | ■■■■ | ■■■■□ | ■■□□□ | ■■■□□ | ■■□□□ | ■□□□□ | ■□□□□ | ■■□□□ | ■■■■□ | ■■□□□ | ■□□□□ | ■□□□□ | ■□□□□ | ■■■□□ |
| Wear resistance at +150°C | ■■■■ | ■■■■ | ■■■■■ | ■□□□□ | ■■■□□ | ■■■□□ | ■□□□□ | ■□□□□ | ■□□□□ | ■■■■■ | ■■■□□ | ■□□□□ | ■□□□□ | ■□□□□ | ■■■□□ |
| Slide property | ■■■□ | ■■■□ | ■■■■■ | ■■■□□ | ■■■■□ | ■■□□□ | ■■■□□ | ■■■■□ | ■■■□□ | ■■■■■ | ■■□□□ | ■■□□□ | ■■□□□ | ■■■□□ | ■■■■□ |
| Wear resistance under water | ■■■□ | ■■■□ | ■■■□□ | ■■■□□ | ■■■■□ | ■■■■□ | ■■□□□ | ■■■□□ | ■□□□□ | ■■■■□ | ■■■■□ | ■■■■■ | ■■□□□ | ■■□□□ | ■■□□□ |
| Media resistance | ■■■■ | ■■■■ | ■■■■■ | ■■■■□ | ■■■■□ | ■■■■■ | ■■■■□ | ■■■■□ | ■■■□□ | ■■■■■ | ■■■■■ | ■■■■□ | ■■■□□ | ■■■■□ | ■■■□□ |
| Resistant to edge pressures | ■□□□ | ■■□□ | ■■□□ | ■■■■■ | ■■■□□ | ■■■■□ | ■■■■□ | ■■■□□ | ■■■■■ | ■■■□□ | ■■■■□ | ■■■□□ | ■■■□□ | ■■■□□ | ■■■■□ |
| Resistant to shock and impact loads | ■■□□ | ■■■□ | ■■■□ | ■■■■■ | ■■■□□ | ■■■■□ | ■■■■□ | ■■■■□ | ■■■■■ | ■■■□□ | ■■■■□ | ■■■□□ | ■■■□□ | ■■■□□ | ■■■■□ |
| Dirt resistance | ■■□□ | ■■□□ | ■■□□ | ■■■■□ | ■■■□□ | ■■■□□ | ■■■■□ | ■■■■□ | ■■■■■ | ■■■□□ | ■■■□□ | ■■■□□ | ■■■■□ | ■■□□□ | ■■■□□ |
| Price index[141)] | ■■■□ | ■■■□ | ■■■■■ | ■■□□□ | ■■■■□ | ■■■■■ | ■□□□□ | ■□□□□ | ■■□□□ | ■■■■■ | ■■■■■ | ■□□□□ | ■■□□□ | ■□□□□ | ■■■□□ |
| For high loads (>60MPa) | ● | ● | ● | | ● | ● | | | | ● | ● | | | | ● |
| Electrically conductive | | | | | | | | | | | | | | | |
| **Approvals and standards** | | | | | | | | | | | | | | | |
| FDA-compliant | | | | ● | ● | ● | ● | ● | ● | | ● | | ● | | |
| EU 10/2011-compliant | | | | ● | ● | ● | ● | ● | ● | | ● | | | | |
| Fire class in accordance with UL-94 | V-0 | V-0 | V-0 | HB | V-0 | V-1 | HB | HB | V-2 | V-0 | V-1 | HB | HB | HB | V-0 |
| Mould test DIN EN ISO 846 | ● | ● | | | | | | | | | | | | | |
| Fogging DIN 75201-B | | | | | | | | | ● | | | | | | |
| **Availabilities / variants** | | | | | | | | | | | | | | | |
| Bar stock, round material | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Bar stock, hollow bars | | | | | | | | | | | | | | | |
| Bar stock, sheet | | | | | | | | | | | | | | | |
| Bar stock, plate | | | | | ● | | ● | ● | | | | | | | |
| Bar stock, plate strips | | | ● | | ● | ● | | | | ● | ● | | | | ● |

[141)] **Price index**

- ■□□□ **Low price category**
- ■■■□ **Medium price category**
- ■■■■ **Highest price category**

# iglidur® bar stock | Material properties

| iglidur® | Unit | M250 | P210 | J4 | RN289 | B160 | J | W300 | J3 | J350 | J260 | R | J200 | E7 | JB | RN44 | X | HSD350 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **General properties** | | | | | | | | | | | | | | | | | | |
| Density | [g/cm³] | 1.14 | 1.40 | 1.48 | 1.24 | 1.00 | 1.49 | 1.24 | 1.42 | 1.44 | 1.35 | 1.39 | 1.72 | 1.05 | 1.49 | 1.42 | 1.44 | 1.39 |
| Colour | | | | | | | | | | | | | | | | | | |
| Max. moisture absorption at +23 °C/50% r.h. | [% weight] | 1.4 | 0.3 | 0.3 | 0.8 | 0.1 | 0.3 | 1.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.1 | 0.3 | 0.4 | 0.1 | 0.6 |
| Max. moisture absorption | [% weight] | 7.6 | 0.5 | 1.3 | 2.9 | 0.1 | 1.3 | 6.5 | 1.3 | 1.6 | 0.4 | 1.1 | 0.7 | 0.1 | 1.3 | 1.2 | 0.5 | 1.2 |
| Coefficient of sliding friction, dynamic against steel | [µ] | 0.18 - 0.40 | 0.07 - 0.19 | 0.06 - 0.20 | 0.45 - 0.57 | 0.13 - 0.20 | 0.06 - 0.18 | 0.08 - 0.23 | 0.06 - 0.20 | 0.10 - 0.20 | 0.06 - 0.20 | 0.09 - 0.25 | 0.11 - 0.17 | 0.08 - 0.17 | 0.06 - 0.18 | 0.31 - 0.36 | 0.09 - 0.27 | 0.07 - 0.23 |
| pv value, max. (dry) | [MPa·m/s] | 0.12 | 0.4 | 0.30 | – | 0.25 | 0.34 | 0.23 | 0.5 | 0.45 | 0.35 | 0.27 | 0.3 | 0.22 | 0.34 | 0.27 | 1.32 | 0.3 |
| **Mechanical properties** | | | | | | | | | | | | | | | | | | |
| Flexural modulus | [MPa] | 2,700 | 2,500 | 2,350 | 1,600 | 852 | 2,400 | 3,500 | 2,700 | 2,000 | 2,200 | 1,950 | 2,800 | 1,477 | 2,400 | 2,000 | 8,100 | 2,150 |
| Flexural strength at +20°C | [MPa] | 112 | 70 | 70 | 60 | 14 | 73 | 125 | 70 | 55 | 60 | 70 | 58 | 22 | 73 | 75 | 170 | 67 |
| Compressive strength | [MPa] | 52 | 50 | 55 | – | 37 | 60 | 61 | 60 | 60 | 50 | 68 | 43 | 18 | 60 | – | 100 | 44 |
| Max. permissible surface pressure at +20°C | [MPa] | 20 | 50 | 35 | 26 | 11 | 35 | 60 | 45 | 60 | 40 | 23 | 23 | 18 | 35 | 25 | 150 | 30 |
| Shore D hardness | | 79 | 75 | 74 | 74 | 59 | 74 | 77 | 73 | 80 | 77 | 77 | 70 | 61 | 74 | 78 | 85 | 77 |
| **Physical and thermal properties** | | | | | | | | | | | | | | | | | | |
| Max. continuous operating temperature | [°C] | +80 | +100 | +90 | +110 | +90 | +90 | +90 | +90 | +180 | +120 | +90 | +90 | +70 | +90 | +90 | +250 | +180 |
| Max. short-term operating temperature | [°C] | +170 | +160 | +120 | +130 | +100 | +120 | +180 | +120 | +220 | +140 | +110 | +120 | +90 | +120 | +110 | +315 | +210 |
| Min. continuous operating temperature | [°C] | -40 | -40 | -50 | -30 | -50 | -50 | -40 | -50 | -100 | -100 | -50 | -50 | -50 | -50 | -50 | -100 | -40 |
| Thermal conductivity | [W/m · K] | 0.24 | 0.25 | 0.25 | – | 0.32 | 0.25 | 0.24 | 0.25 | 0.24 | 0.24 | 0.25 | 0.24 | 0.24 | 0.25 | – | 0.60 | 0.24 |
| Coefficient of thermal expansion at +23°C | [$K^{-1} \cdot 10^{-5}$] | 10 | 8 | 10 | 9.7 | 11 | 10 | 9 | 13 | 7 | 13 | 11 | 8 | 25 | 10 | 16 | 5 | 7 |
| **Electrical properties** | | | | | | | | | | | | | | | | | | |
| Specific contact resistance | [Ωcm] | $> 10^{13}$ | $> 10^{12}$ | $> 10^{13}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{13}$ | $> 10^{13}$ | $> 10^{12}$ | $> 10^{13}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{8}$ | $> 10^{9}$ | $> 10^{13}$ | $> 10^{12}$ | $< 10^{5}$ | $> 10^{13}$ |
| Surface resistance | [Ω] | $> 10^{11}$ | $> 10^{11}$ | $> 10^{13}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{10}$ | $> 10^{10}$ | $> 10^{12}$ | $> 10^{8}$ | $> 10^{9}$ | $> 10^{12}$ | $> 10^{12}$ | $< 10^{3}$ | $> 10^{14}$ |
| **Page** | | **754** | **754** | **755** | **755** | **756** | **756** | **757** | **757** | **758** | **758** | **759** | **759** | **760** | **760** | **761** | **761** | **762** |

# iglidur® bar stock | Material properties

| iglidur® | Unit | H1 | H3 | C500 | A181 | A350 | A500 | A180 | A160 | A250 | AC500 | AD500 | UW160 | T220 | J2 | RW370 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **General properties** | | | | | | | | | | | | | | | | |
| Density | [g/cm³] | 1.53 | 1.41 | 1.37 | 1.38 | 1.42 | 1.28 | 1.46 | 1.00 | 1.34 | 1.38 | 1.31 | 1.04 | 1.28 | 1.44 | 1.34 |
| Colour | | | | | | | | | | | | | | | | |
| Max. moisture absorption at +23 °C/50% r.h. | [% weight] | 0.1 | 0.2 | 0.3 | 0.2 | 0.6 | 0.3 | 0.2 | 0.1 | 0.7 | 0.1 | 0.3 | 0.1 | 0.3 | 0.2 | 0.25 |
| Max. moisture absorption | [% weight] | 0.3 | 0.5 | 0.5 | 1.3 | 1.9 | 0.5 | 1.3 | 0.1 | 4.2 | 0.4 | 0.5 | 0.1 | 0.5 | 1.3 | 1.2 |
| Coefficient of sliding friction, dynamic against steel | [µ] | 0.06 - 0.20 | 0.16 - 0.19 | 0.07 - 0.19 | 0.10 - 0.21 | 0.10 - 0.20 | 0.26 - 0.41 | 0.05 - 0.23 | 0.09 - 0.19 | 0.16 - 0.21 | 0.19 - 0.22 | 0.36 - 0.43 | 0.17 - 0.31 | 0.20 - 0.32 | 0.11 - 0.27 | 0.13 - 0.17 |
| pv value, max. (dry) | [MPa·m/s] | 0.80 | 0.70 | 0.70 | 0.31 | 0.40 | 0.28 | 0.31 | 0.25 | 0.30 | 0.70 | 0.50 | 0.22 | 0.28 | 0.23 | 1.2 |
| **Mechanical properties** | | | | | | | | | | | | | | | | |
| Flexural modulus | [MPa] | 2,800 | 2,760 | 3,300 | 1,913 | 2,000 | 3,600 | 2,300 | 1,151 | 2,540 | 2,776 | 3,700 | 1,349 | 1,800 | 3,605 | 2,997 |
| Flexural strength at +20°C | [MPa] | 55 | 68 | 100 | 48 | 110 | 140 | 88 | 19 | 84 | 127 | 139 | 22 | 65 | 101 | 100 |
| Compressive strength | [MPa] | 78 | n.s. | 110 | 60 | 78 | 118 | 78 | 37 | n.s. | n.s. | 110 | 32 | 55 | 77 | 129 |
| Max. permissible surface pressure at +20°C | [MPa] | 80 | 40 | 80 | 31 | 60 | 120 | 28 | 15 | 34 | 45 | 72 | 15 | 40 | 46 | 75 |
| Shore D hardness | | 77 | 75 | 80 | 76 | 76 | 83 | 76 | 60 | 74 | 85 | 81 | 60 | 76 | n.s. | 80 |
| **Physical and thermal properties** | | | | | | | | | | | | | | | | |
| Max. continuous operating temperature | [°C] | +200 | +200 | +250 | +90 | +180 | +250 | +90 | +90 | +90 | +250 | +250 | +90 | +100 | +90 | +170 |
| Max. short-term operating temperature | [°C] | +240 | +240 | +300 | +110 | +210 | +300 | +110 | +100 | +180 | +300 | +300 | +100 | +160 | +110 | +190 |
| Min. continuous operating temperature | [°C] | -40 | -40 | -100 | -50 | -100 | -100 | -50 | -50 | -40 | -100 | -100 | -50 | -40 | -50 | -50 |
| Thermal conductivity | [W/m · K] | 0.24 | n.s. | 0.24 | 0.25 | 0.24 | 0.24 | 0.25 | 0.30 | 0.24 | 0.24 | 0.24 | 0.50 | 0.24 | 0.25 | 0.22 |
| Coefficient of thermal expansion at +23°C | [$K^{-1} \cdot 10^{-5}$] | 6 | 5 | 9 | 11 | 8 | 9 | 11 | 11 | 10 | 9 | 9 | 18 | 11 | 7 | 5 |
| **Electrical properties** | | | | | | | | | | | | | | | | |
| Specific contact resistance | [Ωcm] | $> 10^{12}$ | $> 10^{12}$ | $> 10^{14}$ | $> 10^{12}$ | $> 10^{11}$ | $> 10^{14}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{11}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{10}$ | $> 10^{13}$ | $> 10^{12}$ |
| Surface resistance | [Ω] | $> 10^{11}$ | $> 10^{12}$ | $> 10^{13}$ | $> 10^{12}$ | $> 10^{11}$ | $> 10^{13}$ | $> 10^{11}$ | $> 10^{12}$ | $> 10^{11}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{10}$ | $> 10^{12}$ | $> 10^{12}$ |
| **Page** | | 762 | 763 | 763 | 764 | 764 | 765 | 765 | 766 | 766 | 767 | 776 | 767 | 768 | 768 | 769 |

# iglidur® round bars | Product range

## Excellent vibration dampening - iglidur® M250

### Order key for round bars

| Type | | | Dimensions [mm] | | |
|---|---|---|---|---|---|
| SF R | M250- | 30 | 00- | | □ |
| Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length |

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRM250-1000-□ |
| 15 | 100 - 1,000 | SFRM250-1500-□ |
| 20 | 100 - 1,000 | SFRM250-2000-□ |
| 25 | 100 - 1,000 | SFRM250-2500-□ |
| 30 | 100 - 1,000 | SFRM250-3000-□ |
| 35 | 100 - 1,000 | SFRM250-3500-□ |
| 40 | 100 - 1,000 | SFRM250-4000-□ |
| 45 | 100 - 1,000 | SFRM250-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRM250-5000-□ |
| 55 | 100 - 1,000 | SFRM250-5500-□ |
| 60 | 100 - 1,000 | SFRM250-6000-□ |
| 65 | 100 - 1,000 | SFRM250-6500-□ |
| 70 | 100 - 1,000 | SFRM250-7000-□ |
| 80 | 100 - 1,000 | SFRM250-8000-□ |
| 90 | 100 - 1,000 | SFRM250-9000-□ |
| 100 | 100 - 1,000 | SFRM250-10000-□ |

## Good coefficient of friction and wear on almost every shaft - iglidur® P210

### Order key for round bars

| Type | | | Dimensions [mm] | | |
|---|---|---|---|---|---|
| SF R | P210- | 30 | 00- | | □ |
| Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length |

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRP210-1000-□ |
| 15 | 100 - 1,000 | SFRP210-1500-□ |
| 20 | 100 - 1,000 | SFRP210-2000-□ |
| 25 | 100 - 1,000 | SFRP210-2500-□ |
| 30 | 100 - 1,000 | SFRP210-3000-□ |
| 35 | 100 - 1,000 | SFRP210-3500-□ |
| 40 | 100 - 1,000 | SFRP210-4000-□ |
| 45 | 100 - 1,000 | SFRP210-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRP210-5000-□ |
| 55 | 100 - 1,000 | SFRP210-5500-□ |
| 60 | 100 - 1,000 | SFRP210-6000-□ |
| 65 | 100 - 1,000 | SFRP210-6500-□ |
| 70 | 100 - 1,000 | SFRP210-7000-□ |
| 80 | 100 - 1,000 | SFRP210-8000-□ |
| 90 | 100 - 1,000 | SFRP210-9000-□ |
| 100 | 100 - 1,000 | SFRP210-10000-□ |

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iglidur® bar stock

# iglidur® round bars | Product range

## Cost-effective and wear-resistant - iglidur® J4

### Order key for round bars

| Type | | | Dimensions [mm] | | |
|---|---|---|---|---|---|
| SF R | J4- | 30 | 00- | | □ |
| Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length |

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRJ4-1000-□ |
| 15 | 100 - 1,000 | SFRJ4-1500-□ |
| 20 | 100 - 1,000 | SFRJ4-2000-□ |
| 25 | 100 - 1,000 | SFRJ4-2500-□ |
| 30 | 100 - 1,000 | SFRJ4-3000-□ |
| 35 | 100 - 1,000 | SFRJ4-3500-□ |
| 40 | 100 - 1,000 | SFRJ4-4000-□ |
| 45 | 100 - 1,000 | SFRJ4-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRJ4-5000-□ |
| 55 | 100 - 1,000 | SFRJ4-5500-□ |
| 60 | 100 - 1,000 | SFRJ4-6000-□ |
| 65 | 100 - 1,000 | SFRJ4-6500-□ |
| 70 | 100 - 1,000 | SFRJ4-7000-□ |
| 80 | 100 - 1,000 | SFRJ4-8000-□ |
| 90 | 100 - 1,000 | SFRJ4-9000-□ |
| 100 | 100 - 1,000 | SFRJ4-10000-□ |

## Impact-resistant and media-resistant - iglidur® RN289 New

### Order key for round bars

| Type | | | Dimensions [mm] | | |
|---|---|---|---|---|---|
| SF R | RN289- | 30 | 00- | | □ |
| Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length |

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRJ-1000-□ |
| 15 | 100 - 1,000 | SFRJ-1500-□ |
| 20 | 100 - 1,000 | SFRJ-2000-□ |
| 25 | 100 - 1,000 | SFRJ-2500-□ |
| 30 | 100 - 1,000 | SFRJ-3000-□ |
| 35 | 100 - 1,000 | SFRJ-3500-□ |
| 40 | 100 - 1,000 | SFRJ-4000-□ |
| 45 | 100 - 1,000 | SFRJ-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRJ-5000-□ |
| 55 | 100 - 1,000 | SFRJ-5500-□ |
| 60 | 100 - 1,000 | SFRJ-6000-□ |
| 65 | 100 - 1,000 | SFRJ-6500-□ |
| 70 | 100 - 1,000 | SFRJ-7000-□ |
| 80 | 100 - 1,000 | SFRJ-8000-□ |
| 90 | 100 - 1,000 | SFRJ-9000-□ |
| 100 | 100 - 1,000 | SFRJ-10000-□ |

igus® constantly expands its range of available materials and dimensions. Please contact us in case the required diameter is not available.

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# iglidur® round bars | Product range

## Excellent vibration dampening - iglidur® B160

### Order key for round bars

| Type | | | Dimensions [mm] | | |
|---|---|---|---|---|---|
| SF R | B160 | - | 30 00- | | □ |
| Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length |

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRM250-1000-□ |
| 15 | 100 - 1,000 | SFRB160-1500-□ |
| 20 | 100 - 1,000 | SFRB160-2000-□ |
| 25 | 100 - 1,000 | SFRB160-2500-□ |
| 30 | 100 - 1,000 | SFRB160-3000-□ |
| 35 | 100 - 1,000 | SFRB160-3500-□ |
| 40 | 100 - 1,000 | SFRB160-4000-□ |
| 45 | 100 - 1,000 | SFRB160-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRB160-5000-□ |
| 55 | 100 - 1,000 | SFRB160-5500-□ |
| 60 | 100 - 1,000 | SFRB160-6000-□ |
| 65 | 100 - 1,000 | SFRB160-6500-□ |
| 70 | 100 - 1,000 | SFRB160-7000-□ |
| 80 | 100 - 1,000 | SFRB160-8000-□ |
| 90 | 100 - 1,000 | SFRB160-9000-□ |
| 100 | 100 - 1,000 | SFRB160-10000-□ |

## The versatile endurance runner - iglidur® J

### Order key for round bars

| Type | | | Dimensions [mm] | | |
|---|---|---|---|---|---|
| SF R | J | - | 30 00- | | □ |
| Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length |

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRJ-1000-□ |
| 15 | 100 - 1,000 | SFRJ-1500-□ |
| 20 | 100 - 1,000 | SFRJ-2000-□ |
| 25 | 100 - 1,000 | SFRJ-2500-□ |
| 30 | 100 - 1,000 | SFRJ-3000-□ |
| 35 | 100 - 1,000 | SFRJ-3500-□ |
| 40 | 100 - 1,000 | SFRJ-4000-□ |
| 45 | 100 - 1,000 | SFRJ-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRJ-5000-□ |
| 55 | 100 - 1,000 | SFRJ-5500-□ |
| 60 | 100 - 1,000 | SFRJ-6000-□ |
| 65 | 100 - 1,000 | SFRJ-6500-□ |
| 70 | 100 - 1,000 | SFRJ-7000-□ |
| 80 | 100 - 1,000 | SFRJ-8000-□ |
| 90 | 100 - 1,000 | SFRJ-9000-□ |
| 100 | 100 - 1,000 | SFRJ-10000-□ |

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Upon request/check availability





iglidur® bar stock

# iglidur® round bars | Product range

## The classic endurance runner up to 30MPa - iglidur® W300

### Order key for round bars

| Type | | | Dimensions [mm] | | |
|---|---|---|---|---|---|
| SF R | W | - | 30 00- | | □ |
| Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length |

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRW-1000-□ |
| 15 | 100 - 1,000 | SFRW-1500-□ |
| 20 | 100 - 1,000 | SFRW-2000-□ |
| 25 | 100 - 1,000 | SFRW-2500-□ |
| 30 | 100 - 1,000 | SFRW-3000-□ |
| 35 | 100 - 1,000 | SFRW-3500-□ |
| 40 | 100 - 1,000 | SFRW-4000-□ |
| 45 | 100 - 1,000 | SFRW-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRW-5000-□ |
| 55 | 100 - 1,000 | SFRW-5500-□ |
| 60 | 100 - 1,000 | SFRW-6000-□ |
| 65 | 100 - 1,000 | SFRW-6500-□ |
| 70 | 100 - 1,000 | SFRW-7000-□ |
| 80 | 100 - 1,000 | SFRW-8000-□ |
| 90 | 100 - 1,000 | SFRW-9000-□ |
| 100 | 100 - 1,000 | SFRW-10000-□ |

## Specialist for pivoting and pulsating loads - iglidur® J3

### Order key for round bars

| Type | | | Dimensions [mm] | | |
|---|---|---|---|---|---|
| SF R | J3 | - | 30 00- | | □ |
| Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length |

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRJ3-1000-□ |
| 15 | 100 - 1,000 | SFRJ3-1500-□ |
| 20 | 100 - 1,000 | SFRJ3-2000-□ |
| 25 | 100 - 1,000 | SFRJ3-2500-□ |
| 30 | 100 - 1,000 | SFRJ3-3000-□ |
| 35 | 100 - 1,000 | SFRJ3-3500-□ |
| 40 | 100 - 1,000 | SFRJ3-4000-□ |
| 45 | 100 - 1,000 | SFRJ3-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRJ3-5000-□ |
| 55 | 100 - 1,000 | SFRJ3-5500-□ |
| 60 | 100 - 1,000 | SFRJ3-6000-□ |
| 65 | 100 - 1,000 | SFRJ3-6500-□ |
| 70 | 100 - 1,000 | SFRJ3-7000-□ |
| 80 | 100 - 1,000 | SFRJ3-8000-□ |
| 90 | 100 - 1,000 | SFRJ3-9000-□ |
| 100 | 100 - 1,000 | SFRJ3-10000-□ |

igus® constantly expands its range of available materials and dimensions. Please contact us in case the required diameter is not available.

# iglidur® round bars | Product range

## Endurance runner with high dimensional stability at high temperature - iglidur® J350

### Order key for round bars

| Type | Dimensions [mm] |
|---|---|
| SF R J350 | -30 00-□ |

Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRJ350-1000-□ |
| 15 | 100 - 1,000 | SFRJ350-1500-□ |
| 20 | 100 - 1,000 | SFRJ350-2000-□ |
| 25 | 100 - 1,000 | SFRJ350-2500-□ |
| 30 | 100 - 1,000 | SFRJ350-3000-□ |
| 35 | 100 - 1,000 | SFRJ350-3500-□ |
| 40 | 100 - 1,000 | SFRJ350-4000-□ |
| 45 | 100 - 1,000 | SFRJ350-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRJ350-5000-□ |
| 55 | 100 - 1,000 | SFRJ350-5500-□ |
| 60 | 100 - 1,000 | SFRJ350-6000-□ |
| 65 | 100 - 1,000 | SFRJ350-6500-□ |
| 70 | 100 - 1,000 | SFRJ350-7000-□ |
| 80 | 100 - 1,000 | SFRJ350-8000-□ |
| 90 | 100 - 1,000 | SFRJ350-9000-□ |
| 100 | 100 - 1,000 | SFRJ350-10000-□ |

## Ideal for plastic shafts - iglidur® J260

### Order key for round bars

| Type | Dimensions [mm] |
|---|---|
| SF R J260 | -30 00-□ |

Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRJ260-1000-□ |
| 15 | 100 - 1,000 | SFRJ260-1500-□ |
| 20 | 100 - 1,000 | SFRJ260-2000-□ |
| 25 | 100 - 1,000 | SFRJ260-2500-□ |
| 30 | 100 - 1,000 | SFRJ260-3000-□ |
| 35 | 100 - 1,000 | SFRJ260-3500-□ |
| 40 | 100 - 1,000 | SFRJ260-4000-□ |
| 45 | 100 - 1,000 | SFRJ260-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRJ260-5000-□ |
| 55 | 100 - 1,000 | SFRJ260-5500-□ |
| 60 | 100 - 1,000 | SFRJ260-6000-□ |
| 65 | 100 - 1,000 | SFRJ260-6500-□ |
| 70 | 100 - 1,000 | SFRJ260-7000-□ |
| 80 | 100 - 1,000 | SFRJ260-8000-□ |
| 90 | 100 - 1,000 | SFRJ260-9000-□ |
| 100 | 100 - 1,000 | SFRJ260-10000-□ |

Available from stock
Upon request/check availability







# iglidur® round bars | Product range

## Low-cost - iglidur® R

### Order key for round bars

| Type | Dimensions [mm] |
|---|---|
| SF R R | -30 00-□ |

Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRR-1000-□ |
| 15 | 100 - 1,000 | SFRR-1500-□ |
| 20 | 100 - 1,000 | SFRR-2000-□ |
| 25 | 100 - 1,000 | SFRR-2500-□ |
| 30 | 100 - 1,000 | SFRR-3000-□ |
| 35 | 100 - 1,000 | SFRR-3500-□ |
| 40 | 100 - 1,000 | SFRR-4000-□ |
| 45 | 100 - 1,000 | SFRR-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRR-5000-□ |
| 55 | 100 - 1,000 | SFRR-5500-□ |
| 60 | 100 - 1,000 | SFRR-6000-□ |
| 65 | 100 - 1,000 | SFRR-6500-□ |
| 70 | 100 - 1,000 | SFRR-7000-□ |
| 80 | 100 - 1,000 | SFRR-8000-□ |
| 90 | 100 - 1,000 | SFRR-9000-□ |
| 100 | 100 - 1,000 | SFRR-10000-□ |

## Specially for aluminium shafts - iglidur® J200

### Order key for round bars

| Type | Dimensions [mm] |
|---|---|
| SF R J200 | -30 00-□ |

Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRJ200-1000-□ |
| 15 | 100 - 1,000 | SFRJ200-1500-□ |
| 20 | 100 - 1,000 | SFRJ200-2000-□ |
| 25 | 100 - 1,000 | SFRJ200-2500-□ |
| 30 | 100 - 1,000 | SFRJ200-3000-□ |
| 35 | 100 - 1,000 | SFRJ200-3500-□ |
| 40 | 100 - 1,000 | SFRJ200-4000-□ |
| 45 | 100 - 1,000 | SFRJ200-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRJ200-5000-□ |
| 55 | 100 - 1,000 | SFRJ200-5500-□ |
| 60 | 100 - 1,000 | SFRJ200-6000-□ |
| 65 | 100 - 1,000 | SFRJ200-6500-□ |
| 70 | 100 - 1,000 | SFRJ200-7000-□ |
| 80 | 100 - 1,000 | SFRJ200-8000-□ |
| 90 | 100 - 1,000 | SFRJ200-9000-□ |
| 100 | 100 - 1,000 | SFRJ200-10000-□ |

igus® constantly expands its range of available materials and dimensions. Please contact us in case the required diameter is not available.

# iglidur® round bars | Product range

## Ideal for pivoting movement - iglidur® E7

### Order key for round bars

| Type | Dimensions [mm] |
|---|---|
| SF R E7 -30 00-□ | |

Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRE7-1000-□ |
| 15 | 100 - 1,000 | SFRE7-1500-□ |
| 20 | 100 - 1,000 | SFRE7-2000-□ |
| 25 | 100 - 1,000 | SFRE7-2500-□ |
| 30 | 100 - 1,000 | SFRE7-3000-□ |
| 35 | 100 - 1,000 | SFRE7-3500-□ |
| 40 | 100 - 1,000 | SFRE7-4000-□ |
| 45 | 100 - 1,000 | SFRE7-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRE7-5000-□ |
| 55 | 100 - 1,000 | SFRE7-5500-□ |
| 60 | 100 - 1,000 | SFRE7-6000-□ |
| 65 | 100 - 1,000 | SFRE7-6500-□ |
| 70 | 100 - 1,000 | SFRE7-7000-□ |
| 80 | 100 - 1,000 | SFRE7-8000-□ |
| 90 | 100 - 1,000 | SFRE7-9000-□ |
| 100 | 100 - 1,000 | SFRE7-10000-□ |

## Extremely wear-resistant in black - iglidur® JB

### Order key for round bars

| Type | Dimensions [mm] |
|---|---|
| SF R JB -30 00-□ | |

Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRJB-1000-□ |
| 15 | 100 - 1,000 | SFRJB-1500-□ |
| 20 | 100 - 1,000 | SFRJB-2000-□ |
| 25 | 100 - 1,000 | SFRJB-2500-□ |
| 30 | 100 - 1,000 | SFRJB-3000-□ |
| 35 | 100 - 1,000 | SFRJB-3500-□ |
| 40 | 100 - 1,000 | SFRJB-4000-□ |
| 45 | 100 - 1,000 | SFRJB-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRJB-5000-□ |
| 55 | 100 - 1,000 | SFRJB-5500-□ |
| 60 | 100 - 1,000 | SFRJB-6000-□ |
| 65 | 100 - 1,000 | SFRJB-6500-□ |
| 70 | 100 - 1,000 | SFRJB-7000-□ |
| 80 | 100 - 1,000 | SFRJB-8000-□ |
| 90 | 100 - 1,000 | SFRJB-9000-□ |
| 100 | 100 - 1,000 | SFRJB-10000-□ |

Available from stock
Upon request/check availability

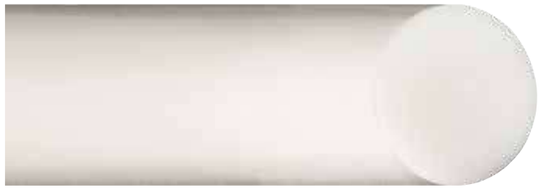


EN 09/2023

iglidur® bar stock

# iglidur® round bars | Product range

## Cost-effective and wear-resistant - iglidur® RN44 New



### Order key for round bars

| Type | Dimensions [mm] |
|---|---|
| SF R RN44 -30 00-□ | |

Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRRN44-1000-□ |
| 15 | 100 - 1,000 | SFRRN44-1500-□ |
| 20 | 100 - 1,000 | SFRRN44-2000-□ |
| 25 | 100 - 1,000 | SFRRN44-2500-□ |
| 30 | 100 - 1,000 | SFRRN44-3000-□ |
| 35 | 100 - 1,000 | SFRRN44-3500-□ |
| 40 | 100 - 1,000 | SFRRN44-4000-□ |
| 45 | 100 - 1,000 | SFRRN44-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRRN44-5000-□ |
| 55 | 100 - 1,000 | SFRRN44-5500-□ |
| 60 | 100 - 1,000 | SFRRN44-6000-□ |
| 65 | 100 - 1,000 | SFRRN44-6500-□ |
| 70 | 100 - 1,000 | SFRRN44-7000-□ |
| 85 | 100 - 1,000 | SFRRN44-8500-□ |
| 90 | 100 - 1,000 | SFRRN44-9000-□ |
| 100 | 100 - 1,000 | SFRRN44-10000-□ |

## The chemical and temperature specialist - iglidur® X

### Order key for round bars

| Type | Dimensions [mm] |
|---|---|
| SF R X -30 00-□ | |

Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRX-1000-□ |
| 15 | 100 - 1,000 | SFRX-1500-□ |
| 20 | 100 - 1,000 | SFRX-2000-□ |
| 25 | 100 - 1,000 | SFRX-2500-□ |
| 30 | 100 - 1,000 | SFRX-3000-□ |
| 35 | 100 - 1,000 | SFRX-3500-□ |
| 40 | 100 - 1,000 | SFRX-4000-□ |
| 45 | 100 - 1,000 | SFRX-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRX-5000-□ |
| 55 | 100 - 1,000 | SFRX-5500-□ |
| 60 | 100 - 1,000 | SFRX-6000-□ |
| 65 | 100 - 1,000 | SFRX-6500-□ |
| 70 | 100 - 1,000 | SFRX-7000-□ |
| 80 | 100 - 1,000 | SFRX-8000-□ |
| 90 | 100 - 1,000 | SFRX-9000-□ |
| 100 | 100 - 1,000 | SFRX-10000-□ |

igus® constantly expands its range of available materials and dimensions. Please contact us in case the required diameter is not available.

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# iglidur® round bars | Product range

## All-rounder for steam sterilisation - iglidur® HSD350

### Order key for round bars

| Type | | | Dimensions [mm] | | |
|---|---|---|---|---|---|
| SF R | HSD350 | -30 | 00 | - | □ |
| Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length |

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRHSD350-1000-□ |
| 15 | 100 - 1,000 | SFRHSD350-1500-□ |
| 20 | 100 - 1,000 | SFRHSD350-2000-□ |
| 25 | 100 - 1,000 | SFRHSD350-2500-□ |
| 30 | 100 - 1,000 | SFRHSD350-3000-□ |
| 35 | 100 - 1,000 | SFRHSD350-3500-□ |
| 40 | 100 - 1,000 | SFRHSD350-4000-□ |
| 45 | 100 - 1,000 | SFRHSD350-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRHSD350-5000-□ |
| 55 | 100 - 1,000 | SFRHSD350-5500-□ |
| 60 | 100 - 1,000 | SFRHSD350-6000-□ |
| 65 | 100 - 1,000 | SFRHSD350-6500-□ |
| 70 | 100 - 1,000 | SFRHSD350-7000-□ |
| 80 | 100 - 1,000 | SFRHSD350-8000-□ |
| 90 | 100 - 1,000 | SFRHSD350-9000-□ |
| 100 | 100 - 1,000 | SFRHSD350-10000-□ |

## Endurance runner with high media resistance - iglidur® H1

### Order key for round bars

| Type | | | Dimensions [mm] | | |
|---|---|---|---|---|---|
| SF R | H1 | -30 | 00 | - | □ |
| Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length |

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRH1-1000-□ |
| 15 | 100 - 1,000 | SFRH1-1500-□ |
| 20 | 100 - 1,000 | SFRH1-2000-□ |
| 25 | 100 - 1,000 | SFRH1-2500-□ |
| 30 | 100 - 1,000 | SFRH1-3000-□ |
| 35 | 100 - 1,000 | SFRH1-3500-□ |
| 40 | 100 - 1,000 | SFRH1-4000-□ |
| 45 | 100 - 1,000 | SFRH1-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRH1-5000-□ |
| 55 | 100 - 1,000 | SFRH1-5500-□ |
| 60 | 100 - 1,000 | SFRH1-6000-□ |
| 65 | 100 - 1,000 | SFRH1-6500-□ |
| 70 | 100 - 1,000 | SFRH1-7000-□ |
| 80 | 100 - 1,000 | SFRH1-8000-□ |
| 90 | 100 - 1,000 | SFRH1-9000-□ |
| 100 | 100 - 1,000 | SFRH1-10000-□ |

Available from stock
Upon request/check availability







# iglidur® round bars | Product range

## Tough, wear-resistant, durable - iglidur® H3 New

### Order key for round bars

| Type | | | Dimensions [mm] | | |
|---|---|---|---|---|---|
| SF R | H3 | -30 | 00 | - | □ |
| Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length |

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRH1-1000-□ |
| 15 | 100 - 1,000 | SFRH3-1500-□ |
| 20 | 100 - 1,000 | SFRH3-2000-□ |
| 25 | 100 - 1,000 | SFRH3-2500-□ |
| 30 | 100 - 1,000 | SFRH3-3000-□ |
| 35 | 100 - 1,000 | SFRH3-3500-□ |
| 40 | 100 - 1,000 | SFRH3-4000-□ |
| 45 | 100 - 1,000 | SFRH3-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRH3-5000-□ |
| 55 | 100 - 1,000 | SFRH3-5500-□ |
| 60 | 100 - 1,000 | SFRH3-6000-□ |
| 65 | 100 - 1,000 | SFRH3-6500-□ |
| 70 | 100 - 1,000 | SFRH3-7000-□ |
| 80 | 100 - 1,000 | SFRH3-8000-□ |
| 90 | 100 - 1,000 | SFRH3-9000-□ |
| 100 | 100 - 1,000 | SFRH3-10000-□ |

## For extreme environmental conditions - iglidur ® C500

### Order key for round bars

| Type | | | Dimensions [mm] | | |
|---|---|---|---|---|---|
| SF R | C500 | -30 | 00 | - | □ |
| Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length |

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRC500-1000-□ |
| 15 | 100 - 1,000 | SFRC500-1500-□ |
| 20 | 100 - 1,000 | SFRC500-2000-□ |
| 25 | 100 - 1,000 | SFRC500-2500-□ |
| 30 | 100 - 1,000 | SFRC500-3000-□ |
| 35 | 100 - 1,000 | SFRC500-3500-□ |
| 40 | 100 - 1,000 | SFRC500-4000-□ |
| 45 | 100 - 1,000 | SFRC500-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRC500-5000-□ |
| 55 | 100 - 1,000 | SFRC500-5500-□ |
| 60 | 100 - 1,000 | SFRC500-6000-□ |
| 65 | 100 - 1,000 | SFRC500-6500-□ |
| 70 | 100 - 1,000 | SFRC500-7000-□ |
| 80 | 100 - 1,000 | SFRC500-8000-□ |
| 90 | 100 - 1,000 | SFRC500-9000-□ |
| 100 | 100 - 1,000 | SFRC500-10000-□ |

igus® constantly expands its range of available materials and dimensions. Please contact us in case the required diameter is not available.

# iglidur® round bars | Product range

## The all-rounder for food, FDA and EU 10/2011-compliant - iglidur® A181

### Order key for round bars

| Type | | | Dimensions [mm] | | |
|---|---|---|---|---|---|
| SF R | A181 | -30 | 00 | - | □ |
| Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length |

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRA181-1000-□ |
| 15 | 100 - 1,000 | SFRA181-1500-□ |
| 20 | 100 - 1,000 | SFRA181-2000-□ |
| 25 | 100 - 1,000 | SFRA181-2500-□ |
| 30 | 100 - 1,000 | SFRA181-3000-□ |
| 35 | 100 - 1,000 | SFRA181-3500-□ |
| 40 | 100 - 1,000 | SFRA181-4000-□ |
| 45 | 100 - 1,000 | SFRA181-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRA181-5000-□ |
| 55 | 100 - 1,000 | SFRA181-5500-□ |
| 60 | 100 - 1,000 | SFRA181-6000-□ |
| 65 | 100 - 1,000 | SFRA181-6500-□ |
| 70 | 100 - 1,000 | SFRA181-7000-□ |
| 80 | 100 - 1,000 | SFRA181-8000-□ |
| 90 | 100 - 1,000 | SFRA181-9000-□ |
| 100 | 100 - 1,000 | SFRA181-10000-□ |

## The FDA-compliant endurance runner at higher temperatures - iglidur® A350

### Order key for round bars

| Type | | | Dimensions [mm] | | |
|---|---|---|---|---|---|
| SF R | A350 | -30 | 00 | - | □ |
| Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length |

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRA350-1000-□ |
| 15 | 100 - 1,000 | SFRA350-1500-□ |
| 20 | 100 - 1,000 | SFRA350-2000-□ |
| 25 | 100 - 1,000 | SFRA350-2500-□ |
| 30 | 100 - 1,000 | SFRA350-3000-□ |
| 35 | 100 - 1,000 | SFRA350-3500-□ |
| 40 | 100 - 1,000 | SFRA350-4000-□ |
| 45 | 100 - 1,000 | SFRA350-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRA350-5000-□ |
| 55 | 100 - 1,000 | SFRA350-5500-□ |
| 60 | 100 - 1,000 | SFRA350-6000-□ |
| 65 | 100 - 1,000 | SFRA350-6500-□ |
| 70 | 100 - 1,000 | SFRA350-7000-□ |
| 80 | 100 - 1,000 | SFRA350-8000-□ |
| 90 | 100 - 1,000 | SFRA350-9000-□ |
| 100 | 100 - 1,000 | SFRA350-10000-□ |

Available from stock
Upon request/check availability



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# iglidur® round bars | Product range

## The media and temperature specialist in the food sector - iglidur® A500

### Order key for round bars

| Type | | | Dimensions [mm] | | |
|---|---|---|---|---|---|
| SF R | A500 | -30 | 00 | - | □ |
| Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length |

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRA500-1000-□ |
| 15 | 100 - 1,000 | SFRA500-1500-□ |
| 20 | 100 - 1,000 | SFRA500-2000-□ |
| 25 | 100 - 1,000 | SFRA500-2500-□ |
| 30 | 100 - 1,000 | SFRA500-3000-□ |
| 35 | 100 - 1,000 | SFRA500-3500-□ |
| 40 | 100 - 1,000 | SFRA500-4000-□ |
| 45 | 100 - 1,000 | SFRA500-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRA500-5000-□ |
| 55 | 100 - 1,000 | SFRA500-5500-□ |
| 60 | 100 - 1,000 | SFRA500-6000-□ |
| 65 | 100 - 1,000 | SFRA500-6500-□ |
| 70 | 100 - 1,000 | SFRA500-7000-□ |
| 80 | 100 - 1,000 | SFRA500-8000-□ |
| 90 | 100 - 1,000 | SFRA500-9000-□ |
| 100 | 100 - 1,000 | SFRA500-10000-□ |

## The all-rounder for food - iglidur® A180

### Order key for round bars

| Type | | | Dimensions [mm] | | |
|---|---|---|---|---|---|
| SF R | A180 | -30 | 00 | - | □ |
| Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length |

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRA180-1000-□ |
| 15 | 100 - 1,000 | SFRA180-1500-□ |
| 20 | 100 - 1,000 | SFRA180-2000-□ |
| 25 | 100 - 1,000 | SFRA180-2500-□ |
| 30 | 100 - 1,000 | SFRA180-3000-□ |
| 35 | 100 - 1,000 | SFRA180-3500-□ |
| 40 | 100 - 1,000 | SFRA180-4000-□ |
| 45 | 100 - 1,000 | SFRA180-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRA180-5000-□ |
| 55 | 100 - 1,000 | SFRA180-5500-□ |
| 60 | 100 - 1,000 | SFRA180-6000-□ |
| 65 | 100 - 1,000 | SFRA180-6500-□ |
| 70 | 100 - 1,000 | SFRA180-7000-□ |
| 80 | 100 - 1,000 | SFRA180-8000-□ |
| 90 | 100 - 1,000 | SFRA180-9000-□ |
| 100 | 100 - 1,000 | SFRA180-10000-□ |

igus® constantly expands its range of available materials and dimensions. Please contact us in case the required diameter is not available.

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# iglidur® round bars | Product range

## "Food" material with high media resistance up to +90°C - iglidur® A160

### Order key for round bars

| Type | | | Dimensions [mm] | | |
|---|---|---|---|---|---|
| SF R | A160 | -30 | 00 | - | □ |
| Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length |

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRA160-1000-□ |
| 15 | 100 - 1,000 | SFRA160-1500-□ |
| 20 | 100 - 1,000 | SFRA160-2000-□ |
| 25 | 100 - 1,000 | SFRA160-2500-□ |
| 30 | 100 - 1,000 | SFRA160-3000-□ |
| 35 | 100 - 1,000 | SFRA160-3500-□ |
| 40 | 100 - 1,000 | SFRA160-4000-□ |
| 45 | 100 - 1,000 | SFRA160-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRA160-5000-□ |
| 55 | 100 - 1,000 | SFRA160-5500-□ |
| 60 | 100 - 1,000 | SFRA160-6000-□ |
| 65 | 100 - 1,000 | SFRA160-6500-□ |
| 70 | 100 - 1,000 | SFRA160-7000-□ |
| 80 | 100 - 1,000 | SFRA160-8000-□ |
| 90 | 100 - 1,000 | SFRA160-9000-□ |
| 100 | 100 - 1,000 | SFRA160-10000-□ |

## Wear-resistant in the food industry - iglidur® A250 New

### Order key for round bars

| Type | | | Dimensions [mm] | | |
|---|---|---|---|---|---|
| SF R | A250 | -30 | 00 | - | □ |
| Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length |

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRA250-1000-□ |
| 15 | 100 - 1,000 | SFRA250-1500-□ |
| 20 | 100 - 1,000 | SFRA250-2000-□ |
| 25 | 100 - 1,000 | SFRA250-2500-□ |
| 30 | 100 - 1,000 | SFRA250-3000-□ |
| 35 | 100 - 1,000 | SFRA250-3500-□ |
| 40 | 100 - 1,000 | SFRA250-4000-□ |
| 45 | 100 - 1,000 | SFRA250-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRA250-5000-□ |
| 55 | 100 - 1,000 | SFRA250-5500-□ |
| 60 | 100 - 1,000 | SFRA250-6000-□ |
| 65 | 100 - 1,000 | SFRA250-6500-□ |
| 70 | 100 - 1,000 | SFRA250-7000-□ |
| 80 | 100 - 1,000 | SFRA250-8000-□ |
| 90 | 100 - 1,000 | SFRA250-9000-□ |
| 100 | 100 - 1,000 | SFRA250-10000-□ |

Available from stock
Upon request/check availability







# iglidur® round bars | Product range

## For high temperatures up to +250°C - iglidur® AC500 New

### Order key for round bars

| Type | | | Dimensions [mm] | | |
|---|---|---|---|---|---|
| SF R | AC500 | -30 | 00 | - | □ |
| Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length |

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRAC500-1000-□ |
| 15 | 100 - 1,000 | SFRAC500-1500-□ |
| 20 | 100 - 1,000 | SFRAC500-2000-□ |
| 25 | 100 - 1,000 | SFRAC500-2500-□ |
| 30 | 100 - 1,000 | SFRAC500-3000-□ |
| 35 | 100 - 1,000 | SFRAC500-3500-□ |
| 40 | 100 - 1,000 | SFRAC500-4000-□ |
| 45 | 100 - 1,000 | SFRAC500-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRAC500-5000-□ |
| 55 | 100 - 1,000 | SFRAC500-5500-□ |
| 60 | 100 - 1,000 | SFRAC500-6000-□ |
| 65 | 100 - 1,000 | SFRAC500-6500-□ |
| 70 | 100 - 1,000 | SFRAC500-7000-□ |
| 80 | 100 - 1,000 | SFRAC500-8000-□ |
| 90 | 100 - 1,000 | SFRAC500-9000-□ |
| 100 | 100 - 1,000 | SFRAC500-10000-□ |

## For contact with drinking water - iglidur® UW160

### Order key for round bars

| Type | | | Dimensions [mm] | | |
|---|---|---|---|---|---|
| SF R | UW160 | -30 | 00 | - | □ |
| Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length |

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRUW160-1000-□ |
| 15 | 100 - 1,000 | SFRUW160-1500-□ |
| 20 | 100 - 1,000 | SFRUW160-2000-□ |
| 25 | 100 - 1,000 | SFRUW160-2500-□ |
| 30 | 100 - 1,000 | SFRUW160-3000-□ |
| 35 | 100 - 1,000 | SFRUW160-3500-□ |
| 40 | 100 - 1,000 | SFRUW160-4000-□ |
| 45 | 100 - 1,000 | SFRUW160-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRUW160-5000-□ |
| 55 | 100 - 1,000 | SFRUW160-5500-□ |
| 60 | 100 - 1,000 | SFRUW160-6000-□ |
| 65 | 100 - 1,000 | SFRUW160-6500-□ |
| 70 | 100 - 1,000 | SFRUW160-7000-□ |
| 80 | 100 - 1,000 | SFRUW160-8000-□ |
| 90 | 100 - 1,000 | SFRUW160-9000-□ |
| 100 | 100 - 1,000 | SFRUW160-10000-□ |

igus® constantly expands its range of available materials and dimensions. Please contact us in case the required diameter is not available.

# iglidur® round bars | Product range

## For the tobacco industry - iglidur® T220

### Order key for round bars

| Type | Dimensions [mm] |
|---|---|
| SF R T220 | -30 00-□ |

Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRT220-1000-□ |
| 15 | 100 - 1,000 | SFRT220-1500-□ |
| 20 | 100 - 1,000 | SFRT220-2000-□ |
| 25 | 100 - 1,000 | SFRT220-2500-□ |
| 30 | 100 - 1,000 | SFRT220-3000-□ |
| 35 | 100 - 1,000 | SFRT220-3500-□ |
| 40 | 100 - 1,000 | SFRT220-4000-□ |
| 45 | 100 - 1,000 | SFRT220-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRT220-5000-□ |
| 55 | 100 - 1,000 | SFRT220-5500-□ |
| 60 | 100 - 1,000 | SFRT220-6000-□ |
| 65 | 100 - 1,000 | SFRT220-6500-□ |
| 70 | 100 - 1,000 | SFRT220-7000-□ |
| 80 | 100 - 1,000 | SFRT220-8000-□ |
| 90 | 100 - 1,000 | SFRT220-9000-□ |
| 100 | 100 - 1,000 | SFRT220-10000-□ |

## Versatile and cost-effective - iglidur® J2

### Order key for round bars

| Type | Dimensions [mm] |
|---|---|
| SF R J2 | -30 00-□ |

Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRJ2-1000-□ |
| 15 | 100 - 1,000 | SFRJ2-1500-□ |
| 20 | 100 - 1,000 | SFRJ2-2000-□ |
| 25 | 100 - 1,000 | SFRJ2-2500-□ |
| 30 | 100 - 1,000 | SFRJ2-3000-□ |
| 35 | 100 - 1,000 | SFRJ2-3500-□ |
| 40 | 100 - 1,000 | SFRJ2-4000-□ |
| 45 | 100 - 1,000 | SFRJ2-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRJ2-5000-□ |
| 55 | 100 - 1,000 | SFRJ2-5500-□ |
| 60 | 100 - 1,000 | SFRJ2-6000-□ |
| 65 | 100 - 1,000 | SFRJ2-6500-□ |
| 70 | 100 - 1,000 | SFRJ2-7000-□ |
| 80 | 100 - 1,000 | SFRJ2-8000-□ |
| 90 | 100 - 1,000 | SFRJ2-9000-□ |
| 100 | 100 - 1,000 | SFRJ2-10000-□ |

Available from stock
Upon request/check availability



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# iglidur® round bars | Product range

## For the rail industry, flame-retardant, complies with DIN EN 45545 HL3, R22/R23 - iglidur® RW370

### Order key for round bars

| Type | Dimensions [mm] |
|---|---|
| SF R RW370 | -30 00-□ |

Bar stock | Round bar | iglidur® material | Outer Ø | Inner Ø | Length

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Ø | Lengths | Part No. |
|---|---|---|
| 10 | 100 - 1,000 | SFRRW370-1000-□ |
| 15 | 100 - 1,000 | SFRRW370-1500-□ |
| 20 | 100 - 1,000 | SFRRW370-2000-□ |
| 25 | 100 - 1,000 | SFRRW370-2500-□ |
| 30 | 100 - 1,000 | SFRRW370-3000-□ |
| 35 | 100 - 1,000 | SFRRW370-3500-□ |
| 40 | 100 - 1,000 | SFRRW370-4000-□ |
| 45 | 100 - 1,000 | SFRRW370-4500-□ |

| Ø | Lengths | Part No. |
|---|---|---|
| 50 | 100 - 1,000 | SFRRW370-5000-□ |
| 55 | 100 - 1,000 | SFRRW370-5500-□ |
| 60 | 100 - 1,000 | SFRRW370-6000-□ |
| 65 | 100 - 1,000 | SFRRW370-6500-□ |
| 70 | 100 - 1,000 | SFRRW370-7000-□ |
| 80 | 100 - 1,000 | SFRRW370-8000-□ |
| 90 | 100 - 1,000 | SFRRW370-9000-□ |
| 100 | 100 - 1,000 | SFRRW370-10000-□ |

igus® constantly expands its range of available materials and dimensions. Please contact us in case the required diameter is not available.

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# iglidur® hollow bars | Product range

## The versatile endurance runner - iglidur® J

### Order key hollow bars

| Type | Dimensions [mm] |
|---|---|

**SF T J -110 70-□**

Bar stock | Hollow bar | iglidur® material | Outer Ø | Inner Ø | Length

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| Inner Ø | Inner diameter tolerance | Outer Ø | Outer diameter tolerance | Length | Part No. |
|---|---|---|---|---|---|
| 70 | -2.0 / -6.5 | 110 | +1.5 / +4.5 | 100 - 1,000 | **SFTJ-11070-□** |
| 70 | -2.0 / -6.5 | 125 | +1.5 / +4.5 | 100 - 1,000 | **SFTJ-12570-□** |
| 100 | -2.0 / -6.5 | 150 | +1.5 / +4.5 | 100 - 1,000 | **SFTJ-150100-□** |

Available from stock

Upon request/check availability



# Notes

# iglidur® sheets | Product range

## The versatile endurance runner - iglidur® J

Plastic sheets (thickness: 2 to 6mm) and plates (thickness: 10 to 40mm) made from iglidur® can be supplied as blanks or finished parts and are offered in up to seven standard sizes.

### Order key

| Type | | | | Dimensions [mm] | |
|---|---|---|---|---|---|
| SF P | J - | □ - | 500 - | 240 | |
| Bar stock | Sheet | iglidur® material | Material thickness | Length | Width |

| Dimensions (L x W) | Material thickness s | Part No. |
|---|---|---|
| 500x240 | 02 / 03 / 04 / 05 / 06 | **SFPJ-□-500-240** |
| 500x500 | 02 / 03 / 04 / 05 / 06 | **SFPJ-□-500-500** |
| 1,000x500 | 02 / 03 / 04 / 05 / 06 | **SFPJ-□-1000-500** |
| 1,000x1,000 | 02 / 03 / 04 / 05 / 06 | **SFPJ-□-1000-1000** |

| Tolerances | |
|---|---|
| Material thickness | Tolerance |
| 02 | +0.050 +0.150 |
| 03 | +0.200 +0.200 |
| 04 | +0.200 +0.200 |
| 05 | +0.250 +0.250 |
| 06 | +0.250 +0.250 |



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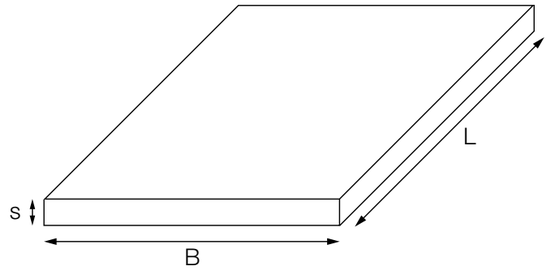
# iglidur® plates | Product range

## The versatile endurance runner - iglidur® J




| Dimensions (L x W) | Material thickness s | Part No. |
|---|---|---|
| 500x300 | 10 / 15 / 20 / 25 / 30 / 40 | **SFPJ-□-500-300** |
| 500x610 | 10 / 15 / 20 / 25 / 30 / 40 | **SFPJ-□-500-610** |
| 1,000x610 | 10 / 15 / 20 / 25 / 30 / 40 | **SFPJ-□-1000-610** |

| Tolerances | |
|---|---|
| Material thickness | Tolerance |
| 10 | +0.200 +1.100 |
| 15 | +0.300 +1.500 |
| 20 | +0.300 +1.500 |
| 25 | +0.300 +1.500 |
| 30 | +0.500 +2.500 |
| 40 | +0.500 +2.500 |

## Extremely wear-resistant in black - iglidur® JB

| Dimensions (L x W) | Material thickness s | Part No. |
|---|---|---|
| 500x300 | 10 / 25 | **SFPJB-□-500-300** |
| 500x610 | 10 / 25 | **SFPJB-□-500-610** |
| 1,000x610 | 10 / 25 | **SFPJB-□-1000-610** |

| Tolerances | |
|---|---|
| Material thickness | Tolerance |
| 10 | +0.200 +1.100 |
| 25 | +0.300 +1.500 |

# iglidur® plates | Product range

## The FDA-compliant endurance runner at higher temperatures - iglidur® A350

Order key

| Type | Dimensions [mm] |
|---|---|
| SF P A350-□ | -500-300 |

Bar stock | Plate | iglidur® material | Material thickness | Length | Width

| Dimensions (L x W) | Material thickness s | Part No. |
|---|---|---|
| 500x300 | 15 / 20 / 25 / 30 | **SFPA350-□-500-300** |
| 500x610 | 15 / 20 / 25 / 30 | **SFPA350-□-500-610** |
| 1,000x610 | 15 / 20 / 25 / 30 | **SFPA350-□-1000-610** |

| Tolerances | |
|---|---|
| Material thickness | Tolerance |
| 15 | +0.300 +1.500 |
| 20 | +0.300 +1.500 |
| 25 | +0.300 +1.500 |
| 30 | +0.500 +2.500 |

## FDA and EU 10/2011-compliant - iglidur® A160

| Dimensions (L x W) | Material thickness s | Part No. |
|---|---|---|
| 500x300 | 10 / 20 | **SFPA160-□-500-300** |
| 500x610 | 10 / 20 | **SFPA160-□-500-610** |
| 1,000x610 | 10 / 20 | **SFPA160-□-1000-610** |

| Tolerances | |
|---|---|
| Material thickness | Tolerance |
| 10 | +0.200 +1.100 |
| 20 | +0.300 +1.500 |

## FDA-compliant - iglidur® A180

| Dimensions (L x W) | Material thickness s | Part No. |
|---|---|---|
| 500x300 | 10 / 20 | **SFPA180-□-500-300** |
| 500x610 | 10 / 20 | **SFPA180-□-500-610** |
| 1,000x610 | 10 / 20 | **SFPA180-□-1000-610** |

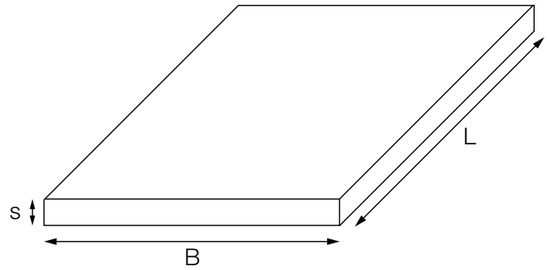
| Tolerances | |
|---|---|
| Material thickness | Tolerance |
| 10 | +0.200 +1.100 |
| 20 | +0.300 +1.500 |



iglidur® bar stock

# iglidur® plates | Product range

## Impact-resistant, strong and media-resistant - RN326




| Dimensions (L x W) | Material thickness s | Part No. |
|---|---|---|
| 500x300 | 15 | **SFPRN326-□-500-300** |
| 500x610 | 15 | **SFPRN326-□-500-610** |
| 1,000x610 | 15 | **SFPRN326-□-1000-610** |

| Tolerances | |
|---|---|
| Material thickness | Tolerance |
| 15 | +0.300 +1.500 |

## With a low coefficient of friction - iglidur® B160 New

| Dimensions (L x W) | Material thickness s | Part No. |
|---|---|---|
| 500x300 | 40 | **SFPB160-□-500-300** |
| 500x610 | 40 | **SFPB160-□-500-610** |
| 1,000x610 | 40 | **SFPB160-□-1000-610** |

| Tolerances | |
|---|---|
| Material thickness | Tolerance |
| 40 | +0.500 +2.500 |

## Cost-effective and wear-resistant - iglidur® RN44 New

| Dimensions (L x W) | Material thickness s | Part No. |
|---|---|---|
| 1,000x610 | 45 | **SFPRN44-□-1000-610** |

| Tolerances | |
|---|---|
| Material thickness | Tolerance |
| 45 | +0.500 +2.500 |

# iglidur® plate strips | Product range

## Solve wear problems quickly with iglidur® plate strips

### Order key for plate strips

| Type | | | Dimensions [mm] | | |
|---|---|---|---|---|---|
| SF P | □ | -15 | -160 | - | □ |
| Bar stock | Plate | iglidur® material | Material thickness | Width | Length |

In your required length, freely selectable between 100 and 1,000mm. Cut-to-size parts are delivered oversized.

### Dimensions [mm]

| iglidur® material | Material thickness Øs | Material thickness Tolerance | Width | Part No. | |
|---|---|---|---|---|---|
| A500 | 15 | +0.300 +1.500 | 160 | SFPA500-15-160-□ | |
| A500 | 30 | +0.500 +2.500 | 160 | SFPA500-30-160-□ | |
| A500 | 50 | +0.500 +2.500 | 160 | SFPA500-50-160-□ | |
| AD500 | 06 | +0.200 +0.700 | 160 | SFPAD500-06-160-□ | New |
| AD500 | 10 | +0.200 +1.100 | 160 | SFPAD500-10-160-□ | New |
| C500 | 15 | +0.300 +1.500 | 160 | SFPC500-15-160-□ | |
| E7 | 30 | +0.500 +2.500 | 160 | SFPE7-30-160-□ | |
| HSD350 | 50 | +0.500 +2.500 | 160 | SFPHSD350-50-160-□ | |
| J350 | 15 | +0.300 +1.500 | 160 | SFPJ350-15-160-□ | |
| J4 | 15 | +0.300 +1.500 | 160 | SFPJ4-15-160-□ | |
| J4 | 30 | +0.500 +2.500 | 160 | SFPJ4-30-160-□ | |
| J4 | 50 | +0.500 +2.500 | 160 | SFPJ4-50-160-□ | |
| RW370 | 15 | +0.300 +1.500 | 160 | SFPRW370-15-160-□ | |
| W300 | 15 | +0.300 +1.500 | 160 | SFPW-15-160-□ | |
| X | 15 | +0.300 +1.500 | 160 | SFPX-15-160-□ | |

igus® constantly expands its range of available materials and dimensions. Please contact us in case the required diameter is not available.



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# iglidur® bar stock | Processing information

## Processing information for iglidur® bar stock

General information for achieving good results when processing iglidur® bar stock:

- Use tools made from high-speed steels (HSS) and hard metal (HM)
- Always ensure the tools are extremely sharp and in perfect condition
- In view of the far greater thermal expansion compared to metals and the dimensional changes caused by absorbed water, larger production tolerances are required for plastics than for metal parts
- To reduce any retrospective warping as a result of machining stresses, if large material volumes are to be machined, interim tempering should be used before the refined finishing stage

| | Sawing | Turning | Milling | Drilling |
|---|---|---|---|---|
| Tool made of | HM with alternate teeth or trapezoidal flat teeth | HSS | HSS | HSS |
| Clearance angle | 5 - 30° | 2 - 10° | 2 - 30° | 3 - 16° |
| Rake angle | 0 - 15° | 0 - 8° | 0 - 15° | 5 - 30° |
| Tooth pitch | 2 - 14 mm | – | – | – |
| Setting angle | – | 45 - 60° | – | – |
| Tip angle | – | – | – | 90 - 130° |
| Cutting speed | max. 300 m/min. | 100 - 500m/min. | 80 - 500m/min. | 20 - 200m/min. |
| Feed rate | – | 0.05 - 0.5mm/rpm | 0.02 - 0.3mm/rpm | |

Table: General processing information

### Machining guidelines

| | Unit | iglidur® material | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A160, B160, W160, E7, RN326, RN289 | J, J2, J4, JB, A180, A181, J200, R, RN44 | J260 | W300 M250 A250 | P210 T220 | A350 J350 | H1 H3 | X A500 C500 AC500 AD500 |
| **Turning** | | | | | | | | | |
| Clearance angle | [°] | 6 - 10 | 6 - 8 | 5 - 10 | 6 - 10 | 5 - 10 | 6 | 6 | 6 |
| Rake angle | [°] | 0 - 5 | 0 - 5 | 6 - 8 | 0 - 5 | 0 - 5 | 0 | 0 - 5 | 0 - 5 |
| Setting angle | [°] | 45 - 60 | 45 - 60 | 45 - 60 | 45 - 60 | 45 - 60 | 45 - 60 | 45 - 60 | 45 - 60 |
| Cutting speed | [m/min] | 250 - 500 | 300 - 600 | 300 | 250 - 500 | 300 - 400 | 350 - 400 | 250 - 500 | 250 - 500 |
| Feed rate | [mm/rpm] | 0.1 - 0.5 | 0.1 - 0.4 | 0.1 - 0.5 | 0.1 - 0.5 | 0.2 - 0.4 | 0.1 - 0.3 | 0.1 - 0.5 | 0.1 - 0.5 |
| **Milling** | | | | | | | | | |
| Number of teeth | | Z1 - Z2 | Z1 - Z2 | Z1 - Z2 | Z1 - Z2 | Z1 - Z2 | Z1 - Z2 | Z1 - Z2 | Z1 - Z2 |
| Cutting speed | [m/min] | 250 - 500 | 300 | 300 | 250 - 500 | 300 | 250 - 500 | 250 - 500 | 250 - 500 |
| Feed rate | [mm/rpm] | 0.1 - 0.45 | 0.15 - 0.5 | 0.15 - 0.4 | 0.1 - 0.45 | 0.15 - 0.5 | 0.1 - 0.45 | 0.1 - 0.45 | 0.1 - 0.45 |
| **Drilling** | | | | | | | | | |
| Number of teeth | | Z2 | Z2 | Z2 | Z2 | Z2 | Z2 | Z2 | Z2 |
| Angle of twist | [°] | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| Acute angle | [°] | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Cutting speed | [m/min] | 50 - 150 | 50 - 150 | 50 - 100 | 50 - 150 | 50 - 100 | 20 - 80 | 50 - 200 | 50 - 200 |
| Feed rate | [mm/rpm] | 0.1 - 0.3 | 0.1 - 0.3 | 0,2 - 0,3 | 0.1 - 0.3 | 0,2 - 0,3 | 0.1 - 0.3 | 0.1 - 0.3 | 0.1 - 0.3 |

# iglidur® bar stock | Processing information

## Processing information for iglidur® bar stock

igus® subjects its bar stock to a material-specific tempering process so that they remain dimensionally stable during and after machining. All bar stock from 25mm thickness are tempered, regardless of the respective iglidur® material. For materials that are suitable for use at high temperatures such as iglidur® X, C500 or A500, all bar stock are basically tempered.

**What is tempering and how does it work?**
During tempering, a material is subjected to a heat treatment for a prolonged period, during which the melting temperature is not exceeded. The selected temperature and the duration of the treatment vary depending on the material, material thickness and shape. It is crucial that the material is completely heated up and cooled slowly and evenly to room temperature after the holding time of the temperature. Tempering is particularly effective only with a slow cooling.

### Tempering specifications for iglidur® materials

| | iglidur® material | | | | | |
|---|---|---|---|---|---|---|
| | **E7, RN326, A160, B160, RN289** | **J, J2, J3, J4, J200, JB, A180, A181, B180, RN44** | **J260** | **W300, M250, P210, T220, A250** | **A350, J350, H1, H3** | **X A500 C500 AC500 AD500** |
| Heat up | 1 hour per cm diameter to | | | | | |
| | +80°C | +120°C | +130°C | +180 °C | +200°C | +220 °C |
| Maximum temperature/ holding time | 1 hour per cm diameter at | | | | | |
| | +80°C | +120°C | +130°C | +180 °C | +200°C | +220 °C |
| Cooling down | Cool down to maximum +20°C per hour until room temperature | | | | | |



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# iglidur® plastic rod | Online service

## CNC online service and tolerance check

### Clear user interface and new features

Improved calculation, ease of use and new features. Multi-part upload, graduated pricing, feasibility analysis and a much simplified order processing.

**Express options:**

- CNC online service: up to ten machined parts ready to ship in three days
- IBD iglidur® bearing designer: up to 500 bearings, thrust washers or knife edge rollers ready to ship in five days

For general design tips and guidance on our manufacturing processes, please refer to the Design Guide.
▶ **www.igus.eu/cnc-design-guide**

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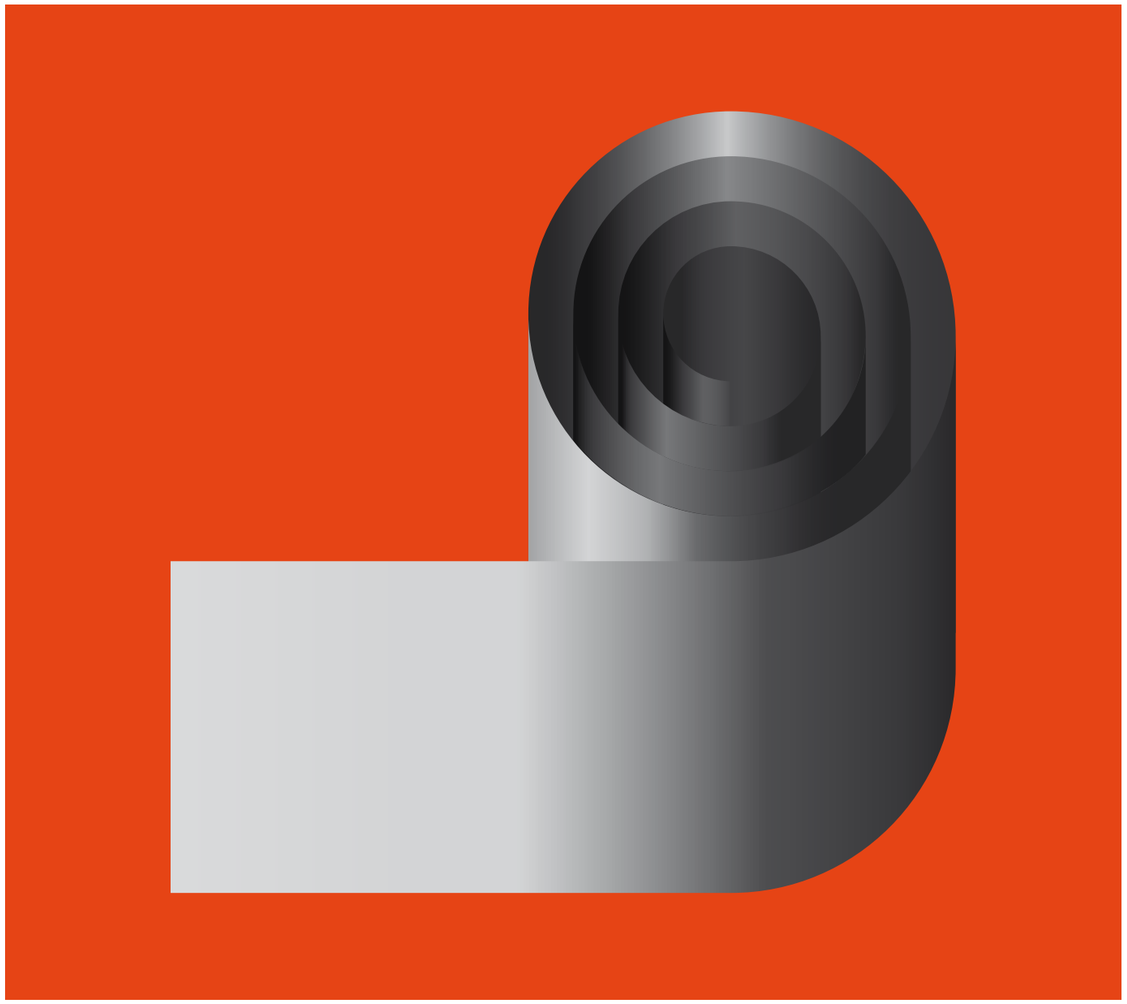
# Wear-resistant industrial profiles

With igus® you have the option of having industrial profiles manufactured according to individual specifications. Various profile geometries can be implemented according to your specifications and requirements. Choose from a variety of our wear-resistant iglidur® materials.

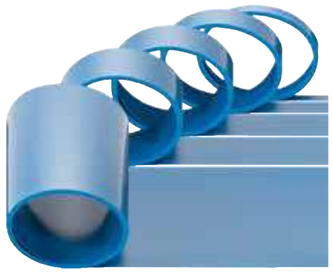
Due to its properties, every material becomes suitable for a specific application. For example, there is suitable bar stock for almost every application from high-temperature to seawater, from food to automotive. All iglidur® materials have been specially developed for dynamic applications, and have low coefficient of friction and wear.

Simply request your individual profile from us now. We would be happy to advise you on your project.
▶ **www.igus.eu/profile-enquiry**



# iglidur® tribo-tape liners

- Choice of 4 materials
- Wear-resistant
- With and without adhesive back
- Standard widths from stock
- Special widths to your specifications
- Special cuts according to drawings

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## Versatile: iglidur® tribo-tape

### Material: iglidur® A160

- Low coefficient of friction
- Wear resistance: ++
- Up to +90°C

▶ Page 786

### Material: iglidur® B160

- For use in visible areas
- Wear resistance: ++++
- Up to +90°C

▶ Page 787

### Material: iglidur® W160

- White and UV-stabilised
- Wear resistance: +++
- Up to +90°C

▶ Page 788

### Material: iglidur® V400

- High media resistance
- Wear resistance: +++++
- Up to +200°C (with adhesive back, see product page)

▶ Page 789

# Easy-to-fit protection for all surfaces: iglidur® tribo-tape

igus® tribo-tape is designed for lining areas of wear and where frequent maintenance is required, an example is for machine beds etc. At just 0.5mm thick (0.71mm including the adhesive back), the space requirement is extremely low. The ease of use (the tape can simply be cut using scissors) and optional self-adhesive back open up almost endless possibilities for the product's use.

- Lubrication and maintenance-free
- Easy to cut
- For compact areas
- With or without self-adhesive back
- Standard widths from stock
- Individual required widths in continuous range from 10-500mm

**Available from stock**
Detailed information about delivery time online.

**Operation temperatures:**
**iglidur® A160: -50°C up to +90°C**
**iglidur® B160: -50°C up to +90°C**
**iglidur® W160: -50°C up to +90°C**
**iglidur® V400: -50°C up to +200°C**
Differing temperatures with adhesive back (see product page)

**Product film**
**▶ www.igus.eu/tape-film**

**Cutting service**
Whether as a specially tailored by-the-metre product or freely designed pre-cut parts: We produce your required product in required width from our iglidur® tribo-tape. Please contact us.
**▶ www.igus.eu/tape-cut-to-size**





## Material properties

| General properties | Unit | iglidur® A160 | iglidur® B160 | iglidur® W160 | iglidur® V400 | Testing method |
|---|---|---|---|---|---|---|
| Density | g/cm³ | 1.00 | 1.00 | 0.95 | 1.51 | |
| Colour | | blue | black | white | cream-white | |
| Max. moisture absorption at +23°C and 50% r.h. | % weight | 0.1 | 0.1 | 0.1 | 0.1 | DIN 53495 |
| Max. moisture absorption | % weight | 0.1 | 0.1 | 0.1 | 0.2 | |
| Coefficient of sliding friction, dynamic against steel | μ | 0.09 - 0.19 | 0.13 - 0.20 | 0.12 - 0.20 | 0.15 - 0.20 | |
| **Mechanical properties** | | | | | | |
| Flexural modulus | MPa | 1,151 | 852 | 799 | 4,500 | DIN 53457 |
| Flexural strength at +20°C | MPa | 19 | 14 | 14 | 95 | DIN 53452 |
| Shore D hardness | | 60 | 59 | 58 | 74 | DIN 53505 |
| **Physical and thermal properties** | | | | | | |
| Max. long-term application temperature | °C | +90 | +90 | +90 | +200 | |
| Max. short-term application temperature | °C | +100 | +100 | +100 | +240 | |
| Min. application temperature | °C | -50 | -50 | -50 | -50 | |
| Thermal conductivity | W/m · K | 0.30 | 0.32 | 0.30 | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 11 | 11 | 11 | 3 | DIN 53752 |
| **Electrical properties** | | | | | | |
| Specific transitional resistance | Ωcm | $> 10^{12}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | $> 10^{12}$ | $> 10^{12}$ | $> 10^{12}$ | $> 10^{12}$ | DIN 53482 |

**Table: Material properties table**

## Chemical resistance (at +20°C)

| Chemical resistance | iglidur® A160 | iglidur® B160 | iglidur® W160 | iglidur® V400 |
|---|---|---|---|---|
| Alcohols | + | + | + | + |
| Hydrocarbons | + | + | + | + |
| Greases, oils without additives | + | + | + | + |
| Fuels | + to 0 | + to 0 | + to 0 | + |
| Diluted acids | + | + | + | + |
| Strong acids | + | + | + | + |
| Diluted alkalines | + | + | + | + |
| Strong alkalines | + | + | + | – |
| **Radiation Resistance [Gy] up to** | $1 \cdot 10^5$ | $1 \cdot 10^5$ | $1 \cdot 10^5$ | $2 \cdot 10^4$ |

**+ resistant 0 conditionally resistant – not resistant**
**All data given at room temperature [+20°C]**

Unknown factors, temperatures, wet weather and many other ambient conditions impair the adhesion. It is therefore essential that the use of iglidur® tribo-tape be tested under realistic conditions. We are happy to provide you with samples for tests. All recommendations, as well as suggestions regarding use that are made, are based on experience gained in practice and tests where the basic conditions cannot be applied to other conditions of use. They are therefore not binding and do not release the buyer from the obligation to carry out his/her own tests. We always recommend application-specific tests under real conditions of use.

# iglidur® liners | Selection according to main criteria

| iglidur® | A160 | B160 | W160 | V400 |
|---|---|---|---|---|
| **Descriptive technical specifications** | | | | |
| Wear resistance at +23°C | | | | |
| Wear resistance at +90°C | | | | |
| Wear resistance at +150°C | | | | |
| Slide property | | | | |
| Wear resistance under water | | | | |
| Media resistance | | | | |
| Resistant to edge pressures | | | | |
| Resistant to shock and impact loads | | | | |
| Dirt resistance | | | | |
| Price index[141)] | | | | |
| For high loads (>60MPa) | | | | |
| Electrically conductive | | | | |
| **Approvals and standards** | | | | |
| FDA-compliant | ● | | | |
| EU 10/2011-compliant | ● | | | |
| Fire class in accordance with UL-94 | HB | HB | HB | V-0 |
| Mould test DIN EN ISO 846 | | | | |
| Fogging DIN 75201-B | | | | |
| **Availabilities / variants** | | | | |
| Bar stock, round material | ● | | | |
| Bar stock, hollow bars | | | | |
| Bar stock, sheet | | | | |
| Bar stock, plate | ● | | | |
| Bar stock, plate strips | | | | |
| Machined made from bar stocks | ● | | | |

[141)] **Price index** **Low price category** **Medium price category** **Highest price category**

# iglidur® liners | Material properties table

| iglidur® | Unit | A160 | B160 | W160 | V400 |
|---|---|---|---|---|---|
| **General properties** | | | | | |
| Density | [g/cm³] | 1.00 | 1.00 | 0.95 | 1.51 |
| Colour | | | | | |
| Max. moisture absorption at +23 °C/50% r.h. | [% weight] | 0.1 | 0.1 | 0.1 | 0.1 |
| Max. moisture absorption | [% weight] | 0.1 | 0.1 | 0.1 | 0.2 |
| Coefficient of sliding friction, dynamic against steel | [µ] | 0.09 - 0.19 | 0.13 - 0.20 | 0.12 - 0.20 | 0.15 - 0.20 |
| **Mechanical properties** | | | | | |
| Flexural modulus | [MPa] | 1,151 | 852 | 799 | 4,500 |
| Flexural strength at +20°C | [MPa] | 19 | 14 | 14 | 95 |
| Compressive strength | [MPa] | 37 | 37 | 37 | 47 |
| Max. permissible surface pressure at +20°C | [MPa] | 15 | 11 | 11 | 45 |
| Shore D hardness | | 60 | 59 | 58 | 74 |
| **Physical and thermal properties** | | | | | |
| Max. continuous operatingtemperature | [°C] | +90 | +90 | +90 | +200 |
| Max. short-term operating temperature | [°C] | +100 | +100 | +100 | +240 |
| Min. continuous operating temperature | [°C] | -50 | -50 | -50 | -50 |
| Thermal conductivity | [W/m · K] | 0.30 | 0.32 | 0.30 | 0.24 |
| Coefficient of thermal expansion at +23°C | [$K^{-1} \cdot 10^{-5}$] | 11 | 11 | 11 | 3 |
| **Electrical properties** | | | | | |
| Specific contact resistance | [Ωcm] | > $10^{12}$ | > $10^{12}$ | > $10^{12}$ | > $10^{12}$ |
| Surface resistance | [Ω] | > $10^{12}$ | > $10^{12}$ | > $10^{12}$ | > $10^{12}$ |
| **Page** | | 786 | 787 | 788 | 789 |

# iglidur® tribo-tape | Product range

## FDA-compliant - iglidur® A160

### Order key

| Type | Dimensions [mm] | | | Options |
|---|---|---|---|---|
| A160 - T | - 005 | - 0020 | | - G |
| iglidur® material | Tape | Thickness | Width | Adhesive back |

G = Optional self-adhesive back

The low-cost iglidur® A160 tribo-tape has high wear resistance compared to similar, thin plastic products.

**tribo-tape from iglidur® A160 with adhesive back**
**Temperature -40°C up to +90°C**

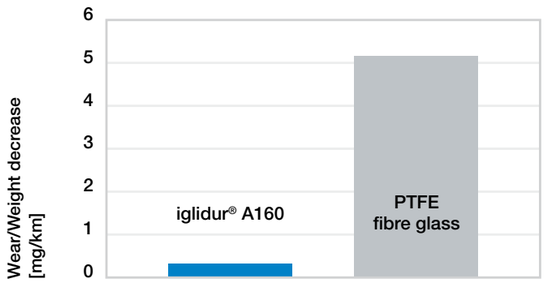
### Dimensions [mm]

| Material thickness without adhesive back ±0.1 | Material thickness with adhesive back ±0.121 | Width ±1.0 | Part No. without adhesive back | Part No. with adhesive back |
|---|---|---|---|---|
| 0.5 | 0.71 | 20 | A160-T-005-0020 | A160-T-005-0020-G |
| 0.5 | 0.71 | 50 | A160-T-005-0050 | A160-T-005-0050-G |
| 0.5 | 0.71 | 100 | A160-T-005-0100 | A160-T-005-0100-G |
| 0.5 | 0.71 | 500 | A160-T-005-0500 | A160-T-005-0500-G |
| 1.0 | 1.21 | 500 | A160-T-010-0500 | A160-T-010-0500-G |

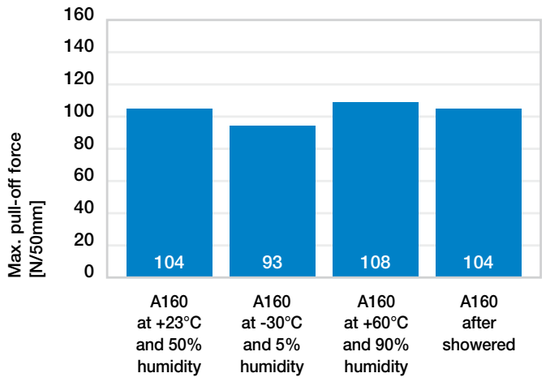
**Cuts from standard widths are manufactured with excess dimensions.**

**Individual widths upon request**
Continuously from 10-500mm

**Cutting service**
Design tribo-tape flexibly
▶ **www.igus.eu/tape-cut-to-size**




**Linear wear against stainless steel pin (AISI 303)**
**F = 10N, v = 9,600mm/min**




**180° pull-off test after various exposure conditions**

**This material complies with EU directive 10/2011 and also with FDA (Food and Drug Administration) specifications for repeated contact with food.**





# iglidur® tribo-tape | Product range

## For use in visible areas - iglidur® B160

### Order key

| Type | Dimensions [mm] | | | Options |
|---|---|---|---|---|
| B160 - T | - 005 | - 0020 | | - G |
| iglidur® material | Tape | Thickness | Width | Adhesive back |

G = Optional self-adhesive back

Especially where the iglidur® tribo-tape is a visible part, the new black option now offers even more creative freedom. In addition the wear resistance has been improved once again compared to iglidur® A160.

**tribo-tape from iglidur® B160 with adhesive back**
**Temperature -40°C up to +90°C**

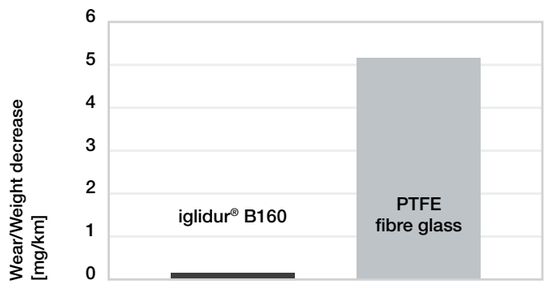
### Dimensions [mm]

| Material thickness without adhesive back ±0.1 | Material thickness with adhesive back ±0.121 | Width ±1.0 | Part No. without adhesive back | Part No. with adhesive back |
|---|---|---|---|---|
| 0.5 | 0.71 | 20 | B160-T-005-0020 | B160-T-005-0020-G |
| 0.5 | 0.71 | 50 | B160-T-005-0050 | B160-T-005-0050-G |
| 0.5 | 0.71 | 100 | B160-T-005-0100 | B160-T-005-0100-G |
| 0.5 | 0.71 | 500 | B160-T-005-0500 | B160-T-005-0500-G |
| 1.0 | 1.21 | 500 | B160-T-010-0500 | B160-T-010-0500-G |

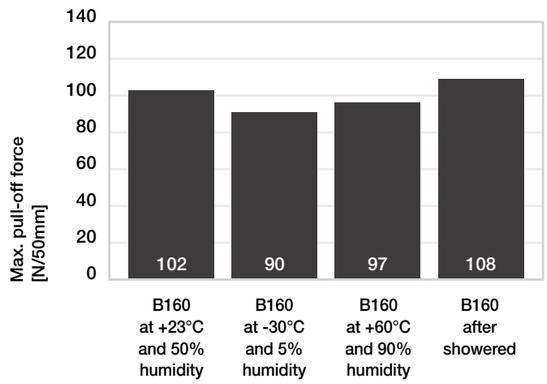
**Cuts from standard widths are manufactured with excess dimensions.**

**Individual widths upon request**
Continuously from 10-500mm

**Cutting service**
Design tribo-tape flexibly
▶ **www.igus.eu/tape-cut-to-size**




**Linear wear against stainless steel pin (AISI 303)**
**F = 10N, v = 9,600mm/min**




**180° pull-off test after various exposure conditions**

# iglidur® tribo-tape | Product range

## White and UV-stabilised - iglidur® W160

### Order key

| Type | Dimensions [mm] | Options |
|---|---|---|
| W160 - T | - 005 - 0020 | - G |

iglidur® material | Tape | Thickness | Width | Adhesive back

G = Optional self-adhesive back

With its white colour and UV-stabilised additives, iglidur® W160 tribo-tape offers even more design freedom.[148)]

**tribo-tape from iglidur® W160 with adhesive back**
**Temperature -40°C up to +90°C**

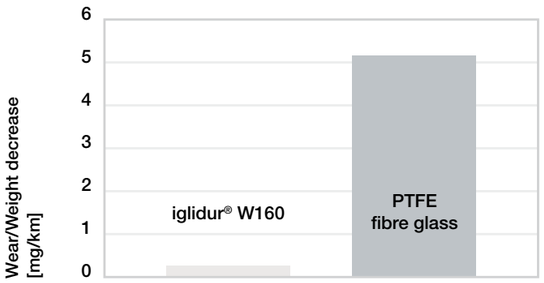
### Dimensions [mm]

| Material thickness without adhesive back ±0.1 | Material thickness with adhesive back ±0.121 | Width ±1.0 | Part No. without adhesive back | Part No. with adhesive back |
|---|---|---|---|---|
| 0.5 | 0.71 | 20 | W160-T-005-0020 | W160-T-005-0020-G |
| 0.5 | 0.71 | 50 | W160-T-005-0050 | W160-T-005-0050-G |
| 0.5 | 0.71 | 100 | W160-T-005-0100 | W160-T-005-0100-G |
| 0.5 | 0.71 | 500 | W160-T-005-0500 | W160-T-005-0500-G |
| 1.0 | 1.21 | 500 | W160-T-010-0500 | W160-T-010-0500-G |

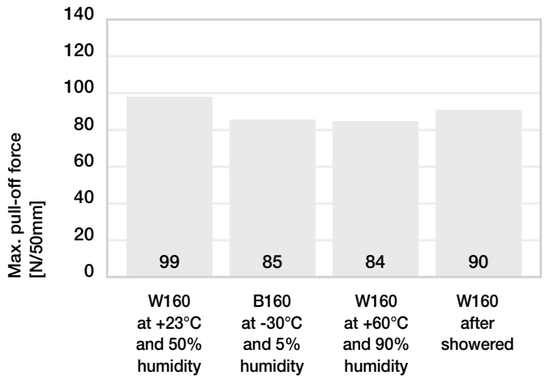
Cuts from standard widths are manufactured with excess dimensions.

**Individual widths upon request**
Continuously from 10-500mm

**Cutting service**
Design tribo-tape flexibly
▶ www.igus.eu/tape-cut-to-size




Linear wear against stainless steel pin (1.4305)
F = 10N, v= 9600mm/min




180° pull-off test after various exposure conditions



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iglidur® tribo-tape

# iglidur® tribo-tape | Product range

## High media resistance - iglidur® V400

### Order key

| Type | Dimensions [mm] | Options |
|---|---|---|
| V400 - T | - 005 - 0120 | - G |

iglidur® material | Tape | Thickness | Width | Adhesive back

G = Optional self-adhesive back

iglidur® V400 tribo-tape is not only extremely wear-resistant but also extremely media and temperature-resistant. In fact, it has been proven in tests to be up to 10 times more wear-resistant than special products for machine beds.

**tribo-tape from iglidur® V400 with adhesive back**
**Temperature -40°C up to +160°C**

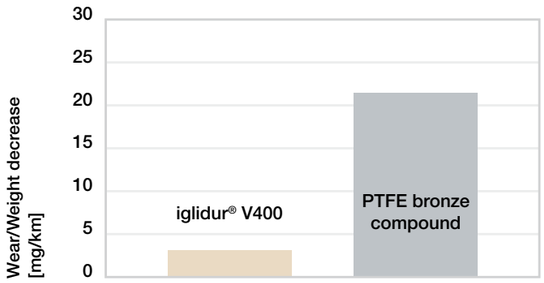
### Dimensions [mm]

| Material thickness without adhesive back ±0.1 | Material thickness with adhesive back ±0.121 | Width ±1.0 | Part No. without adhesive back | Part No. with adhesive back |
|---|---|---|---|---|
| 0.5 | 0.71 | 120 | V400-T-005-0120 | V400-T-005-0120-G |

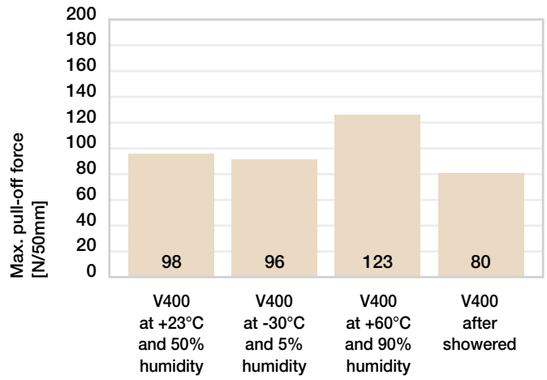
Cuts from standard widths are manufactured with excess dimensions.

**Individual widths upon request**

**Cutting service**
Design tribo-tape flexibly
▶ www.igus.eu/tape-cut-to-size




Linear wear against stainless steel pin (AISI 303)
F = 35N, v = 0.5m/min




180° pull-off test after various exposure conditions

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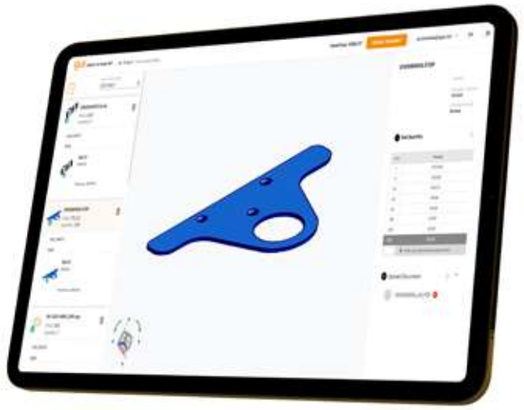
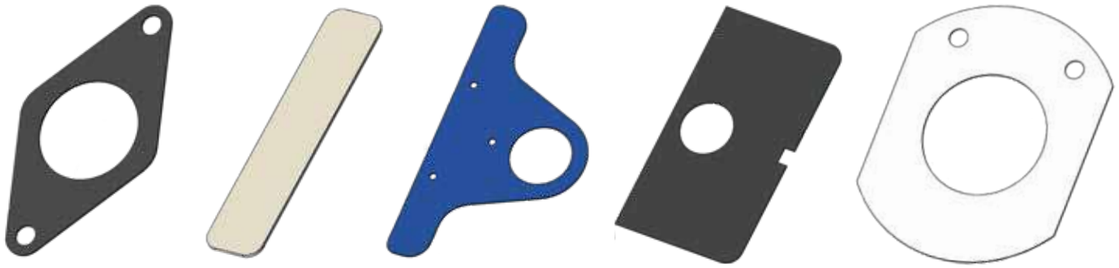
# iglidur® tribo-tape | Online service

## Online calculator

## Calculate tribo-tape special parts online

Calculate plotted tribo-tape custom parts quickly and easily with our new online pricing tool.





Blanks in desired geometry
▶ **www.igus.eu/tribo-tape-tool**



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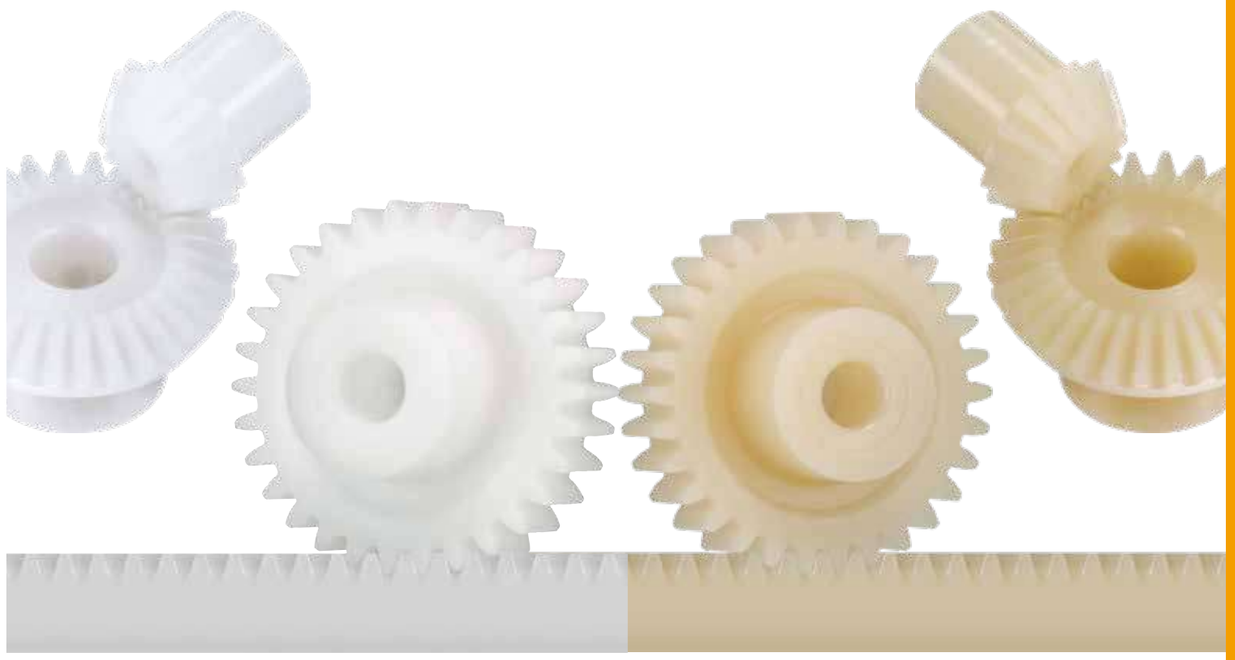
## Notes

# iglidur®

## Gears



# ...plastics

**Injection-moulded gears made of iglidur® high-performance polymers**

**Gears**
8 different modules
12-150 teeth
▶ **From page 800**

**Racks**
8 different modules
250mm
▶ **From page 816**

**Gear wheels**
6 transmission ratios
7 different modules
▶ **From page 818**

**Angular gearbox**
Module 1
5 transmission ratios
▶ **From page 820**

# Lubrication-free iglidur® gears

The gears made of the tribologically optimised iglidur® high-performance polymers prove that a significantly longer service life is possible over gears made of commercially available plastics. By precisely adding reinforcing materials and solid lubricants, you can completely dispense with additional lubricants.

- Maintenance-free dry operation
- Quiet
- Corrosion-free
- Resistant to dirt

**Typical application areas**

- Rail industry
- Automotive industry
- Medical technology
- Food/beverage industry
- Vending machinery
- Packaging industry

**Available from stock**
Detailed information about delivery time online.

**Price breaks online**
No minimum order value. No minimum order quantity

**Max. +250°C**
**min. -100°C**

**Service life calculation**
▶ **www.igus.eu/gear-expert**

**Post processing possible**

**Tolerances for plastic gears**
The hole diameters d1 for cylindrical gears made of plastic are machined with reamers. It should be noted that due to the behaviour of the material, as well as temperature influences, the holes of the gears may change by 0.02-0.04. The tolerance for the bore diameter d1 is given as H10.



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**iguform S270 gears**
- Low coefficient of friction
- Low moisture absorption
- Quiet

▶ **From page 800**

**igutek P360 gears**
- Increased wear resistance
- Good tribological specifications
- Tough
- Resistant to shock loads

▶ **From page 800**

**iguform S270 gear racks**
- Low coefficient of friction
- Low moisture absorption
- Quiet

▶ **From page 816**

**igutek P360 gear racks**
- Increased wear resistance
- Good tribological specifications
- Tough
- Resistant to shock loads

▶ **From page 816**

**iguform S270 and igutek P360 bevel gears**
- iguform S270 convinces with a low coefficient of friction and low moisture absorption.
- igutek P360 offers increased wear resistance, good tribological properties and high toughness.

▶ **From page 818**

**iguform S270 and igutek P360 bevel gear angle gearboxes**
- iguform S270 convinces with a low coefficient of friction and low moisture absorption.
- igutek P360 offers increased wear resistance, good tribological properties and high toughness.

▶ **From page 820**

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# iglidur® gears | Materials

## From a single part to high-volume production of up to several millions

### The expert at higher temperatures with chemical resistance

Max. +250°C
min. -100°C

Lubrication-free

**iglidur® A500**

- The endurance runner at higher temperatures in the food sector
- Compliant with EU Regulation 10/2011 EC
- FDA-compliant
- Temperature-resistant from -100°C to +250°C

### The endurance runner with ESD conformity

Max. +140 °C
min. -40°C

Lubrication-free

**iglidur® F**

- Electrically conductive
- High compressive strength
- Good temperature resistance
- Available in 3 hub designs

### The all-rounder with FDA conformity

Max. +80°C
min. -40°C

Lubrication-free

**xirodur® B180**

- Low coefficient of friction
- Wear-resistant material for continuous operation
- Vibration-dampening
- Available in 3 hub designs

### The cost-effective standard with low moisture absorption

Max. +90°C
min. -40°C

Lubrication-free

**iguform S270**

- Low coefficient of friction
- Low moisture absorption
- Quiet

### The robust all-rounder with high toughness

Max. +110°C
min. -30°C

Lubrication-free

**igutek P360**

- Increased wear resistance
- Good tribological specifications
- Tough
- Resistant to shock loads



# iglidur® gears | Material properties

## Technical data

| General properties | Unit | iguform S270 | igutek P360 | iglidur® A500 | iglidur® F | xirodur® B180 |
|---|---|---|---|---|---|---|
| Density | [g/cm³] | 1.41 | 1.24 | 1.28 | 1.25 | 1.41 |
| Colour | | white | light beige | brown | black | white |
| Max. moisture absorption at +23°C and 50% relative humidity | [% weight] | 0.20 | 0.50 | 0.30 | 1.80 | 0.2 |
| Max. waterabsorption | [% weight] | 0.65 | 2.10 | 0.50 | 8.40 | 0.7 |
| **Mechanical properties** | | | | | | |
| Flexural modulus | [MPa] | 2,400 | 1,300 | 3,600 | 11,600 | 2,500 |
| Flexural strength | [MPa] | 65 | 50 | 140 | 260 | 68 |
| Shore D hardness | | – | – | 83 | 84 | 77 |
| **Physical and thermal properties** | | | | | | |
| Max. continuous operatingtemperature | [°C] | +90 | +110 | +250 | +140 | +80 |
| Max. short-term operating temperature | [°C] | +100 | +130 | +300 | +180 | +110 |
| Min. continuous operating temperature | [°C] | -40 | -30 | -100 | -40 | -40 |
| **Electrical properties** | | | | | | |
| Specific contact resistance | [Ωcm] | $> 10^{12}$ | $> 10^{13}$ | $> 10^{14}$ | $> 10^{3}$ | $> 10^{14}$ |
| Surface resistance | [Ω] | $> 10^{14}$ | $> 10^{13}$ | $> 10^{13}$ | $> 10^{2}$ | $> 10^{14}$ |
| FDA-compliant | | Possible upon request | – | ● | – | ● |

**Other materials and desired dimensions upon request**

| Chemicals | Resistance | | | | |
|---|---|---|---|---|---|
| | iguform S270 | igutek P360 | iglidur® A500 | iglidur® F | xirodur® B180 |
| Alcohols | + | + | + | + up to 0 | + |
| Diluted acids | 0 up to – | + | + | 0 up to – | 0 up to – |
| Diluted alkalines | + | + | + | + | + |
| Fuels | + | + | + | + | + |
| Greases, oils without additives | + | + | + | + | + |
| Strong acids | – | – | + | – | – |
| Strong alkalines | + up to 0 | + up to 0 | + | + up to 0 | + up to 0 |

**+ resistant** **0 conditionally resistant** **– unstable** **All data at room temperature [+20°C]**

**Further information on chemicals can be found in the shop ▶ www.igus.eu/gear-shop**

# iglidur® gears | Application examples

## Gears in actuators

The application areas are diverse, actuators can be found in all areas of the vehicle. Through the innovative formulations of the iglidur® high-performance plastics, we achieve smoother operation, lower torque and thus lower power consumption in the drive unit with improved material properties.
The aim is to eliminate the greases used in the assembly process. This is to prevent failures due to missing or incorrectly dosed grease. The manufacturing process of an actuator is simplified and less expensive.

## Gears in planetary systems

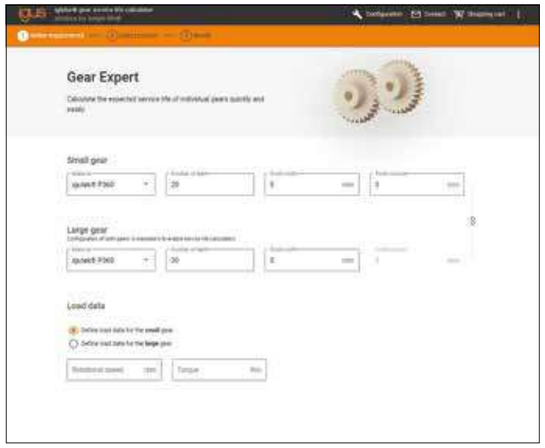
The requirements for eBikes are high, especially the planetary gear located in the drive unit which must transmit high torque. For example, with cargo bikes this load is particularly high.
The gears used here made of the iglidur® high-performance plastics convince with a long service life. Depending on the requirement, it is our goal to find the suitable material for the required parameters together with our customers. Other aspects such as noise emissions to be avoided also play an important role for us.

## Gears in a railway switch

The metal gears used in railway switches require the use of external lubricants. As a result, regular maintenance has to be carried out, costing both time and money. There is a risk that inadequate lubrication can lead to failures. With the help of 3D-printed gears made of iglidur® i3, the downtime is reduced, as they have very good emergency operation properties and can be used without external lubricants. Another advantage is that the iglidur® gears are corrosion-resistant.

# iglidur® gears | Online tools

## iglidur® gear expert




### Gear service life calculator

Enter the application parameters of your gear and calculate the expected service life with just a few clicks.

▶ **www.igus.eu/gear-expert**

### Gear/rack configurator

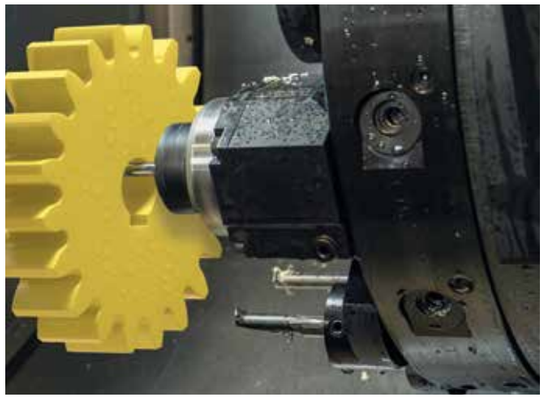
Gear configurator online for single and double gears from 8 teeth. No CAD software or knowledge required.

▶ **www.igus.eu/gear-configurator**
▶ **www.igus.eu/gear-rack**

### Special parts

Do you need gears with special geometries? We will be happy to work with you to find the right manufacturing process and the right material for your project. From a single part to high-volume production of up to several millions.

▶ **www.igus.eu/gear-special-parts**



### Post-processing

Our standard gears can be individually adapted to your requirements, e.g.:

- Hole diameter
- Hub design (key, D-Cut, etc.)
- Cross holes, grooves
- Thread
- …

▶ **www.igus.eu/gears**

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# iglidur® gears | Product range

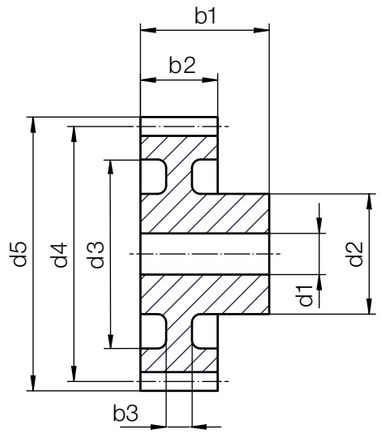
## iguform S270 and igutek P360 gears

iguform S270

igutek P360

- Low coefficient of friction
- Low moisture absorption
- Quiet

- Increased wear resistance
- Good tribological specifications
- Tough
- Resistant to shock loads




### Order key

Part number

□ G M-ST-050-012-00-020-R

Material | Gear | Metric | Spur gear | Module | Number of teeth | Helix angle | Hole diameter | Hub design round

| | |
|---|---|
| S270 | Low coefficient of friction |
| P360 | Good tribological specifications |

### Technical data

| Module | Number of teeth | Helix angle [°] | Hub design |
|---|---|---|---|
| 0.5 | 12 | 0 | Round |
| 0.5 | 13 | 0 | Round |
| 0.5 | 14 | 0 | Round |
| 0.5 | 15 | 0 | Round |
| 0.5 | 16 | 0 | Round |
| 0.5 | 17 | 0 | Round |
| 0.5 | 18 | 0 | Round |
| 0.5 | 19 | 0 | Round |
| 0.5 | 20 | 0 | Round |
| 0.5 | 21 | 0 | Round |
| 0.5 | 22 | 0 | Round |
| 0.5 | 23 | 0 | Round |
| 0.5 | 24 | 0 | Round |
| 0.5 | 25 | 0 | Round |
| 0.5 | 26 | 0 | Round |
| 0.5 | 27 | 0 | Round |
| 0.5 | 28 | 0 | Round |
| 0.5 | 30 | 0 | Round |
| 0.5 | 32 | 0 | Round |
| 0.5 | 35 | 0 | Round |
| 0.5 | 36 | 0 | Round |
| 0.5 | 38 | 0 | Round |
| 0.5 | 40 | 0 | Round |
| 0.5 | 42 | 0 | Round |

**iguform S270 and igutek P360 are available in over 300 variants and customisable according to your requirements**

### Dimensions [mm]

| d1 H10 | d5 | b2 | d4 | b1 | d2 | b3 | d3 | Part No. |
|---|---|---|---|---|---|---|---|---|
| 2 | 7.0 | 3 | 6.0 | 7 | 4.0 | 3.0 | – | □GM-ST-050-012-00-020-R |
| 2 | 7.5 | 3 | 6.5 | 7 | 4.0 | 3.0 | – | □GM-ST-050-013-00-020-R |
| 2 | 8.0 | 3 | 7.0 | 7 | 5.0 | 3.0 | – | □GM-ST-050-014-00-020-R |
| 3 | 8.5 | 3 | 7.5 | 10 | 6.0 | 3.0 | – | □GM-ST-050-015-00-030-R |
| 3 | 9.0 | 3 | 8.0 | 10 | 6.0 | 3.0 | – | □GM-ST-050-016-00-030-R |
| 3 | 9.5 | 3 | 8.5 | 10 | 6.0 | 3.0 | – | □GM-ST-050-017-00-030-R |
| 4 | 10.0 | 3 | 9.0 | 10 | 7.8 | 3.0 | – | □GM-ST-050-018-00-040-R |
| 4 | 10.5 | 3 | 9.5 | 10 | 7.8 | 3.0 | – | □GM-ST-050-019-00-040-R |
| 4 | 11.0 | 3 | 10.0 | 10 | 7.9 | 3.0 | – | □GM-ST-050-020-00-040-R |
| 4 | 11.5 | 3 | 10.5 | 10 | 8.0 | 3.0 | – | □GM-ST-050-021-00-040-R |
| 4 | 12.0 | 3 | 11.0 | 10 | 10.0 | 3.0 | – | □GM-ST-050-022-00-040-R |
| 4 | 12.5 | 3 | 11.5 | 10 | 9.9 | 3.0 | – | □GM-ST-050-023-00-040-R |
| 4 | 13.0 | 3 | 12.0 | 10 | 9.9 | 3.0 | – | □GM-ST-050-024-00-040-R |
| 4 | 13.5 | 3 | 12.5 | 10 | 9.9 | 3.0 | – | □GM-ST-050-025-00-040-R |
| 4 | 14.0 | 3 | 13.0 | 10 | 9.9 | 3.0 | – | □GM-ST-050-026-00-040-R |
| 4 | 14.5 | 3 | 13.5 | 10 | 9.9 | 3.0 | – | □GM-ST-050-027-00-040-R |
| 4 | 15.0 | 3 | 14.0 | 10 | 10.0 | 3.0 | – | □GM-ST-050-028-00-040-R |
| 4 | 16.0 | 3 | 15.0 | 10 | 11.9 | 3.0 | – | □GM-ST-050-030-00-040-R |
| 4 | 17.0 | 3 | 16.0 | 10 | 12.0 | 3.0 | – | □GM-ST-050-032-00-040-R |
| 4 | 18.5 | 3 | 17.5 | 10 | 12.0 | 3.0 | – | □GM-ST-050-035-00-040-R |
| 4 | 19.0 | 3 | 18.0 | 10 | 11.9 | 3.0 | – | □GM-ST-050-036-00-040-R |
| 4 | 20.0 | 3 | 19.0 | 10 | 12.0 | 3.0 | – | □GM-ST-050-038-00-040-R |
| 4 | 21.0 | 3 | 20.0 | 10 | 12.0 | 2.0 | 14.8 | □GM-ST-050-040-00-040-R |
| 4 | 22.0 | 3 | 21.0 | 10 | 12.15 | 2.0 | 17.0 | □GM-ST-050-042-00-040-R |

**Order example:**
**S270GM-ST-050-012-00-020-R:** material iguform S270, G gear, M metric, -ST spur gear, -050 module 0.5, -012 number of teeth 12, -00 helix angle 0°, -020 hole diameter Ø2mm, -R hub design round

# iglidur® gears | Product range

## iguform S270 and igutek P360 gears

### Technical data

| Module | Number of teeth | Helix angle [°] | Hub design |
|---|---|---|---|
| **0.5** | 45 | 0 | Round |
| **0.5** | 48 | 0 | Round |
| **0.5** | 50 | 0 | Round |
| **0.5** | 52 | 0 | Round |
| **0.5** | 54 | 0 | Round |
| **0.5** | 55 | 0 | Round |
| **0.5** | 56 | 0 | Round |
| **0.5** | 60 | 0 | Round |
| **0.5** | 64 | 0 | Round |
| **0.5** | 65 | 0 | Round |
| **0.5** | 70 | 0 | Round |
| **0.5** | 72 | 0 | Round |
| **0.5** | 75 | 0 | Round |
| **0.5** | 80 | 0 | Round |
| **0.5** | 90 | 0 | Round |
| **0.5** | 96 | 0 | Round |
| **0.5** | 100 | 0 | Round |
| **0.5** | 120 | 0 | Round |
| **0.7** | 12 | 0 | Round |
| **0.7** | 13 | 0 | Round |
| **0.7** | 14 | 0 | Round |
| **0.7** | 15 | 0 | Round |
| **0.7** | 16 | 0 | Round |
| **0.7** | 17 | 0 | Round |
| **0.7** | 18 | 0 | Round |
| **0.7** | 19 | 0 | Round |
| **0.7** | 20 | 0 | Round |
| **0.7** | 21 | 0 | Round |
| **0.7** | 22 | 0 | Round |
| **0.7** | 23 | 0 | Round |
| **0.7** | 24 | 0 | Round |
| **0.7** | 25 | 0 | Round |
| **0.7** | 26 | 0 | Round |
| **0.7** | 27 | 0 | Round |
| **0.7** | 28 | 0 | Round |
| **0.7** | 30 | 0 | Round |
| **0.7** | 32 | 0 | Round |
| **0.7** | 35 | 0 | Round |
| **0.7** | 36 | 0 | Round |
| **0.7** | 38 | 0 | Round |
| **0.7** | 40 | 0 | Round |
| **0.7** | 42 | 0 | Round |
| **0.7** | 45 | 0 | Round |
| **0.7** | 48 | 0 | Round |

iguform S270 and igutek P360 are available in over 300 variants and customisable according to your requirements

### Dimensions [mm]

| d1 H10 | d5 | b2 | d4 | b1 | d2 | b3 | d3 | Part No. |
|---|---|---|---|---|---|---|---|---|
| 4 | 23.5 | 3 | 22.5 | 10 | 12.15 | 2.0 | 18.0 | ☐GM-ST-050-045-00-040-R |
| 6 | 25.0 | 3 | 24.0 | 10 | 15.0 | 2.0 | 19.0 | ☐GM-ST-050-048-00-060-R |
| 6 | 26.0 | 3 | 25.0 | 10 | 15.0 | 2.0 | 20.0 | ☐GM-ST-050-050-00-060-R |
| 6 | 27.0 | 3 | 26.0 | 10 | 15.0 | 2.0 | 21.0 | ☐GM-ST-050-052-00-060-R |
| 6 | 28.0 | 3 | 27.0 | 10 | 15.0 | 2.0 | 21.0 | ☐GM-ST-050-054-00-060-R |
| 6 | 28.5 | 3 | 27.5 | 10 | 15.0 | 2.0 | 23.0 | ☐GM-ST-050-055-00-060-R |
| 6 | 29.0 | 3 | 28.0 | 10 | 15.0 | 2.0 | 23.0 | ☐GM-ST-050-056-00-060-R |
| 6 | 31.0 | 3 | 30.0 | 10 | 15.0 | 2.0 | 23.0 | ☐GM-ST-050-060-00-060-R |
| 6 | 33.0 | 3 | 32.0 | 10 | 15.0 | 2.0 | 23.0 | ☐GM-ST-050-064-00-060-R |
| 6 | 33.5 | 3 | 32.5 | 10 | 15.0 | 2.0 | 23.0 | ☐GM-ST-050-065-00-060-R |
| 6 | 36.0 | 3 | 35.0 | 10 | 15.0 | 2.0 | 29.0 | ☐GM-ST-050-070-00-060-R |
| 6 | 37.0 | 3 | 36.0 | 10 | 15.0 | 2.0 | 30.0 | ☐GM-ST-050-072-00-060-R |
| 6 | 38.5 | 3 | 37.5 | 10 | 15.0 | 2.0 | 33.0 | ☐GM-ST-050-075-00-060-R |
| 6 | 41.0 | 3 | 40.0 | 10 | 15.0 | 2.0 | 33.0 | ☐GM-ST-050-080-00-060-R |
| 6 | 46.0 | 3 | 45.0 | 10 | 15.0 | 2.0 | 39.0 | ☐GM-ST-050-090-00-060-R |
| 6 | 49.0 | 3 | 48.0 | 10 | 15.0 | 2.0 | 42.0 | ☐GM-ST-050-096-00-060-R |
| 6 | 51.0 | 3 | 50.0 | 10 | 15.0 | 2.0 | 44.0 | ☐GM-ST-050-100-00-060-R |
| 6 | 61.0 | 3 | 60.0 | 10 | 15.0 | 2.0 | 54.0 | ☐GM-ST-050-120-00-060-R |
| 3 | 9.8 | 6 | 8.4 | 15 | 6.0 | 6.0 | – | ☐GM-ST-070-012-00-030-R |
| 3 | 10.5 | 6 | 9.1 | 15 | 6.0 | 6.0 | – | ☐GM-ST-070-013-00-030-R |
| 3 | 11.2 | 6 | 9.8 | 15 | 6.0 | 6.0 | – | ☐GM-ST-070-014-00-030-R |
| 3 | 11.9 | 6 | 10.5 | 15 | 6.0 | 6.0 | – | ☐GM-ST-070-015-00-030-R |
| 4 | 12.6 | 6 | 11.2 | 15 | 9.0 | 6.0 | – | ☐GM-ST-070-016-00-040-R |
| 4 | 13.3 | 6 | 11.9 | 15 | 9.0 | 6.0 | – | ☐GM-ST-070-017-00-040-R |
| 4 | 14.0 | 6 | 12.6 | 15 | 9.0 | 6.0 | – | ☐GM-ST-070-018-00-040-R |
| 4 | 14.7 | 6 | 13.3 | 15 | 9.0 | 6.0 | – | ☐GM-ST-070-019-00-040-R |
| 4 | 15.4 | 6 | 14.0 | 15 | 9.0 | 6.0 | – | ☐GM-ST-070-020-00-040-R |
| 4 | 16.1 | 6 | 14.7 | 15 | 9.0 | 6.0 | – | ☐GM-ST-070-021-00-040-R |
| 4 | 16.8 | 6 | 15.4 | 15 | 9.0 | 6.0 | – | ☐GM-ST-070-022-00-040-R |
| 4 | 17.5 | 6 | 16.1 | 15 | 9.0 | 6.0 | – | ☐GM-ST-070-023-00-040-R |
| 4 | 18.2 | 6 | 16.8 | 15 | 9.0 | 3.0 | 13.0 | ☐GM-ST-070-024-00-040-R |
| 6 | 18.9 | 6 | 17.5 | 15 | 9.0 | 3.0 | 13.0 | ☐GM-ST-070-025-00-060-R |
| 6 | 19.6 | 6 | 18.2 | 15 | 9.0 | 3.0 | 13.0 | ☐GM-ST-070-026-00-060-R |
| 6 | 20.3 | 6 | 18.9 | 15 | 9.0 | 3.0 | 13.0 | ☐GM-ST-070-027-00-060-R |
| 6 | 21.0 | 6 | 19.6 | 15 | 9.0 | 3.0 | 13.0 | ☐GM-ST-070-028-00-060-R |
| 6 | 22.4 | 6 | 21.0 | 15 | 12.0 | 3.0 | 16.0 | ☐GM-ST-070-030-00-060-R |
| 6 | 23.8 | 6 | 22.4 | 15 | 12.0 | 3.0 | 16.0 | ☐GM-ST-070-032-00-060-R |
| 6 | 25.9 | 6 | 24.5 | 15 | 15.0 | 3.0 | 18.5 | ☐GM-ST-070-035-00-060-R |
| 6 | 26.6 | 6 | 25.2 | 15 | 15.0 | 3.0 | 18.5 | ☐GM-ST-070-036-00-060-R |
| 6 | 28.0 | 6 | 26.6 | 15 | 15.0 | 3.0 | 21.0 | ☐GM-ST-070-038-00-060-R |
| 6 | 29.4 | 6 | 28.0 | 15 | 15.0 | 3.0 | 21.0 | ☐GM-ST-070-040-00-060-R |
| 6 | 30.8 | 6 | 29.4 | 15 | 18.0 | 2.0 | 24.0 | ☐GM-ST-070-042-00-060-R |
| 6 | 32.9 | 6 | 31.5 | 15 | 18.0 | 2.0 | 24.0 | ☐GM-ST-070-045-00-060-R |
| 8 | 35.0 | 6 | 33.6 | 15 | 18.0 | 2.0 | 24.0 | ☐GM-ST-070-048-00-080-R |

Dimension description see page 801

# iglidur® gears | Product range

## iguform S270 and igutek P360 gears

### Technical data

| Module | Number of teeth | Helix angle [°] | Hub design |
|---|---|---|---|
| **0.7** | 50 | 0 | Round |
| **0.7** | 52 | 0 | Round |
| **0.7** | 54 | 0 | Round |
| **0.7** | 55 | 0 | Round |
| **0.7** | 56 | 0 | Round |
| **0.7** | 60 | 0 | Round |
| **0.7** | 64 | 0 | Round |
| **0.7** | 65 | 0 | Round |
| **0.7** | 70 | 0 | Round |
| **0.7** | 72 | 0 | Round |
| **0.7** | 75 | 0 | Round |
| **0.7** | 80 | 0 | Round |
| **0.7** | 90 | 0 | Round |
| **0.7** | 96 | 0 | Round |
| **0.7** | 100 | 0 | Round |
| **0.7** | 120 | 0 | Round |
| **1.0** | 12 | 0 | Round |
| **1.0** | 13 | 0 | Round |
| **1.0** | 14 | 0 | Round |
| **1.0** | 15 | 0 | Round |
| **1.0** | 16 | 0 | Round |
| **1.0** | 17 | 0 | Round |
| **1.0** | 18 | 0 | Round |
| **1.0** | 19 | 0 | Round |
| **1.0** | 20 | 0 | Round |
| **1.0** | 21 | 0 | Round |
| **1.0** | 22 | 0 | Round |
| **1.0** | 23 | 0 | Round |
| **1.0** | 24 | 0 | Round |
| **1.0** | 25 | 0 | Round |
| **1.0** | 26 | 0 | Round |
| **1.0** | 27 | 0 | Round |
| **1.0** | 28 | 0 | Round |
| **1.0** | 30 | 0 | Round |
| **1.0** | 32 | 0 | Round |
| **1.0** | 35 | 0 | Round |
| **1.0** | 36 | 0 | Round |
| **1.0** | 38 | 0 | Round |
| **1.0** | 40 | 0 | Round |
| **1.0** | 42 | 0 | Round |
| **1.0** | 45 | 0 | Round |
| **1.0** | 48 | 0 | Round |
| **1.0** | 50 | 0 | Round |
| **1.0** | 52 | 0 | Round |

**iguform S270 and igutek P360 are available in over 300 variants and customisable according to your requirements**

### Dimensions [mm]

| d1 H10 | d5 | b2 | d4 | b1 | d2 | b3 | d3 | Part No. |
|---|---|---|---|---|---|---|---|---|
| 8 | 36.4 | 6 | 35.0 | 15 | 18.0 | 2.0 | 27.5 | ☐GM-ST-070-050-00-080-R |
| 8 | 37.8 | 6 | 36.4 | 15 | 18.0 | 2.0 | 27.5 | ☐GM-ST-070-052-00-080-R |
| 8 | 39.2 | 6 | 37.8 | 15 | 18.0 | 2.0 | 27.5 | ☐GM-ST-070-054-00-080-R |
| 8 | 39.9 | 6 | 38.5 | 15 | 18.0 | 2.0 | 30.0 | ☐GM-ST-070-055-00-080-R |
| 8 | 40.6 | 6 | 39.2 | 15 | 18.0 | 2.0 | 30.0 | ☐GM-ST-070-056-00-080-R |
| 8 | 43.4 | 6 | 42.0 | 15 | 18.0 | 2.0 | 30.0 | ☐GM-ST-070-060-00-080-R |
| 8 | 46.2 | 6 | 44.8 | 15 | 18.0 | 2.0 | 37.0 | ☐GM-ST-070-064-00-080-R |
| 8 | 46.9 | 6 | 45.5 | 15 | 18.0 | 2.0 | 37.0 | ☐GM-ST-070-065-00-080-R |
| 8 | 50.4 | 6 | 49.0 | 15 | 18.0 | 2.0 | 37.0 | ☐GM-ST-070-070-00-080-R |
| 8 | 51.8 | 6 | 50.4 | 15 | 18.0 | 2.0 | 37.0 | ☐GM-ST-070-072-00-080-R |
| 10 | 53.9 | 6 | 52.5 | 15 | 18.0 | 2.0 | 37.0 | ☐GM-ST-070-075-00-100-R |
| 10 | 57.4 | 6 | 56.0 | 15 | 21.0 | 2.0 | 46.5 | ☐GM-ST-070-080-00-100-R |
| 10 | 64.4 | 6 | 63.0 | 15 | 21.0 | 2.0 | 57.0 | ☐GM-ST-070-090-00-100-R |
| 10 | 68.6 | 6 | 67.2 | 15 | 21.0 | 2.0 | 57.0 | ☐GM-ST-070-096-00-100-R |
| 10 | 71.4 | 6 | 70.0 | 15 | 21.0 | 2.0 | 57.0 | ☐GM-ST-070-100-00-100-R |
| 10 | 85.4 | 6 | 84.0 | 15 | 21.0 | 2.0 | 77.0 | ☐GM-ST-070-120-00-100-R |
| 4 | 14.0 | 9 | 12.0 | 17 | 9.0 | 9.0 | – | ☐GM-ST-100-012-00-040-R |
| 4 | 15.0 | 9 | 13.0 | 17 | 9.0 | 9.0 | – | ☐GM-ST-100-013-00-040-R |
| 4 | 16.0 | 9 | 14.0 | 17 | 9.0 | 9.0 | – | ☐GM-ST-100-014-00-040-R |
| 4 | 17.0 | 9 | 15.0 | 17 | 9.0 | 9.0 | – | ☐GM-ST-100-015-00-040-R |
| 4 | 18.0 | 9 | 16.0 | 17 | 9.0 | 9.0 | – | ☐GM-ST-100-016-00-040-R |
| 4 | 19.0 | 9 | 17.0 | 17 | 9.0 | 6.0 | 12.0 | ☐GM-ST-100-017-00-040-R |
| 4 | 20.0 | 9 | 18.0 | 17 | 9.0 | 6.0 | 13.0 | ☐GM-ST-100-018-00-040-R |
| 4 | 21.0 | 9 | 19.0 | 17 | 9.0 | 6.0 | 13.0 | ☐GM-ST-100-019-00-040-R |
| 4 | 22.0 | 9 | 20.0 | 17 | 9.0 | 6.0 | 13.0 | ☐GM-ST-100-020-00-040-R |
| 5 | 23.0 | 9 | 21.0 | 17 | 12.0 | 6.0 | 16.0 | ☐GM-ST-100-021-00-050-R |
| 5 | 24.0 | 9 | 22.0 | 17 | 12.0 | 6.0 | 16.0 | ☐GM-ST-100-022-00-050-R |
| 5 | 25.0 | 9 | 23.0 | 17 | 12.0 | 6.0 | 16.0 | ☐GM-ST-100-023-00-050-R |
| 6 | 26.0 | 9 | 24.0 | 18 | 15.0 | 6.0 | 18.5 | ☐GM-ST-100-024-00-060-R |
| 6 | 27.0 | 9 | 25.0 | 18 | 15.0 | 6.0 | 18.5 | ☐GM-ST-100-025-00-060-R |
| 6 | 28.0 | 9 | 26.0 | 18 | 15.0 | 6.0 | 18.5 | ☐GM-ST-100-026-00-060-R |
| 6 | 29.0 | 9 | 27.0 | 18 | 15.0 | 6.0 | 18.5 | ☐GM-ST-100-027-00-060-R |
| 6 | 30.0 | 9 | 28.0 | 18 | 15.0 | 6.0 | 21.0 | ☐GM-ST-100-028-00-060-R |
| 6 | 32.0 | 9 | 30.0 | 18 | 15.0 | 6.0 | 21.0 | ☐GM-ST-100-030-00-060-R |
| 6 | 34.0 | 9 | 32.0 | 18 | 18.0 | 4.6 | 23.5 | ☐GM-ST-100-032-00-060-R |
| 8 | 37.0 | 9 | 35.0 | 18 | 18.0 | 4.6 | 23.5 | ☐GM-ST-100-035-00-080-R |
| 8 | 38.0 | 9 | 36.0 | 18 | 18.0 | 4.6 | 27.0 | ☐GM-ST-100-036-00-080-R |
| 8 | 40.0 | 9 | 38.0 | 18 | 18.0 | 4.6 | 27.0 | ☐GM-ST-100-038-00-080-R |
| 8 | 42.0 | 9 | 40.0 | 18 | 18.0 | 4.6 | 27.0 | ☐GM-ST-100-040-00-080-R |
| 8 | 44.0 | 9 | 42.0 | 18 | 18.0 | 4.6 | 27.0 | ☐GM-ST-100-042-00-080-R |
| 8 | 47.0 | 9 | 45.0 | 18 | 18.0 | 4.6 | 36.5 | ☐GM-ST-100-045-00-080-R |
| 8 | 50.0 | 9 | 48.0 | 18 | 18.0 | 4.6 | 36.5 | ☐GM-ST-100-048-00-080-R |
| 8 | 52.0 | 9 | 50.0 | 18 | 18.0 | 4.6 | 36.5 | ☐GM-ST-100-050-00-080-R |
| 8 | 54.0 | 9 | 52.0 | 18 | 21.0 | 4.6 | 46.0 | ☐GM-ST-100-052-00-080-R |

**Dimension description see page 801**

# iglidur® gears | Product range

## iguform S270 and igutek P360 gears

### Technical data

| Module | Number of teeth | Helix angle [°] | Hub design |
|---|---|---|---|
| **1.0** | 54 | 0 | Round |
| **1.0** | 55 | 0 | Round |
| **1.0** | 56 | 0 | Round |
| **1.0** | 58 | 0 | Round |
| **1.0** | 60 | 0 | Round |
| **1.0** | 64 | 0 | Round |
| **1.0** | 65 | 0 | Round |
| **1.0** | 70 | 0 | Round |
| **1.0** | 72 | 0 | Round |
| **1.0** | 75 | 0 | Round |
| **1.0** | 80 | 0 | Round |
| **1.0** | 85 | 0 | Round |
| **1.0** | 90 | 0 | Round |
| **1.0** | 100 | 0 | Round |
| **1.0** | 110 | 0 | Round |
| **1.0** | 120 | 0 | Round |
| **1.0** | 130 | 0 | Round |
| **1.0** | 140 | 0 | Round |
| **1.25** | 12 | 0 | Round |
| **1.25** | 13 | 0 | Round |
| **1.25** | 14 | 0 | Round |
| **1.25** | 15 | 0 | Round |
| **1.25** | 16 | 0 | Round |
| **1.25** | 17 | 0 | Round |
| **1.25** | 18 | 0 | Round |
| **1.25** | 19 | 0 | Round |
| **1.25** | 20 | 0 | Round |
| **1.25** | 21 | 0 | Round |
| **1.25** | 22 | 0 | Round |
| **1.25** | 23 | 0 | Round |
| **1.25** | 24 | 0 | Round |
| **1.25** | 25 | 0 | Round |
| **1.25** | 26 | 0 | Round |
| **1.25** | 27 | 0 | Round |
| **1.25** | 28 | 0 | Round |
| **1.25** | 30 | 0 | Round |
| **1.25** | 32 | 0 | Round |
| **1.25** | 35 | 0 | Round |
| **1.25** | 36 | 0 | Round |
| **1.25** | 38 | 0 | Round |
| **1.25** | 40 | 0 | Round |
| **1.25** | 42 | 0 | Round |
| **1.25** | 45 | 0 | Round |
| **1.25** | 48 | 0 | Round |

**iguform S270 and igutek P360 are available in over 300 variants and customisable according to your requirements**

### Dimensions [mm]

| d1 H10 | d5 | b2 | d4 | b1 | d2 | b3 | d3 | Part No. |
|---|---|---|---|---|---|---|---|---|
| 8 | 56.0 | 9 | 54.0 | 18 | 21.0 | 4.6 | 46.0 | ☐GM-ST-100-054-00-080-R |
| 8 | 57.0 | 9 | 55.0 | 18 | 21.0 | 4.6 | 46.0 | ☐GM-ST-100-055-00-080-R |
| 8 | 58.0 | 9 | 56.0 | 18 | 21.0 | 4.6 | 46.0 | ☐GM-ST-100-056-00-080-R |
| 8 | 60.0 | 9 | 58.0 | 18 | 21.0 | 4.6 | 46.0 | ☐GM-ST-100-058-00-080-R |
| 8 | 62.0 | 9 | 60.0 | 18 | 21.0 | 4.6 | 46.0 | ☐GM-ST-100-060-00-080-R |
| 10 | 66.0 | 9 | 64.0 | 18 | 21.0 | 4.6 | 56.5 | ☐GM-ST-100-064-00-100-R |
| 10 | 67.0 | 9 | 65.0 | 18 | 21.0 | 4.6 | 56.5 | ☐GM-ST-100-065-00-100-R |
| 10 | 72.0 | 9 | 70.0 | 18 | 21.0 | 4.6 | 56.5 | ☐GM-ST-100-070-00-100-R |
| 10 | 74.0 | 9 | 72.0 | 18 | 21.0 | 4.6 | 66.0 | ☐GM-ST-100-072-00-100-R |
| 10 | 77.0 | 9 | 75.0 | 18 | 21.0 | 4.6 | 66.0 | ☐GM-ST-100-075-00-100-R |
| 10 | 82.0 | 9 | 80.0 | 18 | 21.0 | 4.6 | 66.0 | ☐GM-ST-100-080-00-100-R |
| 10 | 87.0 | 9 | 85.0 | 18 | 21.0 | 4.6 | 66.0 | ☐GM-ST-100-085-00-100-R |
| 10 | 92.0 | 9 | 90.0 | 18 | 21.0 | 4.6 | 76.0 | ☐GM-ST-100-090-00-100-R |
| 12 | 102.0 | 9 | 100.0 | 18 | 24.0 | 4.6 | 86.0 | ☐GM-ST-100-100-00-120-R |
| 12 | 112.0 | 9 | 110.0 | 18 | 24.0 | 4.6 | 96.0 | ☐GM-ST-100-110-00-120-R |
| 12 | 122.0 | 9 | 120.0 | 18 | 24.0 | 4.6 | 105.5 | ☐GM-ST-100-120-00-120-R |
| 12 | 132.0 | 9 | 130.0 | 18 | 24.0 | 4.6 | 115.0 | ☐GM-ST-100-130-00-120-R |
| 12 | 142.0 | 9 | 140.0 | 18 | 24.0 | 4.6 | 125.0 | ☐GM-ST-100-140-00-120-R |
| 5 | 17.5 | 10 | 15.0 | 19 | 9.0 | 10.0 | – | ☐GM-ST-125-012-00-050-R |
| 5 | 18.75 | 10 | 16.25 | 19 | 9.0 | 10.0 | – | ☐GM-ST-125-013-00-050-R |
| 5 | 20.0 | 10 | 17.5 | 19 | 9.0 | 10.0 | – | ☐GM-ST-125-014-00-050-R |
| 5 | 21.25 | 10 | 18.75 | 19 | 9.0 | 7.0 | 13.0 | ☐GM-ST-125-015-00-050-R |
| 5 | 22.5 | 10 | 20.0 | 19 | 9.0 | 7.0 | 13.0 | ☐GM-ST-125-016-00-050-R |
| 5 | 23.75 | 10 | 21.25 | 19 | 9.0 | 7.0 | 13.0 | ☐GM-ST-125-017-00-050-R |
| 5 | 25.0 | 10 | 22.5 | 19 | 12.0 | 7.0 | 16.0 | ☐GM-ST-125-018-00-050-R |
| 5 | 26.25 | 10 | 23.75 | 19 | 12.0 | 7.0 | 16.0 | ☐GM-ST-125-019-00-050-R |
| 5 | 27.5 | 10 | 25.0 | 19 | 12.0 | 7.0 | 16.0 | ☐GM-ST-125-020-00-050-R |
| 6 | 28.75 | 10 | 26.25 | 19 | 15.0 | 7.0 | 18.5 | ☐GM-ST-125-021-00-060-R |
| 6 | 30.0 | 10 | 27.5 | 19 | 15.0 | 7.0 | 18.5 | ☐GM-ST-125-022-00-060-R |
| 6 | 31.25 | 10 | 28.75 | 19 | 15.0 | 7.0 | 18.5 | ☐GM-ST-125-023-00-060-R |
| 6 | 32.5 | 10 | 30.0 | 19 | 15.0 | 7.0 | 21.0 | ☐GM-ST-125-024-00-060-R |
| 6 | 33.75 | 10 | 31.25 | 19 | 15.0 | 7.0 | 21.0 | ☐GM-ST-125-025-00-060-R |
| 6 | 35.0 | 10 | 32.5 | 19 | 18.0 | 5.5 | 23.5 | ☐GM-ST-125-026-00-060-R |
| 6 | 36.25 | 10 | 33.75 | 19 | 18.0 | 5.5 | 23.5 | ☐GM-ST-125-027-00-060-R |
| 8 | 37.5 | 10 | 35.0 | 19 | 18.0 | 5.5 | 23.5 | ☐GM-ST-125-028-00-080-R |
| 8 | 40.0 | 10 | 37.5 | 19 | 18.0 | 5.5 | 27.0 | ☐GM-ST-125-030-00-080-R |
| 8 | 42.5 | 10 | 40.0 | 19 | 18.0 | 5.5 | 27.0 | ☐GM-ST-125-032-00-080-R |
| 8 | 46.25 | 10 | 43.75 | 19 | 18.0 | 5.5 | 27.0 | ☐GM-ST-125-035-00-080-R |
| 8 | 47.5 | 10 | 45.0 | 19 | 18.0 | 5.5 | 36.0 | ☐GM-ST-125-036-00-080-R |
| 8 | 50.0 | 10 | 47.5 | 19 | 18.0 | 5.5 | 36.0 | ☐GM-ST-125-038-00-080-R |
| 8 | 52.5 | 10 | 50.0 | 19 | 18.0 | 5.5 | 36.0 | ☐GM-ST-125-040-00-080-R |
| 8 | 55.0 | 10 | 52.5 | 19 | 18.0 | 5.5 | 36.0 | ☐GM-ST-125-042-00-080-R |
| 8 | 58.75 | 10 | 56.25 | 19 | 21.0 | 5.5 | 46.0 | ☐GM-ST-125-045-00-080-R |
| 8 | 62.5 | 10 | 60.0 | 19 | 21.0 | 5.5 | 46.0 | ☐GM-ST-125-048-00-080-R |

**Dimension description see page 801**

# iglidur® gears | Product range

## iguform S270 and igutek P360 gears

### Technical data

| Module | Number of teeth | Helix angle [°] | Hub design |
|---|---|---|---|
| **1.25** | 50 | 0 | Round |
| **1.25** | 52 | 0 | Round |
| **1.25** | 54 | 0 | Round |
| **1.25** | 55 | 0 | Round |
| **1.25** | 56 | 0 | Round |
| **1.25** | 60 | 0 | Round |
| **1.25** | 64 | 0 | Round |
| **1.25** | 65 | 0 | Round |
| **1.25** | 70 | 0 | Round |
| **1.25** | 72 | 0 | Round |
| **1.25** | 75 | 0 | Round |
| **1.25** | 80 | 0 | Round |
| **1.25** | 90 | 0 | Round |
| **1.25** | 100 | 0 | Round |
| **1.25** | 110 | 0 | Round |
| **1.5** | 12 | 0 | Round |
| **1.5** | 13 | 0 | Round |
| **1.5** | 14 | 0 | Round |
| **1.5** | 15 | 0 | Round |
| **1.5** | 16 | 0 | Round |
| **1.5** | 17 | 0 | Round |
| **1.5** | 18 | 0 | Round |
| **1.5** | 19 | 0 | Round |
| **1.5** | 20 | 0 | Round |
| **1.5** | 21 | 0 | Round |
| **1.5** | 22 | 0 | Round |
| **1.5** | 23 | 0 | Round |
| **1.5** | 24 | 0 | Round |
| **1.5** | 25 | 0 | Round |
| **1.5** | 26 | 0 | Round |
| **1.5** | 27 | 0 | Round |
| **1.5** | 28 | 0 | Round |
| **1.5** | 30 | 0 | Round |
| **1.5** | 32 | 0 | Round |
| **1.5** | 35 | 0 | Round |
| **1.5** | 36 | 0 | Round |
| **1.5** | 38 | 0 | Round |
| **1.5** | 40 | 0 | Round |
| **1.5** | 42 | 0 | Round |
| **1.5** | 43 | 0 | Round |
| **1.5** | 45 | 0 | Round |
| **1.5** | 48 | 0 | Round |
| **1.5** | 50 | 0 | Round |
| **1.5** | 52 | 0 | Round |

iguform S270 and igutek P360 are available in over 300 variants and customisable according to your requirements

### Dimensions [mm]

| d1 H10 | d5 | b2 | d4 | b1 | d2 | b3 | d3 | Part No. |
|---|---|---|---|---|---|---|---|---|
| 8 | 65.0 | 10 | 62.5 | 19 | 21.0 | 5.5 | 46.0 | ☐GM-ST-125-050-00-080-R |
| 10 | 67.5 | 10 | 65.0 | 19 | 21.0 | 5.5 | 56.0 | ☐GM-ST-125-052-00-100-R |
| 10 | 70.0 | 10 | 67.5 | 19 | 21.0 | 5.5 | 56.0 | ☐GM-ST-125-054-00-100-R |
| 10 | 71.25 | 10 | 68.75 | 19 | 21.0 | 5.5 | 56.0 | ☐GM-ST-125-055-00-100-R |
| 10 | 72.5 | 10 | 70.0 | 19 | 21.0 | 5.5 | 56.0 | ☐GM-ST-125-056-00-100-R |
| 10 | 77.5 | 10 | 75.0 | 19 | 21.0 | 5.5 | 66.0 | ☐GM-ST-125-060-00-100-R |
| 10 | 82.5 | 10 | 80.0 | 19 | 21.0 | 5.5 | 66.0 | ☐GM-ST-125-064-00-100-R |
| 10 | 83.75 | 10 | 81.25 | 19 | 21.0 | 5.5 | 66.0 | ☐GM-ST-125-065-00-100-R |
| 10 | 90.0 | 10 | 87.5 | 19 | 21.0 | 5.5 | 76.0 | ☐GM-ST-125-070-00-100-R |
| 12 | 92.5 | 10 | 90.0 | 19 | 21.0 | 5.5 | 76.0 | ☐GM-ST-125-072-00-120-R |
| 10 | 96.25 | 10 | 93.75 | 19 | 21.0 | 5.5 | 76.0 | ☐GM-ST-125-075-00-100-R |
| 12 | 102.5 | 10 | 100.0 | 19 | 24.0 | 5.5 | 86.0 | ☐GM-ST-125-080-00-120-R |
| 12 | 115.0 | 10 | 112.5 | 19 | 24.0 | 5.5 | 95.0 | ☐GM-ST-125-090-00-120-R |
| 12 | 127.5 | 10 | 125.0 | 19 | 24.0 | 5.5 | 105.5 | ☐GM-ST-125-100-00-120-R |
| 12 | 140.0 | 10 | 137.5 | 19 | 24.0 | 5.5 | 115.0 | ☐GM-ST-125-110-00-120-R |
| 6 | 21.0 | 12 | 18.0 | 23 | 14.0 | 12.0 | – | ☐GM-ST-150-012-00-060-R |
| 6 | 22.5 | 12 | 19.5 | 23 | 14.0 | 12.0 | – | ☐GM-ST-150-013-00-060-R |
| 6 | 24.0 | 12 | 21.0 | 23 | 14.0 | 10.5 | 13.0 | ☐GM-ST-150-014-00-060-R |
| 6 | 25.5 | 12 | 22.5 | 23 | 14.0 | 10.5 | 16.0 | ☐GM-ST-150-015-00-060-R |
| 6 | 27.0 | 12 | 24.0 | 23 | 14.0 | 10.5 | 16.0 | ☐GM-ST-150-016-00-060-R |
| 6 | 28.5 | 12 | 25.5 | 23 | 14.0 | 10.5 | 16.0 | ☐GM-ST-150-017-00-060-R |
| 8 | 30.0 | 12 | 27.0 | 23 | 17.0 | 10.5 | 18.5 | ☐GM-ST-150-018-00-080-R |
| 8 | 31.5 | 12 | 28.5 | 23 | 17.0 | 10.5 | 18.5 | ☐GM-ST-150-019-00-080-R |
| 8 | 33.0 | 12 | 30.0 | 23 | 17.0 | 9.0 | 22.5 | ☐GM-ST-150-020-00-080-R |
| 8 | 34.5 | 12 | 31.5 | 23 | 17.0 | 5.0 | 22.5 | ☐GM-ST-150-021-00-080-R |
| 8 | 36.0 | 12 | 33.0 | 23 | 17.0 | 5.0 | 22.5 | ☐GM-ST-150-022-00-080-R |
| 8 | 37.5 | 12 | 34.5 | 23 | 17.0 | 5.0 | 22.5 | ☐GM-ST-150-023-00-080-R |
| 8 | 39.0 | 12 | 36.0 | 23 | 19.0 | 5.0 | 26.5 | ☐GM-ST-150-024-00-080-R |
| 8 | 40.5 | 12 | 37.5 | 23 | 19.0 | 5.0 | 26.5 | ☐GM-ST-150-022-00-080-R |
| 8 | 42.0 | 12 | 39.0 | 23 | 19.0 | 5.0 | 26.5 | ☐GM-ST-150-022-00-080-R |
| 8 | 43.5 | 12 | 40.5 | 23 | 19.0 | 5.0 | 25.5 | ☐GM-ST-150-027-00-080-R |
| 8 | 45.0 | 12 | 42.0 | 23 | 19.0 | 5.0 | 25.5 | ☐GM-ST-150-028-00-080-R |
| 10 | 48.0 | 12 | 45.0 | 23 | 24.0 | 5.0 | 33.5 | ☐GM-ST-150-030-00-100-R |
| 10 | 51.0 | 12 | 48.0 | 23 | 24.0 | 5.0 | 33.5 | ☐GM-ST-150-032-00-100-R |
| 10 | 55.5 | 12 | 52.5 | 23 | 24.0 | 5.0 | 41.5 | ☐GM-ST-150-035-00-100-R |
| 10 | 57.0 | 12 | 54.0 | 23 | 24.0 | 5.0 | 41.5 | ☐GM-ST-150-036-00-100-R |
| 10 | 60.0 | 12 | 57.0 | 23 | 24.0 | 5.0 | 41.5 | ☐GM-ST-150-038-00-100-R |
| 10 | 63.0 | 12 | 60.0 | 23 | 24.0 | 5.0 | 48.5 | ☐GM-ST-150-040-00-100-R |
| 10 | 66.0 | 12 | 63.0 | 23 | 24.0 | 5.0 | 48.5 | ☐GM-ST-150-042-00-100-R |
| 10 | 67.5 | 12 | 64.5 | 23 | 24.0 | 5.0 | 48.5 | ☐GM-ST-150-043-00-100-R |
| 10 | 70.5 | 12 | 67.5 | 23 | 24.0 | 5.0 | 48.5 | ☐GM-ST-150-045-00-100-R |
| 10 | 75.0 | 12 | 72.0 | 23 | 24.0 | 5.0 | 48.5 | ☐GM-ST-150-048-00-100-R |
| 12 | 78.0 | 12 | 75.0 | 23 | 27.0 | 5.0 | 63.0 | ☐GM-ST-150-050-00-120-R |
| 12 | 81.0 | 12 | 78.0 | 23 | 27.0 | 5.0 | 63.0 | ☐GM-ST-150-052-00-120-R |

Dimension description see page 801

# iglidur® gears | Product range

## iguform S270 and igutek P360 gears

### Technical data

| Module | Number of teeth | Helix angle [°] | Hub design |
|---|---|---|---|
| **1.5** | 54 | 0 | Round |
| **1.5** | 55 | 0 | Round |
| **1.5** | 60 | 0 | Round |
| **1.5** | 70 | 0 | Round |
| **1.5** | 80 | 0 | Round |
| **1.5** | 90 | 0 | Round |
| **1.5** | 100 | 0 | Round |
| **1.5** | 110 | 0 | Round |
| **1.5** | 120 | 0 | Round |
| **1.5** | 130 | 0 | Round |
| **1.5** | 140 | 0 | Round |
| **1.5** | 150 | 0 | Round |
| **2.0** | 12 | 0 | Round |
| **2.0** | 13 | 0 | Round |
| **2.0** | 14 | 0 | Round |
| **2.0** | 15 | 0 | Round |
| **2.0** | 16 | 0 | Round |
| **2.0** | 17 | 0 | Round |
| **2.0** | 18 | 0 | Round |
| **2.0** | 19 | 0 | Round |
| **2.0** | 20 | 0 | Round |
| **2.0** | 21 | 0 | Round |
| **2.0** | 22 | 0 | Round |
| **2.0** | 23 | 0 | Round |
| **2.0** | 24 | 0 | Round |
| **2.0** | 25 | 0 | Round |
| **2.0** | 26 | 0 | Round |
| **2.0** | 27 | 0 | Round |
| **2.0** | 28 | 0 | Round |
| **2.0** | 30 | 0 | Round |
| **2.0** | 32 | 0 | Round |
| **2.0** | 35 | 0 | Round |
| **2.0** | 36 | 0 | Round |
| **2.0** | 38 | 0 | Round |
| **2.0** | 40 | 0 | Round |
| **2.0** | 42 | 0 | Round |
| **2.0** | 45 | 0 | Round |
| **2.0** | 48 | 0 | Round |
| **2.0** | 50 | 0 | Round |
| **2.0** | 55 | 0 | Round |
| **2.0** | 60 | 0 | Round |
| **2.0** | 70 | 0 | Round |
| **2.0** | 75 | 0 | Round |
| **2.0** | 80 | 0 | Round |

**iguform S270 and igutek P360 are available in over 300 variants and customisable according to your requirements**

### Dimensions [mm]

| d1 H10 | d5 | b2 | d4 | b1 | d2 | b3 | d3 | Part No. |
|---|---|---|---|---|---|---|---|---|
| 12 | 84.0 | 12 | 81.0 | 23 | 27.0 | 5.0 | 63.0 | ☐**GM-ST-150-054-00-120-R** |
| 12 | 85.5 | 12 | 82.5 | 23 | 27.0 | 5.0 | 63.0 | ☐**GM-ST-150-055-00-120-R** |
| 12 | 93.0 | 12 | 90.0 | 23 | 27.0 | 5.0 | 63.0 | ☐**GM-ST-150-060-00-120-R** |
| 14 | 108.0 | 12 | 105.0 | 23 | 30.0 | 5.0 | 88.0 | ☐**GM-ST-150-070-00-140-R** |
| 14 | 123.0 | 12 | 120.0 | 23 | 30.0 | 5.0 | 104.0 | ☐**GM-ST-150-080-00-140-R** |
| 14 | 138.0 | 12 | 135.0 | 23 | 30.0 | 5.0 | 116.0 | ☐**GM-ST-150-090-00-140-R** |
| 20 | 153.0 | 19 | 150.0 | 34 | 40.0 | 8.0 | 133.0 | ☐**GM-ST-150-100-00-200-R** |
| 20 | 168.0 | 19 | 165.0 | 34 | 40.0 | 8.0 | 148.0 | ☐**GM-ST-150-110-00-200-R** |
| 20 | 183.0 | 19 | 180.0 | 34 | 40.0 | 8.0 | 163.0 | ☐**GM-ST-150-120-00-200-R** |
| 20 | 198.0 | 19 | 195.0 | 34 | 40.0 | 8.0 | 178.0 | ☐**GM-ST-150-130-00-200-R** |
| 20 | 213.0 | 19 | 210.0 | 34 | 40.0 | 8.0 | 193.0 | ☐**GM-ST-150-140-00-200-R** |
| 20 | 228.0 | 19 | 225.0 | 34 | 40.0 | 8.0 | 208.0 | ☐**GM-ST-150-150-00-200-R** |
| 8 | 28.0 | 15 | 24.0 | 27 | 18.5 | 13.5 | 16.0 | ☐**GM-ST-200-012-00-080-R** |
| 8 | 30.0 | 15 | 26.0 | 27 | 18.5 | 13.5 | 18.5 | ☐**GM-ST-200-013-00-080-R** |
| 8 | 32.0 | 15 | 28.0 | 27 | 18.5 | 13.5 | 18.5 | ☐**GM-ST-200-014-00-080-R** |
| 8 | 34.0 | 15 | 30.0 | 27 | 18.5 | 12.0 | 22.0 | ☐**GM-ST-200-015-00-080-R** |
| 8 | 36.0 | 15 | 32.0 | 27 | 17.5 | 6.0 | 22.0 | ☐**GM-ST-200-016-00-080-R** |
| 8 | 38.0 | 15 | 34.0 | 27 | 17.5 | 6.0 | 24.0 | ☐**GM-ST-200-017-00-080-R** |
| 8 | 40.0 | 15 | 36.0 | 27 | 17.5 | 6.0 | 25.0 | ☐**GM-ST-200-018-00-080-R** |
| 8 | 42.0 | 15 | 38.0 | 27 | 17.5 | 6.0 | 27.0 | ☐**GM-ST-200-019-00-080-R** |
| 10 | 44.0 | 15 | 40.0 | 27 | 20.0 | 6.0 | 28.0 | ☐**GM-ST-200-020-00-100-R** |
| 10 | 46.0 | 15 | 42.0 | 27 | 20.0 | 6.0 | 28.0 | ☐**GM-ST-200-021-00-100-R** |
| 10 | 48.0 | 15 | 44.0 | 27 | 20.0 | 6.0 | 28.0 | ☐**GM-ST-200-022-00-100-R** |
| 10 | 50.0 | 15 | 46.0 | 27 | 24.0 | 6.0 | 35.0 | ☐**GM-ST-200-023-00-100-R** |
| 10 | 52.0 | 15 | 48.0 | 27 | 24.0 | 6.0 | 35.0 | ☐**GM-ST-200-024-00-100-R** |
| 10 | 54.0 | 15 | 50.0 | 27 | 24.0 | 6.0 | 35.0 | ☐**GM-ST-200-025-00-100-R** |
| 10 | 56.0 | 15 | 52.0 | 27 | 24.0 | 6.0 | 38.5 | ☐**GM-ST-200-026-00-100-R** |
| 10 | 58.0 | 15 | 54.0 | 27 | 24.0 | 6.0 | 38.5 | ☐**GM-ST-200-027-00-100-R** |
| 10 | 60.0 | 15 | 56.0 | 27 | 24.0 | 6.0 | 38.5 | ☐**GM-ST-200-028-00-100-R** |
| 10 | 64.0 | 15 | 60.0 | 27 | 24.0 | 6.0 | 43.5 | ☐**GM-ST-200-030-00-100-R** |
| 10 | 68.0 | 15 | 64.0 | 27 | 26.0 | 6.0 | 44.0 | ☐**GM-ST-200-032-00-100-R** |
| 12 | 74.0 | 15 | 70.0 | 27 | 26.0 | 6.0 | 54.0 | ☐**GM-ST-200-035-00-120-R** |
| 12 | 76.0 | 15 | 72.0 | 27 | 26.0 | 6.0 | 54.0 | ☐**GM-ST-200-036-00-120-R** |
| 12 | 80.0 | 15 | 76.0 | 27 | 26.0 | 6.0 | 61.5 | ☐**GM-ST-200-038-00-120-R** |
| 12 | 84.0 | 15 | 80.0 | 27 | 26.0 | 6.0 | 61.5 | ☐**GM-ST-200-040-00-120-R** |
| 12 | 88.0 | 15 | 84.0 | 27 | 26.0 | 6.0 | 61.5 | ☐**GM-ST-200-042-00-120-R** |
| 14 | 94.0 | 15 | 90.0 | 27 | 30.0 | 6.0 | 68.0 | ☐**GM-ST-200-045-00-140-R** |
| 14 | 100.0 | 15 | 96.0 | 27 | 30.0 | 6.0 | 74.0 | ☐**GM-ST-200-048-00-140-R** |
| 14 | 104.0 | 15 | 100.0 | 27 | 30.0 | 6.0 | 78.0 | ☐**GM-ST-200-050-00-140-R** |
| 14 | 114.0 | 15 | 110.0 | 27 | 30.0 | 6.0 | 87.5 | ☐**GM-ST-200-055-00-140-R** |
| 14 | 124.0 | 15 | 120.0 | 27 | 30.0 | 6.0 | 97.5 | ☐**GM-ST-200-060-00-140-R** |
| 14 | 144.0 | 15 | 140.0 | 27 | 30.0 | 6.0 | 117.0 | ☐**GM-ST-200-070-00-140-R** |
| 20 | 154.0 | 19 | 150.0 | 34 | 40.0 | 8.0 | 133.0 | ☐**GM-ST-200-075-00-200-R** |
| 20 | 164.0 | 19 | 160.0 | 34 | 40.0 | 8.0 | 133.0 | ☐**GM-ST-200-080-00-200-R** |

**Dimension description see page 801**

# iglidur® gears | Product range

## iguform S270 and igutek P360 gears

### Technical data

| Module | Number of teeth | Helix angle [°] | Hub design |
|---|---|---|---|
| **2.0** | 85 | 0 | Round |
| **2.0** | 90 | 0 | Round |
| **2.0** | 95 | 0 | Round |
| **2.0** | 100 | 0 | Round |
| **2.0** | 110 | 0 | Round |
| **2.5** | 10 | 0 | Round |
| **2.5** | 12 | 0 | Round |
| **2.5** | 13 | 0 | Round |
| **2.5** | 14 | 0 | Round |
| **2.5** | 15 | 0 | Round |
| **2.5** | 16 | 0 | Round |
| **2.5** | 17 | 0 | Round |
| **2.5** | 18 | 0 | Round |
| **2.5** | 19 | 0 | Round |
| **2.5** | 20 | 0 | Round |
| **2.5** | 21 | 0 | Round |
| **2.5** | 22 | 0 | Round |
| **2.5** | 23 | 0 | Round |
| **2.5** | 24 | 0 | Round |
| **2.5** | 25 | 0 | Round |
| **2.5** | 26 | 0 | Round |
| **2.5** | 27 | 0 | Round |
| **2.5** | 28 | 0 | Round |
| **2.5** | 30 | 0 | Round |
| **2.5** | 32 | 0 | Round |
| **2.5** | 35 | 0 | Round |
| **2.5** | 36 | 0 | Round |
| **2.5** | 38 | 0 | Round |
| **2.5** | 40 | 0 | Round |
| **2.5** | 42 | 0 | Round |
| **2.5** | 45 | 0 | Round |
| **2.5** | 48 | 0 | Round |
| **2.5** | 50 | 0 | Round |
| **2.5** | 55 | 0 | Round |
| **2.5** | 60 | 0 | Round |
| **2.5** | 65 | 0 | Round |
| **2.5** | 70 | 0 | Round |
| **2.5** | 75 | 0 | Round |
| **2.5** | 80 | 0 | Round |
| **2.5** | 85 | 0 | Round |
| **2.5** | 90 | 0 | Round |
| **2.5** | 95 | 0 | Round |
| **3.0** | 12 | 0 | Round |
| **3.0** | 13 | 0 | Round |

**iguform S270 and igutek P360 are available in over 300 variants and customisable according to your requirements**

### Dimensions [mm]

| d1 H10 | d5 | b2 | d4 | b1 | d2 | b3 | d3 | Part No. |
|---|---|---|---|---|---|---|---|---|
| 20 | 174.0 | 19 | 170.0 | 34 | 40.0 | 8.0 | 148.0 | ☐GM-ST-200-085-00-200-R |
| 20 | 184.0 | 19 | 180.0 | 34 | 40.0 | 8.0 | 163.0 | ☐GM-ST-200-090-00-200-R |
| 20 | 194.0 | 19 | 190.0 | 34 | 40.0 | 8.0 | 163.0 | ☐GM-ST-200-095-00-200-R |
| 20 | 204.0 | 19 | 200.0 | 34 | 40.0 | 8.0 | 178.0 | ☐GM-ST-200-100-00-200-R |
| 20 | 224.0 | 19 | 220.0 | 34 | 40.0 | 8.0 | 193.0 | ☐GM-ST-200-110-00-200-R |
| 10 | 30.0 | 17 | 25.0 | 30 | 20.0 | – | – | ☐GM-ST-250-010-00-100-R |
| 10 | 35.0 | 17 | 30.0 | 30 | 20.0 | – | – | ☐GM-ST-250-012-00-100-R |
| 10 | 37.5 | 17 | 32.5 | 30 | 20.0 | – | – | ☐GM-ST-250-013-00-100-R |
| 10 | 40.0 | 17 | 35.0 | 30 | 20.0 | – | – | ☐GM-ST-250-014-00-100-R |
| 10 | 42.5 | 17 | 37.5 | 30 | 20.0 | 7.0 | 27.0 | ☐GM-ST-250-015-00-100-R |
| 10 | 45.0 | 17 | 40.0 | 30 | 20.0 | 7.0 | 27.0 | ☐GM-ST-250-016-00-100-R |
| 10 | 47.5 | 17 | 42.5 | 30 | 20.0 | 7.0 | 27.0 | ☐GM-ST-250-017-00-100-R |
| 10 | 50.0 | 17 | 45.0 | 30 | 20.0 | 7.0 | 34.0 | ☐GM-ST-250-018-00-100-R |
| 10 | 52.5 | 17 | 47.5 | 30 | 20.0 | 7.0 | 34.0 | ☐GM-ST-250-019-00-100-R |
| 10 | 55.0 | 17 | 50.0 | 30 | 20.0 | 7.0 | 34.0 | ☐GM-ST-250-020-00-100-R |
| 12 | 57.5 | 17 | 52.5 | 30 | 24.0 | 7.0 | 41.0 | ☐GM-ST-250-021-00-120-R |
| 12 | 60.0 | 17 | 55.0 | 30 | 24.0 | 7.0 | 41.0 | ☐GM-ST-250-022-00-120-R |
| 12 | 62.5 | 17 | 57.5 | 30 | 24.0 | 7.0 | 41.0 | ☐GM-ST-250-023-00-120-R |
| 12 | 65.0 | 17 | 60.0 | 30 | 24.0 | 7.0 | 49.0 | ☐GM-ST-250-024-00-120-R |
| 12 | 67.5 | 17 | 62.5 | 30 | 24.0 | 7.0 | 49.0 | ☐GM-ST-250-025-00-120-R |
| 12 | 70.0 | 17 | 65.0 | 30 | 24.0 | 7.0 | 49.0 | ☐GM-ST-250-026-00-120-R |
| 12 | 72.5 | 17 | 67.5 | 30 | 24.0 | 7.0 | 56.0 | ☐GM-ST-250-027-00-120-R |
| 12 | 75.0 | 17 | 70.0 | 30 | 24.0 | 7.0 | 56.0 | ☐GM-ST-250-028-00-120-R |
| 12 | 80.0 | 17 | 75.0 | 30 | 24.0 | 7.0 | 56.0 | ☐GM-ST-250-030-00-120-R |
| 14 | 85.0 | 17 | 80.0 | 30 | 30.0 | 7.0 | 68.0 | ☐GM-ST-250-032-00-140-R |
| 14 | 92.5 | 17 | 87.5 | 30 | 30.0 | 7.0 | 68.0 | ☐GM-ST-250-035-00-140-R |
| 14 | 95.0 | 17 | 90.0 | 30 | 30.0 | 7.0 | 72.0 | ☐GM-ST-250-036-00-140-R |
| 14 | 100.0 | 17 | 95.0 | 30 | 30.0 | 7.0 | 72.0 | ☐GM-ST-250-038-00-140-R |
| 14 | 105.0 | 17 | 100.0 | 30 | 30.0 | 7.0 | 84.0 | ☐GM-ST-250-040-00-140-R |
| 16 | 110.0 | 17 | 105.0 | 30 | 30.0 | 7.0 | 84.0 | ☐GM-ST-250-042-00-160-R |
| 16 | 117.5 | 17 | 112.5 | 30 | 30.0 | 7.0 | 84.0 | ☐GM-ST-250-045-00-160-R |
| 16 | 125.0 | 17 | 120.0 | 30 | 30.0 | 7.0 | 100.0 | ☐GM-ST-250-048-00-160-R |
| 16 | 130.0 | 17 | 125.0 | 30 | 30.0 | 7.0 | 100.0 | ☐GM-ST-250-050-00-160-R |
| 20 | 142.5 | 17 | 137.5 | 30 | 30.0 | 7.0 | 100.0 | ☐GM-ST-250-055-00-200-R |
| 20 | 155.0 | 19 | 150.0 | 34 | 40.0 | 8.0 | 133.0 | ☐GM-ST-250-060-00-200-R |
| 20 | 167.5 | 19 | 162.5 | 34 | 40.0 | 8.0 | 133.0 | ☐GM-ST-250-065-00-200-R |
| 20 | 180.0 | 19 | 175.0 | 34 | 40.0 | 8.0 | 148.0 | ☐GM-ST-250-070-00-200-R |
| 20 | 192.5 | 19 | 187.5 | 34 | 40.0 | 8.0 | 163.0 | ☐GM-ST-250-075-00-200-R |
| 20 | 205.0 | 19 | 200.0 | 34 | 40.0 | 8.0 | 178.0 | ☐GM-ST-250-080-00-200-R |
| 20 | 217.5 | 19 | 212.5 | 34 | 40.0 | 8.0 | 178.0 | ☐GM-ST-250-085-00-200-R |
| 20 | 230.0 | 19 | 225.0 | 34 | 40.0 | 8.0 | 193.0 | ☐GM-ST-250-090-00-200-R |
| 20 | 242.5 | 19 | 237.5 | 34 | 40.0 | 8.0 | 208.0 | ☐GM-ST-250-095-00-200-R |
| 12 | 42.0 | 19 | 36.0 | 34 | 24.0 | 19.0 | – | ☐GM-ST-300-012-00-120-R |
| 12 | 45.0 | 19 | 39.0 | 34 | 24.0 | 19.0 | – | ☐GM-ST-300-013-00-120-R |

**Dimension description see page 801**

# iglidur® gears | Product range

## iguform S270 and igutek P360 gears

### Technical data

| Module | Number of teeth | Helix angle [°] | Hub design |
|---|---|---|---|
| **3.0** | 14 | 0 | Round |
| **3.0** | 15 | 0 | Round |
| **3.0** | 16 | 0 | Round |
| **3.0** | 17 | 0 | Round |
| **3.0** | 18 | 0 | Round |
| **3.0** | 19 | 0 | Round |
| **3.0** | 20 | 0 | Round |
| **3.0** | 21 | 0 | Round |
| **3.0** | 22 | 0 | Round |
| **3.0** | 23 | 0 | Round |
| **3.0** | 24 | 0 | Round |
| **3.0** | 25 | 0 | Round |
| **3.0** | 26 | 0 | Round |
| **3.0** | 27 | 0 | Round |
| **3.0** | 28 | 0 | Round |
| **3.0** | 30 | 0 | Round |
| **3.0** | 32 | 0 | Round |
| **3.0** | 33 | 0 | Round |
| **3.0** | 34 | 0 | Round |
| **3.0** | 35 | 0 | Round |
| **3.0** | 38 | 0 | Round |
| **3.0** | 40 | 0 | Round |
| **3.0** | 45 | 0 | Round |
| **3.0** | 48 | 0 | Round |
| **3.0** | 50 | 0 | Round |
| **3.0** | 55 | 0 | Round |
| **3.0** | 60 | 0 | Round |
| **3.0** | 65 | 0 | Round |
| **3.0** | 70 | 0 | Round |
| **3.0** | 75 | 0 | Round |

**iguform S270 and igutek P360 are available in over 300 variants and customisable according to your requirements**

### Dimensions [mm]

| d1 H10 | d5 | b2 | d4 | b1 | d2 | b3 | d3 | Part No. |
|---|---|---|---|---|---|---|---|---|
| 12 | 48.0 | 19 | 42.0 | 34 | 24.0 | 19.0 | – | ☐**GM-ST-300-014-00-120-R** |
| 12 | 51.0 | 19 | 45.0 | 34 | 24.0 | 8.0 | 30.5 | ☐**GM-ST-300-015-00-120-R** |
| 12 | 54.0 | 19 | 48.0 | 34 | 24.0 | 8.0 | 30.5 | ☐**GM-ST-300-016-00-120-R** |
| 12 | 57.0 | 19 | 51.0 | 34 | 24.0 | 8.0 | 30.5 | ☐**GM-ST-300-017-00-120-R** |
| 12 | 60.0 | 19 | 54.0 | 34 | 24.0 | 8.0 | 38.0 | ☐**GM-ST-300-018-00-120-R** |
| 12 | 63.0 | 19 | 57.0 | 34 | 24.0 | 8.0 | 38.0 | ☐**GM-ST-300-019-00-120-R** |
| 12 | 66.0 | 19 | 60.0 | 34 | 24.0 | 8.0 | 38.0 | ☐**GM-ST-300-020-00-120-R** |
| 12 | 69.0 | 19 | 63.0 | 34 | 24.0 | 8.0 | 45.0 | ☐**GM-ST-300-021-00-120-R** |
| 12 | 72.0 | 19 | 66.0 | 34 | 24.0 | 8.0 | 45.0 | ☐**GM-ST-300-022-00-120-R** |
| 12 | 75.0 | 19 | 69.0 | 34 | 24.0 | 8.0 | 52.0 | ☐**GM-ST-300-023-00-120-R** |
| 12 | 78.0 | 19 | 72.0 | 34 | 24.0 | 8.0 | 52.0 | ☐**GM-ST-300-024-00-120-R** |
| 14 | 81.0 | 19 | 75.0 | 34 | 28.0 | 8.0 | 58.0 | ☐**GM-ST-300-025-00-140-R** |
| 14 | 84.0 | 19 | 78.0 | 34 | 28.0 | 8.0 | 58.0 | ☐**GM-ST-300-026-00-140-R** |
| 14 | 87.0 | 19 | 81.0 | 34 | 28.0 | 8.0 | 58.0 | ☐**GM-ST-300-027-00-140-R** |
| 14 | 90.0 | 19 | 84.0 | 34 | 28.0 | 8.0 | 65.0 | ☐**GM-ST-300-028-00-140-R** |
| 14 | 96.0 | 19 | 90.0 | 34 | 28.0 | 8.0 | 68.0 | ☐**GM-ST-300-030-00-140-R** |
| 16 | 102.0 | 19 | 96.0 | 34 | 32.0 | 8.0 | 69.0 | ☐**GM-ST-300-032-00-160-R** |
| 16 | 105.0 | 19 | 99.0 | 34 | 32.0 | 8.0 | 69.0 | ☐**GM-ST-300-033-00-160-R** |
| 16 | 108.0 | 19 | 102.0 | 34 | 32.0 | 8.0 | 78.0 | ☐**GM-ST-300-034-00-160-R** |
| 16 | 111.0 | 19 | 105.0 | 34 | 32.0 | 8.0 | 78.0 | ☐**GM-ST-300-035-00-160-R** |
| 16 | 120.0 | 19 | 114.0 | 34 | 32.0 | 8.0 | 87.0 | ☐**GM-ST-300-038-00-160-R** |
| 16 | 126.0 | 19 | 120.0 | 34 | 32.0 | 8.0 | 93.0 | ☐**GM-ST-300-040-00-160-R** |
| 16 | 141.0 | 19 | 135.0 | 34 | 32.0 | 8.0 | 108.0 | ☐**GM-ST-300-045-00-160-R** |
| 16 | 150.0 | 19 | 144.0 | 34 | 32.0 | 8.0 | 123.0 | ☐**GM-ST-300-048-00-160-R** |
| 20 | 156.0 | 19 | 150.0 | 34 | 40.0 | 8.0 | 133.0 | ☐**GM-ST-300-050-00-200-R** |
| 20 | 171.0 | 19 | 165.0 | 34 | 40.0 | 8.0 | 148.0 | ☐**GM-ST-300-055-00-200-R** |
| 20 | 186.0 | 19 | 180.0 | 34 | 40.0 | 8.0 | 163.0 | ☐**GM-ST-300-060-00-200-R** |
| 20 | 201.0 | 19 | 195.0 | 34 | 40.0 | 8.0 | 178.0 | ☐**GM-ST-300-065-00-200-R** |
| 20 | 216.0 | 19 | 210.0 | 34 | 40.0 | 8.0 | 193.0 | ☐**GM-ST-300-070-00-200-R** |
| 20 | 231.0 | 19 | 225.0 | 34 | 40.0 | 8.0 | 208.0 | ☐**GM-ST-300-075-00-200-R** |

**Dimension description see page 801**

# iglidur® racks | Product range

## iguform S270 and igutek P360 racks

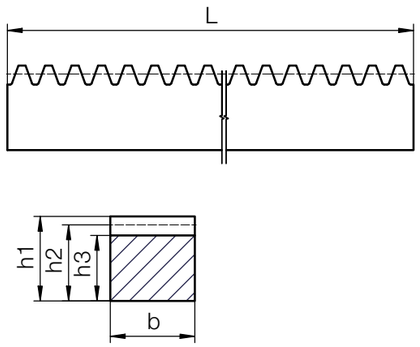


iguform S270

igutek P360

- Low coefficient of friction
- Low moisture absorption
- Quiet

- Increased wear resistance
- Good tribological specifications
- Tough
- Resistant to shock loads




### Order key

| Part number | Dimensions [mm] |
|---|---|
| ☐ G M-GR-050-00-250-040-045 | |

Material | Gear | Metric | Rack | Module | Helix angle | Length | Width | Height

| | |
|---|---|
| S270 | Low coefficient of friction |
| P360 | Good tribological specifications |

### Technical data and dimensions [mm]

| Module | Helix angle [°] | h1 | h2 | h3 | b | L | Part No. |
|---|---|---|---|---|---|---|---|
| **0.5** | 0 | 4.5 | 4.0 | 3.4 | 4.0 | 250 | ☐GM-GR-050-00-250-040-045 |
| **0.5** | 0 | 6.0 | 5.5 | 4.9 | 4.0 | 250 | ☐GM-GR-050-00-250-040-060 |
| **0.7** | 0 | 6.7 | 6.0 | 5.1 | 6.0 | 250 | ☐GM-GR-070-00-250-060-067 |
| **1.0** | 0 | 9.0 | 8.0 | 6.8 | 9.0 | 250 | ☐GM-GR-100-00-250-090-090 |
| **1.25** | 0 | 11.0 | 9.75 | 8.3 | 10.0 | 250 | ☐GM-GR-125-00-250-100-110 |
| **1.5** | 0 | 12.0 | 10.5 | 8.75 | 12.0 | 250 | ☐GM-GR-150-00-250-120-120 |
| **2.0** | 0 | 11.0 | 9.0 | 6.6 | 15.4 | 250 | ☐GM-GR-200-00-250-154-110 |
| **2.5** | 0 | 13.0 | 10.5 | 7.7 | 17.0 | 250 | ☐GM-GR-250-00-250-170-130 |
| **3.0** | 0 | 15.0 | 12.0 | 8.5 | 19.4 | 250 | ☐GM-GR-300-00-250-194-150 |

**The actual length depends on the module and is a multiple of the pitch. The racks start and end with a full tooth and can therefore be paired for the desired length.**

**The exact length can be found in the CAD data. These are freely available for download at ▶ www.igus-cad.com.**

**Order example:**
**S270GM-GR-125-00-250-100-110:** material iguform S270, G gear, M metric, -GR gear rack, -125 module 1.25, -00 helix angle 0°, -250 length 250mm, -100 width 10.0mm, -110 height 11.0mm

# iglidur® bevel gears | Product range

## iguform S270 and igutek P360 bevel gears

Transmission ratio 1:1

iguform S270

igutek P360

Transmission ratio 1:2

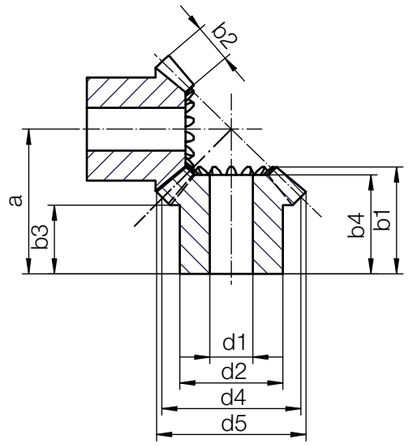
iguform S270

igutek P360

iguform S270 convinces with a low coefficient of friction and low moisture absorption. igutek P360 offers increased wear resistance, good tribological properties and high toughness.

- 6 transmission ratios
- 7 different modules
- Transmission ratios 1:1 to 1:5 available

Please note: the bevel gears are sold individually. In order to achieve the desired transmission ratio, two bevel gears must be ordered. The gears need to have the same transmission ratio and the same module to be compatible.




### Order key

| Part number | Dimensions [mm] |
|---|---|
| ☐ G M-BG-050-016-00-030-R -10 | |

Material | Gear | Metric | Bevel gear | Module | Number of teeth | Helix angle | Hole diameter | Hub design round | Transmission ratio

| | |
|---|---|
| S270 | Low coefficient of friction |
| P360 | Good tribological specifications |

### Technical data and dimensions [mm]

| Module | Number of teeth | b2 | d1 | d4 | d5 | d2 | b1 | b4 | b3 | a | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Transmission ratio 1:1** | | | | | | | | | | | |
| **0.5** | 16 | 2.0 | 3 | 8.0 | 8.7 | 7.0 | 8.1 | 8.1 | 6.0 | 10.5 | ☐GM-BG-050-016-00-030-R-10 |
| **1.0** | 16 | 4.7 | 5 | 16.0 | 17.6 | 12.0 | 13.6 | 13.6 | 8.0 | 18.4 | ☐GM-BG-100-016-00-050-R-10 |
| **1.0** | 30 | 7.0 | 6 | 30.0 | 31.0 | 15.0 | 15.4 | 13.3 | 7.6 | 25.1 | ☐GM-BG-100-030-00-060-R-10 |
| **1.5** | 16 | 7.0 | 8 | 24.0 | 26.4 | 18.5 | 18.4 | 16.2 | 10.0 | 25.8 | ☐GM-BG-150-016-00-080-R-10 |
| **2.0** | 16 | 10.0 | 10 | 32.0 | 34.9 | 21.9 | 21.2 | 18.3 | 9.7 | 30.4 | ☐GM-BG-200-016-00-100-R-10 |
| **2.5** | 16 | 12.3 | 12 | 40.0 | 43.5 | 25.2 | 25.5 | 22.9 | 11.5 | 37.0 | ☐GM-BG-250-016-00-120-R-10 |
| **3.0** | 16 | 13.8 | 14 | 48.0 | 52.3 | 28.8 | 29.2 | 25.7 | 13.2 | 43.0 | ☐GM-BG-300-016-00-140-R-10 |
| **3.5** | 16 | 15.8 | 18 | 56.0 | 61.4 | 33.3 | 33.1 | 28.0 | 14.6 | 49.5 | ☐GM-BG-350-016-00-180-R-10 |
| **Transmission ratio 1:1.5** | | | | | | | | | | | |
| **1.5** | 16 | 8.0 | 8 | 24.0 | 26.0 | 20.0 | 18.8 | 17.8 | 10.8 | 30.0 | ☐GM-BG-150-016-00-080-R-15 |
| **1.5** | 24 | 8.0 | 10 | 36.0 | 37.0 | 24.0 | 19.5 | 18.0 | 11.3 | 26.6 | ☐GM-BG-150-024-00-100-R-15 |
| **Transmission ratio 1:2** | | | | | | | | | | | |
| **1.0** | 15 | 6.4 | 5 | 15.0 | 16.6 | 12.2 | 17.1 | 17.1 | 10.5 | 26.3 | ☐GM-BG-100-015-00-050-R-20 |
| **1.5** | 15 | 10.5 | 8 | 22.5 | 25.0 | 17.0 | 22.8 | 22.8 | 11.7 | 35.8 | ☐GM-BG-150-015-00-080-R-20 |
| **2.0** | 15 | 14.5 | 10 | 30.0 | 33.3 | 22.6 | 27.0 | 26.0 | 12.0 | 44.0 | ☐GM-BG-200-015-00-100-R-20 |
| **2.5** | 15 | 17.1 | 12 | 37.5 | 42.0 | 26.5 | 31.1 | 29.5 | 12.7 | 53.3 | ☐GM-BG-250-015-00-120-R-20 |
| **3.0** | 15 | 20.2 | 14 | 45.0 | 50.0 | 31.2 | 36.4 | 34.8 | 15.3 | 63.3 | ☐GM-BG-300-015-00-140-R-20 |
| **1.0** | 30 | 6.9 | 8 | 30.0 | 31.0 | 18.0 | 16.0 | 14.7 | 9.0 | 20.8 | ☐GM-BG-100-030-00-080-R-20 |
| **1.5** | 30 | 10.7 | 10 | 45.0 | 46.3 | 23.4 | 19.6 | 17.5 | 9.6 | 25.9 | ☐GM-BG-150-030-00-100-R-20 |
| **2.0** | 30 | 14.2 | 12 | 60.0 | 62.0 | 30.2 | 24.5 | 22.4 | 12.0 | 32.9 | ☐GM-BG-200-030-00-120-R-20 |

| Module | Number of teeth | b2 | d1 | d4 | d5 | d2 | b1 | b4 | b3 | a | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **2.5** | 30 | 17.4 | 16 | 75.0 | 77.2 | 35.8 | 29.6 | 27.6 | 15.2 | 40.8 | ☐GM-BG-250-030-00-160-R-20 |
| **3.0** | 30 | 20.3 | 18 | 90.0 | 92.5 | 45.0 | 37.5 | 33.8 | 19.0 | 49.9 | ☐GM-BG-300-030-00-180-R-20 |
| **Transmission ratio 1:3** | | | | | | | | | | | |
| **1.0** | 15 | 9.0 | 5 | 15.0 | 16.4 | 12.3 | 20.5 | – | 11.4 | 34.5 | ☐GM-BG-100-015-00-050-R-30 |
| **1.5** | 15 | 14.0 | 8 | 22.5 | 25.1 | 17.2 | 26.6 | – | 12.3 | 47.3 | ☐GM-BG-150-015-00-080-R-30 |
| **2.0** | 10 | 12.2 | 6 | 20.0 | 23.6 | 15.5 | 25.0 | – | 12.0 | 433. | ☐GM-BG-200-010-00-060-R-30 |
| **2.5** | 10 | 15.2 | 8 | 25.0 | 29.6 | 18.8 | 28.7 | – | 13.0 | 52.4 | ☐GM-BG-250-010-00-080-R-30 |
| **1.0** | 45 | 8.8 | 10 | 45.0 | 45.7 | 23.4 | 17.9 | 16.2 | 9.6 | 22.4 | ☐GM-BG-100-045-00-100-R-30 |
| **1.5** | 45 | 14.0 | 12 | 67.5 | 68.5 | 30.4 | 23.2 | 21.4 | 11.8 | 29.7 | ☐GM-BG-150-045-00-120-R-30 |
| **2.0** | 30 | 12.5 | 12 | 60.0 | 61.7 | 30.3 | 22.5 | 19.8 | 11.8 | 28.0 | ☐GM-BG-200-030-00-120-R-30 |
| **2.5** | 30 | 15.7 | 18 | 75.0 | 77.2 | 36.0 | 29.0 | 25.0 | 15.9 | 35.8 | ☐GM-BG-250-030-00-180-R-30 |
| **Transmission ratio 1:4** | | | | | | | | | | | |
| **1.0** | 10 | 8.0 | 4 | 10.0 | 12.0 | 7.9 | 17.7 | – | 9.6 | 30.2 | ☐GM-BG-100-010-00-040-R-40 |
| **1.5** | 10 | 12.2 | 5 | 15.0 | 18.0 | 11.3 | 23.2 | – | 11.0 | 41.5 | ☐GM-BG-150-010-00-050-R-40 |
| **2.0** | 10 | 16.0 | 6 | 20.0 | 23.7 | 14.0 | 28.7 | – | 12.8 | 53.5 | ☐GM-BG-200-010-00-060-R-40 |
| **1.0** | 40 | 8.4 | 10 | 40.0 | 41.0 | 23.4 | 16.9 | 15.5 | 10.8 | 20.2 | ☐GM-BG-100-040-00-100-R-40 |
| **1.5** | 40 | 12.3 | 12 | 60.0 | 60.7 | 30.4 | 21.0 | 19.0 | 12.8 | 25.2 | ☐GM-BG-150-040-00-120-R-40 |
| **2.0** | 40 | 16.2 | 18 | 80.0 | 81.2 | 36.1 | 27.0 | 24.4 | 17.0 | 32.5 | ☐GM-BG-200-040-00-180-R-40 |
| **Transmission ratio 1:5** | | | | | | | | | | | |
| **1.0** | 12 | 9.9 | 4 | 12.0 | 13.7 | 9.5 | 20.2 | – | 10.1 | 40.6 | ☐GM-BG-100-012-00-040-R-50 |
| **1.0** | 60 | 9.5 | 10 | 60.0 | 60.3 | 20.5 | 17.4 | 15.3 | 11.2 | 21.2 | ☐GM-BG-100-060-00-100-R-50 |

**Order example:**
**S270GM-BG-100-016-00-050-R-10:** material iguform S270, G gear metrical, BG bevel gear, -100 module, -016 number of teeth 16, -00 helix angle 0°, -050 hole diameter 5mm, -R hole diameter round, -10 transmission ratio 1:1

# iglidur® angular gearboxes | Product range

## iguform S270 and igutek P360 angular gearboxes with bevel gears

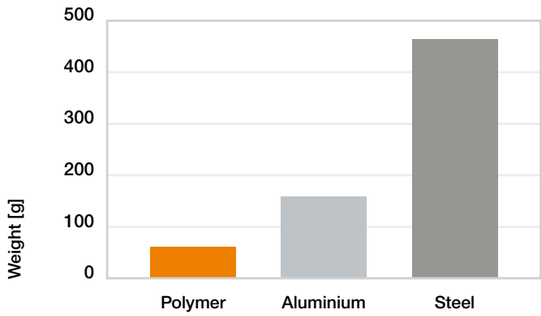
Transmission ratio 1:1

iguform S270 igutek P360

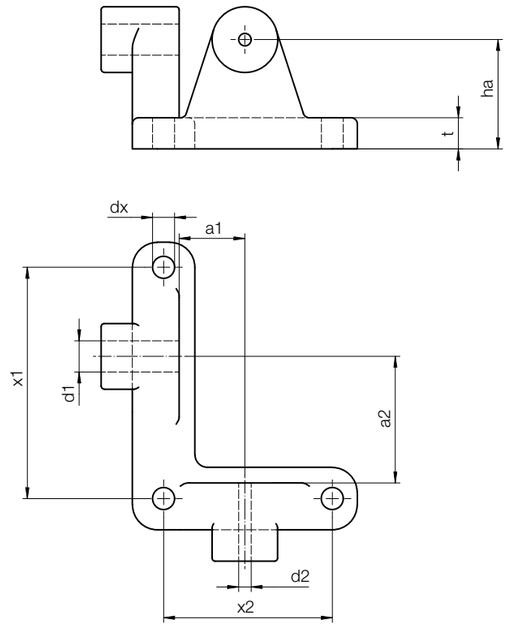
Transmission ratio 1:5

iguform S270 igutek P360

- Module 1
- 5 transmission ratios
- Transmission ratios 1:1 to 1:5 available
- The bevel gears are pinned and interchangeable
- When mounting the shafts in the housing, no external lubricants are required




Weight savings of up to a factor of 7 with housings made of plastic compared to steel and aluminium




### Order key

| Part number | Dimensions [mm] |
|---|---|
| ☐ G M-AG-100-016-016-10-SL-BK | |

| Material | Gear | Metric | Angular gearbox | Module | Number of teeth 1 | Number of teeth 2 | Transmission ratio | Shaft material | Colour: black |
|---|---|---|---|---|---|---|---|---|---|

| | |
|---|---|
| S270 | Low coefficient of friction |
| P360 | Good tribological specifications |

**Housing material:**
Laser sintering material
Colour: black
**Shaft material:**
SL: corrosion-free steel

### Technical data and dimensions [mm]

| Module | a1 | a2 | d1 | d2 | dx | x1 | x2 | ha | L | B | t | Transmission ratio | Number of teeth of bevel gears: Number of teeth 1 | Number of teeth of bevel gears: Number of teeth 2 | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1.0** | 18.4 | 18.4 | 5 | 5 | 5 | 34 | 34 | 15 | 47 | 47 | 6 | 1:1 | 16 | 16 | ☐GM-AG-100-016-016-10-SL-BK |
| **1.0** | 20.9 | 26.4 | 8 | 5 | 5 | 54 | 44 | 20 | 68 | 58 | 8 | 1:2 | 15 | 30 | ☐GM-AG-100-015-030-20-SL-BK |
| **1.0** | 22.7 | 34.3 | 10 | 5 | 7 | 64 | 54 | 25 | 82 | 72 | 10 | 1:3 | 15 | 45 | ☐GM-AG-100-015-045-30-SL-BK |
| **1.0** | 20.1 | 30.1 | 10 | 4 | 7 | 64 | 54 | 25 | 82 | 72 | 10 | 1:4 | 10 | 40 | ☐GM-AG-100-010-040-40-SL-BK |
| **1.0** | 21.0 | 40.5 | 10 | 4 | 7 | 74 | 54 | 35 | 92 | 72 | 10 | 1:5 | 12 | 60 | ☐GM-AG-100-012-060-50-SL-BK |

**Order example:**
**S270GM-AG-100-016-016-10-SL-BK:** material iguform S270, G gear, M metrical, -AG angular gearbox, -100 module 1, -016 number of teeth bevel gear 1, -016 number of teeth bevel gear 2, -10 transmission ratio 1:1, -SL steel shaft, -BK laser sintering material black

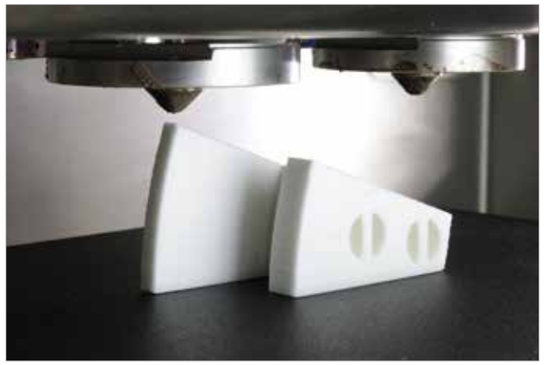
# iglidur®

Tribo 3D printing

# ...plastics

# iglidur® tribo 3D printing | Advantages

**Parts as required - everything a question of quantity**

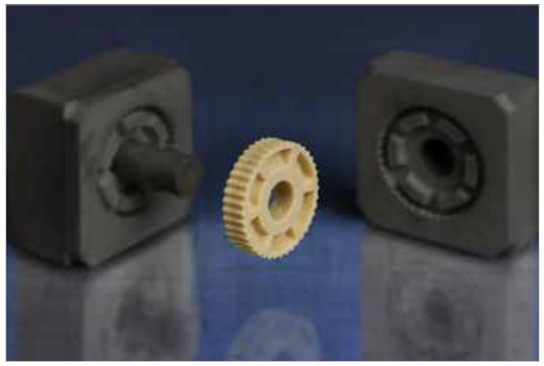


## 3D printing/SLS/DLP

**For prototypes or small quantities made from tribofilaments® with resin or the laser sintering method**

Wear-resistant materials for 3D printing, Digital Light Processing (DLP) and the laser sintering method - print parts yourself or have igus® print them for you.

- Up to 50-times more abrasion-resistant than normal 3D printing materials
- Various iglidur® materials available for FDM/FFF (filament), SLS (powder) and DLP (resin)
- No tool costs, cost-effective, no minimum order quantity



## Printed tools

**For small quantities made from iglidur® granules**

3D printed mould tools to produce wear-resistant injection-moulded parts made in all available iglidur® materials.

- Customised parts delivered from 2 weeks
- Up to 80% more cost-effective than conventional injection mould tools
- For prototypes and small volumes
- Check price and manufacturability online ▶ **www.igus.eu/idd**

# Lubrication-free printing

Abrasion and wear-resistant tribo-plastics for additive manufacturing via selective laser sintering (SLS), with filament (FDM/FFF) or resin (DLP) allow you to use the printed component or to test the function of the part reliably and completely from the prototype or production batch onward.

- Abrasion-resistant
- Lubrication and maintenance-free
- No tooling costs
- Design freedom
- 3D printing of parts on site
- Can be processed by commercially available 3D printers
- Predictable service life
- 3D printing service in 1 to 3 days

**Typical application areas**

- Special wear-resistant parts
- Jig construction
- Single pieces and small volumes

**Available from stock**
Detailed information about delivery time online.

**More information about 3D printing**
▶ **www.igus.eu/3d**

**Get 3D printing prices and calculate the service life online**
▶ **www.igus.eu/idd**

**Calculate service life for 3D printed gears online**
▶ **www.igus.eu/gear-expert**

**Create a 3D model of the gear, roller, and much more within one minute**
▶ **www.igus.eu/cad-configurators**



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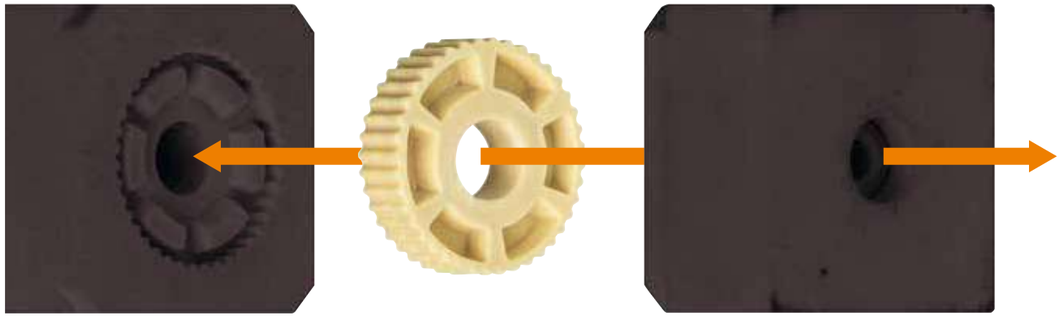
# iglidur® | Injection moulding tools

**Making tools quickly and at low cost**

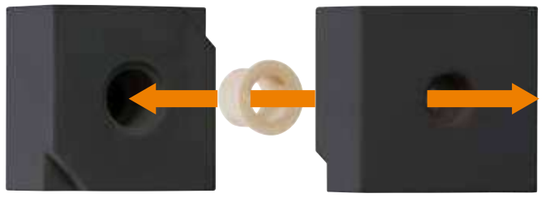


**Injection moulding with 3D printed tools**
Due to 3D printing, igus® is able to make customised injection moulds in a short time with up to 80% lower costs. Maintenance-free plastic plain bearings in the required shape can be made quickly and, above all, cost-effectively from all iglidur® materials.

- High variety of materials: all iglidur® plain bearing materials can be requested as samples
- Cost-efficient and delivered quickly
- No minimum order quantity
- For simple geometries
- For large quantities and recurring projects, metal 3D-printed moulds can also be provided.
- Prices online ▶ **www.igus.eu/idd**

The manufacture of maintenance-free plastic components from 3D printed injection moulds is worthwhile compared to direct 3D printing of the iglidur® materials especially if:

- Special material characteristics are needed, such as conductivity, high temperature, underwater use, KTW compliance
- Small volumes in the same iglidur® material are to be sampled as is a later high volume from a classic injection moulding tool



**Delivery time from 2 weeks**

**Information**
▶ **www.igus.eu/print2mold**

**Prices**
▶ **www.igus.eu/idd**

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# iglidur® tribo 3D printing | 3D printing service

## Individual wear-resistant parts in 3 days - order online

### Wear-resistant parts from the 3D printing service: online and extremely fast

Printed parts extremely wear-resistant- as prototype or in small series. Simply upload your required part, determine the price and order online (or ask for a quotation). Thanks to the iglidur® 3D printing service, from now on 2 quick and easy steps will complete your customised component made of lubrication-free and abrasion-resistant iglidur® plastics. The service life of the 3D printed components is comparable to igus® injection moulded parts. In the online 3D printing calculation, you can not only receive 3D printing, but also analyse feasibility and prices of injection-moulded parts made with 3D-printed moulds (print2mold).

1. Go to **www.igus.eu/idd** and upload the 3D model in the STEP format. The manufacturability (wall thickness and component size) is analysed automatically
2. Select material and quantity and order the component or ask for a quotation.

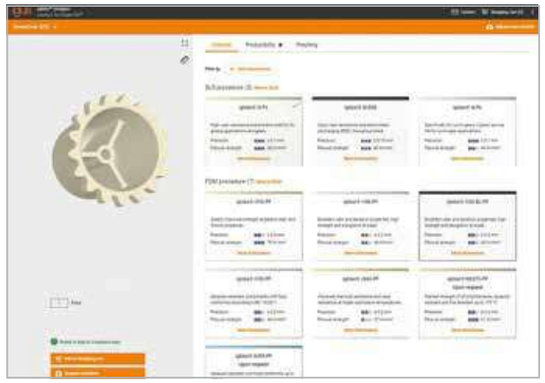
▶ **Your individual wear-resistant part will be shipped in 72 hours**

**Delivery time**
**72hrs**

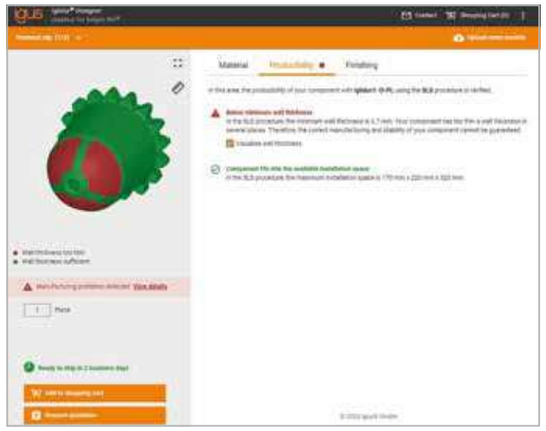
### New: Calculate the service life of sliding surfaces

With the new service life calculator, you can determine the service life of individual components. Simply click on sliding surface and enter the parameters.

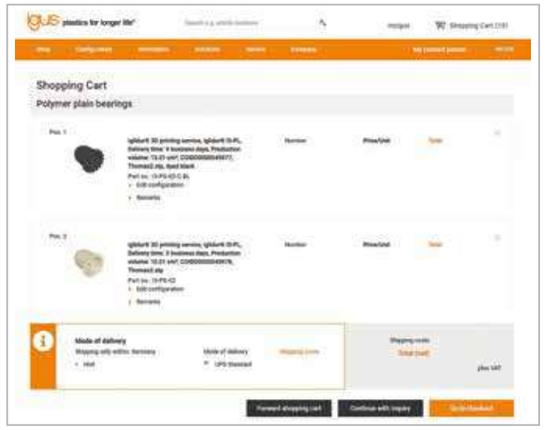
**Try it out now:**
▶ **www.igus.eu/idd**



**Material selection**



**Wall thickness analyses**




**Shopping cart**



iglidur® tribo 3D printing

iglidur® tribo 3D printing | 3D printing service

### SLS can also be used to make wear-resistant parts

The 3D printing service is also available with all of our SLS powders. Laser sintering (SLS) is used to make parts of these materials. With this method even more plain bearing applications are therefore possible with 3D-printed parts, strength and precision are considerably greater and the price per component is lower.

### Additional laser sintering services

In the 3D printing service, more services for laser sintering materials can now be selected and their prices easily defined.

- Black colouring for visible parts
- Polish surfaces using vibratory finishing or chemical polishing

### New: Multi-material print (FDM/FFF)

Workpieces with up to four components made from proven tribofilaments® and other plastics.
One possible combination would be intelligent bearings for predictive maintenance: with a fibre-reinforced housing, tribofilament® and integrated conductor tracks to warn of bearing wear.

### New: Digital Light Processing (DLP)

In the DLP 3D printing service, igus® processes its own iglidur® i3000 resin in the classic DLP process with a high resolution that allows precision components to be manufactured. In addition, the UV wavelength of 385nm can reduce excessive curing and ensure a more precise shape.

### Dimensional stability and size of installation space

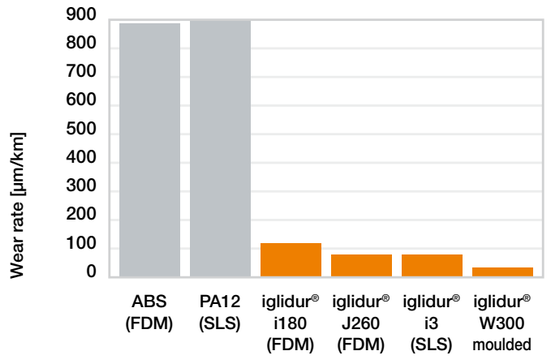
The precision of the printed parts in the case of the iglidur® tribofilaments® is ±0.2mm (up to an edge length of 50mm, above this ±0.4%). In the case of parts made using the laser sintering process the precision is ±0.1mm (up to an edge length of 50mm, above this ±0.2 %).
The space used for processing the iglidur® tribofilaments® measures 135x145x200mm. In the case of laser sintering the space used measures 170x220x300mm. The following applies to both processes: larger parts may have to be made of several pieces.

### Large-format 3D printing

Up to 3 metres-large components made of iglidur® i150 and iglidur® i151 in a 3D printing process. The space of the large-format printer measures 1,000x500x500mm. Larger parts may have to be made of several pieces

In order to ensure that the 3D-printed components function correctly, the following should be included in the 3D model:

- The 3D model should be at the centre of tolerance; e.g. for a tolerance of 16mm to 0.2mm, the 3D model should correspond to 15.9mm to
- In the case of clearance fits, a play of approx. 0.1mm should be planned
- Minimum wall thickness: SLS 0.7mm, FDM/FFF 1mm



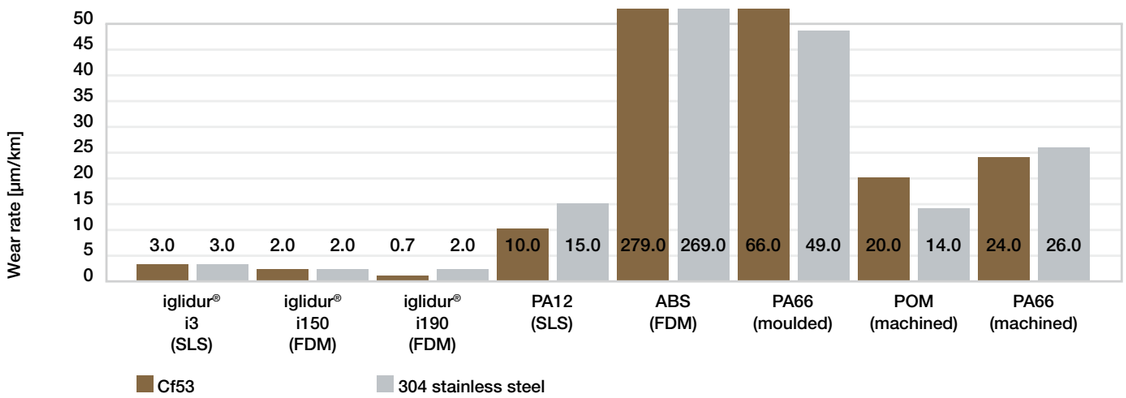

**Wear, rotating p =20MPa; v = 0.01m/s, 304 stainless steel**

# iglidur® tribo 3D printing | Tested

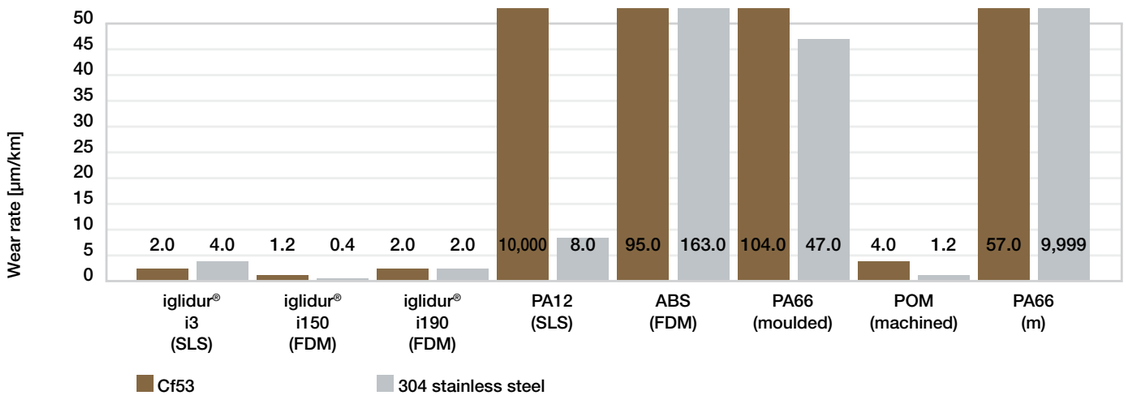
## Printed as good as injection-moulded

### iglidur® 3D printing materials impress in testing with injection-moulded quality

The igus® test series prove that 3D-printed bearings made from iglidur® tribo materials are just as wear-resistant as injection-moulded and machined parts. The tests have also shown that iglidur® 3D printing filaments, 3D printing resins and SLS materials have significantly lower coefficient of friction and up to 50 times higher abrasion resistance than conventional 3D printing materials. This makes igus® 3D printing materials the only ones that are convincing even in moving applications. You can directly install printed parts such as plain bearings, drive nuts or worm gears and use them as wear-resistant parts - from the prototype phase to series production.




Wear, 60° pivoting, p = 2MPa; v = 0.01m/s




Wear, linear p = 1MPa; v = 0.01m/s



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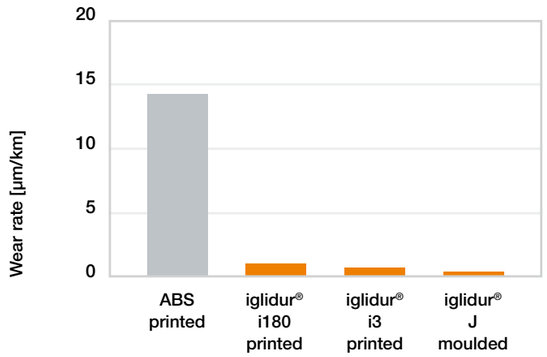
# iglidur® tribofilament® | Test results

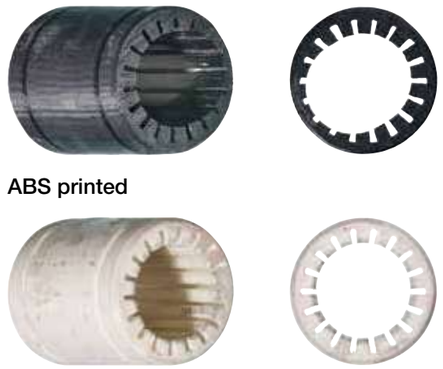
iglidur® tribo 3D printing

Wear-resistant parts made of iglidur® tribofilament® with the 3D printing method or parts made of iglidur® i3 with the SLS method are much more wear-resistant than standard 3D printing materials.

The following tests also show "printed as good as injection-moulded": the 3D-printed iglidur® plain bearings are comparable to conventionally made plain bearings with respect to wear resistance.

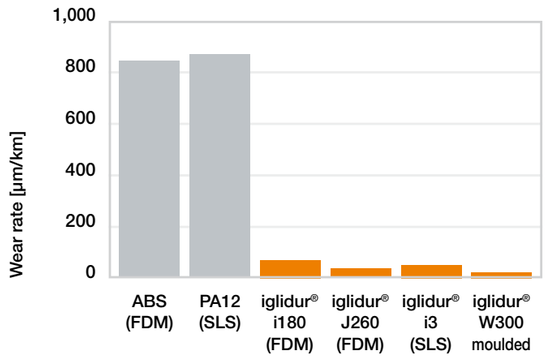



Linear wear: p = 0.11MPa; v = 0.34m/s; l = 370mm



ABS printed

iglidur® i180 printed



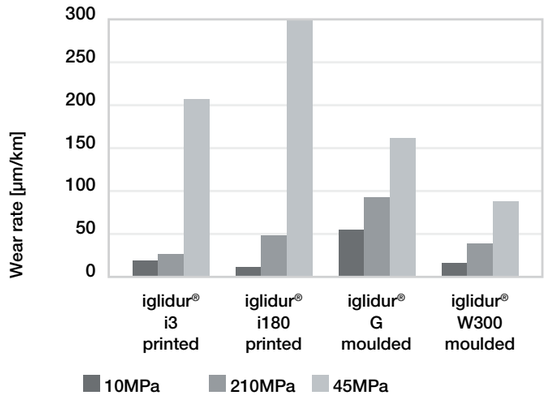

Wear, rotating p =20MPa; v = 0.01m/s, 304 stainless steel

ABS

PA12

iglidur® i3

iglidur® i180




Wear, pivoting shaft: 304 stainless steel, v = 0.01m/s; ß = 60°

iglidur® i3

iglidur® i180

iglidur® G

iglidur® W300

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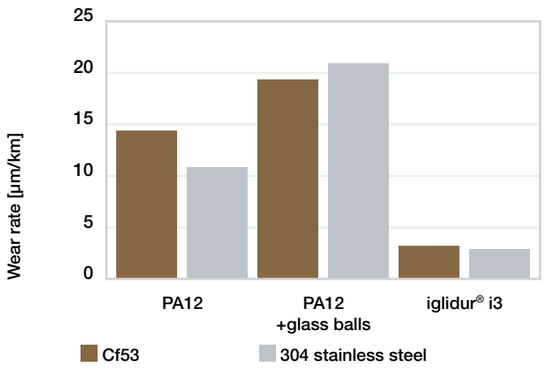
# iglidur® SLS | Laser sintering

## iglidur® i3 for 3D printing via SLS




Wear, rotating p = 1MPa; v = 0.3m/s

Delivery time
72hrs

**At least 3 times more wear-resistant: iglidur® i3 for 3D printing via SLS**

The material iglidur® i3, which was specially developed for laser sintering, showed a 3 to 30 times better abrasion resistance than conventional materials in the igus® test lab. This further increases design freedom of sliding components prone to wear. iglidur® i3 is also suitable for regular gears such as spur gears, bevel gears, and planetary gears.

- Lubrication and maintenance-free
- Wear-resistant
- Good mechanical properties
- Accurate surface details
- Can be processed using the standard parameter set
- Refresh rate: 75%
- Automotive-compliant according to FMV SS 302
- Most-popular igus® 3D-printing material (more than 100,000 parts per year)
- 3D printing service ▶ **www.igus.eu/idd**
- Gear service life calculation ▶ **www.igus.eu/gear-expert**

### Material properties

| General properties | Unit | iglidur® i3 | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.05 | |
| Colour | | yellow | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.8 | DIN 53495 |
| Max. moisture absorption | % weight | 1.9 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 1,400 | DIN 53457 |
| Flexural strength at +20°C | MPa | 68/61[130)] | DIN 53452 |
| Shore D hardness | | 70 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. long-term application temperature | °C | +80 | |
| Max. short-term application temperature | °C | +140 | |
| Min. application temperature | °C | -40 | |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | > $10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | > $10^{11}$ | DIN 53482 |

[130)] Printed flat/upright

▶ Chemical table, **page 1170**

Part No. raw material (10kg)
I3-PL-10000

Part No. component
I3-PS-02

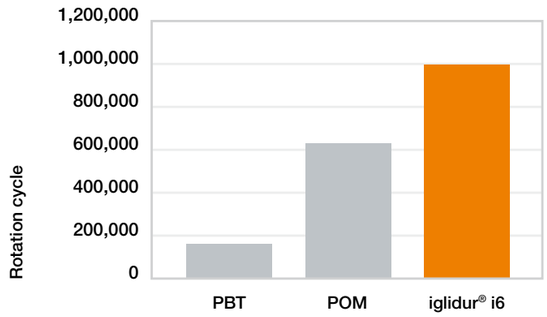






# iglidur® SLS | Laser sintering

## iglidur® i6 for 3D printing via SLS




Service life test worm wheel. 12rpm; 4.9Nm

Delivery time
72hrs

**Durable worm wheels made of iglidur® i6 via laser sintering**

The material iglidur® i6 was specifically developed for laser sintering and is especially suited for worm wheels. The tests in the igus® test laboratory showed a longer service life than conventional machined POM worm wheels. This greatly increases the flexibility in the design of gears, since no tools are necessary due to the laser sintering process and gears can be produced efficiently without minimum order quantity.

- New: Compliant with Regulation (EU) No. 10/2011 and FDA guidelines
- Excellent abrasion resistance
- Extremely long operating times
- Lubrication and maintenance-free
- Cost-effective, no minimum order quantity
- No tooling costs
- Accurate surface details
- 3D printing service ▶ **www.igus.eu/idd**
- Also suitable for medium-sized series, e.g. 5,000 pieces ▶ **www.igus.eu/gears**

### Material properties

| General properties | Unit | iglidur® i6 | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.06 | |
| Colour | | white | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.8 | DIN 53495 |
| Max. moisture absorption | % weight | 1.9 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 1,100 | DIN 53457 |
| Flexural strength at +20°C | MPa | 49/38[130)] | DIN 53452 |
| Shore D hardness | | 67 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. long-term application temperature | °C | +80 | |
| Max. short-term application temperature | °C | +140 | |
| Min. application temperature | °C | -40 | |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | > $10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | > $10^{11}$ | DIN 53482 |

[130)] Printed flat/upright

▶ Chemical table, **page 1170**

Part No. raw material (10kg)
I6-PL-10000

Part No. component
I6-PS-02

# iglidur® SLS | Laser sintering New

## iglidur® i6-BLUE for 3D printing via SLS

### Food safe and in blue

The laser sintering material iglidur® i6-BLUE complies with the food-specific regulations of the FDA and of EU 10/2011 and can therefore be used in numerous applications in the food and beverage industry.

- Easy to detect due to its blue colour
- Abrasion-resistant: at least 9x more abrasion-resistant than PA12 (SLS) in rotation test
- Longer service life in worm gear test than if machined with POM
  ▶ **www.igus.eu/gear**
- Can be processed on regular laser sintering systems
- Available with the 3D printing service from 7 days
  ▶**www.igus.eu/3d-printing-request**

**Delivery time**
**7 business days**

### Material properties

| General properties | Unit | iglidur® i6-BLUE | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.06 | |
| Colour | | light blue | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.8 | DIN 53495 |
| Max. moisture absorption | % weight | 1.9 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 1,100 | DIN 53457 |
| Flexural strength at +20°C | MPa | 49/38[130)] | DIN 53452 |
| Shore D hardness | | 67 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. long-term application temperature | °C | +80 | |
| Max. short-term application temperature | °C | +140 | |
| Min. application temperature | °C | -40 | |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | > $10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | > $10^{11}$ | DIN 53482 |

[130)] **Printed flat/upright**

▶ Chemical table, **page 1170**

**Part No. raw material (10kg)**
I6-BLUE-PL-10000

**Part No. component**
I6-BLUE-PS-02



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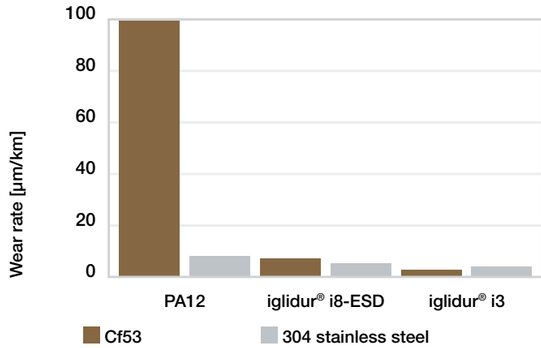
iglidur® tribo 3D printing

# iglidur® SLS | Laser sintering New

## iglidur® i8 for 3D printing via SLS




**Wear, linear p = 1MPa; v = 0.01m/s**

### Components with ESD properties

iglidur® i8 is an electrostatically dissipative SLS material for long-lasting and abrasion-resistant 3D printed components. Ideal for applications where ESD properties are essential to operate within electronic components: also the perfect choice for the manufacture of anti-static parts for machines that require ATEX certification.

- Electrostatically dissipative (ESD) and black
- Excellent service life – for example, a pivoting abrasion resistance factor of 2 compared to PA 12, can be calculated online
- Can be processed on regular and low-cost laser sintering systems
- 3D printing service: ▶ **www.igus.eu/idd**
- Gear service life calculation
  ▶ **www.igus.eu/gear-expert**

**Delivery time**
**4 business days**

### Material properties

| General properties | Unit | iglidur® i8-ESD | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.03 | |
| Colour | | black | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.8 | DIN 53495 |
| Max. moisture absorption | % weight | 1.9 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,200 | DIN 53457 |
| Flexural strength at +20°C | MPa | 63/42[130)] | DIN 53452 |
| Shore D hardness | | 72 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. long-term application temperature | °C | +80 | |
| Max. short-term application temperature | °C | +140 | |
| Min. application temperature | °C | -40 | |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | 2.8 x $10^{7}$ | DIN IEC 93 |
| Surface resistance | Ω | 3.6 x $10^{7}$ | DIN 53482 |

[130)] **Printed flat/upright**

▶ Chemical table, **page 1170**

**Part No. raw material (10kg)**
I8-ESD-PL-10000
**Part No. raw material (1kg)**
I8-ESD-PL-1000

**Part No. component**
I8-ESD-PS-02

EN 09/2023

# iglidur® SLS | Laser sintering New

## iglidur® i10 for 3D printing via SLS

**Chemical-resistant and food-compatible special parts printed via SLS**

The laser sintering material iglidur® i10 is ideal for applications in the food and electroplating industries because of its chemical resistance.

- Chemical-resistant
- Food-compatible
- Lubrication and maintenance-free
- Tough
- Available with the 3D printing service from 7 days

▶ **www.igus.eu/idd**

**Delivery time**
**7 business days**

### Material properties

| General properties[178] | Unit | iglidur® i10 | Testing method |
|---|---|---|---|
| Density | g/cm³ | 0.85 | |
| Colour | | off white | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.1 | DIN 53495 |
| Max. moisture absorption | % weight | 0.2 | |
| **Mechanical properties[178]** | | | |
| Flexural modulus | MPa | 800/750[130] | DIN 53457 |
| Flexural strength at +20°C | MPa | 20[130] | DIN 53452 |
| Shore D hardness | | 66 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. long-term application temperature | °C | +60[176], [177] | |
| Max. short-term application temperature | °C | +80[176], [177] | |
| Min. application temperature | °C | 0 | |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | > $10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | > $10^{11}$ | DIN 53482 |

[130] Printed flat/upright; [176] Relaxation not excluded; [177] Without additional load; no sliding movement;
[178] Depending on the printing parameters and building direction

▶ Chemical table, **page 1170**

**Part No. raw material (10kg)**
I10-PL-10000

**Part No. component**
I10-PS-02



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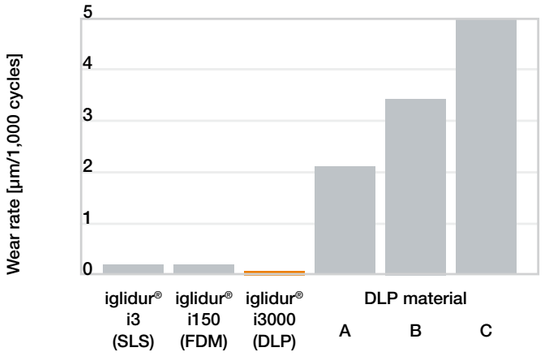
# iglidur® triboresin | Product range New

## iglidur® i3000-PR for DLP and LCD printers




**Wear in µm/1,000 cycles p = 0.42N/mm²; v = 0.32m/s**

**First 3D printing resin for wear-resistant parts and gears**

The DLP 3D printing resin iglidur® i3000 is suitable for DLP and LCD printers and was specifically developed for printing gears and wear-resistant parts. With a service life of at least 30 to 60 times longer than conventional 3D printing resins, iglidur® i3000 is suitable for all types of applications. The high resolution of up to 35µm enables the print of very delicate components with the finest details. The mechanical properties are largely isotropic due to the photopolymerisation process. Start of the beta test phase: please contact igus® if you would like to test individual wear-resistant parts made from iglidur® i3000.

- Self-lubricating and low maintenance
- Fine details, 35µm and 43µm resolution
- Inner channels possible
- Fine tooth module of 0.2 possible
- Available with the 3D printing service from 5 days

▶ **igus.eu/3d-printing-request**

**Processing instructions:**
Since skin contact with the liquid resin must be avoided, personal protective equipment is absolutely necessary during processing.

### Material properties

| General properties | Unit | iglidur® i3000 |
|---|---|---|
| Density | g/cm³ | 1.3 |
| Colour | | grey |
| Max. moisture absorption at +23°C and 50% r.h. | % weight | 1.8 |
| Max. moisture absorption | % weight | 3.2 |
| **Mechanical properties** | | |
| Flexural modulus | MPa | 2,610 |
| Flexural strength at +20°C | MPa | 90 |
| Shore D hardness | | 78 |
| **Physical and thermal properties** | | |
| Max. long-term application temperature | °C | +80 |
| Max. short-term application temperature | °C | +100 |
| Min. application temperature | °C | -20 |
| **Electrical properties** | | |
| Specific transitional resistance | Ωcm | > $10^{12}$ |
| Surface resistance | Ω | > $10^{11}$ |

[130] Printed flat/upright

**For parts with the finest details**

**Part No. raw material (1kg)**
I3000-PR-1000

**Part No. component**
I3000-PS-06

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# iglidur® tribofilament® | Advantages

## 3D printing with tribofilament®

**50 times more abrasion-resistant than standard materials for maximum service life**
Wear-resistant parts made of igus® tribofilaments® are up to 50 times more wear-resistant than standard materials for 3D printing and therefore achieve a long service life. Due to their tribological properties, they are ideal for 3D printing spare wear-resistant parts for e.g. plain bearings, drive nuts, gears and other wear-resistant parts.
The igus® tribofilaments® can be processed on 3D printers that are based on the fused-deposition-modelling method (FDM/FFF) and that allow the nozzle temperature to be set as required.

**Find and order the appropriate tribofilament® online**
**▶ www.igus.eu/tribofilament**

### Recommended iglidur® tribofilament® according to application temperature and printers

| Ambient temperature of application | All printer types (also open installation space) | Closed installation space | Heatable installation space approx. +100°C | Heatable installation space approx. +160°C |
|---|---|---|---|---|
| -30 °C to +65 °C | iglidur® i150<br>iglidur® i151<br>igumid® P150[183)] | iglidur® i150<br>iglidur® i151<br>igumid® P150[184), 183)] | | |
| -40 °C to +80 °C | iglidur® i190[183)] | iglidur® i190[183)] | | |
| -30 °C to +100 °C | igumid® P190[183)] | iglidur® i180<br>iglidur® i180-BL<br>igumid® P190[183)] | iglidur® i180[184)]<br>iglidur® i180-BL[184)] | iglidur® J260 |
| -100 °C to +120 °C | | | iglidur® J260 | iglidur® J260 |
| -50 °C to +170 °C | | | | iglidur® RW370 |
| -100 °C to +180 °C | | | | iglidur® A350 |

[183)] This 3D printer is only needed for larger parts (> 100mm), the previous printer is suitable for smaller parts
[184)] The material is abrasive, therefore a wear-resistant nozzle and drive wheel is required


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# iglidur® tribofilament® | Product overview

### Material: iglidur® i150
**Wear-resistant parts printed the easy way**
- High abrasion resistance at low speeds
- Good mechanical properties
- Easiest to process tribofilament® (also without heated print bed)
- Food-compatible according to EU10/2011 regulation
- Nozzle temperature: +240°C up to +250°C

▶ Page 838

### New Material: iglidur® i151
**For contact with food**
- Compliant with Regulation (EU) No. 10/2011 and FDA guidelines
- Easy to detect due to its blue colour

▶ Page 845

### New Material: igumid® P150
**Rigid and tough**
- The first igus® tribofilament® specially developed for multi-material 3D printing together with iglidur® i150
- Extremely robust and rigid with fibre reinforcement

▶ Page 844

### Material: iglidur® i180
**Best combination of ability to be processed and service life**
- Excellent abrasion resistance
- Good mechanical properties
- Nozzle temperature: +250°C up to +260°C
- Also in black (iglidur® i180-BL)

▶ Page 839

### New Material: iglidur® i190
**Strong and abrasion-resistant**
- Flexural strength 80MPa, the best iglidur® tribofilament® for regular 3D printers
- Excellent service life - 50 times higher abrasion resistance than ABS

▶ Page 842

### New Material: igumid® P190
**Rigid and tough**
- Specially developed for multi-material 3D printing together with iglidur® i190
- Extremely robust and rigid with carbon fibre reinforcement

▶ Page 843

### Material: iglidur® J260
**Extremely long service life and excellent coefficient of friction**
- Outstanding abrasion resistance of tribofilaments®
- Application temperature from -100°C to +120°C
- High-quality processing
- Nozzle temperature: +260°C up to +270°C

▶ Page 840

### Material: iglidur® RW370
**Ideal for rail technology**
- Flame-retardant and high strength
- Application temperature from -50°C to +170°C
- High temperature printer necessary
- Nozzle temperature: +350°C up to +360°C

▶ Page 846

### Material: iglidur® A350
**For the food industry**
- Compliant with Regulation (EU) No. 10/2011 and FDA guidelines
- Application temperature from -100°C to +180°C
- High temperature printer necessary
- Nozzle temperature: +360°C up to +370°C

▶ Page 847

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# iglidur® tribofilament® | Product range

iglidur® i150

## Order key

| tribofilament® | Diameter | Weight |
|---|---|---|
| I150-PF- | 0175 | -0750 |
| iglidur® material | tribofilament® | Ø [mm · 100] | Spool weight [g] |

### iglidur® i150 - makes printing even easier

- High abrasion resistance at low speeds
- Good mechanical properties
- The tribofilament® that is easiest to process
- Compliant with food requirements according to (EU) No 10/2011
- Recommended printing surface: igus® adhesive film or glue-stick on glass
- Also to be processed without a heated print bed (prerequisite: igus® adhesive film ▶ Page 848 )

### Dimensions [mm]

| Filament diameter | Outer Ø spool | Inner Ø spool | Spool width | Weight [g] | Part No. |
|---|---|---|---|---|---|
| 1.75 | 200 | 52 | 55 | 750 | **I150-PF-0175-0750** |
| 1.75 | 335 | 51 | 220 | 8,000 | **I150-PF-0175-8000** New |
| 3.00 | 200 | 52 | 55 | 750 | **I150-PF-0300-0750** |
| 3.00 | 335 | 51 | 220 | 8,000 | **I150-PF-0300-8000** New |

### Material properties

| General properties | Unit | iglidur® i150 | iglidur® i180 | iglidur® i180-BL |
|---|---|---|---|---|
| Density | g/cm³ | 1.30 | 1.21 | 1.21 |
| Colour | | white | white | black |
| Max. moisture absorption at +23°C and 50% r.h. | % weight | 0.3 | 0.3 | 0.3 |
| Max. moisture absorption | % weight | 0.7 | 0.9 | 0.9 |
| **Mechanical properties** | | | | |
| Flexural modulus | MPa | 1,700 | 1,700 | 1,700 |
| Flexural strength at +20°C | MPa | 54/37[130)] | 46/33[130)] | 46/33[130)] |
| Shore D hardness | | 62 | 66 | 66 |
| **Physical and thermal properties** | | | | |
| Max. long-term application temperature | °C | +65 | +80 | +80 |
| Max. short-term application temperature | °C | +75 | +90 | +90 |
| Min. application temperature | °C | -30 | -40 | -40 |
| **Electrical properties** | | | | |
| Specific transitional resistance | Ωcm | > $10^{13}$ | > $10^{12}$ | > $10^{12}$ |
| Surface resistance | Ω | > $10^{12}$ | > $10^{11}$ | > $10^{11}$ |

[130)] Printed flat/upright





iglidur® tribofilament® | Product range

iglidur® tribo 3D printing

iglidur® i180

iglidur® i180-BL

## Order key

| tribofilament® | Diameter | Weight |
|---|---|---|
| I180-PF- | 0175 | -0250 |
| iglidur® material | tribofilament® | Ø [mm · 100] | Spool weight [g] |

### iglidur® i180 - flexible

- High degree of abrasion resistance, even in the case of dynamic applications
- Good mechanical properties
- Max. application temperature: +80°C
- Recommended printing surface: igus® adhesive film ▶ Page 848

### iglidur® i180-BL - for visible parts

- In black for visible parts
- Same mechanical and tribological properties as iglidur® i180 in white

### Dimensions [mm]

| Filament diameter | Outer Ø spool | Inner Ø spool | Spool width | Weight [g] | Part No. |
|---|---|---|---|---|---|
| 1.75 | 200 | 52 | 55 | 250 | **I180-PF-0175-0250** |
| 1.75 | 200 | 52 | 67 | 750 | **I180-PF-0175-0750** |
| 3.00 | 200 | 52 | 55 | 250 | **I180-PF-0300-0250** |
| 3.00 | 200 | 52 | 67 | 750 | **I180-PF-0300-0750** |
| 1.75 | 200 | 52 | 55 | 250 | **I180-BL-PF-0175-0250** |
| 1.75 | 200 | 52 | 67 | 750 | **I180-BL-PF-0175-0750** |
| 3.00 | 200 | 52 | 55 | 250 | **I180-BL-PF-0300-0250** |
| 3.00 | 200 | 52 | 67 | 750 | **I180-BL-PF-0300-0750** |

**Processing and accessories**
▶ Page 848

**Complete processing instructions online (in the download area of the respective material)**
▶ www.igus.eu/tribofilament

**Part No. Adhesive film for the print bed**
PF-01-0203-0203 (203 x 203mm)
PF-01-0254-0228 (254 x 228mm)

# iglidur® tribofilament® | Product range

iglidur® J260

## Order key

| tribofilament® | Diameter | Weight |
|---|---|---|
| J260 - PF - | 0175 | - 0250 |
| iglidur® material | tribofilament® | Ø [mm · 100] | Spool weight [g] |

## iglidur® J260 - long service life

- Outstanding abrasion resistance of tribofilaments®
- Application temperature from -100°C to +120°C
- For experts: high-quality processing
- Recommended printing surface: igus® adhesive film ▶ Page 848

## Dimensions [mm]

| Filament diameter | Outer Ø spool | Inner Ø spool | Spool width | Weight [g] | Part No. |
|---|---|---|---|---|---|
| 1.75 | 200 | 52 | 55 | 250 | **J260-PF-0175-0250** |
| 1.75 | 200 | 52 | 67 | 750 | **J260-PF-0175-0750** |
| 3.00 | 200 | 52 | 55 | 250 | **J260-PF-0300-0250** |
| 3.00 | 200 | 52 | 67 | 750 | **J260-PF-0300-0750** |

## Material properties

| General properties | Unit | iglidur® J260 |
|---|---|---|
| Density | g/cm³ | 1.35 |
| Colour | | yellow |
| Max. moisture absorption at +23°C and 50% r.h. | % weight | 0.2 |
| Max. moisture absorption | % weight | 0.4 |
| **Mechanical properties** | | |
| Flexural modulus | MPa | 1,000 |
| Flexural strength at +20°C | MPa | 41/13[130)] |
| Shore D hardness | | 66 |
| **Physical and thermal properties** | | |
| Max. long-term application temperature | °C | +120 |
| Max. short-term application temperature | °C | +140 |
| Min. application temperature | °C | -100 |
| **Electrical properties** | | |
| Specific transitional resistance | Ωcm | > $10^{12}$ |
| Surface resistance | Ω | > $10^{10}$ |

[130)] Printed flat/upright



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# Notes

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# iglidur® tribofilament® | Product range New

iglidur® i190

## Order key

| tribofilament® | Diameter | Weight |
|---|---|---|
| I190-PF- | 0175 | -0750 |
| iglidur® material | tribofilament® | Ø [mm · 100] | Spool weight [g] |

### iglidur® i190 - strong and abrasion-resistant

- Flexural strength 80MPa, the best iglidur® tribofilament® for regular 3D printers
- Excellent service life - 50 times higher abrasion resistance than ABS
- Can be processed by commercially available 3D printers
- Max. application temperature: +90°C
- igus® bonding agent for tribofilament® or glue stick in glass ▶ Page 848

### Dimensions [mm]

| Filament diameter | Outer Ø spool | Inner Ø spool | Spool width | Weight [g] | Part No. |
|---|---|---|---|---|---|
| 1.75 | 200 | 52 | 55 | 750 | **I190-PF-0175-0750** New |
| 3.00 | 200 | 52 | 55 | 750 | **I190-PF-0300-0750** New |

### Material properties

| General properties | Unit | iglidur® i190 | igumid® P190 |
|---|---|---|---|
| Density | g/cm³ | 1.30 | 1.25 |
| Colour | | beige | black |
| Max. moisture absorption at +23°C and 50% r.h. | % weight | 1.4 | 1.4 |
| Max. moisture absorption | % weight | 6.0 | 3.7 |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,400 | 6.34/11.55/2.86GPa[130] |
| Flexural strength at +20°C | MPa | 75[130] | 163/237/70[189] |
| Shore D hardness | | 71 | 83 |
| **Physical and thermal properties** | | | |
| Max. long-term application temperature | °C | +90 | +120 |
| Max. short-term application temperature | °C | +120 | +140 |
| Min. application temperature | °C | -40 | -40 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | > $10^{12}$ | > $10^{10}$ |
| Surface resistance | Ω | > $10^{11}$ | > $10^{10}$ |

[130] Printed flat/upright

[189] Printed flat, printing lines aligned 45°/-45°; printing lines aligned according to optimum strength/printed upright



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iglidur® tribofilament® | Product range New

iglidur® tribo 3D printing

igumid® P190

## Order key

| tribofilament® | Diameter | Weight |
|---|---|---|
| P190-PF- | 0175 | -0750 |
| iglidur® material | tribofilament® | Ø [mm · 100] | Spool weight [g] |

### igumid® P190 - rigid and tough

- Specially developed for multi-material 3D printing together with iglidur® i190
- Extremely robust and rigid with carbon fibre reinforcement
- Suitable for structural components and multi-material components
- igus® bonding agent for tribofilament® or glue stick in glass ▶ Page 848

### Dimensions [mm]

| Filament diameter | Outer Ø spool | Inner Ø spool | Spool width | Weight [g] | Part No. |
|---|---|---|---|---|---|
| 1.75 | 200 | 52 | 55 | 750 | **P190-PF-0175-0750** New |
| 3.00 | 300 | 52 | 100 | 750 | **P190-PF-0300-0750** New |

Processing and accessories
▶ Page 848

Complete processing instructions online (in the download area of the respective material)
▶ www.igus.eu/tribofilament

Part No. Bonding agent for tribofilaments®
PF-ADHESIVE-01

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# iglidur® tribofilament® | Product range New

igumid® P150

## Order key

| tribofilament® | Diameter | Weight |
|---|---|---|
| P150-PF- | 0175 | -0750 |
| iglidur® material | tribofilament® | Ø [mm · 100] | Spool weight [g] |

## igumid® P150 - rigid and tough

- igumid® P150 is the first igus® tribofilament® specially developed for multi-material 3D printing together with iglidur® i150
- igumid® P150: robust and rigid with fibre reinforcement
- Also suitable for structural components: flexural strength 95MPa, flexural modulus 5GPa (optimised filling direction)
- igus® bonding agent for tribofilament® or glue stick in glass ▶ Page 848

## Dimensions [mm]

| Filament diameter | Outer Ø spool | Inner Ø spool | Spool width | Weight [g] | Part No. |
|---|---|---|---|---|---|
| 1.75 | 200 | 52 | 55 | 750 | P150-PF-0175-0750 New |
| 3.00 | 200 | 52 | 55 | 750 | P150-PF-0300-0750 New |

## Material properties

| General properties | Unit | igumid® P150 | iglidur® i151 |
|---|---|---|---|
| Density | g/cm³ | 1.40 | 1.42 |
| Colour | | black | light blue |
| Max. moisture absorption at +23°C and 50% r.h. | % weight | n.s. | n.s. |
| Max. moisture absorption | % weight | 0.3 | n.s. |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 4,700 | 1,400 |
| Flexural strength at +20°C | MPa | 87[130)] | 43[130)] |
| Shore D hardness | | n.s. | 69 |
| **Physical and thermal properties** | | | |
| Max. long-term application temperature | °C | +100 | +65 |
| Max. short-term application temperature | °C | +125 | +75 |
| Min. application temperature | °C | -30 | -30 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | n.s. | n.s. |
| Surface resistance | Ω | n.s. | n.s. |

[130)] Printed flat/upright



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iglidur® tribofilament® | Product range New

iglidur® tribo 3D printing

iglidur® i151

## Order key

| tribofilament® | Diameter | Weight |
|---|---|---|
| I151-PF- | 0175 | -0750 |
| iglidur® material | tribofilament® | Ø [mm · 100] | Spool weight [g] |

## iglidur® i151 - for contact with food

- Compliant with Regulation (EU) No. 10/2011 and FDA guidelines
- Easy to detect due to its blue colour
- Can be processed easily on any commercially available 3D printers
- Long service life - up to 50x more abrasion-resistant than ABS, PETG and PLA in 3D printing
- igus® bonding agent for tribofilament® or glue stick in glass ▶ Page 848

## Dimensions [mm]

| Filament diameter | Outer Ø spool | Inner Ø spool | Spool width | Weight [g] | Part No. |
|---|---|---|---|---|---|
| 1.75 | 200 | 52 | 55 | 750 | I151-PF-0175-0750 New |
| 3.00 | 200 | 52 | 55 | 750 | I151-PF-0300-0750 New |

Processing and accessories
▶ Page 848

Part No. Bonding agent for tribofilaments®
PF-ADHESIVE-01

Complete processing instructions online (in the download area of the respective material)
▶ www.igus.eu/tribofilament

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# iglidur® tribofilament® | Product range

iglidur® RW370

## Order key

| tribofilament® | Diameter | Weight |
|---|---|---|
| RW370-PF- | 0175 | -0750 |
| iglidur® material | tribofilament® | Ø [mm · 100] | Spool weight [g] |

## iglidur® RW370 - ideal for the rail industry

- Flame-retardant according to UL94-V0 and DIN EN 45545
- 91MPa flexural strength
- High wear resistance
- Can be processed with high-temperature 3D printer
- Max. application temperature: +170°C
- Available for 3D printing (Ø 1.75mm), as bar stock and as injection-moulding material
- Lubrication and maintenance-free
- Recommended printing surface: PET film

## Dimensions [mm]

| Filament diameter | Outer Ø spool | Inner Ø spool | Spool width | Weight [g] | Part No. |
|---|---|---|---|---|---|
| 1.75 | 200 | 52 | 55 | 750 | **RW370-PF-0175-0750** |

## Material properties

| General properties | Unit | iglidur® RW370 | iglidur® A350 |
|---|---|---|---|
| Density | g/cm³ | 1.34 | 1.42 |
| Colour | | beige | blue |
| Max. moisture absorption at +23°C and 50% r.h. | % weight | 0.25 | 0.6 |
| Max. moisture absorption | % weight | 1.2 | 1.9 |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,100 | 1,250/1,390[130)] |
| Flexural strength at +20°C | MPa | 91/30[130)] | 50/46[130)] |
| Shore D hardness | | 80 | 76 |
| **Physical and thermal properties** | | | |
| Max. long-term application temperature | °C | +170 | +180 |
| Max. short-term application temperature | °C | +190 | +210 |
| Min. application temperature | °C | -50 | -100 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | > $10^{12}$ | > $10^{11}$ |
| Surface resistance | Ω | > $10^{12}$ | > $10^{10}$ |

[130)] Printed flat/upright





iglidur® tribofilament® | Product range

iglidur® tribo 3D printing

iglidur® A350

## Order key

| tribofilament® | Diameter | Weight |
|---|---|---|
| A350-PF- | 0175 | -0750 |
| iglidur® material | tribofilament® | Ø [mm · 100] | Spool weight [g] |

## iglidur® A350 - for the food industry

- Compliant with Regulation (EU) No. 10/2011 and FDA guidelines
- Available as 3D print filament, bar stock and for injection moulding
- In industry-standard blue
- Max. application temperature: +180°C
- Complies with the fire prevention requirements of the Federal Aviation Administration of the USA (FAA) for aircraft interiors
- Suitable for autoclave
- Recommended bonding surface: PET film

## Dimensions [mm]

| Filament diameter | Outer Ø spool | Inner Ø spool | Spool width | Weight [g] | Part No. |
|---|---|---|---|---|---|
| 1.75 | 200 | 52 | 55 | 750 | **A350-PF-0175-0750** |

Processing and accessories
▶ Page 848

Complete processing instructions online (in the download area of the respective material)
▶ www.igus.eu/tribofilament

## Processing instructions

iglidur® tribofilaments® can be processed on any 3D printer that is equipped with a heated print bed on which temperatures are adjustable. The igus® adhesive film allows a good adhesion between the iglidur® tribofilament® and the print bed.

- Good ventilation should be provided during processing
- When heated above +300°C, hazardous fumes are produced
- For iglidur® A350 and iglidur® RW370, a high-temperature printer is necessary

**Example: Part No. tribofilaments®**
I150-PF-0175-0750
for 750g spool with a diameter of 1.75mm made of the iglidur® material i150

**Complete processing instructions online (in the download area of the respective material)**
▶ **www.igus.eu/tribofilament**

## New: igus® bonding agent for tribofilament®

The igus® bonding agent for iglidur® tribofilaments® ensures reliable adhesion of the component to the print bed but also easy removal after printing. The bonding agent (powered by Magigoo) was developed as a simple solution specifically for iglidur® tribofilaments® to improve the adhesion of these filaments to various printing plates. It is easy to apply and can be removed at any time with warm water without leaving any residue.

- Ideal for tribofilaments® iglidur® i150, iglidur® i180 and iglidur® i180-BL
- Good adhesion of the parts on the print bed
- Easy detachment

**Part No. Bonding agent for tribofilaments®**
PF-ADHESIVE-01



iglidur® tribofilament® | Processing and accessories

iglidur® tribo 3D printing

## igus® print bed film for your print bed

Thanks to the film available from igus® for the print bed, there is very good adhesion between the iglidur® tribofilament® and the print bed.

- Useable up to approximately 20 times
- "Set" the degree of adhesion by means of print bed temperature
- 3D printer without heating bed? The combination of iglidur® I150 with this print bed film also makes it possible to make wear-resistant parts oneself with such 3D printers

**Part No. Adhesive film for the print bed**
PF-01-0203-0203 (203 x 203mm)
PF-01-0254-0228 (254 x 228mm)

## Spool

iglidur® tribofilaments® weighing up to 750g are wound onto a spool. Larger dimensions are available upon request.

## Filament thickness

The iglidur® tribofilaments® are available with 1.75mm and 3mm thickness. The 3mm filaments can be used without problems in 3D printers that need a 2.85mm filament.

**Test kits**
for 25g of filament, loose with 1.75mm diameter made of the iglidur® material i150

# iglidur® tribo 3D printing | Gear configurator

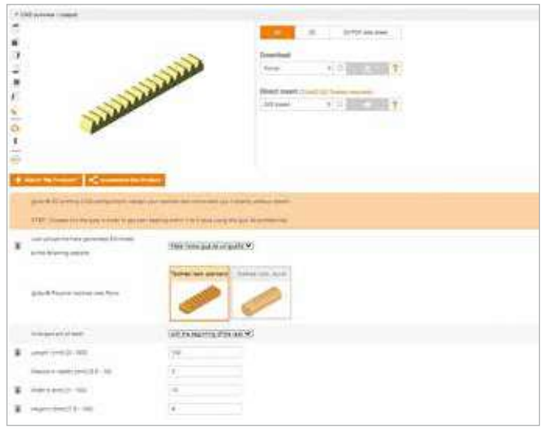
## Wear-resistant gears in 60 seconds using the new igus® gear configurator

### Configure individual gears and racks in 60 seconds, shipped within 3 days

In order to facilitate the work of designers, igus® has now developed a simple and practical tool with the gear configurator. This allows each customer to configure their own component even in special dimensions. In a few steps, the user only needs to enter the specifications of the required gear; such as the tooth module, number of teeth, width and inner diameter or select the suitable rack profile. This automatically displays a 3D model that can be exported as a STEP file. By uploading the file in the igus® 3D printing service, ▶**www.igus.eu/3d-print-service** the configured gear made from the new laser sintering material iglidur® i3 for gears can be ordered immediately.With one click, the user can order their own wear-resistant gear with no minimum order quantity or request a quotation. Within 3 days the custom-made gear is ready for shipment. iglidur® i3 is well suited for straight and helical spur gears, racks and bevel gears.

**Gear service life calculator**

▶ **www.igus.eu/gear-expert**



### iglidur® i6 for worm gears: double the service life

In the test, iglidur® i6 showed itself to be considerably better than machined worm wheels. Worm wheels made of POM had total wear after 621,000 cycles, whereas worm wheels made of iglidur® i6 continued to be functional after more than 1 million cycles.

| POM | POM | iglidur® i6 |
|---|---|---|
| 321,000 cycles | 621,000 cycles | 1 million cycles |
| High wear | Failed | Low wear |

**Delivery time**
**24-72hrs**

**Online CAD configurator for gears**
▶ **www.igus.eu/gear-configurator**

**Online CAD configurator for plain bearings**
▶ **www.igus.eu/3d-model**

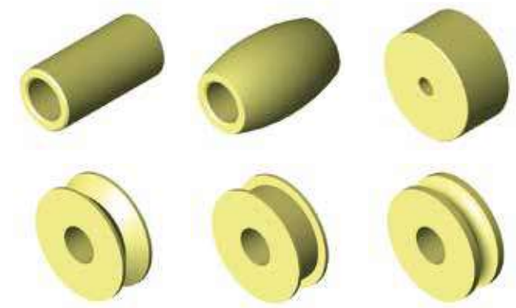
# iglidur® tribo 3D printing | Configurators

## Individual rollers, lead screw nuts, sliding plates and toothed belts

iglidur® tribo 3D printing

### Configure rollers in the desired shape online, delivered in only 24hrs

Create and download your individual 3D model with the roller configurator. Then order it from the 3D printing service (shipped in one to three days). Rollers with different shapes are possible with any dimensions between 1 and 170mm. The rollers can be used immediately without any further machining.



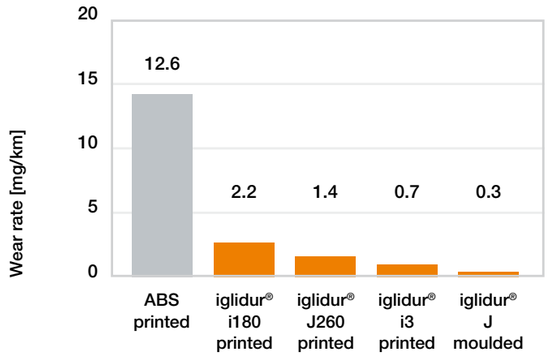
**Delivery time**
**24-72hrs**

**Configure rollers**
▶ **www.igus.eu/roller-configurator**

### Configure custom lead screw nuts, plain bearings, sliding plates and toothed belts in 60 seconds and they will be ready for shipment within 3 days

In addition to individually configurable sliding plates and plain bearings, lead screw nuts with trapezoidal threads can be manufactured from a 3D model. Eliminating costly, time-consuming design and rework. Lead screw nuts, plain bearing and sliding plates are manufactured via laser sintering.

### Lead screw nut wear test




F = 129N; l = 370mm; n = 290rpm

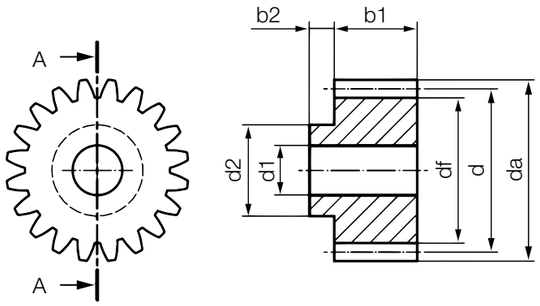
**Delivery time**
**24-72hrs**

**The configurators**
▶ **www.igus.eu/cad-configurators**

# iglidur® tribo 3D printing | Gears

## Configure gear with and without keyway

Image exemplary




### Configuration key

| Part type | Options |
|---|---|

**OC-GEAR-01-1.00-18-10.0-6.1-20.0-8.0**

| Configurator | Gear type | Tooth module | Number of teeth | Width b1 | Inner diameter d1 | Diameter outlet b2 | Width outlet b2 |
|---|---|---|---|---|---|---|---|

Configuration limits:

| | |
|---|---|
| Gear type 01: | gear with hole, keyway optional |
| Tooth module: | 0.50 to 10.0mm |
| Number of teeth: | 17 to 100 |
| Width: | 1.0 to 200mm |

### Dimensions [mm] - example gear configuration with and without keyway

| Part No. | Configuration number | Tooth module | Number of teeth | Width b1 | Inner Ø d1 | Keyway Ø b2 | Width outlet b2 |
|---|---|---|---|---|---|---|---|
| I3-PS-02 | OC-GEAR-01-1.00-☐-10-6-15 | 1.00 | 17 - 100 | 10 | 6 | 15 | 8 |
| I3-PS-02 | OC-GEAR-01-1.50-☐-10-10-25 | 1.50 | 17 - 100 | 10 | 10 | 25 | 10 |
| I3-PS-02 | OC-GEAR-01-2.00-☐-12-10 | 2.00 | 17 - 100 | 12 | 10 | – | – |
| I3-PS-02 | OC-GEAR-01-2.50-☐-14-12 | 2.50 | 17 - 100 | 14 | 12 | – | – |

Many other gear types, including double gears, can be configured online: download the STEP model and determine the price online ▶ www.igus.eu/gear-configurator

Delivery time
72hrs

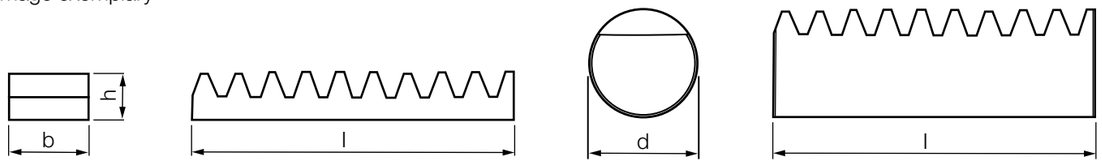




# iglidur® tribo 3D printing | Racks

## Configure flat and round racks

Image exemplary




### Configuration key rack, flat

| Part type | Options |
|---|---|

**OC-GEAR-RACK-01-1.00-10.0-4.5-60.0- S**

| Configurator | Rack type | Tooth module | Width b | Height h | Length l | Arrangement |
|---|---|---|---|---|---|---|

Configuration limits:

| | |
|---|---|
| Rack type 01: | flat rack |
| Tooth module: | 0.50 to 10.0mm |
| Width: | 1.0 to 100mm |
| Height: | up to 100mm |
| Length: | 3 to 300mm[173] |
| Arrangement S: | Symmetrical end separation |

### Configuration key rack, round

| Part type | Options |
|---|---|

**OC-GEAR-RACK-02-1.00-10.0-60.0- S**

| Configurator | Rack type | Tooth module | Diameter d | Length l | Arrangement |
|---|---|---|---|---|---|

Configuration limits:

| | |
|---|---|
| Rack type 02: | round rack |
| Tooth module: | 0.50 to 10.0mm |
| Diameters: | 3.0mm up to 100mm |
| Length: | 3 to 300mm[173] |
| Arrangement S: | Symmetrical end separation |

### Dimensions [mm] - example configuration of rack (flat)

| Part No. | Configuration number | Tooth module | Width b | Height h | Length l | Arrangement |
|---|---|---|---|---|---|---|
| I3-PS-02 | OC-GEAR-RACK-01-1.00-10.0-10.0-☐-S | 1.00 | 10.0 | 10.0 | 3 - 300 | S |
| I3-PS-02 | OC-GEAR-RACK-01-1.50-15.0-15.0-☐-S | 1.50 | 15.0 | 15.0 | 3 - 300 | S |
| I3-PS-02 | OC-GEAR-RACK-01-2.00-20.0-20.0-☐-S | 2.00 | 20.0 | 20.0 | 3 - 300 | S |
| I3-PS-02 | OC-GEAR-RACK-01-2.50-20.0-20.0-☐-S | 2.50 | 20.0 | 20.0 | 3 - 300 | S |

[173] Also has multiple parts

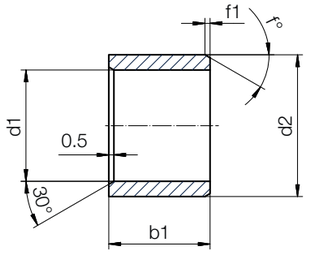
Configure an individual rack, download the STEP model, and determine the price online ▶ www.igus.eu/rack-configurator

Delivery time
72hrs

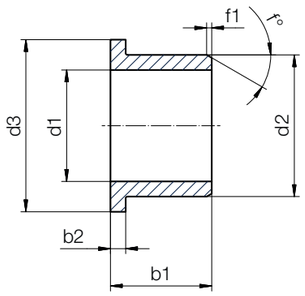
# iglidur® tribo 3D printing | Plain bearings

## Configure plain bearings with and without flange

### Sleeve bearing




### Flanged bearings




### Configuration key Sleeve bearing

| Part type | Options | | | |
|---|---|---|---|---|
| OC-BRG- S | -10.0 | -12.0 | -10.0 | |
| Configurator | Plain bearing type | Inner Ø d1 | Outer Ø d2 | Length b1 |

Configuration limits:

| | |
|---|---|
| Plain bearing type S: | sleeve bearing |
| Inner diameter: | up to 195mm |
| Outer diameter: | up to 200mm |
| Bearing length: | up to 300mm |

### Configuration key Flanged bearings

| Part type | Options | | | | | |
|---|---|---|---|---|---|---|
| OC-BRG- F | -10.0 | -12.0 | -10.0 | -16.0 | -1.0 | |
| Configurator | Plain bearing type | Inner Ø d1 | Outer Ø d2 | Length b1 | Flange Ø d3 | Flange thickness b2 |

Configuration limits:

| | |
|---|---|
| Plain bearing type F: | flanged bearing |
| Inner diameter: | up to 195mm |
| Outer diameter: | up to 200mm |
| Bearing length: | up to 300mm |
| Flange diameter: | up to 200mm |
| Flange thickness: | up to 20mm |

### Dimensions [mm] - example plain bearing configuration with and without flange

| Part No. | Configuration number | Inner Ø d1 | Outer Ø d2 | Total length b1 | Flange Ø d3 | Flange thickness b2 |
|---|---|---|---|---|---|---|
| I3-PS-02 | OC-BRG-S-50.0-60.0-30.0 | 50.0 | 60.0 | 30.0 | – | – |
| I3-PS-02 | OC-BRG-S-18.0-20.0-16.0 | 18.0 | 20.0 | 16.0 | – | – |
| I3-PS-02 | OC-BRG-F-18.0-22.0-18.0-30.0-1.0 | 18.0 | 22.0 | 18.0 | 30.0 | 1.0 |
| I3-PS-02 | OC-BRG-F-50.0-60.0-31.0-66.0-1.0 | 50.0 | 60.0 | 31.0 | 66.0 | 1.0 |

Configure an individual plain bearing, download the STEP model, and determine the price online, including special shapes with slot ▶ www.igus.eu/3d-model

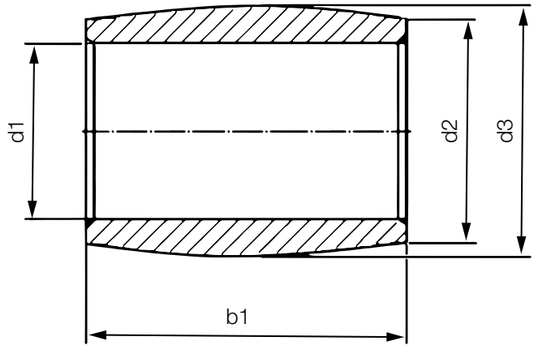
Delivery time
72hrs





# iglidur® tribo 3D printing | Rollers

## Configure convex rollers




### Configuration key

| Part type | Options | | | | |
|---|---|---|---|---|---|
| OC-ROLLER- | 02 | -10.0 | -15.0 | -30.0 | -20.0 |
| Configurator | Roller type | Inner Ø d1 | Outer Ø d2 | Spherical outer Ø d3 | Roller length b1 |

Configuration limits:

| | |
|---|---|
| Roller type 02: | convex roller |
| Inner diameter: | 1 up to 190mm |
| Outer diameter: | up to 195mm |
| Roller length: | up to 300mm |

### Dimensions [mm] - example configuration of convex rollers

| Part No. | Configuration number | Inner Ø d1 | Outer Ø d2 | Spherical Outer Ø d3 | Max. Roller length b1 |
|---|---|---|---|---|---|
| I3-PS-02 | OC-ROLLER-02-4.0-8.0-8.2-☐ | 4.0 | 8.0 | 8.2 | 300 |
| I3-PS-02 | OC-ROLLER-02-10.0-15.0-20-☐ | 10.0 | 15.0 | 20 | 300 |
| I3-PS-02 | OC-ROLLER-02-10.0-50.0-55.0-☐ | 10.0 | 50.0 | 55.0 | 300 |
| I3-PS-02 | OC-ROLLER-02-14.0-60.0-61.0-☐ | 14.0 | 60.0 | 61.0 | 300 |
| I3-PS-02 | OC-ROLLER-02-20.0-100.0-120.0-☐ | 20.0 | 100.0 | 120.0 | 300 |

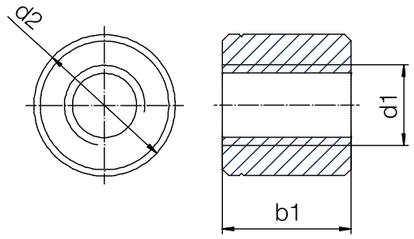
Many other roller types can be configured online: download the STEP model and determine the price online ▶ www.igus.eu/roller-configurator

Delivery time
72hrs

# iglidur® tribo 3D printing | Lead screw nuts

## Configure lead screw nuts

Image exemplary




### Configuration key

| Part type | Options |
|---|---|
| OC-NUT- | S -18.0-12.0-TR10X2- R |

| Configurator | Lead screw nut type | Outer Ø d2 | Width b1 | Thread | Thread direction |
|---|---|---|---|---|---|

Configuration limits:

| | |
|---|---|
| Lead screw nut type S: | cylindrical |
| Outer diameter: | up to 150mm |
| Width: | 3 to 200mm |
| Thread: | 32 types to select from |
| Thread direction: | R = Right hand |
| | L = Left |

### Dimensions [mm] - example configuration of cylindrical lead screw nut

| Part No. | Configuration number | Outer Ø d2 | Width b1 | Thread | Thread direction Right | Thread direction left |
|---|---|---|---|---|---|---|
| I3-PS-02 | OC-NUT-S-15.0-☐-TR8X1.5-R | 15.0 | 3 - 200 | TR8X1.5 | ● | – |
| I3-PS-02 | OC-NUT-S-16.0-☐-TR10X2-L | 16.0 | 3 - 200 | TR10X2 | – | ● |
| I3-PS-02 | OC-NUT-S-18.0-☐-TR11X5-R | 18.0 | 3 - 200 | TR11X5 | ● | – |
| I3-PS-02 | OC-NUT-S-22.0-☐-TR16X2-R | 22.0 | 3 - 200 | TR16X2 | ● | – |
| I3-PS-02 | OC-NUT-S-26.0-☐-TR20X2-L | 26.0 | 3 - 200 | TR20X2 | – | ● |
| I3-PS-02 | OC-NUT-S-50,0-☐-TR30X3-R | 50.0 | 3 - 200 | TR30X3 | ● | – |

Configure individual trapezoidal lead screw nuts, download the STEP model and determine the price online ▶ www.igus.eu/lead-screw-nut-configurator

Delivery time
72hrs





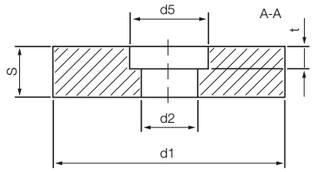


# iglidur® tribo 3D printing | Sliding elements

## Configure sliding elements

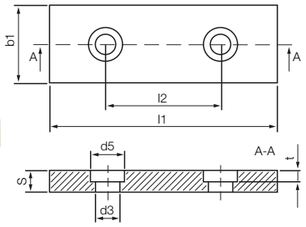
### Round sliding element with central hole

Image exemplary




### Rectangular sliding element with 2 holes

Image exemplary




### Configuration key
### Round sliding element with central hole

| Part type | Options |
|---|---|
| OC-SLIDER- | 01-6.4-30.0-10.0-13.0-5.0 |

| Configurator | Glider type | Inner Ø d1 | Outer Ø d2 | Thickness s | Flat sink d5 | Flat sink depth t |
|---|---|---|---|---|---|---|

Configuration limits:

| | |
|---|---|
| Glider Type 01: | round with central hole |
| Inner diameter: | up to 195mm |
| Outer diameter: | up to 200mm |
| Height 2 : | up to 100mm |
| Flat sink: | optional |

### Configuration key
### Rectangular sliding element with 2 holes

| Part type | Options |
|---|---|
| OC-SLIDER- | 04-20.0-40.0-20.0-10.0-6.4-13.0-5.0 |

| Configurator | Glider type | Width b1 | Length l1 | Pitch l2 | Thickness s | Hole d3 | Flat sink d5 | Flat sink depth t |
|---|---|---|---|---|---|---|---|---|

Configuration limits:

| | |
|---|---|
| Glider Type 04: | Rectangle with two holes |
| Width: | 10 to 200mm |
| Length: | 10 to 200mm |
| Flat sink: | optional |

Glider type:
01: Round with central hole
02 Round with 4 holes
03 Round with 5 holes
04 Rectangle with 2 holes
05 Rectangle with 4 holes

### Dimensions [mm] - example plain bearing configuration with and without flange

| Part No. | Configuration number | Width b1 | Length l1 | Pitch l2 | Height Øs | Bore d3 | Flat sink d5 | Flat sink depth t |
|---|---|---|---|---|---|---|---|---|
| I3-PS-02 | OC-SLIDER-04-20.0-40.0-20.0-10.0-6.4-13.0-5.0 | 20.0 | 40.0 | 20.0 | 10.0 | 6.4 | 13.0 | 5.0 |
| I3-PS-02 | OC-SLIDER-04-30.0-60.0-40.0-8.0-4.3-9.0-4.4 | 30.0 | 60.0 | 40.0 | 8.0 | 4.3 | 9.0 | 4.4 |
| I3-PS-02 | OC-SLIDER-04-50.0-100.0-60.0-11.0-8.2 | 50.0 | 100.0 | 60.0 | 11.0 | 8.2 | – | – |

Many other glider types can be configured online: download the STEP model and determine the price online ▶ www.igus.eu/glider-configurator

Delivery time
72hrs

# 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
inch

Space-saving, selectable spherical ball material:
EBRM/EBLM
▶ Page 888
inch

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
inch

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
inch

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
inch

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
inch

## 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

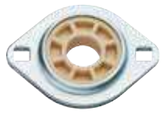
Compact fixed flange bearing: FL208-30-KS
F208-30-KS
▶ Page 958

New

With cast iron housing:
FL-JEM-SP
▶ Page 960

New

With cast iron housing:
F-JEM-SP
▶ Page 961



With cost-effective metallic housing:
PFL-JEM-SP
▶ Page 962

## igubal® spherical bearings

Standard, easy to fit:
KGLM
▶ Page 970

Easy to fit, cost-effective:
KGLM-LC
▶ Page 968

For extremely narrow installation space:
KGLM-SL
▶ Page 969

Cost-effective, selectable spherical ball material:
EGLM-LC
▶ Page 971

Space-saving:
EGLM
▶ Page 972

New

FC spherical bearings:
EGLM-FC
▶ Page 973

## igubal® clip bearings

Simply snap into sheet metal:
ECLM
▶ Page 974

For high axial and radial loads:
ECLM-HD
▶ Page 975

For tolerance compensation, selectable spherical ball material: EGFM-T
▶ Page 976

Clip into sheet metal, can be assembled on both sides:
ZCLM
▶ Page 977

## igubal® double joints and coupling joints

Robust plastic:
EGZM
▶ Page 978

Selectable materials, individual dimensions:
KDGM
▶ Page 980

Selectable materials, individual dimensions:
WDGM
▶ Page 982

Removable, selectable materials:
WDGM-DE
▶ Page 984

New

Variable coupling joint for dirty environments:
WDGM-FX
▶ Page 985

Crimped coupling joints with clevis joints:
GDGM-V
▶ Page 986

New

Crimped threaded inserts:
TDGM
▶ Page 987

## igubal® spherical thrust bearings

Resistant to edge loads:
SAM
▶ Page 992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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.**



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igubal® spherical bearings | Advantages

### 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**

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## 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.

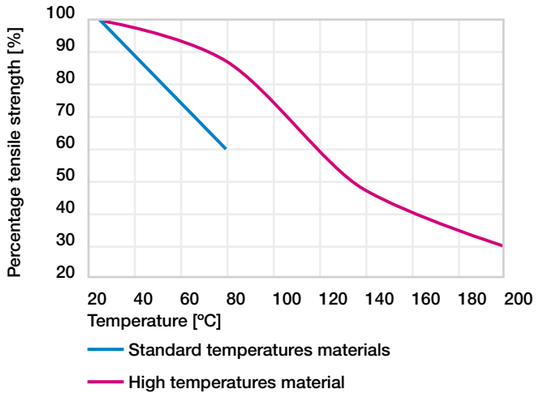



**Diagram 01: Trends indicate the effect of temperature on the max. tensile strength of igubal® rod end bearings.**

## 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**

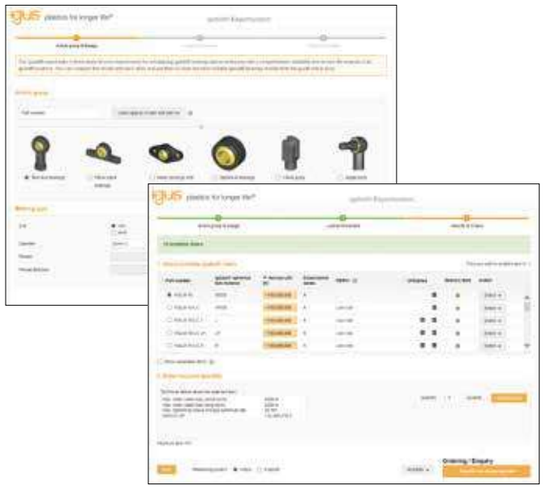
**Wrong test equipment; caliper**

**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





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# igubal® rod ends

- Maintenance-free dry operation
- High rigidity
- Durable
- Compensation of misalignment
- Compensation of edge loads
- Lightweight

# 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**

**Imperial dimensions available**
**▶ From page 1152**

**Online product finder**
**▶ www.igus.eu/igubal-finder**

**Available from stock**
Detailed information about delivery time online.

**Price breaks online**
No minimum order value. No minimum order quantity



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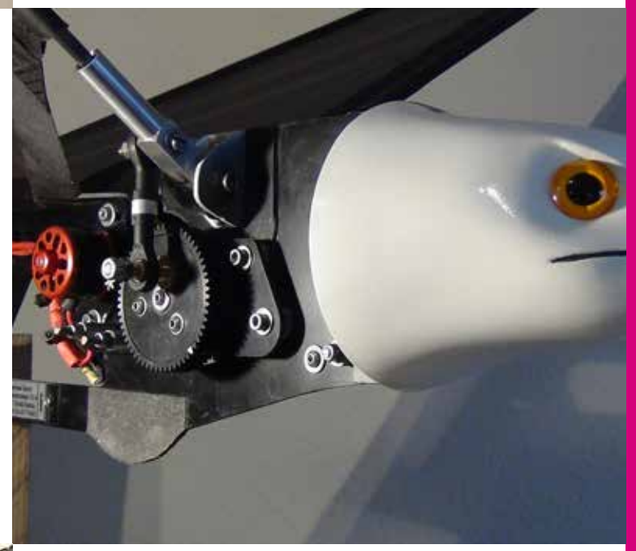
# igubal® rod ends | Application examples

**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.

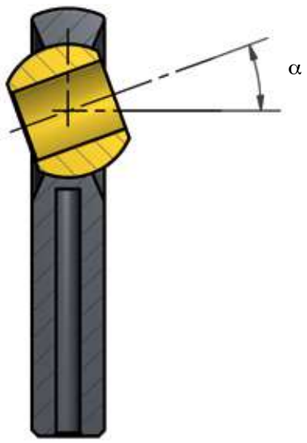
## Temperatures

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






# 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

## 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

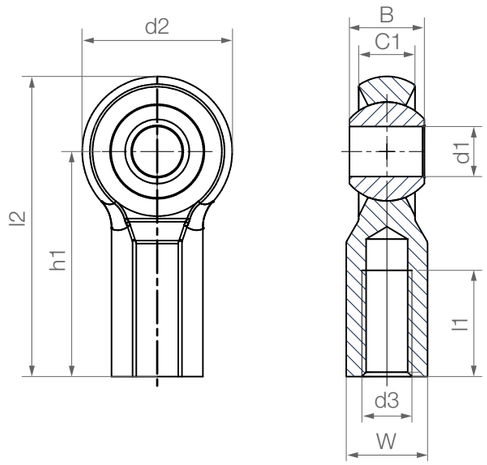
WKM-MH: Standard spherical ball with stainless steel sleeve

J4KM: Low-cost and low moisture absorption



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

## 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

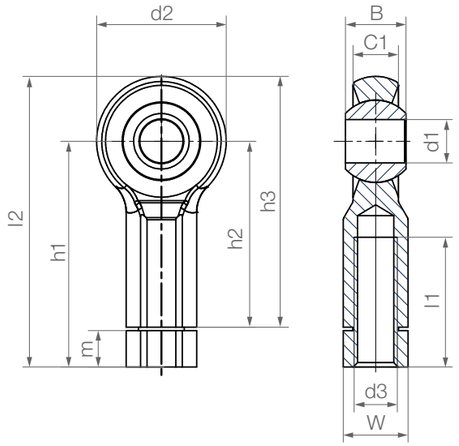
J4KM: Low-cost and low moisture absorption



igubal® rod ends

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**
**L** : Left-hand thread
**R** : Right-hand thread

Add-on:
**MH** : With stainless steel sleeve

**Spherical ball material**
**Blank** : iglidur® W300
**R** : iglidur® R
**J** : iglidur® J
**J4** : iglidur® J4

### 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

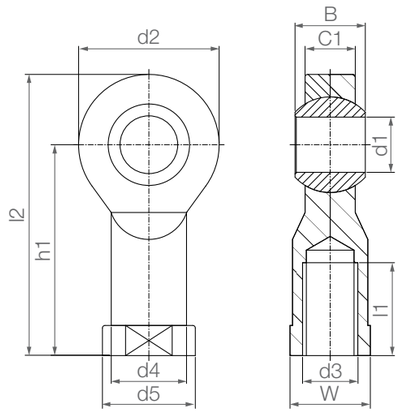
| Part No. | Max. static tensile strain | | Max. static axial load | | Min. thread depth | Max. tightening torque | Max. tightening torque through ball | | Weight |
|---|---|---|---|---|---|---|---|---|---|
| | Short-term [N] | Long-term [N] | Short-term [N] | Long-term [N] | Threads [mm] | Female thread [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**



igubal® rod ends | Product range

## 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**

### 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 |

### Alternative spherical ball materials ▶ Page 993

RKM: Low-cost

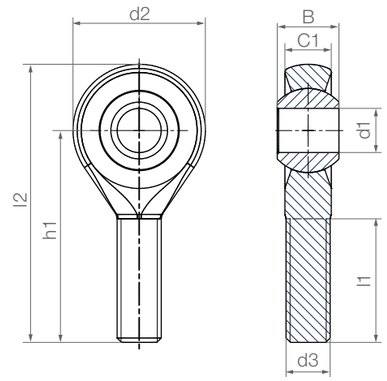
JKM: Low moisture absorption

WKM-MH: Standard spherical ball with stainless steel sleeve

J4KM: Low-cost and low moisture absorption



igubal® rod ends | Product range




**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 | Inner Ø [mm] | 2nd generation |
| Housing (male thread) | | |
| Thread | | |
| Metric | | |

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 | C1 | B | | h1 | l1 | l2 | Max. pivot angle |
|---|---|---|---|---|---|---|---|---|---|---|
| | E10 | | | | without stainless steel sleeve | with stainless steel sleeve +0.2 | | | | |
| **KA□M-05-CL** | 5 | 18 | M5 | 6.0 | 8 | 8.2 | 33 | 19 | 42 | 43° |
| **KA□M-06-CL** | 6 | 20 | M6 | 7.0 | 9 | 9.2 | 36 | 21 | 46 | 40° |
| **KA□M-08-CL** | 8 | 24 | M8 | 9.0 | 12 | 12.2 | 42 | 25 | 55 | 35° |
| **KA□M-10-CL** | 10 | 30 | M10 | 10.5 | 14 | 14.2 | 48 | 28 | 63 | 35° |
| **KA□M-12-CL** | 12 | 34 | M12 | 12.0 | 16 | 16.2 | 54 | 32 | 71 | 35° |

Rod ends can be ordered in metric dimensions with stainless steel sleeve with the addition of **MH** after the part numbers listed here. Example: KARM-10-CL-**MH (Inner Ø: 10mm).**
For another spherical bearing material than iglidur® W300, please add "**J**" to the part number. Example: KARM-10-CL-**J**.

### Alternative spherical ball materials ▶ Page 993

EK: Stainless steel spherical ball

## Rod ends with male thread: KARM and KALM

Standard design

Stainless steel sleeve version (MH)

- Predecessor model of KARM-CL
- Maintenance-free dry operation
- High rigidity
- Very high durability under alternating loads
- Compensation of misalignment errors
- Compensation of edge loads
- Resistant to dirt, dust and lint
- Resistant to corrosion and chemicals
- Vibration-dampening
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional series K following DIN ISO 12240
- Available with stainless steel sleeve for higher tightening torque
- Adapter screw with circlip available
  ▶ Accessories, **page 1015**

**Online service life calculation**
▶ **www.igus.eu/igubal-expert**

## Technical data

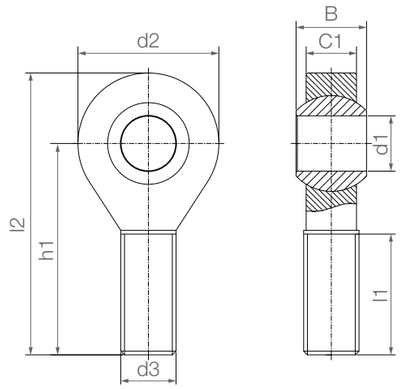
| Part No. | Max. static tensile strain | | Max. static axial force | | min. thread depth | Max. tightening torque | Max. tightening torque through ball | | Weight |
|---|---|---|---|---|---|---|---|---|---|
| | Short-term | Long-term | Short-term | Long-term | Threads | Male thread | without stainless 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 |



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).**

## 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

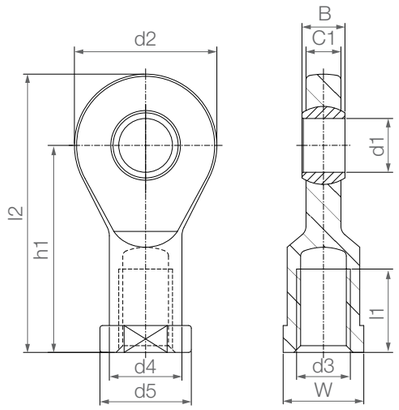
REM: Low-cost

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**

## 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

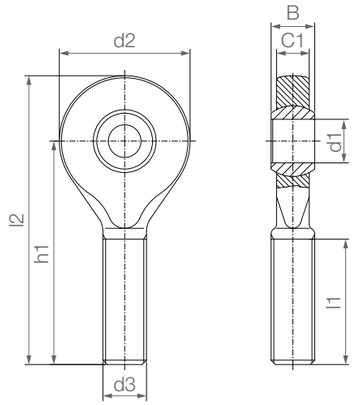
J4EM: Low-cost and low moisture absorption



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]

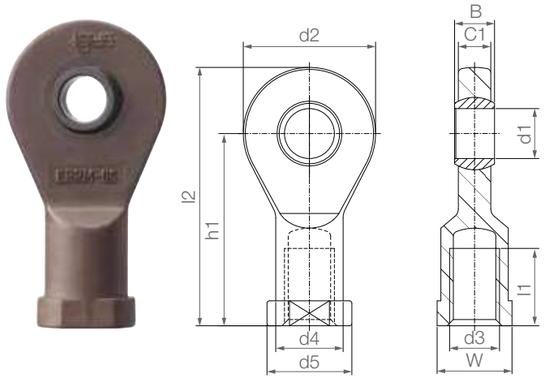
| Part No. | d1 | d2 | d3 | C1 | B | h1 | l1 | l2 | Max. pivot angle |
|---|---|---|---|---|---|---|---|---|---|
| | E10 | | | | | | | | |
| **EA□M-05** | 5 | 19 | M5 | 4.4 | 6 | 36.0 | 20 | 45.5 | 33° |
| **EA□M-06** | 6 | 21 | M6 | 4.4 | 6 | 36.0 | 20 | 46.5 | 27° |
| **EA□M-08** | 8 | 24 | M8 | 6.0 | 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

## High temperature rod ends with female thread: EBRM-HT and EBLM-HT




### Order key

| Type | | | | Size | Version |
|---|---|---|---|---|---|
| E | B | □ | M- | 05 | -HT |
| E series | Housing (female thread) | Thread | Metric | Inner Ø [mm] | High temperature |

- Applicable up to +200°C
- High rigidity
- Very high durability under alternating loads
- Compensation of misalignment and edge loads
- Resistant to corrosion and chemicals (chemical table ▶ **Page 1170**)
- Can be used underwater
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional series E following DIN ISO 12240

Options:
Thread
L : Left-hand thread
R : Right-hand thread

**Material:**
Housing: **iguton G ▶ Page 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]

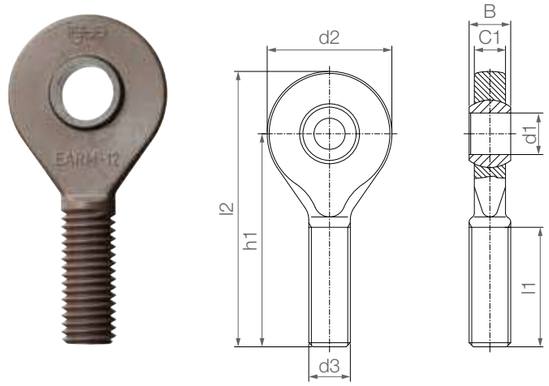
| Part No. | d1 E10 | d2 | d3 | d4 | d5 | C1 | B | h1 | l1 | l2 | W | Max. pivot angle |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **EB□M-05-HT** | 5 | 19 | M5 | 9.0 | 11 | 4.4 | 6 | 30 | 12 | 39.5 | SW9 | 33° |
| **EB□M-06-HT** | 6 | 21 | M6 | 11.0 | 13 | 4.4 | 6 | 30 | 12 | 40.5 | SW11 | 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





## High temperature rod ends with male thread: EARM-HT and EALM-HT




### Order key

| Type | | | | Size | Version |
|---|---|---|---|---|---|
| E | A | □ | M- | 05 | -HT |
| E series | Housing (male thread) | Thread | Metric | Inner Ø [mm] | High temperature |

- Applicable up to +200°C
- High rigidity
- Very high durability under alternating loads
- Compensation of misalignment and edge loads
- Resistant to corrosion and chemicals (chemical table ▶ **Page 1170**)
- Can be used underwater
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional series E following DIN ISO 12240

Options:
Thread
L : Left-hand thread
R : Right-hand thread

**Material:**
Housing: **iguton G ▶ Page 1191**
Spherical ball: **iglidur® X ▶ Page 291**

### Technical data

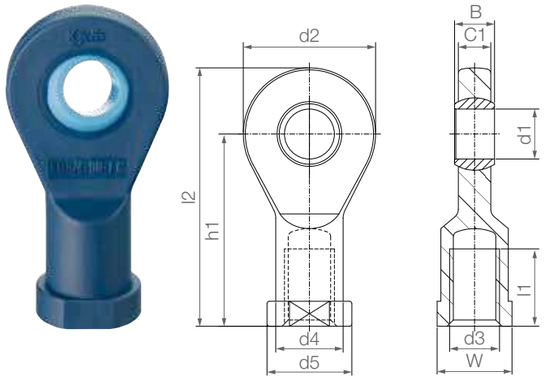
| Part No. | Max. static tensile strain | | Max. static axial force | | min. thread depth | Max. tightening torque | Max. tightening torque through ball | Weight |
|---|---|---|---|---|---|---|---|---|
| | Short-term [N] | Long-term [N] | Short-term [N] | Long-term [N] | Thread [mm] | Male thread [Nm] | [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

## 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 Short-term [N] | Max. static tensile strain Long-term [N] | Max. static axial force Short-term [N] | Max. static axial force Long-term [N] | min. thread depth Thread [mm] | Max. tightening torque Female thread [Nm] | Max. tightening torque through ball [Nm] | Weight [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° |

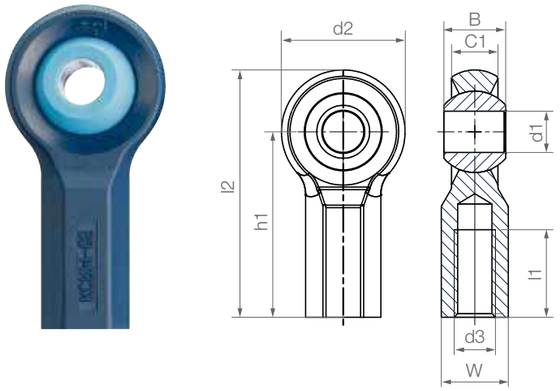
Left-hand thread and other dimensions available upon request



igubal® rod ends | Product range

igubal® rod ends

## 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

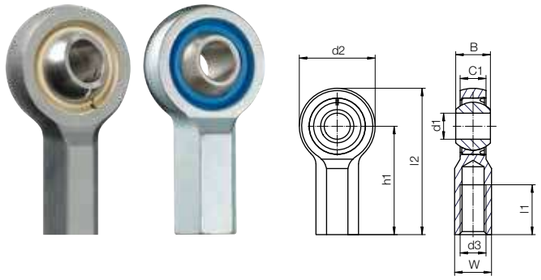
| Part No. | | Max. static tensile strain Short-term [N] | Max. static tensile strain Long-term [N] | Max. static axial force Short-term [N] | min. thread depth Thread [mm] | Max. tightening torque Male thread [Nm] | Max. tightening torque through ball [Nm] | Weight [g] |
|---|---|---|---|---|---|---|---|---|
| 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

## 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

**iglidur® material**
J : iglidur® J
A181 : iglidur® A181

**Housing material**
S : Zinc die-casting
ES : Stainless steel

**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 Short-term [N] | Max. tensile strain Long-term [N] | Max. axial force [N] | Max. axial load [N] | min. thread depth Thread [mm] | Weight[192] [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

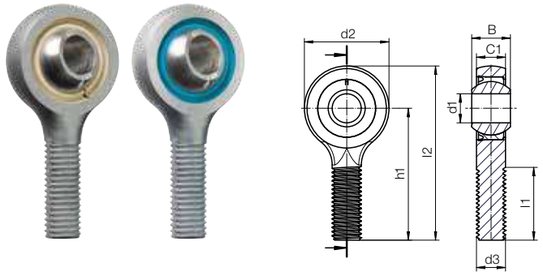
### Dimensions [mm]

| 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° |





## 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

**iglidur® material**
J : iglidur® J
A181 : iglidur® A181

**Housing material**
S : Zinc die-casting
ES : Stainless steel

**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 Short-term [N] | Max. tensile strain Long-term [N] | Max. axial force [N] | Max. axial load [N] | min. thread depth Thread [mm] | Weight[192] [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

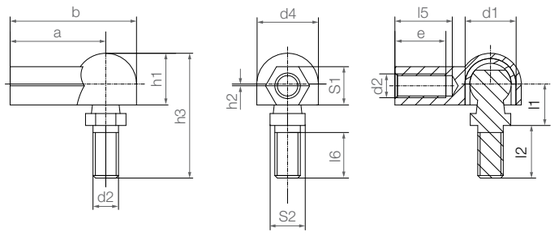
### Dimensions [mm]

| 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° |

## 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) Short-term [N] | Max. static tensile force (Ball stud axis) Long-term [N] | Max. static compressive strength (Ball stud axis) Short-term [N] | Max. static compressive strength (Ball stud axis) Long-term [N] | Max. axial tensile force (Housing axis) Short-term [N] | Max. axial tensile force (Housing axis) Long-term [N] | Max. axial tensile force steel stud (Housing axis) Short-term [N] | Max. axial tensile force steel stud (Housing axis) Long-term [N] | Weight [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



igubal® angled ball and socket joints | Product range

igubal® angled ball and socket joint

## 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) Short-term [N] | Max. static tensile force (Ball stud axis) Long-term [N] | Max. static compressive strength (Ball stud axis) Short-term [N] | Max. static compressive strength (Ball stud axis) Long-term [N] | Max. axial tensile force (Housing axis) Short-term [N] | Max. axial tensile force (Housing axis) Long-term [N] | Max. axial tensile force steel stud (Housing axis) Short-term [N] | Max. axial tensile force steel stud (Housing axis) Long-term [N] | Weight [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

# 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**

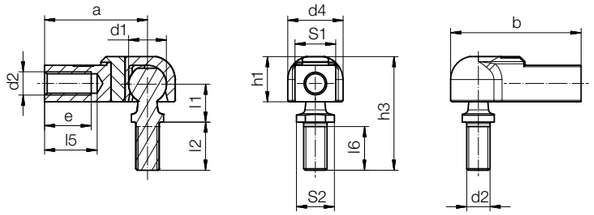
### Order key

| 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



# 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**

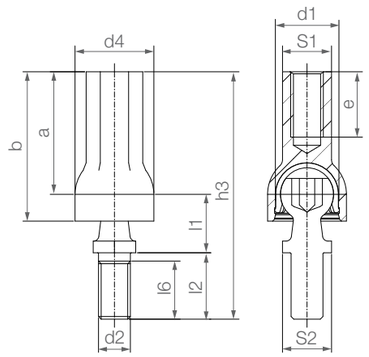
### Order key

| 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 |

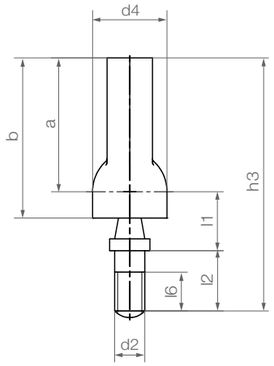
## Dimensions [mm]

| 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

# 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



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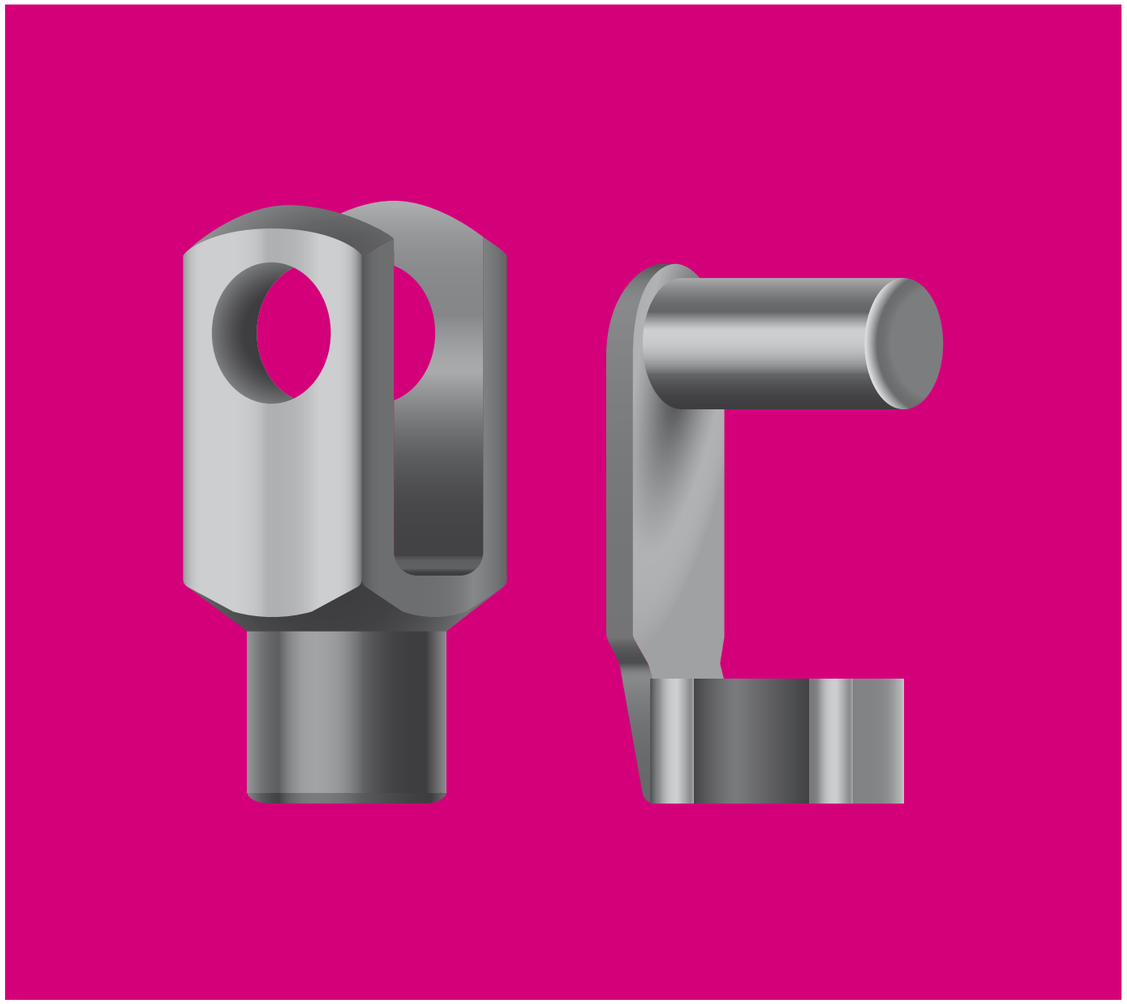

# igubal® clevis joints

- 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

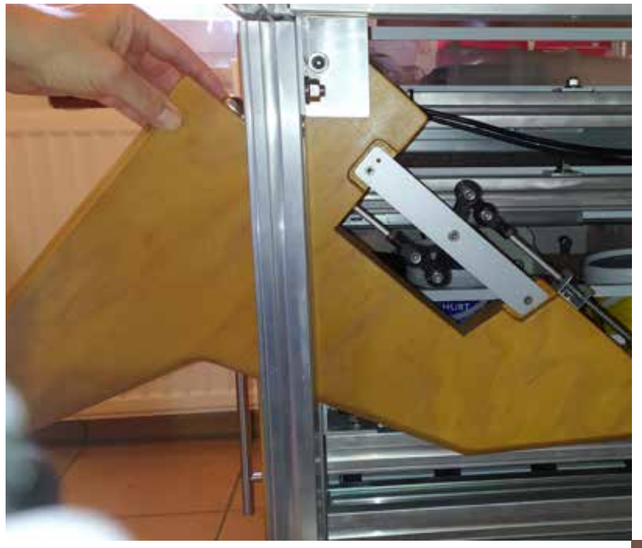
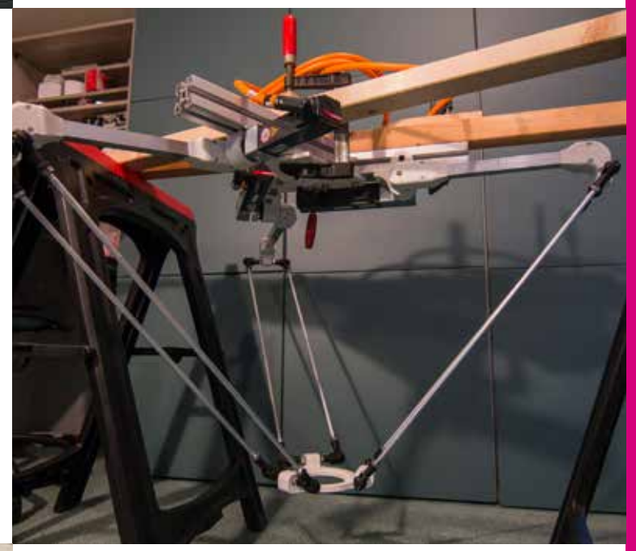
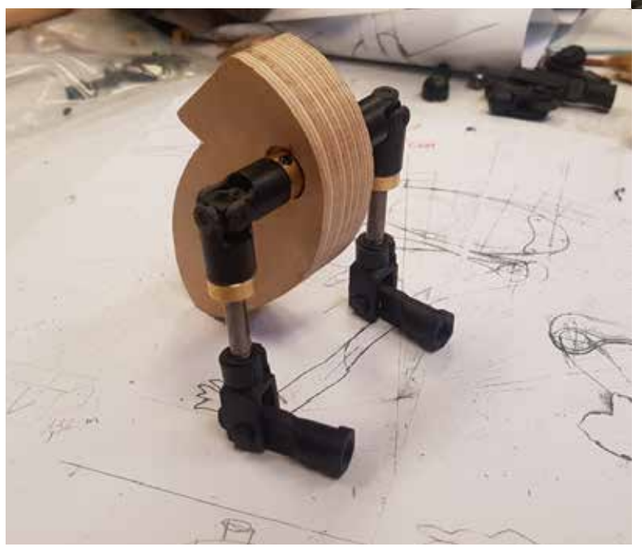


**Table**
Klaus Thiesler from Bad Pyrmont, Germany is building a table without legs that can be folded out from a kitchen unit when needed. Thiesler is using igubal® spherical thrust bearings (SAM-08) for the swivel axes, iglidur® M250 polymer plain bearings (M250-MFM-06) and igubal® double joints (EGZM-06-25) 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

## 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 |

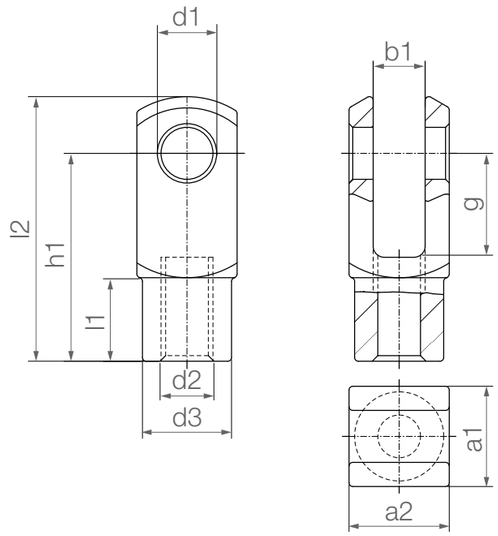
[22)] LS = longer shank



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

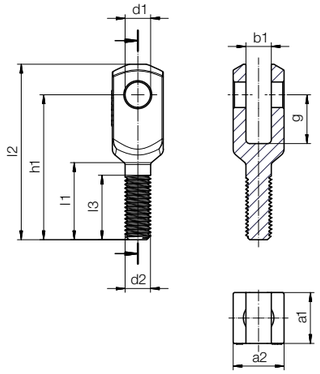
**Imperial dimensions available**
▶ Page 1156

## 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

## 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 |





## 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

## 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

### 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

- Lightweight
- Absolute corrosion resistance
- High tensile force
- Can be combined with E series rod end

**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

### 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

- Lightweight
- Absolute corrosion resistance
- High tensile force
- Can be combined with E series rod end

**Material:**
igumid® G ▶ Page 1190

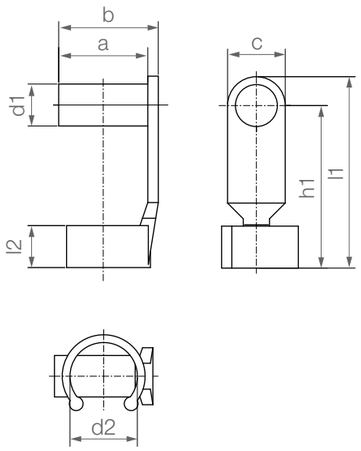
**Online service life calculation**
▶ www.igus.eu/igubal-expert

### 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

## Spring-loaded fixing clips: GEFM




Material:
igumid® G ▶ Page 1190

### Dimensions [mm]

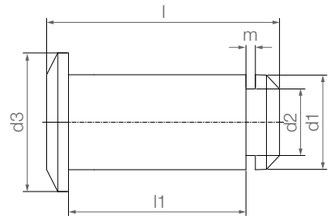
| Part No. | d1 | d2 | a | b | C | l1 ±0.5 | h1 | l2 | Weight [g] |
|---|---|---|---|---|---|---|---|---|---|
| GEFM-04 | 4 | 8 | 9.5 | 10.5 | 8 | 19.0 | 15 | 4.5 | 0.5 |
| GEFM-05-DIN | 5 | 9 | 12.0 | 13.5 | 8 | 23.0 | 19 | 5.5 | 0.8 |
| GEFM-05-DIN-M5-LS[22)] | 5 | 9 | 12.0 | 13.5 | 8 | 33.0 | 29 | 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





## Clevis pins: GBM



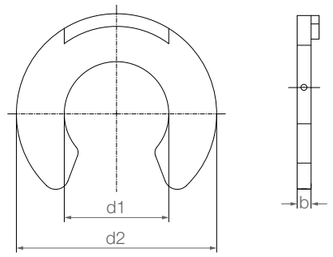

Material:
igumid® G ▶ Page 1190

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

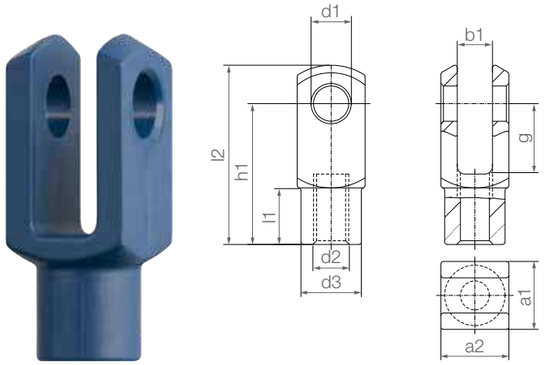



Material:
POM ▶ Page 1192

### 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 |

## Clevis joints, detectable, FDA and EU10/2011-compliant: GERM-FC




### Order key

| Type | Size | Version |
|---|---|---|
| G E R M- | 04 | - FC |

Clevis joint | E series | Thread | Metric | Inner Ø [mm] | 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 Short-term [N] | Max. static tensile strain Long-term [N] | Max. static axial force Short-term [N] | Max. static axial force Long-term [N] | Max. tightening torque [Nm] | Weight [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 |

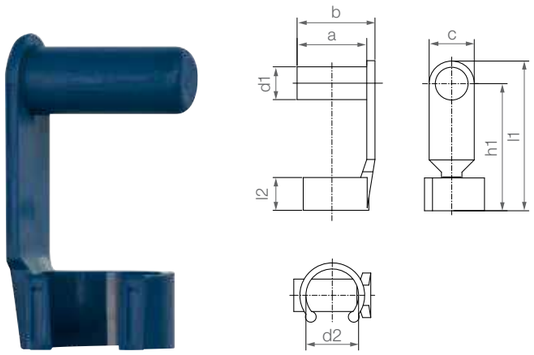
Left-hand thread and other dimensions available upon request



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 |

Clevis joint | E series | Spring-loaded fixing clip | Metric | Inner Ø [mm] | 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

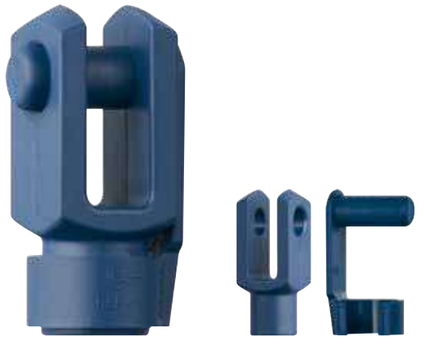
**Material:**
igumid® FC ▶ Page 1191

### 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 |

# 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 |

| 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



EN 09/2023

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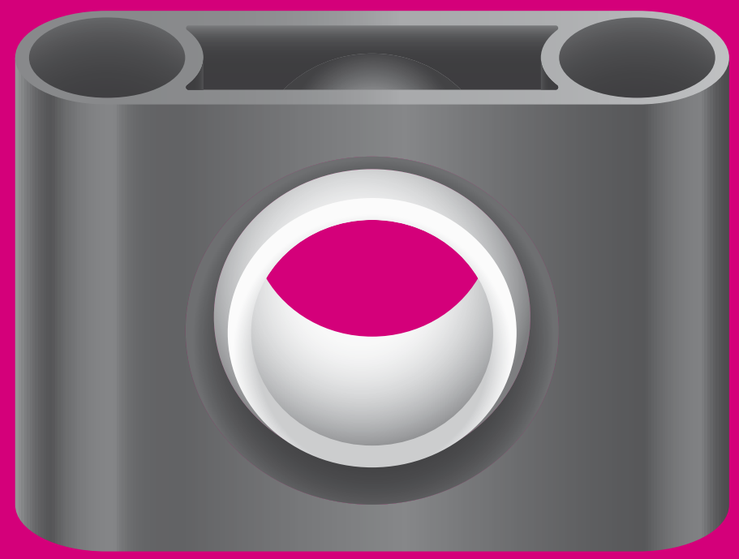


# igubal® pillow block bearing

- Maintenance-free dry operation
- High rigidity
- Durable
- Media-resistant
- High radial loads

# 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

**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

Maintenance-free and lubrication-free

Media-resistant

High radial loads

**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**



EN 09/2023

# igubal® pillow block bearings | Application examples

**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.

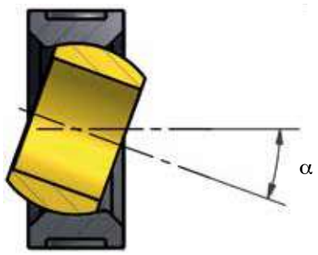
## Tolerances

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

## 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 | Weight |
|---|---|---|---|---|---|---|
| | Short-term | Long-term | Short-term | Long-term | for longitudinal holes[144)] | |
| | [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

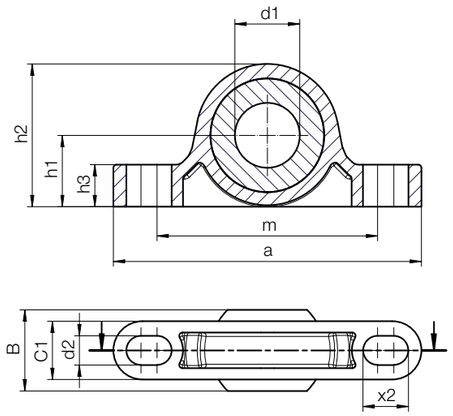
JKM: Low moisture absorption

J4KM:
Low-cost and low moisture absorption



igubal® pillow block bearings | 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° |

## 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

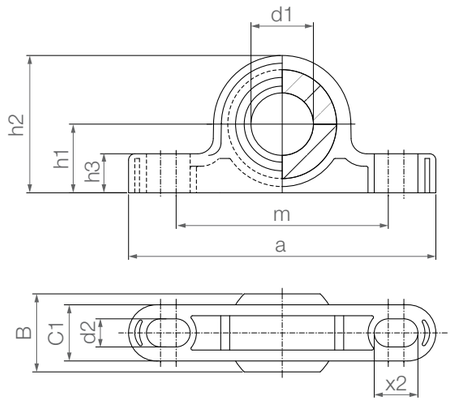
| Part No. | Max. static tensile strain | | Max. axial static compressive force | Max. tightening torque for longitudinal holes[144)] | Weight |
|---|---|---|---|---|---|
| | Short-term | Long-term | | | |
| | [N] | [N] | [N] | [Nm] | [g] |
| **KSTM-05** | 700 | 350 | 300 | 0.6 | 1.7 |
| **KSTM-06** | 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 | Product range

## Pillow block bearings: KSTM




### Order key

| Type | Size |
|---|---|
| **K STM-05** | |

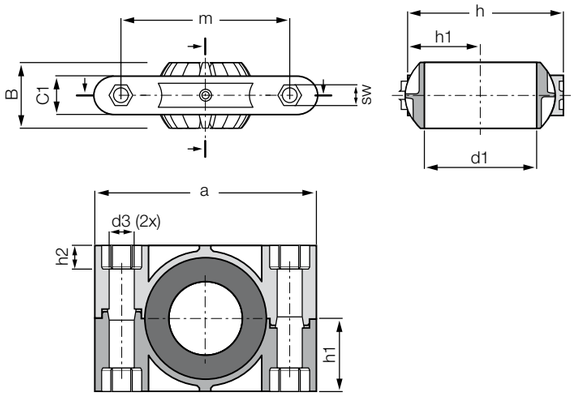
| K series | Pillow block bearing | Metric | Inner Ø [mm] |
|---|---|---|---|

**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° |

## Pillow block bearings with split housing: KSTM-GT




- Fitting is easy and does not require shaft removal
- Maintenance-free, dry operation
- For high static loads
- Mounting: M12

### 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**

- 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 |

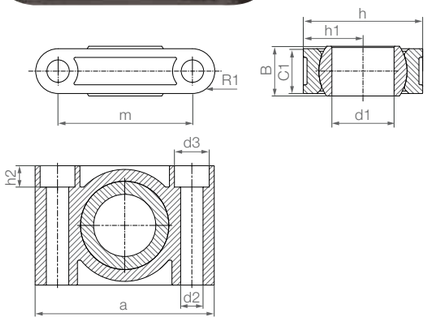
### Dimensions [mm]

| 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



## Pillow block bearings: ESTM




- High radial loads
- Media-resistant
- Space-saving design, easy to fit

### 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**

- 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

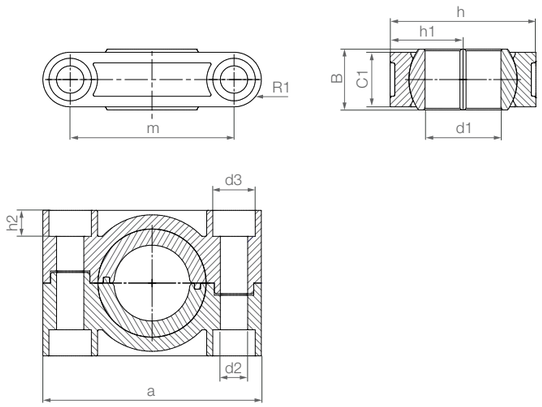
J4VEM: Clearance-free, pre-loaded

JEM: Low moisture absorption

REM: Low-cost

J4EM: Low-cost and low moisture absorption

## Pillow block bearings with split housing and split ball: ESTM-GT-GT




### Order key

| Type | Size | Version |
|---|---|---|
| E STM-GT | 16 | -GT |

E series | Pillow block bearing | Metric | Split housing | Inner Ø [mm] | Split ball

**Material:**
Housing: **RN33 ▶ Page 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 |

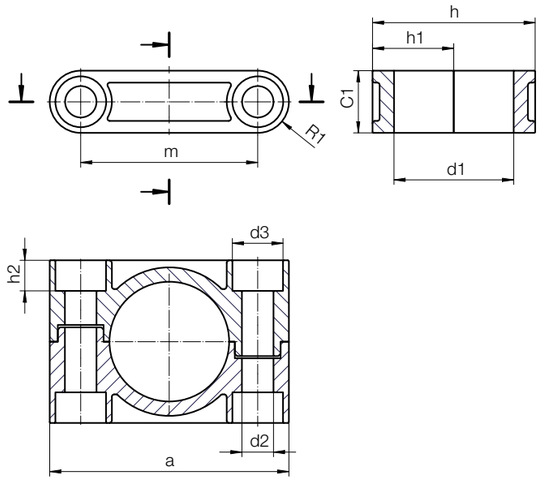
### Dimensions [mm]

| 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° |



igubal® pillow block bearings | Product range

## Split housings with parallel holes: ESTM-GT




### Order key

| Type | Size | Version |
|---|---|---|
| E STM-GT | 16 | -25 |

E series | Pillow block bearing | Metric | Split housing | Dimensions [mm] | Inner Ø

**Material:**
**igumid® G ▶ Page 1190**

- Easy to assemble and disassemble
- Perfect for outdoor applications
- High loads
- Dimensional series E following DIN ISO 12240

### Technical data

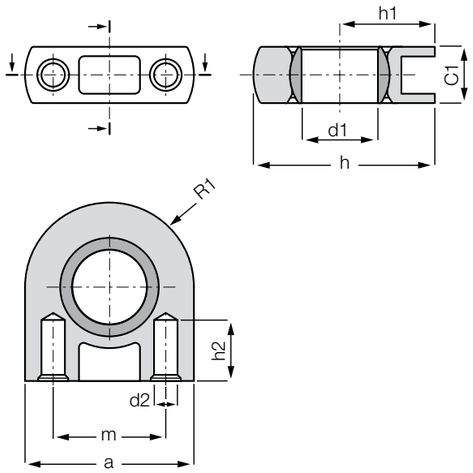
| Part No. | Max. static radial tensile strain | | Max. static radial compressive force | | Max. tightening torque fixing holes | Weight |
|---|---|---|---|---|---|---|
| | Short-term | Long-term | Short-term | Long-term | | |
| | [N] | [N] | [N] | [N] | | [g] |
| ESTM-GT16-25 | 3,600 | 1,800 | 7,000 | 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 |

# 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]

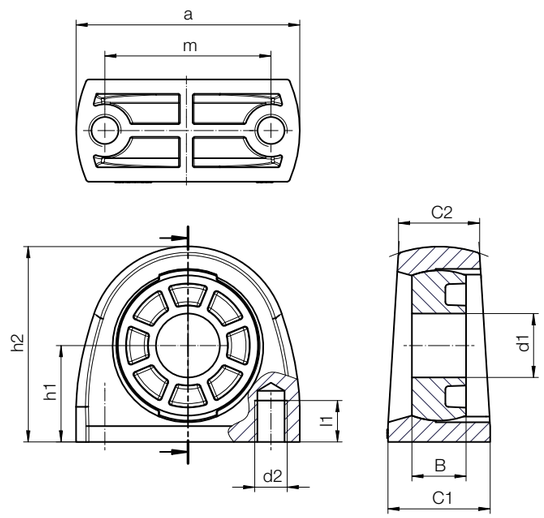
| Part No. | d1 | d2 | h | h1 | h2 | a | m | C1 | R1 | Max. pivot angle |
|---|---|---|---|---|---|---|---|---|---|---|
| | E10 | | | | | | | | | |
| ESTM-05-SL-M3 | 5 | 2.5 | 18 | 10 | 6.5 | 16 | 10 | 6 | 8 | 17° |
| ESTM-06-SL-M3 | 6 | 2.5 | 18 | 10 | 6.5 | 16 | 10 | 6 | 8 | 17° |
| ESTM-08-SL-M3 | 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

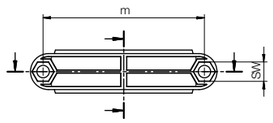
| Part No. | Max. static radial tensile strain | | Max. static axial compressive force | | Weight |
|---|---|---|---|---|---|
| | Short-term | Long-term | Short-term | Long-term | |
| | [N] | [N] | [N] | [N] | [g] |
| PA203-KS-JEM-17-17-SP New | 7,500 | 3,750 | 1,100 | 550 | 85.3 |
| PA204-KS-JEM-20-17-SP 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 |

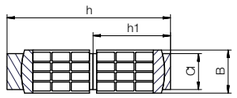
### Dimensions [mm]

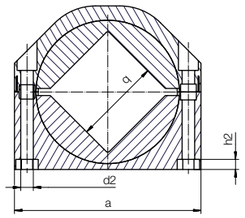
| Part No. | d1 | d2 | h1 | h2 | l1 | B | C1 | C2 | m | a |
|---|---|---|---|---|---|---|---|---|---|---|
| PA203-KS-JEM-17-17-SP New | 17 | M10 | 30.2 | 31.2 | 13 | 17 | 32 | 25.4 | 52 | 70 |
| PA204-KS-JEM-20-17-SP New | 20 | M10 | 30.2 | 31.2 | 13 | 17 | 32 | 25.4 | 52 | 70 |
| PA205-KS-JEM-25-17-SP 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




### 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**

- Profile 100x100mm, 110x110mm, 120x120mm 140x140mm or 150x150mm
- Split version of housing and spherical balls
- Easy assembly and disassembly
- High loads
- Lightweight
- Compensation of misalignment errors
- Mounting: M16 screw
- Recommended tightening torque: 50Nm

### Dimensions [mm]

| Part No. | q +1 | SW | d2 | h | h1 | h2 | a | m | B | C1 | Weight [g] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **ESQM-100** | 100.5 | 24 | 17.5 | 228 | 108 | 13.6 | 260 | 225 | 60 | 50 | 1,295 |
| **ESQM-110** | 110.5 | 24 | 17.5 | 228 | 108 | 13.6 | 260 | 225 | 60 | 50 | 1,255 |
| **ESQM-120** | 120.0 | 24 | 17.5 | 228 | 108 | 13.6 | 260 | 225 | 60 | 50 | 1,210 |
| **ESQM-125** New | 125.0 | 24 | 17.5 | 228 | 108 | 13.6 | 260 | 225 | 60 | 50 | 1,210 |
| **ESQM-140** | 140.5 | 24 | 17.5 | 266 | 130 | 15.0 | 307 | 269 | 60 | 50 | 1,670 |
| **ESQM-150** | 150.5 | 24 | 17.5 | 266 | – | 15.0 | 307 | 268 | 60 | 50 | 1,640 |

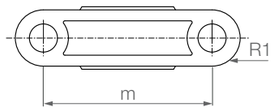


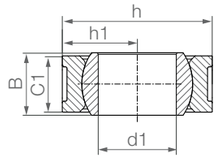
EN 09/2023

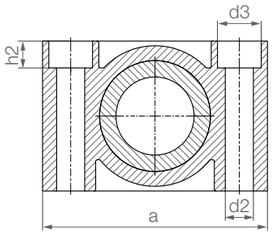
igubal® pillow block bearings

# igubal® pillow block bearings | Product range New

## Pillow block bearings for contact with food: ESTM-FC




### Order key

| Type | | | Size | Version |
|---|---|---|---|---|
| E | ST | M- | 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 Short-term [N] | Max. radial tensile force Long-term [N] | Max. radial compressive strength Short-term [N] | Max. radial compressive strength Long-term [N] | Max. axial strength Short-term [N] | Max. axial strength Long-term [N] | Max. tightening torque fixing holes [N] | Weight [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° |

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# igubal® pillow block bearings | Product range New

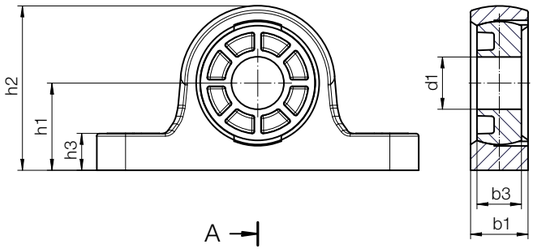
## Pillow block bearings with polymer housing: P-KS-JEM-SP

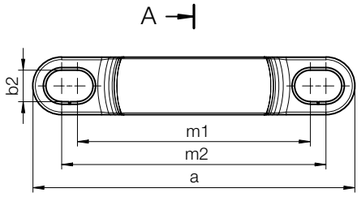
- Dimensionally interchangeable with cast iron housings
- Completely corrosion-free
- Structurally optimised design
- Robust, for high loads

### 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 |



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igubal® pillow block bearings | Product range New

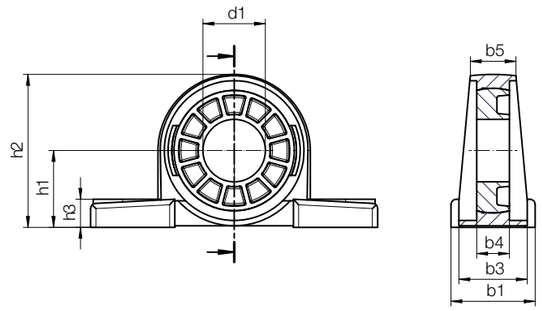
## Pillow block bearings with cast iron housing: P-JEM-SP

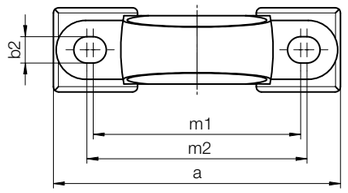
- Service life in dirty environment longer than with ball bearings by up to a factor of 8
- For higher static loads
- No costs due to maintenance or failure times (e.g. due to lack of lubrication)
- Save up to 25% thanks to easy bearing replacement

### 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 [N] | Max. static axial load [N] | d1 | b1 | b2 |
|---|---|---|---|---|---|
| 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

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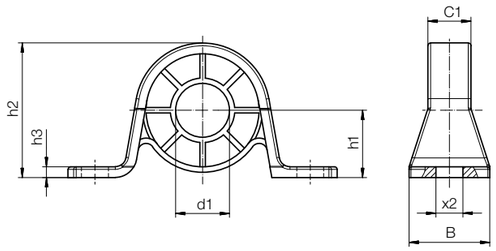
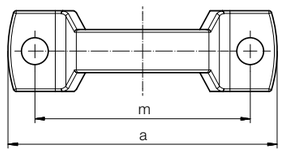
# igubal® pillow block bearings | Product range

## 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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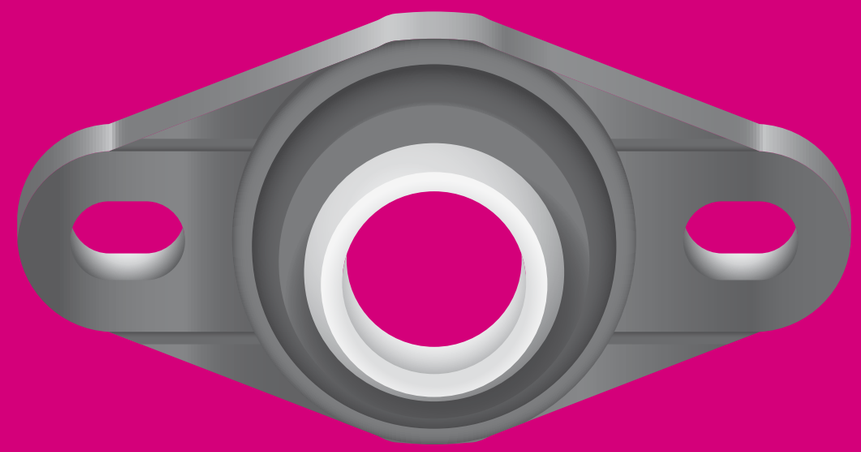

# igubal® fixed flange bearings

- 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**



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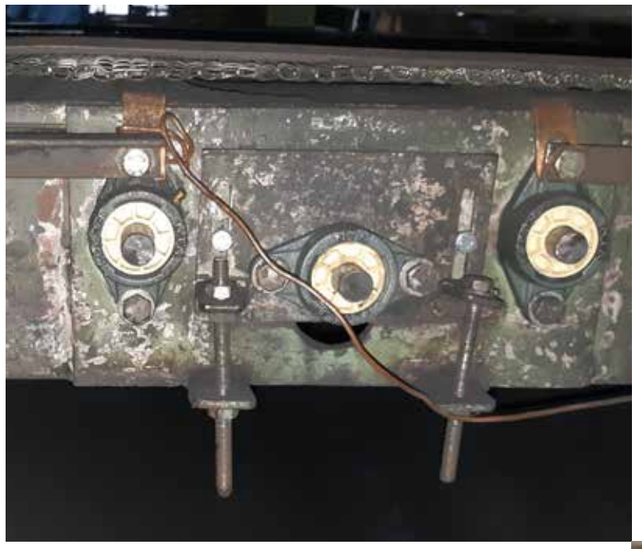
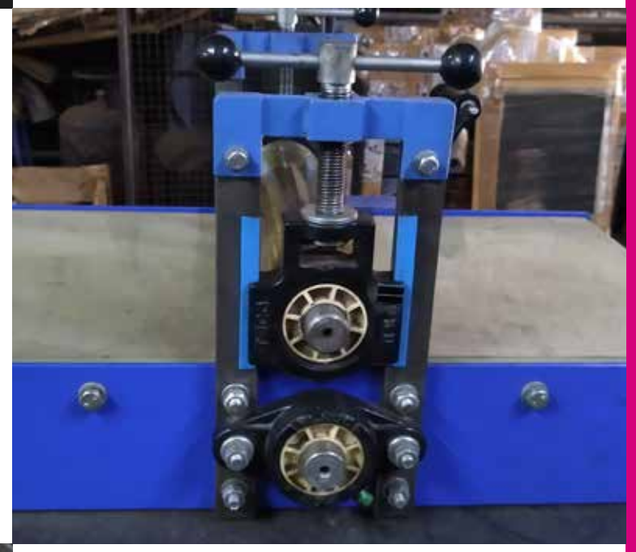
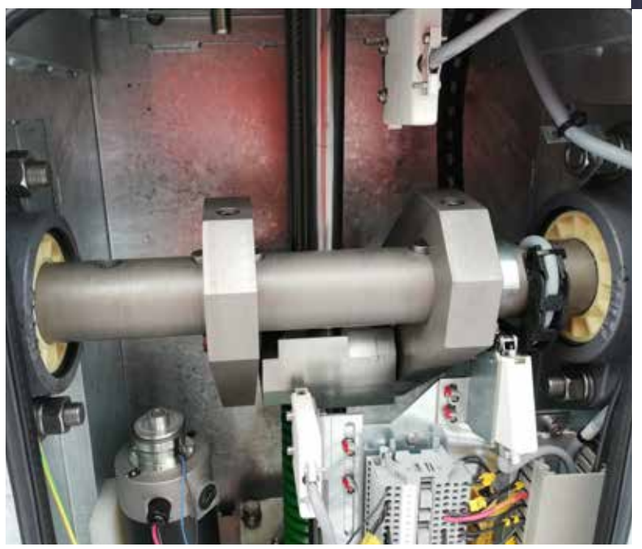
igubal® fixed flange bearings



**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.

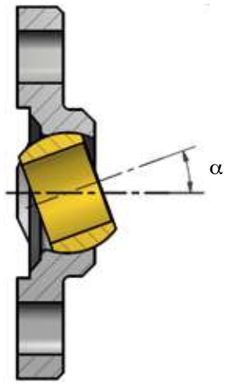
## Tolerances

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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## 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

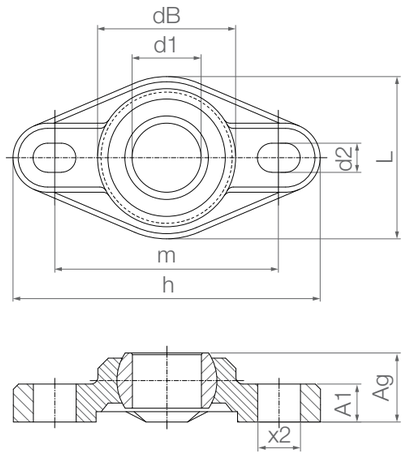
REM:
Low-cost

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. |
|---|---|---|---|---|---|---|---|---|---|---|
| | E10 | | Length | Width | Hole pitch | Height of plate | Total height | Elongated hole | | pivot angle |
| | | | | | ±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

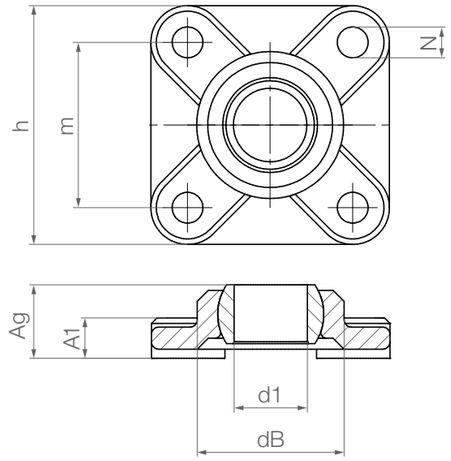
REM:
Low-cost

J4EM:
Low-cost and low moisture absorption



igubal® fixed flange bearings | 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
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]

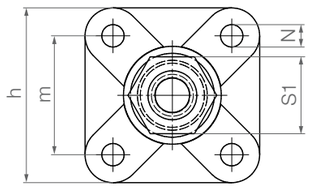
| Part No. | d1 | dB | h | m | A1 | Ag | N | Max. |
|---|---|---|---|---|---|---|---|---|
| | E10 | | Width | Hole pitch | Height of plate | Total height | Hole Ø | pivot angle |
| | | | | ±0.1 | | | | |
| **EFSM-04** | 4 | 14.0 | 25 | 17 | 4.5 | 8.5 | 3.2 | 28° |
| **EFSM-05** | 5 | 14.0 | 25 | 17 | 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° |

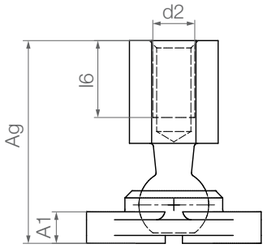
Standard tolerances:
from 0.5 to 6mm: ±0.1mm
from 6 to 30mm: ±0.2mm
from 30 to 120mm: ±0.3mm

# 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



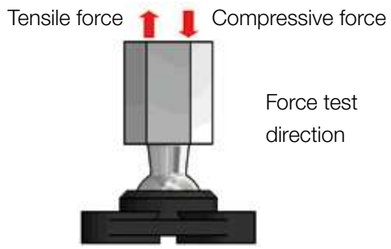




### Order key

| Type | Size | Version |
|---|---|---|
| GF S M- | 06 | - IG - ES |
| Flange mounted, 4 holes, Metric | Inner Ø [mm] | Female thread |

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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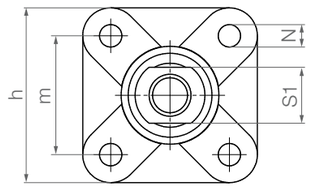
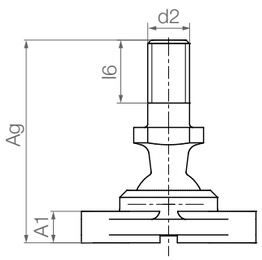
igubal® fixed flange bearings | Product range

## Complete housing with ball stud, male thread: GFSM-AG

- Maintenance and corrosion-free
- Easy connection - easy assembly
- Compensation of misalignment errors



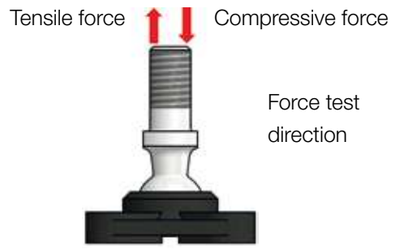




### Order key

| Type | Size | Version |
|---|---|---|
| GF S M- | 06 | -AG- ES |
| Flange mounted, 4 holes, Metric | Inner Ø [mm] | Male thread |

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

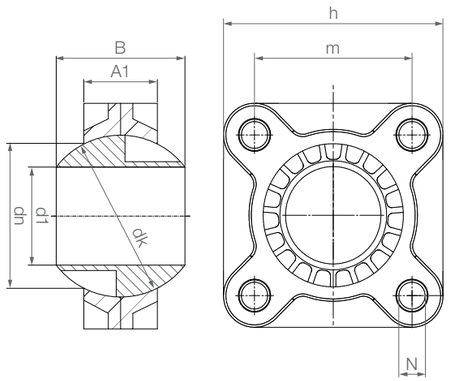
## Fixed flange bearings with 4 mounting holes and split housing: KFSM-GT

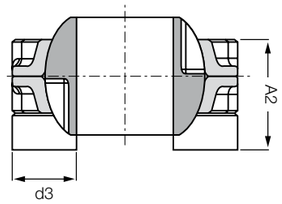
- Pre-assembled
- Option with push-in feet
- Resistant to dirt
- Lightweight
- Low installation space
- For high static loads
- High rigidity and durability
- Predictable service life
- Maintenance-free dry operation
- Mounting: with push-in feet M10, without push-in feet M12

### 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 [N] | Long-term [N] | Short-term [N] | Long-term [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 E10 | dn | d3 | dk | A1 | A2 | B | m | h | N | Max. pivot angle |
|---|---|---|---|---|---|---|---|---|---|---|---|
| KFSM-GT35-A[23] | 35.0 | 59.0 | 26.0 | 66.0 | 30.0 | 45.0 | 48.5 | 66.0 | 92.0 | 13.5 | 24° |
| KFSM-GT40-A | 40.0 | 59.0 | 26.0 | 66.0 | 30.0 | 45.0 | 48.5 | 66.0 | 92.0 | 13.5 | 24° |
| KFSM-GT45-A[23] | 45.0 | 72.0 | 26.0 | 82.0 | 40.0 | 60.0 | 60.0 | 78.0 | 104.0 | 13.5 | 24° |
| KFSM-GT50-A | 50.0 | 72.0 | 26.0 | 82.0 | 40.0 | 60.0 | 60.0 | 78.0 | 104.0 | 13.5 | 24° |

For KFSM with distance pieces, please add an "A" to the Part No. Example: KFSM-GT-50-A

[23] Diameter given by iglidur® J bore reducer



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igubal® fixed flange bearings | Product range

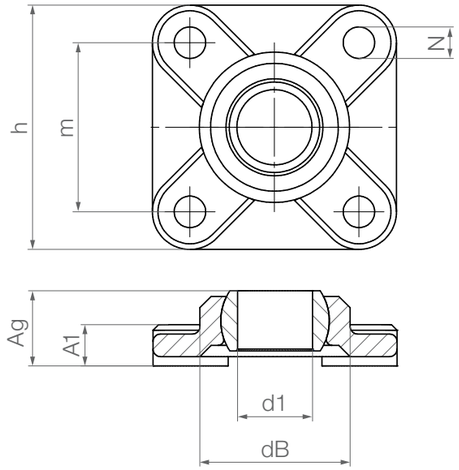
## High-temperature fixed flange bearings with 4 mounting holes: EFSM-HT

### 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 [N] | Long-term [N] | Short-term [N] | Long-term [N] | Holes [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 E10 | dB | h Width | m Hole pitch ±0.1 | A1 Height of plate | Ag Total height | N Bore d | Max. pivot angle |
|---|---|---|---|---|---|---|---|---|
| EFSM-05-HT | 5 | 14 | 25 | 17 | 4.5 | 8.5 | 3.2 | 29° |
| EFSM-06-HT | 6 | 14 | 25 | 17 | 4.5 | 8.5 | 3.2 | 25° |
| EFSM-08-HT | 8 | 18 | 33 | 22 | 5.5 | 10.5 | 4.3 | 25° |
| EFSM-10-HT | 10 | 22 | 38 | 26 | 6.5 | 12.0 | 5.3 | 25° |
| EFSM-12-HT | 12 | 25 | 40 | 28 | 7.0 | 13.0 | 5.3 | 21° |

Other dimensions available upon request

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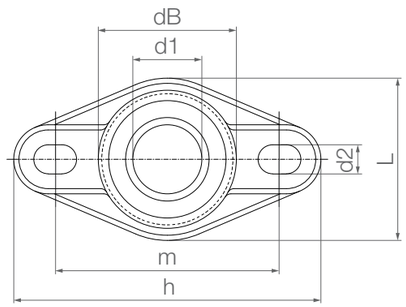
## High-temperature fixed flange bearings with 2 mounting holes: EFOM-HT




### 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]

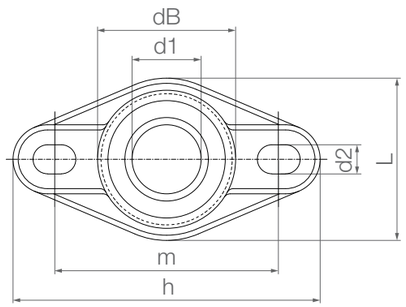
| Part No. | d1 | dB | h | L | m | A1 | Ag | d2 | x2 | Max. pivot angle |
|---|---|---|---|---|---|---|---|---|---|---|
| | E10 | | Length | Width | Hole pitch ±0.1 | Height of plate | Total height | Elongated hole | | |
| **EFOM-05-HT** | 5 | 14 | 33.8 | 16 | 24 | 4.5 | 8.5 | 3.2 | 5.0 | 29° |
| **EFOM-06-HT** | 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





## 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 |

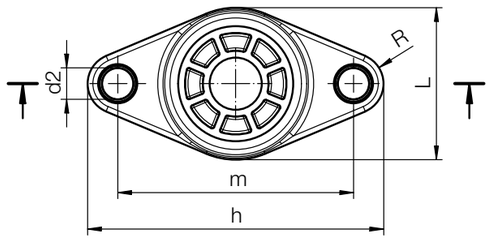
### Dimensions [mm]

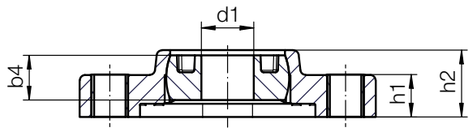
| Part No. | | d1 | dB | h | L | m | A1 | Ag | d2 | x2 | Max. pivot angle |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | E10 | | Length | Width | Hole pitch ±0.1 | Height of plate | Total height | Elongated hole | | |
| **EFOM-08-FC** | New | 8 | 18.0 | 44.2 | 22.0 | 31.0 | 5.5 | 10.5 | 4.3 | 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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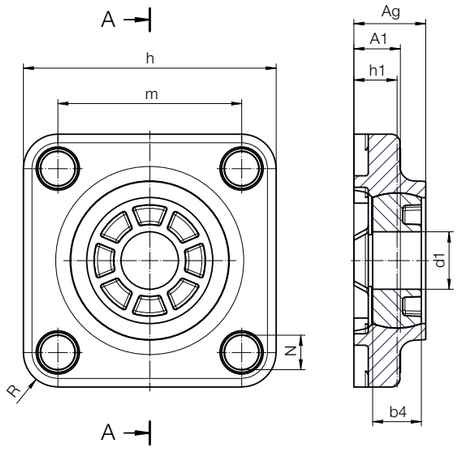
igubal® fixed flange bearings | Product range New

## 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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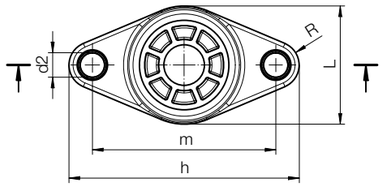
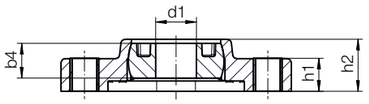
# igubal® fixed flange bearings | Product range New

## 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



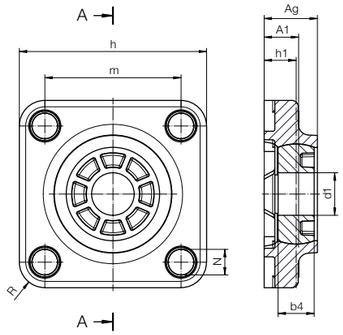
EN 09/2023

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

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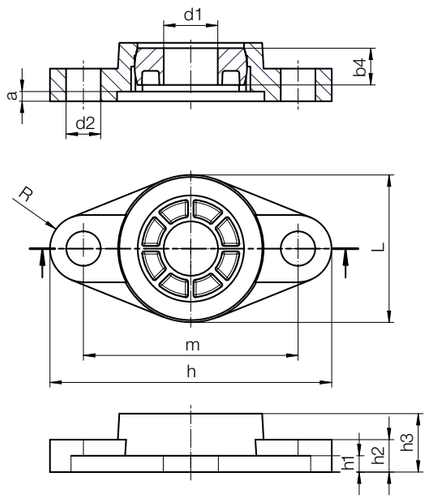
# igubal® fixed flange bearings | Product range New

## 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

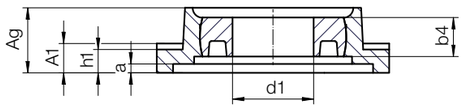


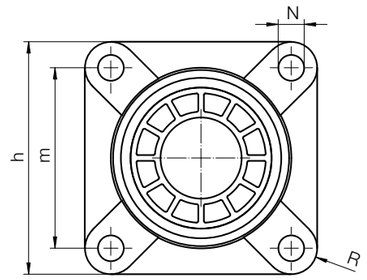
EN 09/2023

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

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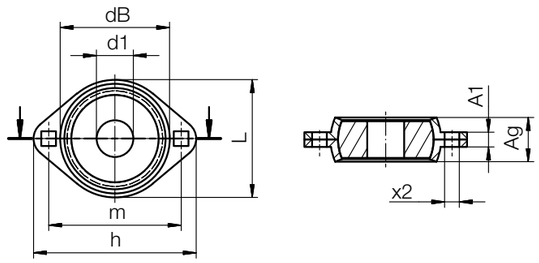
# igubal® fixed flange bearings | Product range

## 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 [N] | Long-term [N] | Short-term [N] | Long-term [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 E10 | h | L | m | A1 +0.1 | Ag | x2 |
|---|---|---|---|---|---|---|---|
| PFL203-J4EM-17-12-SP New | 17 | 81 | 59 | 63.5 | 4.0 | 14 | 7.1 |
| PFL204-□EM-20-14-SP | 20 | 90 | 67 | 71.5 | 4.0 | 16 | 9.0 |
| PFL205-□EM-25-15-SP | 25 | 95 | 71 | 76.0 | 4.0 | 18 | 9.0 |
| PFL206-□EM-30-16-SP | 30 | 113 | 84 | 90.5 | 5.2 | 18 | 11.0 |
| PFL207-JEM-35-17-SP New | 35 | 122 | 94 | 100.0 | 5.2 | 20 | 11.0 |
| PFL208-JEM-40-18-SP New | 40 | 148 | 100 | 119.0 | 6.8 | 21 | 13.5 |

Can be combined with SRM fixing collars ▶ Page 1012



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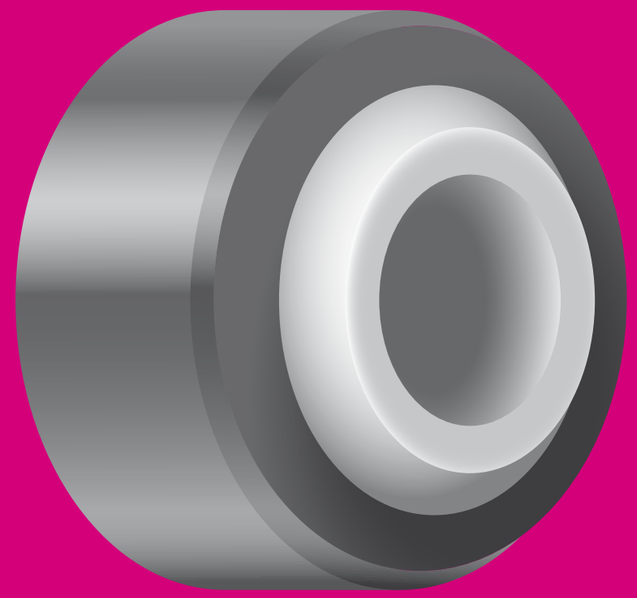

# igubal® spherical bearings

- Easy to fit
- Cost-effective
- Chemical resistance
- Lightweight
- Very robust

# 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.

Easy to fit

Cost-effective

Chemical resistance

Lightweight

Very 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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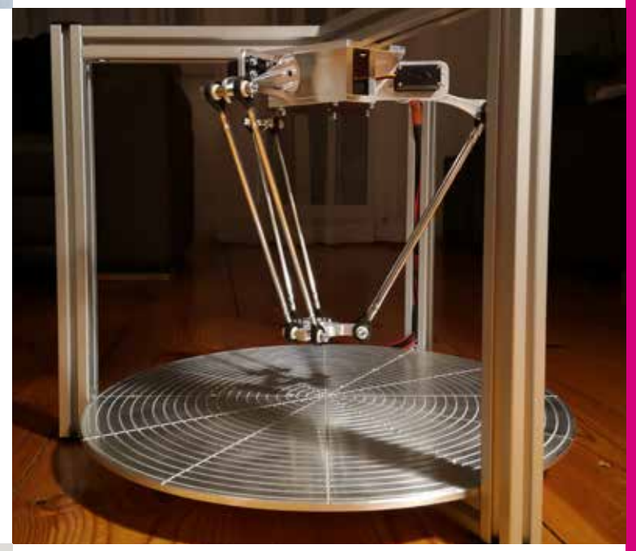
igubal® spherical bearings

**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.

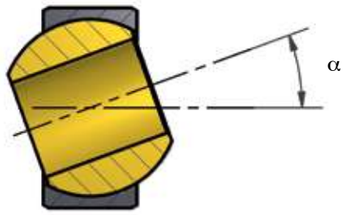
## Assembly

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

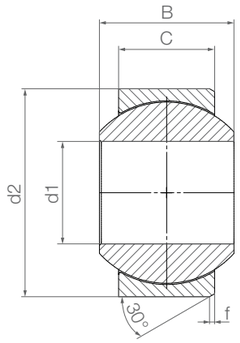
**Crimped coupling joints, particularly resistant to dirt**

▶ Page 985

**Crimped coupling joints with clevis joints**

▶ Page 986

## 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 : 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**
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]

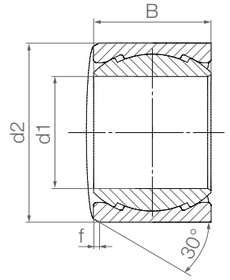
| Part No. | d1 E10 | d2[30] | B | C | f | Max. pivot angle |
|---|---|---|---|---|---|---|
| KGLM-03-LC | 3 | 10 | 6 | 4.5 | 0.5 | 32° |
| KGLM-05-LC | 5 | 13 | 8 | 6.0 | 0.8 | 30° |
| KGLM-08-LC | 8 | 19 | 12 | 9.0 | 0.8 | 29° |
| KGLM-10-LC | 10 | 22 | 14 | 10.5 | 0.8 | 25° |
| KGLM-12-LC | 12 | 26 | 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





## 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 : iglidur® W300
J4V : iglidur® J4V
J : iglidur® J
R : iglidur® R
J4 : iglidur® J4

**Material:**
Housing: **iglidur® RN33 ▶ Page 1192**
Spherical ball: **iglidur® W300 ▶ Page 175**

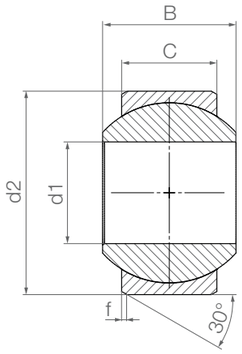
**Imperial dimensions available**
**▶ Page 1161**

**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° |

## Spherical bearings: KGLM




### Order key

| Type | Size |
|---|---|
| K GLM- | 02 |

K series | Spherical bearings | Metric | Inner Ø [mm]

- 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

**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]

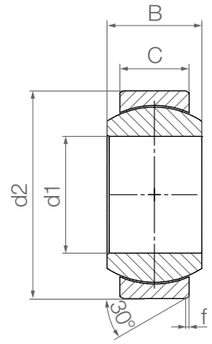
| Part No. | Max. static load on the housing radial [N] | Max. static load on the housing axial[29] [N] | Max. tightening torque through ball [Nm] | d1 E10 | d2 | B | C | f | Weight [g] | Max. pivot angle |
|---|---|---|---|---|---|---|---|---|---|---|
| **KGLM-02** | 300 | 60 | 1 | 2 | 8 | 4 | 3.0 | 0.8 | 0.1 | 32° |
| **KGLM-03** | 550 | 200 | 2 | 3 | 10 | 6 | 4.5 | 0.8 | 0.5 | 32° |
| **KGLM-05** | 1,300 | 500 | 5 | 5 | 13 | 8 | 6.0 | 0.8 | 1.0 | 30° |
| **KGLM-06** | 1,800 | 650 | 10 | 6 | 16 | 9 | 6.5 | 0.8 | 1.6 | 29° |
| **KGLM-08** | 2,700 | 1,200 | 12 | 8 | 19 | 12 | 9.0 | 0.8 | 2.9 | 25° |
| **KGLM-10** | 4,000 | 1,400 | 20 | 10 | 22 | 14 | 10.5 | 0.8 | 4.4 | 25° |
| **KGLM-12** | 5,400 | 1,500 | 30 | 12 | 26 | 16 | 12.0 | 0.8 | 7.0 | 25° |
| **KGLM-14** | 6,000 | 2,500 | 35 | 14 | 28 | 19 | 13.5 | 0.8 | 9.1 | 23° |
| **KGLM-16** | 8,000 | 3,000 | 40 | 16 | 32 | 21 | 15.0 | 0.8 | 12.8 | 23° |
| **KGLM-18** | 9,000 | 4,000 | 45 | 18 | 35 | 23 | 16.5 | 0.8 | 16.6 | 23° |
| **KGLM-20** | 10,000 | 5,000 | 55 | 20 | 40 | 25 | 18.0 | 0.8 | 24.4 | 23° |
| **KGLM-22** | 11,700 | 6,500 | 60 | 22 | 42 | 28 | 20.0 | 0.8 | 28.5 | 22° |
| **KGLM-25** | 13,600 | 7,500 | 65 | 25 | 47 | 31 | 22.0 | 0.8 | 39.3 | 22° |
| **KGLM-30** | 20,000 | 9,000 | 70 | 30 | 55 | 37 | 25.0 | 1.0 | 62.6 | 22° |

[29] The maximum static axial load is determined when fitted into a blind housing





## Spherical bearings: EGLM Low-cost




### Order key

| Type | Size | Version |
|---|---|---|
| E GLM- | 15 | -LC |

E series | Spherical bearings | Metric | Inner Ø [mm] | Low-cost

Spherical ball material
Blank : iglidur® W300
J4V : iglidur® J4V
J : iglidur® J
R : iglidur® R
J4 : iglidur® J4

- Successor model of EGLM
- Easy to fit
- Cost-effective
- Chemical and corrosion-resistant
- Very robust
- Compensation of misalignment errors

**Material:**
Housing: **igumid® G ▶ Page 1190**
Spherical ball: **iglidur® W300 ▶ Page 175**

**Online service life calculation**
**▶ www.igus.eu/igubal-expert**

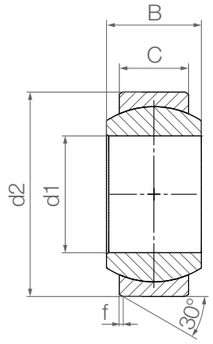
### Technical data and dimensions [mm]

| Part No. | Max. static load on the housing 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-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




### Order key

| Type | Size |
|---|---|
| E GLM | -04 |

E series | Spherical bearings | Metric | Inner Ø [mm]

- 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

**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° |

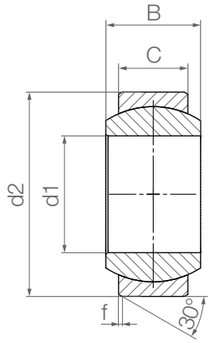
[29] The maximum static axial load is determined when fitted into a blind housing



# igubal® clip bearings | Product range New



## Spherical bearings: EGLM-FC




### Order key

| Type | Size | Version |
|---|---|---|
| E GLM | - 08 | - FC |

E series | Spherical bearings | Metric | Inner Ø [mm] | Suitable for food contact

- FDA- and EU10/2011-compliant
- Longer service life
- Optimised chemical resistance
- Housing made of igumid® FC, detectable
- Also available with detectable spherical ball made of iglidur® FC180

**Material:**
Housing: **igumid® FC ▶ Page 1191**
Spherical ball: **iglidur® A181 ▶ Page 401**
Other spherical ball materials upon request
▶ **Page 993**

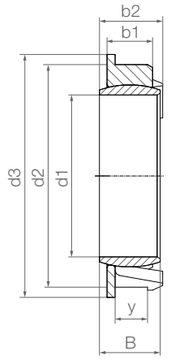
**Online service life calculation**
▶ **www.igus.eu/igubal-expert**

### 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

## 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) radial [N] | Max. static compressive force (short-term) axial [N] | Max. static compressive force (long-term) radial [N] | Max. static compressive force (long-term) axial [N] | Weight [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 |

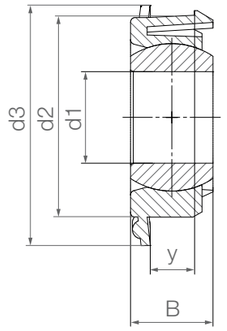
### Dimensions [mm]

| 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° |





## 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) radial [N] | Max. static compressive force (short-term) axial [N] | Max. static compressive force (long-term) radial [N] | Max. static compressive force (long-term) axial [N] | Weight [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

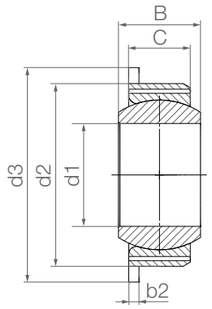
REM: Low-cost

JEM: low moisture absorption

J4EM: low-cost and low moisture absorption

J4VEM: clearance-free pre-loaded spherical ball

## 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) radial [N] | Max. stat. compressive force (short-term) axial [N] | Max. stat. compressive force (long-term) radial [N] | Max. stat. compressive force (long-term) axial [N] | Weight [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]

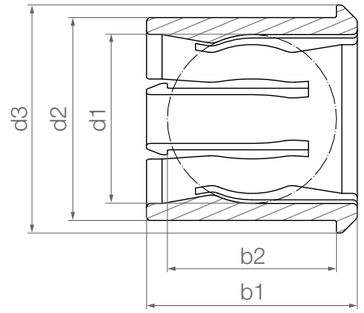
| Part No. | d1 | d2 | | d3 | C | B | b2 | Housing | | Max. |
|---|---|---|---|---|---|---|---|---|---|---|
| | E10 | Min. | max. | | | | | min. | max. | pivot angle |
| EGFM-08-T-SL[31] | 8 | 15.8 | 16.5 | 18 | 5.0 | 6 | 1.1 | 15.8 | 16.2 | 11° |
| EGFM-10-T | 10 | 20.8 | 21.6 | 26 | 6.0 | 9 | 1.0 | 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





## 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

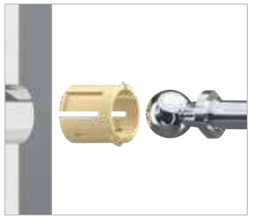
**Material:**
Clip bearing: **iglidur® J ▶ Page 163**

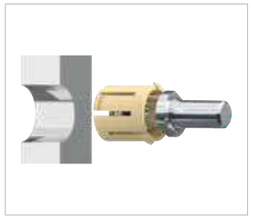
### Technical data and dimensions [mm]

| Part No. | Max. static axial load Short-term [N] | Max. static axial load Long-term [N] | d1 | d2 | d3 | b1 | b2 | Weight [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

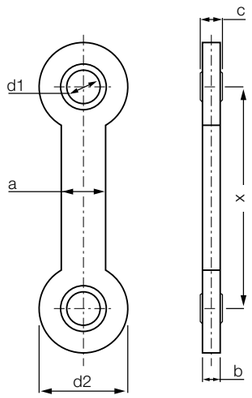
# igubal® double joints | Product range

## 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) Tensile force [N] | Max. static load (short-term) Compressive force [N] | Max. static load (long-term) Tensile force [N] | Max. static load (long-term) Compressive force [N] | Max. pivot angle | Weight [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

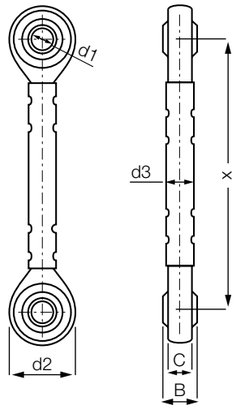
## Variable double joints: KDGM

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 Short-term [N] | Max. static tensile strain Long-term [N] | Max. static compressive force[190] Short-term [N] | Max. static compressive force[190] Long-term [N] | Max. pivot angle |
|---|---|---|---|---|---|
| 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 E10 | d2 | d3 | X min. | B | C |
|---|---|---|---|---|---|
| 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

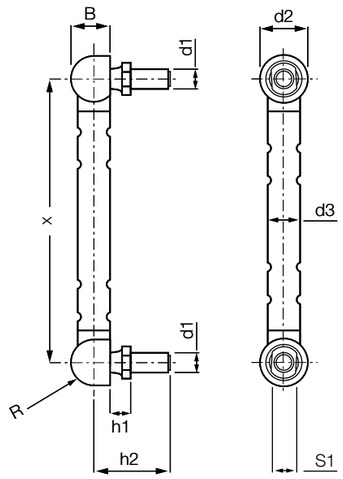
## Variable coupling joints: WDGM

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 Short-term [N] | Max. static tensile strain Long-term [N] | Max. static compressive force[190)] Short-term [N] | Max. static compressive force[190)] Long-term [N] | Max. pivot angle |
|---|---|---|---|---|---|
| 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

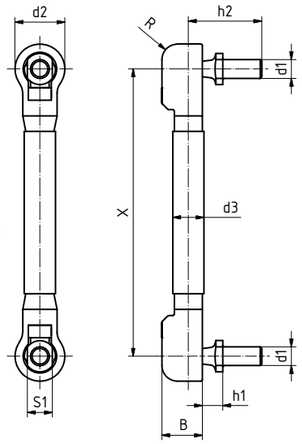
GZRM-MS /GZRM-ES

# 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



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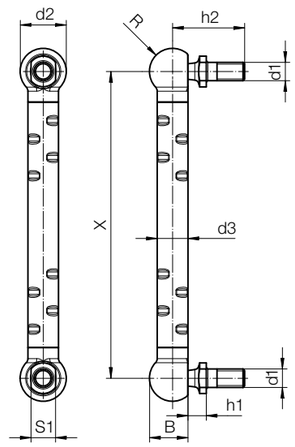
# igubal® coupling joints | Product range New



## 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 Short-term [N] | Max. static tensile strain Long-term [N] | Max. static compressive force[190)] Short-term [N] | Max. static compressive force[190)] 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

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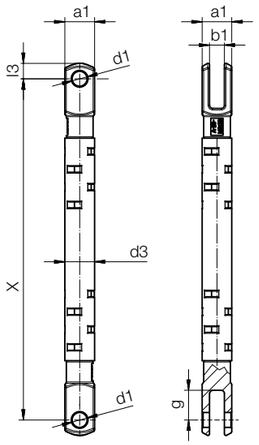
# igubal® coupling joints | Product range

## 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

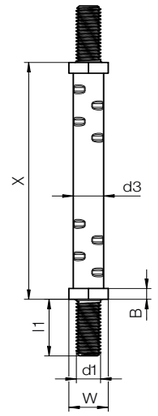
GSR





# 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

## Notes





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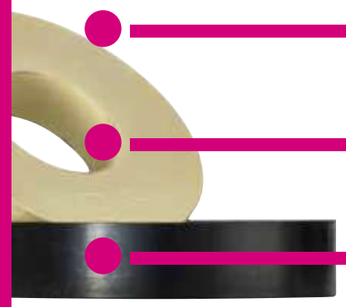
# igubal® - spherical thrust bearing

- Easy installation
- Compensation of misalignment errors
- Compensation of edge loads
- Very good friction and wear properties

# 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.



- Easy installation
- Compensation of misalignment errors
- Compensation of edge loads
- Very good friction and wear properties

**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**



# 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.

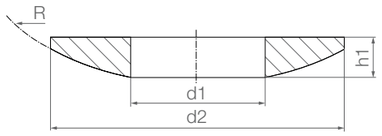
## Assembly
The housing pad is installed so that it is countersunk and secured. The spherical washer is loosely fitted in the socket and is held in place by the shaft that is placed into the bearing.

## 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.

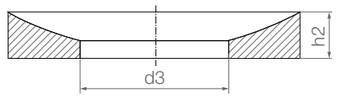
# igubal® spherical thrust bearing | Product range

## 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



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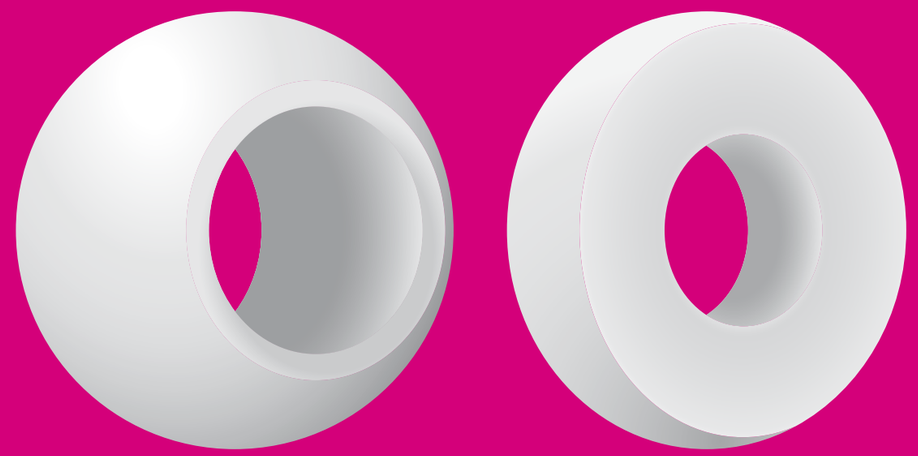

# igubal® spherical balls

- 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
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**Low-cost**
UC series
▶ **Page 1009**



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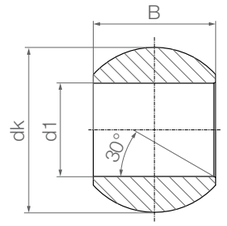
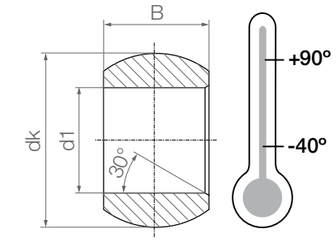
# igubal® spherical balls | Product range



## 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]

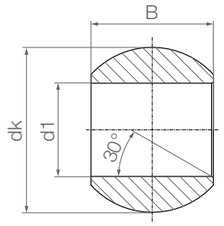
| Part No. | d1 | dK | B | Weight |
|---|---|---|---|---|
| | E10 | | | [g] |
| **WKM-02-04** | 2 | 5.10 | 4 | 0.1 |
| **WKM-03-06** | 3 | 8.10 | 6 | 0.3 |
| **WKM-05-08** | 5 | 11.30 | 8 | 0.6 |
| **WKM-06-09** | 6 | 12.80 | 9 | 0.9 |
| **WKM-08-12** | 8 | 16.00 | 12 | 1.6 |
| **WKM-10-14** | 10 | 19.00 | 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 |

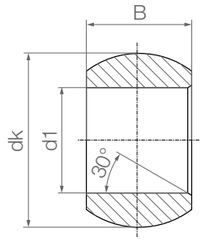
### Dimensions [mm]

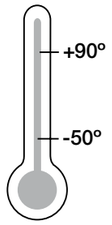
| Part No. | d1 | dK | B | Weight |
|---|---|---|---|---|
| | E10 | | | [g] |
| **WEM-04-05** | 4 | 8.30 | 5 | 0.2 |
| **WEM-05-06** | 5 | 10.30 | 6 | 0.3 |
| **WEM-06-06** | 6 | 10.30 | 6 | 0.4 |
| **WEM-08-08** | 8 | 13.30 | 8 | 0.7 |
| **WEM-10-09** | 10 | 16.10 | 9 | 1.2 |
| **WEM-12-10** | 12 | 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 |

# 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]

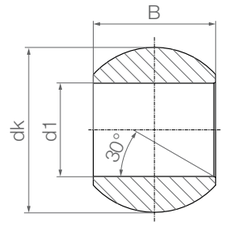
| Part No. | d1 E10 | dK | B | Weight [g] |
|---|---|---|---|---|
| REM-04-05 | 4 | 8.30 | 5 | 0.22 |
| REM-05-06 | 5 | 10.20 | 6 | 0.40 |
| REM-06-06 | 6 | 10.20 | 6 | 0.40 |
| REM-08-08 | 8 | 13.20 | 8 | 0.80 |
| REM-10-09 | 10 | 16.10 | 9 | 1.30 |
| REM-12-10 | 12 | 18.10 | 10 | 1.60 |
| REM-16-13 | 16 | 24.10 | 14 | 3.69 |
| REM-20-16 | 20 | 29.10 | 16 | 5.94 |

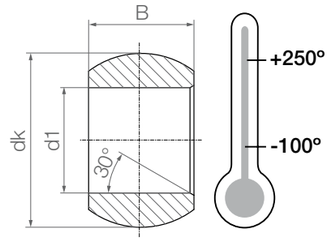


igubal® spherical balls | Product range



## High temperatures spherical balls: XKM and XEM






### Order key

| Type | Size | Options |
|---|---|---|
| X □ M - 10 - 14 | | |

igliduX® 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 |

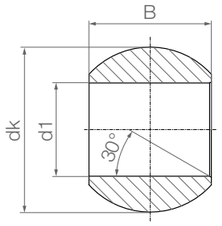
### Dimensions [mm]

| 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 |

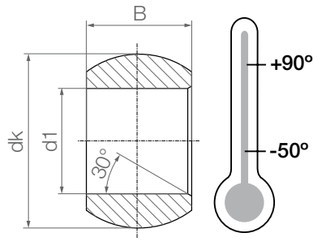
# igubal® spherical balls | Product range

## 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]

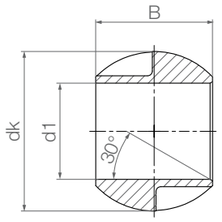
| Part No. | d1 E10 | dK | B | Weight [g] |
|---|---|---|---|---|
| JEM-04-05 | 4 | 8.30 | 5 | 0.3 |
| JEM-05-06 | 5 | 10.20 | 6 | 0.4 |
| JEM-06-06 | 6 | 10.20 | 6 | 0.4 |
| JEM-08-08 | 8 | 13.30 | 8 | 0.8 |
| JEM-10-09 | 10 | 16.10 | 9 | 1.3 |
| JEM-12-10 | 12 | 18.10 | 10 | 1.7 |
| JEM-15-12 | 15 | 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 |



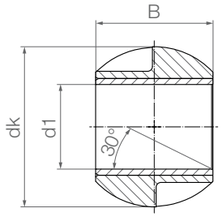
igubal® spherical balls | Product range



## 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 |

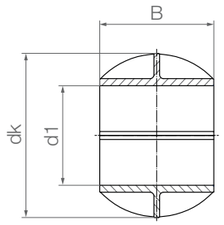
iglidur® J spherical balls | K series | Metric | Inner Ø d1 [mm] | Width [mm]

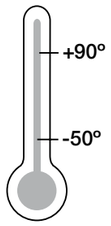
### Dimensions [mm]

| 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

## Low moisture absorption split spherical balls: JKM-GT



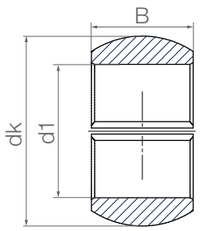

### Order key

| 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 E10 | dK | B | Weight [g] |
|---|---|---|---|---|
| JKM-GT-40 | 40 | 66.30 | 49 | 54.5 |
| JKM-GT-50 | 50 | 82.40 | 60 | 92.1 |

## Low moisture absorption split spherical balls: JEM-GT




### Order key

| Type | Version | Size |
|---|---|---|
| J E M- | GT | -16 |
| igliduR® J spherical balls / E series / Metric | Split ball | Inner Ø d1 [mm] |

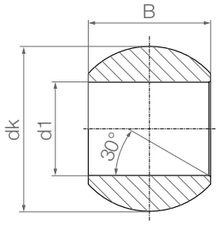
### Dimensions [mm]

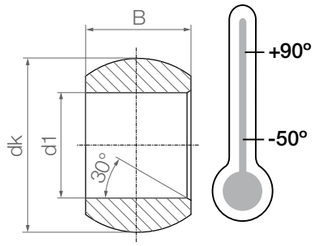
| Part No. | d1 E10 | dK | B | Weight [g] |
|---|---|---|---|---|
| JEM-GT-16 | 16 | 23.7 | 13 | 3.7 |
| JEM-GT-20 | 20 | 28.9 | 16 | 6.1 |
| JEM-GT-25 | 25 | 35.6 | 20 | 10.9 |
| JEM-GT-30 | 30 | 40.8 | 22 | 14.6 |





## Spherical balls, cost-effective: J4KM and J4EM






### Order key

| Type | Size | Options |
|---|---|---|
| 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]

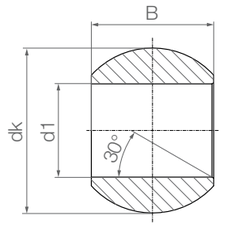
| Part No. | d1 E10 | dK | B | Weight [g] |
|---|---|---|---|---|
| J4KM-06-09 | 6 | 12.80 | 9 | 1.0 |
| J4KM-08-12 | 8 | 15.90 | 12 | 1.9 |
| J4KM-10-14 | 10 | 19.10 | 14 | 3.1 |
| J4KM-12-16 | 12 | 22.10 | 16 | 4.7 |
| J4KM-14-19 | 14 | 25.40 | 19 | 7.0 |
| J4KM-16-21 | 16 | 28.40 | 21 | 9.4 |
| J4KM-25-31 | 25 | 42.80 | 31 | 31.6 |

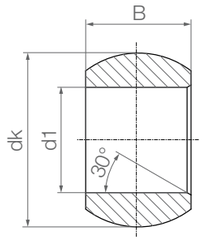
### Dimensions [mm]

| Part No. | d1 E10 | dK | B | Weight [g] |
|---|---|---|---|---|
| J4EM-04-05 | 4 | 8.25 | 5 | 0.3 |
| J4EM-05-06 | 5 | 10.20 | 6 | 0.4 |
| J4EM-06-06 | 6 | 10.20 | 6 | 0.4 |
| J4EM-08-08 | 8 | 13.30 | 8 | 0.8 |
| J4EM-10-09 | 10 | 16.00 | 9 | 1.3 |
| J4EM-12-10 | 12 | 18.00 | 10 | 1.7 |
| J4EM-15-12 | 15 | 22.00 | 12 | 2.9 |
| J4EM-16-13 | 16 | 24.00 | 13 | 3.9 |
| J4EM-17-14 | 17 | 25.10 | 14 | 4.1 |
| J4EM-20-16 | 20 | 28.90 | 16 | 6.4 |
| J4EM-25-20 | 25 | 35.50 | 20 | 11.5 |
| J4EM-30-22 | 30 | 40.90 | 22 | 14.5 |

# igubal® spherical balls | Product range

## Spherical balls, stainless steel: EK






### Order key

| Type | Size | Version | Options |
|---|---|---|---|
| EK - | 03 - | K | |

- Type: Spherical ball made of stainless steel
- Size: Inner Ø d1 [mm]
- Version: 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]

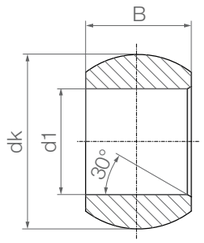
| Part No. | d1 E10 | dK | B | Weight [g] |
|---|---|---|---|---|
| **EK-04** | 4 | 8.30 | 5 | 1.4 |
| **EK-05** | 5 | 10.30 | 6 | 2.5 |
| **EK-06** | 6 | 10.30 | 6 | 2.1 |
| **EK-08** | 8 | 13.30 | 8 | 4.4 |
| **EK-10** | 10 | 16.10 | 9 | 7.4 |
| **EK-12** | 12 | 18.10 | 10 | 9.3 |
| **EK-15** | 15 | 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 |

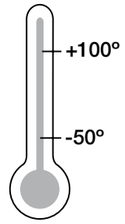


igubal® spherical balls

igubal® spherical balls | Product range

## Spherical balls for underwater applications: UWEM




### Order key

| Type | Size |
|---|---|
| UW E M- | 16-13 |

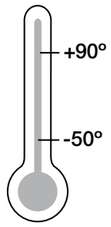
- Type: iglidur® UW spherical balls; E series; Metric
- Size: Inner Ø d1 [mm]; Width [mm]

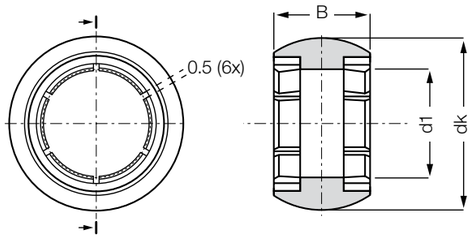
### Dimensions [mm]

| 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:**

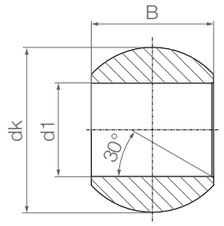
| | | | | | |
|---|---|---|---|---|---|
| igubal® rod ends | EA(L)RM | ▶ Page 890 | igubal® fixed flange bearings | EFSM | ▶ Page 948 |
| igubal® rod ends | EB(L)RM | ▶ Page 888 | igubal® clip bearings | EGFM-T | ▶ Page 976 |
| igubal® pillow block bearings | ESTM | ▶ Page 931 | igubal® spherical bearing | EGLM | ▶ Page 972 |
| igubal® fixed flange bearings | EFOM | ▶ Page 946 | igubal® double joints | EGZM | ▶ Page 978 |

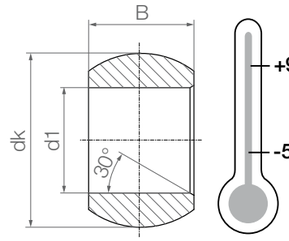


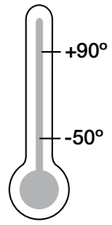


# igubal® spherical balls | Product range New

## 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]

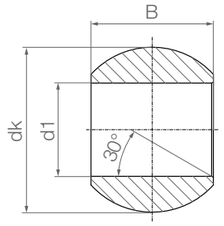
| Part No. | d1 E10 | dK | B | Weight [g] |
|---|---|---|---|---|
| A181KM-05-08 New | 5 | 11.3 | 8 | 0.75 |
| A181KM-06-09 New | 6 | 12.8 | 9 | 0.97 |
| A181KM-12-16 New | 12 | 22.1 | 16 | 4.45 |

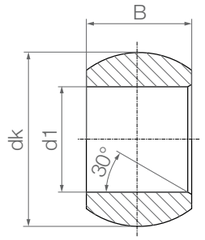
### Dimensions [mm]

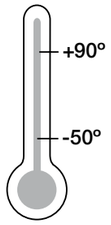
| Part No. | d1 E10 | dK | B | Weight [g] |
|---|---|---|---|---|
| A181EM-04-05 New | 4 | 8.3 | 5 | 0.21 |
| A181EM-05-06 New | 5 | 10.3 | 6 | 0.40 |
| A181EM-06-06 New | 6 | 10.3 | 6 | 0.35 |
| A181EM-08-08 New | 8 | 13.3 | 8 | 0.76 |
| A181EM-10-09 New | 10 | 16.1 | 9 | 1.28 |
| A181EM-12-10 New | 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

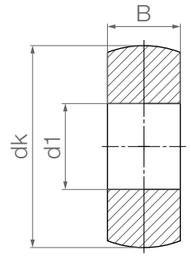


iglidur® A180

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

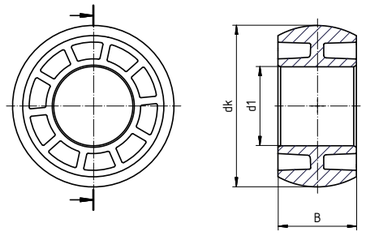
iglidur® J4

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 E10 | dk | B | Max. static compressive force radial Short-term [N] | radial Long-term [N] | axial Short-term [N] | axial Long-term [N] |
|---|---|---|---|---|---|---|---|---|---|
| made of iglidur® J, low coefficient of friction (material information ▶ From page 163) | | | | | | | | | |
| JEM-17-12-SP | New | P203 | 17 | 40 | 12 | – | – | – | – |
| JEM-17-17-SP | | UC203 | 17 | 47 | 17 | 7,500 | 3,750 | 4,000 | 2,000 |
| JEM-20-14-SP | | P204 | 20 | 47 | 14 | 8,000 | 4,000 | 4,000 | 2,000 |
| JEM-20-17-SP | | UC204 | 20 | 47 | 17 | 8,000 | 4,000 | 4,000 | 2,000 |
| JEM-25-15-SP | | P205 | 25 | 52 | 15 | 9,000 | 4,500 | 4,000 | 2,000 |
| JEM-25-17-SP | | UC205 | 25 | 52 | 17 | 9,000 | 4,500 | 3,500 | 1,750 |
| JEM-30-16-SP | | P206 | 30 | 62 | 16 | 13,500 | 6,750 | 5,000 | 2,500 |
| JEM-30-19-SP | | UC206 | 30 | 62 | 19 | 13,500 | 6,750 | 5,000 | 2,500 |
| JEM-30-21-80-SP | New | UC208 | 30 | 80 | 21 | 16,500 | 8,250 | 6,000 | 3,000 |
| JEM-35-17-SP | New | P207 | 35 | 72 | 17 | 14,500 | 7,250 | 6,500 | 3,250 |
| JEM-35-20-SP | | UC207 | 35 | 72 | 20 | 14,500 | 7,250 | 6,500 | 3,250 |
| JEM-35-21-80 | New | UC208 | 35 | 80 | 21 | – | – | – | – |
| JEM-35-21-80-SP | New | UC208 | 35 | 80 | 21 | 18,000 | 9,000 | 6,000 | 3,000 |
| JEM-40-18-SP | New | P208 | 40 | 80 | 18 | 17,000 | 8,500 | 6,000 | 3,000 |
| JEM-40-21-SP | | UC208 | 40 | 80 | 21 | 21,000 | 10,500 | 6,000 | 3,000 |
| JEM-45-22-SP | | UC209 | 45 | 85 | 22 | 23,000 | 11,500 | 5,500 | 2,750 |
| JEM-50-24-SP | | UC210 | 50 | 90 | 24 | 25,000 | 12,500 | 5,500 | 2,750 |
| made of iglidur® J4, low-cost material (material information ▶ From page 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 |



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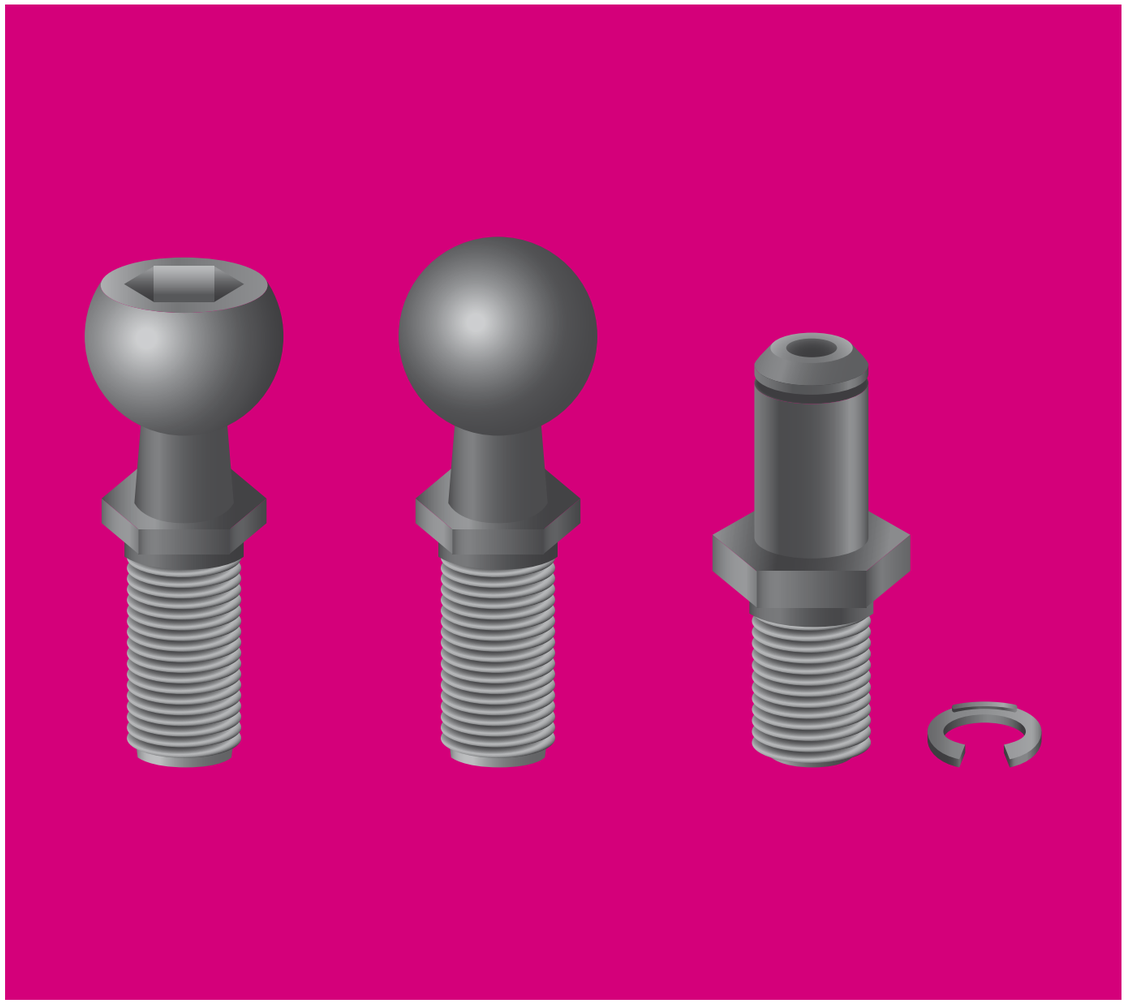


# igubal® accessories

Ball studs made of plastic, galvanised steel and stainless steel

Adapter screw made from plastic

Fixing collars for spherical insert bearings

## Fixing collar, galvanised steel with threaded pin

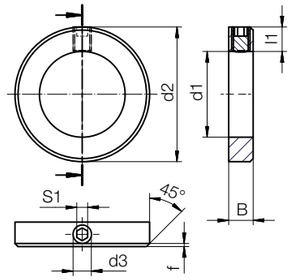
## Fixing collar made of polymer

- Easy installation
- DIN 705 (lightweight series)
- Incl. DIN 914 threaded pin (Allen key)

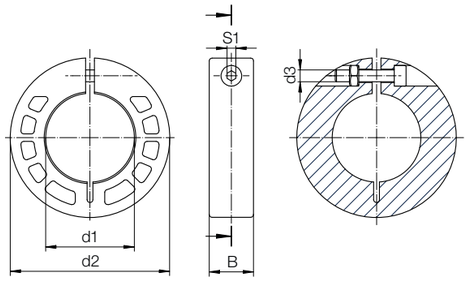
### Order key

| 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 |

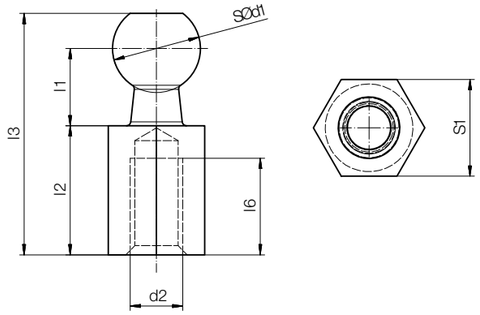
Available from stock
Upon request





## 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

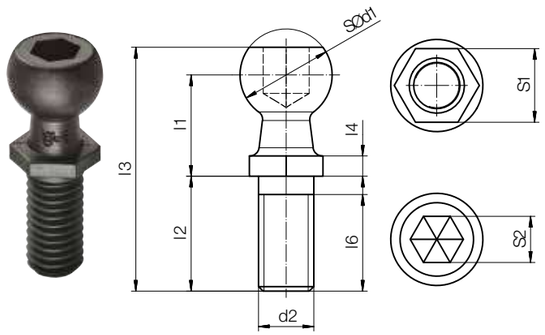
GFSM-IG

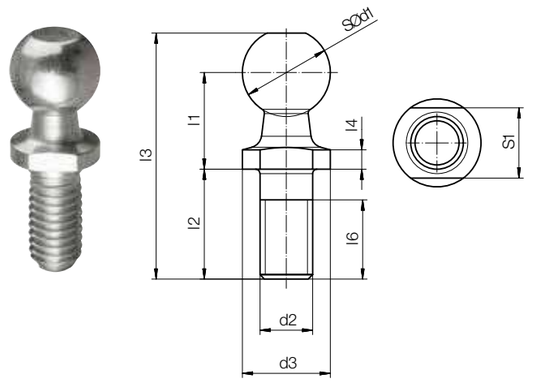
ZCLM-06-10

WDGM

WDGM-DE

## 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:

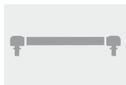
WGR(L)M

WGR(L)M LC

WGR(L)M-DE

GFSM-IG

ZCLM-06-10

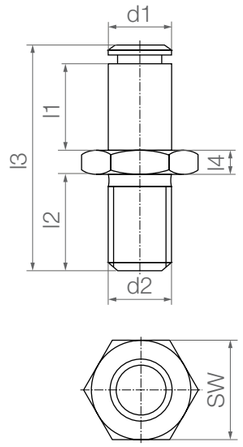

WDGM

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 Short-term [N] | Max. static tensile strain Long-term [N] | Max. static radial load Short-term [N] | Max. static radial load Long-term [N] | d1 h11 | d2 Thread | l1 Length adjusting bolt | l2 Thread length | l3 Total length | l4 Nut width | SW Width across flats | Weight [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

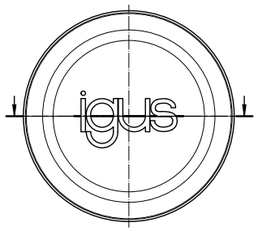
KAR(L)M

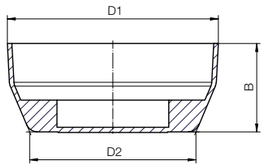
KAR(L)M-CL

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

# xiros®

## Polymer ball bearings

# ...plastics

# xiros® polymer ball bearings | Application examples

Other exciting applications ▶ **www.igus.eu/xiros-applications**

**Labelling machine**
Depending on the size of the system, between 12 and 36 conveyor rollers are used in the Sleevematic's film storage. Two xiros® ball bearings are used per conveyor roller.

**Pellet ovens**
Two lubrication-free polymer ball bearings are used in the mechanical drive unit. These ensure that the pellets are fed into the combustion chamber via the roller.

**Bike washing system**
To mount the washing brushes, the manufacturer of the "cycleWash" has used two xiros® slewing ring ball bearings with stainless steel balls. The bearing rings consist of the wear-resistant ball bearing material xirodur® B180.

**Heating cable drum**
Bodenbender GmbH was looking for a suitable bearing for the cable of a heating cable drum used to cure hose liners. Key properties were smooth operation, freedom from lubrication and long service life.

**Film guide rollers**
There is no contamination of the films through lubricants, due to the use of maintenance-free xiros® flange bearings.

**Pool cleaner**
xiros® B180 polymer ball bearings from igus® allow pool cleaners a lubrication-free underwater operation. Resistant to chemicals, lightweight and maintenance-free.

# xiros® polymer ball bearings | Product overview

## xiros® radial deep groove ball bearings - standard product range

**The classic:**
PA cage
▶ **Page 1038**

FDA

**Cost-effective and FDA-compliant:**
B180 cage
▶ **Page 1038**

FDA

**FDA-compliant**
J3 cage
▶ **Page 1038**

**With shield or labyrinth seal:**
LCC with B180 cage
▶ **Page 1044**

**Black (for visible parts):**
xirodur® S180,
PA cage
▶ **Page 1038**

**High resistance to chemicals:**
xirodur® C160, PP cage
▶ **Page 1046**

**For temperatures up to +120°C:**
xirodur® A500, PA cage
▶ **Page 1050**

FDA

**For heat and chemicals:**
xirodur® A500,
PEEK cage
▶ **Page 1050**

## xiros® radial deep groove ball bearings - standard product range

**Lightweight and non-metallic:**
xirodur® A500, PAI balls
▶ **Page 1050**

**Antistatic:**
xirodur® F180,
PA cage
▶ **Page 1054**

FDA

**Antistatic and FDA-compliant:**
xirodur® F180, PE cage
▶ **Page 1054**

## xiros® radial deep groove ball bearings with flange

**Single flange:**
xirodur® B180,
PA cage
▶ **Page 1056**

**With double flange:**
xirodur® B180,
PA cage
▶ **Page 1056**

## xiros® conveyor rollers and end caps

**Guide roller:**
aluminium tube with fixed flange bearing
▶ **Page 1058**

New

**Guide roller:**
with sandblasted surface
▶ **Page 1059**

New

**Guide roller:**
black anodised
▶ **Page 1061**

New

**Guide roller:**
non-metallic with PVC tube and glass balls
▶ **Page 1062**

**Guide roller:**
plastic approved for food contact
▶ **Page 1063**

New

**Guide roller:**
with stainless steel tube for food contact
▶ **Page 1064**

New

**Guide roller:**
with stainless steel tube for chemicals and heat
▶ **Page 1064**

**Guide roller:**
carbon fibre tube with fixed flange bearing
▶ **Page 1065**

## xiros® conveyor rollers and end caps

**Guide roller:**
carbon fibre tube with ball bearing
▶ **Page 1065**

**End caps:**
xirodur® B180,
PA cage
▶ **Page 1067**



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# xiros® polymer ball bearings | Product overview

## xiros® - other designs

**With profile:**

xirodur® B180

▶ Page 1068

**Skate wheel with spherical outer diameter:**
xirodur® B180

▶ Page 1069

**Double row for higher loads:**
xirodur® B180

▶ Page 1070

New

**Self-aligning ball bearings:**
xirodur® B180,
PA cage

▶ Page 1071

## xiros® polymer ball transfer units

**Polymer ball transfer units:**

xirodur® B180 and F182

▶ Page 1072

New

**Polymer ball transfer units:**
with stainless-steel support balls

▶ Page 1073

**Polymer ball transfer units:**

with stainless steel balls

▶ Page 1074

New

**Polymer ball transfer units:**

sliding version

▶ Page 1075

**Axial polymer ball transfer units:**
with spherical roller

▶ Page 1076

## xiros® thrust bearings and slewing ring ball bearings

**Single row:**
xirodur® B180,
glass/stainless steel balls

▶ Page 1078

**Axial thrust washer:**
xirodur® B180,
glass/stainless steel balls

▶ Page 1079

**Slewing ring ball bearings:**
xirodur® B180,
with gear teeth or with cage

▶ Page 1080

## xiros® special and fixed flange ball bearings, pillow block ball bearings and spherical insert bearings

FDA

**Fixed flange ball bearings, FDA-compliant, fixed version:**
xirodur® B180

▶ Page 1082

FDA

**Pillow block ball bearings, FDA-compliant, fixed version:**
xirodur® B180

▶ Page 1083

New

**UC pillow block:**
with UC housing,
stainless steel balls

▶ Page 1084

New

**Spherical insert bearings:**
for UC housing,
stainless steel balls

▶ Page 1085

## xiros® combinations with igubal®

**Pillow block ball bearings, fixed or pivoting**

▶ Page 1086

**4-hole fixed flange ball bearings, pivoting**

▶ Page 1088

**2-hole fixed flange ball bearings, pivoting**

▶ Page 1089

## Lubrication and maintenance-free

# Lubrication-free polymer ball bearings

xiros® polymer ball bearings revolutionise the ball bearing market. Thanks to their maintenance-free dry operation and the use of xirodur® high-performance polymers, many applications can be successfully implemented in which conventional metal ball bearings are not suitable.

- Lubrication and maintenance-free
- Corrosion-resistant
- Non-metallic (due to the use of glass and plastic balls), therefore non-magnetic
- For temperatures up to +150°C (depending on material)
- High media resistance, suitable for washdown
- Lightweight
- ESD or antistatic properties
- FDA-compliant (depending on material)
- Predictable service life

**Typical application areas**

- Packaging
- Textile industry
- Test engineering and quality assurance
- Optical industry
- Model making

**Available from stock**
Detailed information about delivery time online.

**Price breaks online**
No minimum order value. No minimum order quantity

**max. +150°C**
**min. -100°C**

**12 xirodur® materials**
**Ø 3 - 120mm**

**Imperial dimensions available**
▶ Page 1164

**Service life calculation**
▶ www.igus.eu/xiros-expert



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## Overview types

**xiros® radial deep groove ball bearings - standard product range for 3 materials:**

- xirodur® B180 - cost-effective standard
- xirodur® C160 - resistant to chemicals
- xirodur® A500 - for heat and chemicals

▶ From page 1038

**xiros® radial deep groove ball bearings with flange and conveyor rollers**

- With single or double flange
- Made from xirodur® B180, S180 or F180
- xiros® system solution: aluminium, PVC or carbon fibre tube with 2 fixed flange ball bearings

▶ From page 1056

**xiros® radial deep groove ball bearings - materials for special applications**

- xirodur® S180 - black (for visible parts)
- xirodur® F180 - antistatic
- xirodur® F182 - conductive
- xirodur® D180 - high speeds
- xirodur® K220 - suitable for applications in vacuum
- xirodur® MT180 - for medical devices
- xirodur® F500 - conductive and resistant to chemicals
- xirodur® ECO B180 - environmentally friendly rotation

▶ From page 1060

**xiros® radial deep groove ball bearings - further designs**

- Skate wheel with spherical outer diameter
- Double row for higher loads
- Self-aligning ball bearings for rotary and linear movements

▶ From page 1068

**xiros® thrust bearings**

- For absorbing axial loads
- Various options

▶ From page 1078

**xiros® slewing ring ball bearings**

- With glass or stainless steel balls
- Outer toothed profile
- With cage

▶ From page 1080

**xiros® combinations with igubal®**

- Fixed or pivoting versions
- For maintenance-free use in conveyor belts and conveyor rollers

▶ From page 1086

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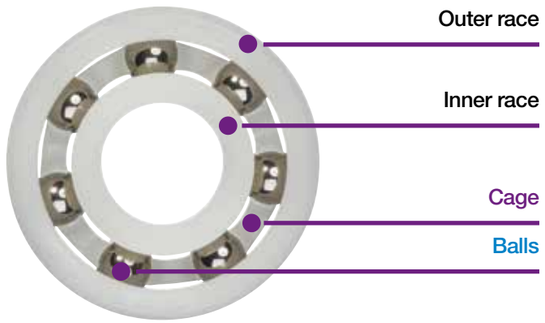
## Radial deep groove ball bearings design

The xiros® polymer ball bearings are single-row deep groove ball bearings based on DIN 625. The lubrication and maintenance-free ball bearings consist of four components:

### The outer and inner races

The suitability of a xiros® polymer ball bearings is largely determined by the materials of the two races. These are made from igus® tribo-polymers to maximise service life and minimise friction. Choice of 5 materials. They allow different values of application temperature, media resistance and price. The table of materials (▶ **Page 824**) provides exact information on this topic.




### The cage

The material of the ball bearing cage must fit well to the application. The various material options have quite different chemical and temperature resistance values. The cage materials are compatible with all the different race options within xiros®.

### The balls

The ball materials differ most significantly. In addition to steel, glass or plastics are used. This produces a large difference in mass, which in turn affects quiet operation, weight and media resistance. Stainless steel balls (1.4401) are cost-effective, resistant to chemicals and suitable for high temperatures, but are the heaviest in the range. Glass balls (soda-lime glass) are also resistant to chemicals and have a medium weight. Just like polymer balls, they are non-metallic and non-magnetic. In addition to their excellent chemical resistance, the polymer balls (PAI) are even lighter than stainless steel or glass balls.

## Other types

**xiros® radial deep groove ball bearings**

The other designs include:

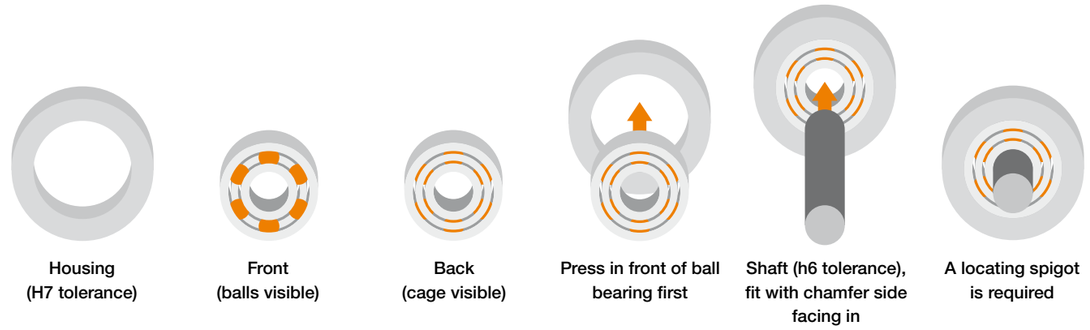
- Convex rollers which can run directly on a profile
- Profiled rollers, e.g. for thread/cable guidance
- Thrust and slewing ring ball bearings for absorbing axial loads
- Self-aligning ball bearings
- Ball bearings designed e.g. for installation in tube ends (also for conveyor rollers)
- Double-row bearings for absorbing higher forces

### Pillow block and fixed flange bearings

This range is made up by combining xiros® polymer ball bearings with the igubal® pillow block and fixed flange housings, resulting in a higher flexibility in terms of installation of the bearings. The bearing housings make it easy for the user to install these maintenance-free components. Both fixed flange and pillow block bearings are available as fixed or as pivoting design. The difference between the two options is that the pivoting type can compensate for shaft and/or bearing misalignment. A spherical outer race is pressed into the bearing housing, ensuring self-aligning action. If necessary, the inner bearing can be pivoted in all directions. Possible misalignment of two bearing points lying together can thus be compensated for.

## Measurement requirement for injection-moulded xiros® polymer ball bearings

The outer race of our ball bearings has a conical shape. This simplifies the installation in a suitable housing (with the narrow side first). After press-fit into a housing machined to a H7 tolerance, the bearing clearance is reduced. Therefore the bearings must be measured over the entire width of the ball bearing. Starting at an angle of 90° from the injection point.




**To press in the xiros® polymer ball bearing over the entire width of the housing, apply pressure on the outer race. xiros® radial deep groove ball bearings are only suitable for limited axial loads.**

## Development and tests

Through numerous tests the race materials were optimised. The polymers we have developed for use with ball bearings allow higher speeds, greater loads, and longer service life. But the development continues. We believe that polymer ball bearing technology will continue to advance, especially with our experience in the development of tribological polymer materials. Challenge us, talk to us about your applications, tell us what you need from a polymer ball bearing. In the igus® test laboratory the service life and wear of xiros® polymer ball bearings are tested. In addition to the actual material comparison, tests indicate these experiments also answer questions about the impact of external influences such as temperature, humidity or dust.

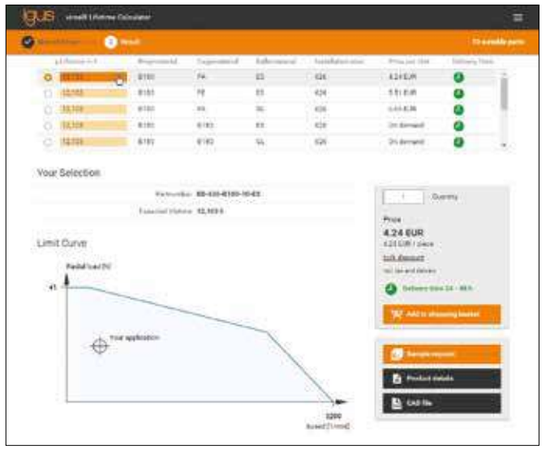
**igus® extends the xiros® test stand in the industry's largest test laboratory for plastics in motion**

## Predictability

As part of the development of xiros® polymer ball bearing tests are carried out continuously. The high number of test results makes it very difficult to present this information in tabular form. It is for this reason that igus® has developed the online service life calculator, which uses real test results to give an accurate calculation.

The predictability of xiros® polymer ball bearings is one of the most important advantages. Based on the results of many wear tests, the user can calculate the service life of xiros® polymer ball bearings reliably and interpret the application.

▶ **www.igus.eu/xiros-expert**



**Download the online tool app now**

Download on the App Store

## In this overview you will find some special materials for special application areas. Contact us!

### xirodur® K220 - no outgassing in vacuum

The xirodur® K220 material is especially well-suited to autoclaving and coating applications, and its service life is longer than that of comparable xirodur® materials.

- Maximum water absorption: 0.4% weight
- 60% more cost-effective than comparable materials for applications in vacuum

### xirodur® D180 - high speeds

- Soft material
- For quiet operation
- Higher speeds
- Only suitable for small loads

### xirodur® MT180 - for medical devices

The material xirodur® MT180 conforms to DIN EN ISO 10993.

- Individual components with USP class VI//DIN EN ISO 10993
- Customers save costs for assembly certification

### xirodur® F500 - conductive and resistant to chemicals

Due to their high chemical resistance, the conductive ball bearings made of xirodur® F500 are ideal for the semiconductor industry.

- Surface resistance $<10^4\ \Omega$
- Temperature-resistant up to +150°C
- Extremely resistant to chemicals (strong acids)

### xirodur® ECO B180 - environmentally friendly rotation

This ECO all-rounder not only stands out visually, but also technically. Extremely resistant to media with low moisture absorption. And that from at least 97% regranulate.

- Low moisture absorption
- High media resistance
- Cost-effective, due to reuse of already processed raw materials

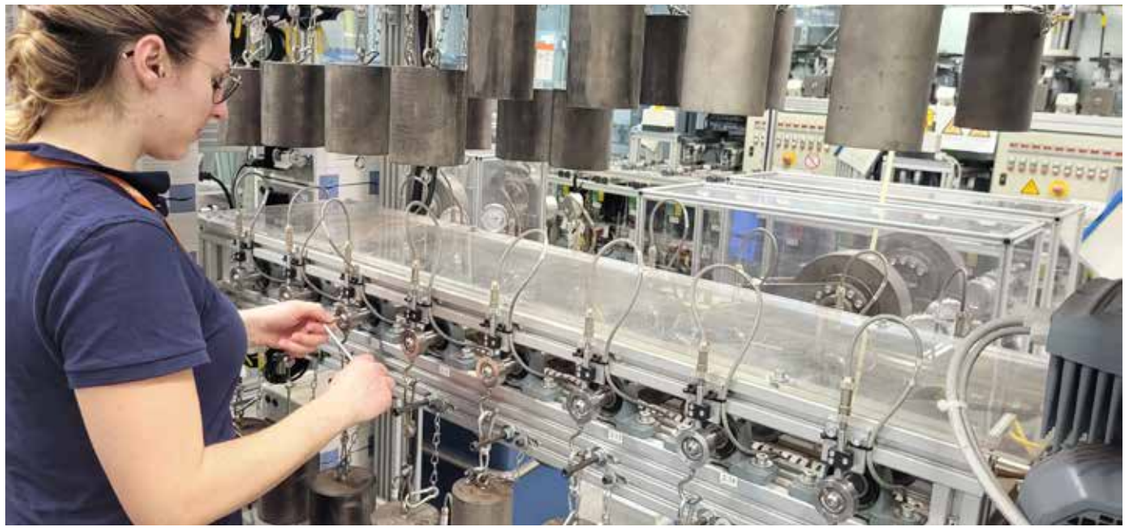
### xirodur® S180LF - for automotive interiors

- Low outgassing (low fogging)
- Especially for automotive interiors
- Bespoke designs possible



xiros® polymer ball bearings | Technical data

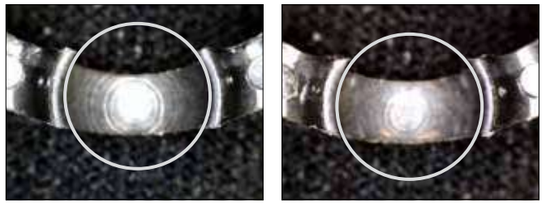
## xiros® test laboratory ... 21x longer service life



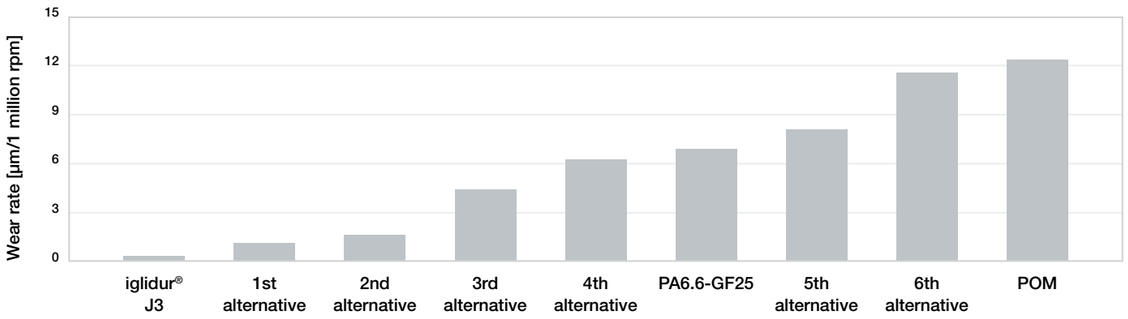
iglidur® cage materials contain enhanced additives that improve stability and sliding properties. This results in longer service life and less downtime.

- Longer service life than the current standard range
- Less wear
- Lower maintenance costs thanks to a longer service life
- Less downtime
- Reduce operating costs due to less frequent replacement

**Picture on the left:**
**unreinforced material, before the test**
**Picture on the right:**
**unreinforced material, after the test**



**Picture on the left:**
**reinforced iglidur® material, before the test**
**Picture on the right:**
**reinforced iglidur® material, after the test**




**Cage made from iglidur® J3 for the best combination with lowest wear**

# xirodur® polymer ball bearing | Materials

### xirodur® B180 - cost-effective all-rounder

- Longest service life
- Extensive product range
- Low wear values
- Good resistance to chemicals and temperature fluctuations/extremes

| | | |
|---|---|---|
| Temperature [°C] | -40 / +80 | – + |
| Chemical resistance | | – + |
| Moisture absorption [% weight] | 0.7 | – + |
| Wear resistance | | – + |
| Price index | | – + |

### xirodur® A500

- Temperature-resistant
- Excellent chemical resistance
- Special product
- For vacuum and autoclave applications

| | | |
|---|---|---|
| Temperature [°C] | -100 / +150 | – + |
| Chemical resistance | | – + |
| Moisture absorption [% weight] | 0.4 | – + |
| Wear resistance | | – + |
| Price index | | – + |

### xirodur® F180

- Anti-static dissipative material
- Supports the removal of undesired electrostatic charge

| | | |
|---|---|---|
| Temperature [°C] | -40 / +80 | – + |
| Chemical resistance | | – + |
| Moisture absorption [% weight] | 1.3 | – + |
| Wear resistance | | – + |
| Price index | | – + |

### xirodur® F182

- Electrostatically conductive
- Lower surface resistance (volume resistance <$10^4$Ωcm) than xirodur® F180

| | | |
|---|---|---|
| Temperature [°C] | -40 / +80 | – + |
| Chemical resistance | | – + |
| Moisture absorption [% weight] | 0.7 | – + |
| Wear resistance | | – + |
| Price index | | – + |

### xirodur® C160

- Excellent chemical resistance
- Low-cost material compared to xirodur® A500
- Low absorption of different media

| | | |
|---|---|---|
| Temperature [°C] | 0 / +60 | – + |
| Chemical resistance | | – + |
| Moisture absorption [% weight] | 0.2 | – + |
| Wear resistance | | – + |
| Price index | | – + |



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### xirodur® S180

- The all-rounder in black for visible parts

| | | |
|---|---|---|
| Temperature [°C] | -40 / +80 | – + |
| Chemical resistance | | – + |
| Moisture absorption [% weight] | 0.7 | – + |
| Wear resistance | | – + |
| Price index | | – + |

### xirodur® MT180

- Individual components with USP class VI // DIN EN ISO 10993
- For use in medical technology

| | | |
|---|---|---|
| Temperature [°C] | -40 / +80 | – + |
| Chemical resistance | | – + |
| Moisture absorption [% weight] | 0.7 | – + |
| Wear resistance | | – + |
| Price index | | – + |

### xirodur® F500

- Ideal for use in the semiconductor industry
- Electrostatically conductive (volume resistance <$10^4$Ωcm)
- Extremely resistant to chemicals

| | | |
|---|---|---|
| Temperature [°C] | -55 / +150 | – + |
| Chemical resistance | | – + |
| Moisture absorption [% weight] | 0.5 | – + |
| Wear resistance | | – + |
| Price index | | – + |

### xirodur® D180

- Soft material
- For quiet operation
- Higher speeds
- Only suitable for small loads

| | | |
|---|---|---|
| Temperature [°C] | -50 / +80 | – + |
| Chemical resistance | | – + |
| Moisture absorption [% weight] | 1.4 | – + |
| Wear resistance | | – + |
| Price index | | – + |

### xirodur® S180LF

- Low outgassing (low fogging)
- Especially for automotive interiors
- Bespoke designs possible

| | | |
|---|---|---|
| Temperature [°C] | -40 / +80 | – + |
| Chemical resistance | | – + |
| Moisture absorption [% weight] | 0.7 | – + |
| Wear resistance | | – + |
| Price index | | – + |

EN 09/2023

# xiros® polymer ball bearings | Material properties

| xirodur® | Unit | B180 | S180 | C160 | A500 | F180 | F182 | F500 | D180 | K220 | MT180 | ECO B180 | S180LF | igumid® G |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **General properties** | | | | | | | | | | | | | | |
| Density | [g/cm³] | 1.41 | 1.40 | 1.11 | 1.30 | 1.36 | 1.42 | 1.40 | 1.22 | 1.35 | 1.41 | 1.41 | 1.41 | 1.37 |
| Colour | | | | | | | | | | | | | | |
| Max. moisture absorption at +23 °C/50% r.h. | [% weight] | 0.2 | 0.2 | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.5 | 0.2 | 0.2 | 0.2 | 0.2 | 1.4 |
| Max. moisture absorption | [% weight] | 0.7 | 0.7 | 0.2 | 0.4 | 1.3 | 0.7 | 0.45 | 1.4 | 0.4 | 0.65 | 0.7 | 0.8 | 5.6 |
| **Mechanical properties** | | | | | | | | | | | | | | |
| Flexural modulus | [MPa] | 2,500 | 2,700 | 1,900 | 4,300 | 1,600 | 3,000 | 24,000 | 135 | 2,200 | 2,700 | 2,500 | 2,550 | 7,800 |
| Flexural strength at +20°C | [MPa] | 68 | 65 | 35 | 130 | 70 | 95 | 380 | n.a. | 60 | n.s. | 68 | 87 | 240 |
| Shore D hardness | | 77 | 78 | 67 | 85 | 79 | 79 | 87.5 | 48 | 77 | n.s. | 77 | 77 | 79 |
| **Physical and thermal properties** | | | | | | | | | | | | | | |
| Max. continuous operating temperature | [°C] | +80 | +80 | +60 | +150 (PEEK) +120 (PA) | +80 | +80 | +150 | +80 | +120 | +80 | +100 | +100 | +120 |
| Min. long-term application temperatures (in combination with cage material) | [°C] | -40 | -40 | 0 | -100 (PEEK) -40 (PA) | -40 | -40 | -50 | -50 | +140 | -40 | -40 | -40 | -40 |
| **Electrical properties** | | | | | | | | | | | | | | |
| Specific transitional resistance[1)] | [Ωcm] | $> 10^{14}$ | $> 10^{13}$ | $> 10^{14}$ | $> 10^{14}$ | $> 10^{12}$ [1)] | $> 10^{4}$ | $> 10^{5}$ | $> 10^{14}$ | $> 10^{12}$ | $> 10^{14}$ | $> 10^{14}$ | $> 10^{14}$ | $> 10^{11}$ |
| Surface resistance[1)] | [Ω] | $> 10^{14}$ | $> 10^{13}$ | $> 10^{14}$ | $> 10^{14}$ | $> 10^{12}$ [1)] | $> 10^{4}$ | $> 10^{4}$ | $> 10^{14}$ | $> 10^{10}$ | $> 10^{14}$ | $> 10^{14}$ | $> 10^{16}$ | $> 10^{11}$ |
| **Medium** | | | | | | | | | | | | | | |
| Alcohols | | + | + | + | + | + | + | + | + up to 0 | + | + | + | + | + |
| Diluted acid | | 0 up to – | 0 up to – | + | + | 0 up to – | 0 up to – | + | + up to 0 | + | + | + | + | + |
| Diluted base | | + | + | + | + | + | + | + | + up to 0 | + | + | + | + | 0 up to – |
| Fuels | | + | + | + up to 0 | + | + | + | + | + | + | + | + | + | + |
| Greases, oils without additives | | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Hydrocarbons | | + | + | + up to 0 | + | + | + | + | + | + | + | + | + | + |
| Strong acids | | – | – | + up to 0 | + | – | – | + | 0 | + | + | + | + | + up to 0 |
| Strong alkaline | | + up to 0 | + up to 0 | + | + | + up to 0 | + up to 0 | + | + up to 0 | + | + | + | + | – |
| UV radiation | | – | 0 | 0 | + | 0 | 0 | + | – | + | + | + | + | – |

[1)] Depending on the geometry

**Table 01: Material data and chemical resistance of xiros® materials**

**+ resistant 0 conditionally resistant – non-resistant**

**Detailed chemicals resistance table for xiros® products ▶ From page 1894**

## Recommended tolerances

| Fitting | Housing hole | Shaft |
|---|---|---|
| Standard: Press-fit | H7 | h6 |

**For further questions about the dimensioning of the hole and the shaft please contact us.**

## Ball materials

| Designation | Description |
|---|---|
| **ES: Stainless steel** | 1,4401 |
| **GL : Glass** | Soda-lime glass or borosilicate glass |
| **PAI: Plastic** | Polyamide-imide |
| **PP: Plastic** | Polypropylene |

## Cage materials

| Designation | Description |
|---|---|
| **10:** | PA |
| **20:** | PP |
| **30:** | xirodur® B180 |
| **35:** | iglidur® J3 |
| **50:** | PE |
| **70:** | PEEK |

# xiros® polymer ball bearings | Selection guide

## According to material properties

| xirodur® | B180 | | | | | | S180 | C160 | | A500 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cage material | PA | | B180 | | PE | J3 | PA | PP | | PA | | PEEK | | |
| Ball material | ES | GL | ES | GL | ES | ES | ES | ES | GL | ES | GL | ES | GL | PAI |
| **Descriptive technical specifications** | | | | | | | | | | | | | | |
| Smooth running | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Low moisture absorption | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Chemical resistance | | | ● | ● | ● | ● | | ● | ● | | | ● | ● | ● |
| Seawater-resistant | | | ● | ● | | ● | | ● | ● | | | ● | ● | |
| Dirt-resistant | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Higher temperatures | | | | | | | | | | ● | ● | ● | ● | ● |
| Higher speeds | | | | | | ● | | | | | | | | |
| Cost-effective | | | ● | ● | | | ● | ● | ● | | | | | |
| **Approvals and standards** | | | | | | | | | | | | | | |
| For contact with food | | | ● | | ● | | | | | | | ● | | |
| Antistatic | | | | | | | | | | | | | | |
| Conductive | | | | | | | | | | | | | | |
| Non-metallic | | ● | | ● | | | | | ● | | ● | | ● | ● |
| Detectable | | | | | | | | | | | | | | |
| **Availabilities / variants** | | | | | | | | | | | | | | |
| Radial deep groove ball bearings | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Radial deep groove ball bearings with flange | ● | ● | ● | ● | | | ● | | | | | | | |
| End cap | ● | ● | | | | | | | | | | | | |
| Spherical outer diameter | ● | ● | | | | | | | | | | | | |
| Double row | ● | ● | | | | | | | | | | | | |
| Slewing ring ball bearings | | | ● | ● | | | | | | | | | | |
| Thrust bearings | | | ● | ● | | | | | | | | | | |

| F180 | | F182 | F500 | D180 | K220 | MT180 | ECO B180 | S180LF | igumid® G |
|---|---|---|---|---|---|---|---|---|---|
| PA | PE | PA | F500 | PA | K230 | MT180 | J4 | PA | |
| ES | ES | ES | ES | ES | ES | ES | ES | ES | |
| **Descriptive technical specifications** | | | | | | | | | |
| ● | ● | ● | ● | | ● | ● | ● | ● | |
| ● | ● | ● | ● | | | ● | ● | ● | |
| | | | ● | | | | | | |
| | | | | | | ● | ● | | |
| ● | ● | ● | ● | | ● | ● | ● | ● | ● |
| | | | ● | | | | | | |
| | | | | ● | | | | | |
| | | | | | | | | ● | ● |
| **Approvals and standards** | | | | | | | | | |
| | ● | | | | | | | | |
| ● | ● | | | | | | | | |
| | | ● | ● | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| **Availabilities / variants** | | | | | | | | | |
| ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| ● | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

# xiros® radial deep groove ball bearings | Product range

## Races made from xirodur® B180 - cost-effective standard

xirodur® B180 cage, stainless steel balls

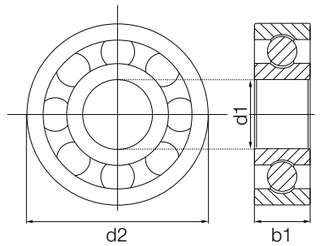
xirodur® B180 cage, glass balls

PA cage, stainless steel balls

PA cage, glass balls

iglidur® J3 cage, stainless steel balls

Also available with S180 races for visible parts (xirodur® S180 and PA cage), upon request




- The largest standard product range of DIN dimensions from stock
- All-rounder with minimal wear
- Suitable for contact with food
- Operating temperature: from -40°C up to +80°C

### Order key

| Type | Material |
|---|---|

**BB-623-B180-10-ES**

Ball bearing | Dimensions according to DIN 625-1 | Race material | Cage material | Ball material

Options:

Cage material
- 10 : PA
- 30 : xirodur® B180
- 35 : iglidur® J3

Ball material
- ES : Stainless steel
- GL : Glass

Race material
- xirodur® B180
- xirodur® S180

### Technical data

| Installation size | Radial load capacity stat. [N] | dyn. [N] | Max. speed [rpm] | Weight B180/ES [g] | B180/GL [g] | PA/ES [g] | PA/GL [g] | J3/ES [g] | J3/GL [g] |
|---|---|---|---|---|---|---|---|---|---|
| **623** | 25 | 34 | 4,500 | 0.37 | 0.31 | 0.40 | 0.32 | 0.37 | 0.31 |
| **633** | 33 | 45 | 4,000 | 0.83 | 0.64 | – | – | 0.83 | 0.64 |
| **684** | 10 | 11 | 4,600 | 0.26 | 0.20 | – | – | 0.26 | 0.20 |
| **694** | 12 | 14 | 4,000 | 0.42 | 0.35 | – | – | 0.42 | 0.35 |
| **604** | 30 | 32 | 3,600 | 0.65 | 0.45 | – | – | 0.65 | 0.45 |
| **624** | 33 | 45 | 4,000 | 0.79 | 0.60 | 0.85 | 0.62 | 0.79 | 0.60 |
| **634** | 40 | 40 | 3,700 | 1.50 | 1.00 | – | – | 1.50 | 1.00 |
| **685** | 12 | 14 | 4,000 | 0.45 | 0.37 | – | – | 0.45 | 0.37 |
| **695** | 29 | 30 | 3,500 | 0.73 | 0.53 | – | – | 0.73 | 0.53 |
| **605** | 32 | 33 | 3,500 | 0.96 | 0.77 | – | – | 0.96 | 0.77 |
| **625** | 40 | 40 | 3,700 | 1.42 | 0.96 | 1.55 | 1.01 | 1.42 | 0.96 |
| **635** | 41 | 43 | 3,200 | 2.59 | 1.76 | – | – | 2.59 | 1.76 |
| **686** | 29 | 30 | 3,500 | 0.76 | 0.57 | – | – | 0.76 | 0.57 |
| **696** | 29 | 30 | 3,500 | 1.05 | 0.85 | – | – | 1.05 | 0.85 |
| **606** | 50 | 53 | 3,300 | 1.89 | 1.25 | – | – | 1.89 | 1.25 |
| **626** | 60 | 62 | 3,200 | 2.06 | 1.60 | 2.44 | 1.69 | 2.06 | 1.60 |
| **636** | 80 | 94 | 2,200 | 3.96 | 2.71 | – | – | 3.96 | 2.71 |
| **687** | 32 | 34 | 3,200 | 0.80 | 0.61 | – | – | 0.80 | 0.61 |
| **697** | 39 | 41 | 3,000 | 1.47 | 1.05 | – | – | 1.47 | 1.05 |
| **607** | 41 | 43 | 3,200 | 1.97 | 1.52 | – | – | 1.97 | 1.52 |
| **627** | 80 | 94 | 2,400 | 3.85 | 2.60 | – | – | 3.85 | 2.60 |
| **688** | 39 | 41 | 3,000 | 1.17 | 0.76 | 1.19 | 0.75 | 1.17 | 0.76 |
| **698** | 60 | 62 | 3,200 | 2.34 | 1.52 | – | – | 2.34 | 1.52 |
| **608** | 80 | 94 | 2,400 | 3.76 | 2.51 | 3.79 | 2.54 | 3.76 | 2.51 |

**Order example:**
**BB-623-B180-10-ES** = Radial deep groove ball bearing with race material xirodur® B180, PA cage and stainless steel balls

### Dimensions [mm]

| Inner Ø d1 | Outer Ø d2 | Width b1 | Cage/ball material combination B180/ES | B180/GL | PA/ES | PA/GL | J3/ES | J3/GL | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 10 | 4 | ● | ● | ● | ● | ○ | ○ | BB-623-B180-□-□ |
| 3 | 13 | 5 | ● | ● | – | – | ○ | ○ | BB-633-B180-30-□ |
| 4 | 9 | 4 | ● | ● | – | – | ○ | ○ | BB-684-B180-30-□ |
| 4 | 11 | 4 | ● | ● | – | – | ○ | ○ | BB-694-B180-30-□ |
| 4 | 12 | 4 | ● | ● | – | – | ○ | ○ | BB-604-B180-30-□ |
| 4 | 13 | 5 | ● | ● | ● | ● | ○ | ○ | BB-624-B180-□-□ |
| 4 | 16 | 5 | ● | ● | – | – | ○ | ○ | BB-634-B180-30-□ |
| 5 | 11 | 5 | ● | ● | – | – | ○ | ○ | BB-685-B180-30-□ |
| 5 | 13 | 4 | ● | ● | – | – | ○ | ○ | BB-695-B180-30-□ |
| 5 | 14 | 5 | ● | ● | – | – | ○ | ○ | BB-605-B180-30-□ |
| 5 | 16 | 5 | ● | ● | ● | ● | ○ | ○ | BB-625-B180-□-□ |
| 5 | 19 | 6 | ● | ● | – | – | ○ | ○ | BB-635-B180-30-i□ |
| 6 | 13 | 5 | ● | ● | – | – | ○ | ○ | BB-686-B180-30-□ |
| 6 | 15 | 5 | ● | ● | – | – | ○ | ○ | BB-696-B180-30-□ |
| 6 | 17 | 6 | ● | ● | – | – | ○ | ○ | BB-606-B180-30-□ |
| 6 | 19 | 6 | ● | ● | ● | ● | ○ | ○ | BB-626-B180-□-□ |
| 6 | 22 | 7 | ● | ● | – | – | ○ | ○ | BB-636-B180-30-□ |
| 7 | 14 | 5 | ● | ● | – | – | ○ | ○ | BB-687-B180-30-□ |
| 7 | 17 | 5 | ● | ● | – | – | ○ | ○ | BB-697-B180-30-□ |
| 7 | 19 | 6 | ● | ● | – | – | ○ | ○ | BB-607-B180-30-□ |
| 7 | 22 | 7 | ● | ● | – | – | ○ | ○ | BB-627-B180-30-□ |
| 8 | 16 | 5 | ● | ● | ● | ● | ○ | ○ | BB-688-B180-□-□ |
| 8 | 19 | 6 | ● | ● | – | – | ○ | ○ | BB-698-B180-30-□ |
| 8 | 22 | 7 | ● | ● | ● | ● | ○ | ○ | BB-608-B180-□-□ |

Available from stock
Upon request

Imperial dimensions available ▶ Page 1164

# xiros® radial deep groove ball bearings | Product range

## Races made from xirodur® B180 - cost-effective standard

### Technical data

| Installation size | Radial load capacity stat. [N] | dyn. [N] | Max. speed [rpm] | Weight B180/ES [g] | B180/GL [g] | PA/ES [g] | PA/GL [g] | J3/ES [g] | J3/GL [g] |
|---|---|---|---|---|---|---|---|---|---|
| **628** | 100 | 110 | 2,300 | 5.57 | 3.4 | – | – | 5.57 | 3.4 |
| **638** | 110 | 130 | 2,200 | 7.82 | 5.65 | – | – | 7.82 | 5.65 |
| **689** | 40 | 42 | 2,500 | 1.30 | 0.88 | – | – | 1.30 | 0.88 |
| **699** | 43 | 45 | 2,250 | 2.08 | 1.66 | – | – | 2.08 | 1.66 |
| **609** | 100 | 110 | 2,300 | 5.12 | 2.95 | – | – | 5.12 | 2.95 |
| **629** | 110 | 128 | 2,200 | 6.20 | 4.03 | 6.14 | – | 6.20 | 4.03 |
| **6800** | 43 | 45 | 2,250 | 1.56 | 1.07 | – | – | 1.56 | 1.07 |
| **6900** | 60 | 64 | 2,000 | 3.24 | 2.04 | – | – | 3.24 | 2.04 |
| **6000** | 110 | 130 | 2,200 | 5.98 | 3.83 | 5.95 | 3.78 | 5.98 | 3.83 |
| **6200** | 130 | 147 | 2,000 | 9.32 | 6.56 | 9.26 | 6.51 | 9.32 | 6.56 |
| **6300** | 140 | 150 | 1,800 | 13.83 | 11.02 | 13.75 | – | 13.83 | 11.02 |
| **6701** | 16 | 18 | 2,200 | 0.68 | 0.57 | – | – | 0.68 | 0.57 |
| **6801** | 60 | 64 | 2,000 | 1.82 | 1.40 | – | – | 1.82 | 1.40 |
| **6901** | 80 | 83 | 1,800 | 3.12 | 2.10 | – | – | 3.12 | 2.10 |
| **6001** | 130 | 147 | 2,000 | 6.36 | 4.18 | 6.78 | 4.34 | 6.36 | 4.18 |
| **6201** | 140 | 150 | 1,800 | 10.04 | 7.25 | 9.97 | 7.12 | 10.04 | 7.25 |
| **6301** | 160 | 220 | 1,600 | 15.69 | 12.90 | – | – | 15.69 | 12.90 |
| **6702** | 19 | 21 | 1,800 | 0.94 | 0.81 | – | – | 0.94 | 0.81 |
| **6802** | 80 | 83 | 1,800 | 2.46 | 1.46 | – | – | 2.46 | 1.46 |
| **6902** | 90 | 94 | 1,700 | 4.37 | 3.12 | – | – | 4.37 | 3.12 |
| **6002** | 140 | 150 | 1,800 | 8.68 | 5.92 | 8.72 | 6.23 | 8.68 | 5.92 |
| **6202** | 160 | 220 | 1,600 | 11.71 | 8.96 | 12.26 | 9.11 | 11.71 | 8.96 |
| **6302** | 250 | 320 | 1,400 | 10.56 | 3.95 | 10.49 | – | 10.56 | 3.95 |
| **6703** | 23 | 25 | 1,600 | 0.66 | – | – | – | 0.66 | – |
| **6803** | 90 | 94 | 1,700 | 2.83 | 1.65 | – | – | 2.83 | 1.65 |
| **6903** | 90 | 94 | 1,700 | – | 0.79 | – | – | – | 0.79 |
| **6003** | 160 | 220 | 1,600 | 10.23 | 7.45 | 10.72 | 7.61 | 10.23 | 7.45 |
| **6203** | 250 | 320 | 1,400 | 19.36 | 12.75 | 17.45 | 12.68 | 19.36 | 12.75 |
| **6303** | 280 | 360 | 1,200 | 21.68 | 13.60 | – | – | 21.68 | 13.60 |
| **6704** | 30 | 36 | 1,400 | 1.39 | 1.17 | – | – | 1.39 | 1.17 |
| **6804** | 100 | 120 | 1,500 | 5.19 | 3.59 | – | – | 5.19 | 3.59 |
| **6904** | 140 | 144 | 1,150 | 9.76 | – | – | – | 9.76 | – |
| **6004** | 250 | 320 | 1,400 | 20.81 | 12.93 | 19.46 | 12.89 | 20.81 | 12.93 |
| **6204** | 280 | 360 | 1,200 | 30.22 | 22.14 | 28.87 | 22.33 | 30.22 | 22.14 |
| **6304** | 380 | 400 | 1,000 | 43.85 | 31.05 | – | – | 43.85 | 31.05 |
| **6705** | 32 | 38 | 1,200 | 1.58 | 1.40 | – | – | 1.58 | 1.40 |
| **6805** | 140 | 144 | 1,150 | 6.48 | 4.16 | – | – | 6.48 | 4.16 |
| **6905** | 160 | 162 | 900 | 4.49 | 4.49 | – | – | 4.49 | 4.49 |
| **6005** | 280 | 360 | 1,200 | 24.14 | 16.07 | 22.93 | 15.67 | 24.14 | 16.07 |
| **6205** | 310 | 370 | 1,000 | 35.99 | 27.92 | 34.82 | 27.51 | 35.99 | 27.92 |
| **6305** | 480 | 520 | 850 | 61.12 | 45.48 | – | – | 61.12 | 45.48 |

**Order example:**
**BB-628-B180-30-ES** = Radial deep groove ball bearing with race material xirodur® B180, xirodur® B180 cage and stainless steel balls

### Dimensions [mm]

| Inner Ø d1 | Outer Ø d2 | Width b1 | Cage/ball material combination B180/ES | B180/GL | PA/ES | PA/GL | J3/ES | J3/GL | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| 8 | 24 | 8 | ● | ● | – | ○ | ○ | ○ | BB-628-B180-30-□ |
| 8 | 28 | 9 | ● | ● | – | – | ○ | ○ | BB-638-B180-30-□ |
| 9 | 17 | 5 | ● | ● | – | – | ○ | ○ | BB-689-B180-30-□ |
| 9 | 20 | 6 | ● | ● | – | – | ○ | ○ | BB-699-B180-30-□ |
| 9 | 24 | 7 | ● | ● | – | – | ○ | ○ | BB-609-B180-30-□ |
| 9 | 26 | 8 | ● | ● | ● | – | ○ | ○ | BB-629-B180-□-□ |
| 10 | 19 | 5 | ● | ● | – | – | ○ | ○ | BB-6800-B180-30-□ |
| 10 | 22 | 6 | ● | ● | – | – | ○ | ○ | BB-6900-B180-30-□ |
| 10 | 26 | 8 | ● | ● | ● | ● | ○ | ○ | BB-6000-B180-□-□ |
| 10 | 30 | 9 | ● | ● | ● | ● | ○ | ○ | BB-6200-B180-□-□ |
| 10 | 35 | 11 | ● | ● | ● | – | ○ | ○ | BB-6300-B180-□-□ |
| 12 | 18 | 4 | ● | ● | – | – | ○ | ○ | BB-6701-B180-30-□ |
| 12 | 21 | 5 | ● | ● | – | – | ○ | ○ | BB-6801-B180-30-□ |
| 12 | 24 | 6 | ● | ● | – | – | ○ | ○ | BB-6901-B180-30-□ |
| 12 | 28 | 8 | ● | ● | ● | ● | ○ | ○ | BB-6001-B180-□-□ |
| 12 | 32 | 10 | ● | ● | ● | ● | ○ | ○ | BB-6201-B180-□-□ |
| 12 | 37 | 12 | ● | ● | – | – | ○ | ○ | BB-6301-B180-30-□ |
| 15 | 21 | 4 | ● | ● | – | – | ○ | ○ | BB-6702-B180-30-□ |
| 15 | 24 | 5 | ● | ● | – | – | ○ | ○ | BB-6802-B180-30-□ |
| 15 | 28 | 7 | ● | ● | – | – | ○ | ○ | BB-6902-B180-30-□ |
| 15 | 32 | 9 | ● | ● | ● | ● | ○ | ○ | BB-6002-B180-□-□ |
| 15 | 35 | 11 | ● | ● | ● | ● | ○ | ○ | BB-6202-B180-□-□ |
| 15 | 42 | 13 | ● | ● | ● | – | ○ | ○ | BB-6302-B180-□-□ |
| 17 | 23 | 4 | ● | – | – | – | ○ | ○ | BB-6703-B180-30-ES |
| 17 | 26 | 5 | ● | ● | – | – | ○ | ○ | BB-6803-B180-30-□ |
| 17 | 30 | 7 | – | ● | – | – | ○ | ○ | BB-6903-B180-30-GL |
| 17 | 35 | 10 | ● | ● | ● | ● | ○ | ○ | BB-6003-B180-□-□ |
| 17 | 40 | 12 | ● | ● | ● | ● | ○ | ○ | BB-6203-B180-□-□ |
| 17 | 47 | 14 | ● | ● | – | – | ○ | ○ | BB-6303-B180-30-□ |
| 20 | 27 | 4 | ● | ● | – | – | ○ | ○ | BB-6704-B180-30-□ |
| 20 | 32 | 7 | ● | ● | – | – | ○ | ○ | BB-6804-B180-30-□ |
| 20 | 37 | 9 | ● | – | – | – | ○ | ○ | BB-6904-B180-30-ES |
| 20 | 42 | 12 | ● | ● | ● | ● | ○ | ○ | BB-6004-B180-□-□ |
| 20 | 47 | 14 | ● | ● | ● | ● | ○ | ○ | BB-6204-B180-□-□ |
| 20 | 52 | 15 | ● | ● | – | – | ○ | ○ | BB-6304-B180-30-□ |
| 25 | 32 | 4 | ● | ● | – | – | ○ | ○ | BB-6705-B180-30-□ |
| 25 | 37 | 7 | ● | ● | – | – | ○ | ○ | BB-6805-B180-30-□ |
| 25 | 42 | 9 | ● | ● | – | – | ○ | ○ | BB-6905-B180-30-□ |
| 25 | 47 | 12 | ● | ● | ● | ● | ○ | ○ | BB-6005-B180-□-□ |
| 25 | 52 | 15 | ● | ● | ● | ● | ○ | ○ | BB-6205-B180-□-□ |
| 25 | 62 | 17 | ● | ● | – | – | ○ | ○ | BB-6305-B180-30-□ |

**Available from stock**
Upon request

# xiros® radial deep groove ball bearings | Product range

## Races made from xirodur® B180 - cost-effective standard

### Technical data

| Installation size | Radial load capacity stat. [N] | Radial load capacity dyn. [N] | Max. speed [rpm] | Weight B180/ES [g] | Weight B180/GL [g] | Weight PA/ES [g] | Weight PA/GL [g] | Weight J3/ES [g] | Weight J3/GL [g] |
|---|---|---|---|---|---|---|---|---|---|
| **6706** | 34 | 41 | 1,000 | 1.76 | 1.59 | – | – | 1.76 | 1.59 |
| **6806** | 160 | 162 | 900 | 4.49 | 1.82 | – | – | 4.49 | 1.82 |
| **6906** | 190 | 193 | 850 | 13.15 | 10.13 | – | – | 13.15 | 10.13 |
| **16006** | 380 | 420 | 900 | – | – | 28.53 | 17.33 | – | – |
| **6006** | 380 | 400 | 1,000 | – | – | 34.15 | 22.70 | – | – |
| **6206** | 480 | 520 | 850 | 55.89 | 39.73 | – | – | 55.89 | 39.73 |
| **6306** | 520 | 660 | 750 | 27.00 | 8.52 | – | – | 27.00 | 8.52 |
| **6007** | 480 | 520 | 850 | – | – | 47.29 | 30.71 | – | – |
| **6008** | 520 | 660 | 750 | – | – | 54.84 | 38.73 | – | – |
| **6009** | 660 | 690 | 650 | – | – | 33.52 | 57.52 | – | – |
| **6010** | 740 | 780 | 600 | – | – | 82.33 | 54.00 | – | – |
| **6011** | 930 | 950 | 550 | – | – | 119.64 | 75.80 | – | – |
| **6012** | 990 | 1,050 | 500 | – | – | 126.66 | 80.54 | – | – |
| **6024** | 2,300 | 2,350 | 250 | 578.8 | – | – | – | 578.8 | – |

### Dimensions [mm]

| Inner Ø d1 | Outer Ø d2 | Width b1 | Cage/ball material combination B180/ES | B180/GL | PA/ES | PA/GL | J3/ES | J3/GL | Part No. | |
|---|---|---|---|---|---|---|---|---|---|---|
| 30 | 37 | 4 | ● | ● | – | – | ● | ● | BB-6706-B180-30-□ | |
| 30 | 42 | 7 | ● | ● | – | – | ● | ● | BB-6806-B180-30-□ | |
| 30 | 47 | 9 | ● | ● | – | – | ● | ● | BB-6906-B180-30-□ | |
| 30 | 55 | 9 | – | – | ● | ● | ● | ● | BB-16006-B180-10-□ | |
| 30 | 55 | 13 | – | – | ● | ● | ● | ● | BB-6006-B180-10-□ | |
| 30 | 62 | 16 | ● | ● | – | – | – | – | BB-6206-B180-30-□ | |
| 30 | 72 | 19 | ● | ● | – | – | – | – | BB-6306-B180-30-□ | |
| 35 | 62 | 14 | – | – | ● | ● | – | – | BB-6007-B180-10-□ | |
| 40 | 68 | 15 | – | – | ● | ● | – | – | BB-6008-B180-10-□ | |
| 45 | 75 | 16 | – | – | ● | ● | – | – | BB-6009-B180-10-□ | |
| 50 | 80 | 16 | – | – | ● | ● | – | – | BB-6010-B180-10-□ | |
| 55 | 90 | 18 | – | – | ● | ● | – | – | BB-6011-B180-10-□ | |
| 60 | 95 | 18 | – | – | ● | ● | – | – | BB-6012-B180-10-□ | |
| 120 | 180 | 28 | ● | – | – | – | – | – | BB-6024-B180-30-ES | New |

**Order example:**
**BB-6706-B180-30-ES** = Thin ring bearing with race material xirodur® B180, xirodur® B180 cage and stainless steel balls

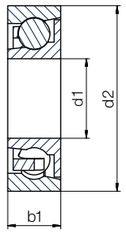
**Available from stock**
Upon request

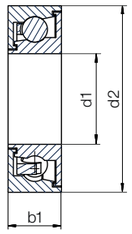
# xiros® radial deep groove ball bearings | Product range

## Races made from xirodur® B180 - with cover plate

PA cage, with shield on one side stainless steel or glass balls

B180 cage, with labyrinth seal, stainless steel balls




- Protects against coarse dirt
- Operating temperature: from -40°C up to +80°C
- Suitable for contact with food

### Order key

| Type | Material | | | | |
|---|---|---|---|---|---|
| BB-623- | B180- | 10- | ES- | C | |
| Ball bearing | Dimensions according to DIN 625-1 | Race material | Cage material | Ball material | With shield |

Options:

**Cage material**
**10** : PA
**30** : xirodur® B180

**Ball material**
**ES** : Stainless steel
**GL** : Glass

**Shield or labyrinth seal**
**C** : One-sided shield
**LCC** : Labyrinth seal

### Technical data

| Installation size | Radial load capacity stat. [N] | Radial load capacity dyn. [N] | Max. speed [rpm] | Weight ES [g] | Weight GL [g] |
|---|---|---|---|---|---|
| 623 | 10 | 25 | 4,500 | 0.41 | 0.33 |
| 626 | 41 | 43 | 3,200 | 2.56 | 1.71 |
| 608 | 80 | 94 | 2,200 | 3.93 | 2.67 |
| 6000 | 110 | 130 | 2,200 | 6.21 | 4.15 |
| 6001 | 138 | 147 | 2,000 | 7.09 | 4.61 |
| 6202 | 142 | 155 | 1,700 | 12.73 | 9.63 |
| 6003 | 160 | 220 | 1,600 | 11.12 | 8.03 |
| 6004 | 250 | 320 | 1,400 | 20.20 | 13.60 |
| 6005 | 280 | 360 | 1,200 | 23.89 | 16.51 |

### Dimensions [mm]

| Inner Ø d1 | Outer Ø d2 | Width b1 | Cage/ball material combination PA/ES | Cage/ball material combination PA/GL | Part No. |
|---|---|---|---|---|---|
| 3 | 10 | 4 | ● | ● | BB-623-B180-10-□-C |
| 6 | 19 | 6 | ● | ● | BB-626-B180-10-□-C |
| 8 | 22 | 7 | ● | ● | BB-608-B180-10-□-C |
| 10 | 26 | 8 | ● | ● | BB-6000-B180-10-□-C |
| 12 | 28 | 8 | ● | ● | BB-6001-B180-10-□-C |
| 15 | 35 | 11 | ● | ● | BB-6202-B180-10-□-C |
| 17 | 35 | 10 | ● | ● | BB-6003-B180-10-□-C |
| 20 | 42 | 12 | ● | ● | BB-6004-B180-10-□-C |
| 25 | 47 | 12 | ● | ● | BB-6005-B180-10-□-C |

### With labyrinth seal

| Installation size | Radial load capacity stat. [N] | Radial load capacity dyn. [N] | Max. speed [rpm] | Weight ES [g] | Weight GL [g] |
|---|---|---|---|---|---|
| 6003 | 160 | 220 | 1,600 | 11.02 | 8.27 |
| 6004 | 250 | 320 | 1,400 | 20.81 | 12.93 |

### Dimensions [mm]

| Inner Ø d1 | Outer Ø d2 | Width b1 | Cage/ball material combination B180/ES | Cage/ball material combination B180/GL | Part No. |
|---|---|---|---|---|---|
| 17 | 35 | 10 | ● | ● | BB-6003-B180-30-□-LCC |
| 20 | 24 | 12 | ● | ● | BB-6004-B180-30-□-LCC |

**Order example:**
**BB-623-B180-10-ES-C** = Radial deep groove ball bearing with race material xirodur® B180, PA cage, stainless steel balls and shield

**Available from stock**

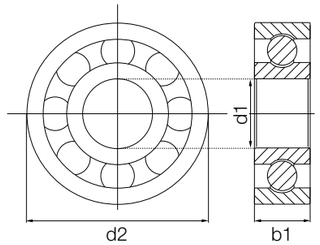
# xiros® radial deep groove ball bearings | Product range

## Races made from xirodur® C160 - resistant to chemicals

PP cage, stainless steel balls

PP cage, glass balls

- Good chemical resistance
- Cost-effective
- Operating temperature: from 0°C up to +60°C




### Order key

| Type | Material |
|---|---|
| BB-623-C160-20-ES | |

Ball bearing | Dimensions according to DIN 625-1 | Race material | Cage material | Ball material

**Cage material**
20 : PP
Options:
**Ball material**
ES : Stainless steel
GL : Glass

### Technical data

| Installation size | Radial load capacity stat. [N] | Radial load capacity dyn. [N] | Limit speed [rpm] | Weight PP/ES [g] | Weight PP/GL [g] |
|---|---|---|---|---|---|
| 623 | 10 | 11 | 4,000 | 0.35 | 0.26 |
| 624 | 12 | 13 | 3,650 | – | – |
| 625 | 20 | 22 | 3,100 | – | 0.21 |
| 635 | 30 | 31 | 2,900 | 1.76 | 1.03 |
| 626 | 30 | 34 | 2,600 | 2.15 | 1.43 |
| 636 | 40 | 42 | 2,050 | 2.06 | – |
| 627 | 40 | 43 | 2,000 | – | – |
| 688 | 20 | 21 | 2,750 | 1.06 | 0.24 |
| 608 | 40 | 46 | 2,200 | 3.37 | 2.21 |
| 628 | 57 | 61 | 1,800 | – | – |
| 638 | 60 | 62 | 1,670 | 6.27 | 4.10 |
| 629 | 60 | 63 | 1,680 | – | – |
| 6800 | 20 | 24 | 2,100 | – | – |
| 6000 | 60 | 65 | 1,700 | 5.48 | 3.33 |
| 6200 | 78 | 81 | 1,540 | 7.50 | 4.71 |
| 6801 | 30 | 32 | 1,920 | 0.84 | 0.92 |
| 6001 | 70 | 74 | 1,580 | 6.59 | 3.80 |
| 6201 | 80 | 83 | 1,260 | – | – |
| 6802 | 40 | 43 | 1,700 | – | 0.46 |
| 6002 | 80 | 85 | 1,500 | 5.72 | 4.86 |
| 6202 | 80 | 85 | 1,130 | – | – |
| 6803 | 50 | 51 | 1,650 | – | – |
| 6003 | 90 | 96 | 1,300 | 9.10 | 6.22 |
| 6203 | 140 | 142 | 1,010 | – | – |
| 6804 | 50 | 54 | 1,480 | – | – |

### Dimensions [mm]

| Inner Ø d1 | OuterØ d2 | Width b1 | Cage/ball material combination PP/ES | Cage/ball material combination PP/GL | Part No. |
|---|---|---|---|---|---|
| 3 | 10 | 4 | ● | ● | BB-623-C160-20-▭ |
| 4 | 13 | 5 | ● | ● | BB-624-C160-20-▭ |
| 5 | 16 | 5 | ● | ● | BB-625-C160-20-▭ |
| 5 | 19 | 6 | ● | ● | BB-635-C160-20-▭ |
| 6 | 19 | 6 | ● | ● | BB-626-C160-20-▭ |
| 6 | 22 | 7 | ● | ● | BB-636-C160-20-▭ |
| 7 | 22 | 7 | ● | ● | BB-627-C160-20-▭ |
| 8 | 16 | 5 | ● | ● | BB-688-C160-20-▭ |
| 8 | 22 | 7 | ● | ● | BB-608-C160-20-▭ |
| 8 | 24 | 8 | ● | ● | BB-628-C160-20-▭ |
| 8 | 28 | 9 | ● | ● | BB-638-C160-20-▭ |
| 9 | 26 | 8 | ● | ● | BB-629-C160-20-▭ |
| 10 | 19 | 5 | ● | ● | BB-6800-C160-20-▭ |
| 10 | 26 | 8 | ● | ● | BB-6000-C160-20-▭ |
| 10 | 30 | 9 | ● | ● | BB-6200-C160-20-▭ |
| 12 | 21 | 5 | ● | ● | BB-6801-C160-20-▭ |
| 12 | 28 | 8 | ● | ● | BB-6001-C160-20-▭ |
| 12 | 32 | 10 | ● | ● | BB-6201-C160-20-▭ |
| 15 | 24 | 5 | ● | ● | BB-6802-C160-20-▭ |
| 15 | 32 | 9 | ● | ● | BB-6002-C160-20-▭ |
| 15 | 35 | 11 | ● | ● | BB-6202-C160-20-▭ |
| 17 | 26 | 5 | ● | ● | BB-6803-C160-20-▭ |
| 17 | 35 | 10 | ● | ● | BB-6003-C160-20-▭ |
| 17 | 40 | 12 | ● | ● | BB-6203-C160-20-▭ |
| 20 | 32 | 7 | ● | ● | BB-6804-C160-20-▭ |

**Order example:**
**BB-623-C160-20-ES** = Radial deep groove ball bearing with race material xirodur® C160, PP cage and stainless steel balls

**Available from stock**
Upon request

# xiros® radial deep groove ball bearings | Product range

## Races made from xirodur® C160 - resistant to chemicals

### Technical data

| Installation size | Radial load capacity stat. [N] | Radial load capacity dyn. [N] | Limit speed [rpm] | Weight PP/ES [g] | Weight PP/GL [g] |
|---|---|---|---|---|---|
| 6004 | 140 | 142 | 1,000 | 17.81 | 11.20 |
| 6204 | 140 | 145 | 950 | 22.85 | 4.89 |
| 6805 | 80 | 82 | 1,075 | – | – |
| 6005 | 140 | 151 | 960 | 20.63 | 13.29 |
| 6205 | 170 | 181 | 810 | 26.70 | 4.89 |

### Dimensions [mm]

| Inner Ø d1 | OuterØ d2 | Width b1 | Cage/ball material combination PP/ES | Cage/ball material combination PP/GL | Part No. |
|---|---|---|---|---|---|
| 20 | 42 | 12 | ● | ● | BB-6004-C160-20-☐ |
| 20 | 47 | 14 | ● | ● | BB-6204-C160-20-☐ |
| 25 | 37 | 7 | ● | ● | BB-6805-C160-20-☐ |
| 25 | 47 | 12 | ● | ● | BB-6005-C160-20-☐ |
| 25 | 52 | 15 | ● | ● | BB-6205-C160-20-☐ |

**Order example:**
**BB-6004-C160-20-ES** = Radial deep groove ball bearing with race material xirodur® C160, PP cage and stainless steel balls

**Available from stock**
Upon request

# xiros® radial deep groove ball bearings | Product range

## Races made from xirodur® A500 - for chemicals and heat up to +150°C

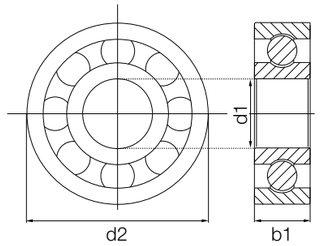
PA cage,
stainless steel balls

PEEK cage,
stainless steel balls

PEEK cage,
glass balls

PEEK cage,
PAI balls

Do you need an electrically conductive material for your application?
xirodur® F500 is conductive and resistant to chemicals. Please contact us!




- Temperature and chemicals resistance
- Operation temperature: from -100°C up to +150°C

### Order key

| Type | Material |
|---|---|

**BB-623-A500-10-ES**

Ball bearing | Dimensions according to DIN 625-1 | Race material | Cage material | Ball material

Options:
Cage material
10 : PA
70 : PEEK
Ball material
ES : Stainless steel
GL : Glass
PAI : Polyamide-imide

### Technical data

| Installation size | Radial load capacity stat. [N] | dyn. [N] | stat. PEEK/PAI [N] | dyn. PEEK/PAI [N] | Limit speed [rpm] | Weight PA/ES [g] | PEEK/ES [g] | PEEK/GL [g] | PEEK/PAI [g] |
|---|---|---|---|---|---|---|---|---|---|
| 623 | 27 | 30 | – | – | 5,000 | 0.4 | 0.4 | 0.3 | – |
| 624 | 30 | 40 | – | – | 4,500 | 1.9 | 1.0 | 0.9 | – |
| 625 | 36 | 43 | – | – | 3,700 | – | – | – | – |
| 635 | 48 | 52 | – | – | 3,400 | – | – | – | – |
| 626 | 54 | 60 | 15 | 20 | 3,400 | 2.3 | 2.3 | 1.6 | 1.4 |
| 636 | 72 | 76 | – | – | 2,450 | – | – | – | – |
| 627 | 72 | 74 | – | – | 2,600 | – | – | – | – |
| 688 | 36 | 38 | – | – | 3,150 | – | – | – | – |
| 608 | 72 | 78 | 18 | 25 | 2,700 | 3.7 | 3.7 | 2.4 | 2.2 |
| 628 | 98 | 104 | – | – | 2,500 | – | – | – | – |
| 638 | 102 | 108 | – | – | 2,300 | – | – | – | – |
| 629 | 102 | 112 | – | – | 2,350 | – | – | – | – |
| 6800 | 42 | 46 | – | – | 2,300 | – | – | – | – |
| 6000 | 102 | 107 | 25 | 34 | 2,100 | 6.0 | 6.0 | 3.8 | 3.4 |
| 6200 | 126 | 132 | – | – | 2,100 | – | – | – | – |
| 6801 | 54 | 57 | – | – | 2,150 | – | – | – | – |
| 6001 | 105 | 124 | – | – | 2,040 | – | – | – | – |
| 6201 | 132 | 141 | – | – | 1,820 | – | – | – | – |
| 6802 | 72 | 76 | – | – | 1,920 | – | – | – | – |
| 6002 | 132 | 145 | 32 | 41 | 1,900 | 9.1 | 9.1 | 5.2 | 5.6 |
| 6202 | 135 | 146 | – | – | 1,600 | – | – | – | – |
| 6803 | 84 | 84 | – | – | 1,760 | – | – | – | – |
| 6003 | 138 | 152 | – | – | 1,790 | – | – | – | – |
| 6203 | 228 | 232 | – | – | 1,450 | – | – | – | – |

### Dimensions [mm]

| Inner Ø d1 | OuterØ d2 | Width b1 | Cage/ball material combination PA/ES | PEEK/ES | PEEK/GL | PEEK/PAI | Part No. |
|---|---|---|---|---|---|---|---|
| 3 | 10 | 4 | ● | ● | ● | – | BB-623-A500-□-□ |
| 4 | 13 | 5 | ● | ● | ● | – | BB-624-A500-□-□ |
| 5 | 16 | 5 | ● | ● | ● | – | BB-625-A500-□-□ |
| 5 | 19 | 6 | ○ | ● | ○ | – | BB-635-A500-□-□ |
| 6 | 19 | 6 | ● | ● | ● | ● | BB-626-A500-□-□ |
| 6 | 22 | 7 | ○ | ○ | ○ | – | BB-636-A500-□-□ |
| 7 | 22 | 7 | ○ | ● | ● | – | BB-627-A500-□-□ |
| 8 | 16 | 5 | ● | ● | ● | – | BB-688-A500-□-□ |
| 8 | 22 | 7 | ● | ● | ● | ● | BB-608-A500-□-□ |
| 8 | 24 | 8 | ● | ○ | ○ | – | BB-628-A500-□-□ |
| 8 | 28 | 9 | ○ | ○ | ○ | – | BB-638-A500-□-□ |
| 9 | 26 | 8 | ○ | ○ | ○ | – | BB-629-A500-□-□ |
| 10 | 19 | 5 | ○ | ● | ○ | – | BB-6800-A500-□-□ |
| 10 | 26 | 8 | ● | ● | ● | ● | BB-6000-A500-□-□ |
| 10 | 30 | 9 | ● | ● | ● | – | BB-6200-A500-□-□ |
| 12 | 21 | 5 | ○ | ● | ○ | – | BB-6801-A500-□-□ |
| 12 | 28 | 8 | ● | ● | ● | ● | BB-6001-A500-□-□ |
| 12 | 32 | 10 | ○ | ○ | ● | – | BB-6201-A500-□-□ |
| 15 | 24 | 5 | ● | ○ | ○ | – | BB-6802-A500-□-□ |
| 15 | 32 | 9 | ● | ● | ● | ● | BB-6002-A500-□-□ |
| 15 | 35 | 11 | ○ | ● | ● | – | BB-6202-A500-□-□ |
| 17 | 26 | 5 | ○ | ● | ● | – | BB-6803-A500-□-□ |
| 17 | 35 | 10 | ● | ● | ● | ● | BB-6003-A500-□-□ |
| 17 | 40 | 12 | ● | ○ | ○ | – | BB-6203-A500-□-□ |

**Order example:**
**BB-623-A500-10-ES** = Radial deep groove ball bearing with race material xirodur® A500, PA cage and stainless steel balls

**Available from stock**
Upon request

# xiros® radial deep groove ball bearings | Product range

## Races made from xirodur® A500 - for chemicals and heat up to +150°C

### Technical data

| Installation size | Radial load capacity stat. [N] | dyn. [N] | stat. PEEK/PAI [N] | dyn. PEEK/PAI [N] | Limit speed [rpm] | Weight PA/ES [g] | PEEK/ES [g] | PEEK/GL [g] | PEEK/PAI [g] |
|---|---|---|---|---|---|---|---|---|---|
| **6804** | 90 | 93 | – | – | 1,560 | – | – | – | – |
| **6004** | 234 | 250 | 62 | 88 | 1,700 | 19.7 | 19.7 | 13.2 | 11.7 |
| **6204** | 234 | 238 | – | – | 1,270 | – | – | – | – |
| **6805** | 132 | 135 | – | – | 980 | – | – | – | – |
| **6005** | 405 | 420 | – | – | 1,500 | – | – | – | – |
| **6205** | 422 | 440 | – | – | 1,100 | – | – | – | – |

### Dimensions [mm]

| Inner Ø d1 | OuterØ d2 | Width b1 | Cage/ball material combination PA/ES | PEEK/ES | PEEK/GL | PEEK/PAI | Part No. |
|---|---|---|---|---|---|---|---|
| 20 | 32 | 7 | ● | ● | ● | – | BB-6804-A500-□-□ |
| 20 | 42 | 12 | ● | ● | ● | ● | BB-6004-A500-□-□ |
| 20 | 47 | 14 | ● | ● | ● | – | BB-6204-A500-□-□ |
| 25 | 37 | 7 | ● | ● | ● | – | BB-6805-A500-□-□ |
| 25 | 47 | 12 | ● | ● | ● | ● | BB-6005-A500-□-□ |
| 25 | 52 | 15 | ● | ● | ● | – | BB-6205-A500-□-□ |

**Order example:**
**BB-623-A500-10-ES** = Radial deep groove ball bearing with race material xirodur® A500, PA cage and stainless steel balls

**Available from stock**
Upon request

# xiros® radial deep groove ball bearings | Product range

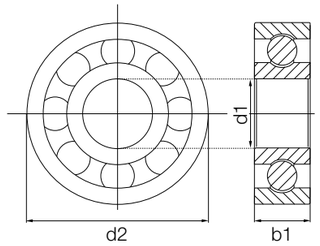
## Races made from xirodur® F180 - antistatic

PA cage,
stainless steel balls

PE cage,
stainless steel balls

- Static dissipation
- Suitable for food contact according to the FDA/EU regulations (combined with PE cage)
- Specific volume resistance <$10^{12}$Ωcm
- Operating temperature: from -40°C up to +80°C

**Do you need an electrically conductive material for your application?**
**xirodur® F182 is even more conductive (without FDA/food approval).**
**Please contact us!**




### Order key

| Type | Material |
|---|---|
| BB-623-F180-10-ES | |

Ball bearing | Dimensions according to DIN 625-1 | Race material | Cage material | Ball material

Options:
Cage material
10 : PA
50 : PE
Ball material
ES : Stainless steel

### Technical data

| Installation size | Radial load capacity stat. [N] | Radial load capacity dyn. [N] | Limit speed [rpm] | Weight PA/ES [g] | Weight PE/ES [g] |
|---|---|---|---|---|---|
| 623 | 10 | 25 | 4,500 | 0.39 | 0.39 |
| 624 | 20 | 33 | 4,000 | 0.83 | 0.82 |
| 625 | 40 | 40 | 3,700 | 1.54 | 1.50 |
| 626 | 41 | 43 | 3,200 | 2.50 | 2.36 |
| 608 | 80 | 94 | 2,200 | 3.79 | 3.67 |
| 6000 | 110 | 130 | 2,200 | 5.86 | 5.76 |
| 6001 | 138 | 147 | 2,000 | 6.72 | 6.62 |
| 6002 | 140 | 150 | 1,800 | 8.59 | 8.50 |
| 6003 | 160 | 220 | 1,600 | 10.53 | 10.39 |
| 6004 | 250 | 320 | 1,400 | 19.24 | 19.18 |
| 6005 | 280 | 360 | 1,200 | 22.43 | 22.04 |

### Dimensions [mm]

| Inner Ø d1 | OuterØ d2 | Width b1 | Cage/ball material combination PA/ES | Cage/ball material combination PE/ES | Part No. |
|---|---|---|---|---|---|
| 3 | 10 | 4 | ● | ● | BB-623-F180-□-ES |
| 4 | 13 | 5 | ● | ● | BB-624-F180-□-ES |
| 5 | 16 | 5 | ● | ● | BB-625-F180-□-ES |
| 6 | 19 | 6 | ● | ● | BB-626-F180-□-ES |
| 8 | 22 | 7 | ● | ● | BB-608-F180-□-ES |
| 10 | 26 | 8 | ● | ● | BB-6000-F180-□-ES |
| 12 | 28 | 8 | ● | ● | BB-6001-F180-□-ES |
| 15 | 32 | 9 | ● | ● | BB-6002-F180-□-ES |
| 17 | 35 | 10 | ● | ● | BB-6003-F180-□-ES |
| 20 | 42 | 12 | ● | ● | BB-6004-F180-□-ES |
| 25 | 47 | 12 | ● | ● | BB-6005-F180-□-ES |

**Order example:**
**BB-623-F180-10-ES** = Radial deep groove ball bearing with race material xirodur® F180, PA cage and stainless steel balls

**Available from stock**

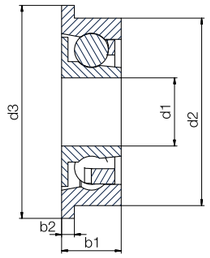
# xiros® radial deep groove ball bearing with flange | Product range

## Races made from xirodur® B180 or xirodur® F180

### Single flange with shield

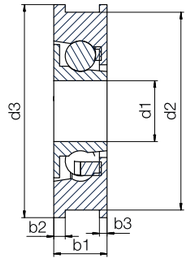
xirodur® B180,
PA cage, stainless
steel balls

xirodur® S180,
PA cage, stainless
steel balls




### Double flange with shield

xirodur® B180 races
PA cage, stainless
steel or glass balls




### Technical data

| Installation size | Double flange | Radial load capacity stat. [N] | Radial load capacity dyn. [N] | Max. speed [rpm] | Weight PA/ES [g] | Weight B180 PA/GL [g] | Weight B180/ES [g] | Weight F180 PA/ES [g] | Weight S180 PA/ES [g] |
|---|---|---|---|---|---|---|---|---|---|
| **Radial deep groove ball bearing with single flange with shield for conveyor roller** | | | | | | | | | |
| 606 | – | 80 | 94 | 2,200 | 2.40 | – | – | – | – |
| 688 | – | 80 | 94 | 2,200 | 1.90 | – | – | – | – |
| 608 | – | 80 | 94 | 2,200 | 5.55 | – | – | – | – |
| 6000 | – | 110 | 130 | 1,900 | 7.55 | – | – | – | – |
| 6000 | – | 110 | 130 | 1,900 | 10.06 | – | – | – | – |
| 6001 | – | 130 | 147 | 1,750 | 7.53 | 5.09 | – | – | – |
| 6001 | – | 130 | 147 | 1,750 | 12.02 | – | – | – | – |
| 6002 | – | 140 | 150 | 1,600 | 11.44 | – | – | – | – |
| 6003 | – | 160 | 220 | 1,550 | 11.42 | – | – | – | – |
| 6004 | – | 250 | 320 | 1,400 | – | – | 16.36 | – | – |
| 6004 | – | 250 | 320 | 1,400 | – | – | 29.60 | – | – |
| **Radial deep groove ball bearing with single or double flange and shields** | | | | | | | | | |
| 608 | – | 80 | 94 | 2,200 | 5.69 | 4.47 | – | 5.49 | – |
| 608 | ● | 80 | 94 | 2,200 | 5.82 | 5.93 | – | 5.61 | – |
| 626 | – | 60 | 62 | 3,200 | – | – | – | – | 1.32 |
| 688 | – | 39 | 41 | 3,000 | – | – | – | – | 0.66 |
| 608 | – | 80 | 94 | 2,400 | – | – | – | – | 2.00 |

**Order example:**
**BB-6000F2830-B180-10-ES** = Radial deep groove ball bearing with single flange for system solution BBT (conveyor roller), race material xirodur® B180, PA cage and stainless steel balls



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### Order key with single flange

| Type | Material |
|---|---|
| BB-6000 F 2830- | B180-10-ES |

Ball bearing | Dimensions according to DIN 625-1 | Single flange | Outer Ø [mm] | Race material | Cage material | Ball material

Also available as complete system solution
▶ Page 1058

### Order key with double flange

| Type | Material | Design |
|---|---|---|
| BB-608FF- | B180-10-ES- | CC |

Ball bearing | Dimensions according to DIN 625-1 | Double flange | Race material | Cage material | Ball material | Double shield

Flange
**F** : Single flange
**FF** : Double flange
Race material
**B180** : xirodur® B180
**S180** : xirodur® S180

Cage material
**10** : PA
**30** : xirodur® B180
Ball material
**ES** : Stainless steel
**GL** : Glass
Shield
**C** : With shield
**CC** : Double shield

### Dimensions [mm]

| Inner Ø d1 | Outer Ø d2 | Outer Ø d3 | Width b1 | Width b2 | Cage/ball material combination PA/ES | B180 PA/GL | B180/ES | S180 PA/ES | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| 6.0 | 18.0 | 20.0 | 6.0 | 2.0 | ● | – | – | – | BB-606F1820-B180-30-ES |
| 8.0 | 18.0 | 20.0 | 6.0 | 2.0 | ● | – | – | – | BB-688F1820-B180-30-ES |
| 8.0 | 28.0 | 30.0 | 7.0 | 2.0 | ● | – | – | – | BB-608F2830-B180-10-ES |
| 10.0 | 28.0 | 30.0 | 9.0 | 2.0 | ● | – | – | – | BB-6000F2830-B180-10-ES |
| 10.0 | 35.0 | 38.0 | 9.0 | 2.0 | ● | – | – | – | BB-6000F3538-B180-10-ES |
| 12.0 | 28.0 | 30.0 | 9.0 | 2.0 | ● | – | – | – | BB-6001F2830-B180-10-ES |
| 12.0 | 35.0 | 38.0 | 9.0 | 2.0 | ● | – | – | – | BB-6001F3538-B180-10-ES |
| 15.0 | 35.0 | 38.0 | 9.0 | 2.0 | ● | – | – | – | BB-6002F3538-B180-10-ES |
| 17.0 | 35.0 | 38.0 | 10.0 | 2.0 | ● | – | – | – | BB-6003F3538-B180-10-ES |
| 20.0 | 46.0 | 50.0 | 12.0 | 2.0 | – | – | ● | – | BB-6004F4650G-B180-30-ES |
| 20.0 | 56.0 | 60.0 | 12.0 | 2.0 | – | – | ● | – | BB-6004F5660G-B180-30-ES |
| | | | | | | | | | |
| 8.0 | 26.0 | 28.0 | 8.5 | 1.5 | ● | ● | – | – | BB-608F-B180-10-□-CC |
| 8.0 | 26.0 | 28.0 | 7.0 | 1.5/1.0 (b3) | ● | ● | – | – | BB-608FF-B180-10-□-CC |
| 6.0 | 19.0 | 22.0 | 6.0 | 1.5 | – | – | – | ● | BB-626F-S180-10-ES-C |
| 8.0 | 16.0 | 18.0 | 5.0 | 1.0 | – | – | – | ● | BB-688F-S180-10-ES-C |
| 8.0 | 22.0 | 25.0 | 7.0 | 1.5 | – | – | – | ● | BB-608F-S180-10-ES-C |

Available from stock

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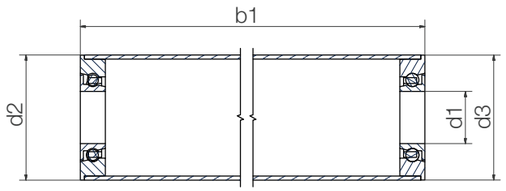
# xiros® conveyor rollers | Product range

## xiros® system solution - aluminium tube with fixed flange ball bearings

Aluminium tube with xirodur® B180 ball bearing

- Cost-effective and available from stock
- Suitable for contact with food according to DIN EN 143692




### Order key

| Type | Material |
|---|---|

**BBT-AC38-6000-B180-10-ES**

| Ball bearing conveyor roller | Aluminium tube | Outer Ø | Dimensions according to DIN 625-1 | Race material | Cage material | Ball material |
|---|---|---|---|---|---|---|

**Cage material**
**10** : PA
**30** : xirodur® B180
**Ball material**
**ES** : Stainless steel

Radial deep groove ball bearings with flange also available as individual parts ▶ Page 1056

### Dimensions [mm]

| Inner Ø d1 | OuterØ d2 | Flange Ø d3 | Length b1 | Tolerance | Part No. |
|---|---|---|---|---|---|
| 6 | 20 | 19.9 | 50 - 500 | ±0.5 | BBT-AC20-606-B180-30-ES |
| 8 | 20 | 19.9 | 50 - 500 | ±0.5 | BBT-AC20-688-B180-30-ES |
| 8 | 30 | 29.9 | 50 - 1,500 | ±0.5 | BBT-AC30-608-B180-10-ES |
| 10 | 30 | 29.9 | 50 - 1,500 | ±0.5 | BBT-AC30-6000-B180-10-ES |
| 12 | 30 | 29.9 | 50 - 1,500 | ±0.5 | BBT-AC30-6001-B180-10-ES |
| 10 | 38 | 37.9 | 50 - 1,500 | ±0.5 | BBT-AC38-6000-B180-10-ES |
| 12 | 38 | 37.9 | 50 - 1,500 | ±0.5 | BBT-AC38-6001-B180-10-ES |
| 15 | 38 | 37.9 | 50 - 1,500 | ±0.5 | BBT-AC38-6002-B180-10-ES |
| 17 | 38 | 37.9 | 50 - 1,500 | ±0.5 | BBT-AC38-6003-B180-10-ES |
| 20 | 50 | 49.9 | 50 - 1,500 | ±0.5 | BBT-AC50-6004-B180-30-ES |
| 20 | 60 | 59.9 | 50 - 1,500 | ±0.5 | BBT-AC60-6004-B180-30-ES |

Online configurator for xiros® system solutions
▶ www.igus.eu/xirosAlu

**Order example:**
**BBT-AC38-6000-B180-10-ES, L = 500mm** = Aluminium tube with 2 ball bearings with race material xirodur® B180, PA cage and stainless steel balls, total length 500mm

**Available from stock**
**Delivery time: approx. 1-2 weeks**



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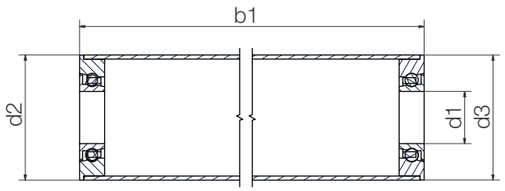
# xiros® conveyor rollers | Product range New

## xiros® system solution - with sandblasted surface

Aluminium tube with xirodur® B180 ball bearing

- Up to 50% less air under the film than a smooth aluminium surface
- Up to 30% more grip compared to a smooth aluminium surface




### Order key

| Type | Material |
|---|---|

**BBT-S AC30-6000-B180-10-ES**

| Ball bearing conveyor roller | Aluminium tube | Black | Outer Ø | Dimensions according to DIN 625-1 | Race material | Cage material | Ball material |
|---|---|---|---|---|---|---|---|

**Cage material**
**10** : PA
**30** : xirodur® B180
**Ball material**
**ES** : Stainless steel

### Dimensions [mm]

| Inner Ø d1 | OuterØ d2 | Flange Ø d3 | Length b1 | Tolerance | Part No. | |
|---|---|---|---|---|---|---|
| 6 | 20 | 20 | 100 - 1,000 | ±0.5 | BBT-SAC20-606-B180-30-ES | New |
| 8 | 20 | 20 | 100 - 1,000 | ±0.5 | BBT-SAC20-608-B180-30-ES | New |
| 8 | 30 | 30 | 100 - 1,000 | ±0.5 | BBT-SAC30-608-B180-10-ES | New |
| 10 | 30 | 30 | 100 - 1,000 | ±0.5 | BBT-SAC30-6000-B180-10-ES | New |
| 12 | 30 | 30 | 100 - 1,000 | ±0.5 | BBT-SAC30-6001-B180-10-ES | New |
| 10 | 38 | 38 | 100 - 1,000 | ±0.5 | BBT-SAC38-6000-B180-10-ES | New |
| 12 | 38 | 38 | 100 - 1,000 | ±0.5 | BBT-SAC38-6001-B180-10-ES | New |
| 15 | 38 | 38 | 100 - 1,000 | ±0.5 | BBT-SAC38-6002-B180-10-ES | New |
| 17 | 38 | 38 | 100 - 1,000 | ±0.5 | BBT-SAC38-6003-B180-10-ES | New |
| 20 | 50 | 50 | 100 - 1,000 | ±0.5 | BBT-SAC50-6004-B180-30-ES | New |
| 20 | 60 | 60 | 100 - 1,000 | ±0.5 | BBT-SAC60-6004-B180-30-ES | New |

**Order example:**
**BBT-SAC20-606-B180-30-ES, L = 200mm** = Aluminium tube, sandblasted, installation size 606 with xirodur® B180 fixed flange ball bearing, xirodur® B180 cage and stainless steel balls, total length 200mm

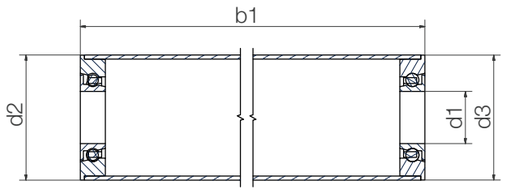
**Available from stock**
**Delivery time: approx. 3-4 weeks**

# xiros® conveyor rollers | Product range New

## xiros® aluminium conveyor roller with non-stick coating

Aluminium conveyor roller with non-stick coating

- Up to 70% less sticking of adhesive labels




### Order key

| Type | Material |
|---|---|

**BBT-AH30-6000-S180-10-ES**

| Ball bearing conveyor roller | Aluminium tube | Outer Ø | Dimensions according to DIN 625-1 | Race material | Cage material | Ball material |
|---|---|---|---|---|---|---|

**Cage material**
**10** : PA
**Ball material**
**ES** : Stainless steel

### Dimensions [mm]

| Inner Ø d1 | OuterØ d2 | Flange Ø d3 | Length b1 | Tolerance | Part No. | |
|---|---|---|---|---|---|---|
| 8 | 30 | 30 | 100 - 1,000 | ±0.5 | BBT-AH30-608-S180-10-ES | New |
| 10 | 30 | 30 | 100 - 1,000 | ±0.5 | BBT-AH30-6000-S180-10-ES | New |
| 12 | 30 | 30 | 100 - 1,000 | ±0.5 | BBT-AH30-6000-S180-10-ES | New |
| 10 | 30 | 30 | 100 - 1,000 | ±0.5 | BBT-AH30-6001-S180-10-ES | New |
| 10 | 38 | 38 | 100 - 1,000 | ±0.5 | BBT-AH38-6000-S180-10-ES | New |
| 10 | 38 | 38 | 100 - 1,000 | ±0.5 | BBT-AH38-6000-S180-10-ES | New |
| 15 | 38 | 38 | 100 - 1,000 | ±0.5 | BBT-AH38-6002-S180-10-ES | New |

**Order example:**
**BBT-AH30-6000-S180-10-ES, L = 100mm,** = Aluminium tube with 2 ball bearings with race material xirodur® S180, PA cage and stainless steel balls, total length 100mm

Upon request
Delivery time: 3-4 weeks



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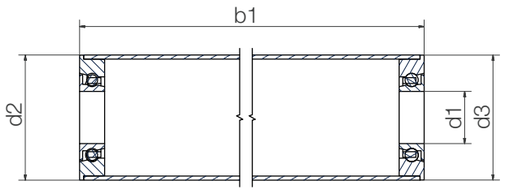
xiros®

# xiros® conveyor rollers | Product range New

## xiros® system solution - black anodised

Aluminium tube with xirodur® S180 ball bearing

- Black design




### Order key

| Type | Material |
|---|---|

**BBT-AC S 30-6000-S180-10-ES**

| Ball bearing conveyor roller | Aluminium tube | Black | Outer Ø | Dimensions according to DIN 625-1 | Race material | Cage material | Ball material |
|---|---|---|---|---|---|---|---|

**Cage material**
**10** : PA
**Ball material**
**ES** : Stainless steel

### Dimensions [mm]

| Inner Ø d1 | OuterØ d2 | Flange Ø d3 | Length b1 | Tolerance | Part No. | |
|---|---|---|---|---|---|---|
| 8 | 30 | 29.9 | 50 - 1,500 | ±0.5 | BBT-ACS30-608-S180-10-ES | New |
| 10 | 30 | 29.9 | 50 - 1,500 | ±0.5 | BBT-ACS30-6000-S180-10-ES | New |
| 12 | 30 | 29.9 | 50 - 1,500 | ±0.5 | BBT-ACS30-6001-S180-10-ES | New |
| 10 | 38 | 37.9 | 50 - 1,500 | ±0.5 | BBT-ACS38-6000-S180-10-ES | New |

**Order example:**
**BBT-ACS30-6000-S180-10-ES, L = 200mm** = Aluminium tube with 2 ball bearings with race material xirodur® S180, PA cage and stainless steel balls, total length 200mm

Upon request
Delivery time: 3-4 weeks

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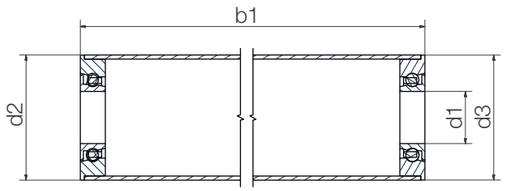
# xiros® conveyor rollers | Product range New

## xiros® system solution - non-metallic with PVC tube and glass balls

PVC tube with xirodur® B180 ball bearing

- 100% non-metallic, non-magnetic
- Application in the chemical, medical and semiconductor industry




### Order key

| Type | | | | Material | | |
|---|---|---|---|---|---|---|
| BBT-PVC | 30- | 6000- | B180- | 30- | GL |
| Ball bearing conveyor roller | PVC tube | Outer Ø | Dimensions according to DIN 625-1 | Race material | Cage material | Ball material |

**Cage material**
**30** : xirodur® B180
**Ball material**
**GL** : Glass

### Dimensions [mm]

| Inner Ø | OuterØ | Flange Ø | Length | | Part No. |
|---|---|---|---|---|---|
| d1 | d2 | d3 | b1 | Tolerance | |
| 8 | 30 | 30 | 100 - 1,000 | ±0.5 | BBT-PVC30-608-B180-30-GL New |
| 8 | 30 | 30 | 100 - 1,000 | ±0.5 | BBT-PVC30-6000-B180-30-GL New |
| 10 | 40 | 40 | 100 - 1,000 | ±0.5 | BBT-PVC40-6000-B180-30-GL New |
| 12 | 40 | 40 | 100 - 1,000 | ±0.5 | BBT-PVC40-6001-B180-30-GL New |
| 15 | 40 | 40 | 100 - 1,000 | ±0.5 | BBT-PVC40-6002-B180-30-GL New |
| 17 | 40 | 40 | 100 - 1,000 | ±0.5 | BBT-PVC40-6003-B180-30-GL New |
| 20 | 50 | 50 | 100 - 1,000 | ±0.5 | BBT-PVC50-6004-B180-30-GL New |
| 20 | 63 | 63 | 100 - 1,000 | ±0.5 | BBT-PVC63-6004-B180-30-GL New |

**Order example:**
**BBT-PVC30-6000-B180-30-GL, L = 200mm** = Aluminium tube with 2 ball bearings with race and cage material xirodur® B180 and glass balls, total length 200mm

**Available from stock**
**Delivery time: approx. 1-2 weeks**



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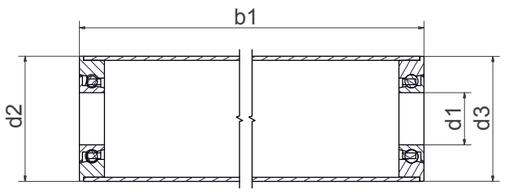
# xiros® conveyor rollers | Product range

## xiros® system solution - plastic for food contact

PVC tube with xirodur® B180 ball bearing

- Components for use in food in accordance with 10/2011/EU and 1935/2004/EG




### Order key

| Type | | | | Material | | |
|---|---|---|---|---|---|---|
| BBT-PVC | 50- | 6004- | B180- | 30- | ES |
| Ball bearing conveyor roller | PVC tube | Outer Ø | Dimensions according to DIN 625-1 | Race material | Cage material | Ball material |

**Cage material**
**30** : xirodur® B180
**Ball material**
**ES** : Stainless steel

### Dimensions [mm]

| Inner Ø | OuterØ | Flange Ø | Length | | Part No. |
|---|---|---|---|---|---|
| d1 | d2 | d3 | b1 | Tolerance | |
| 8 | 30 | 30 | 50 - 1,000 | ±0.5 | BBT-PVC30-608-B180-30-ES |
| 10 | 30 | 30 | 50 - 1,000 | ±0.5 | BBT-PVC30-6000-B180-30-ES |
| 10 | 40 | 40 | 50 - 1,000 | ±0.5 | BBT-PVC40-6000-B180-30-ES |
| 12 | 40 | 40 | 50 - 1,000 | ±0.5 | BBT-PVC40-6001-B180-30-ES |
| 15 | 40 | 40 | 50 - 1,000 | ±0.5 | BBT-PVC40-6002-B180-30-ES |
| 17 | 40 | 40 | 50 - 1,000 | ±0.5 | BBT-PVC40-6003-B180-30-ES |
| 20 | 50 | 50 | 50 - 1,000 | ±0.5 | BBT-PVC50-6004-B180-30-ES |
| 20 | 63 | 63 | 50 - 1,000 | ±0.5 | BBT-PVC63-6004-B180-30-ES |

**Order example:**
**BBT-PVC50-6004-B180-30-ES, L = 200mm** = PVC tube with 2 ball bearings with race material xirodur® B180, xirodur® B180 cage and stainless steel balls, total length 200mm

**Available from stock**
**Delivery time: approx. 1-2 weeks**

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# xiros® conveyor rollers | Product range New

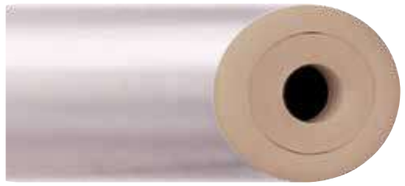
## xiros® system solution - stainless steel tube

**Stainless steel tube with xirodur® B180 ball bearing**

- Application in the food and medical sector

**Stainless steel conveyor rollers with xirodur® F180 ball bearings**

- Prevents static charge



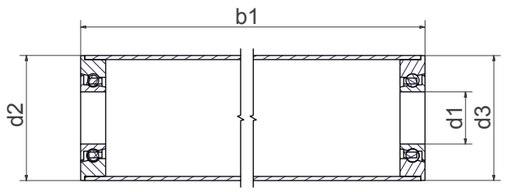
**Stainless steel tube with xirodur® A500 ball bearing**

- Operating temperature up to +150°C
- With FDA-compliant components
- Resistant to a wide range of chemicals

### Order key

| Type | | | | Material | | |
|---|---|---|---|---|---|---|
| BBT-ES | 30- | 6000- | □- | □ | -ES | |
| Ball bearing conveyor roller | Stainless steel tube | Outer Ø | Dimensions according to DIN 625-1 | Race material | Cage material | Ball material |

**Cage material**
**10** : PA
**30** : xirodur® B180
**70** : PEEK
**Ball material**
**ES** : Stainless steel




### Dimensions [mm]

| Inner Ø d1 | OuterØ d2 | Flange Ø d3 | Length b1 | Tolerance | Part No. | |
|---|---|---|---|---|---|---|
| 8 | 30 | 30 | 100 - 1,500 | ±0.5 | BBT-ES30-608-A500-70-ES | New |
| 8 | 30 | 30 | 50 - 1,500 | ±0.5 | BBT-ES30-608-B180-30-ES | |
| 8 | 30 | 30 | 100 - 1,500 | ±0.5 | BBT-ES30-608-F180-10-ES | New |
| 10 | 30 | 30 | 100 - 1,500 | ±0.5 | BBT-ES30-6000-A500-70-ES | New |
| 10 | 30 | 30 | 50 - 1,500 | ±0.5 | BBT-ES30-6000-B180-30-ES | |
| 10 | 30 | 30 | 100 - 1,500 | ±0.5 | BBT-ES30-6000-F180-10-ES | New |
| 12 | 30 | 30 | 100 - 1,500 | ±0.5 | BBT-ES30-6001-A500-70-ES | New |
| 12 | 30 | 30 | 50 - 1,500 | ±0.5 | BBT-ES30-6001-B180-30-ES | |
| 12 | 30 | 30 | 100 - 1,500 | ±0.5 | BBT-ES30-6001-F180-10-ES | New |

**Order example:**
**BBT-ES30-6000-B180-30-ES, L = 200mm** = stainless steel tube with 2 ball bearings with race material xirodur® B180, xirodur® B180 cage and stainless steel balls, total length 200mm

**Available from stock - Delivery time approx. 2-3 weeks**
With xirodur® F180 as ESD version available upon request



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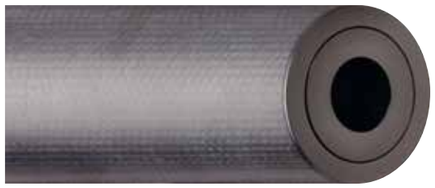
# xiros® conveyor rollers | Product range

## xiros® system solution - carbon fibre tube



**Carbon fibre tube with xirodur® S180 ball bearing, available as ESD version (with xirodur® F180 ball bearing)**

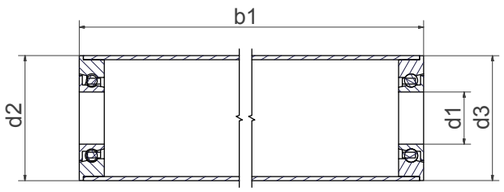
**Carbon fibre tube with xirodur® F180 ball bearing**

- Low inertia
- Antistatic version

### Order key

| Type | | | | Material | | |
|---|---|---|---|---|---|---|
| BBT-CF | 50- | 6004- | □- | 30- | ES | |
| Ball bearing conveyor roller | Carbon fibre tube | Outer Ø | Dimensions according to DIN 625-1 | Race material | Cage material | Ball material |

**Cage material**
**10** : PA
**30** : xirodur® B180
**Ball material**
**ES** : Stainless steel




### Dimensions [mm]

| Inner Ø d1 | OuterØ d2 | Flange Ø d3 | Length b1 | Tolerance | Part No. | |
|---|---|---|---|---|---|---|
| 10 | 30 | 30 | 100 - 1,000 | ±0.5 | BBT-CF30-6000-F180-10-ES | New |
| 12 | 30 | 30 | 100 - 1,000 | ±0.5 | BBT-CF30-6001-F180-10-ES | New |
| 20 | 50 | 49.9 | 50 - 1,000 | ±0.5 | BBT-CF50-6004-S180-30-ES | |
| 20 | 100 | 100.0 | 50 - 1,000 | ±0.5 | BBT-CF100-6004-F180-30-ES | |

**Order example:**
**BBT-CF50-6004-S180-30-ES, L = 370mm =** Carbon fibre tube with 2 ball bearings with race material xirodur® S180, xirodur® B180 cage and stainless steel balls, total length 370mm

**Delivery time: approx. 3 weeks**
With xirodur® F180 as ESD version available upon request

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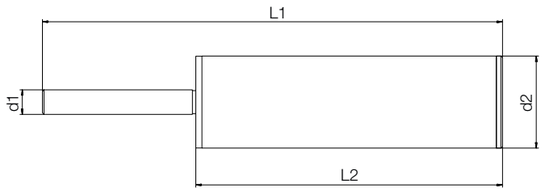
# xiros® conveyor rollers | Product range

## xiros® system solution - closed on one end

**Closed special solution with aluminium tube and polymer ball bearing for guide rollers and label rollers**

- Closed design
- Resistant to dirt
- Simple installation
- Dimensions according to customer request

**Ready-to-install complete systems with shaft to required size upon request**




### Order key

| Type | Material |
|---|---|

**BBTG-AC30-□-30-ES**

| Ball bearing conveyor roller | Aluminium tube | Outer Ø | Length - upon request | Cage material | Ball material |
|---|---|---|---|---|---|

**Cage material**
**30** : xirodur® B180
**Ball material**
**ES** : Stainless steel

### Dimensions [mm]

| OuterØ d2 | Length L1 | Part No. |
|---|---|---|
| 30 | According to customer request | BBTG-AC30-XX-30-ES |
| 38 | According to customer request | BBTG-AC38-XX-30-ES |
| 50 | According to customer request | BBTG-AC50-XX-30-ES |
| 60 | According to customer request | BBTG-AC60-XX-30-ES |

Upon request
For a ready-to-install complete system, please contact us.



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# xiros® end caps | Product range

## Races made from xirodur® B180

**PA cage, stainless steel or glass balls**

**PA cage, stainless steel balls hexagon nut socket**

- Suitable for all conveyor roller tubes 50x2.8mm
- Lubrication-free and corrosion-resistant
- Operating temperature: from -40°C up to +80°C

### Order key

| Type | Material |
|---|---|

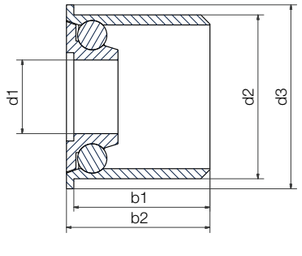
**BB-6204EC44.5-B180-10-ES**

| Ball bearing type | Dimensions according to DIN 625-1 | End cap | Outer Ø (d2) | Race material | Cage material | Ball material |
|---|---|---|---|---|---|---|

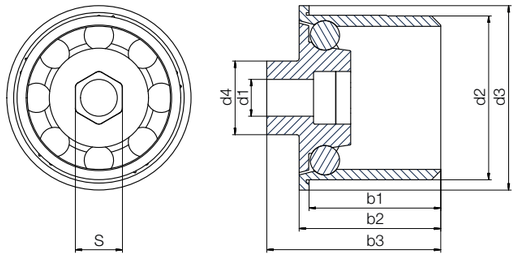
**Cage material**
**10** : PA

**Options:**
**Ball material**
**ES** : Stainless steel
**GL** : Glass

**Example "6204EC"**




**Example "6204ECM8"**




### Technical data

| Installation size | Radial load capacity stat. [N] | Radial load capacity dyn. [N] | Limit speed [rpm] | Weight PA/ES [g] | Weight PA/GL [g] |
|---|---|---|---|---|---|
| **6204** | 245 | 294 | 1,800 | 41.66 | 29.85 |
| **6204** | 245 | 294 | 1,800 | 48.44 | – |

### Dimensions [mm]

| Inner Ø d1 | Outer Ø d2 | Width d3 | d4 | b1 | b2 | b3 | S | Cage/ball material combination PA/ES | PA/GL | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 44.5 | 50 | – | 35.8 | 38.5 | – | – | ● | ● | BB-6204EC44.5-B180-10-□ |
| 10 | 44.5 | 50 | 20 | 35.8 | 38.5 | 47.3 | M8 | ● | – | BB-6204ECM8-B180-10-ES |

**Order example:**
**BB-6204EC44.5-B180-10-ES** = End cap with race material xirodur® B180, PA cage and stainless steel balls

**Available from stock**

# xiros® profiled radial deep groove ball bearings | Product range

## Races made from xirodur® B180

xirodur® B180 cage,
stainless steel balls
Type 6000PP3

xirodur® B180 cage,
stainless steel balls
Type 608P6

- One-piece design
- Replaces several components
- Different profiles and installation sizes
- Suitable for contact with food
- Operating temperature: from -40°C up to +80°C

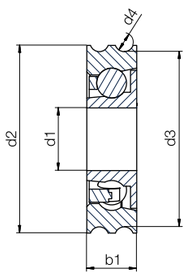
### Order key

| Type | Material | Design |
|---|---|---|
| BB-608P6-B180-30-ES- | | C |

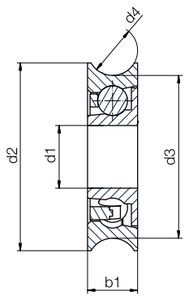
Ball bearing | Dimensions according to DIN 625-1 | Profile P6 | Race material | Cage material | Ball material | With shield

**Cage material**
30 : xirodur® B180
**Ball material**
ES : Stainless steel
**Shield**
C : One-sided shield

Example "Profile PP3"




Example "Profile P8"




### Technical data

| Installation size | Radial load capacity stat. [N] | Limit speed [rpm] | Weight B180/ES [g] |
|---|---|---|---|
| 608P6 | 80 | 2,200 | 3.96 |
| 608P8 | 140 | 1,800 | 23.37 |
| 6000P8 | 110 | 2,200 | 7.14 |
| 6000PP3 | 110 | 2,200 | 7.86 |
| 6201P9 | 160 | 1,600 | 27.05 |

### Dimensions [mm]

| Inner Ø d1 | OuterØ d2 | Base Ø d3 | Groove Ø d4 | Width b1 | Part No. |
|---|---|---|---|---|---|
| 8 | 24 | 20.5 | 6 | 7 | BB-608P6-B180-30-ES-C |
| 8 | 48 | 32 | 8 | 14 | BB-608P8-B180-30-ES |
| 10 | 30 | 26 | 8 | 8 | BB-6000P8-B180-30-ES-C |
| 10 | 30 | 28 | 3 | 8 | BB-6000PP3-B180-30-ES-C |
| 12 | 60 | 43.5 | 9 | 12 | BB-6201P9-B180-30-ES |

**Order example:**
**BB-608P6-B180-30-ES** = Radial deep groove ball bearing, Profil P8 with race material xirodur® B180, xirodur® B180 cage and stainless steel balls

**Available from stock**



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# xiros® skate wheels with spherical outer diameter | Product range

## Races made from xirodur® B180

xirodur® B180 races
PA cage,
stainless steel balls

xirodur® B180 races
PA cage,
glass balls

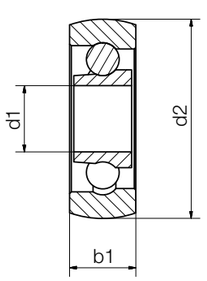
- Replaces several components
- Different profiles and installation sizes
- Operating temperature: from -40°C up to +80°C

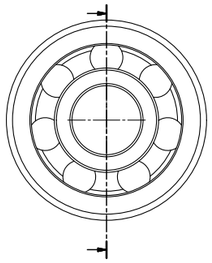
### Order key

| Type | Material |
|---|---|
| BB-608SO-B180-10-ES | |

Ball bearing | Dimensions according to DIN 625-1 | Spherical outer Ø | Race material | Cage material | Ball material

**Cage material**
10 : PA
Options:
**Ball material**
ES : Stainless steel
GL : Glass



### Technical data

| Installation size | Radial load capacity stat. [N] | Radial load capacity dyn. [N] | Limit speed [rpm] | Weight PA/ES [g] | Weight PA/GL [g] |
|---|---|---|---|---|---|
| 608 | 80 | 94 | 2,200 | 4.63 | 3.34 |
| 6000 | 110 | 130 | 1,900 | 7.86 | 5.70 |
| 6001 | 138 | 147 | 1,750 | 13.51 | 11.10 |

### Dimensions [mm]

| Inner Ø d1 | OuterØ d2 | Width b1 | Width b2 | Cage/ball material combination PA/ES | Cage/ball material combination PA/GL | Part No. |
|---|---|---|---|---|---|---|
| 8 | 24.00 | 8 | 7 | ● | ● | BB-608SO-B180-10-☐ |
| 10 | 28.96 | 10 | 8 | ● | ● | BB-6000SO-B180-10-☐ |
| 12 | 35.56 | 12 | 8 | ● | ● | BB-6001SO-B180-10-☐ |

**Order example:**
**BB-608SO-B180-10-ES** = Ball bearing with spherical outer diameter, race material xirodur® B180, PA cage and stainless steel balls

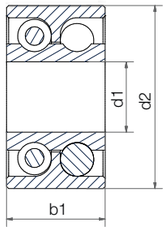
**Available from stock**

# xiros® double row ball bearing | Product range

## Races made from xirodur® B180

PA cage,
stainless steel or
glass balls

- Higher loads
- More cost-effective than two comparable bearings




### Order key

| Type | Material | Design |
|---|---|---|

**BB-6000-B180-10-ES-D**

| Ball bearing | Dimensions according to DIN 625-1 | Race material | Cage material | Ball material | Double row |
|---|---|---|---|---|---|

**Cage material**
**10** : PA
Options:
**Ball material**
**ES** : Stainless steel
**GL** : Glass

### Technical data

| Installation size | Radial load capacity stat. [N] | Radial load capacity dyn. [N] | Limit speed [rpm] | Weight PA/ES [g] | Weight PA/GL [g] |
|---|---|---|---|---|---|
| **6000** | 200 | 240 | 1,000 | 11.23 | 6.90 |
| **6004** | 420 | 470 | 650 | 35.60 | 22.55 |

### Dimensions [mm]

| Inner Ø d1 | OuterØ d2 | Width b1 | Cage/ball material combination PA/ES | PA/GL | Part No. |
|---|---|---|---|---|---|
| 10 | 26 | 14 | ● | ● | BB-6000-B180-10-☐-D |
| 20 | 42 | 20 | ● | ● | BB-6004-B180-10-☐-D |

**Order example:**
**BB-6000-B180-10-ES-D** = Double row ball bearing with race material xirodur® B180, PA cage and stainless steel balls

**Available from stock**



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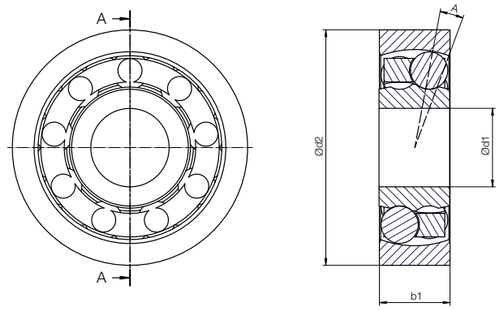
# xiros® self-aligning ball bearing | Product range New

## Races made from xirodur® B180

PA cage and stainless
steel balls

- Angular misalignment compensation
- Lubrication-free and corrosion-resistant
- Operating temperature: from -40°C up to +80°C




### Order key

| Type | Material | Design |
|---|---|---|

**BB-1200-B180-10-ES-D**

| Ball bearing | Dimensions according to DIN 625-1 | Race material | Cage material | Ball material | Double row |
|---|---|---|---|---|---|

**Cage material**
**10** : PA
**Ball material**
**ES** : Stainless steel

### Technical data

| Installation size | Max. pivot angle [°] | Permissible radial load [N] | Max. speed [rpm] | Weight [g] |
|---|---|---|---|---|
| **1,200** | 3.90 | 150 | 1,800 | 8.9 |
| **1201** | 3.92 | 150 | 1,800 | 10.4 |
| **1204** | 3.31 | 290 | 1,150 | 28.8 |

### Dimensions [mm]

| Inner Ø d1 | OuterØ d2 | Width b1 | Part No. |
|---|---|---|---|
| 10 | 30 | 9 | BB-1200-B180-10-ES-D New |
| 12 | 31 | 10 | BB-1201-B180-10-ES-D New |
| 20 | 47 | 14 | BB-1204-B180-10-ES-D New |

**Order example:**
**BB-1200-B180-10-ES-D** = Double row ball bearing with race material xirodur® B180, PA cage and stainless steel balls

**Available from stock**
**Delivery time: approx. 1-2 weeks**

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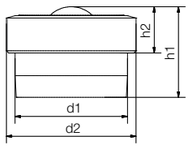
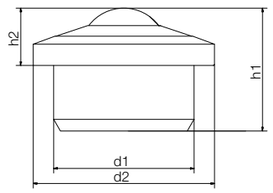
# xiros® polymer ball transfer units | Product range

## Polymer ball transfer units made from xirodur® B180




**Installation size 505(B)**

**Installation size 508, 505(B), 512, 515(B), 522(B), 530B**

- All-rounder for sensitive transportation
- 5XXB series suitable for overhead installation and lateral guidance

### Order key

| Type | Material |
|---|---|
| BB-522 B | -B180-POM |

| Ball bearing | Type | New generation | Housing material | Ball material |
|---|---|---|---|---|

**Ball material**
**POM** : POM (ball)

### Technical data and dimensions [mm]

| Installation size | Max. stat. load capacity axial [N] | Inner Ø d1 | Inner Ø d2 | Height h1 | Height h2 | Weight [g] | Part No. |
|---|---|---|---|---|---|---|---|
| **505** | 35 | 10.4 | 12.0 | 8.4 | 4.3 | 0.88 | **BB-505-B180-POM** |
| **508** | 40 | 12.6 | 17.0 | 11.2 | 4.8 | 1.65 | **BB-508-B180-POM** New |
| **512** | 60 | 18.0 | 23.0 | 15.4 | 7.4 | 4.69 | **BB-512-B180-POM** New |
| **515** | 80 | 24.0 | 31.0 | 21.0 | 9.8 | 10.73 | **BB-515-B180-POM** |
| **522** | 110 | 36.0 | 45.0 | 30.0 | 9.8 | 28.80 | **BB-522-B180-POM** |

### Technical data and dimensions [mm]

| Installation size | Max. stat. load capacity axial [N] | Inner Ø d1 | Inner Ø d2 | Height h1 | Height h2 | Weight [g] | Part No. |
|---|---|---|---|---|---|---|---|
| **505B** | 150 | 10.4 | 12.0 | 8.4 | 4.3 | 0.92 | **BB-505B-B180-POM** |
| **515B** | 300 | 24.0 | 31.0 | 21.0 | 9.8 | 11.19 | **BB-515B-B180-POM** |
| **522B** | 500 | 36.0 | 45.0 | 30.0 | 9.8 | 29.97 | **BB-522B-B180-POM** |
| **530B** | 1000 | 45.0 | 55.0 | 37.0 | 13.8 | 67.40 | **BB-530B-B180-POM** |

**Recommended tolerances**
We recommend the following hole tolerances for the ball transfer units housings:
**Installation size** **505** ▶ 10.40H7 **515/515B** ▶ 24H7 **522/522B** ▶ 36H7
In general: The height tolerance of all installation sizes is ± 0.2mm

**Order example:**
**BB-505-B180-POM** = Polymer ball transfer unit with housing material xirodur® B180 and POM ball

**Available from stock**



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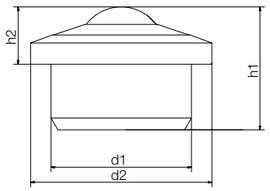
# xiros® polymer ball transfer units | Product range New

## Polymer ball transfer unit with stainless steel support balls

- Higher load capacity and smooth operation
- Up to 45% lower rolling friction compared to BB-515B/522B-B180-POM




### Order key

| Type | Material |
|---|---|
| BB-522- | B180-POM-ES |

| Ball bearing | Type | Housing material | Ball material | Support balls |
|---|---|---|---|---|

**Support balls**
**ES**: Stainless steel

### Technical data and dimensions [mm]

| Installation size | Max. static load capacity axial [N] | Inner Ø d1 | Inner Ø d2 | Height h1 | Height h2 | Weight [g] | Part No. |
|---|---|---|---|---|---|---|---|
| **515** | 180 | 24.0 | 31.0 | 21.0 | 9.8 | 15.59 | **BB-515-B180-POM-ES** New |
| **522** | 300 | 36.0 | 45.0 | 30.0 | 9.8 | 35.56 | **BB-522-B180-POM-ES** New |

**Recommended tolerances**
We recommend the following hole tolerances for the ball transfer units housings:
**Installation size**
**515** ▶ 24H7
**522** ▶ 36H7
In general: The height tolerance of all installation sizes is ± 0.2mm

**Order example:**
**BB-515-B180-POM-ES** = Polymer ball transfer unit with housing material xirodur® B180 and stainless steel support balls

**Available from stock**

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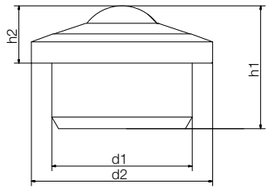
# xiros® polymer ball transfer units | Product range

## Polymer ball transfer unit with stainless steel ball

With stainless steel balls

Electrostatically conductive




- For semiconductors and electronic components
- Suitable for overhead installation and lateral guidance

### Order key

| Type | Material |
|---|---|
| BB-522 B - ☐ - ES | |

Ball bearing | Type | New generation | Housing material | Ball material

**Housing material:**
xirodur® B180
xirodur® F182
(ESD version)

**Ball material**
**ES**: Stainless steel

### Technical data and dimensions [mm]

| Installation size | Max. static axial load capacity [N] | Inner Ø d1 | Inner Ø d2 | Height h1 | Height h2 | Weight [g] | Part No. |
|---|---|---|---|---|---|---|---|
| 515 | 300 | 24.0 | 31.0 | 21.0 | 9.8 | 22.8 | BB-515B-B180-ES |
| 515 | 300 | 24.0 | 31.0 | 21.0 | 9.8 | 22.8 | BB-515B-F182-ES |
| 522 | 500 | 36.0 | 45.0 | 30.0 | 9.8 | 66.6 | BB-522B-B180-ES |

### Technical data and dimensions [mm]

| Installation size | Max. static axial load capacity [N] | Inner Ø d1 | Inner Ø d2 | Height h1 | Height h2 | Weight [g] | Part No. |
|---|---|---|---|---|---|---|---|
| 515B | 300 | 24.0 | 31.0 | 21.0 | 9.8 | 11.19 | BB-515B-B180-ES |
| 522B | 500 | 36.0 | 45.0 | 30.0 | 9.8 | 29.97 | BB-522B-B180-ES |

**Recommended tolerances**
We recommend the following hole tolerances for the ball transfer units housings:
**Installation size**
**515B** ▶ 24H7
**522B** ▶ 36H7
In general: The height tolerance of all installation sizes is ± 0.2mm

**Order example:**
**BB-515B-B180-ES** = Polymer ball transfer unit with housing material xirodur® B180 and stainless steel balls

**Available from stock**



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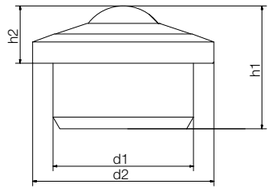
# xiros® polymer ball transfer units | Product range New

## Polymer ball transfer unit, sliding version

- High load carrying capacity with low friction
- For high impact loads




### Order key

| Type | Material |
|---|---|
| BB-522 G - J3B - ES | |

Ball bearing | Type | Sliding version | Housing material | Ball material

**Ball material**
**ES**: Stainless steel

### Technical data and dimensions [mm]

| Installation size | Max. static load capacity axial [N] | Inner Ø d1 | Inner Ø d2 | Height h1 | Height h2 | Weight [g] | Part No. |
|---|---|---|---|---|---|---|---|
| 515G | 700 | 24.0 | 31.0 | 21.0 | 9.8 | 23.02 | BB-515G-J3B-ES New |
| 522G | 1,470 | 36.0 | 45.0 | 30.0 | 9.8 | 69.43 | BB-522G-J3B-ES New |

**Recommended tolerances**
We recommend the following hole tolerances for the ball transfer units housings:
**Installation size**
**515G** ▶ 24H7
**522G** ▶ 36H7
In general: The height tolerance of all installation sizes is ± 0.2mm

**Order example:**
**BB-515G-J3B-ES** = Polymer ball transfer unit with sliding insert, housing material J3B and stainless steel balls

**Available from stock**
**Delivery time: approx. 3-4 weeks**

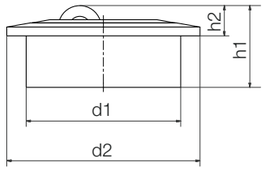
# xiros® polymer ball transfer units | Product range

## Axial polymer ball transfer unit made from xirodur® B180

For high loads (HH)

With soft roller made from xirodur® D180 (HS)

- Self-aligning
- Low installation height




BB-515A-B180-HH/-HS
BB-522A-B180-HH/-HS

### Order key

| Type | Material |
|---|---|

**BB-522 A -B180-HS**

| Ball bearing | Type | Axial ball transfer unit | Housing material | Ball material |
|---|---|---|---|---|

Options:
Ball material
HH (Hard roller) : xirodur® B180
HS (Soft roller) : xirodur® D180

### Technical data and dimensions [mm]

| Installation size | Max. stat. load capacity axial [N] | Inner Ø d1 | Inner Ø d2 | Height h1 | Height h2 | Weight HS [g] | Weight HH [g] | Part No. |
|---|---|---|---|---|---|---|---|---|
| 515A | 150 | 24.0 | 31.0 | 14.3 | 5.3 | 9.96 | 9.99 | BB-515A-B180-☐ |
| 522A | 300 | 36.0 | 45.0 | 19.2 | 7.05 | 24.69 | 24.71 | BB-522A-B180-☐ |

**Order example:**
BB-515A-B180-HS = axial polymer ball transfer unit with housing material xirodur® B180 and xirodur® D180 soft roller

Available from stock



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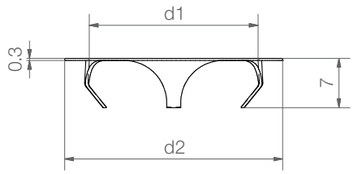
xiros®

# xiros® polymer ball transfer units | Product range

## Accessories: Clamping rings for xiros® polymer ball transfer units

xiros® clamping rings made of stainless steel offer the possibility to install xiros® polymer ball transfer units in another orientation than the standard horizontal position. Easy assembly and disassembly.




### Dimensions [mm]

| For ball transfer unit | d1 | d2 | Housing hole | Weight [g] | Part No. |
|---|---|---|---|---|---|
| BB-515-B180-POM/BB-515A-B180-☐ | 24 | 31 | 25H7 | 0.91 | BB-515-CR |
| BB-522-B180-POM/BB-522A-B180-☐ | 36 | 41 | 37H7 | 1.61 | BB-522-CR |

Available from stock

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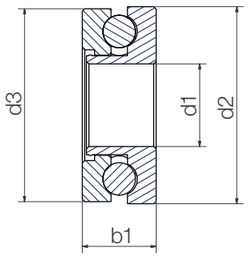
# xiros® thrust bearings | Product range

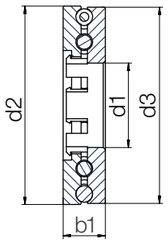
## Races made from xirodur® B180

**Single or double row, with stainless steel or glass balls**

- Higher load capacity
- Good resistance to chemicals and seawater
- Suitable for contact with food
- Operating temperature: from -40°C up to +80°C




Single row bearing




Double row bearing

### Order key

| Type | Material |
|---|---|
| BB-51104- | B180-ES-D |

- Ball bearing
- Dimensions according to DIN 711
- Race/cage material: B180
- Ball material: ES
- Double row: D

Options:

**Ball material**
ES : Stainless steel
GL : Glass

**Suffix**
Blank : Single row
D : Double row

### Technical data

| Installation size | Single row | Double row | load capacity stat. [N] | load capacity dyn. [N] | Limit speed [rpm] | Weight B180/ES [g] | Weight B180/GL [g] |
|---|---|---|---|---|---|---|---|
| 51100 | ● | – | 200 | 250 | 600 | 6.61 | 4.12 |
| 51104 | ● | – | 650 | 810 | 460 | 13.72 | 8.19 |
| 51104 | – | ● | 975 | 1,215 | 460 | 18.96 | 8.99 |

### Dimensions [mm]

| Inner Ø d1 | OuterØ d2 | OuterØ d3 | Width b1 | Cage/ball material combination B180/ES | Cage/ball material combination B180/GL | Part No. |
|---|---|---|---|---|---|---|
| 10 | 24 | 23.5 | 9 | ● | ● | BB-51100-B180-□ |
| 20 | 35 | 34.5 | 10 | ● | ● | BB-51104-B180-□ |
| 20 | 47 | 46.5 | 10 | ● | ● | BB-51104-B180-□-D |

**Order example:**
BB-51100-B180-ES = Thrust bearing with race material xirodur® B180, xirodur® B180 cage and stainless steel balls

**Available from stock**



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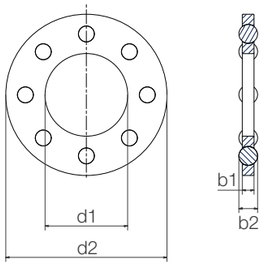
# xiros® thrust washers | Product range

## Races made from xirodur® B180

**Standard type with stainless steel or glass balls**

**Slim Line design with stainless steel or glass balls**

- Good resistance to chemicals and seawater
- Suitable for contact with food
- Operating temperature: from -40°C up to +80°C




### Order key

| Type | Material |
|---|---|
| BB-6004TW- | B180-ES-SL |

- Ball bearing
- Dimensions according to DIN 625-1
- Axial thrust washer
- Race material: B180
- Ball material: ES
- Slim Line: SL

Options:

**Ball material**
ES : Stainless steel
GL : Glass

**Suffix**
Blank : Standard
SL : Slim Line

### Technical data (related to metallic shafts)

| Installation size | Slim Line | Recommended load capacity stat. [N] | Recommended load capacity dyn. [N] | Limit speed [rpm] | Weight B180/ES [g] | Weight B180/GL [g] |
|---|---|---|---|---|---|---|
| 626 | – | 341 | 425 | 2,000 | 1.35 | 0.81 |
| 608 | – | 482 | 600 | 1,700 | 2.25 | 1.17 |
| 6000 | – | 610 | 782 | 1,500 | 3.04 | 1.50 |
| 6000 | ● | 405 | 500 | 1,500 | 2.09 | 1.20 |
| 6004 | – | 975 | 1,215 | 700 | 6.87 | 4.41 |
| 6006 | – | 925 | 1,540 | 600 | 5.51 | 3.39 |
| 6006 | ● | 520 | 680 | 600 | 4.23 | 2.98 |

### Dimensions [mm]

| Inner Ø d1 | OuterØ d2 | Width b1 | Width b2 | Race/ball material combination B180/ES | Race/ball material combination B180/GL | Part No. |
|---|---|---|---|---|---|---|
| 6.2 | 18.8 | 2.0 | 3.18 | ● | ● | BB-626TW-B180-□ |
| 8.2 | 21.8 | 2.0 | 3.97 | ● | ● | BB-608TW-B180-□ |
| 10.2 | 25.8 | 2.0 | 4.76 | ● | ● | BB-6000TW-B180-□ |
| 10.2 | 25.8 | 2.0 | 3.97 | ● | ● | BB-6000TW-B180-□-SL |
| 21.0 | 41.0 | 3.0 | 4.76 | ● | ● | BB-6004TW-B180-□ |
| 29.9 | 45.5 | 2.5 | 4.76 | ● | ● | BB-6006TW-B180-□ |
| 29.9 | 45.5 | 2.5 | 3.97 | ● | ● | BB-6006TW-B180-□-SL |

**Order example:**
BB-6000TW-B180-ES-SL = Thrust washer with race material xirodur® B180, stainless steel balls, Slim Line version

**Available from stock**

# xiros® slewing ring ball bearings | Product range

## Races made from xirodur® B180 - for absorbing higher axial loads

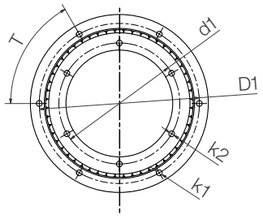
Stainless steel balls

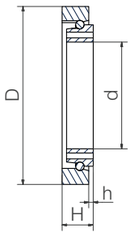
Glass balls

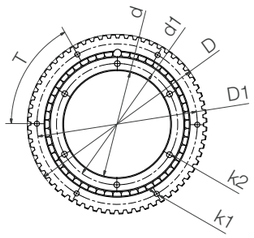
Stainless steel balls, with cage made from xirodur® B180

Stainless steel balls, with outer drive ring (HDT5)

- Good resistance to chemicals and seawater
- Suitable for contact with food
- Operating temperature: from -40°C up to +80°C




### Order key

| Type | Type | Material |
|---|---|---|
| BB- | RT - 01 - | 60 - ES |
| Ball bearing | Slewing ring ball bearings | Type 01 | Inner Ø | Ball material |

### Order key with cage

| Type | Type | Material |
|---|---|---|
| BB- | RT - 01 - | 60 - B180 - 30 - ES |
| Ball bearing | Slewing ring ball bearings | Type 01 | Inner Ø | Race material | Cage material | Ball material |

Options:

Cage material

30 : xirodur® B180

Ball material

ES : Stainless steel

GL : Glass

### Technical data

| Type | Load capacity axial [N] | Load capacity radial [N] | Max. permissible tilting moment [Nm] | Limit speed [rpm] | Weight ES [g] | Weight GL [g] |
|---|---|---|---|---|---|---|
| **Standard with stainless steel or glass balls** | | | | | | |
| RT-01-60 | 800 | 720 | 40 | 350 | 111.68 | 98.3 |
| RT-01-100 | 1,600 | 1,250 | 60 | 250 | 283.85 | 243.76 |
| **Slewing ring ball bearings with xirodur® B180 cage** | | | | | | |
| RT-01–40-B180-30 | 500 | 260 | 30 | 900 | 63.46 | – |
| RT-01-60-B180-30 | 600 | 300 | 30 | 800 | 101.22 | – |
| RT-01-100-B180-30 | 1,020 | 760 | 55 | 650 | 248.90 | – |
| RT-01-150-B180-30 | 2,000 | 1,100 | 75 | 600 | 398.00 | – |
| **Slewing ring ball bearings with outer drive ring and cage** | | | | | | |
| RT-01-60HDT5-B180 | 800 | 720 | 40 | 320 | 97.00 | – |
| **Slewing ring ball bearings with outer drive ring without cage** | | | | | | |
| RT-01-60HDT5-B180-30 | 600 | 300 | 30 | 800 | 109.00 | – |

### Dimensions [mm]

| d | d1 | D | D1 | h | H | T | k1 | k2 | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| **Standard with stainless steel or glass balls** | | | | | | | | | |
| 60 | 68 | 100 | 90 | 2.5 | 17.5 | 60 | 3.3 | 3.3 | BB-RT-01-60-☐ |
| 100 | 110 | 160 | 150 | 5.0 | 20.0 | 60 | 5.2 | 5.2 | BB-RT-01-100-☐ |
| **Slewing ring ball bearings with xirodur® B180 cage** | | | | | | | | | |
| 40 | 47 | 80 | 72 | 2.5 | 15 | 60 | 3.3 | 3.2 | BB-RT-01-40-B180-30-ES |
| 60 | 68 | 100 | 90 | 2.5 | 17.5 | 60 | 3.3 | 3.3 | BB-RT-01-60-B180-30-ES |
| 100 | 110 | 160 | 150 | 5.0 | 20 | 60 | 5.2 | 5.2 | BB-RT-01-100-B180-30-ES |
| 150 | 163 | 210 | 197 | 5.0 | 22.5 | 60 | 6.1 | 6.1 | BB-RT-01-150-B180-30-ES |
| **Slewing ring ball bearings with outer drive ring and cage** | | | | | | | | | |
| 60 | 68 | 100 | 90 | 2.5 | 17.5 | 60 | M3 | 3.3 | BB-RT-01-60HDT5-B180-30-ES |
| **Slewing ring ball bearings with outer drive ring without cage** | | | | | | | | | |
| 60 | 68 | 100 | 90 | 2.5 | 17.5 | 60 | M3 | 3.3 | BB-RT-01-60HDT5-B180-30-ES |

**Order example:**

BB-RT-01-60-ES = Standard-Standard slewing ring ball bearing with race material xirodur® B180 and stainless steel balls

BB-RT-01-60-B180-30-ES = Slewing ring ball bearing with race material xirodur® B180, xirodur® B180 cage and stainless steel balls

BB-RT-01-60-HDT5-B180-ES = Slewing ring ball bearing with race material xirodur® B180, outer drive ring and stainless steel balls

BB-RT-01-60-HDT5-B180-30-ES = Slewing ring ball bearing with race material xirodur® B180, outer drive ring, xirodur® B180 cage and stainless steel balls

Available from stock

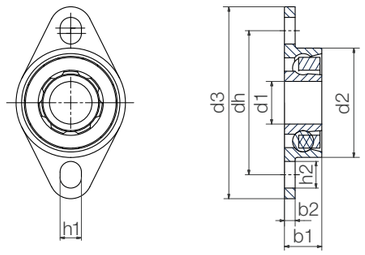
# xiros® fixed flange ball bearings | Product range

## FDA-compliant, fixed version

FDA

**xirodur® B180 cage**
**Stainless steel balls**

- For less precise holding fixtures




### Order key

| Type | Material |
|---|---|

**BB-FL-608-B180-30-ES**

| Ball bearing | Fixed flange ball bearings | Dimensions according to DIN 625-1 | Housing material | Cage material | Ball material |
|---|---|---|---|---|---|

**Cage material**
**30** : xirodur® B180
**Ball material**
**ES** : Stainless steel

### Technical data

| Installation size | Radial load capacity stat. [N] | dyn. [N] | Limit speed [rpm] | Weight B180/ES [g] |
|---|---|---|---|---|
| **626** | 60 | 62 | 3,200 | 2.89 |
| **608** | 80 | 92 | 2,200 | 3.65 |
| **6000** | 110 | 130 | 2,200 | 6.49 |
| **6001** | 130 | 147 | 2,000 | 7.68 |
| **6003** | 160 | 220 | 1,600 | 11.13 |
| **6004** | 250 | 320 | 1,400 | 25.06 |

### Dimensions [mm]

| d1 | d2 | d3 | b1 | b2 | DH | h1 | h2 | Part No. |
|---|---|---|---|---|---|---|---|---|
| 6 | 19 | 33.5 | 6 | 2 | 25 | 3 | 4.5 | **BB-FL-626-B180-30-ES** |
| 8 | 20.7 | 35.8 | 7 | 2 | 26.8 | 4 | 5 | **BB-FL-608-B180-30-ES** |
| 10 | 26 | 41 | 8 | 2 | 32 | 4 | 5 | **BB-FL-6000-B180-30-ES** |
| 12 | 28 | 44 | 8 | 2 | 35 | 4 | 5 | **BB-FL-6001-B180-30-ES** |
| 17 | 35 | 54 | 10 | 2.5 | 44 | 4 | 6 | **BB-FL-6003-B180-30-ES** |
| 20 | 42 | 84 | 12 | 4 | 63 | 8 | 12 | **BB-FL-6004-B180-30-ES** |

**Order example:**
**BB-FL-608-B180-30-ES** = Fixed flange ball bearing with housing material xirodur® B180, xirodur® B180 cage and stainless steel balls

**Available from stock**



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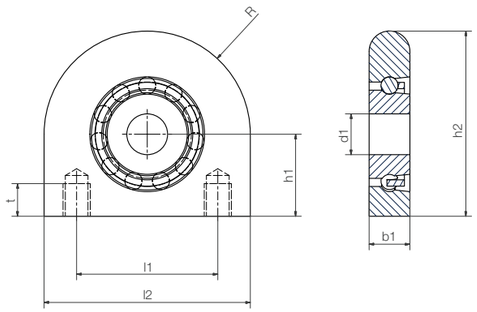
# xiros® pillow block ball bearings | Product range

## FDA-compliant, fixed version - 1:1 interchangeable



FDA

- Easy to assemble with integrated thread
- Suitable for contact with food
- Operating temperature: from -40°C up to +80°C




### Order key

| Type | Material |
|---|---|

**ESTM-BB1-F 25-B180-ES-SL**

| Pillow block bearing | Ball bearing, single row | Fixed version | Inner Ø | Race/cage material | Ball material | Slim Line |
|---|---|---|---|---|---|---|

**Race/cage material**
**B180** : xirodur® B180
**Ball material**
**ES** : Stainless steel

### Technical data

| Type | Load capacity, radial stat. [N] | dyn. [N] | Limit speed [rpm] | Weight ES [g] |
|---|---|---|---|---|
| **ESTM-F15** | 270 | 350 | 1,250 | 86 |
| **ESTM-F17** | 280 | 360 | 1,200 | 85 |
| **ESTM-F20** | 290 | 370 | 1,150 | 83 |
| **ESTM-F25** | 480 | 520 | 850 | 119 |
| **ESTM-F30** | 500 | 550 | 840 | 163 |

### Dimensions [mm]

| d1 | b1 | h1 | h2 | l1 | l2 | R | Thread | t | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| 15 | 15 | 30.2 | 68.2 | 52 | 76 | 38 | M10 | 12 | **ESTM-BB1-F15-B180-ES-SL** |
| 17 | 15 | 30.2 | 68.2 | 52 | 76 | 38 | M10 | 12 | **ESTM-BB1-F17-B180-ES-SL** |
| 20 | 15 | 30.2 | 68.2 | 52 | 76 | 38 | M10 | 12 | **ESTM-BB1-F20-B180-ES-SL** |
| 25 | 17 | 36.5 | 78.5 | 56 | 84 | 42 | M10 | 15 | **ESTM-BB1-F25-B180-ES-SL** |
| 30 | 19 | 42.9 | 89.9 | 66 | 94 | 47 | M14 | 18 | **ESTM-BB1-F30-B180-ES-SL** |

**Order example:**
**ESTM-BB1-F25-B180-ES-SL** = pillow block ball bearing with race material xirodur® B180, xirodur® B180 cage, stainless steel balls, Slim Line version

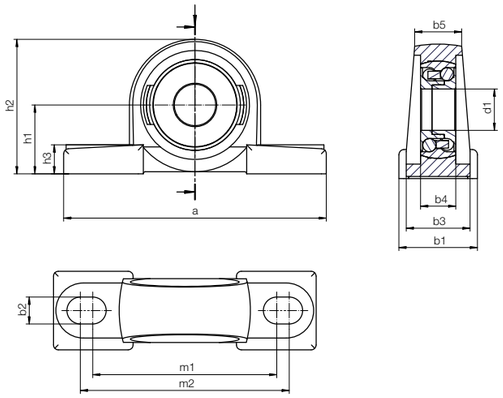
**Available from stock**

EN 09/2023

# xiros® pillow block ball bearings | Product range New

## Pillow block ball bearings with metal housings

- 1:1 interchangeable with common UC pillow block bearing
- Twice the load capacity compared to single-row xiros® ball bearings
- Protected from dirt
- No lubrication




### Order key

| Type | | | Material | |
|---|---|---|---|---|
| P204 | BB | 6004 | B180 | ES |
| Pillow block bearing | Ball bearing | Installation size | Race/cage material | Ball material |

**Race/cage material**
**B180** : xirodur® B180
**Ball material**
**ES** : Stainless steel

### Technical data

| Type | Load capacity [N] | Limit speed [rpm] | Weight ES [g] |
|---|---|---|---|
| **P204** | 310 | 1,200 | 524 |
| **P205** | 400 | 1,000 | 598 |
| **P206** | 480 | 850 | 1,082 |

### Technical data

| d1 | b1 | b2 | b3 | b4 | b5 | h1 | a | h2 | h3 | m1 | m2 | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 38 | 13 | 30.9 | 17 | 22.7 | 33.3 | 127 | 65 | 14 | 89 | 101 | **P204-BB-6004-B180-ES** New |
| 25 | 38 | 13 | 30.9 | 17 | 23.3 | 36.5 | 140 | 71 | 15 | 99 | 111 | **P205-BB-6005-B180-ES** New |
| 30 | 48 | 17 | 39.0 | 19 | 25.3 | 42.9 | 165 | 83 | 17 | 117 | 125 | **P206-BB-6006-B180-ES** New |

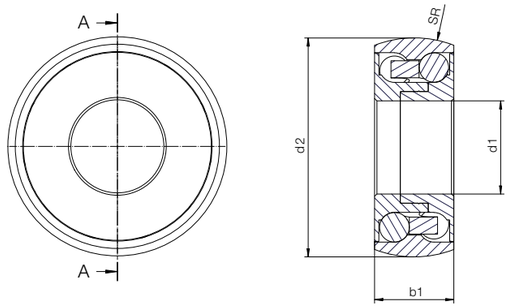


xiros®

# xiros® pillow block ball bearings | Product range New

## Spherical insert bearing for pillow block ball bearing

- One-to-one replacement of metallic ball bearings in common UC pillow block sizes
- Smooth operation
- Operating temperature: from -40°C up to +80°C




### Order key

| Type | | | | Material | | |
|---|---|---|---|---|---|---|
| BB | 6004 | SO | | B180 | ES | D |
| Ball bearing | Installation size | Spherical | | Race/cage material | Ball material | Double row |

**Race/cage material**
**B180** : xirodur® B180
**Ball material**
**ES** : Stainless steel

### Technical data

| d1 | d2 | b1 | Load capacity [N] | Limit speed [rpm] | Weight ES [g] | Part No. |
|---|---|---|---|---|---|---|
| 20 | 65 | 38 | 310 | 1,200 | 44.9 | **BB-6004SO-B180-ES-D** New |
| 25 | 71 | 38 | 400 | 1,000 | 58.4 | **BB-6005SO-B180-ES-D** New |
| 30 | 83 | 48 | 480 | 850 | 82.3 | **BB-6006SO-B180-ES-D** New |

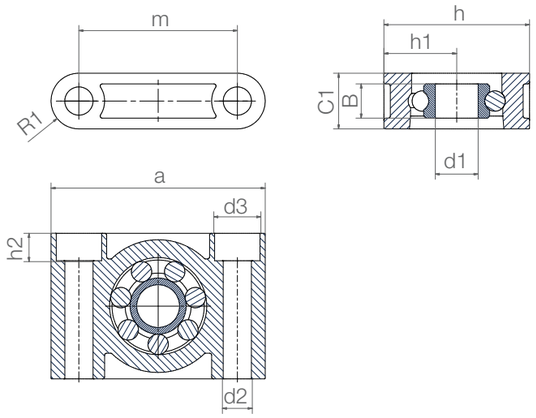
# xiros® pillow block ball bearings | Product range

## Fixed version

igumid® G housing, PA cage, stainless steel balls

igumid® G housing, PA cage, glass balls

- Good resistance to chemicals and seawater
- Smooth operation
- Operating temperature: from -40°C up to +80°C




### Order key

| Type | Material |
|---|---|

**ESTM-BB1- F 06-B180-ES**

| Pillow block bearing | Ball bearing, single row | Fixed version | Inner Ø | Race material | Ball material |
|---|---|---|---|---|---|

**Race material**
**B180** : xirodur® B180
**Options:**
**Ball material**
**ES** : Stainless steel
**GL** : Glass

### Technical data

| Type | Radial load capacity stat. [N] | Radial load capacity dyn. [N] | Limit speed [rpm] | Weight B180/ES [g] | Weight B180/GL [g] |
|---|---|---|---|---|---|
| ESTM-F06 | 41 | 43 | 2,600 | 7.7 | 6.7 |
| ESTM-F10 | 110 | 130 | 1,900 | 20.2 | 18.2 |
| ESTM-F20 | 250 | 320 | 1,150 | 54.1 | 47.7 |

### Dimensions [mm]

| Inner Ø d1 | Hole Ø d2 | d3 | h | h1 | h2 | a | m | C1 | B | R1 | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | 5.5 | – | 22 | 11 | – | 36 | 26 | 10 | 6 | 5.0 | ESTM-BB1-F06-B180-☐ |
| 10 | 6.6 | 10.6 | 34 | 17 | 6.6 | 50 | 37 | 13 | 8 | 6.5 | ESTM-BB1-F10-B180-☐ |
| 20 | 9.0 | 14.0 | 48 | 24 | 8.6 | 72 | 54 | 18 | 12 | 9.0 | ESTM-BB1-F20-B180-☐ |

**Order example:**
**ESTM-BB1-F06-B180-ES** = Pillow block bearing, fixed version, made from xirodur® B180 with stainless steel balls

**Available from stock**



EN 09/2023

xiros®

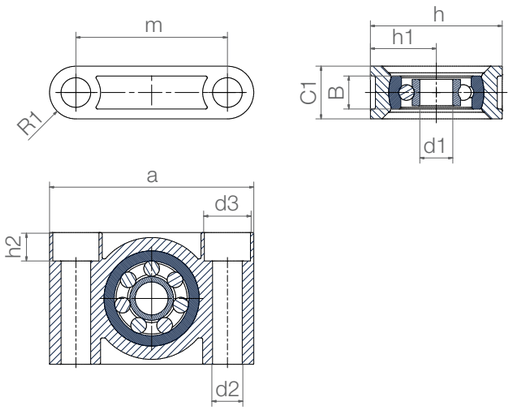
# xiros® pillow block ball bearings | Product range

## Pivoting version

igumid® G housing, PA cage, stainless steel balls

igumid® G housing, PA cage, Glass balls

- Self-aligning
- Good resistance to chemicals and seawater
- Spherical ball bearing
- Operating temperature: from -40°C up to +80°C




### Order key

| Type | Material |
|---|---|

**ESTM-BB1- P 08-B180-ES**

| Pillow block bearing | Ball bearing, single row | Fixed version | Inner Ø | Race material | Ball material |
|---|---|---|---|---|---|

**Race material**
**B180** : xirodur® B180
**Options:**
**Ball material**
**ES** : Stainless steel
**GL** : Glass

### Technical data

| Type | Radial load capacity stat. [N] | Radial load capacity dyn. [N] | Limit speed [rpm] | Weight B180/ES [g] | Weight B180/GL [g] |
|---|---|---|---|---|---|
| ESTM-P08 | 80 | 94 | 2,200 | 19.6 | 18.2 |
| ESTM-P10 | 110 | 130 | 1,900 | 32.9 | 30.3 |
| ESTM-P12 | 130 | 147 | 1,750 | 54.8 | 52.8 |

### Dimensions [mm]

| Inner Ø d1 | Hole Ø d2 | d3 | h | h1 | h2 | a | m | C1 | B | R1 | Max. pivot angle | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 6.6 | 10.6 | 34 | 17 | 6.4 | 50 | 37 | 13 | 8 | 6.5 | ±5° | ESTM-BB1-P08-B180-☐ |
| 10 | 9.0 | 14.0 | 40 | 20 | 8.6 | 62 | 46 | 16 | 10 | 8 | ±5° | ESTM-BB1-P10-B180-☐ |
| 12 | 9.0 | 14.0 | 48 | 24 | 8.6 | 72 | 54 | 18 | 12 | 9 | ±5° | ESTM-BB1-P12-B180-☐ |

**Order example:**
**ESTM-BB1-P08-B180-ES** = Pillow block bearing, pivoting version, made from xirodur® B180 with stainless steel balls

**Available from stock**

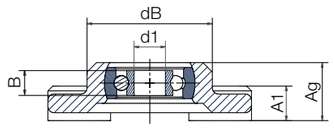
EN 09/2023

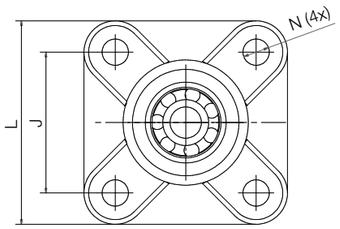
# xiros® 4-hole fixed flange ball bearings | Product range

## Pivoting version

igumid® G housing,
PA cage,
stainless steel balls or
glass balls

- Compensation of misalignment




### Order key

| Type | | | | Material | |
|---|---|---|---|---|---|
| Four-hole fixed flange ball bearings | Ball bearing, single row | Pivoting version | Inner Ø | Race material | Ball material |
| EFSM- | BB1- | P | 08- | B180- | ES |

**Race material**
**B180** : xirodur® B180
**Options:**
**Ball material**
**ES** : Stainless steel
**GL** : Glass

### Technical data

| Type | Radial load capacity stat. [N] | Radial load capacity dyn. [N] | Limit speed [rpm] | Weight B180/ES [g] | Weight B180/GL [g] |
|---|---|---|---|---|---|
| EFSM-P08 | 80 | 94 | 2,200 | 25.2 | 24.0 |
| EFSM-P10 | 110 | 130 | 1,900 | 48.8 | 46.2 |
| EFSM-P12 | 130 | 147 | 1,750 | 80.0 | 77.7 |

### Dimensions [mm]

| Inner Ø d1 | dB d2 | L | J | A1 | Ag | B | N | Max. pivot angle | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| 8 | 32.5 | 52 | 36 | 9 | 15.5 | 7 | 6.4 | ±20° | EFSM-BB1-P08-B180-☐ |
| 10 | 40.0 | 65 | 45 | 11 | 18.5 | 8 | 8.4 | ±20° | EFSM-BB1-P10-B180-☐ |
| 12 | 48.5 | 74 | 52 | 14 | 23.5 | 8 | 8.4 | ±20° | EFSM-BB1-P12-B180-☐ |

**Order example:**
**EFSM-BB1-P08-B180-ES** = 4-hole fixed flange ball bearing with race material xirodur® B180 and stainless steel balls

**Available from stock**



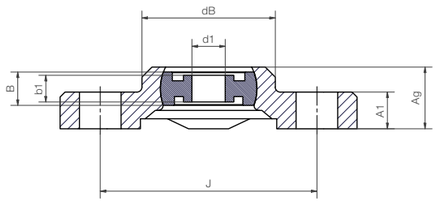
EN 09/2023

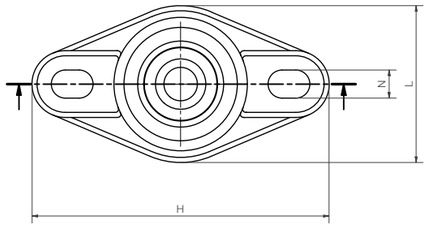
# xiros® 2-hole fixed flange ball bearings | Product range

## Pivoting version

igumid® G housing,
PA cage,
stainless steel balls or
glass balls

- Trouble-free readjustment thanks to elongated holes
- Precise alignment of the bearings not necessary




### Order key

| Type | | | | Material | |
|---|---|---|---|---|---|
| 2-hole fixed flange ball bearings | Ball bearing, single row | Pivoting version | Inner Ø | Race material | Ball material |
| EFOM- | BB1- | P | 08- | B180- | ES |

**Race material**
**B180** : xirodur® B180
**Options:**
**Ball material**
**ES** : Stainless steel
**GL** : Glass

### Technical data

| Type | Radial load capacity stat. [N] | Radial load capacity dyn. [N] | Limit speed [rpm] | Weight B180/ES [g] | Weight B180/GL [g] |
|---|---|---|---|---|---|
| EFOM-P08 | 80 | 94 | 2,200 | 19.5 | 18.1 |
| EFOM-P10 | 110 | 130 | 1,900 | 36.3 | 33.6 |
| EFOM-P12 | 130 | 147 | 1,750 | 61.7 | 59.4 |

### Dimensions [mm]

| Inner Ø d1 | b1 | dB d2 | H | L | J | A1 | Ag | B | N | Max. pivot angle | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 7 | 32.0 | 72.6 | 38 | 53 | 10 | 15.25 | 8.0 | 6.4x10.1 | ±20° | EFOM-BB1-P08-B180-☐ |
| 10 | 8 | 40.0 | 89.1 | 47 | 65 | 11 | 18.5 | 9.9 | 8.4x12.5 | ±20° | EFOM-BB1-P10-B180-☐ |
| 12 | 9 | 48.5 | 101.0 | 58.5 | 75 | 14 | 23.5 | 12.0 | 8.4x12.5 | ±20° | EFOM-BB1-P12-B180-☐ |

**Order example:**
**EFOM-BB1-P08-B180-ES** = 2-hole fixed flange ball bearing with race material xirodur® B180 and stainless steel balls

**Available from stock**

EN 09/2023

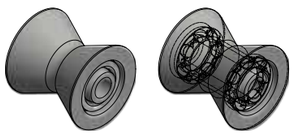
# xiros® customised special parts

## Customised and cost-effective

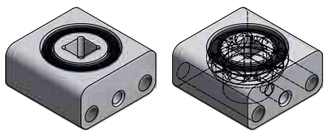
### Infinite possibilities

Customised & cost-effective: your polymer ball bearing in the required design, material and quantity.

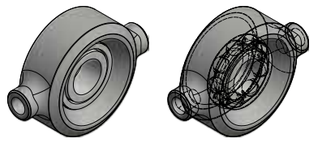
- Machined or injection-moulded
- Square or round
- With flange, outer toothed profile, etc.
- In customised quantity
- Lubrication and maintenance-free
- Cost-effective
- Select from different xirodur® materials



Guide roller for rubber seals in car production: which replaced a special unavailable roller



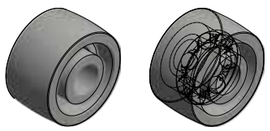
Non-magnetic for drylin® linear guide: design of a ball bearing with square housing, square shaft and glass balls



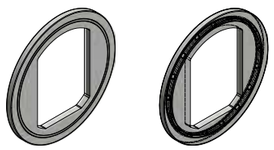
Consumer product camera stabilizer: injection-moulded special parts to improve engineered solution

Blood pumps (peristaltic): lubrication-free and longer service life

Gear-driven shaft: one-part solution for full integration

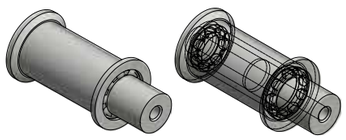


Roller for belt guide in ATM cash machines



Tension rollers in rubber production

Bearings for cash machines: lubrication-free and integration of 2 rubber rings for better paper grip



Tension roller for tape deflection: one-part solution (6 in 1)



xiros® customised special parts

### In 3 steps to your individual ball bearing

**1. Submit an enquiry**
Fill in the form with some basic information: quantity and requirement, such as food contact, dirt resistance, etc. and upload the CAD files, for example.

After one of our specialists has contacted you for a consultation, you will receive a quotation.

**2. We manufacture your required component**
Upon order, igus® starts the production process.

**3. You receive your product**
Your required component is ready to ship and delivered quickly.

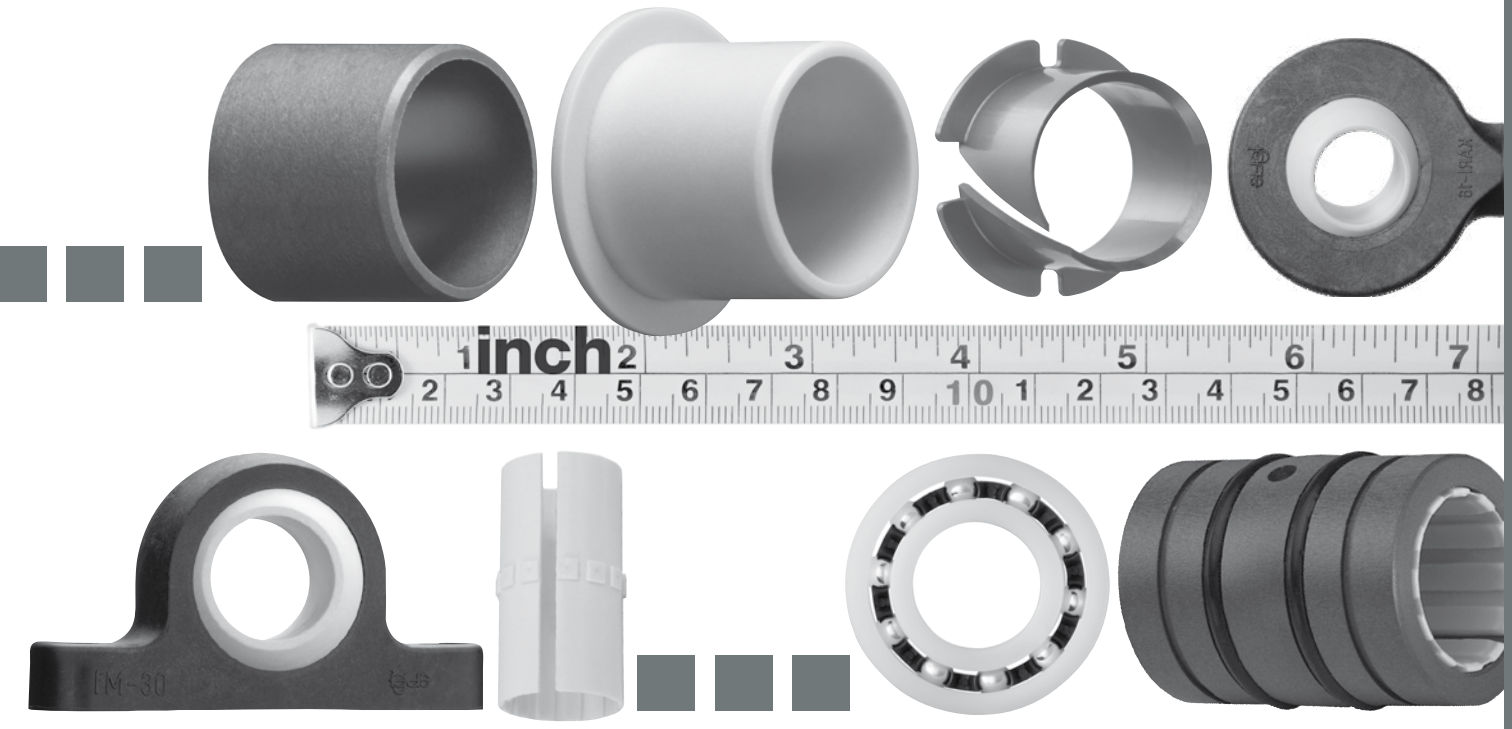
Submit an enquiry:
▶ **www.igus.eu/xiros-specialparts**

### igus® test laboratory

The material combinations included in xiros® ball bearings are subjected to a large number of load and speed tests in the igus® test laboratory. The test results can be used to determine service life and suitability for both standard and special parts.

# inch...

## Catalogue products in imperial sizes




# ...plastics

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## iglidur® plain bearings


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| **iglidur® A350,** the endurance runner at higher temperatures in the food sector | ▶ Page 1102 |
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## xiros® - polymer ball bearings


| | |
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| **xirodur® B180** | ▶ Page 1164 |


# More products online

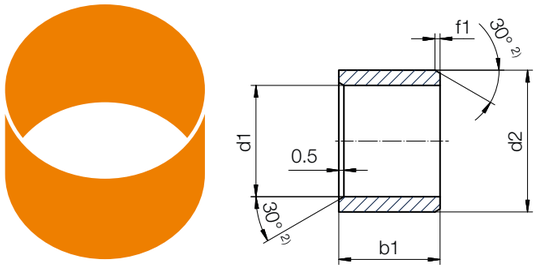
## drylin® R - shaft guides

**drylin® R - shaft guides**

**drylin® R - adapters**

# Imperial product range | Standards overview

## Sleeve bearings (form S)




[2] Thickness < 1mm: chamfer = 20°

Chamfer in relation to d1

| d1 [inch] | f [inch] |
|---|---|
| Ø .040 - .236 | .012 |
| Ø .236 - .472 | .019 |
| Ø .472 - 1.18 | .031 |
| Ø > 1.18 | .047 |

### Order key

| Type | Dimensions [inch] |
|---|---|
| ☐ S I | -02 03-03 |

iglidur® material | Form S | Imperial dimension | Inner Ø d1 | Outer Ø d2 | Length b1

Choose the suitable material and dimensions for your application

Dimensions according to ISO 3547-1

# Imperial product range | Standards overview

## Absolute flexibility: all iglidur® standard sizes available from stock

| | |
|---|---|
| G | The classic all-rounder |
| P210 | Specialist for pivoting, rolling applications and more |
| P | The cost-effective outdoor all-rounder |
| J | The versatile endurance runner |
| W(300) | The classic endurance runner up to 30MPa |
| J3 | The new endurance runner: specialist for pivoting applications and pulsating loads |
| J350 | Endurance runner with high dimensional stability at high temperature |
| X | The chemical and temperature specialist |
| Z | Long service life under extreme conditions |
| H1 | Endurance runner with high media resistance |
| H370 | Long service life under water |
| A181 | The universal bearing for food contact |
| A350 | The endurance runner at higher temperatures in the food sector |
| A500 | The media and temperature specialist in the food sector |
| Q2 | The durable heavy-duty bearing |

### Dimensions [inch]

| d1 | d2 | b1 | Part No. |
|---|---|---|---|
| 1/8 | 3/16 | 3/16 | ☐SI-0203-03 |
| 3/16 | 1/4 | 1/4 | ☐SI-0304-04 |
| 3/16 | 1/4 | 3/8 | ☐SI-0304-06 |
| 1/4 | 5/16 | 3/8 | ☐SI-0405-06 |
| 1/4 | 5/16 | 1/2 | ☐SI-0405-08 |
| 5/16 | 3/8 | 1/4 | ☐SI-0506-04 |
| 5/16 | 3/8 | 3/8 | ☐SI-0506-06 |
| 5/16 | 3/8 | 1/2 | ☐SI-0506-08 |
| 3/8 | 15/32 | 1/4 | ☐SI-0607-04 |
| 3/8 | 15/32 | 3/8 | ☐SI-0607-06 |
| 3/8 | 15/32 | 1/2 | ☐SI-0607-08 |
| 3/8 | 15/32 | 5/8 | ☐SI-0607-10 |
| 3/8 | 15/32 | 3/4 | ☐SI-0607-12 |

| d1 | d2 | b1 | Part No. |
|---|---|---|---|
| 7/16 | 17/32 | 1/2 | ☐SI-0708-08 |
| 7/16 | 17/32 | 3/7 | ☐SI-0708-12 |
| 1/2 | 19/32 | 1/4 | ☐SI-0809-04 |
| 1/2 | 19/32 | 3/8 | ☐SI-0809-06 |
| 1/2 | 19/32 | 1/2 | ☐SI-0809-08 |
| 1/2 | 19/32 | 5/8 | ☐SI-0809-10 |
| 1/2 | 19/32 | 3/4 | ☐SI-0809-12 |
| 1/2 | 19/32 | 1 | ☐SI-0809-16 |
| 9/16 | 21/32 | 1/2 | ☐SI-0910-08 |
| 9/16 | 21/32 | 5/8 | ☐SI-0910-10 |
| 9/16 | 21/32 | 3/4 | ☐SI-0910-12 |
| 5/8 | 23/32 | 1/2 | ☐SI-1011-08 |
| 5/8 | 23/32 | 3/4 | ☐SI-1011-12 |

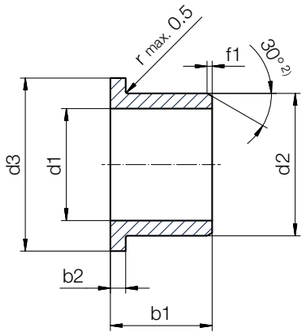
### Dimensions [inch]

| d1 | d2 | b1 | Part No. |
|---|---|---|---|
| 5/8 | 23/32 | 1 | ☐SI-1011-16 |
| 3/4 | 7/8 | 1/2 | ☐SI-1214-08 |
| 3/4 | 7/8 | 3/4 | ☐SI-1214-12 |
| 3/4 | 7/8 | 1 | ☐SI-1214-16 |
| 7/8 | 1 | 1/2 | ☐SI-1416-08 |
| 7/8 | 1 | 3/4 | ☐SI-1416-12 |
| 7/8 | 1 | 1 | ☐SI-1416-16 |
| 1 | 1 1/8 | 1/2 | ☐SI-1618-08 |
| 1 | 1 1/8 | 3/4 | ☐SI-1618-12 |
| 1 | 1 1/8 | 1 | ☐SI-1618-16 |
| 1 1/8 | 1 9/32 | 3/4 | ☐SI-1820-12 |
| 1 1/8 | 1 9/32 | 1 | ☐SI-1820-16 |
| 1 1/8 | 1 9/32 | 1 1/4 | ☐SI-1820-20 |

| d1 | d2 | b1 | Part No. |
|---|---|---|---|
| 1 1/4 | 1 13/32 | 3/4 | ☐SI-2022-12 |
| 1 1/4 | 1 13/32 | 1 | ☐SI-2022-16 |
| 1 1/4 | 1 13/32 | 1 1/4 | ☐SI-2022-20 |
| 1 1/2 | 1 21/32 | 1 | ☐SI-2426-16 |
| 1 1/2 | 1 21/32 | 1 1/2 | ☐SI-2426-24 |
| 1 5/8 | 1 25/32 | 1 | ☐SI-2629-16 |
| 1 5/8 | 1 25/32 | 1 1/2 | ☐SI-2629-24 |
| 1 3/4 | 1 15/16 | 1 | ☐SI-2831-16 |
| 1 3/4 | 1 15/16 | 2 | ☐SI-2831-32 |
| 1 7/8 | 2 1/16 | 1 | ☐SI-3033-16 |
| 1 7/8 | 2 1/16 | 2 | ☐SI-3033-32 |
| 2 | 2 3/16 | 1 | ☐SI-3235-16 |
| 2 | 2 3/16 | 2 | ☐SI-3235-32 |

# Imperial product range | Standards overview

## Flange bearings (form F)




[2] Thickness < 1mm: chamfer = 20°

Chamfer in relation to d1

| d1 [inch] | f [inch] |
|---|---|
| Ø .040 - .236 | .012 |
| Ø .236 – .472 | .019 |
| Ø .472 - 1.18 | .031 |
| Ø > 1.18 | .047 |

### Order key

| Type | Dimensions [inch] |
|---|---|
| ☐ F I | -02 03-03 |

iglidur® material | Form F | Imperial dimension | Inner Ø d1 | Outer Ø d2 | Length b1

Choose the suitable material and dimensions for your application

Dimensions according to ISO 3547-1

# Imperial product range | Standards overview

## Absolute flexibility: all iglidur® standard sizes available from stock

| | |
|---|---|
| G | The classic all-rounder |
| P210 | Specialist for pivoting, rolling applications and more |
| P | The cost-effective outdoor all-rounder |
| J | The versatile endurance runner |
| W(300) | The classic endurance runner up to 30MPa |
| J3 | The new endurance runner: specialist for pivoting applications and pulsating loads |
| J350 | Endurance runner with high dimensional stability at high temperature |
| X | The chemical and temperature specialist |
| Z | Long service life under extreme conditions |
| H1 | Endurance runner with high media resistance |
| H370 | Long service life under water |
| A181 | The universal bearing for food contact |
| A350 | The endurance runner at higher temperatures in the food sector |
| A500 | The media and temperature specialist in the food sector |
| Q2 | The durable heavy-duty bearing |



### Dimensions [inch]

| d1 | d2 | b1 | d3 | b2 h13 | Part No. |
|---|---|---|---|---|---|
| 1/8 | 3/16 | 3/16 | .312 | .0320 | ☐FI-0203-03 |
| 3/16 | 1/4 | 1/4 | .375 | .0320 | ☐FI-0304-04 |
| 1/4 | 5/16 | 3/8 | .430 | .0320 | ☐FI-0405-06 |
| 1/4 | 5/16 | 1/2 | .500 | .0320 | ☐FI-0405-08 |
| 5/16 | 3/8 | 1/4 | .500 | .0320 | ☐FI-0506-04 |
| 5/16 | 3/8 | 3/8 | .500 | .0320 | ☐FI-0506-06 |
| 5/16 | 3/8 | 1/2 | .500 | .0320 | ☐FI-0506-08 |
| 3/8 | 15/32 | 1/4 | .687 | .0460 | ☐FI-0607-04 |
| 3/8 | 15/32 | 3/8 | .687 | .0460 | ☐FI-0607-06 |
| 3/8 | 15/32 | 1/2 | .687 | .0460 | ☐FI-0607-08 |
| 3/8 | 15/32 | 3/4 | .687 | .0460 | ☐FI-0607-12 |
| 7/16 | 17/32 | 1/2 | .750 | .0460 | ☐FI-0708-08 |
| 1/2 | 19/32 | 1/4 | .875 | .0460 | ☐FI-0809-04 |
| 1/2 | 19/32 | 3/8 | .875 | .0460 | ☐FI-0809-06 |
| 1/2 | 19/32 | 1/2 | .875 | .0460 | ☐FI-0809-08 |
| 1/2 | 19/32 | 3/4 | .875 | .0460 | ☐FI-0809-12 |
| 1/2 | 19/32 | 1 | .875 | .0460 | ☐FI-0809-16 |
| 5/8 | 23/32 | 1/2 | .937 | .0460 | ☐FI-1011-08 |

### Dimensions [inch]

| d1 | d2 | b1 | d3 | b2 h13 | Part No. |
|---|---|---|---|---|---|
| 5/8 | 23/32 | 3/4 | .937 | .0460 | ☐FI-1011-12 |
| 5/8 | 23/32 | 1 | .937 | .0460 | ☐FI-1011-16 |
| 3/4 | 7/8 | 1/2 | 1,125 | .0620 | ☐FI-1214-08 |
| 3/4 | 7/8 | 3/4 | 1,125 | .0620 | ☐FI-1214-12 |
| 3/4 | 7/8 | 1 | 1,125 | .0620 | ☐FI-1214-16 |
| 7/8 | 1 | 1/2 | 1,250 | .0620 | ☐FI-1416-08 |
| 7/8 | 1 | 3/4 | 1,250 | .0620 | ☐FI-1416-12 |
| 7/8 | 1 | 1 | 1,250 | .0620 | ☐FI-1416-16 |
| 1 | 1 1/8 | 1/2 | 1.375 | .0620 | ☐FI-1618-08 |
| 1 | 1 1/8 | 3/4 | 1.375 | .0620 | ☐FI-1618-12 |
| 1 | 1 1/8 | 1 | 1.375 | .0620 | ☐FI-1618-16 |
| 1 1/4 | 1 13/32 | 1 | 1.687 | .0780 | ☐FI-2022-16 |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.687 | .0780 | ☐FI-2022-20 |
| 1 1/2 | 1 21/32 | 1 | 2,000 | .0780 | ☐FI-2426-16 |
| 1 1/2 | 1 21/32 | 1 1/2 | 2,000 | .0780 | ☐FI-2426-24 |
| 1 3/4 | 1 15/16 | 2 | 2.375 | .0930 | ☐FI-2831-32 |
| 2 | 2 3/16 | 2 | 2.625 | .0930 | ☐FI-3235-32 |

## Sleeve bearings (form S)

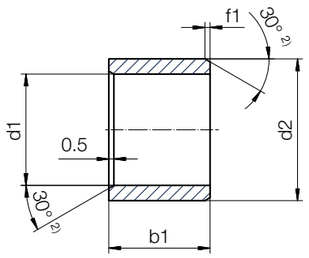



Image exemplary

**Chamfer in relation to d1**

| d1 [inch] | f [inch] |
|---|---|
| Ø 0.040 - 0.236 | 0.012 |
| Ø 0.236 - 0.472 | 0.019 |
| Ø 0.472 - 1.18 | 0.031 |
| Ø > 1.18 | 0.047 |

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| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .1269 | .1251 | .1878 | .1873 | .1243 | .1236 | **A181SI-0203-03** |
| 3/16 | 1/4 | 1/4 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **A181SI-0304-04** |
| 3/16 | 1/4 | 3/8 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **A181SI-0304-06** |
| 1/4 | 5/16 | 3/8 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **A181SI-0405-06** |
| 1/4 | 5/16 | 1/2 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **A181SI-0405-08** |
| 5/16 | 3/8 | 1/4 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **A181SI-0506-04** |
| 5/16 | 3/8 | 3/8 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **A181SI-0506-06** |
| 5/16 | 3/8 | 1/2 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **A181SI-0506-08** |
| 3/8 | 15/32 | 1/4 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **A181SI-0607-04** |
| 3/8 | 15/32 | 3/8 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **A181SI-0607-06** |
| 3/8 | 15/32 | 1/2 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **A181SI-0607-08** |
| 3/8 | 15/32 | 5/8 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **A181SI-0607-10** |
| 3/8 | 15/32 | 3/4 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **A181SI-0607-12** |
| 7/16 | 17/32 | 1/2 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **A181SI-0708-08** |
| 7/16 | 17/32 | 3/4 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **A181SI-0708-12** |
| 1/2 | 19/32 | 1/4 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **A181SI-0809-04** |
| 1/2 | 19/32 | 3/8 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **A181SI-0809-06** |
| 1/2 | 19/32 | 1/2 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **A181SI-0809-08** |
| 1/2 | 19/32 | 5/8 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **A181SI-0809-10** |
| 1/2 | 19/32 | 3/4 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **A181SI-0809-12** |
| 1/2 | 19/32 | 1 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **A181SI-0809-16** |
| 9/16 | 21/32 | 1/2 | .5655 | .5627 | .6566 | .6559 | .5615 | .5605 | **A181SI-0910-08** |
| 9/16 | 21/32 | 5/8 | .5655 | .5627 | .6566 | .6559 | .5615 | .5605 | **A181SI-0910-10** |
| 9/16 | 21/32 | 3/4 | .5655 | .5627 | .6566 | .6559 | .5615 | .5605 | **A181SI-0910-12** |
| 5/8 | 23/32 | 1/2 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **A181SI-1011-08** |
| 5/8 | 23/32 | 3/4 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **A181SI-1011-12** |
| 5/8 | 23/32 | 1 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **A181SI-1011-16** |
| 3/4 | 7/8 | 1/2 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **A181SI-1214-08** |
| 3/4 | 7/8 | 3/4 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **A181SI-1214-12** |
| 3/4 | 7/8 | 1 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **A181SI-1214-16** |
| 7/8 | 1 | 1/2 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **A181SI-1416-08** |

[3] After press-fit. Testing methods ▶ Page 61





| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 7/8 | 1 | 3/4 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **A181SI-1416-12** |
| 7/8 | 1 | 1 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **A181SI-1416-16** |
| 1 | 1 1/8 | 1/2 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **A181SI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **A181SI-1618-12** |
| 1 | 1 1/8 | 1 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **A181SI-1618-16** |
| 1 1/8 | 1 9/32 | 3/4 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **A181SI-1820-12** |
| 1 1/8 | 1 9/32 | 1 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **A181SI-1820-16** |
| 1 1/8 | 1 9/32 | 1 1/4 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **A181SI-1820-20** |
| 1 1/4 | 1 13/32 | 3/4 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **A181SI-2022-12** |
| 1 1/4 | 1 13/32 | 1 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **A181SI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **A181SI-2022-20** |
| 1 1/2 | 1 21/32 | 1 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **A181SI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **A181SI-2426-24** |
| 1 5/8 | 1 25/32 | 1 | 1.6297 | 1.6258 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **A181SI-2629-16** |
| 1 5/8 | 1 25/32 | 1 1/2 | 1.6297 | 1.6258 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **A181SI-2629-24** |
| 1 3/4 | 1 15/16 | 1 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **A181SI-2831-16** |
| 1 3/4 | 1 15/16 | 2 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **A181SI-2831-32** |
| 1 7/8 | 2 1/16 | 1 | 1.8796 | 1.8757 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **A181SI-3033-16** |
| 1 7/8 | 2 1/16 | 2 | 1.8796 | 1.8757 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **A181SI-3033-32** |
| 2 | 2 3/16 | 1 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **A181SI-3235-16** |
| 2 | 2 3/16 | 2 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **A181SI-3235-32** |

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| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 1/8 | 1/4 | 1/4 | .1280 | .1262 | .2515 | .2510 | .1250 | .1241 | **ASI-0204-04** |
| 3/16 | 5/16 | 1/4 | .1905 | .1887 | .3140 | .3135 | .1875 | .1866 | **ASI-0305-04** |
| 1/4 | 3/8 | 1/4 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **ASI-0406-04** |
| 1/4 | 3/8 | 3/8 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **ASI-0406-06** |
| 1/4 | 3/8 | 1/2 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **ASI-0406-08** |
| 5/16 | 15/32 | 1/2 | .3164 | .3141 | .4390 | .4385 | .3125 | .3116 | **ASI-0507-08** |
| 3/8 | 1/2 | 1/4 | .3789 | .3766 | .5015 | .5010 | .3750 | .3741 | **ASI-0608-04** |
| 3/8 | 1/2 | 1/2 | .3789 | .3766 | .5015 | .5010 | .3750 | .3741 | **ASI-0608-08** |
| 1/2 | 5/8 | 1/2 | .5047 | .5020 | .6260 | .6250 | .5000 | .4990 | **ASI-0810-08** |
| 1/2 | 5/8 | 3/4 | .5047 | .5020 | .6260 | .6250 | .5000 | .4990 | **ASI-0810-12** |
| 5/8 | 13/16 | 5/16 | .6297 | .6270 | .8135 | .8125 | .6250 | .6240 | **ASI-1013-05** |
| 5/8 | 13/16 | 3/4 | .6297 | .6270 | .8135 | .8125 | .6250 | .6240 | **ASI-1013-12** |
| 3/4 | 1 | 3/4 | .7559 | .7525 | 1.0010 | 1.0000 | .7500 | .7490 | **ASI-1216-12** |
| 3/4 | 1 | 1 | .7559 | .7525 | 1.0010 | 1.0000 | .7500 | .7490 | **ASI-1216-16** |
| 7/8 | 1 1/8 | 1 | .8809 | .8775 | 1.1260 | 1.1250 | .8750 | .8740 | **ASI-1418-16** |
| 1 | 1 9/32 | 3/4 | 1.0059 | 1.0025 | 1.2510 | 1.2500 | 1.0000 | .9990 | **ASI-1620-12** |
| 1 | 1 9/32 | 1 | 1.0059 | 1.0025 | 1.2510 | 1.2500 | 1.0000 | .9990 | **ASI-1620-16** |
| 1 1/4 | 1 17/32 | 1 | 1.2600 | 1.2531 | 1.5005 | 1.4995 | 1.2500 | 1.249 | **ASI-2024-16** |
| 1 1/2 | 1 3/4 | 1 1/2 | 1.5100 | 1.5032 | 1.7505 | 1.7495 | 1.5000 | 1.499 | **ASI-2428-24** |

[3] After press-fit. Testing methods ▶ Page 61

## iglidur® A350

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| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .1266 | .1247 | .1878 | .1873 | .1243 | .1236 | **A350SI-0203-03** |
| 3/16 | 1/4 | 1/4 | .1888 | .1869 | .2503 | .2497 | .1865 | .1858 | **A350SI-0304-04** |
| 3/16 | 1/4 | 3/8 | .1888 | .1869 | .2503 | .2497 | .1865 | .1858 | **A350SI-0304-06** |
| 1/4 | 5/16 | 3/8 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **A350SI-0405-06** |
| 1/4 | 5/16 | 1/2 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **A350SI-0405-08** |
| 5/16 | 3/8 | 1/4 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **A350SI-0506-04** |
| 5/16 | 3/8 | 3/8 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **A350SI-0506-06** |
| 5/16 | 3/8 | 1/2 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **A350SI-0506-08** |
| 3/8 | 15/32 | 1/4 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **A350SI-0607-04** |
| 3/8 | 15/32 | 3/8 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **A350SI-0607-06** |
| 3/8 | 15/32 | 1/2 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **A350SI-0607-08** |
| 3/8 | 15/32 | 5/8 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **A350SI-0607-10** |
| 3/8 | 15/32 | 3/4 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **A350SI-0607-12** |
| 7/16 | 17/32 | 1/2 | .4399 | .4371 | .5316 | .5309 | .4365 | .4355 | **A350SI-0708-08** |
| 7/16 | 17/32 | 3/4 | .4399 | .4371 | .5316 | .5309 | .4365 | .4355 | **A350SI-0708-12** |
| 1/2 | 19/32 | 1/4 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **A350SI-0809-04** |
| 1/2 | 19/32 | 3/8 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **A350SI-0809-06** |
| 1/2 | 19/32 | 1/2 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **A350SI-0809-08** |
| 1/2 | 19/32 | 5/8 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **A350SI-0809-10** |
| 1/2 | 19/32 | 3/4 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **A350SI-0809-12** |
| 1/2 | 19/32 | 1 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **A350SI-0809-16** |
| 9/16 | 21/32 | 1/2 | .5649 | .5620 | .6566 | .6559 | .5615 | .5605 | **A350SI-0910-08** |
| 9/16 | 21/32 | 5/8 | .5649 | .5620 | .6566 | .6559 | .5615 | .5605 | **A350SI-0910-10** |
| 9/16 | 21/32 | 3/4 | .5649 | .5620 | .6566 | .6559 | .5615 | .5605 | **A350SI-0910-12** |
| 5/8 | 23/32 | 1/2 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **A350SI-1011-08** |
| 5/8 | 23/32 | 3/4 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **A350SI-1011-12** |
| 5/8 | 23/32 | 1 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **A350SI-1011-16** |
| 3/4 | 7/8 | 1/2 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **A350SI-1214-08** |
| 3/4 | 7/8 | 3/4 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **A350SI-1214-12** |
| 3/4 | 7/8 | 1 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **A350SI-1214-16** |
| 7/8 | 1 | 1/2 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **A350SI-1416-08** |
| 7/8 | 1 | 3/4 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **A350SI-1416-12** |
| 7/8 | 1 | 1 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **A350SI-1416-16** |
| 1 | 1 1/8 | 1/2 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **A350SI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **A350SI-1618-12** |
| 1 | 1 1/8 | 1 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **A350SI-1618-16** |
| 1 1/8 | 1 9/32 | 3/4 | 1.1279 | 1.1246 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **A350SI-1820-12** |
| 1 1/8 | 1 9/32 | 1 | 1.1279 | 1.1246 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **A350SI-1820-16** |
| 1 1/8 | 1 9/32 | 1 1/4 | 1.1279 | 1.1246 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **A350SI-1820-20** |
| 1 1/4 | 1 13/32 | 3/4 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **A350SI-2022-12** |
| 1 1/4 | 1 13/32 | 1 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **A350SI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **A350SI-2022-20** |
| 1 1/2 | 1 21/32 | 1 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **A350SI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **A350SI-2426-24** |

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| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 1 5/8 | 1 25/32 | 1 | 1.6287 | 1.6248 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **A350SI-2629-16** |
| 1 5/8 | 1 25/32 | 1 1/2 | 1.6287 | 1.6248 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **A350SI-2629-24** |
| 1 3/4 | 1 15/16 | 1 | 1.7536 | 1.7497 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **A350SI-2831-16** |
| 1 3/4 | 1 15/16 | 2 | 1.7536 | 1.7497 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **A350SI-2831-32** |
| 1 7/8 | 2 1/16 | 1 | 1.8747 | 1.8786 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **A350SI-3033-16** |
| 1 7/8 | 2 1/16 | 2 | 1.8747 | 1.8786 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **A350SI-3033-32** |
| 2 | 2 3/16 | 1 | 2.0040 | 1.9993 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **A350SI-3235-16** |
| 2 | 2 3/16 | 2 | 2.0040 | 1.9993 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **A350SI-3235-32** |

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| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .1266 | .1247 | .1878 | .1873 | .1243 | .1236 | **A500SI-0203-03** |
| 3/16 | 1/4 | 1/4 | .1888 | .1869 | .2503 | .2497 | .1865 | .1858 | **A500SI-0304-04** |
| 3/16 | 1/4 | 3/8 | .1888 | .1869 | .2503 | .2497 | .1865 | .1858 | **A500SI-0304-06** |
| 1/4 | 5/16 | 3/8 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **A500SI-0405-06** |
| 1/4 | 5/16 | 1/2 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **A500SI-0405-08** |
| 5/16 | 3/8 | 1/4 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **A500SI-0506-04** |
| 5/16 | 3/8 | 3/8 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **A500SI-0506-06** |
| 5/16 | 3/8 | 1/2 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **A500SI-0506-08** |
| 3/8 | 15/32 | 1/4 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **A500SI-0607-04** |
| 3/8 | 15/32 | 3/8 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **A500SI-0607-06** |
| 3/8 | 15/32 | 1/2 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **A500SI-0607-08** |
| 3/8 | 15/32 | 5/8 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **A500SI-0607-10** |
| 3/8 | 15/32 | 3/4 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **A500SI-0607-12** |
| 7/16 | 17/32 | 1/2 | .4399 | .4371 | .5316 | .5309 | .4365 | .4355 | **A500SI-0708-08** |
| 7/16 | 17/32 | 3/4 | .4399 | .4371 | .5316 | .5309 | .4365 | .4355 | **A500SI-0708-12** |
| 1/2 | 19/32 | 1/4 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **A500SI-0809-04** |
| 1/2 | 19/32 | 3/8 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **A500SI-0809-06** |
| 1/2 | 19/32 | 1/2 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **A500SI-0809-08** |
| 1/2 | 19/32 | 5/8 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **A500SI-0809-10** |
| 1/2 | 19/32 | 3/4 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **A500SI-0809-12** |
| 1/2 | 19/32 | 1 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **A500SI-0809-16** |
| 9/16 | 21/32 | 1/2 | .5649 | .5620 | .6566 | .6559 | .5615 | .5605 | **A500SI-0910-08** |
| 9/16 | 21/32 | 5/8 | .5649 | .5620 | .6566 | .6559 | .5615 | .5605 | **A500SI-0910-10** |
| 9/16 | 21/32 | 3/4 | .5649 | .5620 | .6566 | .6559 | .5615 | .5605 | **A500SI-0910-12** |
| 5/8 | 23/32 | 1/2 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **A500SI-1011-08** |
| 5/8 | 23/32 | 3/4 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **A500SI-1011-12** |
| 5/8 | 23/32 | 1 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **A500SI-1011-16** |
| 3/4 | 7/8 | 1/2 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **A500SI-1214-08** |
| 3/4 | 7/8 | 3/4 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **A500SI-1214-12** |
| 3/4 | 7/8 | 1 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **A500SI-1214-16** |
| 7/8 | 1 | 1/2 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **A500SI-1416-08** |
| 7/8 | 1 | 3/4 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **A500SI-1416-12** |
| 7/8 | 1 | 1 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **A500SI-1416-16** |

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| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 1 | 1 1/8 | 1/2 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **A500SI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **A500SI-1618-12** |
| 1 | 1 1/8 | 1 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **A500SI-1618-16** |
| 1 1/8 | 1 9/32 | 3/4 | 1.1279 | 1.1246 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **A500SI-1820-12** |
| 1 1/8 | 1 9/32 | 1 | 1.1279 | 1.1246 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **A500SI-1820-16** |
| 1 1/8 | 1 9/32 | 1 1/4 | 1.1279 | 1.1246 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **A500SI-1820-20** |
| 1 1/4 | 1 13/32 | 3/4 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **A500SI-2022-12** |
| 1 1/4 | 1 13/32 | 1 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **A500SI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **A500SI-2022-20** |
| 1 1/2 | 1 21/32 | 1 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **A500SI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **A500SI-2426-24** |
| 1 5/8 | 1 25/32 | 1 | 1.6287 | 1.6248 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **A500SI-2629-16** |
| 1 5/8 | 1 25/32 | 1 1/2 | 1.6287 | 1.6248 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **A500SI-2629-24** |
| 1 3/4 | 1 15/16 | 1 | 1.7536 | 1.7497 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **A500SI-2831-16** |
| 1 3/4 | 1 15/16 | 2 | 1.7536 | 1.7497 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **A500SI-2831-32** |
| 1 7/8 | 2 1/16 | 1 | 1.8747 | 1.8786 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **A500SI-3033-16** |
| 1 7/8 | 2 1/16 | 2 | 1.8747 | 1.8786 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **A500SI-3033-32** |
| 2 | 2 3/16 | 1 | 2.0040 | 1.9993 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **A500SI-3235-16** |
| 2 | 2 3/16 | 2 | 2.0040 | 1.9993 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **A500SI-3235-32** |

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| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .1269 | .1251 | .1878 | .1873 | .1243 | .1236 | **GSI-0203-03** |
| 1/8 | 3/16 | 1/4 | .1269 | .1251 | .1878 | .1873 | .1243 | .1236 | **GSI-0203-04** |
| 1/8 | 3/16 | 3/8 | .1269 | .1251 | .1878 | .1873 | .1243 | .1236 | **GSI-0203-06** |
| 3/16 | 1/4 | 1/4 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **GSI-0304-04** |
| 3/16 | 1/4 | 3/8 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **GSI-0304-06** |
| 3/16 | 1/4 | 1/2 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **GSI-0304-08** |
| 1/4 | 5/16 | 1/4 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **GSI-0405-04** |
| 1/4 | 5/16 | 5/16 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **GSI-0405-05** |
| 1/4 | 5/16 | 3/8 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **GSI-0405-06** |
| 1/4 | 5/16 | 1/2 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **GSI-0405-08** |
| 1/4 | 5/16 | 5/8 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **GSI-0405-10** |
| 1/4 | 5/16 | 3/4 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **GSI-0405-12** |
| 5/16 | 3/8 | 1/4 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **GSI-0506-04** |
| 5/16 | 3/8 | 3/8 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **GSI-0506-06** |
| 5/16 | 3/8 | 1/2 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **GSI-0506-08** |
| 5/16 | 3/8 | 3/4 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **GSI-0506-12** |
| 3/8 | 15/32 | 1/4 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **GSI-0607-04** |
| 3/8 | 15/32 | 3/8 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **GSI-0607-06** |
| 3/8 | 15/32 | 1/2 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **GSI-0607-08** |
| 3/8 | 15/32 | 5/8 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **GSI-0607-10** |
| 3/8 | 15/32 | 3/4 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **GSI-0607-12** |
| 3/8 | 8/16 | 1/2 | .3783 | .3760 | .5015 | .5010 | .3750 | .3741 | **GSI-0608-08** |

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| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 3/8 | 8/16 | 3/4 | .3773 | .3750 | .5015 | .5010 | .3750 | .3741 | **GSI-0608-12** |
| 7/16 | 17/32 | 1/4 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **GSI-0708-04** |
| 7/16 | 17/32 | 1/2 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **GSI-0708-08** |
| 7/16 | 17/32 | 3/4 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **GSI-0708-12** |
| 1/2 | 19/32 | 3/16 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **GSI-0809-03** |
| 1/2 | 19/32 | 1/4 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **GSI-0809-04** |
| 1/2 | 19/32 | 3/8 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **GSI-0809-06** |
| 1/2 | 19/32 | 1/2 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **GSI-0809-08** |
| 1/2 | 19/32 | 5/8 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **GSI-0809-10** |
| 1/2 | 19/32 | 3/4 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **GSI-0809-12** |
| 1/2 | 19/32 | 1 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **GSI-0809-16** |
| 1/2 | 5/8 | 3/4 | .5040 | .5013 | .6260 | .6250 | .5000 | .4990 | **GSI-0810-12** |
| 9/16 | 21/32 | 3/8 | .5655 | .5627 | .6566 | .6559 | .5615 | .5605 | **GSI-0910-06** |
| 9/16 | 21/32 | 1/2 | .5655 | .5627 | .6566 | .6559 | .5615 | .5605 | **GSI-0910-08** |
| 9/16 | 21/32 | 5/8 | .5655 | .5627 | .6566 | .6559 | .5615 | .5605 | **GSI-0910-10** |
| 9/16 | 21/32 | 3/4 | .5655 | .5627 | .6566 | .6559 | .5615 | .5605 | **GSI-0910-12** |
| 5/8 | 23/32 | 3/8 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **GSI-1011-06** |
| 5/8 | 23/32 | 1/2 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **GSI-1011-08** |
| 5/8 | 23/32 | 5/8 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **GSI-1011-10** |
| 5/8 | 23/32 | 3/4 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **GSI-1011-12** |
| 5/8 | 23/32 | 1 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **GSI-1011-16** |
| 5/8 | 23/32 | 1 1/4 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **GSI-1011-20** |
| 5/8 | 23/32 | 1 7/8 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **GSI-1011-30** |
| 5/8 | 3/4 | 1/2 | .6290 | .6263 | .7510 | .7500 | .6250 | .6240 | **GSI-1012-08** |
| 5/8 | 3/4 | 1 | .6290 | .6263 | .7510 | .7500 | .6250 | .6240 | **GSI-1012-16** |
| 11/16 | 25/32 | 7/8 | .6906 | .6879 | .7817 | .7809 | .6865 | .6855 | **GSI-1112-14** |
| 3/4 | 7/8 | 1/8 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **GSI-1214-02** |
| 3/4 | 7/8 | 3/8 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **GSI-1214-06** |
| 3/4 | 7/8 | 1/2 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **GSI-1214-08** |
| 3/4 | 7/8 | 3/4 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **GSI-1214-12** |
| 3/4 | 7/8 | 1 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **GSI-1214-16** |
| 3/4 | 7/8 | 1 1/4 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **GSI-1214-20** |
| 3/4 | 7/8 | 1 1/2 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **GSI-1214-24** |
| 7/8 | 1 | 3/8 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **GSI-1416-06** |
| 7/8 | 1 | 1/2 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **GSI-1416-08** |
| 7/8 | 1 | 5/8 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **GSI-1416-10** |
| 7/8 | 1 | 3/4 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **GSI-1416-12** |
| 7/8 | 1 | 1 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **GSI-1416-16** |
| 7/8 | 1 | 1 1/2 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **GSI-1416-24** |
| 1 | 1 1/8 | 1/2 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **GSI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **GSI-1618-12** |
| 1 | 1 1/8 | 1 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **GSI-1618-16** |
| 1 | 1 1/8 | 1 1/4 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **GSI-1618-20** |
| 1 | 1 1/8 | 1 1/2 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **GSI-1618-24** |
| 1 | 1 1/8 | 2 1/16 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **GSI-1618-33** |
| 1 1/8 | 1 9/32 | 3/4 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **GSI-1820-12** |

[3] After press-fit. Testing methods ▶ Page 61

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| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 1 1/8 | 1 9/32 | 1 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **GSI-1820-16** |
| 1 1/8 | 1 9/32 | 1 1/4 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **GSI-1820-20** |
| 1 1/8 | 1 9/32 | 1 1/2 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **GSI-1820-24** |
| 1 1/4 | 1 13/32 | 3/4 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **GSI-2022-12** |
| 1 1/4 | 1 13/32 | 7/8 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **GSI-2022-14** |
| 1 1/4 | 1 13/32 | 1 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **GSI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **GSI-2022-20** |
| 1 1/4 | 1 13/32 | 1 1/2 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **GSI-2022-24** |
| 1 3/8 | 1 17/32 | 1 | 1.3798 | 1.3758 | 1.5318 | 1.5308 | 1.3738 | 1.3722 | **GSI-2224-16** |
| 1 3/8 | 1 17/32 | 1 1/2 | 1.3798 | 1.3758 | 1.5318 | 1.5308 | 1.3738 | 1.3722 | **GSI-2224-24** |
| 1 3/8 | 1 17/32 | 1 5/8 | 1.3798 | 1.3758 | 1.5318 | 1.5308 | 1.3738 | 1.3722 | **GSI-2224-26** |
| 1 1/2 | 1 21/32 | 3/8 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **GSI-2426-06** |
| 1 1/2 | 1 21/32 | 7/16 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **GSI-2426-07** |
| 1 1/2 | 1 21/32 | 1/2 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **GSI-2426-08** |
| 1 1/2 | 1 21/32 | 3/4 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **GSI-2426-12** |
| 1 1/2 | 1 21/32 | 1 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **GSI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **GSI-2426-24** |
| 1 5/8 | 1 25/32 | 1 | 1.6297 | 1.6258 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **GSI-2629-16** |
| 1 5/8 | 1 25/32 | 1 1/4 | 1.6297 | 1.6258 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **GSI-2629-20** |
| 1 5/8 | 1 25/32 | 1 1/2 | 1.6297 | 1.6258 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **GSI-2629-24** |
| 1 3/4 | 1 15/16 | 1 | 1.7547 | 1.7505 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **GSI-2831-16** |
| 1 3/4 | 1 15/16 | 1 1/2 | 1.7547 | 1.7505 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **GSI-2831-24** |
| 1 3/4 | 1 15/16 | 2 | 1.7547 | 1.7505 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **GSI-2831-32** |
| 1 3/4 | 1 15/16 | 2 1/2 | 1.7547 | 1.7505 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **GSI-2831-40** |
| 1 3/4 | 1 15/16 | 3 | 1.7547 | 1.7505 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **GSI-2831-48** |
| 1 7/8 | 2 1/16 | 1 | 1.8796 | 1.8757 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **GSI-3033-16** |
| 1 7/8 | 2 1/16 | 2 | 1.8796 | 1.8757 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **GSI-3033-32** |
| 2 | 2 3/16 | 1 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **GSI-3235-16** |
| 2 | 2 3/16 | 1 1/2 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **GSI-3235-24** |
| 2 | 2 3/16 | 2 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **GSI-3235-32** |
| 2 1/4 | 2 7/16 | 2 | 2.2577 | 2.2531 | 2.4377 | 2.4365 | 2.2507 | 2.2489 | **GSI-3639-32** |
| 2 2/4 | 2 11/16 | 2 | 2.5082 | 2.5035 | 2.6881 | 2.6869 | 2.5000 | 2.4999 | **GSI-4043-32** |
| 2 3/4 | 2 15/16 | 2 | 2.7570 | 2.7523 | 2.9370 | 2.9358 | 2.7500 | 2.7490 | **GSI-4447-32** |
| 3 | 3 3/16 | 2 | 3.0070 | 3.0023 | 3.1870 | 3.1858 | 3.0000 | 2.9990 | **GSI-4851-32** |

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| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | h13 | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .1266 | .1247 | .1878 | .1873 | .1243 | .1236 | **H1SI-0203-03** |
| 3/16 | 1/4 | 1/4 | .1888 | .1869 | .2503 | .2497 | .1865 | .1858 | **H1SI-0304-04** |
| 3/16 | 1/4 | 3/8 | .1888 | .1869 | .2503 | .2497 | .1865 | .1858 | **H1SI-0304-06** |
| 1/4 | 5/16 | 3/8 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **H1SI-0405-06** |
| 1/4 | 5/16 | 1/2 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **H1SI-0405-08** |
| 5/16 | 3/8 | 1/4 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **H1SI-0506-04** |

[3] After press-fit. Testing methods ▶ Page 61





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Inch iglidur® form S

| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | h13 | max. | min. | max. | min. | max. | min. | |
| 5/16 | 3/8 | 3/8 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **H1SI-0506-06** |
| 5/16 | 3/8 | 1/2 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **H1SI-0506-08** |
| 3/8 | 15/32 | 1/4 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **H1SI-0607-04** |
| 3/8 | 15/32 | 3/8 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **H1SI-0607-06** |
| 3/8 | 15/32 | 1/2 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **H1SI-0607-08** |
| 3/8 | 15/32 | 5/8 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **H1SI-0607-10** |
| 3/8 | 15/32 | 3/4 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **H1SI-0607-12** |
| 7/16 | 17/32 | 1/2 | .4399 | .4371 | .5316 | .5309 | .4365 | .4355 | **H1SI-0708-08** |
| 7/16 | 17/32 | 3/4 | .4399 | .4371 | .5316 | .5309 | .4365 | .4355 | **H1SI-0708-12** |
| 1/2 | 19/32 | 1/4 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **H1SI-0809-04** |
| 1/2 | 19/32 | 3/8 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **H1SI-0809-06** |
| 1/2 | 19/32 | 1/2 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **H1SI-0809-08** |
| 1/2 | 19/32 | 5/8 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **H1SI-0809-10** |
| 1/2 | 19/32 | 3/4 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **H1SI-0809-12** |
| 1/2 | 19/32 | 1 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **H1SI-0809-16** |
| 9/16 | 21/32 | 1/2 | .5649 | .5620 | .6566 | .6559 | .5615 | .5605 | **H1SI-0910-08** |
| 9/16 | 21/32 | 5/8 | .5649 | .5620 | .6566 | .6559 | .5615 | .5605 | **H1SI-0910-10** |
| 9/16 | 21/32 | 3/4 | .5649 | .5620 | .6566 | .6559 | .5615 | .5605 | **H1SI-0910-12** |
| 5/8 | 23/32 | 1/2 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **H1SI-1011-08** |
| 5/8 | 23/32 | 3/4 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **H1SI-1011-12** |
| 5/8 | 23/32 | 1 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **H1SI-1011-16** |
| 3/4 | 7/8 | 1/2 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **H1SI-1214-08** |
| 3/4 | 7/8 | 3/4 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **H1SI-1214-12** |
| 3/4 | 7/8 | 1 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **H1SI-1214-16** |
| 7/8 | 1 | 1/2 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **H1SI-1416-08** |
| 7/8 | 1 | 3/4 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **H1SI-1416-12** |
| 7/8 | 1 | 1 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **H1SI-1416-16** |
| 1 | 1 1/8 | 1/2 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **H1SI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **H1SI-1618-12** |
| 1 | 1 1/8 | 1 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **H1SI-1618-16** |
| 1 1/8 | 1 9/32 | 3/4 | 1.1279 | 1.1246 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **H1SI-1820-12** |
| 1 1/8 | 1 9/32 | 1 | 1.1279 | 1.1246 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **H1SI-1820-16** |
| 1 1/8 | 1 9/32 | 1 1/4 | 1.1279 | 1.1246 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **H1SI-1820-20** |
| 1 1/4 | 1 13/32 | 3/4 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **H1SI-2022-12** |
| 1 1/4 | 1 13/32 | 1 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **H1SI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **H1SI-2022-20** |
| 1 1/2 | 1 21/32 | 1 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **H1SI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **H1SI-2426-24** |
| 1 5/8 | 1 25/32 | 1 | 1.6287 | 1.6248 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **H1SI-2629-16** |
| 1 5/8 | 1 25/32 | 1 1/2 | 1.6287 | 1.6248 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **H1SI-2629-24** |
| 1 3/4 | 1 15/16 | 1 | 1.7536 | 1.7497 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **H1SI-2831-16** |
| 1 3/4 | 1 15/16 | 2 | 1.7536 | 1.7497 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **H1SI-2831-32** |
| 1 7/8 | 2 1/16 | 1 | 1.8747 | 1.8786 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **H1SI-3033-16** |
| 1 7/8 | 2 1/16 | 2 | 1.8747 | 1.8786 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **H1SI-3033-32** |
| 2 | 2 3/16 | 1 | 2.0040 | 1.9993 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **H1SI-3235-16** |
| 2 | 2 3/16 | 2 | 2.0040 | 1.9993 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **H1SI-3235-32** |

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| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | h13 | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .1266 | .1247 | .1878 | .1873 | .1243 | .1236 | **H370SI-0203-03** |
| 3/16 | 1/4 | 1/4 | .1888 | .1869 | .2503 | .2497 | .1865 | .1858 | **H370SI-0304-04** |
| 3/16 | 1/4 | 3/8 | .1888 | .1869 | .2503 | .2497 | .1865 | .1858 | **H370SI-0304-06** |
| 1/4 | 5/16 | 1/4 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **H370SI-0405-04** |
| 1/4 | 5/16 | 3/8 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **H370SI-0405-06** |
| 1/4 | 5/16 | 1/2 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **H370SI-0405-08** |
| 5/16 | 3/8 | 1/4 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **H370SI-0506-04** |
| 5/16 | 3/8 | 3/8 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **H370SI-0506-06** |
| 5/16 | 3/8 | 1/2 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **H370SI-0506-08** |
| 3/8 | 15/32 | 1/4 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **H370SI-0607-04** |
| 3/8 | 15/32 | 3/8 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **H370SI-0607-06** |
| 3/8 | 15/32 | 1/2 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **H370SI-0607-08** |
| 3/8 | 15/32 | 5/8 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **H370SI-0607-10** |
| 3/8 | 15/32 | 3/4 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **H370SI-0607-12** |
| 7/16 | 17/32 | 1/2 | .4399 | .4371 | .5316 | .5309 | .4365 | .4355 | **H370SI-0708-08** |
| 7/16 | 17/32 | 3/4 | .4399 | .4371 | .5316 | .5309 | .4365 | .4355 | **H370SI-0708-12** |
| 1/2 | 19/32 | 1/4 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **H370SI-0809-04** |
| 1/2 | 19/32 | 3/8 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **H370SI-0809-06** |
| 1/2 | 19/32 | 1/2 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **H370SI-0809-08** |
| 1/2 | 19/32 | 5/8 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **H370SI-0809-10** |
| 1/2 | 19/32 | 3/4 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **H370SI-0809-12** |
| 1/2 | 19/32 | 1 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **H370SI-0809-16** |
| 9/16 | 21/32 | 1/2 | .5649 | .5620 | .6566 | .6559 | .5615 | .5605 | **H370SI-0910-08** |
| 9/16 | 21/32 | 5/8 | .5649 | .5620 | .6566 | .6559 | .5615 | .5605 | **H370SI-0910-10** |
| 9/16 | 21/32 | 3/4 | .5649 | .5620 | .6566 | .6559 | .5615 | .5605 | **H370SI-0910-12** |
| 5/8 | 23/32 | 1/2 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **H370SI-1011-08** |
| 5/8 | 23/32 | 3/4 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **H370SI-1011-12** |
| 5/8 | 23/32 | 1 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **H370SI-1011-16** |
| 3/4 | 7/8 | 1/2 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **H370SI-1214-08** |
| 3/4 | 7/8 | 3/4 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **H370SI-1214-12** |
| 3/4 | 7/8 | 1 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **H370SI-1214-16** |
| 7/8 | 1 | 1/2 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **H370SI-1416-08** |
| 7/8 | 1 | 3/4 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **H370SI-1416-12** |
| 7/8 | 1 | 1 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **H370SI-1416-16** |
| 1 | 1 1/8 | 1/2 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **H370SI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **H370SI-1618-12** |
| 1 | 1 1/8 | 1 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **H370SI-1618-16** |
| 1 1/8 | 1 9/32 | 3/4 | 1.1279 | 1.1246 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **H370SI-1820-12** |
| 1 1/8 | 1 9/32 | 1 | 1.1279 | 1.1246 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **H370SI-1820-16** |
| 1 1/8 | 1 9/32 | 1 1/4 | 1.1279 | 1.1246 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **H370SI-1820-20** |
| 1 1/4 | 1 13/32 | 3/4 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **H370SI-2022-12** |
| 1 1/4 | 1 13/32 | 1 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **H370SI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **H370SI-2022-20** |
| 1 1/2 | 1 21/32 | 1 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **H370SI-2426-16** |

[3] After press-fit. Testing methods ▶ Page 61



Imperial product range | iglidur® | Sleeve bearings

Inch iglidur® form S

| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | h13 | max. | min. | max. | min. | max. | min. | |
| 1 1/2 | 1 21/32 | 1 1/2 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **H370SI-2426-24** |
| 1 5/8 | 1 25/32 | 1 | 1.6287 | 1.6248 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **H370SI-2629-16** |
| 1 5/8 | 1 25/32 | 1 1/2 | 1.6287 | 1.6248 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **H370SI-2629-24** |
| 1 3/4 | 1 15/16 | 1 | 1.7536 | 1.7497 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **H370SI-2831-16** |
| 1 3/4 | 1 15/16 | 2 | 1.7536 | 1.7497 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **H370SI-2831-32** |
| 1 7/8 | 2 1/16 | 1 | 1.8747 | 1.8786 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **H370SI-3033-16** |
| 1 7/8 | 2 1/16 | 2 | 1.8747 | 1.8786 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **H370SI-3033-32** |
| 2 | 2 3/16 | 1 | 2.0040 | 1.9993 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **H370SI-3235-16** |
| 2 | 2 3/16 | 2 | 2.0040 | 1.9993 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **H370SI-3235-32** |

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| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .1269 | .1251 | .1878 | .1873 | .1243 | .1236 | **JSI-0203-03** |
| 1/8 | 1/4 | 1/4 | .1280 | .1262 | .2515 | .2510 | .1250 | .1241 | **JSI-0204-04** |
| 1/8 | 1/4 | 3/8 | .1280 | .1262 | .2515 | .2510 | .1250 | .1241 | **JSI-0204-06** |
| 3/16 | 1/4 | 1/4 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **JSI-0304-04** |
| 3/16 | 1/4 | 3/8 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **JSI-0304-06** |
| 3/16 | 1/4 | 1/2 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **JSI-0304-08** |
| 3/16 | 5/16 | 5/16 | .1905 | .1887 | .3140 | .3135 | .1875 | .1866 | **JSI-0305-05** |
| 3/16 | 5/16 | 3/8 | .1905 | .1887 | .3140 | .3135 | .1875 | .1866 | **JSI-0305-06** |
| 3/16 | 5/16 | 1/2 | .1905 | .1887 | .3140 | .3135 | .1875 | .1866 | **JSI-0305-08** |
| 1/4 | 5/16 | 1/4 | .2521 | .2498 | .3140 | .3135 | .2490 | .2481 | **JSI-0405-04** |
| 1/4 | 5/16 | 3/8 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **JSI-0405-06** |
| 1/4 | 5/16 | 1/2 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **JSI-0405-08** |
| 1/4 | 3/8 | 1/4 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **JSI-0406-04** |
| 1/4 | 3/8 | 1/2 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **JSI-0406-08** |
| 1/4 | 3/8 | 3/4 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **JSI-0406-12** |
| 1/4 | 3/8 | 1 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **JSI-0406-16** |
| 5/16 | 3/8 | 1/4 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **JSI-0506-04** |
| 5/16 | 3/8 | 3/8 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **JSI-0506-06** |
| 5/16 | 3/8 | 1/2 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **JSI-0506-08** |
| 5/16 | 3/8 | 3/4 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **JSI-0506-12** |
| 5/16 | 7/16 | 3/8 | .3164 | .3141 | .4390 | .4385 | .3125 | .3116 | **JSI-0507-06** |
| 5/16 | 7/16 | 1/2 | .3164 | .3141 | .4390 | .4385 | .3125 | .3116 | **JSI-0507-08** |
| 5/16 | 7/16 | 5/8 | .3164 | .3141 | .4390 | .4385 | .3125 | .3116 | **JSI-0507-10** |
| 3/8 | 15/32 | 1/4 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **JSI-0607-04** |
| 3/8 | 15/32 | 3/8 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **JSI-0607-06** |
| 3/8 | 15/32 | 1/2 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **JSI-0607-08** |
| 3/8 | 15/32 | 5/8 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **JSI-0607-10** |
| 3/8 | 15/32 | 3/4 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **JSI-0607-12** |
| 3/8 | 1/2 | 3/16 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **JSI-0608-03** |
| 3/8 | 1/2 | 3/8 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **JSI-0608-06** |
| 3/8 | 1/2 | 1/2 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **JSI-0608-08** |
| 3/8 | 1/2 | 5/8 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **JSI-0608-10** |

[3] After press-fit. Testing methods ▶ Page 61

# Imperial product range | iglidur® | Sleeve bearings

| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 7/16 | 17/32 | 1/2 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **JSI-0708-08** |
| 7/16 | 17/32 | 3/4 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **JSI-0708-12** |
| 1/2 | 19/32 | 1/4 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **JSI-0809-04** |
| 1/2 | 19/32 | 3/8 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **JSI-0809-06** |
| 1/2 | 19/32 | 1/2 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **JSI-0809-08** |
| 1/2 | 19/32 | 5/8 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **JSI-0809-10** |
| 1/2 | 19/32 | 3/4 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **JSI-0809-12** |
| 1/2 | 19/32 | 1 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **JSI-0809-16** |
| 1/2 | 5/8 | 1/2 | .5040 | .5013 | .6260 | .6250 | .5000 | .4990 | **JSI-0810-08** |
| 1/2 | 5/8 | 3/4 | .5040 | .5013 | .6260 | .6250 | .5000 | .4990 | **JSI-0810-12** |
| 9/16 | 21/32 | 1/2 | .5655 | .5627 | .6566 | .6559 | .5615 | .5605 | **JSI-0910-08** |
| 9/16 | 21/32 | 5/8 | .5655 | .5627 | .6566 | .6559 | .5615 | .5605 | **JSI-0910-10** |
| 9/16 | 21/32 | 3/4 | .5655 | .5627 | .6566 | .6559 | .5615 | .5605 | **JSI-0910-12** |
| 5/8 | 23/32 | 1/2 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **JSI-1011-08** |
| 5/8 | 23/32 | 3/4 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **JSI-1011-12** |
| 5/8 | 23/32 | 1 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **JSI-1011-16** |
| 5/8 | 3/4 | 1/4 | .6297 | .6270 | .7510 | .7500 | .6250 | .6240 | **JSI-1012-04** |
| 5/8 | 3/4 | 3/8 | .6297 | .6270 | .7510 | .7500 | .6250 | .6240 | **JSI-1012-06** |
| 5/8 | 3/4 | 1/2 | .6297 | .6270 | .7510 | .7500 | .6250 | .6240 | **JSI-1012-08** |
| 5/8 | 3/4 | 3/4 | .6297 | .6270 | .7510 | .7500 | .6250 | .6240 | **JSI-1012-12** |
| 5/8 | 3/4 | 1 | .6297 | .6270 | .7510 | .7500 | .6250 | .6240 | **JSI-1012-16** |
| 3/4 | 7/8 | 1/2 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **JSI-1214-08** |
| 3/4 | 7/8 | 3/4 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **JSI-1214-12** |
| 3/4 | 7/8 | 1 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **JSI-1214-16** |
| 3/4 | 1 | 3/4 | .7559 | .7525 | 1.0010 | 1.0000 | .7500 | .7490 | **JSI-1216-12** |
| 3/4 | 1 | 1 | .7559 | .7525 | 1.0010 | 1.0000 | .7500 | .7490 | **JSI-1216-16** |
| 7/8 | 1 | 1/2 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **JSI-1416-08** |
| 7/8 | 1 | 3/4 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **JSI-1416-12** |
| 7/8 | 1 | 1 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **JSI-1416-16** |
| 7/8 | 1 1/8 | 3/4 | .8809 | .8775 | 1.1260 | 1.1250 | .8750 | .8740 | **JSI-1418-12** |
| 7/8 | 1 1/8 | 1 1/2 | .8809 | .8775 | 1.1260 | 1.1250 | .8750 | .8740 | **JSI-1418-24** |
| 1 | 1 1/8 | 1/2 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **JSI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **JSI-1618-12** |
| 1 | 1 1/8 | 1 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **JSI-1618-16** |
| 1 | 1 1/4 | 1 | 1.0059 | 1.0025 | 1.2510 | 1.2500 | 1.0000 | .9990 | **JSI-1620-16** |
| 1 | 1 1/4 | 1 1/2 | 1.0059 | 1.0025 | 1.2510 | 1.2500 | 1.0000 | .9990 | **JSI-1620-24** |
| 1 1/8 | 1 9/32 | 3/4 | 1.1288 | 1.2808 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **JSI-1820-12** |
| 1 1/8 | 1 9/32 | 1 | 1.1288 | 1.2808 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **JSI-1820-16** |
| 1 1/8 | 1 9/32 | 1 1/4 | 1.1288 | 1.2808 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **JSI-1820-20** |
| 1 1/8 | 1 13/8 | 1 | 1.1327 | 1.1276 | 1.3760 | 1.3750 | 1.1250 | 1.1240 | **JSI-1822-16** |
| 1 1/4 | 1 13/32 | 3/4 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **JSI-2022-12** |
| 1 1/4 | 1 13/32 | 7/8 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **JSI-2022-14** |
| 1 1/4 | 1 13/32 | 1 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **JSI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **JSI-2022-20** |
| 1 1/4 | 1 1/2 | 1 1/2 | 1.2600 | 1.2532 | 1.5005 | 1.4995 | 1.2500 | 1.2490 | **JSI-2024-24** |
| 1 1/2 | 1 21/32 | 1 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **JSI-2426-16** |

[3] After press-fit. Testing methods ▶ Page 61



Imperial product range | iglidur® | Sleeve bearings
Inch
iglidur®
form S

| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 1 1/2 | 1 21/32 | 1 1/2 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **JSI-2426-24** |
| 1 1/2 | 1 3/4 | 1 1/2 | 1.5100 | 1.5032 | 1.7505 | 1.7495 | 1.50 | 1.499 | **JSI-2428-24** |
| 1 5/8 | 1 25/32 | 1 | 1.6297 | 1.6258 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **JSI-2629-16** |
| 1 5/8 | 1 25/32 | 1 1/2 | 1.6297 | 1.6258 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **JSI-2629-24** |
| 1 5/8 | 1 25/32 | 1 1/2 | 1.6297 | 1.6258 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **JSI-2629-24** |
| 1 3/4 | 1 15/16 | 1 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **JSI-2831-16** |
| 1 3/4 | 1 15/16 | 2 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **JSI-2831-32** |
| 1 7/8 | 2 1/16 | 1 | 1.8796 | 1.8757 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **JSI-3033-16** |
| 1 7/8 | 2 1/16 | 2 | 1.8796 | 1.8757 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **JSI-3033-32** |
| 2 | 2 3/16 | 1 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **JSI-3235-16** |
| 2 | 2 3/16 | 2 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **JSI-3235-32** |

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| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | 0.1269 | 0.1251 | 0.1878 | 0.1873 | 0.1243 | 0.1236 | **J3SI-0203-03** |
| 3/16 | 1/4 | 1/4 | 0.1892 | 0.1873 | 0.2503 | 0.2497 | 0.1865 | 0.1858 | **J3SI-0304-04** |
| 3/16 | 1/4 | 3/8 | 0.1892 | 0.1873 | 0.2503 | 0.2497 | 0.1865 | 0.1858 | **J3SI-0304-06** |
| 1/4 | 5/16 | 3/8 | 0.2521 | 0.2498 | 0.3128 | 0.3122 | 0.2490 | 0.2481 | **J3SI-0405-06** |
| 1/4 | 5/16 | 1/2 | 0.2521 | 0.2498 | 0.3128 | 0.3122 | 0.2490 | 0.2481 | **J3SI-0405-08** |
| 5/16 | 3/8 | 1/4 | 0.3148 | 0.3125 | 0.3753 | 0.3747 | 0.3115 | 0.3106 | **J3SI-0506-04** |
| 5/16 | 3/8 | 3/8 | 0.3148 | 0.3125 | 0.3753 | 0.3747 | 0.3115 | 0.3106 | **J3SI-0506-06** |
| 5/16 | 3/8 | 1/2 | 0.3148 | 0.3125 | 0.3753 | 0.3747 | 0.3115 | 0.3106 | **J3SI-0506-08** |
| 3/8 | 15/32 | 1/4 | 0.3773 | 0.3750 | 0.4691 | 0.4684 | 0.3740 | 0.3731 | **J3SI-0607-04** |
| 3/8 | 15/32 | 3/8 | 0.3773 | 0.3750 | 0.4691 | 0.4684 | 0.3740 | 0.3731 | **J3SI-0607-06** |
| 3/8 | 15/32 | 1/2 | 0.3773 | 0.3750 | 0.4691 | 0.4684 | 0.3740 | 0.3731 | **J3SI-0607-08** |
| 3/8 | 15/32 | 5/8 | 0.3773 | 0.3750 | 0.4691 | 0.4684 | 0.3740 | 0.3731 | **J3SI-0607-10** |
| 3/8 | 15/32 | 3/4 | 0.3773 | 0.3750 | 0.4691 | 0.4684 | 0.3740 | 0.3731 | **J3SI-0607-12** |
| 7/16 | 17/32 | 1/2 | 0.4406 | 0.4379 | 0.5316 | 0.5309 | 0.4365 | 0.4355 | **J3SI-0708-08** |
| 7/16 | 17/32 | 3/4 | 0.4406 | 0.4379 | 0.5316 | 0.5309 | 0.4365 | 0.4355 | **J3SI-0708-12** |
| 1/2 | 19/32 | 1/4 | 0.5030 | 0.5003 | 0.5941 | 0.5934 | 0.4990 | 0.4980 | **J3SI-0809-04** |
| 1/2 | 19/32 | 3/8 | 0.5030 | 0.5003 | 0.5941 | 0.5934 | 0.4990 | 0.4980 | **J3SI-0809-06** |
| 1/2 | 19/32 | 1/2 | 0.5030 | 0.5003 | 0.5941 | 0.5934 | 0.4990 | 0.4980 | **J3SI-0809-08** |
| 1/2 | 19/32 | 5/8 | 0.5030 | 0.5003 | 0.5941 | 0.5934 | 0.4990 | 0.4980 | **J3SI-0809-10** |
| 1/2 | 19/32 | 3/4 | 0.5030 | 0.5003 | 0.5941 | 0.5934 | 0.4990 | 0.4980 | **J3SI-0809-12** |
| 1/2 | 19/32 | 1 | 0.5030 | 0.5003 | 0.5941 | 0.5934 | 0.4990 | 0.4980 | **J3SI-0809-16** |
| 9/16 | 21/32 | 1/2 | 0.5655 | 0.5627 | 0.6566 | 0.6559 | 0.5615 | 0.5605 | **J3SI-0910-08** |
| 9/16 | 21/32 | 5/8 | 0.5655 | 0.5627 | 0.6566 | 0.6559 | 0.5615 | 0.5605 | **J3SI-0910-10** |
| 9/16 | 21/32 | 3/4 | 0.5655 | 0.5627 | 0.6566 | 0.6559 | 0.5615 | 0.5605 | **J3SI-0910-12** |
| 5/8 | 23/32 | 1/2 | 0.6280 | 0.6253 | 0.7192 | 0.7184 | 0.6240 | 0.6230 | **J3SI-1011-08** |
| 5/8 | 23/32 | 3/4 | 0.6280 | 0.6253 | 0.7192 | 0.7184 | 0.6240 | 0.6230 | **J3SI-1011-12** |
| 5/8 | 23/32 | 1 | 0.6280 | 0.6253 | 0.7192 | 0.7184 | 0.6240 | 0.6230 | **J3SI-1011-16** |
| 3/4 | 7/8 | 1/2 | 0.7541 | 0.7505 | 0.8755 | 0.8747 | 0.7491 | 0.7479 | **J3SI-1214-08** |
| 3/4 | 7/8 | 3/4 | 0.7541 | 0.7505 | 0.8755 | 0.8747 | 0.7491 | 0.7479 | **J3SI-1214-12** |
| 3/4 | 7/8 | 1 | 0.7541 | 0.7505 | 0.8755 | 0.8747 | 0.7491 | 0.7479 | **J3SI-1214-16** |

[3] After press-fit. Testing methods ▶ Page 61

# Imperial product range | iglidur® | Sleeve bearings

| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 7/8 | 1 | 1/2 | 0.8791 | 0.8757 | 1.0005 | 0.9997 | 0.8741 | 0.8729 | **J3SI-1416-08** |
| 7/8 | 1 | 3/4 | 0.8791 | 0.8757 | 1.0005 | 0.9997 | 0.8741 | 0.8729 | **J3SI-1416-12** |
| 7/8 | 1 | 1 | 0.8791 | 0.8757 | 1.0005 | 0.9997 | 0.8741 | 0.8729 | **J3SI-1416-16** |
| 1 | 1 1/8 | 1/2 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | 0.9991 | 0.9979 | **J3SI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | 0.9991 | 0.9979 | **J3SI-1618-12** |
| 1 | 1 1/8 | 1 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | 0.9991 | 0.9979 | **J3SI-1618-16** |
| 1 1/8 | 1 9/32 | 3/4 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **J3SI-1820-12** |
| 1 1/8 | 1 9/32 | 1 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **J3SI-1820-16** |
| 1 1/8 | 1 9/32 | 1 1/4 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **J3SI-1820-20** |
| 1 1/4 | 1 13/32 | 3/4 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **J3SI-2022-12** |
| 1 1/4 | 1 13/32 | 1 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **J3SI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **J3SI-2022-20** |
| 1 1/2 | 1 21/32 | 1 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **J3SI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **J3SI-2426-24** |
| 1 5/8 | 1 25/32 | 1 | 1.6297 | 1.6258 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **J3SI-2629-16** |
| 1 5/8 | 1 25/32 | 1 1/2 | 1.6297 | 1.6258 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **J3SI-2629-24** |
| 1 3/4 | 1 15/16 | 1 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **J3SI-2831-16** |
| 1 3/4 | 1 15/16 | 2 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **J3SI-2831-32** |
| 1 7/8 | 2 1/16 | 1 | 1.8796 | 1.8757 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **J3SI-3033-16** |
| 1 7/8 | 2 1/16 | 2 | 1.8796 | 1.8757 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **J3SI-3033-32** |
| 2 | 2 3/16 | 1 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **J3SI-3235-16** |
| 2 | 2 3/16 | 2 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **J3SI-3235-32** |

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| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .1266 | .1247 | .1878 | .1873 | .1243 | .1236 | **J350SI-0203-03** |
| 3/16 | 1/4 | 1/4 | .1888 | .1869 | .2503 | .2497 | .1865 | .1858 | **J350SI-0304-04** |
| 3/16 | 1/4 | 3/8 | .1888 | .1869 | .2503 | .2497 | .1865 | .1858 | **J350SI-0304-06** |
| 1/4 | 5/16 | 3/8 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **J350SI-0405-06** |
| 1/4 | 5/16 | 1/2 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **J350SI-0405-08** |
| 5/16 | 3/8 | 1/4 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **J350SI-0506-04** |
| 5/16 | 3/8 | 3/8 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **J350SI-0506-06** |
| 5/16 | 3/8 | 1/2 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **J350SI-0506-08** |
| 3/8 | 15/32 | 1/4 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **J350SI-0607-04** |
| 3/8 | 15/32 | 3/8 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **J350SI-0607-06** |
| 3/8 | 15/32 | 1/2 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **J350SI-0607-08** |
| 3/8 | 15/32 | 5/8 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **J350SI-0607-10** |
| 3/8 | 15/32 | 3/4 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **J350SI-0607-12** |
| 7/16 | 17/32 | 1/2 | .4399 | .4371 | .5316 | .5309 | .4365 | .4355 | **J350SI-0708-08** |
| 7/16 | 17/32 | 3/4 | .4399 | .4371 | .5316 | .5309 | .4365 | .4355 | **J350SI-0708-12** |
| 1/2 | 19/32 | 1/4 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **J350SI-0809-04** |
| 1/2 | 19/32 | 3/8 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **J350SI-0809-06** |
| 1/2 | 19/32 | 1/2 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **J350SI-0809-08** |
| 1/2 | 19/32 | 5/8 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **J350SI-0809-10** |

[3] After press-fit. Testing methods ▶ Page 61





Imperial product range | iglidur® | Sleeve bearings

Inch iglidur® form S

| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 1/2 | 19/32 | 3/4 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **J350SI-0809-12** |
| 1/2 | 19/32 | 1 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **J350SI-0809-16** |
| 9/16 | 21/32 | 1/2 | .5649 | .5620 | .6566 | .6559 | .5615 | .5605 | **J350SI-0910-08** |
| 9/16 | 21/32 | 5/8 | .5649 | .5620 | .6566 | .6559 | .5615 | .5605 | **J350SI-0910-10** |
| 9/16 | 21/32 | 3/4 | .5649 | .5620 | .6566 | .6559 | .5615 | .5605 | **J350SI-0910-12** |
| 5/8 | 23/32 | 1/2 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **J350SI-1011-08** |
| 5/8 | 23/32 | 3/4 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **J350SI-1011-12** |
| 5/8 | 23/32 | 1 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **J350SI-1011-16** |
| 3/4 | 7/8 | 1/2 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **J350SI-1214-08** |
| 3/4 | 7/8 | 3/4 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **J350SI-1214-12** |
| 3/4 | 7/8 | 1 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **J350SI-1214-16** |
| 7/8 | 1 | 1/2 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **J350SI-1416-08** |
| 7/8 | 1 | 3/4 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **J350SI-1416-12** |
| 7/8 | 1 | 1 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **J350SI-1416-16** |
| 1 | 1 1/8 | 1/2 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **J350SI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **J350SI-1618-12** |
| 1 | 1 1/8 | 1 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **J350SI-1618-16** |
| 1 1/8 | 1 9/32 | 3/4 | 1.1279 | 1.1246 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **J350SI-1820-12** |
| 1 1/8 | 1 9/32 | 1 | 1.1279 | 1.1246 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **J350SI-1820-16** |
| 1 1/8 | 1 9/32 | 1 1/4 | 1.1279 | 1.1246 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **J350SI-1820-20** |
| 1 1/4 | 1 13/32 | 3/4 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **J350SI-2022-12** |
| 1 1/4 | 1 13/32 | 1 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **J350SI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **J350SI-2022-20** |
| 1 1/2 | 1 21/32 | 1 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **J350SI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **J350SI-2426-24** |
| 1 5/8 | 1 25/32 | 1 | 1.6287 | 1.6248 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **J350SI-2629-16** |
| 1 5/8 | 1 25/32 | 1 1/2 | 1.6287 | 1.6248 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **J350SI-2629-24** |
| 1 3/4 | 1 15/16 | 1 | 1.7536 | 1.7497 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **J350SI-2831-16** |
| 1 3/4 | 1 15/16 | 2 | 1.7536 | 1.7497 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **J350SI-2831-32** |
| 1 7/8 | 2 1/16 | 1 | 1.8747 | 1.8786 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **J350SI-3033-16** |
| 1 7/8 | 2 1/16 | 2 | 1.8747 | 1.8786 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **J350SI-3033-32** |
| 2 | 2 3/16 | 1 | 2.0040 | 1.9993 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **J350SI-3235-16** |
| 2 | 2 3/16 | 2 | 2.0040 | 1.9993 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **J350SI-3235-32** |

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| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 1/8 | .1280 | .1262 | .1990 | .1985 | .1250 | .1241 | **MSI-0203-02** |
| 1/8 | 3/16 | 1/4 | .1280 | .1262 | .1990 | .1985 | .1250 | .1241 | **MSI-0203-04** |
| 1/8 | 1/4 | 1/8 | .1280 | .1262 | .2515 | .2510 | .1250 | .1241 | **MSI-0204-02** |
| 1/8 | 1/4 | 3/16 | .1280 | .1262 | .2515 | .2510 | .1250 | .1241 | **MSI-0204-03** |
| 1/8 | 1/4 | 1/4 | .1280 | .1262 | .2515 | .2510 | .1250 | .1241 | **MSI-0204-04** |
| 1/8 | 1/4 | 3/8 | .1280 | .1262 | .2515 | .2510 | .1250 | .1241 | **MSI-0204-06** |
| 3/16 | 1/4 | 1/4 | .1905 | .1887 | .2515 | .2510 | .1875 | .1866 | **MSI-0304-04** |
| 3/16 | 1/4 | 3/8 | .1905 | .1887 | .2515 | .2510 | .1875 | .1866 | **MSI-0304-06** |

[3] After press-fit. Testing methods ▶ Page 61

# Imperial product range | iglidur® | Sleeve bearings

| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 3/16 | 1/4 | 1/2 | .1905 | .1887 | .2515 | .2510 | .1875 | .1866 | **MSI-0304-08** |
| 3/16 | 5/16 | 1/8 | .1905 | .1887 | .3140 | .3135 | .1875 | .1866 | **MSI-0305-02** |
| 3/16 | 5/16 | 3/16 | .1905 | .1887 | .3140 | .3135 | .1875 | .1866 | **MSI-0305-03** |
| 3/16 | 5/16 | 1/4 | .1905 | .1887 | .3140 | .3135 | .1875 | .1866 | **MSI-0305-04** |
| 3/16 | 5/16 | 5/16 | .1905 | .1887 | .3140 | .3135 | .1875 | .1866 | **MSI-0305-05** |
| 3/16 | 5/16 | 3/8 | .1905 | .1887 | .3140 | .3135 | .1875 | .1866 | **MSI-0305-06** |
| 3/16 | 5/16 | 1/2 | .1905 | .1887 | .3140 | .3135 | .1875 | .1866 | **MSI-0305-08** |
| 1/4 | 5/16 | 3/16 | .2539 | .2516 | .3140 | .3135 | .2500 | .2491 | **MSI-0405-03** |
| 1/4 | 5/16 | 3/8 | .2539 | .2516 | .3140 | .3135 | .2500 | .2491 | **MSI-0405-06** |
| 1/4 | 5/16 | 1/2 | .2539 | .2516 | .3140 | .3135 | .2500 | .2491 | **MSI-0405-08** |
| 1/4 | 3/8 | 1/8 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **MSI-0406-02** |
| 1/4 | 3/8 | 3/16 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **MSI-0406-03** |
| 1/4 | 3/8 | 1/4 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **MSI-0406-04** |
| 1/4 | 3/8 | 5/16 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **MSI-0406-05** |
| 1/4 | 3/8 | 3/8 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **MSI-0406-06** |
| 1/4 | 3/8 | 1/2 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **MSI-0406-08** |
| 1/4 | 3/8 | 5/8 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **MSI-0406-10** |
| 1/4 | 3/8 | 3/4 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **MSI-0406-12** |
| 5/16 | 3/8 | 1/4 | .3164 | .3141 | .3765 | .3760 | .3125 | .3116 | **MSI-0506-04** |
| 5/16 | 3/8 | 3/8 | .3164 | .3141 | .3765 | .3760 | .3125 | .3116 | **MSI-0506-06** |
| 5/16 | 3/8 | 1/2 | .3164 | .3141 | .3765 | .3760 | .3125 | .3116 | **MSI-0506-08** |
| 5/16 | 7/16 | 3/16 | .3164 | .3141 | .4390 | .4385 | .3125 | .3116 | **MSI-0507-03** |
| 5/16 | 7/16 | 1/4 | .3164 | .3141 | .4390 | .4385 | .3125 | .3116 | **MSI-0507-04** |
| 5/16 | 7/16 | 5/16 | .3164 | .3141 | .4390 | .4385 | .3125 | .3116 | **MSI-0507-05** |
| 5/16 | 7/16 | 3/8 | .3164 | .3141 | .4390 | .4385 | .3125 | .3116 | **MSI-0507-06** |
| 5/16 | 7/16 | 1/2 | .3164 | .3141 | .4390 | .4385 | .3125 | .3116 | **MSI-0507-08** |
| 5/16 | 7/16 | 5/8 | .3164 | .3141 | .4390 | .4385 | .3125 | .3116 | **MSI-0507-10** |
| 5/16 | 7/16 | 3/4 | .3164 | .3141 | .4390 | .4385 | .3125 | .3116 | **MSI-0507-12** |
| 3/8 | 7/16 | 1/4 | .3789 | .3766 | .4390 | .4385 | .3750 | .3741 | **MSI-0607-04** |
| 3/8 | 7/16 | 3/8 | .3789 | .3766 | .4390 | .4385 | .3750 | .3741 | **MSI-0607-06** |
| 3/8 | 7/16 | 1/2 | .3789 | .3766 | .4390 | .4385 | .3750 | .3741 | **MSI-0607-08** |
| 3/8 | 1/2 | 1/4 | .3789 | .3766 | .5015 | .5010 | .3750 | .3741 | **MSI-0608-04** |
| 3/8 | 1/2 | 5/16 | .3789 | .3766 | .5015 | .5010 | .3750 | .3741 | **MSI-0608-05** |
| 3/8 | 1/2 | 3/8 | .3789 | .3766 | .5015 | .5010 | .3750 | .3741 | **MSI-0608-06** |
| 3/8 | 1/2 | 1/2 | .3789 | .3766 | .5015 | .5010 | .3750 | .3741 | **MSI-0608-08** |
| 3/8 | 1/2 | 5/8 | .3789 | .3766 | .5015 | .5010 | .3750 | .3741 | **MSI-0608-10** |
| 3/8 | 1/2 | 3/4 | .3789 | .3766 | .5015 | .5010 | .3750 | .3741 | **MSI-0608-12** |
| 3/8 | 1/2 | 1 | .3789 | .3766 | .5015 | .5010 | .3750 | .3741 | **MSI-0608-16** |
| 7/16 | 9/16 | 3/8 | .4422 | .4395 | .5941 | .5934 | .4375 | .4365 | **MSI-0709-06** |
| 7/16 | 9/16 | 1/2 | .4422 | .4395 | .5941 | .5934 | .4375 | .4365 | **MSI-0709-08** |
| 1/2 | 5/8 | 1/4 | .5047 | .5020 | .6260 | .6250 | .5000 | .4990 | **MSI-0810-04** |
| 1/2 | 5/8 | 5/16 | .5047 | .5020 | .6260 | .6250 | .5000 | .4990 | **MSI-0810-05** |
| 1/2 | 5/8 | 3/8 | .5047 | .5020 | .6260 | .6250 | .5000 | .4990 | **MSI-0810-06** |
| 1/2 | 5/8 | 1/2 | .5047 | .5020 | .6260 | .6250 | .5000 | .4990 | **MSI-0810-08** |
| 1/2 | 5/8 | 5/8 | .5047 | .5020 | .6260 | .6250 | .5000 | .4990 | **MSI-0810-10** |
| 1/2 | 5/8 | 3/4 | .5047 | .5020 | .6260 | .6250 | .5000 | .4990 | **MSI-0810-12** |

[3] After press-fit. Testing methods ▶ Page 61



Imperial product range | iglidur® | Sleeve bearings
Inch
iglidur®
form S

| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 1/2 | 5/8 | 1 | .5047 | .5020 | .6260 | .6250 | .5000 | .4990 | **MSI-0810-16** |
| 5/8 | 3/4 | 1/4 | .6297 | .6270 | .7510 | .7500 | .6250 | .6240 | **MSI-1012-04** |
| 5/8 | 3/4 | 3/8 | .6297 | .6270 | .7510 | .7500 | .6250 | .6240 | **MSI-1012-06** |
| 5/8 | 3/4 | 1/2 | .6297 | .6270 | .7510 | .7500 | .6250 | .6240 | **MSI-1012-08** |
| 5/8 | 3/4 | 5/8 | .6297 | .6270 | .7510 | .7500 | .6250 | .6240 | **MSI-1012-10** |
| 5/8 | 3/4 | 3/4 | .6297 | .6270 | .7510 | .7500 | .6250 | .6240 | **MSI-1012-12** |
| 5/8 | 3/4 | 1 | .6297 | .6270 | .7510 | .7500 | .6250 | .6240 | **MSI-1012-16** |
| 5/8 | 3/4 | 1 5/8 | .6297 | .6270 | .7510 | .7500 | .6250 | .6240 | **MSI-1012-26** |
| 5/8 | 13/16 | 3/8 | .6297 | .6270 | .8135 | .8125 | .6250 | .6240 | **MSI-1013-06** |
| 5/8 | 13/16 | 1/2 | .6297 | .6270 | .8135 | .8125 | .6250 | .6240 | **MSI-1013-08** |
| 5/8 | 13/16 | 5/8 | .6297 | .6270 | .8135 | .8125 | .6250 | .6240 | **MSI-1013-10** |
| 5/8 | 13/16 | 3/4 | .6297 | .6270 | .8135 | .8125 | .6250 | .6240 | **MSI-1013-12** |
| 5/8 | 13/16 | 1 | .6297 | .6270 | .8135 | .8125 | .6250 | .6240 | **MSI-1013-16** |
| 11/16 | 13/16 | 3/4 | .6921 | .6893 | .8135 | .8125 | .6875 | .6865 | **MSI-1113-12** |
| 11/16 | 13/16 | 7/8 | .6921 | .6893 | .8135 | .8125 | .6875 | .6865 | **MSI-1113-14** |
| 11/16 | 13/16 | 1 | .6922 | .6900 | .8135 | .8125 | .6875 | .6865 | **MSI-1113-16** |
| 3/4 | 7/8 | 3/8 | .7559 | .7525 | .8760 | .8750 | .7500 | .7490 | **MSI-1214-06** |
| 3/4 | 7/8 | 3/4 | .7559 | .7525 | .8760 | .8750 | .7500 | .7490 | **MSI-1214-12** |
| 3/4 | 7/8 | 1 | .7559 | .7525 | .8760 | .8750 | .7500 | .7490 | **MSI-1214-16** |
| 3/4 | 7/8 | 11/2 | .7559 | .7525 | .8760 | .8750 | .7500 | .7490 | **MSI-1214-24** |
| 3/4 | 1 | 3/8 | .7559 | .7525 | 1.0010 | 1.0000 | .7500 | .7490 | **MSI-1216-06** |
| 3/4 | 1 | 1/2 | .7559 | .7525 | 1.0010 | 1.0000 | .7500 | .7490 | **MSI-1216-08** |
| 3/4 | 1 | 5/8 | .7559 | .7525 | 1.0010 | 1.0000 | .7500 | .7490 | **MSI-1216-10** |
| 3/4 | 1 | 3/4 | .7559 | .7525 | 1.0010 | 1.0000 | .7500 | .7490 | **MSI-1216-12** |
| 3/4 | 1 | 1 | .7559 | .7525 | 1.0010 | 1.0000 | .7500 | .7490 | **MSI-1216-16** |
| 3/4 | 1 | 1 1/4 | .7559 | .7525 | 1.0010 | 1.0000 | .7500 | .7490 | **MSI-1216-20** |
| 3/4 | 1 | 1 1/2 | .7559 | .7525 | 1.0010 | 1.0000 | .7500 | .7490 | **MSI-1216-24** |
| 13/16 | 1 | 1/2 | .8184 | .8151 | 1.0010 | 1.0000 | .8126 | .8116 | **MSI-1316-08** |
| 7/8 | 1 | 3/4 | .8809 | .8775 | 1.0010 | 1.0000 | .8750 | .8740 | **MSI-1416-12** |
| 7/8 | 1 | 1 | .8809 | .8775 | 1.0010 | 1.0000 | .8750 | .8740 | **MSI-1416-16** |
| 7/8 | 1 | 1 1/2 | .8809 | .8775 | 1.0010 | 1.0000 | .8750 | .8740 | **MSI-1416-24** |
| 7/8 | 1 1/8 | 1/2 | .8809 | .8775 | 1.1260 | 1.1250 | .8750 | .8740 | **MSI-1418-08** |
| 7/8 | 1 1/8 | 3/4 | .8809 | .8775 | 1.1260 | 1.1250 | .8750 | .8740 | **MSI-1418-12** |
| 7/8 | 1 1/8 | 1 | .8809 | .8775 | 1.1260 | 1.1250 | .8750 | .8740 | **MSI-1418-16** |
| 7/8 | 1 1/8 | 1 1/2 | .8809 | .8775 | 1.1260 | 1.1250 | .8750 | .8740 | **MSI-1418-24** |
| 1 | 1 1/8 | 3/4 | 1.0059 | 1.0025 | 1.1260 | 1.1250 | 1.0000 | .9990 | **MSI-1618-12** |
| 1 | 1 1/8 | 1 | 1.0059 | 1.0025 | 1.1260 | 1.1250 | 1.0000 | .9990 | **MSI-1618-16** |
| 1 | 1 1/8 | 1 1/2 | 1.0059 | 1.0025 | 1.1260 | 1.1250 | 1.0000 | .9990 | **MSI-1618-24** |
| 1 | 1 1/4 | 1/2 | 1.0059 | 1.0025 | 1.2510 | 1.2500 | 1.0000 | .9990 | **MSI-1620-08** |
| 1 | 1 1/4 | 5/8 | 1.0059 | 1.0025 | 1.2510 | 1.2500 | 1.0000 | .9990 | **MSI-1620-10** |
| 1 | 1 1/4 | 3/4 | 1.0059 | 1.0025 | 1.2510 | 1.2500 | 1.0000 | .9990 | **MSI-1620-12** |
| 1 | 1 1/4 | 1 | 1.0059 | 1.0025 | 1.2510 | 1.2500 | 1.0000 | .9990 | **MSI-1620-16** |
| 1 | 1 1/4 | 1 1/2 | 1.0059 | 1.0025 | 1.2510 | 1.2500 | 1.0000 | .9990 | **MSI-1620-24** |
| 1 | 1 1/4 | 2 | 1.0059 | 1.0025 | 1.2510 | 1.2500 | 1.0000 | .9990 | **MSI-1620-32** |
| 1 1/8 | 1 3/8 | 1 | 1.1309 | 1.1275 | 1.3760 | 1.3750 | 1.1250 | 1.1240 | **MSI-1822-16** |
| 1 1/8 | 1 3/8 | 1 1/2 | 1.1309 | 1.1275 | 1.3760 | 1.3750 | 1.1250 | 1.1240 | **MSI-1822-24** |

[3] After press-fit. Testing methods ▶ Page 61

# Imperial product range | iglidur® | Sleeve bearings

| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 1 1/4 | 1 1/2 | 3/4 | 1.2600 | 1.2531 | 1.5005 | 1.4995 | 1.2500 | 1.2490 | **MSI-2024-12** |
| 1 1/4 | 1 1/2 | 1 | 1.2600 | 1.2531 | 1.5005 | 1.4995 | 1.2500 | 1.2490 | **MSI-2024-16** |
| 1 1/4 | 1 1/2 | 1 3/8 | 1.2600 | 1.2531 | 1.5005 | 1.4995 | 1.2500 | 1.2490 | **MSI-2024-22** |
| 1 1/4 | 1 1/2 | 1 1/2 | 1.2600 | 1.2531 | 1.5005 | 1.4995 | 1.2500 | 1.2490 | **MSI-2024-24** |
| 1 1/4 | 1 1/2 | 2 1/2 | 1.2600 | 1.2531 | 1.5005 | 1.4995 | 1.2500 | 1.2490 | **MSI-2024-40** |
| 1 3/8 | 1 5/8 | 1 | 1.3850 | 1.3182 | 1.6255 | 1.6245 | 1.3750 | 1.3740 | **MSI-2226-16** |
| 1 1/2 | 1 3/4 | 3/4 | 1.5100 | 1.5032 | 1.7505 | 1.7495 | 1.5000 | 1.4990 | **MSI-2428-12** |
| 1 1/2 | 1 3/4 | 1 | 1.5100 | 1.5032 | 1.7505 | 1.7495 | 1.5000 | 1.4990 | **MSI-2428-16** |
| 1 1/2 | 1 3/4 | 1 1/2 | 1.5100 | 1.5032 | 1.7505 | 1.7495 | 1.5000 | 1.4990 | **MSI-2428-24** |
| 1 1/2 | 1 3/4 | 2 /2 | 1.5100 | 1.5032 | 1.7505 | 1.7495 | 1.5000 | 1.4990 | **MSI-2428-40** |
| 1 5/8 | 1 7/8 | 1 | 1.6350 | 1.6282 | 1.8755 | 1.8745 | 1.6250 | 1.6240 | **MSI-2630-16** |
| 1 3/4 | 2 | 1/2 | 1.7560 | 1.7532 | 2.0005 | 1.9995 | 1.7500 | 1.7490 | **MSI-2832-08** |
| 1 3/4 | 2 | 3/4 | 1.7560 | 1.7532 | 2.0005 | 1.9995 | 1.7500 | 1.7490 | **MSI-2832-12** |
| 1 3/4 | 2 | 1 | 1.7560 | 1.7532 | 2.0005 | 1.9995 | 1.7500 | 1.7490 | **MSI-2832-16** |
| 1 3/4 | 2 | 1 1/2 | 1.7560 | 1.7532 | 2.0005 | 1.9995 | 1.7500 | 1.7490 | **MSI-2832-24** |
| 1 3/4 | 2 | 2 1/2 | 1.7560 | 1.7532 | 2.0005 | 1.9995 | 1.7500 | 1.7490 | **MSI-2832-40** |
| 2 | 2 1/4 | 1 | 2.0100 | 2.0032 | 2.2505 | 2.2495 | 2.0000 | 1.9990 | **MSI-3236-16** |
| 2 | 2 1/4 | 1 1/2 | 2.0100 | 2.0032 | 2.2505 | 2.2495 | 2.0000 | 1.9990 | **MSI-3236-24** |
| 2 | 2 1/4 | 2 | 2.0100 | 2.0032 | 2.2505 | 2.2495 | 2.0000 | 1.9990 | **MSI-3236-32** |
| 2 | 2 1/4 | 2 1/2 | 2.0100 | 2.0032 | 2.2505 | 2.2495 | 2.0000 | 1.9990 | **MSI-3236-40** |
| 3 | 3 1/4 | 1 | 3.0114 | 3.0039 | 3.2505 | 3.2495 | 3.0000 | 2.9990 | **MSI-4852-16** |

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| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .1269 | .1251 | .1878 | .1873 | .1243 | .1236 | **PSI-0203-03** |
| 3/16 | 1/4 | 1/4 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **PSI-0304-04** |
| 3/16 | 1/4 | 3/8 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **PSI-0304-06** |
| 1/4 | 5/16 | 3/8 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **PSI-0405-06** |
| 1/4 | 5/16 | 1/2 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **PSI-0405-08** |
| 5/16 | 3/8 | 1/4 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **PSI-0506-04** |
| 5/16 | 3/8 | 3/8 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **PSI-0506-06** |
| 5/16 | 3/8 | 1/2 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **PSI-0506-08** |
| 3/8 | 15/32 | 1/4 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **PSI-0607-04** |
| 3/8 | 15/32 | 3/8 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **PSI-0607-06** |
| 3/8 | 15/32 | 1/2 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **PSI-0607-08** |
| 3/8 | 15/32 | 5/8 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **PSI-0607-10** |
| 3/8 | 15/32 | 3/4 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **PSI-0607-12** |
| 7/16 | 17/32 | 1/2 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **PSI-0708-08** |
| 7/16 | 17/32 | 3/4 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **PSI-0708-12** |
| 1/2 | 19/32 | 1/4 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **PSI-0809-04** |
| 1/2 | 19/32 | 3/8 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **PSI-0809-06** |
| 1/2 | 19/32 | 1/2 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **PSI-0809-08** |
| 1/2 | 19/32 | 5/8 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **PSI-0809-10** |
| 1/2 | 19/32 | 3/4 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **PSI-0809-12** |

[3] After press-fit. Testing methods ▶ Page 61



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Imperial product range | iglidur® | Sleeve bearings

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form S

| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 1/2 | 19/32 | 1 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **PSI-0809-16** |
| 9/16 | 21/32 | 1/2 | .5655 | .5627 | .6566 | .6559 | .5615 | .5605 | **PSI-0910-08** |
| 9/16 | 21/32 | 5/8 | .5655 | .5627 | .6566 | .6559 | .5615 | .5605 | **PSI-0910-10** |
| 9/16 | 21/32 | 3/4 | .5655 | .5627 | .6566 | .6559 | .5615 | .5605 | **PSI-0910-12** |
| 5/8 | 23/32 | 1/2 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **PSI-1011-08** |
| 5/8 | 23/32 | 3/4 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **PSI-1011-12** |
| 5/8 | 23/32 | 1 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **PSI-1011-16** |
| 3/4 | 7/8 | 1/2 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **PSI-1214-08** |
| 3/4 | 7/8 | 3/4 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **PSI-1214-12** |
| 3/4 | 7/8 | 1 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **PSI-1214-16** |
| 7/8 | 1 | 1/2 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **PSI-1416-08** |
| 7/8 | 1 | 3/4 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **PSI-1416-12** |
| 7/8 | 1 | 1 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **PSI-1416-16** |
| 1 | 1 1/8 | 1/2 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **PSI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **PSI-1618-12** |
| 1 | 1 1/8 | 1 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **PSI-1618-16** |
| 1 1/8 | 1 9/32 | 3/4 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **PSI-1820-12** |
| 1 1/8 | 1 9/32 | 1 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **PSI-1820-16** |
| 1 1/8 | 1 9/32 | 1 1/4 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **PSI-1820-20** |
| 1 1/4 | 1 13/32 | 3/4 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **PSI-2022-12** |
| 1 1/4 | 1 13/32 | 1 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **PSI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **PSI-2022-20** |
| 1 1/2 | 1 21/32 | 1 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **PSI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **PSI-2426-24** |
| 1 5/8 | 1 25/32 | 1 | 1.6297 | 1.6258 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **PSI-2629-16** |
| 1 5/8 | 1 25/32 | 1 1/2 | 1.6297 | 1.6258 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **PSI-2629-24** |
| 1 3/4 | 1 15/16 | 1 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **PSI-2831-16** |
| 1 3/4 | 1 15/16 | 2 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **PSI-2831-32** |
| 1 7/8 | 2 1/16 | 1 | 1.8796 | 1.8757 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **PSI-3033-16** |
| 1 7/8 | 2 1/16 | 2 | 1.8796 | 1.8757 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **PSI-3033-32** |
| 2 | 2 3/16 | 1 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **PSI-3235-16** |
| 2 | 2 3/16 | 2 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **PSI-3235-32** |

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| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .1269 | .1251 | .1878 | .1873 | .1243 | .1236 | **P210SI-0203-03** |
| 3/16 | 1/4 | 1/4 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **P210SI-0304-04** |
| 3/16 | 1/4 | 3/8 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **P210SI-0304-06** |
| 1/4 | 5/16 | 3/8 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **P210SI-0405-06** |
| 1/4 | 5/16 | 1/2 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **P210SI-0405-08** |
| 5/16 | 3/8 | 1/4 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **P210SI-0506-04** |
| 5/16 | 3/8 | 3/8 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **P210SI-0506-06** |
| 5/16 | 3/8 | 1/2 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **P210SI-0506-08** |
| 3/8 | 15/32 | 1/4 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **P210SI-0607-04** |

[3] After press-fit. Testing methods ▶ Page 61

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# Imperial product range | iglidur® | Sleeve bearings

| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 3/8 | 15/32 | 3/8 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **P210SI-0607-06** |
| 3/8 | 15/32 | 1/2 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **P210SI-0607-08** |
| 3/8 | 15/32 | 5/8 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **P210SI-0607-10** |
| 3/8 | 15/32 | 3/4 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **P210SI-0607-12** |
| 7/16 | 17/32 | 1/2 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **P210SI-0708-08** |
| 7/16 | 17/32 | 3/4 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **P210SI-0708-12** |
| 1/2 | 19/32 | 1/4 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **P210SI-0809-04** |
| 1/2 | 19/32 | 3/8 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **P210SI-0809-06** |
| 1/2 | 19/32 | 1/2 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **P210SI-0809-08** |
| 1/2 | 19/32 | 5/8 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **P210SI-0809-10** |
| 1/2 | 19/32 | 3/4 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **P210SI-0809-12** |
| 1/2 | 19/32 | 1 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **P210SI-0809-16** |
| 9/16 | 21/32 | 1/2 | .5655 | .5627 | .6566 | .6559 | .5615 | .5605 | **P210SI-0910-08** |
| 9/16 | 21/32 | 5/8 | .5655 | .5627 | .6566 | .6559 | .5615 | .5605 | **P210SI-0910-10** |
| 9/16 | 21/32 | 3/4 | .5655 | .5627 | .6566 | .6559 | .5615 | .5605 | **P210SI-0910-12** |
| 5/8 | 23/32 | 1/2 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **P210SI-1011-08** |
| 5/8 | 23/32 | 3/4 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **P210SI-1011-12** |
| 5/8 | 23/32 | 1 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **P210SI-1011-16** |
| 3/4 | 7/8 | 1/2 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **P210SI-1214-08** |
| 3/4 | 7/8 | 3/4 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **P210SI-1214-12** |
| 3/4 | 7/8 | 1 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **P210SI-1214-16** |
| 7/8 | 1 | 1/2 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **P210SI-1416-08** |
| 7/8 | 1 | 3/4 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **P210SI-1416-12** |
| 7/8 | 1 | 1 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **P210SI-1416-16** |
| 1 | 1 1/8 | 1/2 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **P210SI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **P210SI-1618-12** |
| 1 | 1 1/8 | 1 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **P210SI-1618-16** |
| 1 1/8 | 1 9/32 | 3/4 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **P210SI-1820-12** |
| 1 1/8 | 1 9/32 | 1 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **P210SI-1820-16** |
| 1 1/8 | 1 9/32 | 1 1/4 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **P210SI-1820-20** |
| 1 1/4 | 1 13/32 | 3/4 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **P210SI-2022-12** |
| 1 1/4 | 1 13/32 | 1 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **P210SI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **P210SI-2022-20** |
| 1 1/2 | 1 21/32 | 1 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **P210SI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **P210SI-2426-24** |
| 1 5/8 | 1 25/32 | 1 | 1.6297 | 1.6258 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **P210SI-2629-16** |
| 1 5/8 | 1 25/32 | 1 1/2 | 1.6297 | 1.6258 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **P210SI-2629-24** |
| 1 3/4 | 1 15/16 | 1 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **P210SI-2831-16** |
| 1 3/4 | 1 15/16 | 2 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **P210SI-2831-32** |
| 1 7/8 | 2 1/16 | 1 | 1.8796 | 1.8757 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **P210SI-3033-16** |
| 1 7/8 | 2 1/16 | 2 | 1.8796 | 1.8757 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **P210SI-3033-32** |
| 2 | 2 3/16 | 1 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **P210SI-3235-16** |
| 2 | 2 3/16 | 2 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **P210SI-3235-32** |

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Imperial product range | iglidur® | Sleeve bearings

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| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 3/8 | 15/32 | 1/4 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **QSI-0607-04** |
| 3/8 | 15/32 | 3/8 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **QSI-0607-06** |
| 3/8 | 15/32 | 1/2 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **QSI-0607-08** |
| 7/16 | 17/32 | 1/2 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **QSI-0708-08** |
| 1/2 | 19/32 | 3/4 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **QSI-0809-12** |
| 5/8 | 23/32 | 3/4 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **QSI-1011-12** |
| 3/4 | 7/8 | 1/2 | .7541 | .7507 | .8755 | .8747 | .7491 | .7479 | **QSI-1214-08** |
| 3/4 | 7/8 | 3/4 | .7541 | .7507 | .8755 | .8747 | .7491 | .7479 | **QSI-1214-12** |
| 3/4 | 7/8 | 1 | .7541 | .7507 | .8755 | .8747 | .7491 | .7479 | **QSI-1214-16** |
| 7/8 | 1 | 1 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **QSI-1416-16** |
| 1 | 1 1/8 | 1 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **QSI-1618-16** |
| 1 | 1 1/8 | 1 1/2 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **QSI-1618-24** |
| 1 1/8 | 1 9/32 | 1 1/2 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **QSI-1820-24** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **QSI-2022-20** |
| 1 1/4 | 1 13/32 | 1 1/2 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **QSI-2022-24** |
| 1 1/2 | 1 21/32 | 1 1/2 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **QSI-2426-24** |
| 1 5/8 | 1 25/32 | 1 1/4 | 1.6297 | 1.6258 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **QSI-2629-20** |
| 1 3/4 | 1 15/16 | 2 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **QSI-2831-32** |
| 2 | 2 3/16 | 3/4 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **QSI-3235-12** |
| 2 | 2 3/16 | 1 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **QSI-3235-16** |
| 2 | 2 3/16 | 1 1/2 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **QSI-3235-24** |
| 2 | 2 3/16 | 2 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **QSI-3235-32** |
| 2 | 2 3/16 | 2 1/2 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **QSI-3235-40** |
| 2 1/4 | 2 7/16 | 2 | 2.2577 | 2.2531 | 2.4377 | 2.4365 | 2.2507 | 2.2489 | **QSI-3639-32** |

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| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .1269 | .1251 | .1878 | .1873 | .1243 | .1236 | **Q2SI-0203-03** |
| 3/16 | 1/4 | 1/4 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **Q2SI-0304-04** |
| 3/16 | 1/4 | 3/8 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **Q2SI-0304-06** |
| 1/4 | 5/16 | 3/8 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **Q2SI-0405-06** |
| 1/4 | 5/16 | 1/2 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **Q2SI-0405-08** |
| 5/16 | 3/8 | 1/4 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **Q2SI-0506-04** |
| 5/16 | 3/8 | 3/8 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **Q2SI-0506-06** |
| 5/16 | 3/8 | 1/2 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **Q2SI-0506-08** |
| 3/8 | 15/32 | 1/4 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **Q2SI-0607-04** |
| 3/8 | 15/32 | 3/8 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **Q2SI-0607-06** |
| 3/8 | 15/32 | 1/2 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **Q2SI-0607-08** |
| 3/8 | 15/32 | 5/8 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **Q2SI-0607-10** |
| 3/8 | 15/32 | 3/4 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **Q2SI-0607-12** |
| 7/16 | 17/32 | 1/2 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **Q2SI-0708-08** |
| 7/16 | 17/32 | 3/4 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **Q2SI-0708-12** |

[3] After press-fit. Testing methods ▶ Page 61

# Imperial product range | iglidur® | Sleeve bearings

| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 1/2 | 19/32 | 1/4 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **Q2SI-0809-04** |
| 1/2 | 19/32 | 3/8 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **Q2SI-0809-06** |
| 1/2 | 19/32 | 1/2 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **Q2SI-0809-08** |
| 1/2 | 19/32 | 5/8 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **Q2SI-0809-10** |
| 1/2 | 19/32 | 3/4 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **Q2SI-0809-12** |
| 1/2 | 19/32 | 1 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **Q2SI-0809-16** |
| 9/16 | 21/32 | 1/2 | .5655 | .5627 | .6566 | .6559 | .5615 | .5605 | **Q2SI-0910-08** |
| 9/16 | 21/32 | 5/8 | .5655 | .5627 | .6566 | .6559 | .5615 | .5605 | **Q2SI-0910-10** |
| 9/16 | 21/32 | 3/4 | .5655 | .5627 | .6566 | .6559 | .5615 | .5605 | **Q2SI-0910-12** |
| 5/8 | 23/32 | 1/2 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **Q2SI-1011-08** |
| 5/8 | 23/32 | 3/4 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **Q2SI-1011-12** |
| 5/8 | 23/32 | 1 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **Q2SI-1011-16** |
| 3/4 | 7/8 | 1/2 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **Q2SI-1214-08** |
| 3/4 | 7/8 | 3/4 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **Q2SI-1214-12** |
| 3/4 | 7/8 | 1 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **Q2SI-1214-16** |
| 3/4 | 1 | 3/4 | .7541 | .7508 | 1.0010 | 1.0000 | .7491 | .7479 | **Q2SI-1216-16** |
| 7/8 | 1 | 1/2 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **Q2SI-1416-08** |
| 7/8 | 1 | 3/4 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **Q2SI-1416-12** |
| 7/8 | 1 | 1 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **Q2SI-1416-16** |
| 1 | 1 1/8 | 1/2 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **Q2SI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **Q2SI-1618-12** |
| 1 | 1 1/8 | 1 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **Q2SI-1618-16** |
| 1 | 1 1/4 | 1 1/2 | 1.0041 | 1.0007 | 1.2510 | 1.2500 | .9991 | .9979 | **Q2SI-1620-24** |
| 1 1/8 | 1 9/32 | 3/4 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **Q2SI-1820-12** |
| 1 1/8 | 1 9/32 | 1 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **Q2SI-1820-16** |
| 1 1/8 | 1 9/32 | 1 1/4 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **Q2SI-1820-20** |
| 1 1/4 | 1 13/32 | 3/4 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **Q2SI-2022-12** |
| 1 1/4 | 1 13/32 | 1 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **Q2SI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **Q2SI-2022-20** |
| 1 1/4 | 1 13/32 | 1 1/2 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **Q2SI-2022-24** |
| 1 1/4 | 1 1/2 | 1 1/2 | 1.2548 | 1.2508 | 1.501 | 1,500 | 1.2488 | 1.2472 | **Q2SI-2024-24** |
| 1 1/2 | 1 21/32 | 1 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **Q2SI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **Q2SI-2426-24** |
| 1 1/2 | 1 3/4 | 1 1/2 | 1.5048 | 1.5008 | 1.7505 | 1.7495 | 1.4988 | 1.4972 | **Q2SI-2428-24** |
| 1 5/8 | 1 25/32 | 1 | 1.6297 | 1.6258 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **Q2SI-2629-16** |
| 1 5/8 | 1 25/32 | 1 1/2 | 1.6297 | 1.6258 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **Q2SI-2629-24** |
| 1 3/4 | 1 15/16 | 1 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **Q2SI-2831-16** |
| 1 3/4 | 1 15/16 | 2 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **Q2SI-2831-32** |
| 1 7/8 | 2 1/16 | 1 | 1.8796 | 1.8757 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **Q2SI-3033-16** |
| 1 7/8 | 2 1/16 | 2 | 1.8796 | 1.8757 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **Q2SI-3033-32** |
| 2 | 2 3/16 | 1 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **Q2SI-3235-16** |
| 2 | 2 3/16 | 2 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **Q2SI-3235-32** |
| 2 | 2 1/4 | 2 1/4 | 2.0059 | 2.0012 | 2.2505 | 2.2495 | 1.9981 | 1.9969 | **Q2SI-3236-36** |

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| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .1269 | .1251 | .1878 | .1873 | .1243 | .1236 | **WSI-0203-03** |
| 1/8 | 3/16 | 1/4 | .1269 | .1251 | .1878 | .1873 | .1243 | .1236 | **WSI-0203-04** |
| 1/8 | 3/16 | 3/8 | .1269 | .1251 | .1878 | .1873 | .1243 | .1236 | **WSI-0203-06** |
| 3/16 | 1/4 | 1/4 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **WSI-0304-04** |
| 3/16 | 1/4 | 3/8 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **WSI-0304-06** |
| 3/16 | 1/4 | 1/2 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **WSI-0304-08** |
| 1/4 | 5/16 | 3/16 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **WSI-0405-03** |
| 1/4 | 5/16 | 1/4 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **WSI-0405-04** |
| 1/4 | 5/16 | 5/16 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **WSI-0405-05** |
| 1/4 | 5/16 | 3/8 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **WSI-0405-06** |
| 1/4 | 5/16 | 1/2 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **WSI-0405-08** |
| 5/16 | 3/8 | 1/4 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **WSI-0506-04** |
| 5/16 | 3/8 | 3/8 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **WSI-0506-06** |
| 5/16 | 3/8 | 1/2 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **WSI-0506-08** |
| 5/16 | 3/8 | 3/4 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **WSI-0506-12** |
| 3/8 | 15/32 | 1/4 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **WSI-0607-04** |
| 3/8 | 15/32 | 3/8 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **WSI-0607-06** |
| 3/8 | 15/32 | 7/16 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **WSI-0607-07** |
| 3/8 | 15/32 | 1/2 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **WSI-0607-08** |
| 3/8 | 15/32 | 5/8 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **WSI-0607-10** |
| 3/8 | 15/32 | 3/4 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **WSI-0607-12** |
| 3/8 | 17/32 | 3/4 | .3773 | .3750 | .5316 | .5309 | .3740 | .3731 | **WSI-0608-12** |
| 7/16 | 17/32 | 1/4 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **WSI-0708-04** |
| 7/16 | 17/32 | 1/2 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **WSI-0708-08** |
| 7/16 | 17/32 | 3/4 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **WSI-0708-12** |
| 1/2 | 19/32 | 3/16 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **WSI-0809-03** |
| 1/2 | 19/32 | 1/4 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **WSI-0809-04** |
| 1/2 | 19/32 | 3/8 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **WSI-0809-06** |
| 1/2 | 19/32 | 1/2 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **WSI-0809-08** |
| 1/2 | 19/32 | 5/8 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **WSI-0809-10** |
| 1/2 | 19/32 | 3/4 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **WSI-0809-12** |
| 1/2 | 19/32 | 1 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **WSI-0809-16** |
| 1/2 | 5/8 | 1/2 | .5040 | .5013 | .6260 | .6250 | .5000 | .4990 | **WSI-0810-08** |
| 1/2 | 5/8 | 5/8 | .5040 | .5013 | .6260 | .6250 | .5000 | .4990 | **WSI-0810-10** |
| 1/2 | 5/8 | 3/4 | .5040 | .5013 | .6260 | .6250 | .5000 | .4990 | **WSI-0810-12** |
| 1/2 | 5/8 | 1 | .5040 | .5013 | .6260 | .6250 | .5000 | .4990 | **WSI-0810-16** |
| 9/16 | 21/32 | 1/2 | .5655 | .5627 | .6566 | .6559 | .5615 | .5605 | **WSI-0910-08** |
| 9/16 | 21/32 | 5/8 | .5655 | .5627 | .6566 | .6559 | .5615 | .5605 | **WSI-0910-10** |
| 9/16 | 21/32 | 3/4 | .5655 | .5627 | .6566 | .6559 | .5615 | .5605 | **WSI-0910-12** |
| 5/8 | 23/32 | 1/4 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **WSI-1011-04** |
| 5/8 | 23/32 | 3/8 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **WSI-1011-06** |
| 5/8 | 23/32 | 1/2 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **WSI-1011-08** |
| 5/8 | 23/32 | 5/8 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **WSI-1011-10** |
| 5/8 | 23/32 | 3/4 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **WSI-1011-12** |

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# Imperial product range | iglidur® | Sleeve bearings

| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 5/8 | 23/32 | 1 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **WSI-1011-16** |
| 11/16 | 25/32 | 3/4 | .6906 | .6879 | .7817 | .7809 | .6865 | .6855 | **WSI-1112-12** |
| 3/4 | 7/8 | 1/2 | .7541 | .7507 | .8755 | .8747 | .7491 | .7479 | **WSI-1214-08** |
| 3/4 | 7/8 | 3/4 | .7541 | .7507 | .8755 | .8747 | .7491 | .7479 | **WSI-1214-12** |
| 3/4 | 7/8 | 1 | .7541 | .7507 | .8755 | .8747 | .7491 | .7479 | **WSI-1214-16** |
| 3/4 | 7/8 | 1 1/2 | .7541 | .7507 | .8755 | .8747 | .7491 | .7479 | **WSI-1214-24** |
| 7/8 | 1 | 1/4 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **WSI-1416-04** |
| 7/8 | 1 | 3/8 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **WSI-1416-06** |
| 7/8 | 1 | 1/2 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **WSI-1416-08** |
| 7/8 | 1 | 5/8 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **WSI-1416-10** |
| 7/8 | 1 | 3/4 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **WSI-1416-12** |
| 7/8 | 1 | 1 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **WSI-1416-16** |
| 7/8 | 1 | 1 1/2 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **WSI-1416-24** |
| 1 | 1 1/8 | 3/8 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **WSI-1618-06** |
| 1 | 1 1/8 | 1/2 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **WSI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **WSI-1618-12** |
| 1 | 1 1/8 | 1 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **WSI-1618-16** |
| 1 | 1 1/8 | 1 5/16 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **WSI-1618-20** |
| 1 | 1 1/8 | 1 3/8 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **WSI-1618-22** |
| 1 | 1 1/8 | 1 1/2 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **WSI-1618-24** |
| 1 1/8 | 1 9/32 | 3/4 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **WSI-1820-12** |
| 1 1/8 | 1 9/32 | 1 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **WSI-1820-16** |
| 1 1/8 | 1 9/32 | 1 1/4 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **WSI-1820-20** |
| 1 1/4 | 1 13/32 | 3/4 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **WSI-2022-12** |
| 1 1/4 | 1 13/32 | 7/8 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **WSI-2022-14** |
| 1 1/4 | 1 13/32 | 1 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **WSI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **WSI-2022-20** |
| 1 1/4 | 1 13/32 | 1 1/2 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **WSI-2022-24** |
| 1 3/8 | 1 17/32 | 1 | 1.3798 | 1.3758 | 1.5318 | 1.5308 | 1.3738 | 1.3722 | **WSI-2224-16** |
| 1 3/8 | 1 17/32 | 1 1/2 | 1.3798 | 1.3758 | 1.5318 | 1.5308 | 1.3738 | 1.3722 | **WSI-2224-24** |
| 1 1/2 | 1 21/32 | 3/4 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **WSI-2426-12** |
| 1 1/2 | 1 21/32 | 1 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **WSI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **WSI-2426-24** |
| 1 1/2 | 1 21/32 | 2 3/4 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **WSI-2426-44** |
| 1 5/8 | 1 25/32 | 1 | 1.6297 | 1.6258 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **WSI-2629-16** |
| 1 5/8 | 1 25/32 | 1 1/4 | 1.6297 | 1.6258 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **WSI-2629-20** |
| 1 5/8 | 1 25/32 | 1 1/2 | 1.6297 | 1.6258 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **WSI-2629-24** |
| 1 3/4 | 1 15/16 | 1 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **WSI-2831-16** |
| 1 3/4 | 1 15/16 | 1 1/2 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **WSI-2831-24** |
| 1 3/4 | 1 15/16 | 2 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **WSI-2831-32** |
| 1 3/4 | 1 15/16 | 3 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **WSI-2831-48** |
| 1 7/8 | 2 1/16 | 1 | 1.8796 | 1.8757 | 2.0621 | 2.0633 | 1.8721 | 1.8737 | **WSI-3033-16** |
| 1 7/8 | 2 1/16 | 2 | 1.8796 | 1.8757 | 2.0621 | 2.0633 | 1.8721 | 1.8737 | **WSI-3033-32** |
| 2 | 2 3/16 | 1 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **WSI-3235-16** |
| 2 | 2 3/16 | 1 1/2 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **WSI-3235-24** |
| 2 | 2 3/16 | 2 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **WSI-3235-32** |

[3] After press-fit. Testing methods ▶ Page 61





# Imperial product range | iglidur® | Sleeve bearings

| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 2 1/4 | 2 7/16 | 2 | 2.2577 | 2.2531 | 2.4377 | 2.4365 | 2.2507 | 2.2489 | **WSI-3639-32** |

## iglidur® X

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| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .1266 | .1247 | .1878 | .1873 | .1243 | .1236 | **XSI-0203-03** |
| 1/8 | 3/16 | 5/16 | .1266 | .1247 | .1878 | .1873 | .1243 | .1236 | **XSI-0203-05** |
| 1/8 | 3/16 | 3/8 | .1266 | .1247 | .1878 | .1873 | .1243 | .1236 | **XSI-0203-06** |
| 3/16 | 1/4 | 3/16 | .1888 | .1869 | .2503 | .2497 | .1865 | .1858 | **XSI-0304-03** |
| 3/16 | 1/4 | 1/4 | .1888 | .1869 | .2503 | .2497 | .1865 | .1858 | **XSI-0304-04** |
| 3/16 | 1/4 | 3/8 | .1888 | .1869 | .2503 | .2497 | .1865 | .1858 | **XSI-0304-06** |
| 3/16 | 1/4 | 1/2 | .1888 | .1869 | .2503 | .2497 | .1865 | .1858 | **XSI-0304-08** |
| 1/4 | 5/16 | 1/4 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **XSI-0405-04** |
| 1/4 | 5/16 | 3/8 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **XSI-0405-06** |
| 1/4 | 5/16 | 1/2 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **XSI-0405-08** |
| 5/16 | 3/8 | 1/4 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **XSI-0506-04** |
| 5/16 | 3/8 | 3/8 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **XSI-0506-06** |
| 5/16 | 3/8 | 1/2 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **XSI-0506-08** |
| 3/8 | 15/32 | 1/4 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **XSI-0607-04** |
| 3/8 | 15/32 | 5/16 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **XSI-0607-05** |
| 3/8 | 15/32 | 3/8 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **XSI-0607-06** |
| 3/8 | 15/32 | 1/2 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **XSI-0607-08** |
| 3/8 | 15/32 | 5/8 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **XSI-0607-10** |
| 3/8 | 15/32 | 3/4 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **XSI-0607-12** |
| 7/16 | 17/32 | 1/4 | .4399 | .4371 | .5316 | .5309 | .4365 | .4355 | **XSI-0708-04** |
| 7/16 | 17/32 | 1/2 | .4399 | .4371 | .5316 | .5309 | .4365 | .4355 | **XSI-0708-08** |
| 7/16 | 17/32 | 5/8 | .4399 | .4371 | .5316 | .5309 | .4365 | .4355 | **XSI-0708-10** |
| 7/16 | 17/32 | 3/4 | .4399 | .4371 | .5316 | .5309 | .4365 | .4355 | **XSI-0708-12** |
| 1/2 | 19/32 | 1/4 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **XSI-0809-04** |
| 1/2 | 19/32 | 3/8 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **XSI-0809-06** |
| 1/2 | 19/32 | 1/2 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **XSI-0809-08** |
| 1/2 | 19/32 | 5/8 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **XSI-0809-10** |
| 1/2 | 19/32 | 3/4 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **XSI-0809-12** |
| 1/2 | 19/32 | 1 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **XSI-0809-16** |
| 9/16 | 21/32 | 1/2 | .5649 | .5620 | .6566 | .6559 | .5615 | .5605 | **XSI-0910-08** |
| 9/16 | 21/32 | 5/8 | .5649 | .5620 | .6566 | .6559 | .5615 | .5605 | **XSI-0910-10** |
| 9/16 | 21/32 | 3/4 | .5649 | .5620 | .6566 | .6559 | .5615 | .5605 | **XSI-0910-12** |
| 5/8 | 23/32 | 1/4 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **XSI-1011-04** |
| 5/8 | 23/32 | 3/8 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **XSI-1011-06** |
| 5/8 | 23/32 | 1/2 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **XSI-1011-08** |
| 5/8 | 23/32 | 5/8 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **XSI-1011-10** |
| 5/8 | 23/32 | 3/4 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **XSI-1011-12** |
| 5/8 | 23/32 | 1 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **XSI-1011-16** |
| 11/16 | 25/32 | 7/8 | .6906 | .6879 | .7817 | .7809 | .6865 | .6855 | **XSI-1112-14** |
| 3/4 | 7/8 | 3/8 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **XSI-1214-06** |

[3] After press-fit. Testing methods ▶ Page 61

# Imperial product range | iglidur® | Sleeve bearings

| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 3/4 | 7/8 | 1/2 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **XSI-1214-08** |
| 3/4 | 7/8 | 3/4 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **XSI-1214-12** |
| 3/4 | 7/8 | 1 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **XSI-1214-16** |
| 7/8 | 1 | 1/2 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **XSI-1416-08** |
| 7/8 | 1 | 3/4 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **XSI-1416-12** |
| 7/8 | 1 | 1 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **XSI-1416-16** |
| 1 | 1 1/8 | 1/2 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **XSI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **XSI-1618-12** |
| 1 | 1 1/8 | 1 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **XSI-1618-16** |
| 1 | 1 1/8 | 1 1/2 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **XSI-1618-24** |
| 1 1/8 | 1 9/32 | 3/4 | 1.1279 | 1.1246 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **XSI-1820-12** |
| 1 1/8 | 1 9/32 | 1 | 1.1279 | 1.1246 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **XSI-1820-16** |
| 1 1/8 | 1 9/32 | 1 1/4 | 1.1279 | 1.1246 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **XSI-1820-20** |
| 1 1/4 | 1 13/32 | 5/8 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **XSI-2022-10** |
| 1 1/4 | 1 13/32 | 3/4 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **XSI-2022-12** |
| 1 1/4 | 1 13/32 | 1 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **XSI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **XSI-2022-20** |
| 1 1/2 | 1 21/32 | 3/4 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **XSI-2426-12** |
| 1 1/2 | 1 21/32 | 1 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **XSI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **XSI-2426-24** |
| 1 5/8 | 1 25/32 | 1 | 1.6287 | 1.6248 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **XSI-2629-16** |
| 1 5/8 | 1 25/32 | 1 1/4 | 1.6287 | 1.6248 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **XSI-2629-20** |
| 1 5/8 | 1 25/32 | 1 1/2 | 1.6287 | 1.6248 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **XSI-2629-24** |
| 1 3/4 | 1 15/16 | 1 | 1.7536 | 1.7497 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **XSI-2831-16** |
| 1 3/4 | 1 15/16 | 2 | 1.7536 | 1.7497 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **XSI-2831-32** |
| 1 7/8 | 2 1/16 | 1 | 1.8747 | 1.8786 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **XSI-3033-16** |
| 1 7/8 | 2 1/16 | 2 | 1.8747 | 1.8786 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **XSI-3033-32** |
| 2 | 2 3/16 | 1 | 2.0040 | 1.9993 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **XSI-3235-16** |
| 2 | 2 3/16 | 1 1/2 | 2.0040 | 1.9993 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **XSI-3235-24** |
| 2 | 2 3/16 | 2 | 2.0040 | 1.9993 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **XSI-3235-32** |
| 2 1/4 | 2 7/16 | 2 | 2.2577 | 2.2531 | 2.4377 | 2.4365 | 2.2507 | 2.2489 | **XSI-3639-32** |
| 2 3/4 | 2 15/16 | 2 | 2.7570 | 2.7523 | 2.9370 | 2.9358 | 2.7500 | 2.7490 | **XSI-4447-32** |

[3] After press-fit. Testing methods ▶ Page 61



Imperial product range | iglidur® | Sleeve bearings
Inch
iglidur®
form S

## iglidur® Z

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| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .1266 | .1247 | .1878 | .1873 | .1243 | .1236 | **ZSI-0203-03** |
| 3/16 | 1/4 | 1/4 | .1888 | .1869 | .2503 | .2497 | .1865 | .1858 | **ZSI-0304-04** |
| 3/16 | 1/4 | 3/8 | .1888 | .1869 | .2503 | .2497 | .1865 | .1858 | **ZSI-0304-06** |
| 1/4 | 5/16 | 3/8 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **ZSI-0405-06** |
| 1/4 | 5/16 | 1/2 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **ZSI-0405-08** |
| 5/16 | 3/8 | 1/4 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **ZSI-0506-04** |
| 5/16 | 3/8 | 3/8 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **ZSI-0506-06** |
| 5/16 | 3/8 | 1/2 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **ZSI-0506-08** |
| 3/8 | 15/32 | 1/4 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **ZSI-0607-04** |
| 3/8 | 15/32 | 3/8 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **ZSI-0607-06** |
| 3/8 | 15/32 | 1/2 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **ZSI-0607-08** |
| 3/8 | 15/32 | 5/8 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **ZSI-0607-10** |
| 3/8 | 15/32 | 3/4 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **ZSI-0607-12** |
| 7/16 | 17/32 | 1/2 | .4399 | .4371 | .5316 | .5309 | .4365 | .4355 | **ZSI-0708-08** |
| 7/16 | 17/32 | 3/4 | .4399 | .4371 | .5316 | .5309 | .4365 | .4355 | **ZSI-0708-12** |
| 1/2 | 19/32 | 1/4 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **ZSI-0809-04** |
| 1/2 | 19/32 | 3/8 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **ZSI-0809-06** |
| 1/2 | 19/32 | 1/2 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **ZSI-0809-08** |
| 1/2 | 19/32 | 5/8 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **ZSI-0809-10** |
| 1/2 | 19/32 | 3/4 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **ZSI-0809-12** |
| 1/2 | 19/32 | 1 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **ZSI-0809-16** |
| 1/2 | 5/8 | 3/4 | .5034 | .5006 | .6260 | .6250 | .5000 | .4990 | **ZSI-0810-12** |
| 9/16 | 21/32 | 1/2 | .5649 | .5620 | .6566 | .6559 | .5615 | .5605 | **ZSI-0910-08** |
| 9/16 | 21/32 | 5/8 | .5649 | .5620 | .6566 | .6559 | .5615 | .5605 | **ZSI-0910-10** |
| 9/16 | 21/32 | 3/4 | .5649 | .5620 | .6566 | .6559 | .5615 | .5605 | **ZSI-0910-12** |
| 5/8 | 23/32 | 1/2 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **ZSI-1011-08** |
| 5/8 | 23/32 | 3/4 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **ZSI-1011-12** |
| 5/8 | 23/32 | 1 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **ZSI-1011-16** |
| 3/4 | 7/8 | 1/2 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **ZSI-1214-08** |
| 3/4 | 7/8 | 3/4 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **ZSI-1214-12** |
| 3/4 | 7/8 | 1 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **ZSI-1214-16** |
| 7/8 | 1 | 1/2 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **ZSI-1416-08** |
| 7/8 | 1 | 3/4 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **ZSI-1416-12** |
| 7/8 | 1 | 1 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **ZSI-1416-16** |
| 1 | 1 1/8 | 1/2 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **ZSI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **ZSI-1618-12** |
| 1 | 1 1/8 | 1 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **ZSI-1618-16** |
| 1 | 11/8 | 11/2 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **ZSI-1618-24** |
| 1 1/8 | 1 9/32 | 3/4 | 1.1279 | 1.1246 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **ZSI-1820-12** |
| 1 1/8 | 1 9/32 | 1 | 1.1279 | 1.1246 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **ZSI-1820-16** |
| 1 1/8 | 1 9/32 | 1 1/4 | 1.1279 | 1.1246 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **ZSI-1820-20** |
| 1 1/8 | 1 9/32 | 11/2 | 1.1279 | 1.1246 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **ZSI-1820-24** |
| 1 1/4 | 1 13/32 | 3/4 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **ZSI-2022-12** |
| 1 1/4 | 1 13/32 | 1 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **ZSI-2022-16** |

[3] After press-fit. Testing methods ▶ Page 61

# Imperial product range | iglidur® | Sleeve bearings

| d1 | d2 | b1 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | max. | min. | max. | min. | max. | min. | |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **ZSI-2022-20** |
| 1 1/2 | 1 21/32 | 1 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **ZSI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **ZSI-2426-24** |
| 1 5/8 | 1 25/32 | 1 | 1.6287 | 1.6248 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **ZSI-2629-16** |
| 1 5/8 | 1 25/32 | 1 1/2 | 1.6287 | 1.6248 | 1.7818 | 1.7808 | 1.6238 | 1.6222 | **ZSI-2629-24** |
| 1 3/4 | 1 15/16 | 1 | 1.7536 | 1.7497 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **ZSI-2831-16** |
| 1 3/4 | 1 15/16 | 2 | 1.7536 | 1.7497 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **ZSI-2831-32** |
| 1 7/8 | 2 1/16 | 1 | 1.8747 | 1.8786 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **ZSI-3033-16** |
| 1 7/8 | 2 1/16 | 2 | 1.8747 | 1.8786 | 2.0633 | 2.0621 | 1.8737 | 1.8721 | **ZSI-3033-32** |
| 2 | 2 3/16 | 1 | 2.0040 | 1.9993 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **ZSI-3235-16** |
| 2 | 2 3/16 | 2 | 2.0040 | 1.9993 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **ZSI-3235-32** |
| 2 1/4 | 27/16 | 2 | 2.2556 | 2.2519 | 2.4377 | 2.4365 | 2.2507 | 2.2489 | **ZSI-3639-32** |

[3] After press-fit. Testing methods ▶ Page 61



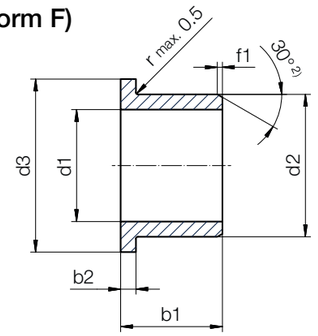
EN 09/2023



# Imperial product range | iglidur® | Flanged bearings

## Flange bearings (form F)

Image exemplary




Chamfer in relation to d1

| d1 [inch] | f [inch] |
|---|---|
| Ø 0.040 - 0.236 | 0.012 |
| Ø 0.236 - 0.472 | 0.019 |
| Ø 0.472 - 1.18 | 0.031 |
| Ø > 1.18 | 0.047 |

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| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .3120 | .0320 | .1269 | .1251 | .1878 | .1873 | .1243 | .1236 | **A181FI-0203-03** |
| 3/16 | 1/4 | 1/4 | .3750 | .0320 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **A181FI-0304-04** |
| 1/4 | 5/16 | 3/8 | .5000 | .0320 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **A181FI-0405-06** |
| 1/4 | 5/16 | 1/2 | .5000 | .0320 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **A181FI-0405-08** |
| 5/16 | 3/8 | 1/4 | .5620 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **A181FI-0506-04** |
| 5/16 | 3/8 | 3/8 | .5620 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **A181FI-0506-06** |
| 5/16 | 3/8 | 1/2 | .5620 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **A181FI-0506-08** |
| 3/8 | 15/32 | 1/4 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **A181FI-0607-04** |
| 3/8 | 15/32 | 3/8 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **A181FI-0607-06** |
| 3/8 | 15/32 | 1/2 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **A181FI-0607-08** |
| 3/8 | 15/32 | 3/4 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **A181FI-0607-12** |
| 7/16 | 17/32 | 1/2 | .7500 | .0460 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **A181FI-0708-08** |
| 1/2 | 19/32 | 1/4 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **A181FI-0809-04** |
| 1/2 | 19/32 | 3/8 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **A181FI-0809-06** |
| 1/2 | 19/32 | 1/2 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **A181FI-0809-08** |
| 1/2 | 19/32 | 3/4 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **A181FI-0809-12** |
| 1/2 | 19/32 | 1 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **A181FI-0809-16** |
| 5/8 | 23/32 | 1/2 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **A181FI-1011-08** |
| 5/8 | 23/32 | 3/4 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **A181FI-1011-12** |
| 5/8 | 23/32 | 1 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **A181FI-1011-16** |
| 3/4 | 7/8 | 1/2 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **A181FI-1214-08** |
| 3/4 | 7/8 | 3/4 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **A181FI-1214-12** |
| 3/4 | 7/8 | 1 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **A181FI-1214-16** |
| 7/8 | 1 | 1/2 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **A181FI-1416-08** |
| 7/8 | 1 | 3/4 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **A181FI-1416-12** |
| 7/8 | 1 | 1 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **A181FI-1416-16** |
| 1 | 1 1/8 | 1/2 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **A181FI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **A181FI-1618-12** |
| 1 | 1 1/8 | 1 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **A181FI-1618-16** |
| 1 1/4 | 1 13/32 | 1 | 1.6870 | .0780 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **A181FI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.6870 | .0780 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **A181FI-2022-20** |
| 1 1/2 | 1 21/32 | 1 | 2.0000 | .0780 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **A181FI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 2.0000 | .0780 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **A181FI-2426-24** |

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# Imperial product range | iglidur® | Flanged bearings

| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 1 3/4 | 1 15/16 | 2 | 2.3750 | .0930 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **A181FI-2831-32** |
| 2 | 2 3/16 | 2 | 2.6250 | .0930 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **A181FI-3235-32** |

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| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 1/8 | 1/4 | 1/4 | .3600 | .0470 | .1280 | .1262 | .2515 | .2510 | .1250 | .1241 | **AFI-0204-04** |
| 3/16 | 5/16 | 1/4 | .3700 | .0470 | .1905 | .1887 | .3140 | .3135 | .1875 | .1866 | **AFI-0305-04** |
| 1/4 | 3/8 | 1/4 | .5600 | .0470 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **AFI-0406-04** |
| 1/4 | 3/8 | 3/8 | .5600 | .0470 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **AFI-0406-06** |
| 5/16 | 7/16 | 1/2 | .5600 | .0620 | .3164 | .3141 | .4390 | .4385 | .3125 | .3116 | **AFI-0507-08** |
| 3/8 | 1/2 | 1/4 | .6250 | .0620 | .3164 | .3141 | .4390 | .4385 | .3125 | .3116 | **AFI-0608-04** |
| 3/8 | 1/2 | 1/2 | .6250 | .0620 | .3789 | .3766 | .5015 | .5010 | .3750 | .3741 | **AFI-0608-08** |
| 1/2 | 5/8 | 1/2 | .8750 | .0620 | .5047 | .5020 | .6257 | .6250 | .5000 | .4983 | **AFI-0810-08** |
| 1/2 | 5/8 | 3/4 | .8750 | .0620 | .5047 | .5020 | .6257 | .6250 | .5000 | .4983 | **AFI-0810-12** |
| 5/8 | 13/16 | 1 | 1.0630 | .1560 | .6297 | .6270 | .8135 | .8125 | .6250 | .6240 | **AFI-1013-16** |
| 3/4 | 1 | 3/4 | 1.2500 | .1560 | .7559 | .7525 | 1.0010 | 1.0000 | .7500 | .7490 | **AFI-1216-12** |
| 3/4 | 1 | 1 | 1.2500 | .1560 | .7559 | .7525 | 1.0010 | 1.0000 | .7500 | .7490 | **AFI-1216-16** |
| 7/8 | 1 1/8 | 1 1/2 | 1.3750 | .1560 | .8809 | .8775 | 1.1260 | 1.1250 | .8750 | .8740 | **AFI-1418-24** |
| 1 | 1 9/32 | 1 | 1.5000 | .1880 | 1.0059 | 1.0025 | 1.2510 | 1.2500 | 1.0000 | .9990 | **AFI-1620-16** |
| 1 | 1 9/32 | 1 1/2 | 1.5000 | .1880 | 1.0059 | 1.0025 | 1.2510 | 1.2500 | 1.0000 | .9990 | **AFI-1620-24** |
| 1 1/4 | 1 17/32 | 1 | 1.7500 | .2000 | 1.2600 | 1.2531 | 1.5005 | 1.4995 | 1.2500 | 1.2490 | **AFI-2024-16** |
| 1 1/4 | 1 17/32 | 1 1/2 | 1.7500 | .2000 | 1.2600 | 1.2531 | 1.5005 | 1.4995 | 1.2500 | 1.2490 | **AFI-2024-24** |
| 1 1/2 | 1 3/4 | 1 | 2.0000 | .1250 | 1.5100 | 1.5032 | 1.7505 | 1.7495 | 1.5000 | 1.4990 | **AFI-2428-16** |
| 1 1/2 | 1 3/4 | 1 1/2 | 2.0000 | .1250 | 1.5100 | 1.5032 | 1.7505 | 1.7495 | 1.5000 | 1.4990 | **AFI-2428-24** |
| 1 3/4 | 2 | 1 | 2.2500 | .1250 | 1.7560 | 1.7532 | 2.0005 | 1.9995 | 1.7500 | 1.7490 | **AFI-2832-16** |

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| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .3120 | .0320 | .1266 | .1247 | .1878 | .1873 | .1243 | .1236 | **A350FI-0203-03** |
| 3/16 | 1/4 | 1/4 | .3750 | .0320 | .1888 | .1869 | .2503 | .2497 | .1865 | .1858 | **A350FI-0304-04** |
| 1/4 | 5/16 | 3/8 | .5000 | .0320 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **A350FI-0405-06** |
| 1/4 | 5/16 | 1/2 | .5000 | .0320 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **A350FI-0405-08** |
| 5/16 | 3/8 | 1/4 | .5620 | .0320 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **A350FI-0506-04** |
| 5/16 | 3/8 | 3/8 | .5620 | .0320 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **A350FI-0506-06** |
| 5/16 | 3/8 | 1/2 | .5620 | .0320 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **A350FI-0506-08** |
| 3/8 | 15/32 | 1/4 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **A350FI-0607-04** |
| 3/8 | 15/32 | 3/8 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **A350FI-0607-06** |
| 3/8 | 15/32 | 1/2 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **A350FI-0607-08** |
| 3/8 | 15/32 | 3/4 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **A350FI-0607-12** |
| 7/16 | 17/32 | 1/2 | .7500 | .0460 | .4399 | .4371 | .5316 | .5309 | .4365 | .4355 | **A350FI-0708-08** |
| 1/2 | 19/32 | 1/4 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **A350FI-0809-04** |
| 1/2 | 19/32 | 3/8 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **A350FI-0809-06** |

[3] After press-fit. Testing methods ▶ Page 61





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Inch iglidur® form F

| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 1/2 | 19/32 | 1/2 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **A350FI-0809-08** |
| 1/2 | 19/32 | 3/4 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **A350FI-0809-12** |
| 1/2 | 19/32 | 1 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **A350FI-0809-16** |
| 5/8 | 23/32 | 1/2 | .9370 | .0460 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **A350FI-1011-08** |
| 5/8 | 23/32 | 3/4 | .9370 | .0460 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **A350FI-1011-12** |
| 5/8 | 23/32 | 1 | .9370 | .0460 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **A350FI-1011-16** |
| 3/4 | 7/8 | 1/2 | 1.1250 | .0620 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **A350FI-1214-08** |
| 3/4 | 7/8 | 3/4 | 1.1250 | .0620 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **A350FI-1214-12** |
| 3/4 | 7/8 | 1 | 1.1250 | .0620 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **A350FI-1214-16** |
| 7/8 | 1 | 1/2 | 1.2500 | .0620 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **A350FI-1416-08** |
| 7/8 | 1 | 3/4 | 1.2500 | .0620 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **A350FI-1416-12** |
| 7/8 | 1 | 1 | 1.2500 | .0620 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **A350FI-1416-16** |
| 1 | 1 1/8 | 1/2 | 1.3750 | .0620 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **A350FI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.3750 | .0620 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **A350FI-1618-12** |
| 1 | 1 1/8 | 1 | 1.3750 | .0620 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **A350FI-1618-16** |
| 1 1/4 | 1 13/32 | 1 | 1.6870 | .0780 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **A350FI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.6870 | .0780 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **A350FI-2022-20** |
| 1 1/2 | 1 21/32 | 1 | 2.0000 | .0780 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **A350FI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 2.0000 | .0780 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **A350FI-2426-24** |
| 1 3/4 | 1 15/16 | 2 | 2.3750 | .0930 | 1.7536 | 1.7497 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **A350FI-2831-32** |
| 2 | 2 3/16 | 2 | 2.6250 | .0930 | 2.0040 | 1.9993 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **A350FI-3235-32** |

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| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .3120 | .0320 | .1266 | .1247 | .1878 | .1873 | .1243 | .1236 | **A500FI-0203-03** |
| 3/16 | 1/4 | 1/4 | .3750 | .0320 | .1888 | .1869 | .2503 | .2497 | .1865 | .1858 | **A500FI-0304-04** |
| 1/4 | 5/16 | 3/8 | .5000 | .0320 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **A500FI-0405-06** |
| 1/4 | 5/16 | 1/2 | .5000 | .0320 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **A500FI-0405-08** |
| 5/16 | 3/8 | 1/4 | .5620 | .0320 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **A500FI-0506-04** |
| 5/16 | 3/8 | 3/8 | .5620 | .0320 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **A500FI-0506-06** |
| 5/16 | 3/8 | 1/2 | .5620 | .0320 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **A500FI-0506-08** |
| 3/8 | 15/32 | 1/4 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **A500FI-0607-04** |
| 3/8 | 15/32 | 3/8 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **A500FI-0607-06** |
| 3/8 | 15/32 | 1/2 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **A500FI-0607-08** |
| 3/8 | 15/32 | 3/4 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **A500FI-0607-12** |
| 7/16 | 17/32 | 1/2 | .7500 | .0460 | .4399 | .4371 | .5316 | .5309 | .4365 | .4355 | **A500FI-0708-08** |
| 1/2 | 19/32 | 1/4 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **A500FI-0809-04** |
| 1/2 | 19/32 | 3/8 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **A500FI-0809-06** |
| 1/2 | 19/32 | 1/2 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **A500FI-0809-08** |
| 1/2 | 19/32 | 3/4 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **A500FI-0809-12** |
| 1/2 | 19/32 | 1 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **A500FI-0809-16** |
| 5/8 | 23/32 | 1/2 | .9370 | .0460 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **A500FI-1011-08** |
| 5/8 | 23/32 | 3/4 | .9370 | .0460 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **A500FI-1011-12** |
| 5/8 | 23/32 | 1 | .9370 | .0460 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **A500FI-1011-16** |

[3] After press-fit. Testing methods ▶ Page 61

# Imperial product range | iglidur® | Flanged bearings

| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 3/4 | 7/8 | 1/2 | 1.1250 | .0620 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **A500FI-1214-08** |
| 3/4 | 7/8 | 3/4 | 1.1250 | .0620 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **A500FI-1214-12** |
| 3/4 | 7/8 | 1 | 1.1250 | .0620 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **A500FI-1214-16** |
| 7/8 | 1 | 1/2 | 1.2500 | .0620 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **A500FI-1416-08** |
| 7/8 | 1 | 3/4 | 1.2500 | .0620 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **A500FI-1416-12** |
| 7/8 | 1 | 1 | 1.2500 | .0620 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **A500FI-1416-16** |
| 1 | 1 1/8 | 1/2 | 1.3750 | .0620 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **A500FI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.3750 | .0620 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **A500FI-1618-12** |
| 1 | 1 1/8 | 1 | 1.3750 | .0620 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **A500FI-1618-16** |
| 1 1/4 | 1 13/32 | 1 | 1.6870 | .0780 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **A500FI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.6870 | .0780 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **A500FI-2022-20** |
| 1 1/2 | 1 21/32 | 1 | 2.0000 | .0780 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **A500FI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 2.0000 | .0780 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **A500FI-2426-24** |
| 1 3/4 | 1 15/16 | 2 | 2.3750 | .0930 | 1.7536 | 1.7497 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **A500FI-2831-32** |
| 2 | 2 3/16 | 2 | 2.6250 | .0930 | 2.0040 | 1.9993 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **A500FI-3235-32** |

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| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 1/8 | .3120 | .0320 | .1269 | .1251 | .1878 | .1873 | .1243 | .1236 | **GFI-0203-02** |
| 1/8 | 3/16 | 3/16 | .3120 | .0320 | .1269 | .1251 | .1878 | .1873 | .1243 | .1236 | **GFI-0203-03** |
| 1/8 | 3/16 | 1/4 | .3120 | .0320 | .1269 | .1251 | .1878 | .1873 | .1243 | .1236 | **GFI-0203-04** |
| 1/8 | 3/16 | 3/8 | .3120 | .0320 | .1269 | .1251 | .1878 | .1873 | .1243 | .1236 | **GFI-0203-06** |
| 3/16 | 1/4 | 1/4 | .3750 | .0320 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **GFI-0304-04** |
| 3/16 | 1/4 | 3/8 | .3750 | .0320 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **GFI-0304-06** |
| 3/16 | 1/4 | 1/2 | .3750 | .0320 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **GFI-0304-08** |
| 1/4 | 5/16 | 1/4 | .5000 | .0320 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **GFI-0405-04** |
| 1/4 | 5/16 | 5/16 | .5000 | .0320 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **GFI-0405-05** |
| 1/4 | 5/16 | 3/8 | .5000 | .0320 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **GFI-0405-06** |
| 1/4 | 5/16 | 1/2 | .5000 | .0320 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **GFI-0405-08** |
| 1/4 | 5/16 | 3/4 | .5000 | .0320 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **GFI-0405-12** |
| 5/16 | 3/8 | 1/4 | .5620 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **GFI-0506-04** |
| 5/16 | 3/8 | 3/8 | .5620 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **GFI-0506-06** |
| 5/16 | 3/8 | 1/2 | .5620 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **GFI-0506-08** |
| 5/16 | 3/8 | 3/4 | .5620 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **GFI-0506-12** |
| 3/8 | 15/32 | 1/4 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **GFI-0607-04** |
| 3/8 | 15/32 | 5/16 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **GFI-0607-05** |
| 3/8 | 15/32 | 3/8 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **GFI-0607-06** |
| 3/8 | 15/32 | 1/2 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **GFI-0607-08** |
| 3/8 | 15/32 | 3/4 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **GFI-0607-12** |
| 3/8 | 15/32 | 7/8 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **GFI-0607-14** |
| 7/16 | 17/32 | 1/4 | .7500 | .0460 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **GFI-0708-04** |
| 7/16 | 17/32 | 1/2 | .7500 | .0460 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **GFI-0708-08** |
| 1/2 | 19/32 | 1/4 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **GFI-0809-04** |
| 1/2 | 19/32 | 5/16 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **GFI-0809-05** |

[3] After press-fit. Testing methods ▶ Page 61



Imperial product range | iglidur® | Flanged bearings
Inch
iglidur®
form F

| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 1/2 | 19/32 | 3/8 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **GFI-0809-06** |
| 1/2 | 19/32 | 1/2 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **GFI-0809-08** |
| 1/2 | 19/32 | 3/4 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **GFI-0809-12** |
| 1/2 | 19/32 | 1 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **GFI-0809-16** |
| 5/8 | 23/32 | 3/8 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **GFI-1011-06** |
| 5/8 | 23/32 | 1/2 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **GFI-1011-08** |
| 5/8 | 23/32 | 3/4 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **GFI-1011-12** |
| 5/8 | 23/32 | 7/8 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **GFI-1011-14** |
| 5/8 | 23/32 | 1 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **GFI-1011-16** |
| 5/8 | 23/32 | 1 1/2 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **GFI-1011-24** |
| 3/4 | 7/8 | 1/8 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **GFI-1214-02** |
| 3/4 | 7/8 | 3/8 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **GFI-1214-06** |
| 3/4 | 7/8 | 1/2 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **GFI-1214-08** |
| 3/4 | 7/8 | 5/8 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **GFI-1214-10** |
| 3/4 | 7/8 | 3/4 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **GFI-1214-12** |
| 3/4 | 7/8 | 1 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **GFI-1214-16** |
| 3/4 | 7/8 | 1 1/2 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **GFI-1214-24** |
| 7/8 | 1 | 1/2 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **GFI-1416-08** |
| 7/8 | 1 | 3/4 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **GFI-1416-12** |
| 7/8 | 1 | 1 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **GFI-1416-16** |
| 7/8 | 1 | 1 1/4 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **GFI-1416-20** |
| 7/8 | 1 | 1 1/2 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **GFI-1416-24** |
| 1 | 1 1/8 | 1/2 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **GFI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **GFI-1618-12** |
| 1 | 1 1/8 | 1 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **GFI-1618-16** |
| 1 | 1 1/8 | 1 1/4 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **GFI-1618-20** |
| 1 | 1 1/8 | 1 1/2 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **GFI-1618-24** |
| 1 1/8 | 1 9/32 | 3/4 | 1.5620 | .0780 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **GFI-1820-12** |
| 1 1/8 | 1 9/32 | 1 1/2 | 1.5620 | .0780 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **GFI-1820-24** |
| 1 1/4 | 1 13/32 | 3/8 | 1.6870 | .0780 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **GFI-2022-06** |
| 1 1/4 | 1 13/32 | 3/4 | 1.6870 | .0780 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **GFI-2022-12** |
| 1 1/4 | 1 13/32 | 7/8 | 1.6870 | .0780 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **GFI-2022-14** |
| 1 1/4 | 1 13/32 | 1 | 1.6870 | .0780 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **GFI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.6870 | .0780 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **GFI-2022-20** |
| 1 1/4 | 1 13/32 | 1 1/2 | 1.6870 | .0780 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **GFI-2022-24** |
| 1 3/8 | 1 17/32 | 1 | 1.8750 | .0780 | 1.3798 | 1.3758 | 1.5318 | 1.5308 | 1.3738 | 1.3722 | **GFI-2224-16** |
| 1 1/2 | 1 21/32 | 3/4 | 2.0000 | .0780 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **GFI-2426-12** |
| 1 1/2 | 1 21/32 | 1 | 2.0000 | .0780 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **GFI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 2.0000 | .0780 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **GFI-2426-24** |
| 1 3/4 | 1 15/16 | 1 | 2.3750 | .0930 | 1.7547 | 1.7505 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **GFI-2831-16** |
| 1 3/4 | 1 15/16 | 1 1/2 | 2.3750 | .0930 | 1.7547 | 1.7505 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **GFI-2831-24** |
| 1 3/4 | 1 15/16 | 2 | 2.3750 | .0930 | 1.7547 | 1.7505 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **GFI-2831-32** |
| 2 | 2 3/16 | 1 | 2.6250 | .0930 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **GFI-3235-16** |
| 2 | 2 3/16 | 1 1/2 | 2.6250 | .0930 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **GFI-3235-24** |
| 2 | 2 3/16 | 2 | 2.6250 | .0930 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **GFI-3235-32** |
| 2 1/4 | 2 7/16 | 2 | 2.7500 | .0930 | 2.2577 | 2.2531 | 2.4377 | 2.4365 | 2.2507 | 2.2489 | **GFI-3639-32** |

[3] After press-fit. Testing methods ▶ Page 61

# Imperial product range | iglidur® | Flanged bearings

| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 2 1/2 | 2 11/16 | 2 | 3.1250 | .0930 | 2.5082 | 2.5035 | 2.6881 | 2.6869 | 2.5000 | 2.4999 | **GFI-4043-32** |
| 2 3/4 | 2 15/16 | 2 | 3.3750 | .0930 | 2.7570 | 2.7523 | 2.9370 | 2.9358 | 2.7500 | 2.7490 | **GFI-4447-32** |

## iglidur® H1

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| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | h13 | | h13 | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .3120 | .0320 | .1266 | .1247 | .1878 | .1873 | .1243 | .1236 | **H1FI-0203-03** |
| 3/16 | 1/4 | 1/4 | .3750 | .0320 | .1888 | .1869 | .2503 | .2497 | .1865 | .1858 | **H1FI-0304-04** |
| 1/4 | 5/16 | 3/8 | .5000 | .0320 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **H1FI-0405-06** |
| 1/4 | 5/16 | 1/2 | .5000 | .0320 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **H1FI-0405-08** |
| 5/16 | 3/8 | 1/4 | .5620 | .0320 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **H1FI-0506-04** |
| 5/16 | 3/8 | 3/8 | .5620 | .0320 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **H1FI-0506-06** |
| 5/16 | 3/8 | 1/2 | .5620 | .0320 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **H1FI-0506-08** |
| 3/8 | 15/32 | 1/4 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **H1FI-0607-04** |
| 3/8 | 15/32 | 3/8 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **H1FI-0607-06** |
| 3/8 | 15/32 | 1/2 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **H1FI-0607-08** |
| 3/8 | 15/32 | 3/4 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **H1FI-0607-12** |
| 7/16 | 17/32 | 1/2 | .7500 | .0460 | .4399 | .4371 | .5316 | .5309 | .4365 | .4355 | **H1FI-0708-08** |
| 1/2 | 19/32 | 1/4 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **H1FI-0809-04** |
| 1/2 | 19/32 | 3/8 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **H1FI-0809-06** |
| 1/2 | 19/32 | 1/2 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **H1FI-0809-08** |
| 1/2 | 19/32 | 3/4 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **H1FI-0809-12** |
| 1/2 | 19/32 | 1 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **H1FI-0809-16** |
| 5/8 | 23/32 | 1/2 | .9370 | .0460 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **H1FI-1011-08** |
| 5/8 | 23/32 | 3/4 | .9370 | .0460 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **H1FI-1011-12** |
| 5/8 | 23/32 | 1 | .9370 | .0460 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **H1FI-1011-16** |
| 3/4 | 7/8 | 1/2 | 1.1250 | .0620 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **H1FI-1214-08** |
| 3/4 | 7/8 | 3/4 | 1.1250 | .0620 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **H1FI-1214-12** |
| 3/4 | 7/8 | 1 | 1.1250 | .0620 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **H1FI-1214-16** |
| 7/8 | 1 | 1/2 | 1.2500 | .0620 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **H1FI-1416-08** |
| 7/8 | 1 | 3/4 | 1.2500 | .0620 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **H1FI-1416-12** |
| 7/8 | 1 | 1 | 1.2500 | .0620 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **H1FI-1416-16** |
| 1 | 1 1/8 | 1/2 | 1.3750 | .0620 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **H1FI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.3750 | .0620 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **H1FI-1618-12** |
| 1 | 1 1/8 | 1 | 1.3750 | .0620 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **H1FI-1618-16** |
| 1 1/4 | 1 13/32 | 1 | 1.6870 | .0780 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **H1FI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.6870 | .0780 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **H1FI-2022-20** |
| 1 1/2 | 1 21/32 | 1 | 2.0000 | .0780 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **H1FI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 2.0000 | .0780 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **H1FI-2426-24** |
| 1 3/4 | 1 15/16 | 2 | 2.3750 | .0930 | 1.7536 | 1.7497 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **H1FI-2831-32** |
| 2 | 2 3/16 | 2 | 2.6250 | .0930 | 2.0040 | 1.9993 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **H1FI-3235-32** |

[3] After press-fit. Testing methods ▶ Page 61



Imperial product range | iglidur® | Flanged bearings

Inch
iglidur®
form F

## iglidur® H370

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| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | h13 | | h13 | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .3120 | .0320 | .1266 | .1247 | .1878 | .1873 | .1243 | .1236 | **H370FI-0203-03** |
| 3/16 | 1/4 | 1/4 | .3750 | .0320 | .1888 | .1869 | .2503 | .2497 | .1865 | .1858 | **H370FI-0304-04** |
| 1/4 | 5/16 | 1/4 | .5000 | .0320 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **H370FI-0405-04** |
| 1/4 | 5/16 | 3/8 | .5000 | .0320 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **H370FI-0405-06** |
| 1/4 | 5/16 | 1/2 | .5000 | .0320 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **H370FI-0405-08** |
| 5/16 | 3/8 | 1/4 | .5620 | .0320 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **H370FI-0506-04** |
| 5/16 | 3/8 | 3/8 | .5620 | .0320 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **H370FI-0506-06** |
| 5/16 | 3/8 | 1/2 | .5620 | .0320 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **H370FI-0506-08** |
| 3/8 | 15/32 | 1/4 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **H370FI-0607-04** |
| 3/8 | 15/32 | 3/8 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **H370FI-0607-06** |
| 3/8 | 15/32 | 1/2 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **H370FI-0607-08** |
| 3/8 | 15/32 | 3/4 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **H370FI-0607-12** |
| 7/16 | 17/32 | 1/2 | .7500 | .0460 | .4399 | .4371 | .5316 | .5309 | .4365 | .4355 | **H370FI-0708-08** |
| 1/2 | 19/32 | 1/4 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **H370FI-0809-04** |
| 1/2 | 19/32 | 3/8 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **H370FI-0809-06** |
| 1/2 | 19/32 | 1/2 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **H370FI-0809-08** |
| 1/2 | 19/32 | 3/4 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **H370FI-0809-12** |
| 1/2 | 19/32 | 1 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **H370FI-0809-16** |
| 5/8 | 23/32 | 1/2 | .9370 | .0460 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **H370FI-1011-08** |
| 5/8 | 23/32 | 3/4 | .9370 | .0460 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **H370FI-1011-12** |
| 5/8 | 23/32 | 1 | .9370 | .0460 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **H370FI-1011-16** |
| 3/4 | 7/8 | 1/2 | 1.1250 | .0620 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **H370FI-1214-08** |
| 3/4 | 7/8 | 3/4 | 1.1250 | .0620 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **H370FI-1214-12** |
| 3/4 | 7/8 | 1 | 1.1250 | .0620 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **H370FI-1214-16** |
| 7/8 | 1 | 1/2 | 1.2500 | .0620 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **H370FI-1416-08** |
| 7/8 | 1 | 3/4 | 1.2500 | .0620 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **H370FI-1416-12** |
| 7/8 | 1 | 1 | 1.2500 | .0620 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **H370FI-1416-16** |
| 1 | 1 1/8 | 1/2 | 1.3750 | .0620 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **H370FI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.3750 | .0620 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **H370FI-1618-12** |
| 1 | 1 1/8 | 1 | 1.3750 | .0620 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **H370FI-1618-16** |
| 1 1/4 | 1 13/32 | 1 | 1.6870 | .0780 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **H370FI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.6870 | .0780 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **H370FI-2022-20** |
| 1 1/2 | 1 21/32 | 1 | 2.0000 | .0780 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **H370FI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 2.0000 | .0780 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **H370FI-2426-24** |
| 1 3/4 | 1 15/16 | 2 | 2.3750 | .0930 | 1.7536 | 1.7497 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **H370FI-2831-32** |
| 2 | 2 3/16 | 2 | 2.6250 | .0930 | 2.0040 | 1.9993 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **H370FI-3235-32** |

[3] After press-fit. Testing methods ▶ Page 61

# Imperial product range | iglidur® | Flanged bearings

## iglidur® J

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| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .3120 | .0320 | .1269 | .1251 | .1878 | .1873 | .1243 | .1236 | **JFI-0203-03** |
| 1/8 | 1/4 | 3/8 | .3600 | .0470 | .1280 | .1262 | .2515 | .2510 | .1250 | .1241 | **JFI-0204-06** |
| 3/16 | 1/4 | 1/8 | .3750 | .0320 | .1905 | .1887 | .2515 | .2510 | .1875 | .1866 | **JFI-0304-02** |
| 3/16 | 1/4 | 1/4 | .3750 | .0320 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **JFI-0304-04** |
| 3/16 | 1/4 | 3/8 | .3750 | .0320 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **JFI-0304-06** |
| 3/16 | 1/4 | 1/2 | .3750 | .0320 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **JFI-0304-08** |
| 3/16 | 5/16 | 3/8 | .3700 | .0470 | .1905 | .1887 | .3140 | .3135 | .1875 | .1866 | **JFI-0305-06** |
| 3/16 | 5/16 | 1/2 | .3700 | .0470 | .1905 | .1887 | .3140 | .3135 | .1875 | .1866 | **JFI-0305-08** |
| 1/4 | 5/16 | 1/4 | .4370 | .0320 | .2521 | .2498 | .3140 | .3135 | .2490 | .2481 | **JFI-0405-04** |
| 1/4 | 5/16 | 1/2 | .5000 | .0320 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **JFI-0405-06** |
| 1/4 | 5/16 | 3/8 | .4370 | .0320 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **JFI-0405-08** |
| 1/4 | 5/16 | 3/4 | .4370 | .0320 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **JFI-0405-12** |
| 1/4 | 3/8 | 3/16 | .5600 | .0470 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **JFI-0406-03** |
| 1/4 | 3/8 | 1/4 | .5600 | .0470 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **JFI-0406-04** |
| 1/4 | 3/8 | 1/2 | .5600 | .0470 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **JFI-0406-08** |
| 5/16 | 3/8 | 1/4 | .5000 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **JFI-0506-04** |
| 5/16 | 3/8 | 3/8 | .5000 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **JFI-0506-06** |
| 5/16 | 3/8 | 1/2 | .5000 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **JFI-0506-08** |
| 5/16 | 7/16 | 1/2 | .5600 | .0620 | .3164 | .3141 | .4390 | .4385 | .3125 | .3116 | **JFI-0507-08** |
| 3/8 | 15/32 | 1/4 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **JFI-0607-04** |
| 3/8 | 15/32 | 3/8 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **JFI-0607-06** |
| 3/8 | 15/32 | 1/2 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **JFI-0607-08** |
| 3/8 | 15/32 | 3/4 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **JFI-0607-12** |
| 3/8 | 1/2 | 3/16 | .6250 | .0620 | .3789 | .3766 | .5015 | .5010 | .3750 | .3741 | **JFI-0608-03** |
| 3/8 | 1/2 | 3/8 | .6250 | .0620 | .3789 | .3766 | .5015 | .5010 | .3750 | .3741 | **JFI-0608-06** |
| 3/8 | 1/2 | 1/2 | .6250 | .0620 | .3789 | .3766 | .5015 | .5010 | .3750 | .3741 | **JFI-0608-08** |
| 7/16 | 17/32 | 1/2 | .7500 | .0460 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **JFI-0708-08** |
| 1/2 | 19/32 | 1/4 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **JFI-0809-04** |
| 1/2 | 19/32 | 3/8 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **JFI-0809-06** |
| 1/2 | 19/32 | 1/2 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **JFI-0809-08** |
| 1/2 | 19/32 | 3/4 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **JFI-0809-12** |
| 1/2 | 19/32 | 1 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **JFI-0809-16** |
| 1/2 | 5/8 | 1/4 | .8750 | .0620 | .5047 | .5020 | .6260 | .6250 | .5000 | .4990 | **JFI-0810-04** |
| 1/2 | 5/8 | 1/2 | .8750 | .0620 | .5047 | .5020 | .6260 | .6250 | .5000 | .4990 | **JFI-0810-08** |
| 1/2 | 5/8 | 5/8 | .8750 | .0620 | .5047 | .5020 | .6260 | .6250 | .5000 | .4990 | **JFI-0810-10** |
| 1/2 | 5/8 | 3/4 | .8750 | .0620 | .5047 | .5020 | .6260 | .6250 | .5000 | .4990 | **JFI-0810-12** |
| 5/8 | 23/32 | 1/2 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **JFI-1011-08** |
| 5/8 | 23/32 | 3/4 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6250 | .6240 | **JFI-1011-12** |
| 5/8 | 23/32 | 1 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6250 | .6240 | **JFI-1011-16** |
| 5/8 | 3/4 | 1/2 | 1.0000 | .0620 | .6297 | .6270 | .7510 | .7500 | .6250 | .6240 | **JFI-1012-08** |
| 5/8 | 3/4 | 3/4 | 1.0000 | .0620 | .6297 | .6270 | .7510 | .7500 | .6250 | .6240 | **JFI-1012-12** |
| 5/8 | 3/4 | 1 | 1.0000 | .0620 | .6297 | .6270 | .7510 | .7500 | .6250 | .6240 | **JFI-1012-16** |
| 3/4 | 7/8 | 1/2 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **JFI-1214-08** |
| 3/4 | 7/8 | 5/8 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **JFI-1214-10** |

[3] After press-fit. Testing methods ▶ Page 61





Imperial product range | iglidur® | Flanged bearings

Inch iglidur® form F

| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 3/4 | 7/8 | 3/4 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **JFI-1214-12** |
| 3/4 | 7/8 | 1 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **JFI-1214-16** |
| 3/4 | 1 | 3/4 | 1.2500 | .1560 | .7559 | .7525 | 1.0010 | 1.00 | .7500 | .7490 | **JFI-1216-12** |
| 3/4 | 1 | 1 | 1.2500 | .1560 | .7559 | .7525 | 1.0010 | 1.00 | .7500 | .7490 | **JFI-1216-16** |
| 7/8 | 1 | 1/2 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **JFI-1416-08** |
| 7/8 | 1 | 3/4 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **JFI-1416-12** |
| 7/8 | 1 | 1 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **JFI-1416-16** |
| 7/8 | 1 | 1 1/16 | 1.1250 | .0620 | .8809 | .8776 | 1.0010 | 1.00 | .8750 | .8740 | **JFI-141618-11** |
| 1 | 1 1/8 | 1/2 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **JFI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **JFI-1618-12** |
| 1 | 1 1/8 | 1 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **JFI-1618-16** |
| 1 | 1 1/4 | 3/4 | 1.5000 | .1880 | 1.0059 | 1.0025 | 1.2510 | 1,250 | 1.0000 | .9990 | **JFI-1620-12** |
| 1 | 1 1/4 | 1 | 1.5000 | .1880 | 1.0059 | 1.0025 | 1.2510 | 1,250 | 1.0000 | .9990 | **JFI-1620-16** |
| 1 | 1 1/4 | 1 1/2 | 1.5000 | .1880 | 1.0059 | 1.0025 | 1.2510 | 1,250 | 1.0000 | .9990 | **JFI-1620-24** |
| 1 1/4 | 1 13/32 | 1 | 1.6870 | .0780 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **JFI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.6870 | .0780 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **JFI-2022-20** |
| 1 1/4 | 1 1/2 | 1 | 1.7500 | .1880 | 1.2600 | 1.2531 | 1.5005 | 1.4995 | 1.2500 | 1.2490 | **JFI-2024-16** |
| 1 1/4 | 1 1/2 | 1 1/2 | 1.7500 | .1880 | 1.2600 | 1.2531 | 1.5005 | 1.4995 | 1.2500 | 1.2490 | **JFI-2024-24** |
| 1 1/2 | 1 21/32 | 1 | 2.0000 | .0780 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **JFI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 2.0000 | .0780 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **JFI-2426-24** |
| 1 1/2 | 1 3/4 | 1 | 2.0000 | .1250 | 1.5100 | 1.5032 | 1.7505 | 1.7495 | 1.5000 | 1.4990 | **JFI-2428-16** |
| 1 1/2 | 1 3/4 | 1 1/2 | 2.0000 | .1250 | 1.5100 | 1.5032 | 1.7505 | 1.7495 | 1.5000 | 1.4990 | **JFI-2428-24** |
| 1 5/8 | 1 7/8 | 1 | 2.1250 | .1250 | 1.6350 | 1.6882 | 1.8755 | 1.8745 | 1.6250 | 1.6240 | **JFI-2630-16** |
| 1 3/4 | 1 15/16 | 2 | 2.3750 | .0930 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **JFI-2831-32** |
| 2 | 2 3/16 | 2 | 2.6250 | .0930 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **JFI-3235-32** |

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| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .3120 | .0320 | .1269 | .1251 | .1878 | .1873 | .1243 | .1236 | **J3FI-0203-03** |
| 3/16 | 1/4 | 1/4 | .3750 | .0320 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **J3FI-0304-04** |
| 1/4 | 5/16 | 3/8 | .5000 | .0320 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **J3FI-0405-06** |
| 1/4 | 5/16 | 1/2 | .5000 | .0320 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **J3FI-0405-08** |
| 5/16 | 3/8 | 1/4 | .5620 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **J3FI-0506-04** |
| 5/16 | 3/8 | 3/8 | .5620 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **J3FI-0506-06** |
| 5/16 | 3/8 | 1/2 | .5620 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **J3FI-0506-08** |
| 3/8 | 15/32 | 1/4 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **J3FI-0607-04** |
| 3/8 | 15/32 | 3/8 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **J3FI-0607-06** |
| 3/8 | 15/32 | 1/2 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **J3FI-0607-08** |
| 3/8 | 15/32 | 3/4 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **J3FI-0607-12** |
| 7/16 | 17/32 | 1/2 | .7500 | .0460 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **J3FI-0708-08** |
| 1/2 | 19/32 | 1/4 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **J3FI-0809-04** |
| 1/2 | 19/32 | 3/8 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **J3FI-0809-06** |
| 1/2 | 19/32 | 1/2 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **J3FI-0809-08** |
| 1/2 | 19/32 | 3/4 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **J3FI-0809-12** |

[3] After press-fit. Testing methods ▶ Page 61

# Imperial product range | iglidur® | Flanged bearings

| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 1/2 | 19/32 | 1 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **J3FI-0809-16** |
| 5/8 | 23/32 | 1/2 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **J3FI-1011-08** |
| 5/8 | 23/32 | 3/4 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **J3FI-1011-12** |
| 5/8 | 23/32 | 1 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **J3FI-1011-16** |
| 3/4 | 7/8 | 1/2 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **J3FI-1214-08** |
| 3/4 | 7/8 | 3/4 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **J3FI-1214-12** |
| 3/4 | 7/8 | 1 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **J3FI-1214-16** |
| 7/8 | 1 | 1/2 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **J3FI-1416-08** |
| 7/8 | 1 | 3/4 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **J3FI-1416-12** |
| 7/8 | 1 | 1 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **J3FI-1416-16** |
| 1 | 1 1/8 | 1/2 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **J3FI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **J3FI-1618-12** |
| 1 | 1 1/8 | 1 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **J3FI-1618-16** |
| 1 1/4 | 1 13/32 | 1 | 1.6870 | .0780 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **J3FI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.6870 | .0780 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **J3FI-2022-20** |
| 1 1/2 | 1 21/32 | 1 | 2.0000 | .0780 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **J3FI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 2.0000 | .0780 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **J3FI-2426-24** |
| 1 3/4 | 1 15/16 | 2 | 2.3750 | .0930 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **J3FI-2831-32** |
| 2 | 2 3/16 | 2 | 2.6250 | .0930 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **J3FI-3235-32** |

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| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .3120 | .0320 | .1266 | .1247 | .1878 | .1873 | .1243 | .1236 | **J350FI-0203-03** |
| 3/16 | 1/4 | 1/4 | .3750 | .0320 | .1888 | .1869 | .2503 | .2497 | .1865 | .1858 | **J350FI-0304-04** |
| 1/4 | 5/16 | 3/8 | .5000 | .0320 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **J350FI-0405-06** |
| 1/4 | 5/16 | 1/2 | .5000 | .0320 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **J350FI-0405-08** |
| 5/16 | 3/8 | 1/4 | .5620 | .0320 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **J350FI-0506-04** |
| 5/16 | 3/8 | 3/8 | .5620 | .0320 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **J350FI-0506-06** |
| 5/16 | 3/8 | 1/2 | .5620 | .0320 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **J350FI-0506-08** |
| 3/8 | 15/32 | 1/4 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **J350FI-0607-04** |
| 3/8 | 15/32 | 3/8 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **J350FI-0607-06** |
| 3/8 | 15/32 | 1/2 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **J350FI-0607-08** |
| 3/8 | 15/32 | 3/4 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **J350FI-0607-12** |
| 7/16 | 17/32 | 1/2 | .7500 | .0460 | .4399 | .4371 | .5316 | .5309 | .4365 | .4355 | **J350FI-0708-08** |
| 1/2 | 19/32 | 1/4 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **J350FI-0809-04** |
| 1/2 | 19/32 | 3/8 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **J350FI-0809-06** |
| 1/2 | 19/32 | 1/2 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **J350FI-0809-08** |
| 1/2 | 19/32 | 3/4 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **J350FI-0809-12** |
| 1/2 | 19/32 | 1 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **J350FI-0809-16** |
| 5/8 | 23/32 | 1/2 | .9370 | .0460 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **J350FI-1011-08** |
| 5/8 | 23/32 | 3/4 | .9370 | .0460 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **J350FI-1011-12** |
| 5/8 | 23/32 | 1 | .9370 | .0460 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **J350FI-1011-16** |
| 3/4 | 7/8 | 1/2 | 1.1250 | .0620 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **J350FI-1214-08** |
| 3/4 | 7/8 | 3/4 | 1.1250 | .0620 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **J350FI-1214-12** |

[3] After press-fit. Testing methods ▶ Page 61



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Imperial product range | iglidur® | Flanged bearings

Inch iglidur® form F

| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 3/4 | 7/8 | 1 | 1.1250 | .0620 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **J350FI-1214-16** |
| 7/8 | 1 | 1/2 | 1.2500 | .0620 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **J350FI-1416-08** |
| 7/8 | 1 | 3/4 | 1.2500 | .0620 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **J350FI-1416-12** |
| 7/8 | 1 | 1 | 1.2500 | .0620 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **J350FI-1416-16** |
| 1 | 1 1/8 | 1/2 | 1.3750 | .0620 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **J350FI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.3750 | .0620 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **J350FI-1618-12** |
| 1 | 1 1/8 | 1 | 1.3750 | .0620 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **J350FI-1618-16** |
| 1 1/4 | 1 13/32 | 1 | 1.6870 | .0780 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **J350FI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.6870 | .0780 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **J350FI-2022-20** |
| 1 1/2 | 1 21/32 | 1 | 2.0000 | .0780 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **J350FI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 2.0000 | .0780 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **J350FI-2426-24** |
| 1 3/4 | 1 15/16 | 2 | 2.3750 | .0930 | 1.7536 | 1.7497 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **J350FI-2831-32** |
| 2 | 2 3/16 | 2 | 2.6250 | .0930 | 2.0040 | 1.9993 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **J350FI-3235-32** |

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| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 1/8 | .3125 | .0320 | .1280 | .1262 | .1885 | .1880 | .1250 | .1241 | **MFI-0203-02** |
| 1/8 | 3/16 | 1/4 | .3125 | .0320 | .1280 | .1262 | .1885 | .1880 | .1250 | .1241 | **MFI-0203-04** |
| 1/8 | 1/4 | 1/8 | .3600 | .0470 | .1280 | .1262 | .2515 | .2510 | .1250 | .1241 | **MFI-0204-02** |
| 1/8 | 1/4 | 3/16 | .3600 | .0470 | .1280 | .1262 | .2515 | .2510 | .1250 | .1241 | **MFI-0204-03** |
| 1/8 | 1/4 | 1/4 | .3600 | .0470 | .1280 | .1262 | .2515 | .2510 | .1250 | .1241 | **MFI-0204-04** |
| 1/8 | 1/4 | 3/8 | .3600 | .0470 | .1280 | .1262 | .2515 | .2510 | .1250 | .1241 | **MFI-0204-06** |
| 1/8 | 1/4 | 3/4 | .3600 | .0470 | .1280 | .1262 | .2515 | .2510 | .1250 | .1241 | **MFI-0204-12** |
| 3/16 | 1/4 | 1/4 | .3750 | .0320 | .1905 | .1887 | .2515 | .2510 | .1875 | .1866 | **MFI-0304-04** |
| 3/16 | 1/4 | 3/8 | .3750 | .0320 | .1905 | .1887 | .2515 | .2510 | .1875 | .1866 | **MFI-0304-06** |
| 3/16 | 1/4 | 1/2 | .3750 | .0320 | .1905 | .1887 | .2515 | .2510 | .1875 | .1866 | **MFI-0304-08** |
| 3/16 | 5/16 | 3/16 | .3700 | .0470 | .1905 | .1887 | .3140 | .3135 | .1875 | .1866 | **MFI-0305-03** |
| 3/16 | 5/16 | 1/4 | .3700 | .0470 | .1905 | .1887 | .3140 | .3135 | .1875 | .1866 | **MFI-0305-04** |
| 3/16 | 5/16 | 5/16 | .3700 | .0470 | .1905 | .1887 | .3140 | .3135 | .1875 | .1866 | **MFI-0305-05** |
| 3/16 | 5/16 | 3/8 | .3700 | .0470 | .1905 | .1887 | .3140 | .3135 | .1875 | .1866 | **MFI-0305-06** |
| 3/16 | 5/16 | 1/2 | .3700 | .0470 | .1905 | .1887 | .3140 | .3135 | .1875 | .1866 | **MFI-0305-08** |
| 1/4 | 5/16 | 3/16 | .4375 | .0470 | .2539 | .2516 | .3140 | .3135 | .2500 | .2491 | **MFI-0405-03** |
| 1/4 | 5/16 | 1/4 | .4375 | .0320 | .2539 | .2516 | .3140 | .3135 | .2500 | .2491 | **MFI-0405-04** |
| 1/4 | 5/16 | 3/8 | .4375 | .0320 | .2539 | .2516 | .3140 | .3135 | .2500 | .2491 | **MFI-0405-06** |
| 1/4 | 5/16 | 7/16 | .4375 | .0470 | .2539 | .2516 | .3140 | .3135 | .2500 | .2491 | **MFI-0405-07** |
| 1/4 | 5/16 | 1/2 | .4375 | .0320 | .2539 | .2516 | .3140 | .3135 | .2500 | .2491 | **MFI-0405-08** |
| 1/4 | 5/16 | 3/4 | .4375 | .0470 | .2539 | .2516 | .3140 | .3135 | .2500 | .2491 | **MFI-0405-12** |
| 1/4 | 3/8 | 1/8 | .5600 | .0470 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **MFI-0406-02** |
| 1/4 | 3/8 | 3/16 | .5600 | .0470 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **MFI-0406-03** |
| 1/4 | 3/8 | 1/4 | .5600 | .0470 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **MFI-0406-04** |
| 1/4 | 3/8 | 3/8 | .5600 | .0470 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **MFI-0406-06** |
| 1/4 | 3/8 | 1/2 | .5600 | .0470 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **MFI-0406-08** |
| 1/4 | 3/8 | 5/8 | .5600 | .0470 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **MFI-0406-10** |
| 1/4 | 3/8 | 3/4 | .5600 | .0470 | .2539 | .2516 | .3765 | .3760 | .2500 | .2491 | **MFI-0406-12** |

[3] After press-fit. Testing methods ▶ Page 61

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# Imperial product range | iglidur® | Flanged bearings

| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 5/16 | 3/8 | 1/4 | .5000 | .0320 | .3164 | .3141 | .3765 | .3760 | .3125 | .3116 | **MFI-0506-04** |
| 5/16 | 3/8 | 3/8 | .5000 | .0320 | .3164 | .3141 | .3765 | .3760 | .3125 | .3116 | **MFI-0506-06** |
| 5/16 | 3/8 | 1/2 | .5000 | .0320 | .3164 | .3141 | .3765 | .3760 | .3125 | .3116 | **MFI-0506-08** |
| 5/16 | 3/8 | 15/16 | .5000 | .0320 | .3164 | .3141 | .3765 | .3760 | .3125 | .3116 | **MFI-0506-15** |
| 5/16 | 7/16 | 3/16 | .5600 | .0620 | .3164 | .3141 | .4390 | .4385 | .3125 | .3116 | **MFI-0507-03** |
| 5/16 | 7/16 | 1/4 | .5600 | .0620 | .3164 | .3141 | .4390 | .4385 | .3125 | .3116 | **MFI-0507-04** |
| 5/16 | 7/16 | 5/16 | .5600 | .0620 | .3164 | .3141 | .4390 | .4385 | .3125 | .3116 | **MFI-0507-05** |
| 5/16 | 7/16 | 3/8 | .5600 | .0620 | .3164 | .3141 | .4390 | .4385 | .3125 | .3116 | **MFI-0507-06** |
| 5/16 | 7/16 | 1/2 | .5600 | .0620 | .3164 | .3141 | .4390 | .4385 | .3125 | .3116 | **MFI-0507-08** |
| 5/16 | 7/16 | 5/8 | .5600 | .0620 | .3164 | .3141 | .4390 | .4385 | .3125 | .3116 | **MFI-0507-10** |
| 5/16 | 7/16 | 3/4 | .5600 | .0620 | .3164 | .3141 | .4390 | .4385 | .3125 | .3116 | **MFI-0507-12** |
| 3/8 | 7/16 | 1/4 | .5625 | .0320 | .3789 | .3766 | .4390 | .4385 | .3750 | .3741 | **MFI-0607-04** |
| 3/8 | 7/16 | 3/8 | .5625 | .0320 | .3789 | .3766 | .4390 | .4385 | .3750 | .3741 | **MFI-0607-06** |
| 3/8 | 7/16 | 1/2 | .5625 | .0320 | .3789 | .3766 | .4390 | .4385 | .3750 | .3741 | **MFI-0607-08** |
| 3/8 | 1/2 | 1/8 | .6250 | .0620 | .3789 | .3766 | .5015 | .5010 | .3750 | .3741 | **MFI-0608-02** |
| 3/8 | 1/2 | 3/16 | .6250 | .0620 | .3789 | .3766 | .5015 | .5010 | .3750 | .3741 | **MFI-0608-03** |
| 3/8 | 1/2 | 1/4 | .6250 | .0620 | .3789 | .3766 | .5015 | .5010 | .3750 | .3741 | **MFI-0608-04** |
| 3/8 | 1/2 | 5/16 | .6250 | .0620 | .3789 | .3766 | .5015 | .5010 | .3750 | .3741 | **MFI-0608-05** |
| 3/8 | 1/2 | 3/8 | .6250 | .0620 | .3789 | .3766 | .5015 | .5010 | .3750 | .3741 | **MFI-0608-06** |
| 3/8 | 1/2 | 1/2 | .6250 | .0620 | .3789 | .3766 | .5015 | .5010 | .3750 | .3741 | **MFI-0608-08** |
| 3/8 | 1/2 | 5/8 | .6250 | .0620 | .3789 | .3766 | .5015 | .5010 | .3750 | .3741 | **MFI-0608-10** |
| 3/8 | 1/2 | 3/4 | .6250 | .0620 | .3789 | .3766 | .5015 | .5010 | .3750 | .3741 | **MFI-0608-12** |
| 3/8 | 1/2 | 1 | .6250 | .0620 | .3789 | .3766 | .5015 | .5010 | .3750 | .3741 | **MFI-0608-16** |
| 7/16 | 9/16 | 3/8 | .6870 | .0620 | .4422 | .4395 | .5941 | .5934 | .4375 | .4365 | **MFI-0709-06** |
| 7/16 | 9/16 | 1/2 | .6870 | .0620 | .4422 | .4395 | .5941 | .5934 | .4375 | .4365 | **MFI-0709-08** |
| 1/2 | 5/8 | 1/8 | .8750 | .0620 | .5047 | .5020 | .6260 | .6250 | .5000 | .4990 | **MFI-0810-02** |
| 1/2 | 5/8 | 1/4 | .8750 | .0620 | .5047 | .5020 | .6260 | .6250 | .5000 | .4990 | **MFI-0810-04** |
| 1/2 | 5/8 | 5/16 | .8750 | .0620 | .5047 | .5020 | .6260 | .6250 | .5000 | .4990 | **MFI-0810-05** |
| 1/2 | 5/8 | 3/8 | .8750 | .0620 | .5047 | .5020 | .6260 | .6250 | .5000 | .4990 | **MFI-0810-06** |
| 1/2 | 5/8 | 1/2 | .8750 | .0620 | .5047 | .5020 | .6260 | .6250 | .5000 | .4990 | **MFI-0810-08** |
| 1/2 | 5/8 | 5/8 | .8750 | .0620 | .5047 | .5020 | .6260 | .6250 | .5000 | .4990 | **MFI-0810-10** |
| 1/2 | 5/8 | 3/4 | .8750 | .0620 | .5047 | .5020 | .6260 | .6250 | .5000 | .4990 | **MFI-0810-12** |
| 1/2 | 5/8 | 1 | .8750 | .0620 | .5047 | .5020 | .6260 | .6250 | .5000 | .4990 | **MFI-0810-16** |
| 5/8 | 3/4 | 3/8 | 1.0000 | .0620 | .6297 | .6270 | .7510 | .7500 | .6250 | .6240 | **MFI-1012-06** |
| 5/8 | 3/4 | 1/2 | 1.0000 | .0620 | .6297 | .6270 | .7510 | .7500 | .6250 | .6240 | **MFI-1012-08** |
| 5/8 | 3/4 | 5/8 | 1.0000 | .0620 | .6297 | .6270 | .7510 | .7500 | .6250 | .6240 | **MFI-1012-10** |
| 5/8 | 3/4 | 3/4 | 1.0000 | .0620 | .6297 | .6270 | .7510 | .7500 | .6250 | .6240 | **MFI-1012-12** |
| 5/8 | 3/4 | 1 | 1.0000 | .0620 | .6297 | .6270 | .7510 | .7500 | .6250 | .6240 | **MFI-1012-16** |
| 5/8 | 3/4 | 1 1/2 | 1.0000 | .0620 | .6297 | .6270 | .7510 | .7500 | .6250 | .6240 | **MFI-1012-24** |
| 5/8 | 13/16 | 1/2 | 1.0630 | .0620 | .6297 | .6270 | .8135 | .8125 | .6250 | .6240 | **MFI-1013-08** |
| 5/8 | 13/16 | 5/8 | 1.0630 | .0620 | .6297 | .6270 | .8135 | .8125 | .6250 | .6240 | **MFI-1013-10** |
| 5/8 | 13/16 | 3/4 | 1.0630 | .0620 | .6297 | .6270 | .8135 | .8125 | .6250 | .6240 | **MFI-1013-12** |
| 5/8 | 13/16 | 1 | 1.0630 | .0620 | .6297 | .6270 | .8135 | .8125 | .6250 | .6240 | **MFI-1013-16** |
| 3/4 | 7/8 | 3/8 | 1.1250 | .0620 | .7559 | .7525 | .8760 | .8750 | .6250 | .6240 | **MFI-1214-06** |
| 3/4 | 7/8 | 1/2 | 1.1250 | .0620 | .7559 | .7525 | .8760 | .8750 | .6250 | .6240 | **MFI-1214-08** |
| 3/4 | 7/8 | 3/4 | 1.1250 | .0620 | .7559 | .7525 | .8760 | .8750 | .7500 | .7490 | **MFI-1214-12** |

[3] After press-fit. Testing methods ▶ Page 61





Imperial product range | iglidur® | Flanged bearings

Inch iglidur® form F

| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 3/4 | 7/8 | 1 | 1.1250 | .0620 | .7559 | .7525 | .8760 | .8750 | .7500 | .7490 | **MFI-1214-16** |
| 3/4 | 7/8 | 1 1/2 | 1.1250 | .0620 | .7559 | .7525 | .8760 | .8750 | .7500 | .7490 | **MFI-1214-24** |
| 3/4 | 1 | 1/2 | 1.2500 | .1560 | .7559 | .7525 | 1.0010 | 1.0000 | .7500 | .7490 | **MFI-1216-08** |
| 3/4 | 1 | 5/8 | 1.2500 | .1560 | .7559 | .7525 | 1.0010 | 1.0000 | .7500 | .7490 | **MFI-1216-10** |
| 3/4 | 1 | 3/4 | 1.2500 | .1560 | .7559 | .7525 | 1.0010 | 1.0000 | .7500 | .7490 | **MFI-1216-12** |
| 3/4 | 1 | 1 | 1.2500 | .1560 | .7559 | .7525 | 1.0010 | 1.0000 | .7500 | .7490 | **MFI-1216-16** |
| 3/4 | 1 | 1 1/2 | 1.2500 | .1560 | .7559 | .7525 | 1.0010 | 1.0000 | .7500 | .7490 | **MFI-1216-24** |
| 7/8 | 1 | 3/4 | 1.2500 | .0620 | .8809 | .8775 | 1.0010 | 1.0000 | .8750 | .8740 | **MFI-1416-12** |
| 7/8 | 1 | 1 | 1.2500 | .0620 | .8809 | .8775 | 1.0010 | 1.0000 | .8750 | .8740 | **MFI-1416-16** |
| 7/8 | 1 | 1 1/2 | 1.2500 | .0620 | .8809 | .8775 | 1.0010 | 1.0000 | .8750 | .8740 | **MFI-1416-24** |
| 7/8 | 1 1/8 | 1/2 | 1.3750 | .1560 | .8809 | .8775 | 1.1260 | 1.1250 | .8750 | .8740 | **MFI-1418-08** |
| 7/8 | 1 1/8 | 3/4 | 1.3750 | .1560 | .8809 | .8775 | 1.1260 | 1.1250 | .8750 | .8740 | **MFI-1418-12** |
| 7/8 | 1 1/8 | 1 | 1.3750 | .1560 | .8809 | .8775 | 1.1260 | 1.1250 | .8750 | .8740 | **MFI-1418-16** |
| 7/8 | 1 1/8 | 1 1/2 | 1.3750 | .1560 | .8809 | .8775 | 1.1260 | 1.1250 | .8750 | .8740 | **MFI-1418-24** |
| 1 | 1 1/8 | 3/16 | 1.3750 | .0620 | 1.0059 | 1.0025 | 1.1260 | 1.1250 | 1.0000 | .9990 | **MFI-1618-03** |
| 1 | 1 1/8 | 3/4 | 1.3750 | .0620 | 1.0059 | 1.0025 | 1.1260 | 1.1250 | 1.0000 | .9990 | **MFI-1618-12** |
| 1 | 1 1/8 | 1 | 1.3750 | .0620 | 1.0059 | 1.0025 | 1.1260 | 1.1250 | 1.0000 | .9990 | **MFI-1618-16** |
| 1 | 1 1/8 | 1 1/2 | 1.3750 | .0620 | 1.0059 | 1.0025 | 1.1260 | 1.1250 | 1.0000 | .9990 | **MFI-1618-24** |
| 1 | 1 1/4 | 1/2 | 1.5000 | .1880 | 1.0059 | 1.0025 | 1.2510 | 1.2500 | 1.0000 | .9990 | **MFI-1620-08** |
| 1 | 1 1/4 | 5/8 | 1.5000 | .1880 | 1.0059 | 1.0025 | 1.2510 | 1.2500 | 1.0000 | .9990 | **MFI-1620-10** |
| 1 | 1 1/4 | 3/4 | 1.5000 | .1880 | 1.0059 | 1.0025 | 1.2510 | 1.2500 | 1.0000 | .9990 | **MFI-1620-12** |
| 1 | 1 1/4 | 1 | 1.5000 | .1880 | 1.0059 | 1.0025 | 1.2510 | 1.2500 | 1.0000 | .9990 | **MFI-1620-16** |
| 1 | 1 1/4 | 1 1/2 | 1.5000 | .1880 | 1.0059 | 1.0025 | 1.2510 | 1.2500 | 1.0000 | .9990 | **MFI-1620-24** |
| 1 1/4 | 1 1/2 | 7/16 | 1.7500 | .2000 | 1.2600 | 1.2531 | 1.5005 | 1.4995 | 1.2500 | 1.2490 | **MFI-2024-07** |
| 1 1/4 | 1 1/2 | 3/4 | 1.7500 | .2000 | 1.2600 | 1.2531 | 1.5005 | 1.4995 | 1.2500 | 1.2490 | **MFI-2024-12** |
| 1 1/4 | 1 1/2 | 1 | 1.7500 | .2000 | 1.2600 | 1.2531 | 1.5005 | 1.4995 | 1.2500 | 1.2490 | **MFI-2024-16** |
| 1 1/4 | 1 1/2 | 1 1/2 | 1.7500 | .2000 | 1.2600 | 1.2531 | 1.5005 | 1.4995 | 1.2500 | 1.2490 | **MFI-2024-24** |
| 1 3/8 | 1 5/8 | 3/4 | 1.8750 | .1250 | 1.3850 | 1.3182 | 1.6255 | 1.6245 | 1.3750 | 1.3740 | **MFI-2226-12** |
| 1 3/8 | 1 5/8 | 1 | 1.8750 | .1250 | 1.3850 | 1.3182 | 1.6255 | 1.6245 | 1.3750 | 1.3740 | **MFI-2226-16** |
| 1 1/2 | 1 3/4 | 3/4 | 2.0000 | .1250 | 1.5100 | 1.5032 | 1.7505 | 1.7495 | 1.5000 | 1.4990 | **MFI-2428-12** |
| 1 1/2 | 1 3/4 | 1 | 2.0000 | .1250 | 1.5100 | 1.5032 | 1.7505 | 1.7495 | 1.5000 | 1.4990 | **MFI-2428-16** |
| 1 1/2 | 1 3/4 | 1 1/2 | 2.0000 | .1250 | 1.5100 | 1.5032 | 1.7505 | 1.7495 | 1.5000 | 1.4990 | **MFI-2428-24** |
| 1 5/8 | 1 7/8 | 1 | 2.1250 | .1250 | 1.6350 | 1.6282 | 1.8755 | 1.8745 | 1.6250 | 1.6240 | **MFI-2630-16** |
| 1 3/4 | 2 | 3/4 | 2.2500 | .1250 | 1.7560 | 1.7532 | 2.0005 | 1.9995 | 1.7500 | 1.7490 | **MFI-2832-12** |
| 1 3/4 | 2 | 1 | 2.2500 | .1250 | 1.7560 | 1.7532 | 2.0005 | 1.9995 | 1.7500 | 1.7490 | **MFI-2832-16** |
| 1 3/4 | 2 | 1 1/2 | 2.2500 | .1250 | 1.7560 | 1.7532 | 2.0005 | 1.9995 | 1.7500 | 1.7490 | **MFI-2832-24** |
| 2 | 2 1/4 | 1 | 2.5000 | .1250 | 2.0100 | 2.0032 | 2.2550 | 2.2540 | 2.0000 | 1.9990 | **MFI-3236-16** |
| 2 | 2 1/4 | 1 1/2 | 2.5000 | .1250 | 2.0100 | 2.0032 | 2.2550 | 2.2540 | 2.0000 | 1.9990 | **MFI-3236-24** |
| 2 | 2 1/4 | 2 | 2.5000 | .1250 | 2.0100 | 2.0032 | 2.2550 | 2.2540 | 2.0000 | 1.9990 | **MFI-3236-32** |

[3] After press-fit. Testing methods ▶ Page 61

# Imperial product range | iglidur® | Flanged bearings

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| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .3120 | .0320 | .1269 | .1251 | .1878 | .1873 | .1243 | .1236 | **PFI-0203-03** |
| 3/16 | 1/4 | 1/4 | .3750 | .0320 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **PFI-0304-04** |
| 1/4 | 5/16 | 3/8 | .5000 | .0320 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **PFI-0405-06** |
| 1/4 | 5/16 | 1/2 | .5000 | .0320 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **PFI-0405-08** |
| 5/16 | 3/8 | 1/4 | .5620 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **PFI-0506-04** |
| 5/16 | 3/8 | 3/8 | .5620 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **PFI-0506-06** |
| 5/16 | 3/8 | 1/2 | .5620 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **PFI-0506-08** |
| 3/8 | 15/32 | 1/4 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **PFI-0607-04** |
| 3/8 | 15/32 | 3/8 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **PFI-0607-06** |
| 3/8 | 15/32 | 1/2 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **PFI-0607-08** |
| 3/8 | 15/32 | 3/4 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **PFI-0607-12** |
| 7/16 | 17/32 | 1/2 | .7500 | .0460 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **PFI-0708-08** |
| 1/2 | 19/32 | 1/4 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **PFI-0809-04** |
| 1/2 | 19/32 | 3/8 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **PFI-0809-06** |
| 1/2 | 19/32 | 1/2 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **PFI-0809-08** |
| 1/2 | 19/32 | 3/4 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **PFI-0809-12** |
| 1/2 | 19/32 | 1 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **PFI-0809-16** |
| 5/8 | 23/32 | 1/2 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **PFI-1011-08** |
| 5/8 | 23/32 | 3/4 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **PFI-1011-12** |
| 5/8 | 23/32 | 1 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **PFI-1011-16** |
| 3/4 | 7/8 | 1/2 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **PFI-1214-08** |
| 3/4 | 7/8 | 3/4 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **PFI-1214-12** |
| 3/4 | 7/8 | 1 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **PFI-1214-16** |
| 7/8 | 1 | 1/2 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **PFI-1416-08** |
| 7/8 | 1 | 3/4 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **PFI-1416-12** |
| 7/8 | 1 | 1 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **PFI-1416-16** |
| 1 | 1 1/8 | 1/2 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **PFI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **PFI-1618-12** |
| 1 | 1 1/8 | 1 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **PFI-1618-16** |
| 1 1/4 | 1 13/32 | 1 | 1.6870 | .0780 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **PFI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.6870 | .0780 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **PFI-2022-20** |
| 1 1/2 | 1 21/32 | 1 | 2.0000 | .0780 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **PFI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 2.0000 | .0780 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **PFI-2426-24** |
| 1 3/4 | 1 15/16 | 2 | 2.3750 | .0930 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **PFI-2831-32** |
| 2 | 2 3/16 | 2 | 2.6250 | .0930 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **PFI-3235-32** |

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| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .3120 | .0320 | .1269 | .1251 | .1878 | .1873 | .1243 | .1236 | **P210FI-0203-03** |
| 3/16 | 1/4 | 1/4 | .3750 | .0320 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **P210FI-0304-04** |
| 1/4 | 5/16 | 3/8 | .5000 | .0320 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **P210FI-0405-06** |
| 1/4 | 5/16 | 1/2 | .5000 | .0320 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **P210FI-0405-08** |

[3] After press-fit. Testing methods ▶ Page 61





Imperial product range | iglidur® | Flanged bearings

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form F

| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 5/16 | 3/8 | 1/4 | .5620 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **P210FI-0506-04** |
| 5/16 | 3/8 | 3/8 | .5620 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **P210FI-0506-06** |
| 5/16 | 3/8 | 1/2 | .5620 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **P210FI-0506-08** |
| 3/8 | 15/32 | 1/4 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **P210FI-0607-04** |
| 3/8 | 15/32 | 3/8 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **P210FI-0607-06** |
| 3/8 | 15/32 | 1/2 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **P210FI-0607-08** |
| 3/8 | 15/32 | 3/4 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **P210FI-0607-12** |
| 7/16 | 17/32 | 1/2 | .7500 | .0460 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **P210FI-0708-08** |
| 1/2 | 19/32 | 1/4 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **P210FI-0809-04** |
| 1/2 | 19/32 | 3/8 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **P210FI-0809-06** |
| 1/2 | 19/32 | 1/2 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **P210FI-0809-08** |
| 1/2 | 19/32 | 3/4 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **P210FI-0809-12** |
| 1/2 | 19/32 | 1 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **P210FI-0809-16** |
| 5/8 | 23/32 | 1/2 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **P210FI-1011-08** |
| 5/8 | 23/32 | 3/4 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **P210FI-1011-12** |
| 5/8 | 23/32 | 1 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **P210FI-1011-16** |
| 3/4 | 7/8 | 1/2 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **P210FI-1214-08** |
| 3/4 | 7/8 | 3/4 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **P210FI-1214-12** |
| 3/4 | 7/8 | 1 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **P210FI-1214-16** |
| 7/8 | 1 | 1/2 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **P210FI-1416-08** |
| 7/8 | 1 | 3/4 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **P210FI-1416-12** |
| 7/8 | 1 | 1 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **P210FI-1416-16** |
| 1 | 1 1/8 | 1/2 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **P210FI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **P210FI-1618-12** |
| 1 | 1 1/8 | 1 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **P210FI-1618-16** |
| 1 1/4 | 1 13/32 | 1 | 1.6870 | .0780 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **P210FI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.6870 | .0780 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **P210FI-2022-20** |
| 1 1/2 | 1 21/32 | 1 | 2.0000 | .0780 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **P210FI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 2.0000 | .0780 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **P210FI-2426-24** |
| 1 3/4 | 1 15/16 | 2 | 2.3750 | .0930 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **P210FI-2831-32** |
| 2 | 2 3/16 | 2 | 2.6250 | .0930 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **P210FI-3235-32** |

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| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 3/8 | 15/32 | 1/4 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **QFI-0607-04** |
| 3/8 | 15/32 | 1/2 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **QFI-0607-08** |
| 1/2 | 19/32 | 1/4 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **QFI-0809-04** |
| 1/2 | 19/32 | 1/2 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **QFI-0809-08** |
| 1/2 | 19/32 | 3/4 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **QFI-0809-12** |
| 5/8 | 23/32 | 3/4 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **QFI-1011-12** |
| 5/8 | 3/4 | 1/2 | 1.0000 | .0620 | .6290 | .6263 | .7510 | .7500 | .6250 | .6240 | **QFI-1012-08** |
| 3/4 | 7/8 | 1/2 | 1.1250 | .0620 | .7541 | .7507 | .8755 | .8747 | .7491 | .7479 | **QFI-1214-08** |
| 3/4 | 7/8 | 3/4 | 1.1250 | .0620 | .7541 | .7507 | .8755 | .8747 | .7491 | .7479 | **QFI-1214-12** |
| 3/4 | 7/8 | 1 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **QFI-1214-16** |

[3] After press-fit. Testing methods ▶ Page 61

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| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 7/8 | 1 | 3/4 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **QFI-1416-12** |
| 7/8 | 1 | 1 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **QFI-1416-16** |
| 1 | 1 1/8 | 1/2 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **QFI-1618-08** |
| 1 | 1 1/8 | 1 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **QFI-1618-16** |
| 1 | 1 1/8 | 1 1/2 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **QFI-1618-24** |
| 1 1/8 | 1 9/32 | 3/4 | 1.5620 | .0780 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **QFI-1820-12** |
| 1 1/8 | 1 9/32 | 1 1/2 | 1.5620 | .0780 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **QFI-1820-24** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.6870 | .0780 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **QFI-2022-20** |
| 1 1/4 | 1 13/32 | 1 1/2 | 1.6870 | .0780 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **QFI-2022-24** |
| 1 1/2 | 1 21/32 | 1 1/2 | 2.0000 | .0780 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **QFI-2426-24** |
| 1 3/4 | 1 15/16 | 2 | 2.3750 | .0930 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **QFI-2831-32** |
| 2 | 2 3/16 | 2 | 2.6250 | .0930 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **QFI-3235-32** |
| 2 1/4 | 2 7/16 | 2 | 2.7500 | .0930 | 2.2577 | 2.2531 | 2.4377 | 2.4365 | 2.2507 | 2.2489 | **QFI-3639-32** |

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| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .3120 | .0320 | .1269 | .1251 | .1878 | .1873 | .1243 | .1236 | **Q2FI-0203-03** |
| 3/16 | 1/4 | 1/4 | .3750 | .0320 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **Q2FI-0304-04** |
| 1/4 | 5/16 | 3/8 | .5000 | .0320 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **Q2FI-0405-06** |
| 1/4 | 5/16 | 1/2 | .5000 | .0320 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **Q2FI-0405-08** |
| 5/16 | 3/8 | 1/4 | .5620 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **Q2FI-0506-04** |
| 5/16 | 3/8 | 3/8 | .5620 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **Q2FI-0506-06** |
| 5/16 | 3/8 | 1/2 | .5620 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **Q2FI-0506-08** |
| 3/8 | 15/32 | 1/4 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **Q2FI-0607-04** |
| 3/8 | 15/32 | 3/8 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **Q2FI-0607-06** |
| 3/8 | 15/32 | 1/2 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **Q2FI-0607-08** |
| 3/8 | 15/32 | 3/4 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **Q2FI-0607-12** |
| 7/16 | 17/32 | 1/2 | .7500 | .0460 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **Q2FI-0708-08** |
| 1/2 | 19/32 | 1/4 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **Q2FI-0809-04** |
| 1/2 | 19/32 | 3/8 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **Q2FI-0809-06** |
| 1/2 | 19/32 | 1/2 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **Q2FI-0809-08** |
| 1/2 | 19/32 | 3/4 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **Q2FI-0809-12** |
| 1/2 | 19/32 | 1 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **Q2FI-0809-16** |
| 5/8 | 23/32 | 1/2 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **Q2FI-1011-08** |
| 5/8 | 23/32 | 3/4 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **Q2FI-1011-12** |
| 5/8 | 23/32 | 1 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **Q2FI-1011-16** |
| 3/4 | 7/8 | 1/2 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **Q2FI-1214-08** |
| 3/4 | 7/8 | 3/4 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **Q2FI-1214-12** |
| 3/4 | 7/8 | 1 | 1.1250 | .0620 | .7541 | .7505 | .8755 | .8747 | .7491 | .7479 | **Q2FI-1214-16** |
| 7/8 | 1 | 1/2 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **Q2FI-1416-08** |
| 7/8 | 1 | 3/4 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **Q2FI-1416-12** |
| 7/8 | 1 | 1 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **Q2FI-1416-16** |
| 1 | 1 1/8 | 1/2 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **Q2FI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **Q2FI-1618-12** |

[3] After press-fit. Testing methods ▶ Page 61





Imperial product range | iglidur® | Flanged bearings

Inch iglidur® form F

| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 1 | 1 1/8 | 1 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **Q2FI-1618-16** |
| 1 1/4 | 1 13/32 | 1 | 1.6870 | .0780 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **Q2FI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.6870 | .0780 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **Q2FI-2022-20** |
| 1 1/2 | 1 21/32 | 1 | 2.0000 | .0780 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **Q2FI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 2.0000 | .0780 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **Q2FI-2426-24** |
| 1 3/4 | 1 15/16 | 2 | 2.3750 | .0930 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **Q2FI-2831-32** |
| 2 | 2 3/16 | 2 | 2.6250 | .0930 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **Q2FI-3235-32** |

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| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .3120 | .0320 | .1269 | .1251 | .1878 | .1873 | .1243 | .1236 | **WFI-0203-03** |
| 1/8 | 3/16 | 1/4 | .3120 | .0320 | .1269 | .1251 | .1878 | .1873 | .1243 | .1236 | **WFI-0203-04** |
| 1/8 | 3/16 | 3/8 | .3120 | .0320 | .1269 | .1251 | .1878 | .1873 | .1243 | .1236 | **WFI-0203-06** |
| 3/16 | 1/4 | 1/8 | .3750 | .0320 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **WFI-0304-02** |
| 3/16 | 1/4 | 1/4 | .3750 | .0320 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **WFI-0304-04** |
| 3/16 | 1/4 | 3/8 | .3750 | .0320 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **WFI-0304-06** |
| 3/16 | 1/4 | 1/2 | .3750 | .0320 | .1892 | .1873 | .2503 | .2497 | .1865 | .1858 | **WFI-0304-08** |
| 1/4 | 5/16 | 1/4 | .5000 | .0320 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **WFI-0405-04** |
| 1/4 | 5/16 | 5/16 | .5000 | .0320 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **WFI-0405-05** |
| 1/4 | 5/16 | 3/8 | .5000 | .0320 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **WFI-0405-06** |
| 1/4 | 5/16 | 1/2 | .5000 | .0320 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **WFI-0405-08** |
| 1/4 | 5/16 | 3/4 | .5000 | .0320 | .2521 | .2498 | .3128 | .3122 | .2490 | .2481 | **WFI-0405-12** |
| 5/16 | 3/8 | 1/4 | .5620 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **WFI-0506-04** |
| 5/16 | 3/8 | 3/8 | .5620 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **WFI-0506-06** |
| 5/16 | 3/8 | 1/2 | .5620 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **WFI-0506-08** |
| 5/16 | 3/8 | 3/4 | .5620 | .0320 | .3148 | .3125 | .3753 | .3747 | .3115 | .3106 | **WFI-0506-12** |
| 3/8 | 15/32 | 1/4 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **WFI-0607-04** |
| 3/8 | 15/32 | 3/8 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **WFI-0607-06** |
| 3/8 | 15/32 | 1/2 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **WFI-0607-08** |
| 3/8 | 15/32 | 3/4 | .6870 | .0460 | .3773 | .3750 | .4691 | .4684 | .3740 | .3731 | **WFI-0607-12** |
| 7/16 | 17/32 | 1/2 | .7500 | .0460 | .4406 | .4379 | .5316 | .5309 | .4365 | .4355 | **WFI-0708-08** |
| 1/2 | 19/32 | 1/4 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **WFI-0809-04** |
| 1/2 | 19/32 | 3/8 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **WFI-0809-06** |
| 1/2 | 19/32 | 1/2 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **WFI-0809-08** |
| 1/2 | 19/32 | 3/4 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **WFI-0809-12** |
| 1/2 | 19/32 | 1 | .8750 | .0460 | .5030 | .5003 | .5941 | .5934 | .4990 | .4980 | **WFI-0809-16** |
| 5/8 | 23/32 | 9/32 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **WFI-1011-045** |
| 5/8 | 23/32 | 1/2 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **WFI-1011-08** |
| 5/8 | 23/32 | 3/4 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **WFI-1011-12** |
| 5/8 | 23/32 | 1 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **WFI-1011-16** |
| 5/8 | 23/32 | 1 1/2 | .9370 | .0460 | .6280 | .6253 | .7192 | .7184 | .6240 | .6230 | **WFI-1011-24** |
| 3/4 | 7/8 | 1/2 | 1.1250 | .0620 | .7541 | .7507 | .8755 | .8747 | .7491 | .7479 | **WFI-1214-08** |
| 3/4 | 7/8 | 5/8 | 1.1250 | .0620 | .7541 | .7507 | .8755 | .8747 | .7491 | .7479 | **WFI-1214-10** |
| 3/4 | 7/8 | 3/4 | 1.1250 | .0620 | .7541 | .7507 | .8755 | .8747 | .7491 | .7479 | **WFI-1214-12** |

[3] After press-fit. Testing methods ▶ Page 61

# Imperial product range | iglidur® | Flanged bearings

| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 3/4 | 7/8 | 1 | 1.1250 | .0620 | .7541 | .7507 | .8755 | .8747 | .7491 | .7479 | **WFI-1214-16** |
| 3/4 | 7/8 | 1 1/2 | 1.1250 | .0620 | .7541 | .7507 | .8755 | .8747 | .7491 | .7479 | **WFI-1214-24** |
| 7/8 | 1 | 1/4 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **WFI-1416-04** |
| 7/8 | 1 | 15/32 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **WFI-1416-075** |
| 7/8 | 1 | 1/2 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **WFI-1416-08** |
| 7/8 | 1 | 23/32 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **WFI-1416-115** |
| 7/8 | 1 | 3/4 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **WFI-1416-12** |
| 7/8 | 1 | 1 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **WFI-1416-16** |
| 7/8 | 1 | 1 1/4 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **WFI-1416-20** |
| 7/8 | 1 | 1 1/2 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **WFI-1416-24** |
| 7/8 | 1 | 5/8 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **WFI-141618-10** |
| 7/8 | 1 | 11/16 | 1.2500 | .0620 | .8791 | .8757 | 1.0005 | .9997 | .8741 | .8729 | **WFI-141620-11** |
| 1 | 1 1/8 | 1/2 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **WFI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **WFI-1618-12** |
| 1 | 1 1/8 | 1 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **WFI-1618-16** |
| 1 | 1 1/8 | 1 1/4 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **WFI-1618-20** |
| 1 | 1 1/8 | 1 1/2 | 1.3750 | .0620 | 1.0041 | 1.0007 | 1.1255 | 1.1247 | .9991 | .9979 | **WFI-1618-24** |
| 1 1/8 | 1 9/32 | 1/2 | 1.5620 | .0780 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **WFI-1820-08** |
| 1 1/8 | 1 9/32 | 3/4 | 1.5620 | .0780 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **WFI-1820-12** |
| 1 1/8 | 1 9/32 | 1 1/2 | 1.5620 | .0780 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **WFI-1820-24** |
| 1 1/4 | 1 13/32 | 3/4 | 1.6870 | .0780 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **WFI-2022-12** |
| 1 1/4 | 1 13/32 | 1 | 1.6870 | .0780 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **WFI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.6870 | .0780 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **WFI-2022-20** |
| 1 1/4 | 1 13/32 | 1 1/2 | 1.6870 | .0780 | 1.2548 | 1.2508 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **WFI-2022-24** |
| 1 3/8 | 1 17/32 | 1 | 1.8750 | .0780 | 1.3798 | 1.3758 | 1.5318 | 1.5308 | 1.3738 | 1.3722 | **WFI-2224-16** |
| 1 1/2 | 1 21/32 | 3/4 | 2.0000 | .0780 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **WFI-2426-12** |
| 1 1/2 | 1 21/32 | 1 | 2.0000 | .0780 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **WFI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 2.0000 | .0780 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **WFI-2426-24** |
| 1 3/4 | 1 15/16 | 1 | 2.3750 | .0930 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **WFI-2831-16** |
| 1 3/4 | 1 15/16 | 1 1/2 | 2.3750 | .0930 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **WFI-2831-24** |
| 1 3/4 | 1 15/16 | 2 | 2.3750 | .0930 | 1.7547 | 1.7507 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **WFI-2831-32** |
| 2 | 2 3/16 | 1 | 2.6250 | .0930 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **WFI-3235-16** |
| 2 | 2 3/16 | 1 1/2 | 2.6250 | .0930 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **WFI-3235-24** |
| 2 | 2 3/16 | 2 | 2.6250 | .0930 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **WFI-3235-32** |

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| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .3120 | .0320 | .1266 | .1247 | .1878 | .1873 | .1243 | .1236 | **XFI-0203-03** |
| 1/8 | 3/16 | 3/8 | .3120 | .0320 | .1266 | .1247 | .1878 | .1873 | .1243 | .1236 | **XFI-0203-06** |
| 3/16 | 1/4 | 1/4 | .3750 | .0320 | .1888 | .1869 | .2503 | .2497 | .1865 | .1858 | **XFI-0304-04** |
| 3/16 | 1/4 | 3/8 | .3750 | .0320 | .1888 | .1869 | .2503 | .2497 | .1865 | .1858 | **XFI-0304-06** |
| 3/16 | 1/4 | 1/2 | .3750 | .0320 | .1888 | .1869 | .2503 | .2497 | .1865 | .1858 | **XFI-0304-08** |
| 1/4 | 5/16 | 3/16 | .5000 | .0320 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **XFI-0405-03** |
| 1/4 | 5/16 | 1/4 | .5000 | .0320 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **XFI-0405-04** |

[3] After press-fit. Testing methods ▶ Page 61





Imperial product range | iglidur® | Flanged bearings

Inch iglidur® form F

| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 1/4 | 5/16 | 3/8 | .5000 | .0320 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **XFI-0405-06** |
| 1/4 | 5/16 | 1/2 | .5000 | .0320 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **XFI-0405-08** |
| 1/4 | 5/16 | 3/4 | .5000 | .0320 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **XFI-0405-12** |
| 5/16 | 3/8 | 1/4 | .5620 | .0320 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **XFI-0506-04** |
| 5/16 | 3/8 | 3/8 | .5620 | .0320 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **XFI-0506-06** |
| 5/16 | 3/8 | 1/2 | .5620 | .0320 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **XFI-0506-08** |
| 3/8 | 15/32 | 1/4 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **XFI-0607-04** |
| 3/8 | 15/32 | 3/8 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **XFI-0607-06** |
| 3/8 | 15/32 | 1/2 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **XFI-0607-08** |
| 3/8 | 15/32 | 3/4 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **XFI-0607-12** |
| 7/16 | 17/32 | 1/2 | .7500 | .0460 | .4399 | .4371 | .5316 | .5309 | .4365 | .4355 | **XFI-0708-08** |
| 1/2 | 19/32 | 1/4 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **XFI-0809-04** |
| 1/2 | 19/32 | 3/8 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **XFI-0809-06** |
| 1/2 | 19/32 | 1/2 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **XFI-0809-08** |
| 1/2 | 19/32 | 3/4 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **XFI-0809-12** |
| 1/2 | 19/32 | 1 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **XFI-0809-16** |
| 5/8 | 23/32 | 1/2 | .9370 | .0460 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **XFI-1011-08** |
| 5/8 | 23/32 | 3/4 | .9370 | .0460 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **XFI-1011-12** |
| 5/8 | 23/32 | 1 | .9370 | .0460 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **XFI-1011-16** |
| 5/8 | 23/32 | 1 1/2 | .9370 | .0460 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **XFI-1011-24** |
| 3/4 | 7/8 | 1/2 | 1.1250 | .0620 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **XFI-1214-08** |
| 3/4 | 7/8 | 3/4 | 1.1250 | .0620 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **XFI-1214-12** |
| 3/4 | 7/8 | 1 | 1.1250 | .0620 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **XFI-1214-16** |
| 3/4 | 7/8 | 1 3/4 | 1.1250 | .0620 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **XFI-1214-28** |
| 7/8 | 1 | 1/2 | 1.2500 | .0620 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **XFI-1416-08** |
| 7/8 | 1 | 3/4 | 1.2500 | .0620 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **XFI-1416-12** |
| 7/8 | 1 | 1 | 1.2500 | .0620 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **XFI-1416-16** |
| 1 | 1 1/8 | 1/2 | 1.3750 | .0620 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **XFI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.3750 | .0620 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **XFI-1618-12** |
| 1 | 1 1/8 | 1 | 1.3750 | .0620 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **XFI-1618-16** |
| 1 | 1 1/8 | 1 1/2 | 1.3750 | .0620 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **XFI-1618-24** |
| 1 1/8 | 1 9/32 | 3/4 | 1.5620 | .0780 | 1.1288 | 1.1254 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **XFI-1820-12** |
| 1 1/4 | 1 13/32 | 1 | 1.6870 | .0780 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **XFI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.6870 | .0780 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **XFI-2022-20** |
| 1 1/4 | 1 13/32 | 2 | 1.6870 | .0780 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **XFI-2022-32** |
| 1 1/2 | 1 21/32 | 3/4 | 2.0000 | .0780 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **XFI-2426-12** |
| 1 1/2 | 1 21/32 | 1 | 2.0000 | .0780 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **XFI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 2.0000 | .0780 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **XFI-2426-24** |
| 1 1/2 | 1 21/32 | 1 5/8 | 2.0000 | .0780 | 1.5048 | 1.5008 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **XFI-2426-26** |
| 1 3/4 | 1 15/16 | 1 | 2.3750 | .0930 | 1.7536 | 1.7497 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **XFI-2831-16** |
| 1 3/4 | 1 15/16 | 2 | 2.3750 | .0930 | 1.7536 | 1.7497 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **XFI-2831-32** |
| 2 | 2 3/16 | 2 | 2.6250 | .0930 | 2.0057 | 2.0011 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **XFI-3235-32** |
| 2 3/4 | 2 15/16 | 2 | 3.3750 | .0930 | 2.7570 | 2.7523 | 2.9370 | 2.9358 | 2.7500 | 2.7490 | **XFI-4447-32** |

[3] After press-fit. Testing methods ▶ Page 61

# Imperial product range | iglidur® | Flanged bearings

## iglidur® Z

Chapter ▶ Page 301

| d1 | d2 | b1 | d3 | b2 | d1[3] | | Housing hole | | Shaft size | | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | h13 | max. | min. | max. | min. | max. | min. | |
| 1/8 | 3/16 | 3/16 | .3120 | .0320 | .1266 | .1247 | .1878 | .1873 | .1243 | .1236 | **ZFI-0203-03** |
| 3/16 | 1/4 | 1/4 | .3750 | .0320 | .1888 | .1869 | .2503 | .2497 | .1865 | .1858 | **ZFI-0304-04** |
| 1/4 | 5/16 | 3/8 | .5000 | .0320 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **ZFI-0405-06** |
| 1/4 | 5/16 | 1/2 | .5000 | .0320 | .2518 | .2495 | .3128 | .3122 | .2490 | .2481 | **ZFI-0405-08** |
| 5/16 | 3/8 | 1/4 | .5620 | .0320 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **ZFI-0506-04** |
| 5/16 | 3/8 | 3/8 | .5620 | .0320 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **ZFI-0506-06** |
| 5/16 | 3/8 | 1/2 | .5620 | .0320 | .3143 | .3120 | .3753 | .3747 | .3115 | .3106 | **ZFI-0506-08** |
| 3/8 | 15/32 | 1/4 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **ZFI-0607-04** |
| 3/8 | 15/32 | 3/8 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **ZFI-0607-06** |
| 3/8 | 15/32 | 1/2 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **ZFI-0607-08** |
| 3/8 | 15/32 | 3/4 | .6870 | .0460 | .3768 | .3745 | .4691 | .4684 | .3740 | .3731 | **ZFI-0607-12** |
| 7/16 | 17/32 | 1/2 | .7500 | .0460 | .4399 | .4371 | .5316 | .5309 | .4365 | .4355 | **ZFI-0708-08** |
| 1/2 | 19/32 | 1/4 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **ZFI-0809-04** |
| 1/2 | 19/32 | 3/8 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **ZFI-0809-06** |
| 1/2 | 19/32 | 1/2 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **ZFI-0809-08** |
| 1/2 | 19/32 | 3/4 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **ZFI-0809-12** |
| 1/2 | 19/32 | 1 | .8750 | .0460 | .5024 | .4996 | .5941 | .5934 | .4990 | .4980 | **ZFI-0809-16** |
| 5/8 | 23/32 | 1/2 | .9370 | .0460 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **ZFI-1011-08** |
| 5/8 | 23/32 | 3/4 | .9370 | .0460 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **ZFI-1011-12** |
| 5/8 | 23/32 | 1 | .9370 | .0460 | .6274 | .6246 | .7192 | .7184 | .6240 | .6230 | **ZFI-1011-16** |
| 5/8 | 3/4 | 3/4 | 1.0000 | .0460 | .6284 | .6256 | .7510 | .7500 | .6250 | .6240 | **ZFI-1012-08** |
| 3/4 | 7/8 | 1/2 | 1.1250 | .0620 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **ZFI-1214-08** |
| 3/4 | 7/8 | 3/4 | 1.1250 | .0620 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **ZFI-1214-12** |
| 3/4 | 7/8 | 1 | 1.1250 | .0620 | .7532 | .7499 | .8755 | .8747 | .7491 | .7479 | **ZFI-1214-16** |
| 7/8 | 1 | 1/2 | 1.2500 | .0620 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **ZFI-1416-08** |
| 7/8 | 1 | 3/4 | 1.2500 | .0620 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **ZFI-1416-12** |
| 7/8 | 1 | 1 | 1.2500 | .0620 | .8782 | .8749 | 1.0005 | .9997 | .8741 | .8729 | **ZFI-1416-16** |
| 1 | 1 1/8 | 1/2 | 1.3750 | .0620 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **ZFI-1618-08** |
| 1 | 1 1/8 | 3/4 | 1.3750 | .0620 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **ZFI-1618-12** |
| 1 | 1 1/8 | 1 | 1.3750 | .0620 | 1.0032 | .9999 | 1.1255 | 1.1247 | .9991 | .9979 | **ZFI-1618-16** |
| 1 1/8 | 1 9/32 | 11/2 | 1.5620 | .0780 | 1.1279 | 1.1246 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **ZFI-1820-12** |
| 1 1/8 | 1 9/32 | 11/2 | 1.5620 | .0780 | 1.1279 | 1.1246 | 1.2818 | 1.2808 | 1.1238 | 1.1226 | **ZFI-1820-24** |
| 1 1/4 | 1 13/32 | 1 | 1.6870 | .0780 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **ZFI-2022-16** |
| 1 1/4 | 1 13/32 | 1 1/4 | 1.6870 | .0780 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **ZFI-2022-20** |
| 1 1/4 | 1 13/32 | 11/4 | 1.6870 | .0780 | 1.2537 | 1.2498 | 1.4068 | 1.4058 | 1.2488 | 1.2472 | **ZFI-2022-24** |
| 1 1/2 | 1 21/32 | 1 | 2.0000 | .0780 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **ZFI-2426-16** |
| 1 1/2 | 1 21/32 | 1 1/2 | 2.0000 | .0780 | 1.5037 | 1.4998 | 1.6568 | 1.6558 | 1.4988 | 1.4972 | **ZFI-2426-24** |
| 1 3/4 | 1 15/16 | 2 | 2.3750 | .0930 | 1.7536 | 1.7497 | 1.9381 | 1.9371 | 1.7487 | 1.7471 | **ZFI-2831-32** |
| 2 | 2 3/16 | 2 | 2.6250 | .0930 | 2.0040 | 1.9993 | 2.1883 | 2.1871 | 1.9981 | 1.9969 | **ZFI-3235-32** |

[3] After press-fit. Testing methods ▶ Page 61



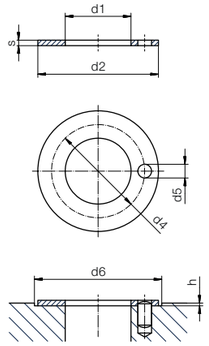




# Imperial product range | iglidur® | Thrust washers

### Thrust washer (form T)

Image exemplary




## iglidur® A200

Chapter ▶ Page 433

| d1 | d1[3] | | d2 | | Øs | Part No. |
|---|---|---|---|---|---|---|
| (nominal) | max. | min. | max. | min. | | |
| 1/4 | .2610 | .2551 | .6201 | .6094 | .0902 | **ATI-04** |
| 3/8 | .3943 | .3813 | .7500 | .7370 | .0902 | **ATI-06** |
| 1/2 | .5102 | .5031 | .8201 | .8071 | .0902 | **ATI-08** |
| 3/4 | .7673 | .7598 | 1.0654 | 1.0500 | .0941 | **ATI-12** |
| 1 | 1.0268 | 1.0197 | 1.5000 | 1.4843 | .1252 | **ATI-16** |

## iglidur® G

Chapter ▶ Page 85

| d1 | d2 | s | d4 | d5 | h | d6 | Part No. |
|---|---|---|---|---|---|---|---|
| +.010 | -.010 | -.0020 | ±.005 | .015 + .005 | +.008 | +.005 | |
| .5000 | .8750 | .0585 | .6920 | .0670 | .0400 | .8750 | **GTI-0814-01** |
| .6250 | 1.1250 | .0585 | .8800 | .0990 | .0400 | 1,125 | **GTI-1018-01** |
| .7500 | 1.2500 | .0585 | 1,005 | .0990 | .0400 | 1,250 | **GTI-1220-01** |
| .8750 | 1.5000 | .0585 | 1.192 | .1300 | .0400 | 1,500 | **GTI-1424-01** |
| 1.0000 | 1.7500 | .0585 | 1.380 | .1300 | .0400 | 1,750 | **GTI-1628-01** |
| 1.2500 | 2.1250 | .0585 | 1.692 | .1610 | .0400 | 2.125 | **GTI-2034-01** |
| 1.5000 | 2.5000 | .0585 | 2.005 | .1920 | .0400 | 2,500 | **GTI-2440-01** |
| 1.7500 | 2.7500 | .0585 | 2.255 | .1920 | .0400 | 2,750 | **GTI-2844-01** |
| 2.0000 | 3.0000 | .0895 | 2.505 | .1920 | .0700 | 3,000 | **GTI-3248-01** |

## iglidur® M250

Chapter ▶ Page 111

| d1 | d1[3] | | d2 | | Øs | Part No. |
|---|---|---|---|---|---|---|
| (nominal) | max. | min. | max. | min. | | |
| 1/4 | .2609 | .2550 | .6200 | .6094 | .0900 | **MTI-04** |
| 5/16 | .3271 | .3189 | .6874 | .6767 | .0900 | **MTI-05** |
| 3/8 | .3940 | .3810 | .7409 | .7394 | .0900 | **MTI-06** |
| 1/2 | .5101 | .5030 | .8200 | .8070 | .0900 | **MTI-08** |
| 5/8 | .6371 | .6300 | 1.0000 | .9870 | .0940 | **MTI-10** |
| 3/4 | .7675 | .7600 | 1.0630 | 1.0500 | .0940 | **MTI-12** |
| 1 | 1.0200 | 1.0100 | 1.5000 | 1.4843 | .1250 | **MTI-16** |
| 1 1/4 | 1.2998 | 1.2900 | 2.1400 | 2.1220 | .0980 | **MTI-20** |
| 1 1/2 | 1.6000 | 1.5500 | 2.6000 | 2.5500 | .1250 | **MTI-24** |

[3] After press-fit. Testing methods ▶ Page 61

# Imperial product range | iglidur® | Thrust washers

## iglidur® W300

Chapter ▶ Page 175

| d1 | d2 | s | d4 | d5 | h | d6 | Part No. |
|---|---|---|---|---|---|---|---|
| +.010 | -.010 | -.0020 | ±.005 | .015 + .005 | +.008 | +.005 | |
| .500 | .8750 | .0585 | .6920 | .0670 | .0400 | .8750 | **WTI-0814-01** |
| .625 | 1.1250 | .0585 | .8800 | .0990 | .0400 | 1.1250 | **WTI-1018-01** |
| .750 | 1.2500 | .0585 | 1.0050 | .0990 | .0400 | 1.2500 | **WTI-1220-01** |
| .875 | 1.5000 | .0585 | 1.1920 | .1300 | .0400 | 1.5000 | **WTI-1424-01** |
| 1.00 | 1.7500 | .0585 | 1.3800 | .1300 | .0400 | 1.7500 | **WTI-1628-01** |
| 1.25 | 2.1250 | .0585 | 1.6920 | .1610 | .0400 | 2.1250 | **WTI-2034-01** |
| 1.50 | 2.5000 | .0585 | 2.0050 | .1920 | .0400 | 2.5000 | **WTI-2440-01** |
| 1.75 | 2.7500 | .0585 | 2.2550 | .1920 | .0400 | 2.7500 | **WTI-2844-01** |
| 2.00 | 3.0000 | .0895 | 2.5050 | .1920 | .0700 | 3.0000 | **WTI-3248-01** |

## iglidur® X

Chapter ▶ Page 291

| d1 | d2 | s | d4 | d5 | h | d6 | Part No. |
|---|---|---|---|---|---|---|---|
| +.010 | -.010 | -.0020 | ±.005 | .015 + .005 | +.008 | +.005 | |
| .500 | .8750 | .0585 | .6920 | .0670 | .0400 | .8750 | **XTI-0814-01** |
| .625 | 1.1250 | .0585 | .8800 | .0990 | .0400 | 1.1250 | **XTI-1018-01** |
| .750 | 1.2500 | .0585 | 1.0050 | .0990 | .0400 | 1.2500 | **XTI-1220-01** |
| .875 | 1.5000 | .0585 | 1.1920 | .1300 | .0400 | 1.5000 | **XTI-1424-01** |
| 1.00 | 1.7500 | .0585 | 1.3800 | .1300 | .0400 | 1.7500 | **XTI-1628-01** |
| 1,125 | 1.6250 | .0585 | – | – | .0400 | 1.6250 | **XTI-1826-01** |
| 1.25 | 2.1250 | .0585 | 1.6920 | .1610 | .0400 | 2.1250 | **XTI-2034-01** |
| 1.50 | 2.5000 | .0585 | 2.0050 | .1920 | .0400 | 2.5000 | **XTI-2440-01** |
| 1.75 | 2.7500 | .0585 | 2.2550 | .1920 | .0400 | 2.7500 | **XTI-2844-01** |
| 2.00 | 3.0000 | .0895 | 2.5050 | .1920 | .0700 | 3.0000 | **XTI-3248-01** |

[3] After press-fit. Testing methods ▶ Page 61



EN 09/2023

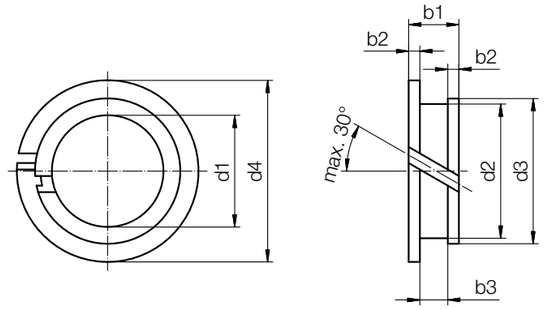
EN 09/2023

# Imperial product range | iglidur® | More products



### Clip bearings

Image exemplary




## Clip bearings

Chapter ▶ Page 652

| d1 | d2 | d3 | d4 | b1 | b2 | b3 | Part No. |
|---|---|---|---|---|---|---|---|
| D11[7] | | | | +0.20 | -0.10 | | |
| 3/16 | 0.2343 | 1/4 | 5/16 | 0.138 | 0.032 | 0.074 | **MCI-03-01** |
| 3/16 | 0.2343 | 1/4 | 5/16 | 0.200 | 0.032 | 0.136 | **MCI-03-02** |
| 1/4 | 0.3125 | 11/32 | 7/16 | 0.138 | 0.032 | 0.074 | **MCI-04-01** |
| 1/4 | 0.3125 | 11/32 | 7/16 | 0.200 | 0.032 | 0.136 | **MCI-04-02** |
| 5/16 | 0.3750 | 13/32 | 1/2 | 0.138 | 0.032 | 0.074 | **MCI-05-01** |
| 5/16 | 0.3750 | 13/32 | 1/2 | 0.200 | 0.032 | 0.136 | **MCI-05-02** |
| 3/8 | 0.4375 | 15/32 | 9/16 | 0.138 | 0.032 | 0.074 | **MCI-06-01** |
| 3/8 | 0.4375 | 15/32 | 9/16 | 0.200 | 0.032 | 0.136 | **MCI-06-02** |
| 7/16 | 0.5000 | 17/32 | 5/8 | 0.138 | 0.032 | 0.074 | **MCI-07-01** |
| 7/16 | 0.5000 | 17/32 | 5/8 | 0.200 | 0.032 | 0.136 | **MCI-07-02** |
| 1/2 | 0.5625 | 19/32 | 11/16 | 0.138 | 0.032 | 0.074 | **MCI-08-01** |
| 1/2 | 0.5625 | 19/32 | 11/16 | 0.200 | 0.032 | 0.136 | **MCI-08-02** |

[7] d1 value is measured with a plug gauge after fitting into a reference housing d2 (+0.005).
Please see D11 tolerances table ▶ Page 62

## Split bearings, low bearing clearance

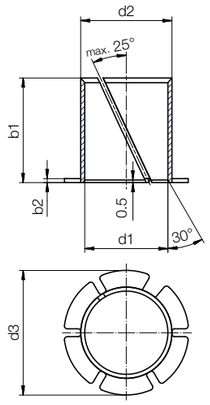



Image exemplary

## Split bearings with anti-rotation feature

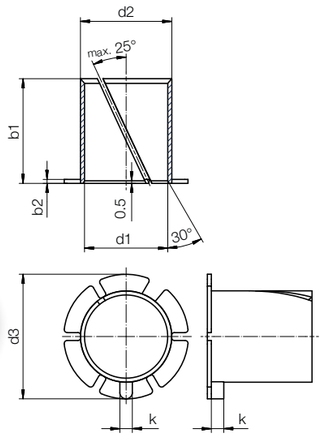



Image exemplary

### Split bearings, low bearing clearance

Chapter ▶ Page 656

| d1 | Shaft diameter | | d2 | Housing hole | | d3 | b1 | b1 | b2 | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|
| | min. | max. | | min. | max. | | | tolerance | | |
| 3/16 | .1875 | .1865 | 0.2339 | .2351 | .2339 | 19/61 | 3/16 | –0.016 | 0.0252 | **MYI-03-03** |
| 1/4 | .0025 | .2490 | 0.2965 | .2979 | .2965 | 13/32 | 1/4 | –0.016 | 0.0252 | **MYI-04-04** |
| 5/16 | .3125 | .3115 | 0.3744 | .3758 | .3744 | 1/2 | 5/16 | –0.017 | 0.0299 | **MYI-05-05** |
| 3/8 | .3750 | .3740 | 0.4370 | .4387 | .4370 | 19/32 | 3/8 | –0.017 | 0.0299 | **MYI-06-06** |
| 7/16 | .4375 | .4365 | 0.4996 | .5013 | .4996 | 21/32 | 7/16 | –0.017 | 0.0299 | **MYI-07-07** |
| 1/2 | .5000 | .4990 | 0.5618 | .5635 | .5618 | 3/4 | 3/8 | –0.018 | 0.0299 | **MYI-08-06** |
| 1/2 | .5000 | .4990 | 0.5618 | .5635 | .5618 | 3/4 | 1/2 | –0.018 | 0.0299 | **MYI-08-08** |
| 5/8 | .6250 | .6240 | 0.6870 | .6887 | .6870 | 15/16 | 7/16 | –0.018 | 0.0299 | **MYI-10-07** |
| 5/8 | .6250 | .6240 | 0.6870 | .6887 | .6870 | 15/16 | 5/8 | –0.018 | 0.0299 | **MYI-10-10** |
| 5/8 | .6250 | .6240 | 0.6870 | .6887 | .6870 | 15/16 | 1 1/8 | –0.018 | 0.0299 | **MYI-10-18** |
| 3/4 | .7500 | .7490 | 0.8118 | .8139 | .8118 | 1 1/8 | 3/4 | –0.019 | 0.0299 | **MYI-12-12** |
| 3/4 | .7500 | .7490 | 0.8118 | .8139 | .8118 | 1 1/8 | 1 1/8 | –0.019 | 0.0299 | **MYI-12-18** |
| 7/8 | .8750 | .8740 | 0.9370 | .9391 | .9370 | 1 5/16 | 15/32 | –0.019 | 0.0299 | **MYI-14-7.5** |
| 7/8 | .8750 | .8740 | 0.9370 | .9391 | .9370 | 1 5/16 | 7/8 | –0.019 | 0.0299 | **MYI-14-14** |
| 1 | 1.00 | .9985 | 1.0933 | 1.0954 | 1.0933 | 1 1/2 | 7/8 | -0.020 | 0.0449 | **MYI-16-14** |
| 1 | 1.00 | .9985 | 1.0933 | 1.0954 | 1.0933 | 1 1/2 | 1 | -0.020 | 0.0449 | **MYI-16-16** |

### Split bearings with anti-rotation feature

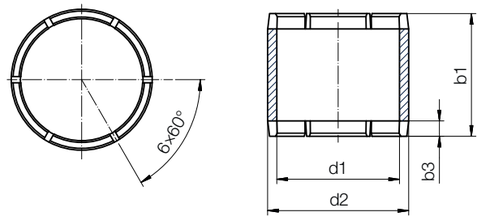
Chapter ▶ Page 657

| d1 | Shaft diameter | | d2 | Housing hole | | d3 | b1 | b1 | b2 | k | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | min. | max. | | min. | max. | | | tolerance | | | |
| 1/4 | .0025 | .2490 | 0.2965 | .2979 | .2965 | 13/32 | 1/4 | –0.016 | 0.0252 | 1/16 | **MYI-04-04-K** |
| 5/16 | .3125 | .3115 | 0.3744 | .3758 | .3744 | 1/2 | 5/16 | –0.017 | 0.0299 | 3/32 | **MYI-05-05-K** |
| 1/2 | .5000 | .4990 | 0.5618 | .5635 | .5618 | 3/4 | 1/2 | –0.018 | 0.0299 | 3/32 | **MYI-08-08-K** |
| 5/8 | .6250 | .6240 | 0.6870 | .6887 | .6870 | 15/16 | 7/16 | –0.018 | 0.0299 | 1/8 | **MYI-10-07-K** |
| 5/8 | .6250 | .6240 | 0.6870 | .6887 | .6870 | 15/16 | 5/8 | –0.018 | 0.0299 | 1/8 | **MYI-10-10-K** |
| 3/4 | .7500 | .7490 | 0.8118 | .8139 | .8118 | 1 1/8 | 3/4 | –0.019 | 0.0299 | 1/8 | **MYI-12-12-K** |
| 1 | 1.00 | .9985 | 1.0933 | 1.0954 | 1.0933 | 1 1/2 | 1 | -0.020 | 0.0449 | 5/32 | **MYI-16-16-K** |





## Clearance-free, pre-loaded sleeve plain bearings



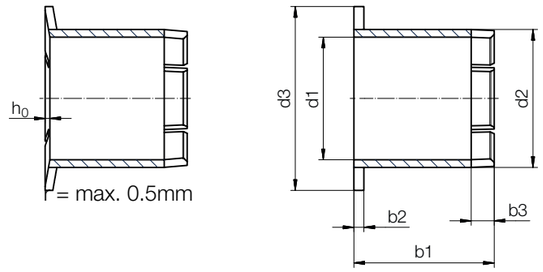

### JVSI - clearance-free pre-loaded plain bearings

Chapter ▶ Page 671

| d1 | d1[14] | | d2 | b1 | b1 tolerance | Part No. |
|---|---|---|---|---|---|---|
| | max. | min. | | h13 | | |
| 3/8 | .3773 | .3750 | 1/2 | 3/8 | 0.075 | **JVSI-0608-06** |
| 1/2 | .5040 | .5013 | 5/8 | 1/2 | 0.075 | **JVSI-0810-08** |
| 5/8 | .6297 | .6270 | 3/4 | 5/8 | 0.075 | **JVSI-1012-10** |
| 3/4 | .7541 | .7505 | 1 1/8 | 3/4 | 0.075 | **JVSI-1214-12** |
| 1 | 1.0041 | 1.0007 | 28.58 | 1 | 0.100 | **JVSI-1618-16** |

[14] d1 measured after press-fit in housing hole. d2 H7 within the measurement plane

## Sleeve bearings for all shaft surfaces

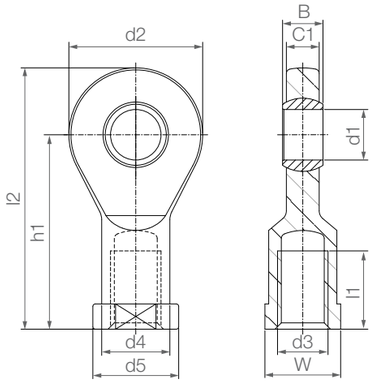



### PEPSI - for all shaft surfaces

Chapter ▶ Page 679

| d1 | d2 | b1 | Part No. |
|---|---|---|---|
| 1/4 | 3/8 | 3/8 | **PEPSI-0406-06** |
| 3/8 | 1/2 | 1/2 | **PEPSI-0608-08** |
| 1/2 | 5/8 | 1/2 | **PEPSI-0810-08** |
| 5/8 | 3/4 | 3/4 | **PEPSI-1012-12** |
| 3/4 | 7/8 | 3/4 | **PEPSI-1214-12** |
| 1 | 1 1/8 | 1 | **PEPSI-1618-16** |

## Rod ends with female thread: EBRI and EBLI




**EBRI/EBLI** Chapter ▶ Page 888

| Part No. | | d1 | d2 | d3 | d4 | d5 | C1 | B |
|---|---|---|---|---|---|---|---|---|
| Right-hand thread | Left-hand thread | E10 | | | | | | |
| EBRI-03 | EBLI-03 | .1900 | .748 | 10–32 | .3543 | .4331 | .1732 | .1900 |
| EBRI-04 | EBLI-04 | .2500 | .827 | 1/4–28 | .4331 | .5118 | .1732 | .2500 |
| EBRI-05 | EBLI-05 | .3125 | .945 | 5/16–24 | .5118 | .6299 | .2362 | .3125 |
| EBRI-06 | EBLI-06 | .3750 | 1.142 | 3/8–24 | .5906 | .7480 | .2756 | .3750 |
| EBRI-07 | EBLI-07 | .4375 | 1,339 | 7/16–20 | .7087 | .8661 | .3150 | .4063 |
| EBRI-08 | EBLI-08 | .5000 | 1,339 | 1/2–20 | .7087 | .8661 | .3150 | .4063 |
| EBRI-10[17] | EBLI-10[17] | .6250 | 1.693 | 5/8–18 | – | – | .4134 | .5000 |
| EBRI-12 | EBLI-12 | .7500 | 2.087 | 3/4–16 | 1.0630 | 1.3386 | .5118 | .6250 |

| Part No. | | h1 | l1 | l2 | W | Max. |
|---|---|---|---|---|---|---|
| Right-hand thread | Left-hand thread | E10 | | | | pivot angle |
| EBRI-03 | EBLI-03 | 1.1811 | .4724 | 1.5551 | 0.35 | 30° |
| EBRI-04 | EBLI-04 | 1.1811 | .4724 | 1.5945 | 0.43 | 25° |
| EBRI-05 | EBLI-05 | 1.4173 | .6299 | 1.8898 | 0.55 | 22° |
| EBRI-06 | EBLI-06 | 1.6929 | .7087 | 2.2638 | 0.67 | 22° |
| EBRI-07 | EBLI-07 | 1.9685 | .7874 | 2.6378 | 0.75 | 18° |
| EBRI-08 | EBLI-08 | 1.9685 | .7874 | 2.6378 | 0.75 | 18° |
| EBRI-10[17] | EBLI-10[17] | 2.5394 | 1.0433 | 3.3858 | 0.87 | 16° |
| EBRI-12 | EBLI-12 | 3.0315 | 1.2205 | 4.0748 | 1.18 | 14° |

[17] EBRI-10/EBLI-10 special form with hexagonal foot

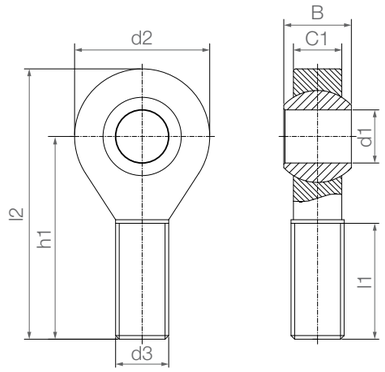
| Part No. | | Max. static tensile strain | | Max. axial force | | Min. thread depth | Max. tightening torque | Max. tightening torque through ball | Weight |
|---|---|---|---|---|---|---|---|---|---|
| | | Short-term | Long-term | Short-term | Long-term | Thread | Female thread | | |
| Right-hand thread | Left-hand thread | [N] | [N] | [N] | [N] | [inch] | [Nm] | [Nm] | [g] |
| EBRI-03 | EBLI-03 | 1,300 | 650 | 150 | 75 | .315 | 2 | 2.0 | 3.1 |
| EBRI-04 | EBLI-04 | 1,500 | 750 | 200 | 100 | .315 | 5 | 2.5 | 3.8 |
| EBRI-05 | EBLI-05 | 2,000 | 1,000 | 450 | 225 | .433 | 6 | 7.0 | 6.9 |
| EBRI-06 | EBLI-06 | 2,300 | 1,150 | 500 | 250 | .512 | 7 | 14.0 | 11.5 |
| EBRI-07 | EBLI-07 | 3,300 | 1,650 | 550 | 275 | .551 | 18 | 25.0 | 17.6 |
| EBRI-08 | EBLI-08 | 3,300 | 1,650 | 550 | 275 | .551 | 23 | 25.0 | 18.1 |
| EBRI-10 | EBLI-10 | 5,000 | 2,500 | 850 | 425 | .709 | 30 | 32.0 | 31.9 |
| EBRI-12 | EBLI-12 | 7,200 | 3,600 | 1,800 | 900 | .866 | 40 | 40.0 | 61.5 |



Imperial product range | igubal® | Rod end bearings

Inch igubal®

## Rod ends with male thread: KARI and KALI

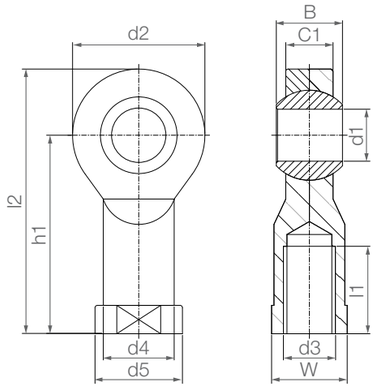



**KARI/KALI** Chapter ▶ Page 886

| Part No. | | d1 | d2 | d3 | C1 | B | h1 | l1 | l2 | Max. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | E10 | | | | | | | | pivot angle |
| Right-hand thread | Left-hand thread | | | | | | | | | |
| KARI-03 | KALI-03 | .1900 | .625 | 10-32 | .234 | .312 | 1.25 | .750 | 1.563 | 25° |
| KARI-04 | KALI-04 | .2500 | .750 | 1/4-28 | .250 | .365 | 1.562 | 1.00 | 1.937 | 25° |
| KARI-05 | KALI-05 | .3125 | .875 | 5/16-24 | .312 | .437 | 1.875 | 1.25 | 2.313 | 25° |
| KARI-06 | KALI-06 | .3750 | 1.00 | 3/8-24 | .359 | .500 | 1.938 | 1.25 | 2.438 | 22° |
| KARI-07 | KALI-07 | .4375 | 1,125 | 7/16-20 | .406 | .562 | 2.125 | 1.375 | 2.688 | 22° |
| KARI-08 | KALI-08 | .5000 | 1.312 | 1/2-20 | .453 | .625 | 2.428 | 1.50 | 2.094 | 22° |
| KARI-10 | KALI-10 | .6250 | 1.50 | 5/8-18 | .484 | .750 | 2.625 | 1.625 | 3.375 | 22° |
| KARI-12 | KALI-12 | .7500 | 1.75 | 3/4-16 | .593 | .875 | 2.875 | 1.75 | 3.75 | 22° |
| KARI-16 | KALI-16 | 1.00 | 2.75 | 1-12 | 1.00 | 1.375 | 4.125 | 2.35 | 5.50 | 20° |

| Part No. | | Max. static tensile strain | | Max. axial force | | Min. thread depth | Max. tightening torque | Max. tightening torque through ball | Weight |
|---|---|---|---|---|---|---|---|---|---|
| | | Short-term | Long-term | Short-term | Long-term | | Male thread | | |
| Right-hand thread | Left-hand thread | [N] | [N] | [N] | [N] | [inch] | [Nm] | [Nm] | [g] |
| KARI-03 | KALI-03 | 390 | 200 | 70 | 35 | .525 | 0.5 | 3 | 2.1 |
| KARI-04 | KALI-04 | 900 | 450 | 100 | 50 | .700 | 1.0 | 4 | 3.5 |
| KARI-05 | KALI-05 | 1,100 | 550 | 150 | 75 | .875 | 2.0 | 10 | 6 |
| KARI-06 | KALI-06 | 1,500 | 750 | 350 | 175 | .875 | 3.0 | 15 | 8.8 |
| KARI-07 | KALI-07 | 2,000 | 1,000 | 400 | 200 | .962 | 6.0 | 25 | 12.4 |
| KARI-08 | KALI-08 | 2,500 | 1,250 | 450 | 225 | 1,050 | 9.0 | 35 | 18.5 |
| KARI-10 | KALI-10 | 3,500 | 1,750 | 600 | 300 | 1.137 | 12.0 | 50 | 27.6 |
| KARI-12 | KALI-12 | 3,900 | 1,950 | 1,000 | 500 | 1.226 | 25.0 | 70 | 42.8 |
| KARI-16 | KALI-16 | 4,400 | 2,200 | 1,300 | 650 | 1.488 | 45.0 | 85 | 143.3 |

## Rod ends with female thread: KBRI and KBLI




**KBRI/KBLI** Chapter ▶ Page 882

| Part No. Right-hand thread | Part No. Left-hand thread | d1 E10 | d2 | d3 | d4 | C1 | B | h1 | l1 | l2 | W | Max. pivot angle |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KBRI-03 | KBLI-03 | .1900 | .625 | 10-32 | .406 | .246 | .312 | 1.062 | .500 | 1.374 | .312 | 25° |
| KBRI-04 | KBLI-04 | .2500 | .750 | 1/4-28 | .469 | .272 | .365 | 1.312 | .687 | 1.687 | .375 | 25° |
| KBRI-05 | KBLI-05 | .3125 | .875 | 5/16-24 | .500 | .340 | .437 | 1.375 | .687 | 1.813 | .437 | 25° |
| KBRI-06 | KBLI-06 | .3750 | 1.00 | 3/8-24 | .687 | .394 | .500 | 1.625 | .812 | 2.125 | .562 | 22° |
| KBRI-07 | KBLI-07 | .4375 | 1,125 | 7/16-20 | .750 | .456 | .562 | 1.812 | .937 | 2.374 | .625 | 22° |
| KBRI-08 | KBLI-08 | .5000 | 1.312 | 1/2-20 | .875 | .487 | .625 | 2.125 | 1.062 | 2.781 | .750 | 22° |
| KBRI-10 | KBLI-10 | .6250 | 1.50 | 5/8-18 | 1.00 | .545 | .750 | 2.50 | 1.375 | 3.25 | .875 | 22° |
| KBRI-12 | KBLI-12 | .7500 | 1.75 | 3/4-16 | 1,125 | .676 | .875 | 2.875 | 1.562 | 3.75 | 1.00 | 22° |
| KBRI-16 | KBLI-16 | 1.00 | 2.75 | 1-12 | 1.625 | 1.00 | 1.375 | 4.125 | 2.125 | 5.50 | 1.500[18)] | 20° |

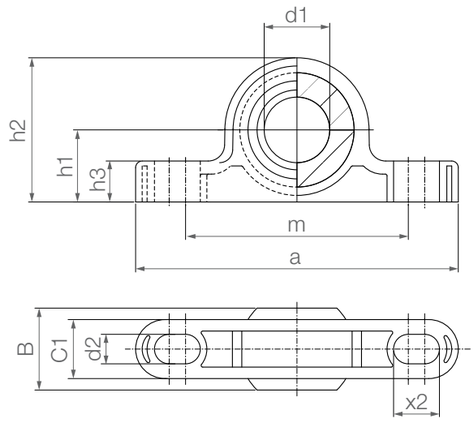
[18)] Spanner flat design

| Part No. Right-hand thread | Part No. Left-hand thread | Max. static tensile strain Short-term [N] | Max. static tensile strain Long-term [N] | Max. axial force Short-term [N] | Max. axial force Long-term [N] | Min. thread depth Thread [inch] | Max. tightening torque Female thread [Nm] | Max. tightening torque through ball [Nm] | Weight [g] |
|---|---|---|---|---|---|---|---|---|---|
| KBRI-03 | KBLI-03 | 900 | 450 | 300 | 150 | .350 | 2 | 3 | 3.3 |
| KBRI-04 | KBLI-04 | 1,100 | 550 | 400 | 200 | .480 | 5 | 4 | 5.1 |
| KBRI-05 | KBLI-05 | 1,700 | 850 | 500 | 250 | .480 | 6 | 10 | 7.1 |
| KBRI-06 | KBLI-06 | 2,000 | 1,000 | 1,000 | 500 | .568 | 7 | 15 | 12.6 |
| KBRI-07 | KBLI-07 | 2,300 | 1,150 | 1,200 | 600 | .655 | 18 | 25 | 16.1 |
| KBRI-08 | KBLI-08 | 2,600 | 1,300 | 1,500 | 750 | .743 | 23 | 35 | 26.5 |
| KBRI-10 | KBLI-10 | 4,900 | 2,450 | 1,700 | 850 | .962 | 30 | 50 | 38.7 |
| KBRI-12 | KBLI-12 | 5,600 | 2,800 | 2,300 | 1,150 | 1,093 | 40 | 70 | 54.4 |
| KBRI-16 | KBLI-16 | 6,000 | 3,000 | 2,600 | 1,300 | 1.488 | 46 | 85 | 197.5 |





## Pillow block bearings: KSTI



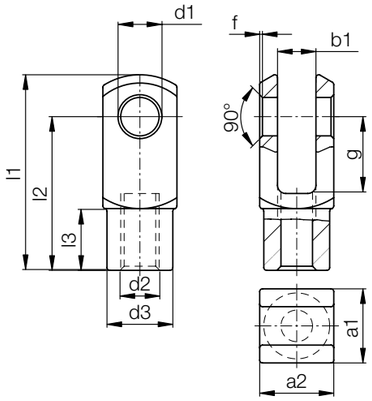

**KSTI** Chapter ▶ Page 928

| Part No. | d1 E10 | B | C1 | h1 | h2 | m | a | h3 | d2 | X2 | Max. pivot angle |
|---|---|---|---|---|---|---|---|---|---|---|---|
| KSTI-03 | .1900 | .312 | .234 | .290 | .566 | 1.00 | 1.40 | .165 | .137 | .200 | 25° |
| KSTI-04 | .2500 | .375 | .250 | .390 | .705 | 1.25 | 1.75 | .205 | .137 | .250 | 25° |
| KSTI-05 | 3125 | .437 | .312 | .430 | .824 | 1.35 | 1.95 | .236 | .150 | .280 | 25° |
| KSTI-06 | .3750 | .500 | .359 | .550 | 1.022 | 1.80 | 2.40 | .376 | .180 | .300 | 22° |
| KSTI-07 | .4375 | .562 | .406 | .570 | 1,082 | 1.85 | 2.50 | .315 | .205 | .330 | 22° |
| KSTI-08 | .5000 | .625 | .453 | .600 | 1.191 | 2.00 | 2.80 | .354 | .205 | .380 | 22° |
| KSTI-10 | .6250 | .750 | .484 | .700 | 1.409 | 2.30 | 3.35 | .413 | .205 | .470 | 22° |
| KSTI-12 | .7500 | .875 | .593 | .860 | 1.687 | 2.70 | 3.75 | .472 | .270 | .530 | 22° |
| KSTI-16 | 1.00 | 1.375 | 1,005 | 1.10 | 2.163 | 3.50 | 5.00 | .630 | .520 | .680 | 20° |

| Part No. | Max. static tensile strain Short-term [N] | Max. static tensile strain Long-term [N] | Max. axial static compressive force [N] | Max. tightening torque for longitudinal holes [Nm] | Weight [g] |
|---|---|---|---|---|---|
| KSTI-03 | 550 | 275 | 300 | 0.6 | 1.7 |
| KSTI-04 | 600 | 300 | 300 | 0.6 | 2.8 |
| KSTI-05 | 800 | 400 | 400 | 0.8 | 4.5 |
| KSTI-06 | 1,000 | 500 | 500 | 1.3 | 7.5 |
| KSTI-07 | 1,100 | 550 | 600 | 2.5 | 9.7 |
| KSTI-08 | 1,200 | 600 | 600 | 2.5 | 13.5 |
| KSTI-10 | 2,100 | 1,050 | 800 | 2.5 | 21.5 |
| KSTI-12 | 3,100 | 1,550 | 1,200 | 4.5 | 33.4 |
| KSTI-16 | 5,400 | 2,700 | 1,600 | 10.5 | 85.8 |

The maximum tightening torques for elongated holes correspond to the permissible tightening torque of the fixing screws (fixing category 5.8).

## Clevis joints: GERI and GELI




**GERI/GELI** Chapter ▶ Page 908

| Part No. | d1 | g | a1 | a2 | b1 | d2 | d3 | f | l1 | l2 | h1 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | H9 | h11 | | +0.3 -0.16 | | 2B | ±0.3 | ±0.3 | ±0.5 | ±0.3 | ±0.2 |
| GE□I-03 New | .1875 | .394 | .394 | .394 | .197 | 10-32 | .354 | .02 | 1,024 | .787 | .295 |
| GE□I-04 New | .2500 | .472 | .472 | .472 | .236 | 1/4-28 | .394 | .02 | 1.205 | .945 | .354 |
| GE□I-05 New | .3125 | .630 | .630 | .630 | .315 | 5/16-24 | .551 | .02 | 1,638 | 1,260 | .472 |
| GE□I-06 New | .3750 | .787 | .787 | .787 | .394 | 3/8-24 | .709 | .02 | 2.020 | 1.575 | .591 |
| GE□I-07 New | .4375 | .945 | .945 | .945 | .472 | 7/16-20 | .787 | .02 | 2.413 | 1.890 | .709 |
| GE□I-08 New | .5000 | 1.102 | 1.063 | 1.063 | .551 | 1/2-20 | .945 | .02 | 2.807 | 2.205 | .886 |

| Part No. | Max. static tensile strain | | Weight |
|---|---|---|---|
| | Short-term | Long-term | |
| | [lbf] | [lbf] | [g] |
| GE□I-03 New | 225 | 112 | 1.6 |
| GE□I-04 New | 270 | 135 | 2.9 |
| GE□I-05 New | 607 | 303 | 6.1 |
| GE□I-06 New | 1056 | 528 | 13.0 |
| GE□I-07 New | 1281 | 640 | 16.5 |
| GE□I-08 New | 719 | 360 | 20.8 |



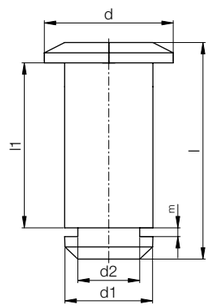


## Clevis joints: GERIK and GELIK

**GERIK/GELIK** Chapter ▶ Page 912

| Part No. | Max. static tensile strain | | Weight |
|---|---|---|---|
| | Short-term | Long-term | |
| | [lbf] | [lbf] | [g] |
| GE□IK-03 New | 180 | 90 | 2.0 |
| GE□IK-04 New | 202 | 101 | 3.5 |
| GE□IK-05 New | 472 | 236 | 7.7 |
| GE□IK-06 New | 674 | 404 | 16.0 |
| GE□IK-07 New | 787 | 393 | 21.4 |
| GE□IK-08 New | 629 | 315 | 26.3 |

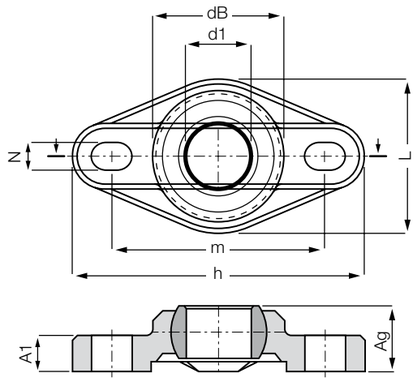
## Clevis pins: GBI




**GBI** Chapter ▶ Page 917

| Part No. | d1 | d2 | d | l | l1 | m | Clip | Weight |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | [g] |
| GBI-03 New | .1875 | .1260 | .3125 | .55 | .3975 | .0472 | GSR-04 | 0.4 |
| GBI-04 New | .2500 | .1969 | .3750 | .65 | .4764 | .0512 | GSR-08 | 0.5 |
| GBI-05 New | .3125 | .1969 | .4375 | .85 | .6339 | .0512 | GSR-08 | 1.5 |
| GBI-06 New | .3750 | .2756 | .5000 | 1.05 | .7953 | .0591 | GSR-10 | 2.8 |
| GBI-07 New | .4375 | .3543 | .6250 | 1.25 | .9528 | .0669 | GSR-12 | 4.6 |
| GBI-08 New | .5000 | .3543 | .7500 | 1.40 | 1.0709 | .0669 | GSR-12 | 5.2 |

## Fixed flange bearings with 2 mounting holes: EFOI




**EFOI** Chapter ▶ Page 946

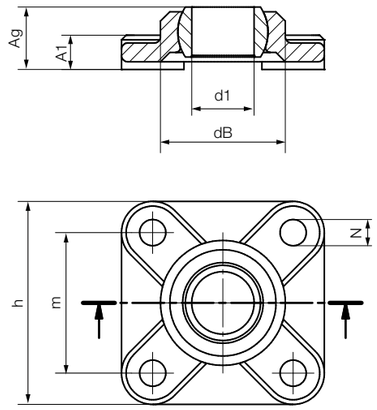
| Part No. | d1 E10 | dB | H | L | J Hole pitch | A1 Height of plate | Ag Total height | N d x 1 |
|---|---|---|---|---|---|---|---|---|
| EFOI-03 New | .1875 | .551 | 1.331 | .630 | .945 | .177 | .312 | .126 x .197 |
| EFOI-04 New | .2500 | .551 | 1.331 | .630 | .945 | .177 | .342 | .126 x .197 |
| EFOI-05 New | .3125 | .709 | 1.740 | .866 | 1,220 | .217 | .412 | .169 x .256 |
| EFOI-06 New | .3750 | .866 | 2.047 | 1,024 | 1.417 | .256 | .483 | .210 x .315 |
| EFOI-07 New | .4375 | .984 | 2.232 | 1,220 | 1.614 | .276 | .518 | .210 x .315 |
| EFOI-08 New | .5000 | .984 | 2.232 | 1,220 | 1.614 | .276 | .518 | .210 x .315 |
| EFOI-10 New | .6250 | 1,260 | 2.858 | 1.496 | 2.087 | .394 | .683 | .212 x .315 |
| EFOI-12 New | .7500 | 1.575 | 3.504 | 1,850 | 2.559 | .433 | .785 | .331 x .492 |
| EFOI-16 New | 1.0000 | 1.909 | 3.976 | 2.303 | 2.953 | .551 | .966 | .331 x .492 |

| Part No. | Max. permissible axial load Short-term [lbf] | Max. permissible axial load Long-term [lbf] | Max. permissible radial load Short-term [lbf] | Max. permissible radial load Long-term [lbf] | Max. tightening torque Holes [ft*lbs] | Max. pivot angle | Weight [g] |
|---|---|---|---|---|---|---|---|
| EFOI-03 New | 56 | 28 | 168 | 84 | 0.44 | 33° | 2.3 |
| EFOI-04 New | 56 | 28 | 180 | 90 | 0.96 | 27° | 2.0 |
| EFOI-05 New | 156 | 78 | 248 | 124 | 1.84 | 24° | 4.0 |
| EFOI-06 New | 192 | 96 | 450 | 225 | 1.84 | 24° | 6.5 |
| EFOI-07 New | 248 | 124 | 494 | 247 | 1.84 | 21° | 7.5 |
| EFOI-08 New | 248 | 124 | 494 | 247 | 3.32 | 21° | 12.0 |
| EFOI-10 New | 314 | 157 | 630 | 315 | 3.32 | 24° | 17.2 |
| EFOI-12 New | 404 | 202 | 1236 | 618 | 3.32 | 17° | 33.7 |
| EFOI-16 New | 674 | 337 | 1348 | 674 | 7.74 | 14° | 59.0 |





## Fixed flange bearings with 4 mounting holes: EFSI

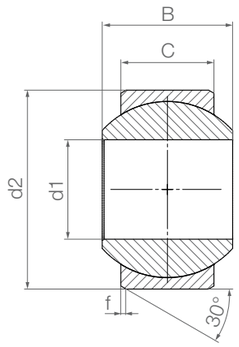



**EFSI** Chapter ▶ Page 948

| Part No. | d1 E10 | dB | L | J Hole pitch | A1 Height of plate | Ag Total height | N d x 1 |
|---|---|---|---|---|---|---|---|
| EFSI-03 New | .1875 | .551 | .984 | .669 | .177 | .311 | .126 |
| EFSI-04 New | .2500 | .551 | .984 | .669 | .177 | .343 | .126 |
| EFSI-05 New | .3125 | .709 | 1.299 | .866 | .217 | .413 | .169 |
| EFSI-06 New | .3750 | .866 | 1.496 | 1,024 | .256 | .484 | .209 |
| EFSI-07 New | .4375 | .984 | 1.575 | 1.102 | .276 | .520 | .209 |
| EFSI-08 New | .5000 | .984 | 1.575 | 1.102 | .276 | .520 | .209 |
| EFSI-10 New | .6250 | 1,260 | 2.047 | 1.417 | .354 | .654 | .252 |
| EFSI-12 New | .7500 | 1.575 | 2.559 | 1.772 | .433 | .787 | .331 |
| EFSI-16 New | 1.0000 | 1.909 | 2.913 | 2.047 | .551 | .965 | .331 |

| Part No. | Max. permissible axial load Short-term [lbf] | Max. permissible axial load Long-term [lbf] | Max. permissible radial load Short-term [lbf] | Max. permissible radial load Long-term [lbf] | Max. tightening torque Holes [ft*lbs] | Max. pivot angle | Weight [g] |
|---|---|---|---|---|---|---|---|
| EFSI-03 New | 50 | 25 | 224 | 112 | 0.44 | 33° | 2.3 |
| EFSI-04 New | 56 | 28 | 224 | 112 | 0.96 | 27° | 2.0 |
| EFSI-05 New | 90 | 45 | 314 | 157 | 1.84 | 24° | 4.0 |
| EFSI-06 New | 112 | 56 | 448 | 224 | 1.84 | 24° | 6.5 |
| EFSI-07 New | 134 | 67 | 562 | 281 | 1.84 | 21° | 7.5 |
| EFSI-08 New | 134 | 67 | 562 | 281 | 3.32 | 21° | 12.0 |
| EFSI-10 New | 282 | 141 | 720 | 360 | 3.32 | 24° | 17.2 |
| EFSI-12 New | 428 | 214 | 900 | 450 | 3.32 | 17° | 31.5 |
| EFSI-16 New | 584 | 292 | 1258 | 629 | 7.74 | 14° | 77.0 |

## Spherical bearings: KGLI




### KGLI

Chapter ▶ Page 970

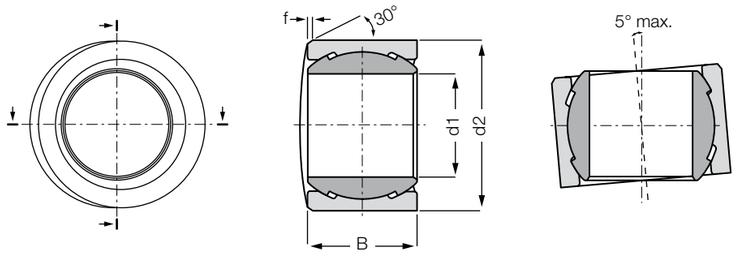
| Part No. | Max. static load radial [N] | Max. static load axial[29] [N] | Max. tightening torque through ball [Nm] | d1 E10 | d2 | B | C | f | Max. pivot angle | Weight [g] |
|---|---|---|---|---|---|---|---|---|---|---|
| KGLI-03 | 1,000 | 150 | 5 | .1900 | .5625 | .312 | .218 | 0.3 | 34° | 1.2 |
| KGLI-04 | 1,500 | 250 | 10 | .2500 | .6562 | .375 | .250 | 0.3 | 30° | 1.7 |
| KGLI-05 | 2,000 | 350 | 12 | .3125 | .7500 | .437 | .281 | 0.3 | 29° | 2.6 |
| KGLI-06 | 2,800 | 400 | 20 | .3750 | .8125 | .500 | .312 | 0.5 | 25° | 3.3 |
| KGLI-07 | 3,750 | 450 | 30 | .4375 | .9375 | .562 | .343 | 0.5 | 25° | 4.9 |
| KGLI-08 | 4,250 | 500 | 35 | .5000 | 1.0625 | .625 | .390 | 0.5 | 25° | 7.1 |
| KGLI-10 | 5,300 | 750 | 40 | .6250 | 1.1875 | .750 | .500 | 0.5 | 23° | 10.2 |
| KGLI-12 | 8,500 | 850 | 55 | .7500 | 1.4375 | .875 | .593 | 0.5 | 23° | 17.5 |
| KGLI-16 | 13,600 | 2,500 | 65 | 1.00 | 2.125 | 1.375 | 1,005 | 0.5 | 23° | 62.7 |

[29] The maximum static axial load is determined when fitted into a blind housing.





## Spherical bearings: KGLI Slim Line



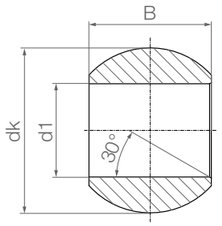

### KGLI-SL

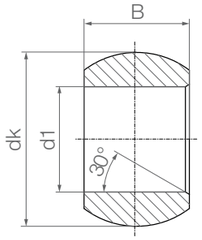
Chapter ▶ Page 969

| Part No. | d1 E10 | d2 | B | f | Max. pivot angle | Weight [g] |
|---|---|---|---|---|---|---|
| KGLI-03-SL New | .1875 | .3750 | .1875 | .0200 | 5° | 0.69 |
| KGLI-04-SL New | .2500 | .5000 | .2500 | .0200 | 5° | 0.75 |
| KGLI-05-SL New | .3125 | .5000 | .3125 | .0200 | 5° | 1.0 |
| KGLI-06-SL New | .3750 | .6250 | .3750 | .0200 | 5° | 1.3 |
| KGLI-08-SL New | .5000 | .8125 | .5000 | .0200 | 5° | 2.5 |

| Part No. | Max. permissible axial load Short-term [lbf] | Max. permissible axial load Long-term [lbf] | Max. permissible radial load Short-term [lbf] | Max. permissible radial load Long-term [lbf] |
|---|---|---|---|---|
| KGLI-03-SL New | 34 | 17 | 225 | 112 |
| KGLI-04-SL New | 56 | 28 | 337 | 168 |
| KGLI-05-SL New | 79 | 39 | 450 | 225 |
| KGLI-06-SL New | 112 | 56 | 630 | 315 |
| KGLI-08-SL New | 135 | 67 | 955 | 478 |

## Low-cost spherical balls: REI





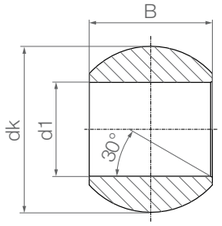

**REI** Chapter ▶ Page 998

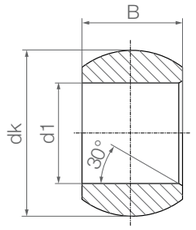
| Part No. | d1 E10 | dK | B | Weight [g] |
|---|---|---|---|---|
| REI-03 New | .1875 | .402 | .1900 | 0.3 |
| REI-04 New | .2500 | .402 | .2500 | 0.3 |
| REI-05 New | .3125 | .520 | .3125 | 0.7 |
| REI-06 New | .3750 | .630 | .3750 | 1.3 |
| REI-07 New | .4275 | .709 | .4063 | 1.6 |
| REI-08 New | .5000 | .709 | .4063 | 2.6 |
| REI-10 New | .6250 | .945 | .5000 | 3.1 |
| REI-12 New | .7500 | 1.138 | .6250 | 5.9 |
| REI-16 New | 1.0000 | 1,398 | .7500 | 9.2 |





## Standard spherical balls: WKI and WEI





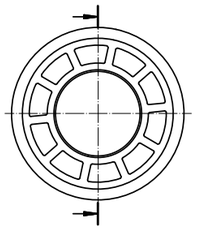

**WKI** Chapter ▶ Page 997

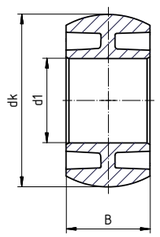
| Part No. | d1 E10 | dK | B | Weight [g] |
|---|---|---|---|---|
| WKI-03 | .1900 | .444 | .312 | 0.6 |
| WKI-04 | .2500 | .516 | .375 | 1.0 |
| WKI-05 | .3125 | .625 | .437 | 1.7 |
| WKI-06 | .3750 | .718 | .500 | 2.3 |
| WKI-07 | .4375 | .828 | .562 | 3.5 |
| WKI-08 | .5000 | .938 | .625 | 5.0 |
| WKI-10 | .6250 | 1,125 | .750 | 8.2 |
| WKI-12 | .7500 | 1.312 | .875 | 12.5 |
| WKI-16 | 1.00 | 1.75 | 1.375 | 31.7 |

**WEI** Chapter ▶ Page 997

| Part No. | d1 | dK | B | Weight [g] |
|---|---|---|---|---|
| WEI-03 | .1900 H10 | .402 | .1900 | 0.3 |
| WEI-04 | .2500 H10 | .402 | .2500 | 0.3 |
| WEI-05 | .3125 H10 | .520 | .3125 | 0.7 |
| WEI-06 | .3750 H10 | .630 | .3750 | 1.3 |
| WEI-07 | .4375 H10 | .709 | .4063 | 1.6 |
| WEI-08 | .5000 H10 | .709 | .4063 | 2.6 |
| WEI-10 | .6250 E10 | .945 | .5000 | 3.1 |
| WEI-12 | .7500 E10 | 1.138 | .6250 | 5.9 |
| WEI-16 | 1.00 E10 | 1,398 | .7500 | 9.2 |

## Cost-effective spherical insert bearings for various metallic bearing housings: JEI



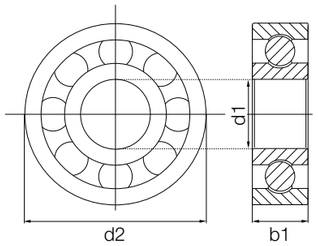



**JEI** Chapter ▶ Page 1000

| Part No. | Housing No. | d1 E10 | dk | B | Max. static compressive force radial [N] | axial [N] |
|---|---|---|---|---|---|---|
| JEI-16-17-SP New | 205 | 1 | 2.0472 | .6692 | 9,000 | 3,500 |
| JEI-24-21-SP New | 208 | 1 1/2 | 3.1496 | .8267 | 21,000 | 6,000 |
| JEI-32-25-SP New | 211 | 2 | 3.9370 | .9842 | 25,000 | 5,500 |

The bearing inserts can be combined with our plastic housings, e.g. B. P205-xx-KS/P208-xx-KS. Contact us!
KS housing ▶ Page 938

## Radial deep groove ball bearings, up to +80°C




**xirodur® B180** Chapter ▶ Page 886

| Part No. | Race | Cage | Balls | | Inner Ø | Outer Ø | Width |
|---|---|---|---|---|---|---|---|
| | | | ES | GL | d1 | d2 | b1 |
| BB-I-0620-06-B180-10-☐ [142)] | B180 | PA | 1,4401 | Glas | 3/16 | 5/8 | 10/51 |
| BB-I-0820-06-B180-10-ES | B180 | PA | 1,4401 | – | 1/4 | 5/8 | 10/51 |
| BB-I-0824-07-B180-10-☐ [142)] | B180 | PA | 1,4401 | Glas | 1/4 | 3/4 | 7/32 |
| BB-I-1228-10-B180-10-ES | B180 | PA | 1,4401 | – | 3/8 | 7/8 | 5/16 |
| BB-I-1236-12-B180-10-☐ [142)] | B180 | PA | 1,4401 | Glas | 3/8 | 1 1/8 | 3/8 |
| BB-I-1636-12-B180-10-☐ [142)] | B180 | PA | 1,4401 | Glas | 1/2 | 1 1/8 | 3/8 |
| BB-I-2044-12-B180-10-☐ [142)] | B180 | PA | 1,4401 | Glas | 5/8 | 1 3/8 | 3/8 |
| BB-I-2452-16-B180-10-☐ [142)] | B180 | PA | 1,4401 | Glas | 3/4 | 1 5/8 | 1/2 |
| BB-I-3264-12-B180-10-☐ [142)] | B180 | PA | 1,4401 | Glas | 1 | 2 | 1/2 |

[142)] For ball bearings with stainless steel balls please add suffix"-ES", for glass balls please add suffix "-GL".

| Part No. | Max. static axial load capacity | Load capacity | | Limit speed | Weight | |
|---|---|---|---|---|---|---|
| | | stat. | dyn. | | ES | GL |
| | [N] | [N] | [N] | [rpm] | [g] | [g] |
| BB-I-0620-06-B180-ES/-GL | 35 | 45 | 49 | 3,700 | 1.6 | 1.0 |
| BB-I-0820-06-B180-ES | 40 | 47 | 51 | 3,500 | 1.3 | – |
| BB-I-0824-07-B180-ES/-GL | 50 | 60 | 75 | 3,200 | 1.6 | 1.0 |
| BB-I-1228-09-B180-ES | 55 | 70 | 89 | 2,200 | 3.9 | – |
| BB-I-1236-12-B180-ES/-GL | 75 | 134 | 150 | 1,050 | 4.9 | 2.9 |
| BB-I-1636-12-B180-ES/-GL | 75 | 134 | 150 | 2,000 | 7.6 | 5.2 |
| BB-I-2044-12-B180-ES/-GL | 78 | 170 | 193 | 1,600 | 11.0 | 7.9 |
| BB-I-2452-16-B180-ES/-GL | 81 | 260 | 290 | 1,400 | 20.1 | 13.6 |
| BB-I-3264-12-B180-ES/-GL | 85 | 275 | 320 | 1,050 | 27,3 | 21.3 |



# Notes

# Service

Online tools, chemicals table, material data, forms, addresses

...plastics

# Online tools

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# Online services

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With the igus® FastLine service, you receive customised injection-moulded plain bearings and thrust washers in a maximum of seven days. Apart from the immediate price indication, the iglidur® bearing designer shows you the manufacturing costs of our other production methods.

**3D printing service**
In the online 3D printing calculation, you not only receive 3D printing, but also analyse feasibility and prices of injection-moulded parts made with 3D-printed moulds (print2mold).

**CNC service**
Online CNC service for individually machined parts. Upload the 3D models of your machined parts in our online CNC tool, configure your requirements and get direct price feedback.

**Coating service**
iglidur® coating is a tribologically optimised polymer in powder form that can be applied to electrically conductive components using powder coating. With our iglidur® coating service, you will get your configuration at the push of a button.

# Chemical resistance

Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available

| Chemicals, iglidur® | A180<br>A181<br>J200<br>R<br>UW<br>xirodur® B180<br>xirodur® S180<br>xirodur® F180<br>xirodur® M180<br>FC180 | A200, G<br>GLW<br>G V0<br>M250<br>N54, Q2<br>W300, C<br>L250, L100<br>igumid® G<br>xirodur® G220<br>igumid® FC | A350 | A500<br>C500<br>UW500<br>X<br>X6<br>xirodur® A500<br>L500<br>AX500 | A290<br>F<br>Q290<br>W360<br>G1 | J<br>J2<br>J3<br>J4<br>JB<br>E | J260<br>M260 | J350 | H<br>H1<br>H2<br>H370<br>H4<br>HLW<br>iguton G<br>H3, H5 | F2<br>K<br>P<br>P210<br>P4<br>M210 | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Acetaldehyde (aqueous), 40% | + | o | x | + | o | + | – | x | x | – | o |
| Acetaldehyde (aqueous), 40% | + | o | x | x | o | o | x | x | x | o | o |
| Acetamide (aqueous), 50% | + | 4 | x | + | 4 | + | – | x | x | x | 4 |
| Acetic acid, 10% | + | – | + | + | – | + | + | + | + | + | + |
| Acetic acid, 2% | + | – | + | + | – | + | + | + | + | + | o |
| Acetic acid, 90% | – | – | + | o | – | – | – | x | + | – | – |
| Acetone | + | + | – | + | o | + | – | – | + | – | + |
| Acetyl chloride | – | – | x | x | – | – | x | x | x | x | – |
| Acrylnitrile | o | + | x | + | + | o | – | x | x | – | + |
| Air, liquid | o | o | x | x | o | o | x | x | x | o | o |
| Allyl alcohol | + | o | x | + | o | + | x | x | + | + | + |
| Aluminium chloride (aqueous), 10% | o | o | x | + | o | o | o | x | + | o | o |
| Aluminium cleaner | – | – | x | o | – | – | x | x | o | x | – |
| Aluminium salts of mineral acids, 20% | o | o | x | x | o | o | x | x | x | o | o |
| Aluminium sulphate (aqueous), 10% | o | o | x | + | o | o | + | x | + | o | o |
| Ammonium carbonate (aqueous), 10% | + | 4 | x | + | 4 | + | o | x | + | + | 4 |
| Ammonium carbonate (aqueous), 10% | + | + | x | + | + | + | x | x | + | x | x |
| Ammonium chloride (aqueous), 10% | + | 4 | x | + | 4 | + | + | x | + | + | 4 |
| Amyl acetate, 100% | – | – | x | + | – | – | – | x | + | o | + |
| Amyl alcohol | + | + | x | + | + | + | + | x | + | o | + |
| Aniline (aqueous), saturated solution | o | o | x | + | o | o | – | x | + | o | o |
| Anodic solutions (HNO3 -30%/H2SO4 -10%) | – | o | x | x | o | – | x | x | x | o | o |
| Aqua regia HCl/HNO3 (75/50 vol.) | o | + | x | + | + | o | – | x | x | – | + |
| Aromatic compounds | + | + | + | x | + | + | x | x | x | o | x |
| Barium chloride (aqueous), 10% | + | o | x | + | o | + | + | x | + | + | 4 |
| Barium salts from mineral acids | + | o | x | x | o | o | x | x | x | o | o |
| Barium sulphate (aqueous), 10% | + | o | x | + | o | + | o | x | + | + | 4 |
| Benzaldehyde | + | o | x | + | o | o | – | x | o | – | o |
| Benzoic acid (aqueous), 20% | o | o | x | + | o | o | – | x | x | + | o |
| Benzyl alcohol | + | + | + | + | + | o | – | + | x | x | o |
| Biphenyl | + | + | x | x | + | + | x | x | x | – | x |
| Bitumen, DIN 51567 | + | o | – | + | o | o | + | x | x | o | o |
| Bleaching lye | – | – | x | + | – | – | x | x | x | – | o |
| Bleaching lye (aqueous), 10% | – | – | x | + | – | – | x | x | + | o | o |
| Boric acid (aqueous), 10% | + | o | + | + | o | + | + | x | x | – | 4 |
| Brandy vinegar | o | o | x | + | o | o | x | x | + | o | o |
| Bromine (aqueous), 25% | – | – | x | + | – | – | – | x | – | – | – |
| Bromine vapours | – | – | x | x | – | – | x | x | x | – | – |



EN 09/2023

# Chemical resistance

"4" swelling, softening due to the water

| V400 | Z | B | D | T220 | K230 | PEP | A160<br>B160<br>UW160<br>xirodur® C160 | E7 | I170 | I180<br>I180-BL | xirodur®<br>D180 | xiros® ball bearings with<br>PEEK cage | PP cage<br>PE cage | PA cage | I150 | C210<br>P230 | I3<br>I6<br>AB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| x | x | o | + | – | x | o | + | x | x | – | x | + | + | o | – | x | + |
| x | x | x | o | o | x | x | o | x | x | x | x | o | + | – | – | x | o |
| x | x | x | + | x | x | 4 | x | x | + | – | x | + | x | + | x | x | + |
| + | + | – | + | + | x | o | + | x | + | + | x | + | + | – | + | + | + |
| + | + | – | + | + | o | o | + | x | + | + | – | x | x | o | + | + | + |
| + | + | – | – | – | x | – | + | x | – | – | x | + | + | – | – | – | – |
| + | + | o | o | – | o | + | + | o | – | – | x | + | + | + | – | + | + |
| x | x | x | – | x | x | – | x | x | x | x | x | x | x | – | – | x | – |
| x | x | – | o | – | x | + | + | x | x | – | x | + | + | + | – | x | + |
| x | x | x | o | o | x | x | x | x | x | x | x | x | x | – | x | o | o |
| x | + | o | + | + | x | + | + | x | – | – | x | + | + | o | + | + | + |
| x | x | o | o | o | x | o | + | x | + | o | x | + | + | o | + | x | o |
| x | x | – | – | x | x | – | x | x | x | x | x | o | x | – | x | x | – |
| x | x | x | o | o | x | x | x | x | x | x | x | x | x | o | x | + | o |
| x | + | o | o | o | x | o | + | + | + | + | x | + | + | o | + | x | o |
| x | + | o | + | + | x | 4 | + | + | + | o | x | + | + | + | + | x | x |
| x | + | x | + | x | x | + | x | x | x | x | x | + | + | + | x | x | + |
| x | + | o | + | + | x | 4 | + | + | x | + | o | + | + | + | + | x | – |
| x | + | – | o | o | x | o | o | x | – | – | x | + | o | – | + | + | – |
| x | o | o | + | + | x | + | + | x | + | + | x | + | + | + | + | + | + |
| x | x | – | o | o | x | o | + | o | – | – | x | + | + | o | x | x | o |
| x | x | x | – | o | x | – | x | x | x | x | x | x | + | o | x | o | o |
| x | x | – | o | – | x | + | + | + | o | – | x | + | x | + | – | – | – |
| x | x | x | x | o | x | x | x | x | x | x | x | x | x | + | x | o | + |
| x | + | – | + | + | x | 4 | + | – | + | + | x | + | + | o | + | x | o |
| x | x | x | o | o | x | x | x | x | x | x | x | x | x | o | x | + | + |
| x | + | o | + | + | x | 4 | + | x | x | o | x | + | + | o | x | x | o |
| x | x | – | o | – | x | o | + | x | – | – | x | + | + | o | – | x | o |
| x | + | o | o | + | x | o | + | x | + | + | x | + | + | o | + | + | o |
| x | o | o | o | x | x | o | + | + | – | – | x | + | + | + | x | x | + |
| x | x | x | x | – | x | x | x | x | x | x | x | x | x | + | – | – | + |
| x | + | – | o | o | x | o | o | + | x | + | x | + | o | o | + | x | o |
| x | + | – | – | – | x | – | x | x | x | x | x | + | x | – | x | x | – |
| x | + | – | – | o | x | – | x | x | + | + | x | + | x | – | x | x | – |
| x | + | – | – | + | x | 4 | + | + | + | + | o | + | + | o | + | + | o |
| x | + | o | o | o | x | o | + | x | x | x | x | + | + | o | x | x | o |
| x | o | – | – | – | x | – | – | x | – | – | x | + | – | – | x | x | – |
| x | x | x | – | – | x | – | o | x | x | x | x | x | o | – | – | – | – |



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# Chemical resistance

Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available

| Chemicals, iglidur® | A180<br>A181<br>J200<br>R<br>UW<br>xirodur® B180<br>xirodur® S180<br>xirodur® F180<br>xirodur® M180<br>FC180 | A200, G<br>GLW<br>G V0<br>M250<br>N54, Q2<br>W300, C<br>L250, L100<br>igumid® G<br>xirodur® G220<br>igumid® FC | A350 | A500<br>C500<br>UW500<br>X<br>X6<br>xirodur® A500<br>L500<br>AX500 | A290<br>F<br>Q290<br>W360<br>G1 | J<br>J2<br>J3<br>J4<br>JB<br>E | J260<br>M260 | J350 | H<br>H1<br>H2<br>H370<br>H4<br>HLW<br>iguton G<br>H3, H5 | F2<br>K<br>P<br>P210<br>P4<br>M210 | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bromochloromethane, 98% | x | o | x | + | o | x | x | x | x | o | o |
| Butanol | + | + | + | + | + | + | o | x | + | + | + |
| Butter | + | + | x | + | + | + | + | x | + | + | + |
| Butyl acetate | + | + | o | + | o | o | x | x | + | o | o |
| Butyl glycol | + | + | – | + | + | + | o | x | + | + | + |
| Butyl glycolate | + | + | x | x | + | + | x | x | x | + | x |
| Butyl phthalate | + | + | x | x | + | + | x | x | x | + | x |
| Butyric acid | o | o | x | + | o | – | – | x | + | o | – |
| Calcium chloride, saturated solution | + | 4 | x | + | 4 | + | + | x | + | + | 4 |
| Calcium hydroxide, aqueous | + | + | + | x | + | + | x | x | x | + | x |
| Calcium hypochlorite | + | + | x | x | + | + | x | x | x | o | x |
| Camphor | + | + | x | + | + | + | o | x | + | x | + |
| Carbon bisulphide | + | + | x | + | + | + | x | x | + | x | + |
| Carbon dioxide gas | + | + | x | + | + | + | + | x | + | + | x |
| Casein | + | + | x | x | + | + | x | x | x | + | x |
| Caustic potash lye (aqueous), 40% | + | + | x | + | + | + | x | x | x | x | x |
| Caustic potash, 10% | o | 4 | + | x | 4 | o | x | x | x | – | x |
| Caustic potash, 20% | – | o | + | + | o | – | – | x | + | – | x |
| Caustic potash, 50% | – | o | + | x | o | – | x | x | x | – | o |
| Caustic sodium bicarbonate (aqueous), 50% | o | o | x | + | o | o | x | x | x | x | x |
| Cellulose lacquer | + | + | x | x | x | + | x | x | x | x | x |
| Chloramine | x | – | x | x | – | – | x | x | x | – | – |
| Chlorinated water, saturated solution | – | – | x | + | – | – | o | x | x | – | o |
| Chlorine | – | – | x | x | – | – | x | x | x | – | – |
| Chlorine gas | – | – | x | – | – | – | – | x | – | – | – |
| Chloroacetic acid (aqueous), 10% | – | – | x | + | – | – | – | x | x | – | – |
| Chloroethanol | – | – | x | x | – | – | x | x | x | – | – |
| Chloroform | – | – | – | + | o | – | – | – | o | – | – |
| Chlorsulphonic acid (aq.) | – | – | x | – | o | – | – | x | – | – | – |
| Chromic acid (aq.), 10% | – | – | x | + | – | – | – | x | – | – | – |
| Chromic acid (aqueous), 1% | o | – | x | + | – | o | o | x | – | o | o |
| Citric acid (aqueous), 10% | + | 4 | + | + | 4 | + | + | x | + | + | o |
| Citric acid, concentrated solution | o | o | x | + | o | o | + | x | o | x | – |
| Citrus fruits | + | + | x | x | + | + | x | x | x | + | x |
| Cobalt salts (aqueous) | + | + | x | x | + | + | x | x | x | + | x |
| Copper sulphate, 0.5% | + | o | + | + | o | + | x | x | + | x | o |
| Copper sulphate, saturated solution | o | o | + | + | o | o | x | x | + | x | o |
| Cresol | – | – | x | + | – | – | – | x | + | – | – |



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# Chemical resistance

"4" swelling, softening due to the water

| V400 | Z | B | D | T220 | K230 | PEP | A160<br>B160<br>UW160<br>xirodur® C160 | E7 | I170 | I180<br>I180-BL | xirodur®<br>D180 | xiros® ball bearings with<br>PEEK cage | PP cage<br>PE cage | PA cage | I150 | C210<br>P230 | I3<br>I6<br>AB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| x | x | o | x | o | x | x | – | x | x | x | x | + | – | o | + | + | o |
| x | o | – | o | + | x | + | + | + | + | o | x | + | + | + | + | o | + |
| x | + | o | + | + | x | + | + | x | + | + | x | + | + | + | + | + | + |
| x | + | x | o | o | + | o | + | o | – | – | x | + | + | + | x | o | + |
| x | + | o | + | + | x | + | + | x | x | o | x | + | + | + | + | + | + |
| x | x | x | x | x | x | x | x | x | x | x | x | x | x | + | x | + | + |
| x | x | x | x | x | x | x | + | x | x | x | x | x | + | + | x | + | + |
| x | + | – | – | o | x | – | + | + | – | – | x | + | + | o | x | + | o |
| x | + | + | + | + | x | 4 | + | x | + | + | o | + | + | + | x | + | + |
| x | x | x | x | x | x | x | + | + | x | x | x | x | + | + | + | + | + |
| x | x | x | x | o | x | x | o | + | + | + | x | x | o | + | x | o | + |
| x | + | o | + | x | x | + | + | x | + | o | x | + | + | + | x | x | + |
| x | x | x | + | x | x | + | x | x | x | x | x | + | x | + | x | x | + |
| x | x | – | + | + | x | x | + | x | + | + | x | x | x | + | x | + | + |
| x | x | x | x | x | x | x | x | x | x | x | x | + | + | + | x | + | + |
| x | + | x | + | x | x | + | x | x | x | x | x | x | x | + | x | x | + |
| x | x | x | o | – | x | x | + | x | + | + | x | + | + | – | – | – | x |
| x | + | o | – | – | x | – | + | x | x | – | x | x | + | + | – | – | o |
| x | x | x | – | – | x | – | + | x | + | + | x | + | + | o | – | – | + |
| x | + | o | o | x | x | o | x | x | x | x | x | + | x | + | x | x | o |
| x | x | x | + | + | x | x | x | x | x | x | x | x | x | + | x | + | + |
| x | x | x | – | – | x | – | + | + | x | x | x | x | + | – | – | – | – |
| + | o | – | – | – | x | – | o | x | o | o | x | + | o | – | – | x | – |
| x | x | x | – | – | x | – | – | – | – | – | x | x | – | – | – | – | – |
| o | – | – | – | – | x | – | – | x | – | – | x | – | – | – | – | x | – |
| x | – | – | – | – | x | – | + | + | o | – | x | + | + | – | – | – | – |
| x | x | x | – | – | x | – | x | x | x | x | x | x | x | – | x | x | – |
| x | o | – | – | – | x | – | o | x | – | – | x | + | o | – | – | – | o |
| x | + | – | – | – | x | – | – | x | – | – | x | – | – | – | – | – | – |
| + | o | – | – | – | x | – | + | x | o | – | x | + | + | – | o | o | – |
| + | o | – | o | o | x | o | + | x | o | o | x | + | + | – | x | + | – |
| x | + | x | + | + | x | o | + | + | + | + | o | + | + | + | + | + | + |
| x | + | o | o | x | x | – | + | x | x | + | x | + | + | + | x | x | o |
| x | x | x | x | x | x | x | + | x | x | x | x | + | + | o | x | + | + |
| x | x | x | x | x | x | x | x | x | x | x | x | x | + | – | x | + | + |
| x | + | o | + | x | x | o | x | x | x | x | x | + | x | o | x | + | o |
| x | + | o | o | x | x | o | x | x | + | + | x | + | + | – | x | x | o |
| x | + | – | – | – | x | – | + | + | o | – | x | x | – | – | – | – | – |



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# Chemical resistance

Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available

| Chemicals, iglidur® | A180<br>A181<br>J200<br>R<br>UW<br>xirodur® B180<br>xirodur® S180<br>xirodur® F180<br>xirodur® M180<br>FC180 | A200, G<br>GLW<br>G V0<br>M250<br>N54, Q2<br>W300, C<br>L250, L100<br>igumid® G<br>xirodur® G220<br>igumid® FC | A350 | A500<br>C500<br>UW500<br>X<br>X6<br>xirodur® A500<br>L500<br>AX500 | A290<br>F<br>Q290<br>W360<br>G1 | J<br>J2<br>J3<br>J4<br>JB<br>E | J260<br>M260 | J350 | H<br>H1<br>H2<br>H370<br>H4<br>HLW<br>iguton G<br>H3, H5 | F2<br>K<br>P<br>P210<br>P4<br>M210 | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cyclohexane | + | + | + | + | + | + | o | x | + | – | + |
| Decahydronaphthalene = decalin | + | + | – | + | + | + | x | x | + | – | + |
| Dibutyl ether | + | + | x | x | + | + | x | x | x | + | x |
| Dibutylphthalate | + | + | x | + | + | + | – | x | + | + | + |
| Dichlorethylene | – | – | x | + | – | – | – | x | + | – | – |
| Dichlorobenzene | – | + | x | + | + | – | x | x | + | – | + |
| Dichloroethene | – | + | x | + | + | – | x | x | + | – | + |
| Diethyl ether | o | o | + | + | + | + | – | x | x | + | + |
| Dimethylformamide | o | + | + | + | + | + | – | x | + | + | + |
| Dioctylphthalate | + | + | + | + | + | + | x | x | + | o | + |
| Dioxane | o | + | x | + | + | o | – | x | + | + | + |
| Drilling oils | + | + | + | x | + | + | x | x | x | + | x |
| Edible fats, 100% | + | + | + | + | + | + | x | x | + | + | + |
| Edible oils | + | + | + | + | + | + | x | x | + | + | + |
| Ethanol (aqueous), 96% | + | o | + | + | o | o | + | x | + | – | o |
| Ethyl acetate | + | + | – | + | + | + | – | x | + | – | + |
| Ethylene | + | + | x | x | + | + | x | x | x | + | x |
| Ethylene chloride | + | + | – | + | + | + | – | x | + | – | + |
| Ethylene glycol (aqueous), 95% | + | o | x | + | o | + | o | x | + | + | o |
| Ethylene oxide (1.2 epoxyethane) | + | o | + | x | o | o | x | x | x | o | o |
| Ethylenediamine (1.2 ethanediamine) | + | + | x | + | + | + | o | x | o | + | + |
| Ferric chloride, 2.5% | + | o | x | x | o | + | x | x | + | x | o |
| Ferric chloride, 5% | – | o | x | o | o | – | o | x | + | x | o |
| Ferric chloride, saturated solution | + | o | x | x | o | + | x | x | + | x | o |
| Fluorinated hydrocarbons | o | + | x | + | o | + | o | x | + | o | + |
| Fluorine | – | – | + | x | – | – | x | x | x | – | – |
| Formaldehyde (aqueous), 30% | + | o | + | + | o | + | + | + | + | + | 4 |
| Formamide | + | o | – | + | o | + | o | x | x | x | o |
| Formic acid (aqueous), 2% | o | – | x | o | – | – | + | x | + | o | – |
| Formic acid, 10% | – | – | x | – | – | – | x | x | o | – | – |
| Formic acid, 90% | – | – | x | – | – | – | – | x | o | – | – |
| Fruit juices | + | + | – | x | + | + | x | x | x | + | x |
| Furfural | + | o | x | + | o | + | o | x | + | + | + |
| Glycerine | – | + | + | + | + | + | o | x | + | + | + |
| Glycol | + | o | + | + | o | o | x | x | + | + | o |
| Greases, cooking fat | + | + | x | + | + | + | o | x | + | + | + |
| Heptane | + | + | + | + | + | + | + | x | + | o | + |
| Hexachlorobenzene | + | – | x | + | – | – | x | x | x | x | – |
| Hexachloroethane | + | + | x | + | + | + | x | x | x | x | + |



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# Chemical resistance

"4" swelling, softening due to the water

| V400 | Z | B | D | T220 | K230 | PEP | A160<br>B160<br>UW160<br>xirodur® C160 | E7 | I170 | I180<br>I180-BL | xirodur®<br>D180 | xiros® ball bearings with<br>PEEK cage | PP cage<br>PE cage | PA cage | I150 | C210<br>P230 | I3<br>I6<br>AB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| x | + | – | – | – | x | + | + | + | + | o | x | x | + | + | + | + | + |
| x | + | – | – | – | x | + | – | x | + | + | x | + | + | + | o | o | + |
| x | x | x | x | x | x | x | o | o | x | x | x | + | – | + | + | + | + |
| x | + | o | + | + | x | + | + | x | x | – | x | x | o | + | x | + | + |
| x | + | – | – | – | x | – | x | x | x | – | x | + | + | + | – | x | – |
| x | o | x | – | – | x | – | o | o | – | – | x | + | + | + | x | x | + |
| x | o | x | – | – | x | – | + | x | x | x | x | + | o | + | – | – | + |
| x | + | o | o | + | x | + | o | o | – | – | x | + | x | – | x | + | + |
| + | + | o | + | + | o | + | + | + | – | – | x | + | o | o | + | + | + |
| x | + | x | o | o | x | + | + | – | x | x | x | + | + | + | + | + | + |
| x | + | x | o | + | x | o | + | + | – | – | x | + | + | + | + | + | + |
| x | x | x | x | x | x | x | x | x | x | x | x | x | x | + | x | + | + |
| x | + | o | + | + | x | + | + | x | x | x | x | + | + | + | x | + | + |
| x | + | o | + | + | x | + | + | x | x | x | x | + | + | + | x | + | + |
| + | o | o | + | – | o | o | + | x | x | + | o | x | o | o | + | + | + |
| + | + | o | + | – | x | + | + | + | – | – | o | + | + | o | – | – | + |
| x | x | x | x | x | x | – | x | x | x | x | x | + | + | + | x | + | + |
| x | + | o | + | – | x | + | + | o | x | – | x | x | x | + | – | – | + |
| + | + | – | + | + | + | o | + | + | x | o | x | + | + | + | + | + | o |
| x | x | x | o | o | x | x | – | x | x | x | x | + | + | o | + | + | o |
| + | + | o | o | x | x | + | + | + | x | o | x | + | + | + | o | x | + |
| x | + | o | + | x | x | o | x | x | x | x | x | o | + | + | x | x | o |
| x | + | o | – | x | x | – | x | x | x | o | x | + | + | – | x | x | o |
| x | + | o | + | x | x | o | + | x | x | x | x | x | x | + | x | x | o |
| x | o | x | o | o | x | + | x | x | x | o | x | x | – | – | + | + | + |
| x | x | x | – | – | x | – | – | – | x | x | x | + | + | + | – | – | – |
| x | + | o | + | + | x | 4 | + | + | + | + | x | + | + | – | + | + | o |
| x | + | – | o | x | x | o | + | x | x | o | x | + | + | o | x | x | o |
| x | o | – | – | o | x | – | + | x | + | + | x | o | + | – | + | + | + |
| x | – | – | – | – | x | – | + | x | + | + | x | – | + | – | x | + | + |
| x | – | – | – | – | x | – | + | x | + | – | x | – | + | – | x | x | – |
| x | x | x | x | x | x | x | + | x | x | x | x | + | + | o | + | + | + |
| x | + | o | + | + | x | + | o | + | – | – | x | x | + | + | + | + | o |
| x | + | x | + | + | x | + | + | x | + | o | x | + | + | o | + | + | + |
| x | + | o | o | + | x | o | + | x | + | + | x | + | o | o | + | + | + |
| x | + | o | + | + | x | + | + | x | x | o | x | x | – | o | + | + | + |
| x | + | – | – | o | + | + | + | + | + | + | x | + | + | + | + | + | + |
| x | o | x | – | – | x | – | x | x | + | + | x | + | + | + | x | x | – |
| x | o | x | – | – | x | – | – | x | x | x | x | + | x | – | x | x | + |



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# Chemical resistance

**Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available**

| Chemicals, iglidur® | A180<br>A181<br>J200<br>R<br>UW<br>xirodur® B180<br>xirodur® S180<br>xirodur® F180<br>xirodur® M180<br>FC180 | A200, G<br>GLW<br>G V0<br>M250<br>N54, Q2<br>W300, C<br>L250, L100<br>igumid® G<br>xirodur® G220<br>igumid® FC | A350 | A500<br>C500<br>UW500<br>X<br>X6<br>xirodur® A500<br>L500<br>AX500 | A290<br>F<br>Q290<br>W360<br>G1 | J<br>J2<br>J3<br>J4<br>JB<br>E | J260<br>M260 | J350 | H<br>H1<br>H2<br>H370<br>H4<br>HLW<br>iguton G<br>H3, H5 | F2<br>K<br>P<br>P210<br>P4<br>M210 | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Hexafluorosilicic acid (aqueous), 30% | x | – | x | x | – | – | x | x | x | – | – |
| Hexamethylphosphoramide | + | – | x | x | – | – | x | x | x | – | – |
| Hexane | + | + | + | + | + | + | + | x | + | – | + |
| Humic acids | o | o | x | x | o | o | x | x | x | o | o |
| Hydrobromic acid (aqueous), 10% | – | – | x | + | – | – | – | x | o | – | – |
| Hydrochloric acid, 10% | – | – | + | + | – | – | – | o | – | – | – |
| Hydrochloric acid, 2% | – | – | + | + | – | – | + | x | – | – | o |
| Hydrochloric gas | – | – | x | x | – | – | x | x | x | – | – |
| Hydrofluoric acid (aqueous), 4% | – | – | – | + | – | – | – | x | – | – | – |
| Hydrogen peroxide, 0.5% | + | + | – | + | + | + | + | o | + | + | + |
| Hydrogen peroxide, 30% | – | – | – | + | – | – | – | – | – | – | – |
| Hydrogen sulphide (aqueous) | + | o | x | x | o | + | x | x | x | o | o |
| Hydrogen sulphide (dry) | + | + | + | + | o | x | + | x | + | + | + |
| Hydroquinone (aqueous), 5% | o | – | x | + | – | o | o | x | x | o | – |
| Ink, printing ink | + | 4 | – | + | 4 | + | + | x | + | + | 4 |
| Inks | + | 4 | x | + | 4 | + | + | x | + | x | 4 |
| Iron (III) chloride (aqueous), acidic, 10% | – | – | x | + | + | – | – | x | + | – | o |
| Iron (III) chloride (aqueous), neutral, 10% | o | 4 | x | o | o | o | + | x | + | x | o |
| Isooctane, 80% | + | + | + | + | + | + | + | x | + | o | + |
| Isopropyl alcohol = isopropanol | + | + | + | + | + | + | + | x | + | + | o |
| Isopropylether | + | + | x | + | + | + | – | x | x | o | + |
| Ketones (aliphatic) | + | o | + | x | o | o | x | x | x | – | o |
| Lactic acid, 10% | + | + | + | + | + | + | + | x | + | + | o |
| Lactic acid, 90% | + | o | o | + | o | o | + | x | + | o | o |
| Lead acetate (aqueous), 10% | + | o | x | + | o | + | + | x | x | o | o |
| Lead stearate | + | + | x | + | + | + | + | x | + | + | + |
| Linseed oil | + | + | + | + | + | + | + | x | + | + | + |
| Lithium bromide/chloride/salts (aqueous), 50% | + | o | x | + | o | + | + | x | x | o | o |
| Lithium chloride in alcohol, 20% | + | – | x | x | – | – | x | x | x | x | – |
| Lubricating oil, mineral | + | + | + | + | + | + | + | x | + | o | + |
| Lubricating oil, synthetic | o | o | x | + | o | o | o | x | + | – | + |
| Magnesium chloride (aqueous), 10% | + | 4 | x | + | 4 | + | + | x | + | + | 4 |
| Magnesium hydroxide (aq.) | + | 4 | x | + | 4 | + | + | x | + | + | + |
| Maleic acid (aqueous), 10% | – | o | x | x | o | – | x | x | x | – | o |
| Maleic acid, concentrated solution | o | – | x | + | – | o | o | x | + | x | o |
| Malt | + | + | x | x | + | + | x | x | x | + | x |
| Manganese sulphate (aqueous), 10% | + | o | x | + | o | + | x | x | + | x | + |
| Mercury | + | + | x | + | + | + | + | x | + | + | + |



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# Chemical resistance

**"4" swelling, softening due to the water**

| V400 | Z | B | D | T220 | K230 | PEP | A160<br>B160<br>UW160<br>xirodur® C160 | E7 | I170 | I180<br>I180-BL | xirodur®<br>D180 | xiros® ball bearings with<br>PEEK cage | PP cage<br>PE cage | PA cage | I150 | C210<br>P230 | I3<br>I6<br>AB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| x | x | x | – | – | x | – | + | + | x | x | x | x | x | o | – | – | – |
| x | x | x | – | – | x | – | x | x | x | x | x | + | – | + | x | + | – |
| + | + | – | – | – | x | + | + | x | + | + | x | x | x | – | x | x | + |
| x | x | x | o | o | x | x | + | x | x | x | x | + | + | + | x | + | o |
| x | + | – | – | – | x | – | + | + | x | – | x | + | + | – | x | o | – |
| + | + | – | – | – | o | – | + | x | x | – | x | + | + | – | o | o | – |
| + | + | – | – | – | x | – | + | x | x | + | – | + | + | – | + | + | – |
| x | x | x | – | – | x | – | + | x | x | x | x | x | + | – | | – | – |
| – | – | – | – | – | x | – | + | – | + | – | x | + | x | + | – | – | – |
| + | + | + | + | + | x | + | + | x | + | + | x | + | + | + | + | + | + |
| x | – | – | – | – | x | – | + | x | x | – | o | + | + | + | + | + | – |
| x | x | x | – | o | x | o | + | x | x | x | x | x | + | o | x | + | o |
| x | + | x | x | + | x | x | + | + | + | + | x | o | + | – | x | + | + |
| x | + | – | – | x | x | – | + | x | x | – | x | o | x | o | x | x | – |
| x | + | o | o | x | x | – | + | x | x | + | x | x | x | o | x | x | + |
| x | + | – | – | o | x | + | + | x | + | + | x | + | + | – | + | + | + |
| x | o | o | + | + | x | o | + | x | + | + | o | + | + | + | + | + | + |
| x | + | o | + | o | x | + | o | + | x | – | x | + | + | + | + | x | + |
| x | x | x | o | – | x | x | x | x | x | x | x | + | x | o | – | – | o |
| x | + | o | o | o | x | o | + | + | + | + | – | + | + | + | x | + | + |
| x | + | o | o | o | x | o | + | + | + | + | x | + | + | + | x | + | o |
| x | + | – | + | o | x | o | + | + | + | + | x | + | + | o | + | x | o |
| x | + | o | + | + | x | + | x | x | + | + | x | + | x | + | + | x | + |
| + | + | – | + | + | x | + | + | + | + | + | x | + | x | o | + | + | + |
| x | + | – | + | o | x | o | x | x | x | + | x | + | + | + | + | + | o |
| x | x | x | – | x | x | – | x | x | x | x | x | + | x | o | x | x | – |
| + | + | – | + | o | x | o | x | x | x | + | x | + | + | + | x | x | + |
| + | + | – | o | – | x | o | x | x | x | o | x | + | x | + | x | x | o |
| + | + | + | + | + | x | 4 | + | + | + | + | x | x | x | o | + | + | + |
| + | + | + | + | + | x | + | + | x | x | + | x | + | + | + | + | x | – |
| x | x | x | – | – | x | – | + | x | x | x | x | x | + | o | x | x | o |
| x | + | – | o | x | x | – | + | x | x | o | x | + | + | + | x | x | – |
| x | x | x | x | x | x | x | x | x | x | x | x | + | + | – | x | + | + |
| x | + | o | + | x | x | + | x | x | x | x | x | x | x | + | x | x | o |
| + | + | + | + | + | x | + | + | + | + | + | x | + | o | + | + | + | + |



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# Chemical resistance

**Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available**

| Chemicals, iglidur® | A180<br>A181<br>J200<br>R<br>UW<br>xirodur® B180<br>xirodur® S180<br>xirodur® F180<br>xirodur® M180<br>FC180 | A200, G<br>GLW<br>G V0<br>M250<br>N54, Q2<br>W300, C<br>L250, L100<br>igumid® G<br>xirodur® G220<br>igumid® FC | A350 | A500<br>C500<br>UW500<br>X<br>X6<br>xirodur® A500<br>L500<br>AX500 | A290<br>F<br>Q290<br>W360<br>G1 | J<br>J2<br>J3<br>J4<br>JB<br>E | J260<br>M260 | J350 | H<br>H1<br>H2<br>H370<br>H4<br>HLW<br>iguton G<br>H3, H5 | F2<br>K<br>P<br>P210<br>P4<br>M210 | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury chloride, 6% | – | – | x | + | – | – | + | x | o | o | – |
| Methane | + | + | + | + | + | + | + | + | + | + | x |
| Methanol | + | + | + | x | + | + | x | + | x | + | x |
| Methanol +20% CaCl2 or LiCl | + | – | x | o | o | o | – | x | o | + | o |
| Methyl acetate | o | + | x | + | + | o | x | x | + | o | + |
| Methyl ethyl ketone | o | + | – | + | + | o | – | – | + | – | + |
| Methylamine | + | + | x | x | + | + | x | x | x | + | x |
| Methylene chloride | o | – | – | x | – | – | x | – | + | – | – |
| Milk | + | 4 | + | + | 4 | + | + | x | + | + | 4 |
| Molasses | + | + | + | x | + | + | x | + | x | + | x |
| Mortar, cement, lime | + | + | x | x | + | + | x | x | x | + | x |
| Naphthalene | + | + | x | + | + | + | o | x | + | + | + |
| Naphthalenesulfonic acid | – | – | x | x | – | – | x | x | x | x | – |
| Nickel salts (aqueous), 10% | + | o | x | x | o | + | x | x | x | x | o |
| Nitric acetic acid | + | + | x | x | + | + | x | x | x | + | x |
| Nitric acid (aq.), 5% | – | – | x | + | – | – | – | x | – | – | – |
| Nitric acid (aqueous), 2% | – | – | + | + | – | – | o | + | – | – | – |
| Nitro gases | – | o | x | x | o | – | x | x | x | x | o |
| Nitrobenzene | o | – | – | + | – | o | – | x | o | – | o |
| Nitrocellulose lacquers, Hazard Class A I | + | o | x | x | o | + | x | x | x | o | o |
| Nitrocellulose lacquers, Hazard Class A II | + | + | x | x | + | + | x | x | x | o | x |
| Nitrogen oxides (dry) | – | o | x | x | o | – | x | x | x | o | o |
| Nitromethane | – | o | x | + | o | – | x | x | o | – | x |
| Nitrotoluene | o | o | x | x | o | o | x | x | x | – | o |
| Noble gases (argon, helium, neon) | + | + | x | x | + | + | x | x | x | + | x |
| Octane | x | + | x | x | + | + | x | x | x | + | x |
| Oil, cooking | + | + | + | + | + | + | + | + | + | + | + |
| Oleic acid | + | + | x | + | + | + | + | x | + | + | + |
| Oleum | – | – | – | – | – | – | – | – | – | – | – |
| Oxalic acid (aqueous), 10% | x | o | + | + | o | x | + | x | x | + | o |
| Oxygen gas +23°C, without pressure | + | + | x | + | + | + | + | x | + | + | x |
| Ozone | – | – | – | + | – | – | + | x | – | – | – |
| Palmitic acid | + | + | x | x | + | + | x | x | x | + | x |
| Paraffin oil | + | + | + | + | + | + | + | x | + | – | + |
| Paraffins | + | + | x | x | + | + | x | x | x | + | x |
| Perchlorethene | – | – | – | + | – | – | – | – | x | – | – |
| Perchloric acid, 10% | – | – | x | + | – | – | – | x | x | – | – |
| Perfume | + | + | x | x | + | + | x | x | x | + | x |
| Phenol (alcoholic), 70% | – | – | x | o | – | – | – | x | + | – | – |





# Chemical resistance

**"4" swelling, softening due to the water**

| V400 | Z | B | D | T220 | K230 | PEP | A160<br>B160<br>UW160<br>xirodur® C160 | E7 | I170 | I180<br>I180-BL | xirodur®<br>D180 | xiros® ball bearings with<br>PEEK cage | PP cage<br>PE cage | PA cage | I150 | C210<br>P230 | I3<br>I6<br>AB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| x | x | – | – | o | x | – | + | x | + | + | x | + | + | + | + | x | – |
| x | x | – | + | + | x | x | + | x | x | x | x | x | + | + | + | + | + |
| x | x | x | x | x | o | x | + | + | o | o | – | + | + | + | + | + | + |
| + | o | + | + | + | x | o | x | x | – | – | x | x | + | + | x | x | – |
| x | + | x | o | o | x | o | + | x | x | x | x | o | x | – | + | o | + |
| x | + | – | o | – | o | o | + | x | x | – | x | x | – | – | – | – | + |
| x | x | x | x | x | x | x | + | x | x | x | x | + | + | + | x | x | + |
| + | o | o | – | – | x | – | – | o | – | – | x | x | + | + | x | – | – |
| + | + | + | + | + | x | 4 | + | + | + | + | x | + | + | + | + | + | + |
| x | x | x | x | x | x | x | + | + | x | x | x | x | + | + | + | + | + |
| x | x | x | x | x | x | x | x | x | x | x | x | + | x | + | x | + | + |
| x | + | – | + | + | x | + | + | + | x | o | x | x | x | + | x | + | + |
| x | x | x | – | x | x | – | x | x | x | x | x | + | + | + | x | x | – |
| x | x | x | – | x | x | o | x | x | x | x | x | x | + | + | – | – | x |
| x | x | x | x | x | x | x | x | x | x | x | x | x | x | o | x | + | + |
| + | + | – | – | – | x | – | + | – | x | – | x | + | + | – | + | x | – |
| + | + | – | – | – | x | – | + | + | x | o | – | + | + | – | + | + | – |
| x | x | x | – | x | x | – | x | x | x | x | x | + | + | – | x | x | o |
| + | – | – | – | – | x | – | + | + | – | – | x | x | x | + | + | + | o |
| x | x | x | – | o | x | o | x | x | x | x | x | x | x | o | x | o | o |
| x | x | x | x | o | x | x | x | x | x | x | x | x | x | o | x | o | + |
| x | x | x | – | o | x | – | – | x | x | x | x | + | + | + | x | + | o |
| x | + | o | – | – | x | – | + | x | x | x | x | x | x | + | x | o | o |
| x | x | x | o | – | x | x | + | x | x | x | x | + | + | o | + | + | o |
| x | x | x | x | x | x | x | x | x | x | x | x | + | + | + | x | + | + |
| x | x | x | x | x | x | x | + | x | x | x | x | x | + | o | x | + | + |
| + | + | o | + | + | x | + | + | x | x | + | x | x | + | + | + | + | + |
| + | + | o | + | + | x | + | + | + | + | + | x | – | – | – | + | + | + |
| – | – | – | – | – | x | – | – | + | x | – | x | + | + | + | – | – | – |
| x | + | – | x | + | x | x | + | x | x | + | x | + | + | + | + | + | o |
| x | x | – | + | + | x | x | + | x | x | + | x | x | x | – | x | + | + |
| x | + | – | – | – | x | – | o | x | + | + | x | + | + | o | x | – | – |
| x | x | x | x | x | x | x | + | + | + | + | x | + | o | – | + | + | + |
| x | + | – | – | – | x | + | + | + | + | + | x | x | + | + | x | + | + |
| x | x | x | x | x | x | x | + | + | x | x | x | x | + | + | + | + | + |
| x | + | – | – | – | x | – | o | x | o | – | x | x | + | + | o | o | – |
| x | + | – | – | – | x | – | + | + | x | – | x | + | o | – | x | x | – |
| x | x | x | x | x | x | x | + | x | x | x | x | + | + | + | + | + | + |
| x | + | – | – | – | x | – | + | x | x | – | x | + | + | – | – | x | – |

# Chemical resistance

**Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available**

| Chemicals, iglidur® | A180<br>A181<br>J200<br>R<br>UW<br>xirodur® B180<br>xirodur® S180<br>xirodur® F180<br>xirodur® M180<br>FC180 | A200, G<br>GLW<br>G V0<br>M250<br>N54, Q2<br>W300, C<br>L250, L100<br>igumid® G<br>xirodur® G220<br>igumid® FC | A350 | A500<br>C500<br>UW500<br>X<br>X6<br>xirodur® A500<br>L500<br>AX500 | A290<br>F<br>Q290<br>W360<br>G1 | J<br>J2<br>J3<br>J4<br>JB<br>E | J260<br>M260 | J350 | H<br>H1<br>H2<br>H370<br>H4<br>HLW<br>iguton G<br>H3, H5 | F2<br>K<br>P<br>P210<br>P4<br>M210 | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Phenol (aq.), 88% | + | – | – | x | – | – | x | x | x | x | – |
| Phenol (aqueous), 6% | – | – | – | x | – | – | – | x | + | – | – |
| Phosphoric acid (aqueous), 0.3% | + | o | x | + | o | + | + | x | o | – | o |
| Phosphoric acid (aqueous), 10% | – | – | – | + | – | – | o | x | – | – | – |
| Phosphoric acid (aqueous), 3% | – | o | x | + | – | o | + | x | o | – | o |
| Phthalic acid, saturated solution | + | o | x | + | o | + | o | x | o | + | o |
| Polyester resins (with styrene) | o | + | x | + | + | + | – | x | + | o | + |
| Potassium bromide (aqueous), 10% | + | o | x | + | o | o | + | x | + | o | 4 |
| Potassium carbonate (aqueous), 60% | + | 4 | x | + | 4 | + | + | x | + | o | 4 |
| Potassium chloride (aq.), 90% | + | 4 | x | + | 4 | + | + | x | + | + | 4 |
| Potassium chloride (aqueous), 10% | + | 4 | x | x | 4 | + | x | x | x | + | x |
| Potassium dichromate (aqueous), 5% | + | o | – | + | o | o | + | x | + | o | o |
| Potassium nitrate (aqueous), 10% | + | 4 | x | + | 4 | + | + | x | + | + | 4 |
| Potassium permanganate (aqueous), 1% | + | – | – | + | – | + | + | x | – | + | o |
| Potassium sulphate, saturated solution | + | 4 | x | + | 4 | + | + | x | + | o | 4 |
| Propane, propene | + | + | x | + | + | + | – | x | + | + | + |
| Propanol | + | + | – | + | + | + | + | x | o | + | + |
| Propenoic acid | o | – | x | x | – | – | x | x | x | – | – |
| Pyridine | o | + | – | + | + | o | – | x | + | x | + |
| Pyrocatechol (aqueous), 6% | – | – | x | + | – | – | – | x | x | – | o |
| Pyruvic acid (aqueous), 10% | x | o | x | x | o | x | x | x | x | o | o |
| Resorcinol (1.3-dihydroxybenzene), 50% | x | – | x | x | – | – | x | x | x | – | – |
| Salicylic acid | – | + | – | + | + | – | + | x | + | – | + |
| Seawater | + | + | + | + | + | + | + | + | + | + | + |
| Silicone oils | + | + | + | + | + | + | + | x | + | + | + |
| Silver nitrate | + | 4 | x | + | 4 | + | + | x | + | o | 4 |
| Soap solutions | + | 4 | + | + | 4 | + | + | x | + | + | 4 |
| Soda lye (aqueous), 10% | + | + | + | + | + | o | x | x | + | – | o |
| Soda lye (aqueous), 50% | o | o | x | + | o | o | x | x | x | x | x |
| Soda solution, 10% | + | 4 | + | + | 4 | + | x | x | + | + | 4 |
| Sodium acetate (aqueous), 10% | + | – | x | + | 4 | + | + | x | + | o | + |
| Sodium bisulphite (aqueous), 10% | + | 4 | – | + | 4 | + | o | x | + | + | 4 |
| Sodium bromide (aqueous), 10% | + | 4 | x | + | 4 | + | + | x | + | + | 4 |
| Sodium carbonate (aqueous), 21.5% | + | 4 | – | + | 4 | + | + | x | + | + | 4 |
| Sodium carbonate (aqueous), 50% | + | 4 | – | + | 4 | + | + | x | + | + | 4 |
| Sodium carbonate, 5% | + | 4 | – | + | 4 | + | + | x | + | + | 4 |
| Sodium chlorate (aqueous), 10% | + | o | x | x | o | o | x | x | x | o | o |
| Sodium chloride, saturated solution | + | 4 | x | + | 4 | + | + | x | + | + | 4 |
| Sodium dichromate (aqueous), 10% | x | o | x | x | o | x | x | x | x | o | o |



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# Chemical resistance

**"4" swelling, softening due to the water**

| V400 | Z | B | D | T220 | K230 | PEP | A160<br>B160<br>UW160<br>xirodur® C160 | E7 | I170 | I180<br>I180-BL | xirodur®<br>D180 | xiros® ball bearings with<br>PEEK cage | PP cage<br>PE cage | PA cage | I150 | C210<br>P230 | I3<br>I6<br>AB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| x | x | x | – | x | x | – | + | x | x | x | x | x | + | – | – | x | – |
| x | + | – | – | – | x | – | x | x | x | – | x | x | + | – | – | x | – |
| x | + | o | – | + | x | o | + | + | + | + | x | o | x | – | + | + | o |
| x | + | – | – | – | x | – | + | + | x | o | x | + | + | – | x | + | – |
| x | + | o | – | – | x | o | + | + | x | + | o | + | + | o | + | + | o |
| x | + | o | + | + | x | o | + | x | + | + | x | + | + | o | + | + | o |
| x | + | – | o | o | x | + | x | x | x | – | x | + | + | o | + | + | + |
| x | + | – | + | o | x | + | + | + | + | + | x | x | + | o | + | + | + |
| x | + | o | + | o | x | + | + | x | x | + | x | + | + | o | + | x | – |
| + | + | + | + | + | x | + | + | + | x | + | x | x | + | + | x | x | – |
| x | x | x | x | x | x | x | + | + | + | + | x | + | + | + | + | x | + |
| x | + | – | + | o | x | o | + | x | + | + | x | + | + | + | o | o | o |
| + | + | + | + | + | x | + | + | + | + | + | x | + | + | o | + | + | + |
| x | + | – | + | + | x | o | + | x | + | + | x | + | + | + | + | + | – |
| x | + | o | + | o | x | + | + | + | + | + | x | + | + | – | x | x | – |
| x | + | o | + | + | x | + | + | x | + | – | x | + | x | + | + | + | + |
| + | o | o | + | + | x | + | + | + | + | + | x | + | + | + | + | x | + |
| x | x | x | – | – | x | – | x | x | x | x | x | + | + | + | x | x | – |
| x | + | x | o | x | x | o | o | + | – | – | x | x | x | – | x | x | + |
| x | o | – | – | – | x | – | x | x | x | – | x | + | x | – | x | x | – |
| x | x | x | – | o | x | x | x | x | x | x | x | x | x | o | x | + | o |
| x | x | x | – | – | x | – | x | x | o | o | x | + | + | – | – | – | – |
| x | + | x | – | – | x | – | + | + | + | + | x | x | x | – | x | + | + |
| + | + | + | + | + | x | x | + | x | + | + | x | + | + | o | x | + | + |
| + | + | + | + | + | x | + | + | + | + | + | + | + | + | + | + | + | + |
| x | + | x | + | o | x | 4 | + | + | + | + | x | + | + | + | + | x | x |
| + | + | + | + | + | x | 4 | + | + | x | + | x | + | + | + | + | + | + |
| + | + | + | + | – | x | o | + | – | + | x | x | + | x | + | – | – | + |
| x | + | o | o | x | x | o | x | x | + | x | x | + | + | – | – | – | + |
| x | + | x | + | + | x | 4 | + | x | + | + | o | + | + | + | x | + | + |
| x | + | o | + | o | x | + | + | x | + | + | x | x | x | – | + | + | + |
| x | + | x | + | + | x | 4 | + | x | + | o | x | + | + | – | + | + | x |
| x | + | + | + | + | x | 4 | + | x | + | + | x | + | + | + | + | x | + |
| x | + | x | + | + | x | + | + | x | x | + | x | + | + | + | x | x | x |
| x | + | o | + | + | x | + | + | x | x | + | x | + | + | + | x | x | x |
| x | + | x | + | + | x | + | + | x | + | + | x | + | + | + | x | + | + |
| x | x | x | o | o | + | x | + | o | x | x | x | + | + | + | x | + | o |
| x | + | + | + | + | x | 4 | + | + | + | + | x | x | + | o | + | x | x |
| x | x | x | – | o | x | x | x | x | x | x | x | + | + | + | o | o | o |

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# Chemical resistance

**Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available**

| Chemicals, iglidur® | A180<br>A181<br>J200<br>R<br>UW<br>xirodur® B180<br>xirodur® S180<br>xirodur® F180<br>xirodur® M180<br>FC180 | A200, G<br>GLW<br>G V0<br>M250<br>N54, Q2<br>W300, C<br>L250, L100<br>igumid® G<br>xirodur® G220<br>igumid® FC | A350 | A500<br>C500<br>UW500<br>X<br>X6<br>xirodur® A500<br>L500<br>AX500 | A290<br>F<br>Q290<br>W360<br>G1 | J<br>J2<br>J3<br>J4<br>JB<br>E | J260<br>M260 | J350 | H<br>H1<br>H2<br>H370<br>H4<br>HLW<br>iguton G<br>H3, H5 | F2<br>K<br>P<br>P210<br>P4<br>M210 | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sodium dodecylbenzenesulfonate | + | + | x | x | + | + | x | x | x | + | x |
| Sodium hypochlorite (aqueous), 10% | – | – | x | + | – | – | o | x | o | o | o |
| Sodium hypophosphite (aqueous), 10% | + | + | x | x | + | + | x | x | x | + | x |
| Sodium nitrate (aqueous), 10% | + | 4 | – | + | 4 | + | + | x | + | + | 4 |
| Sodium nitrilotriacetate (aqueous), 10% | + | + | x | x | + | + | x | x | x | + | x |
| Sodium oleate | + | + | x | x | + | + | x | x | x | + | x |
| Sodium salts, 10% | + | + | x | x | + | + | x | x | x | + | x |
| Sodium sulphate, 10% | + | 4 | x | + | 4 | + | + | x | + | + | 4 |
| Sodium sulphite, neutral, 2% | o | 4 | x | + | 4 | o | o | x | + | o | 4 |
| Sodium thiosulphate, 10% | + | 4 | – | + | 4 | + | + | x | + | + | 4 |
| Soldering fluid | – | – | x | x | – | – | x | x | x | – | – |
| Soluble glass (sodium silicate) | + | 4 | x | + | 4 | + | + | x | + | + | 4 |
| Steam | x | – | o | + | – | x | o | x | + | – | o |
| Styrene | o | + | x | + | + | o | – | x | + | – | + |
| Sulphur | + | + | x | + | + | + | + | x | + | + | + |
| Sulphuric acid (concentrated), 98% | – | – | – | – | – | – | – | x | – | – | – |
| Sulphuric acid, 10% | – | – | + | o | – | – | o | o | – | – | – |
| Sulphuric acid, 2% | – | – | + | o | – | – | o | + | o | – | – |
| Tallow | + | + | x | + | + | + | + | x | + | + | + |
| Tar | + | + | + | + | + | + | o | x | + | + | + |
| Tartaric acid | o | o | + | + | o | + | + | x | + | x | 4 |
| Tetrahydrofuran (solvent) | o | + | – | + | + | o | – | x | + | + | + |
| Tetralin | + | + | x | + | + | + | x | x | + | – | + |
| Thionyl chloride | o | o | – | + | o | o | – | x | x | x | o |
| Tincture of iodine, 3% | o | – | – | + | – | o | – | x | + | x | o |
| Toluol | o | + | o | + | + | o | – | o | + | – | + |
| Transformer oil | + | + | + | + | + | + | o | x | + | + | + |
| Trichloroacetic acid (aqueous), 50% | – | – | x | x | – | – | x | x | x | – | – |
| Trichloroethane | – | o | x | + | o | – | x | x | + | – | o |
| Trichloroethylene | – | – | – | + | – | – | – | – | o | – | – |
| Triethanolamine, 90% | + | 4 | – | + | 4 | + | + | x | + | + | 4 |
| Trisodium phosphate, 90% | + | + | x | + | + | + | + | x | + | + | + |
| Uranium fluorides | – | – | x | x | – | – | x | x | x | – | – |
| Urea | + | + | x | + | + | + | + | x | + | + | + |
| Uric acid (aqueous), 10% | + | + | + | x | + | + | x | x | x | + | x |
| Urine | + | + | + | + | + | + | + | + | + | + | + |
| Vaseline | o | o | + | + | + | + | o | x | + | o | + |
| Violet oil | + | + | x | + | + | + | x | x | + | x | + |



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# Chemical resistance

**"4" swelling, softening due to the water**

| V400 | Z | B | D | T220 | K230 | PEP | A160<br>B160<br>UW160<br>xirodur® C160 | E7 | I170 | I180<br>I180-BL | xirodur®<br>D180 | xiros® ball bearings with<br>PEEK cage | PP cage<br>PE cage | PA cage | I150 | C210<br>P230 | I3<br>I6<br>AB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| x | x | x | x | x | x | x | + | x | x | x | x | x | x | o | + | + | + |
| x | x | o | o | o | x | o | + | + | + | o | o | x | + | + | o | o | o |
| x | x | x | x | x | x | x | x | x | x | x | x | + | + | – | x | + | + |
| x | + | + | + | + | x | 4 | + | + | + | + | o | x | x | + | + | + | + |
| x | x | x | x | x | x | x | x | x | x | x | x | + | + | + | x | + | + |
| x | x | x | x | x | x | x | x | x | x | x | x | x | x | + | x | + | + |
| x | x | x | x | x | x | x | x | x | x | x | x | x | x | + | x | x | + |
| x | + | + | + | + | x | 4 | + | x | + | + | x | x | x | + | + | x | + |
| x | + | x | o | o | x | o | + | x | + | + | x | + | + | + | + | x | + |
| x | + | x | + | + | x | 4 | x | + | x | + | x | + | + | + | + | + | + |
| x | x | x | – | – | x | – | x | x | x | x | x | x | x | – | x | + | – |
| x | + | + | + | + | x | 4 | + | x | + | + | x | + | + | – | + | x | x |
| o | o | – | x | – | x | x | + | x | x | o | x | + | + | o | x | + | – |
| x | + | – | – | – | x | + | o | o | x | – | x | x | – | o | + | + | + |
| + | + | + | + | + | x | + | + | + | + | + | x | + | x | o | + | + | + |
| – | o | – | – | – | x | – | o | x | – | – | x | o | + | – | – | x | – |
| + | + | – | – | – | o | – | + | – | + | o | x | – | o | – | x | + | – |
| + | + | – | – | – | o | – | + | – | x | o | – | + | + | + | x | + | – |
| + | + | + | + | + | x | + | + | + | x | + | x | + | o | + | + | + | + |
| x | + | x | + | + | x | + | + | + | x | o | x | + | + | + | + | + | + |
| x | + | o | o | x | x | 4 | + | x | + | + | x | + | + | – | x | x | o |
| + | + | x | o | + | x | o | o | o | – | – | x | + | + | + | + | + | + |
| x | + | x | – | – | x | + | – | x | – | – | x | + | o | + | + | + | + |
| x | x | o | o | x | x | o | – | – | – | – | x | + | – | + | x | x | o |
| x | + | – | o | x | x | o | + | + | o | – | x | + | o | + | x | x | – |
| + | + | – | – | – | + | + | o | o | – | – | x | + | + | + | x | o | + |
| x | + | – | + | + | x | + | o | x | + | o | x | + | o | + | + | + | + |
| x | x | x | – | – | x | – | + | + | x | x | x | + | o | + | – | – | – |
| x | o | x | – | – | + | – | x | x | – | – | x | + | x | o | – | – | o |
| x | + | – | – | – | x | – | o | x | – | – | x | x | + | – | – | – | – |
| x | + | x | + | + | x | 4 | x | x | + | + | o | + | o | – | + | x | + |
| x | + | x | + | + | x | + | x | x | x | + | x | + | x | + | + | x | + |
| x | x | x | – | – | x | – | x | x | x | x | x | + | x | + | – | – | – |
| x | + | o | + | + | x | + | + | + | + | + | o | x | + | + | + | + | + |
| x | x | x | x | x | x | x | + | x | x | x | x | + | + | + | + | + | + |
| + | + | + | + | + | x | + | + | x | x | + | x | x | x | – | + | + | + |
| x | + | o | o | + | x | + | + | + | + | o | x | + | + | + | + | + | + |
| x | + | x | + | x | x | + | x | x | x | x | x | + | + | o | x | x | + |

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# Chemical resistance

**Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available**

| Chemicals, iglidur® | A180<br>A181<br>J200<br>R<br>UW<br>xirodur® B180<br>xirodur® S180<br>xirodur® F180<br>xirodur® M180<br>FC180 | A200, G<br>GLW<br>G V0<br>M250<br>N54, Q2<br>W300, C<br>L250, L100<br>igumid® G<br>xirodur® G220<br>igumid® FC | A350 | A500<br>C500<br>UW500<br>X<br>X6<br>xirodur® A500<br>L500<br>AX500 | A290<br>F<br>Q290<br>W360<br>G1 | J<br>J2<br>J3<br>J4<br>JB<br>E | J260<br>M260 | J350 | H<br>H1<br>H2<br>H370<br>H4<br>HLW<br>iguton G<br>H3, H5 | F2<br>K<br>P<br>P210<br>P4<br>M210 | Q |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Washing machine cleaner (phosphoric and nitric acid) | + | o | x | + | o | – | x | x | + | + | o |
| Wax, melted | + | + | + | + | + | + | + | + | + | + | + |
| White spirit | + | + | x | + | + | + | o | x | + | + | + |
| Xylol | o | o | + | + | + | o | – | x | + | – | + |
| Zinc chloride (aqueous), 10% | – | – | x | + | + | – | – | x | + | – | o |
| Zinc oxide | + | + | x | + | + | + | + | x | + | + | + |
| Zinc sulphate (aq.), 10% | + | 4 | x | + | 4 | + | + | x | + | + | 4 |
| Zinc sulphate (aqueous), 10% | + | 4 | x | + | 4 | + | + | x | + | + | 4 |

**Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available**

**4) The lead screw nuts are not chemically attacked by these substances. However, there may be a dimensional change due to total moisture absorption.**

# Chemical resistance

**"4" swelling, softening due to water**

| Chemicals, iglidur® | V400 | Z | B | D | T220 | K230 | PEP | A160<br>B160<br>UW160<br>xirodur® C160 | E7 | I170 | I180<br>I180-BL | xirodur®<br>D180 | xiros® ball bearings with<br>PEEK cage | PP cage<br>PE cage | PA cage | I150 | C210<br>P230 | I3<br>I6<br>AB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Washing machine cleaner (phosphoric and nitric acid) | x | + | o | – | + | x | – | + | x | x | x | x | + | o | + | x | x | o |
| Wax, melted | + | + | + | + | + | x | + | o | x | + | + | x | + | x | + | x | + | + |
| White spirit | x | + | x | + | + | x | + | x | x | x | o | x | + | + | o | x | x | + |
| Xylol | x | + | o | – | – | + | + | – | o | – | – | x | + | x | + | x | o | + |
| Zinc chloride (aqueous), 10% | x | + | – | – | x | o | – | + | + | + | – | x | + | – | o | x | x | – |
| Zinc oxide | + | + | + | + | + | x | + | x | x | + | + | x | + | + | o | + | x | + |
| Zinc sulphate (aq.), 10% | x | + | + | + | + | x | 4 | + | x | + | + | x | + | x | + | + | x | x |
| Zinc sulphate (aqueous), 10% | x | + | + | + | + | x | 4 | + | x | + | + | x | + | x | + | + | x | x |

The data was determined using laboratory specimens or based on comparisons with similar chemicals. Therefore, this data can only act as a reference. No interaction is also considered between the single chemicals / media which can lead to a change of the resistance of iglidur® plain bearings. The chemical resistance of actual parts should be tested under application conditions. All data given concerns the chemical resistance at room temperature. Other temperatures may lead to different classifications of the chemical resistance. We therefore recommend custom-designed tests under real application conditions.

## iglidur® J4

| General properties | Unit | iglidur® J4 | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.48 | |
| Colour | | grey | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.3 | DIN 53495 |
| Max. moisture absorption | % weight | 1.3 | |
| Coefficient of sliding friction, dynamic against steel | µ | 0.06 - 0.20 | |
| pv value, max. (dry) | MPa · m/s | 0.3 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,350 | DIN 53457 |
| Flexural strength at +20°C | MPa | 70 | DIN 53452 |
| Compressive strength | MPa | 55 | |
| Max. recommended surface pressure (+20°C) | MPa | 35 | |
| Shore D hardness | | 74 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. long-term application temperature | °C | +90 | |
| Max. short-term application temperature | °C | +120 | |
| Min. application temperature | °C | -50 | |
| Thermal conductivity | W/m · K | 0.25 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 10 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | > $10^{13}$ | DIN IEC 93 |
| Surface resistance | Ω | > $10^{12}$ | DIN 53482 |

## iglidur® FC180

| General properties | Unit | iglidur® FC180 | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.73 | |
| Colour | | blue | |
| Max. moisture absorption at +23°C and 50% r.h. | % weight | 0.7 | DIN 53495 |
| Max. moisture absorption | % weight | 1.3 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,600 | DIN 53457 |
| Flexural strength at +20°C | MPa | 68 | DIN 53452 |
| Max. recommended surface pressure (+20°C) | MPa | 31 | |
| Shore D hardness | | 69 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. long-term application temperature | °C | +90 | |
| Max. short-term application temperature | °C | +120 | |
| Min. application temperature | °C | -40 | |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | > $10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | > $10^{12}$ | DIN 53482 |





Material properties

## iglidur® I3

| General properties | Unit | iglidur® I3 | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.05 | |
| Colour | | yellow | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.8 | DIN 53495 |
| Max. moisture absorption | % weight | 1.9 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 1,400 | DIN 53457 |
| Flexural strength at +20°C | MPa | 68/61[130)] | DIN 53452 |
| Shore D hardness | | 70 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. long-term application temperature | °C | +80 | |
| Max. short-term application temperature | °C | +140 | |
| Min. application temperature | °C | -40 | |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | > $10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | > $10^{11}$ | DIN 53482 |

[130)] **Printed flat/upright**

## iglidur® K230

| General properties | Unit | iglidur® K230 | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.36 | |
| Colour | | dark grey | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.8 | DIN 53495 |
| Max. moisture absorption | % weight | 2.9 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 1,600 | DIN 53457 |
| Flexural strength at +20°C | MPa | 40 | DIN 53452 |
| Max. recommended surface pressure (+20°C) | MPa | 38 | |
| Shore D hardness | | 68 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. long-term application temperature | °C | +110 | |
| Max. short-term application temperature | °C | +130 | |
| Min. application temperature | °C | -30 | |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | > $10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | > $10^{12}$ | DIN 53482 |

## iglidur® K250

| General properties | Unit | iglidur® K250 | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.19 | |
| Colour | | black | |
| Max. moisture absorption at +23°C and 50% r.h. | % weight | 0.3 | DIN 53495 |
| Max. moisture absorption | % weight | 3.6 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,975 | DIN 53457 |
| Flexural strength at +20°C | MPa | 79 | DIN 53452 |
| Shore D hardness | | 70 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. long-term application temperature | °C | +90 | |
| Max. short-term application temperature | °C | +110 | |
| Min. application temperature | °C | -50 | |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | > $10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | > $10^{12}$ | DIN 53482 |

## iglidur® A230

| General properties | Unit | iglidur® A230 | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.20 | |
| Colour | | blue | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.3 | DIN 53495 |
| Max. moisture absorption | % weight | 2.5 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 1,530 | DIN 53457 |
| Flexural strength at +20°C | MPa | 53 | DIN 53452 |
| Max. recommended surface pressure (+20°C) | MPa | 18 | |
| Shore D hardness | | 73 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. long-term application temperature | °C | +110 | |
| Max. short-term application temperature | °C | +130 | |
| Min. application temperature | °C | -30 | |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | > $10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | > $10^{12}$ | DIN 53482 |





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Material properties

## iglidur® L100

| General properties | Unit | iglidur® L100 | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.35 | |
| Colour | | yellow | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.7 | DIN 53495 |
| Max. moisture absorption | % weight | 5.2 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 5,500 | DIN 53457 |
| Flexural strength at +20°C | MPa | 150 | DIN 53452 |
| Max. recommended surface pressure (+20°C) | MPa | 70 | |
| Shore D hardness | | 79 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. long-term application temperature | °C | +100 | |
| Max. short-term application temperature | °C | +190 | |
| Max. short-term ambient temperature | °C | +200 | |
| Min. application temperature | °C | -40 | |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | > $10^{13}$ | DIN IEC 93 |
| Surface resistance | Ω | > $10^{11}$ | DIN 53482 |

## iglidur® P UV

| General properties | Unit | iglidur® P UV | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.45 | |
| Colour | | black | |
| Max. moisture absorption at +23°C/50% r.h. | % weight | 0.5 | DIN 53495 |
| Max. moisture absorption | % weight | 0.5 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 4,250 | DIN 53457 |
| Flexural strength at +20°C | MPa | 110 | DIN 53452 |
| Max. recommended surface pressure (+20°C) | MPa | n.s. | |
| Shore D hardness | | 78 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. long-term application temperature | °C | +100 | |
| Max. short-term application temperature | °C | +160 | |
| Min. application temperature | °C | -40 | |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | > $10^{11}$ | DIN IEC 93 |
| Surface resistance | Ω | > $10^{11}$ | DIN 53482 |

## igumid® F300

| General properties | Unit | igumid® F300 | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.44 | |
| Colour | | grey | |
| Max. moisture absorption at +23°C and 50% r.h. | % weight | 0.9 | DIN 53495 |
| Max. moisture absorption | % weight | 3.9 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 5,900 | DIN 53457 |
| Flexural strength at +20°C | MPa | 150 | DIN 53452 |
| Max. recommended surface pressure (+20°C) | MPa | 45 | |
| Shore D hardness | | 79 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. long-term application temperature | °C | +90 | |
| Max. short-term application temperature | °C | +170 | |
| Min. application temperature | °C | -40 | |
| **Electrical properties** | | | |
| Specific transitional resistance[5)] | Ωcm | > $10^4$ - $10^9$ [37)] | DIN IEC 93 |
| Surface resistance[5)] | Ω | > $10^4$ - $10^9$ [37)] | DIN 53482 |

[5)] **The good conductivity of this plastic material under certain circumstances can favour the generation of corrosion on the metallic contact components**

[37)] **Depending on the geometry**

## igumid® G

| General properties | Unit | igumid® G | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.37 | |
| Colour | | black | |
| Max. moisture absorption at +23°C and 50% r.h. | % weight | 1.4 | DIN 53495 |
| Max. moisture absorption | % weight | 5.6 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 7,800 | DIN 53457 |
| Flexural strength at +20°C | MPa | 240 | DIN 53452 |
| Shore D hardness | | 79 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. long-term application temperature | °C | +120 | |
| Max. short-term application temperature | °C | +180 | |
| Min. application temperature | °C | -40 | |
| Thermal conductivity | W/m · K | 0.24 | ASTM C 177 |
| Coefficient of thermal expansion (at +23°C) | $K^{-1} \cdot 10^{-5}$ | 17 | DIN 53752 |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | > $10^{11}$ | DIN IEC 93 |
| Surface resistance | Ω | > $10^{11}$ | DIN 53482 |





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Material properties

## igumid® FC

| General properties | Unit | igumid® FC | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.47 | |
| Colour | | dark blue | |
| Max. moisture absorption at +23°C and 50% r.h. | % weight | 2.3 | DIN 53495 |
| Max. moisture absorption | % weight | 5.2 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 7,083 | DIN 53457 |
| Flexural strength at +20°C | MPa | 193 | DIN 53452 |
| Shore D hardness | | 83 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. long-term application temperature | °C | +100 | |
| Max. short-term application temperature | °C | +140 | |
| Min. application temperature | °C | -30 | |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | > $10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | > $10^{12}$ | DIN 53482 |

## iguton G

| General properties | Unit | iguton G | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.69 | |
| Colour | | brown | |
| Max. moisture absorption at +23°C and 50% r.h. | % weight | 0.1 | DIN 53495 |
| Max. moisture absorption | % weight | 0.2 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 10,200 | DIN 53457 |
| Flexural strength at +20°C | MPa | 140 | DIN 53452 |
| Max. recommended surface pressure (+20°C) | MPa | 65 | |
| Shore D hardness | | 85 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. long-term application temperature | °C | +200 | |
| Max. short-term application temperature | °C | +240 | |
| Max. short-term ambient temperature[1] | °C | +260 | |
| Min. application temperature | °C | -40 | |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | > $10^{15}$ | DIN IEC 93 |
| Surface resistance | Ω | > $10^{14}$ | DIN 53482 |

## POM black

| General properties | Unit | POM black | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.41 | |
| Colour | | black | |
| Max. moisture absorption at +23°C and 50% r.h. | % weight | 0.2 | DIN 53495 |
| Max. moisture absorption | % weight | 1.1 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 1,900 | DIN 53457 |
| Flexural strength at +20°C | MPa | 68 | DIN 53452 |
| Max. recommended surface pressure (+20°C) | MPa | 23 | |
| Shore D hardness | | 78 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. long-term application temperature | °C | +90 | |
| Max. short-term application temperature | °C | +120 | |
| Min. application temperature | °C | -50 | |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | > $10^{12}$ | DIN IEC 93 |
| Surface resistance | Ω | > $10^{12}$ | DIN 53482 |

## iglidur® RN33 + RN89

| General properties | Unit | RN33 | RN89 | Testing method |
|---|---|---|---|---|
| Density | g/cm³ | 1.36 | 1.44 | |
| Colour | | black | grey | |
| Max. moisture absorption at +23°C and 50% r.h. | % weight | 1.4 | 0.9 | DIN 53495 |
| Max. moisture absorption | % weight | 6.0 | 3.9 | |
| **Mechanical properties** | | | | |
| Flexural modulus | MPa | 3,200 | 5,900 | DIN 53457 |
| Flexural strength at +20°C | MPa | 80 | 150 | DIN 53452 |
| Max. recommended surface pressure (+20°C) | MPa | 60 | 45 | |
| Shore D hardness | | 77 | 79 | DIN 53505 |
| **Physical and thermal properties** | | | | |
| Max. long-term application temperature | °C | +90 | +90 | |
| Max. short-term application temperature | °C | +120 | +170 | |
| Min. application temperature | °C | -40 | -40 | |
| **Electrical properties** | | | | |
| Specific transitional resistance | Ωcm | ~ $10^{11}$ | $10^{4}$ - $10^{9}$ | DIN IEC 93 |
| Surface resistance | Ω | ~ $10^{11}$ | $10^{4}$ - $10^{9}$ | DIN 53482 |





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## iglidur® RN246 + RN248

| General properties | Unit | RN246 | RN248 | Testing method |
|---|---|---|---|---|
| Density | g/cm³ | 1.49 | 1.25 | |
| Colour | | blue | black | |
| Max. moisture absorption at +23°C and 50% r.h. | % weight | 2.0 | 1.4 | DIN 53495 |
| Max. moisture absorption | % weight | 6.0 | 7.6 | |
| **Mechanical properties** | | | | |
| Flexural modulus | MPa | 6,000 | 2,700 | DIN 53457 |
| Flexural strength at +20°C | MPa | 180 | 99 | DIN 53452 |
| Max. recommended surface pressure (+20°C) | MPa | 65 | 50 | |
| Shore D hardness | | 85 | – | DIN 53505 |
| **Physical and thermal properties** | | | | |
| Max. long-term application temperature | °C | +80 | +90 | |
| Max. short-term application temperature[1)] | °C | +120 | +180 | |
| Min. application temperature | °C | -40 | -40 | |
| **Electrical properties** | | | | |
| Specific transitional resistance | Ωcm | > $10^{11}$ | > $10^{3}$ | DIN IEC 93 |
| Surface resistance | Ω | > $10^{11}$ | > $10^{9}$ | DIN 53482 |

[1)] **Without fill weight; no gliding movement; relaxation not excluded**

## iglidur® JB

| General properties | Unit | iglidur® JB | Testing method |
|---|---|---|---|
| Density | g/cm³ | 1.49 | |
| Colour | | black | |
| Max. moisture absorption at +23°C and 50% r.h. | % weight | 0.3 | DIN 53495 |
| Max. moisture absorption | % weight | 1.3 | |
| **Mechanical properties** | | | |
| Flexural modulus | MPa | 2,400 | DIN 53457 |
| Flexural strength at +20°C | MPa | 73 | DIN 53452 |
| Max. recommended surface pressure (+20°C) | MPa | 35 | |
| Shore D hardness | | 74 | DIN 53505 |
| **Physical and thermal properties** | | | |
| Max. long-term application temperature | °C | +90 | |
| Max. short-term application temperature | °C | +120 | |
| Min. application temperature | °C | -50 | |
| **Electrical properties** | | | |
| Specific transitional resistance | Ωcm | > $10^{13}$ | DIN IEC 93 |
| Surface resistance | Ω | > $10^{12}$ | DIN 53482 |

# igubal® | Analysis

| | |
|---|---|
| Date: | Phone: +49 2203 9649-145<br>Fax: +49 2203 9649-334 |
| From:<br><br><br><br>Phone:<br>Fax: | To:<br>**igus® GmbH**<br>Technical Sales<br>igubal® spherical bearings<br>PO Box 90 61 23<br>51127 Cologne, Germany |

Please enter all the data you know. If you prefer other measuring units, cross out the given unit and write your units next to it. Please enter as much information as possible. The question "Is igubal® a possible solution?" can already be answered with minimal data. Please call for further information (Phone: +49 2203 9649-145).

Rod end, Type A ☐ (male thread)
Rod end, Type B ☐ (female thread)
Pillow block bearings ☐
Spherical bearings ☐
Fixed flange bearings ☐ 2-hole
☐ 4-hole
Clevis joint ☐ with pin and clip
☐ with spring-loaded fixing clip
Dimensional series ☐ E
☐ K
Thread ☐ Standard thread
☐ Fine thread

Average surface finish Ra: .....
Target service life (hrs): .....
Current bearing type: .....
.....
Surrounding media (e.g. acids, water, alkalines etc.): .....
.....

Which problem can igubal® solve for you?
☐ Dry operation ☐ Chemicals
☐ Corrosion ☐ Dirt
☐ Vibration dampening ☐ Dust
☐ Cost reduction ☐ Weight
Other load characteristics: .....
.....

Speed (m/s; 1/min): .....

**Type of movements:**
☐ Rotating
☐ Oscillating with ..... degrees
☐ Linear

**Lubrication:**
☐ Dry
☐ Oil
☐ Greases
☐ Water

Shaft diameter (mm/inch): .....
.....
Bearing load [N]: .....
Ambient temperature [°C]: .....
Shaft material (e.g. steel, VA, plastic): .....
.....

**Sketch:**

**All calculations easily and quickly also online with our expert system**
**▶ www.igus.eu/igubal-expert**



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# iglidur® | Analysis

| | |
|---|---|
| Date: | Phone: +49 2203 9649-145<br>Fax: +49 2203 9649-334 |
| From:<br><br><br><br>Phone:<br>Fax: | To:<br>**igus® GmbH**<br>Technical Sales<br>iglidur® plain bearings<br>PO Box 90 61 23<br>51127 Cologne, Germany |

Please enter all the data you know. If you prefer other measuring units, cross out the given unit and write your units next to it. Please enter as much information as possible. The question "Is iglidur® a possible solution?" can already be answered with minimal data. Please call for further information (Phone: +49 2203 9649-145).

**Dimensions:**
Shaft diameter [mm]: .....
Bearing width [mm]: .....
Bearing wall thickness [mm]: .....
Bearing flange diameter [mm]: .....
Bearing flange wall thickness [mm]: .....
Bearing load [N]: .....
Surface speed [m/s]: .....
Type of motion:
☐ Rotating with ..... rpm
☐ Oscillating with ..... degrees
☐ Linear with .....mm stroke length
Speed [1/min]: .....

What type of bearing are you currently using?
☐ iglidur®
☐ Wrapped bushing
☐ Sinter
☐ Rolling bearing
☐ Other

Which problem can iglidur® solve for you?
☐ Dry operation ☐ Chemicals
☐ Abrasion resistance ☐ Temperature
☐ Edge pressures ☐ Dirt, dust, ...
☐ Vibration dampening ☐ Cost reduction
Other load characteristics: .....
.....

**Lubrication:**
☐ Dry
☐ Oil
☐ Greases
☐ Water

Ambient temperature [°C] .....
Surrounding media (e.g. acids, water, alkalines etc.): .....
.....
Shaft material (e.g. steel, plastic): .....
.....
Average surface finish [Ra]: .....
Housing material: .....
Intermittent rating: .....
Run time [s]: .....
Down time [s]: .....
Target service life: .....

**Sketch:**

**All calculations easily and quickly also online with our expert system**
**▶ www.igus.eu/iglidur-expert**

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Improve what moves

# motion plastics®

- iglidur® polymer plain bearings
- iglidur® more products
- iglidur® slewing rings
- iglidur® bar stock
- iglidur® gears
- iglidur® tribo 3D printing
- igubal® spherical bearings
- xiros® polymer ball bearings
- drylin® linear technology
- dryspin® lead screw technology
- drylin® drive technology
- Low Cost Automation
- e-chains® and e-chain systems®
- smart plastics
- chainflex® cables
- readycable® readychain®
- Connectors



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Everything at a glance

# dry-tech® bearing technology

**iglidur® plain bearings**

Sleeve bearings

Flange bearings

Thrust washers

**iglidur® more products**

Two hole flange bearings

Guide rings

Guide rollers

Knife edge rollers

Clip bearings

Coating powder

## iglidur® slewing rings

Slewing rings

Toothed slewing rings

Accessories

## iglidur® bar stock

Round bars

Hollow bars

Plates

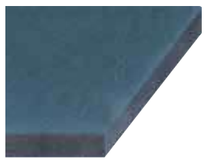


Plate strips

## iglidur® gears

Spur gears

Gear wheels

Racks

Angular gearbox

## iglidur® tribo 3D printing

Filaments

Selective Laser Sintering

Resin

Accessories

## igubal® spherical bearings

Rod end bearings

Spherical balls

Spherical insert bearings

Coupling joints

Double joints

Clevis joint combinations

Fixed flange bearings

Spherical bearings

Pillow block bearings

Angled and in-line ball and socket joints

Clip bearing

Accessories

xiros®
ball bearings

Radial deep groove ball bearings

Thrust bearings

Fixed flange ball bearings

Pillow block ball bearings

Ball transfer units

Conveyor rollers

Slewing ring ball bearings

Other types

drylin®
linear technology

W profile guides

N low-profile linear guides

T rail guides

R shaft guides

Q square linear guides

NT telescopic rails

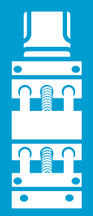
Complete systems with measuring technology

**dryspin® lead screw technology**

Lead screw nuts

Lead screws

Accessories



**drylin® drive technology**

Linear modules with lead screw

Linear modules with toothed belt

Linear modules with racks

XY-tables





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Electric motors

**Low Cost Automation**

Articulated arm robot

Linear robots

Further kinematics

Modular gearbox system

Accessories

Everything at a glance

# e-chains® and e-chain systems®

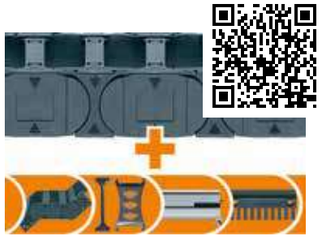
**e-chains® and e-chain systems®**

Energy chains for linear motion

Special solutions

Rotary movements

Accessories



Complete set

triflex® multi-axis energy chains for robots

**smart plastics**

Condition monitoring | i.Sense





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Predictive maintenance | i.Cee

Complete system solutions

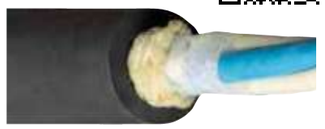
**chainflex® cables**

Control cables

Data cables

Coaxial cables

Bus cables



Fibre optic cables

Measuring system cables

Servo cables

Hybrid cables

Motor cables

Robot cables

Special cables

Clean room elements

## readycable® readychain®

Drive cables in accordance with manufacturers' standards

Network, Ethernet, fieldbus cables

Video, vision, bus technology

Sensor and actuator cables

Cables with HARTING industrial plug-in connectors

Cables for robots

AIDA Standard

Accessories





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## Connectors

Plug-in connectors in accordance with manufacturers' standards

## Catalogues

dry-tech® bearings technology
MAT0075591.20

dry-tech® linear technology
MAT0075592.20

e-chains® catalogue
MAT0072320.20

chainflex® catalogue
MAT0070582.20

New products journal 2023
MAT0075538.20

# Notes



# Notes

# Notes



# Notes

# Notes



# Notes

# Notes



# Notes

## igus® Offices

### igus® Distributors

### 1 Germany
**igus® GmbH**
Spicher Str. 1a
51147 Köln
PO Box 90 61 23
51127 Köln
Phone 02203 9649-0
Fax 02203 9649-222
info@igus.de

### 2 Argentina
**Borintech SRL**
Av. Elcano 4971
C1427CIH Buenos Aires
Phone +5411 4556 1000
igus@borintech.com

### 3 Australia
**Treotham Automation Pty. Ltd.**
14 Sydenham Road
Brookvale NSW 2100
Phone +61 2 9907-1788
Fax +61 2 9907-1778
info@treotham.com.au

### 4 Austria
**igus® polymer Innovationen GmbH**
Photo-Play-Straße 1
4860 Lenzing
Phone +43 7662 57763
Fax +43 7662 57751
igus-austria@igus.de

### 5 Belarus
**SOOO Hennlich**
Biryuzova street, 4/5, office 1012
220073 Minsk
Republik Belarus
Phone +375 17 258 88 28
Fax +375 17 373 39 26
info@hennlich.by

### 6 Belgium/Luxemburg
**igus® B.V.B.A.**
Jagersdreef 4A
2900 Schoten
Phone +32 3 330 13 60
Fax +32 3 313 79 91
info@igus.be

### 7 Bosnia + Herzegowina
**HENNLICH industrijska tehnika d.o.o.**
Tvornička 3
(Energoinvest-zgrada C&O)
BiH-71210 Ilidža - Sarajevo
Phone +387 33 451 439
Fax +387 33 451 439
info@hennlich.ba

### 8 Brazil
**igus® do Brasil Ltda.**
Rua Antônio Christi, nº 611
Parque Industrial III – FAZGRAN
Jundiaí – CEP 13213-183 – SP
Phone +55 11 3531-4487
Fax +55 11 3531-4488
vendas@igus.com.br

### 9 Bulgaria
**Hennlich OOD, BG**
4003 Plovdiv, Bulgaria
147A, Brezovsko shose Str.,
Rota center, fl. 3
Phone +359 32 511 326
Fax +359 32 621 929
office@hennlich.bg

### 10 Canada
**igus® Office Canada**
Suite 100-180
Bass Pro Mills Dr
Vaughan, ON L4K 5W4
Phone +1 905 7608448
Fax +1 905 7608688
webmaster@igus.com

### 11 Chile
**Vendortec**
Avda. Los Pajaritos 3195,
Oficina 1410
Edificio Centro Maipú
Maipú – Santiago
Phone +56 22 710 58 25
+56 23 245 02 00
ventas@vendortec.cl

### 12 China
**igus® Shanghai Co., Ltd.**
No.50, North Huancheng Road
Fengxian district
Shanghai 201401
P. R. China
Phone +86 21 8036 6999
Fax +86 21 8036 6116
cnmaster@igus.net

### 13 Colombia
**PRODUCTOS I SAS**
Carrera 28a, 15-18 Local 1,
Paloquemao, Bogotá
Phone +57 1 561 2959
ext. 113
igus@igus.com.co

### 14 Costa Rica
**Enesa Equipos Neumaticos S.A.**
Del Colegio Marista
100 este, 200 sur, 25 este
Urbanizacion Ciruelas
Alajuela, Costa Rica
Phone +506 2440-2393
Fax +506 2440-2393
equiposneumaticos@enesa.net

### 15 Croatia
**Hennlich, Industrijska d. o. o.**
Stupničkoobreška 17
Stupnički Obrež
10255 Gornji Stupnik
Phone +385 1 3874334
Fax +385 1 3874336
hennlich@hennlich.hr

### 16 Czech Republic
**HENNLICH s.r.o.**
Českolipská 9
412 01 Litoměřice
Phone e-chains®
+420 416 711332
Phone Plain bearings
+420 416 711339
Fax +420 416 711999
lin-tech@hennlich.cz

### 17 Denmark
**igus® ApS**
Lysholt Alle 8
DK-7100 Vejle
Phone +45 86 603373
Fax +45 86 603273
info@igus.dk

### 18 Ecuador
**Ecuainsetec**
Yugoeslavia N34-110 y Azuay
Quito
Phone +593 2 2253757
Fax +593 2 2461833
infouio@ecuainsetec.com.ec

### 19 Egypt
**IEE International Company for Electrical Engineering**
2nd floor, 25 Orabi St
Down Town, Cairo
Phone +202 25767370
Fax +202 25767375
sales@iee-egypt.com

### 20 Estonia
**igus® OÜ**
Vana-Tartu mnt 79a
75312 Peetri
Phone +372 667 5600
info@igus.ee

### 21 Finland
**OEM Finland OY**
Fiskarsinkatu 3
20750 Turku
PL 9, 20101 Turku
Phone +358 20 7499499
Fax +358 20 7499456
info@oem.fi

### 22 France
**igus® SARL**
49, avenue des Pépinières
Parc Médicis
94260 Fresnes
Phone +33 1 49840404
Fax +33 1 49840394
info@igus.fr

### 23 Greece
**J. & E. Papadopoulos S.A.**
12 Polidefkous str
Piraeus, 185 40
Phone +30 210 4113133
Fax +30 210 4116781
sales@papadopoulos-sa.com

### 24 Hong Kong
**Sky Top Enterprises Ltd.**
Room 1806 ; Block C; Wah Tat Industrial Center; Wah Sing Street; Kwai Chung Hong Kong
Phone +852 23318928
Fax +852 24269738
info@skytop.com.cn

### 25 Hungary
**igus® Hungária Kft.**
Ipari Park u.10.
1044 Budapest
Phone +36 1 3066486
Fax +36 1 4310374
info@igus.hu

### 25 Hungary
**Tech-Con Kft.**
Vésö utca 9-11
1133 Budapest
Phone +36 1 4124161
Fax +36 1 4124171
tech-con@tech-con.hu

### 26 India
**igus® (India) Pvt. Ltd.**
36/1, Sy No. 17/3
Euro School Road,
Dodda Nekkundi Industrial Area, - 2nd Stage
Mahadevapura Post
Bangalore 560048
Phone +91 80 68127800
Fax +91 80 68127802
info-in@igus.net

### 27 Indonesia
**PT igus® Indonesia**
Headquarter Indonesia
Taman Tekno BSD
Sektor XI, Blok L1 No. 15
Tangerang Selatan 15314
Phone +62 21 7588 1933
Fax +62 21 7588 1932
id-info@igus.net

### 28 Ireland
**igus® Ireland**
Caswell Rd
Northampton NN4 7PW
Phone +44-1604 677240
Fax +44-1604 677242
sales@igus.ie

### 29 Israel
**Conlog LTD**
PO Box 3265
17 Hamefalssim Str.
Industrial Zone Kiryat Arie
Petach-Tikva 49130
Phone +972 3 9269595
Fax +972 3 9233367
conlog@conlog.co.il

### 30 Italy
**igus® S.r.l.**
Via delle Rovedine, 4
23899 Robbiate (LC)
Phone +39 039 5906.1
Fax +39 039 5906.222
igusitalia@igus.it

### 31 Japan
**igus® k.k.**
Arcacentral 15F, 1-2-1 Kinshi,
Sumida-ku Tokyo JAPAN
Zip 130-0013
Phone +81 358 192030
Fax +81 358 192055
info@igus.co.jp

### 32 Kazakhstan
**HENNLICH TOO**
Nursultan Nazar-Baev Pros.
Build. 4
100002 Kazybek Bi R-N,
Karaganda
Tel. +7 701 419 0756
igus@hennlich.kz

### 33 Kenya
**Mantrad Ltd.**
Sterling House, 1St. Floor
Moi Avenue, Mombasa
Phone + 254 722 706 830
Fax + 254 720 765 566
info@mantrad.co.ke

### 34 Latvia
**Techvitas SIA**
Daugavas iela 38-3
Mārupe, LV-2167
Phone +371 22 325 004
i_igusLettland_G@igus.de

### 35 Lebanon
**Mecanix Shops SAL**
Horsh Tablet - Ste Rita blvd
P.O.Box: 55384 Beirut
Phone +961 1 486701
Fax +961 1 490929
sales@mecanixshops.com

### 36 Lithuania
**Hitech UAB**
Terminalo g. 3
54469 Biruliskiu k. (Kauno LEZ)
Kauno raj.
Phone +370 37 323271
Fax +370 37 203273
info@hitech.lt

### 37 Mazedonien, Albania, Kosovo
**Hennlich doo Beograd**
Radomira Markovića 1/3
11222 Beograd
Phone +381 11 63 098 17
Fax +381 11 63 098 20
office@hennlich.rs

### 38 Malaysia
**igus® Malaysia Sdn Bhd**
Suite 1601-1, Level 16,
Tower 2, Wisma AmFirst,
Jalan SS 7/15 (Jalan Stadium),
47301 Kelana Jaya, Selangor
Phone +603 7803 0618
Fax +603 7886 1328
my-info@igus.net

### 39 Morocco
**AFIT**
5, Rue Amir Abdelkader
20300 Casablanca
Phone +212 522 633769
Fax +212 522 618351
souria.vu@premium.net.ma

### 40 Mexiko
**igus® México S. de R.L. de C.V.**
Boulevad Aeropuerto Miguel Alemán 160 Int. 135
Col. Corredor Industrial Toluca Lerma
Lerma, Estado de México C.P. 52004
Phone +52 728284 3185
Fax +52 728284 3187
fmarquez@igus.com

### 41 Middle East (except of UAE)
**JISigus Middle East FZE**
FF07, Jebel Ali Free Zone
PO Box- 17483
Dubai, United Arab Emirates
Phone +971 4222 1185
Fax +971 4222 1186
info@jisigus.com

### 42 Myanmar
**Sea Lion Co. Ltd.**
181 Bo Myat Tun St
Botataung Yangon
11161 Myanmar
Phone +95 1 29 97 97
Fax +95 1 20 27 51
zaw.m.thant@sealionmyanmar.com

### 43 Netherlands
**igus® B.V.**
Sterrenbergweg 9
3769 BS Soesterberg
Phone +31 346 353932
Fax +31 346 353849
info@igus.nl

### 43 Netherlands – dry-tech®
**Elcee B.V.**
Kamerlingh Onnesweg 28
NL-3316 GL Dordrecht
Phone +31 (0)78-654 47 77
Fax +31 (0)78-654 47 33
info@elcee.nl

### 44 Nigeria
**Deepee Industrials Ltd.**
11 Ishaga Road Surulere
Lagos
Phone +234 803 3899107
ovoachinike@deepeeindustrials.com

### 45 New Zealand
**Treotham Automation Pty Ltd.**
Level 4, 21 Putney Way
Manukau, Auckland 2104
Phone +64 9 278 6577
Fax +64 9 278 6578
info@treotham.co.nz

### 46 Norway
**ASI Automatikk AS**
Sankt Hallvards vei 3, port 8
3414 Lierstranda
Phone +47 9006 1100
info@asiflex.no

### 47 Peru
**PROIGUS S.A.C.**
Calle Bolivar 388/of. 203
Miraflores
Lima 18 – Perú
Phone +51 1 2414370
Fax +51 1 2428608
profacoventas@profaco.com

### 48 Pakistan
**GEMS International Trading**
501, Windsong Place, Block 7&8,
K.C.H.S, Off Shaheed-e-Millat Rd.
Karachi - 75350
Phone +92 21 34531505
marketing@gemsinter.com

### 49 Philippines
**Silicon Exponents Corp.**
Unit 1-B, 8414 LMN Bldg.
Dr. A. Santos Avenue Brgy.BF
Homes Sucat Parañaque City
1700 Philippines
Phone +63 2 8250 126/135
Fax +63 2 8250 141
ryemrigor@sieplus.ph

### 50 Poland
**igus® Sp. z o.o.**
ul. Działkowa 121C
02-234 Warszawa
Phone +48 22 8635770
Fax +48-22 8636169
info-pl@igus.net



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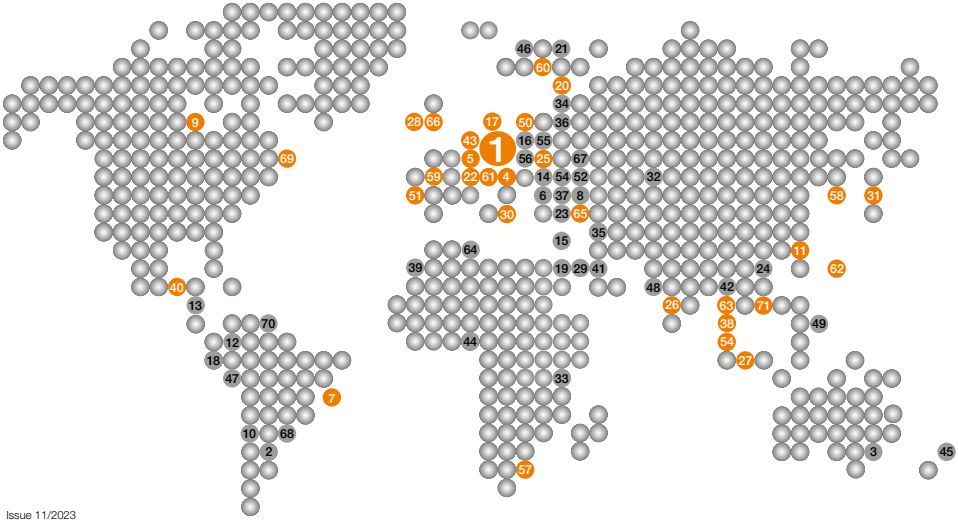


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## 51 Portugal

**igus® Lda.**
R Engº Ezequiel Campos, 239
4100-232 Porto
Phone +351 226109000
info@igus.pt

## 52 Romania

**Hennlich SRL**
Str. Timotei Cipariu, Nr. 5-7
310213 Arad
Phone +40 257 211119
Fax +40 257 211021
igus@hennlich.ro

## 53 Serbia + Montenegro

**Hennlich doo Beograd**
Radomira Markovica 1/3
11222 Beograd / Srbija
Phone +381 11 63 098 17
Fax +381 11 63 098 20
office@hennlich.rs

## 54 Singapore – ASEAN HQ

**igus® Singapore Pte Ltd**
84 Genting Lane
#06-03 Axxel Innovation Centre
Singapore 349584
Phone +65 6487 1411
sg-info@igus.net

## 55 Slovakia

**HENNLICH s.r.o.**
Košťany nad Turcom 543
SK-038 41 Košťany nad Turcom
Phone +421 43 421 2352
lintech@hennlich.sk

## 56 Slovenia

**Hennlich d. o. o.**
Ulica Mirka Vadnova 13
SI-4000 Kranj
Slovenija
Phone +386 4 53206-10
info@hennlich.si

## 57 South Africa

**igus® Pty. Ltd.**
Unit 29
Midline Business Park
Cnr Le Roux & Richards Drive
Midrand 1682
Phone +27 11312-1848
Fax +27 11312-1594
sales.sa@igus.de

## 58 South Korea

**igus® Korea Co. Ltd.**
Venture-ro 12-42,
Yeonsu-gu
Incheon city, 22011
Phone +82 32 82129-11
Fax +82 32 82129-13
kr-info@igus.net

## 59 Spain

**igus® S.L.**
Ctra. Llobatona, 6
Polígono Noi del Sucre
08840 Viladecans – BCN
Phone +34 93 647 39 50
Fax +34 93 647 39 51
igus.es@igus.es

## 60 Sweden

**igus® AB**
Berga Allé 1
254 52 Helsingborg
Phone +46 42 329270
Fax +46 42 211585
info@igusab.se

## 60 Sweden – the-chain

**OEM Automatic AB**
Box 1011 Dalagatan 4
573 28 Tranås
Phone +46 75 2424100
Fax +46 75 2424159
info@oemautomatic.se

## 60 Sweden – dry-tech®

**Colly Components AB**
Raseborgsgatan 9
PO Box 76
164 94 Kista
Phone +46 8 7030100
Fax +46 8 7039841
info@me.colly.se

## 61 Switzerland

**igus® Schweiz GmbH**
Winkelstr. 5
4622 Egerkingen
Phone +41 62 388 97 97
Fax +41 62 388 97 99
info@igus.ch

## 62 Taiwan

**igus® Taiwan Company Ltd.**
5F, No. 35, 24th Road
Taichung Industrial Park
Taichung 40850
Phone +886 4 2358-1000
Fax +886 4 2358-1100
info@igus.com.tw

## 63 Thailand

**IGUS MOTION PLASTICS (THAILAND) CO LTD.**
1340 Soi Bangkok-Nonthaburi 30,
Bangkok-Nonthaburi Rd.,
Bangsue, Bangsue
Bangkok 10800
Phone +66 (0)2 587 4899
Fax +66 (0)2 587 4898
th-info@igus.net

## 64 Tunisia

**BOUDRANT**
53, Avenue de Carthage
1000 Tunis – Tunisia
Phone +216 71340244
Fax +216 71348910
info@boudrant.com.tn

## 65 Turkey

**igus® Turkey**
Güzeller Org. San. Bölg.
Galvano Teknik San. Sit.
Cumhuriyet Cad. 2/32
P.K. 41400 Gebze / Kocaeli
Phone +90 262 502 14 08
Fax +90 262 502 14 19
info@igus.com.tr

## 66 United Kingdom

**igus®**
Caswell Rd
Northampton NN4 7PW
Phone +44 1604 677240
sales@igus.co.uk

## 67 Ukraine

**Hennlich Ukraine LLC (HQ)**
Kramatorska Street 15
84100 Slovyansk City,
Donetsky Region
Phone +38 06262 33540
hennlich@hennlich.com.ua

## 67 Ukraine

**Cominpro GmbH**
Romena Rollana 12,
Office 100
61058 Kharkov
Phone/Fax +38 057-7174914
Mobile +38 050-4012625
cominpro@gmail.com

## 68 Uruguay

**Larrique Rulemanes SA**
Galicia 1204
Montevideo-Uruguay
Phone +598 29021773
Fax +598-29084824
larrique@larrique.com.uy

## 69 USA

**igus® inc.**
257 Ferris Avenue
PO Box 14349
East Providence
RI 02914
Phone +1 401 4382200
Fax +1 401 4387270
webmaster@igus.com

## 70 Venezuela

**Neumatica Rotonda C.A.**
Prolong Av. Michelena
C.C. Atlas Locales B-10 y
B-11
Valencia, Edo. Carabobo
Phone +58 241 832.64.64
+58 241 832.32.50
+58 241 838.88.19
Fax +58 241 832.62.83
ventas@neumaticar.com

## 71 Vietnam

**igus® Vietnam Company Ltd**
Unit 4, 7th Floor, Standard
Factory B, Tan Thuan Export
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