polymer...

igus.eu ... dry-tech® bearings ... 2016 ... plastics for longer life®

... linear systems and ball bearings

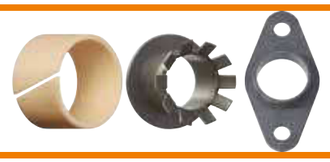
bearings

iglidur®
Bearing technology

Plastic bearings from igus® – lubrication-free, maintenance-free, cost-effective and versatile – increase service life and save up to 40 %. Over 50 materials for all requirements and industries. Other designs from stock; bar stock, liners and Tribo-3D printing also available.

1 Polymer plain bearings
- ▶ Service life calculation online
- ▶ Online product finder

From page 19



2 Clip bearings, piston rings and more
- ▶ Service life calculation online
- ▶ Online product finder

From page 511

3 Slewing ring bearing
- ▶ Product finder and service life calculation online

From page 559

4 iglidur® for design freedom
- ▶ Service life calculation online
- ▶ Online product finder

From page 585

5 iglidur® Tribo 3D printing
- ▶ 3D printing service online

From page 621

igubal®

Self-aligning polymer spherical bearings from igus® – lubrication and maintenance-free. Whether as a rod end, pivot or flange bearing – igubal® spherical bearings suit all requirements and are more economical and lighter than conventional metallic spherical bearings.

6 Spherical bearings
- ▶ Service life calculation online
- ▶ Online product finder

From page 631

xiros®

Radial deep groove ball bearing and other ball bearing types from igus® – maintenance-free dry running, lightweight and cost-effective. Wide range of designs and sizes.

7 Ball bearings and types
- ▶ Service life calculation online
- ▶ System solution configurator online

From page 761

drylin®
Linear technology, lead screw technology and drive technology

Sliding instead of rolling: drylin® linear guides from igus® on a rail or shaft basis for almost all linear movement tasks – lubrication-free and maintenance-free, 1:1 replaceable. Efficient lead screw technology with high helix and trapezoidal threads. Ready to fit and individually configurable linear modules for manual adjustment or with motor.

8 Modular linear technology
- ▶ Service life calculation online
- ▶ System configurator online

From page 825

9 Efficient lead screw technology
- ▶ Product finder and service life calculation online
- ▶ System configurator online

From page 1071

10 Ready to fit drive technology
- ▶ Service life calculation online
- ▶ System configurator online

From page 1161

Inch

Imperial dimensions for all dry-tech® product groups

11 Imperial dimensions

From page 1337

igus.eu

Overview of all online tools, table of chemicals, service addresses and more

12 Online tools and more

From page 1411

igus® dry-tech® lubrication-free made easy

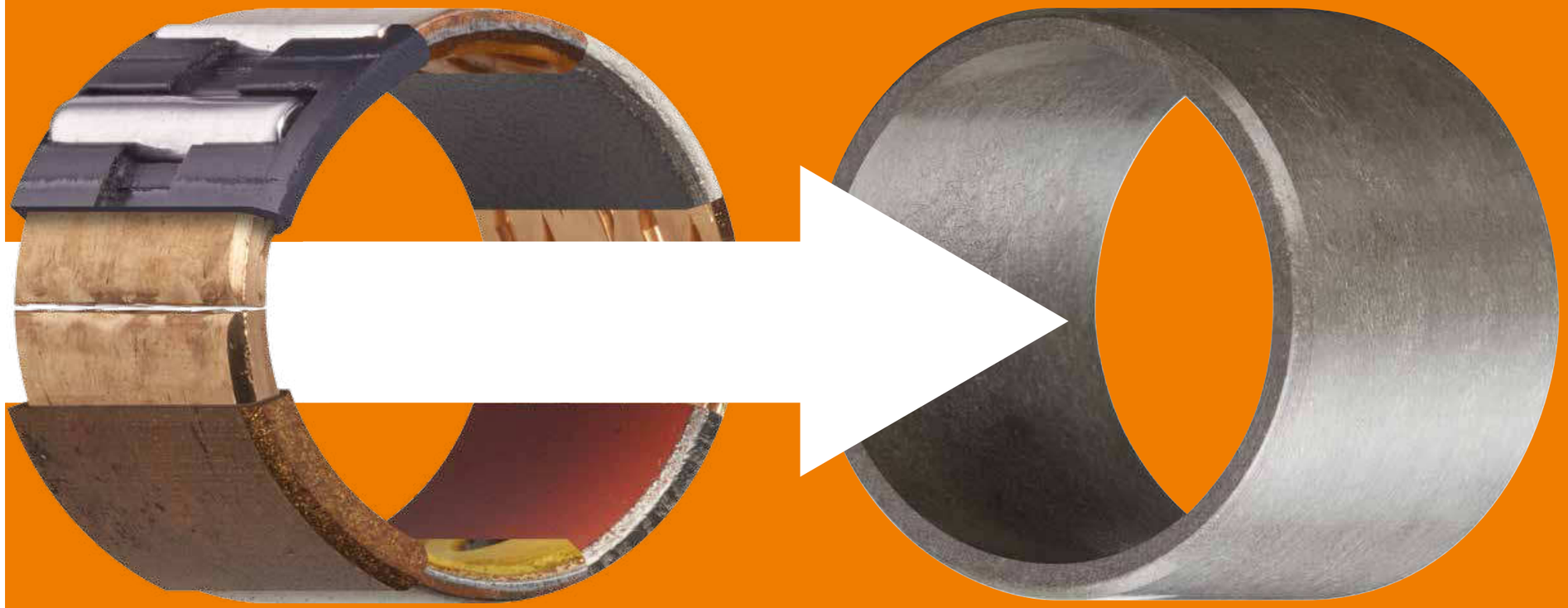
Plastic instead of metal: Longer service life and 40 % cost saving

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 tobacco industry, for extreme resistance to chemicals and temperature fluctuations or for simple metal-sheet bearings: iglidur® bearings always offer a solution - either from the product range in the catalogue or as a special customised bearing solution - minimum quantity 1!
For more than 30 years, iglidur® 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 approx. 15,000 tests per year enables reliable predictability.

Tested service life. Available immediately with online service life calculators.

The most affordable bearing for any application

- 16 standard materials from high temperature to seawater, from food to the automotive
- More than 5,000 standard-compliant bearings available
- Savings potential up to 40 %
- 100 % lubrication- and maintenance-free
- 100 % corrosion-free
- 100 % RoHS-compliant
- Online: product finder and service life calculation, prices, ordering, CAD etc.



Resistant to dirt with igus®.
Zero-maintenance and dirt resistance are not the only advantages of drylin®. 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®.
Various iglidur® materials for wide variety of operating conditions. Large program of dimensions compatible with nearly all applications.
Predictable service life!

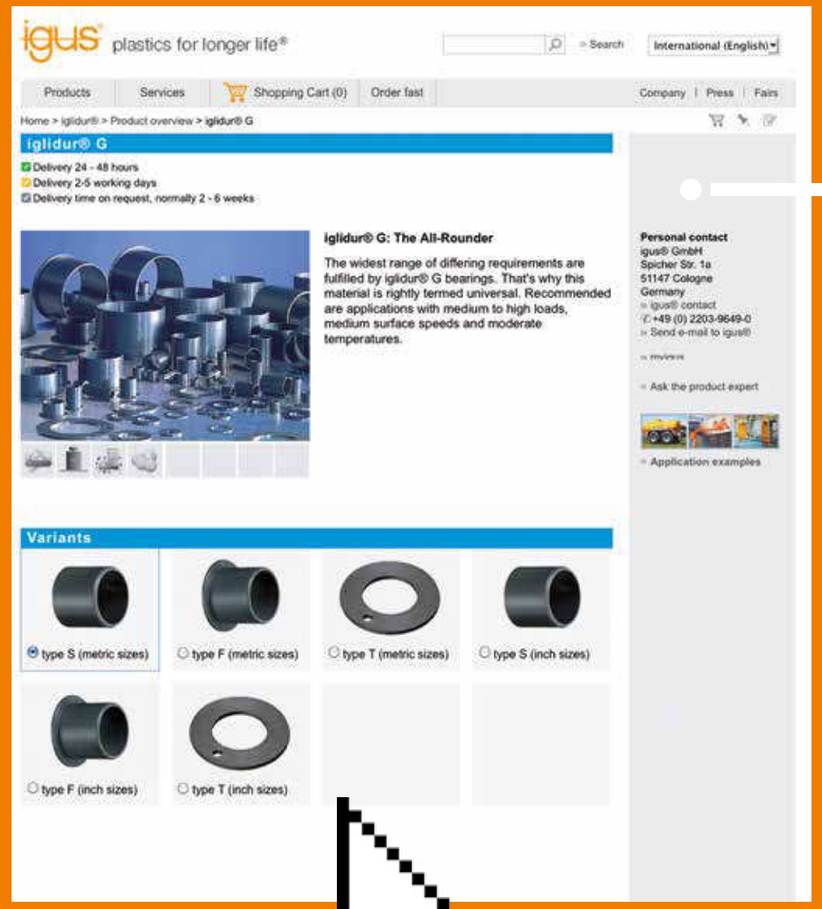
Corrosion-free with igus®.
Low weight, corrosion resistance as well as zero maintenance and lubrication achieve solutions for nearly all types of applications. Fit and forget!

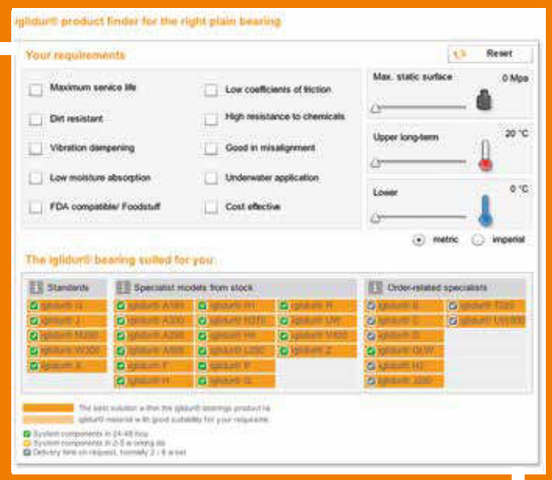
Reduce process costs: bearings online

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

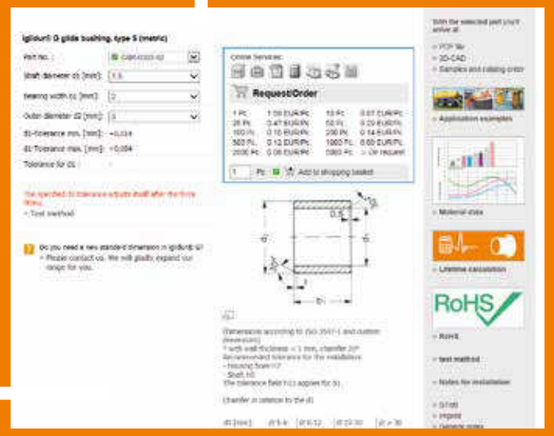
- Online wizards for calculating service life
- 3D-CAD files
- DXF data
- PDFs-data and other formats for download
- Application pictures
- Imperial dimensions
- Personal support
- Catalogue and sample ordering
- Online pricelist and online shop

30 helpful online tools for quick finding, configuring and calculating your product. No registration necessary. 3D-CAD models also online for downloading. Easy to use.





SEARCH
iglidur® product finder
Find the right bearing for your application with few clicks



ORDER
iglidur® online catalogue
The online catalogue is just a click away. See all important product details, information and tools by clicking again on the corresponding link.

CALCULATE
iglidur® lifetime calculation
Simple and quick input of your application parameters, allows a precise calculation of the life cycle. Also download and save CAD data free of charge.

Online shopping – 24h!

- iglidur® ▶ www.igus.eu/iglidurshop
- igubal® ▶ www.igus.eu/igubalshop
- xiros® ▶ www.igus.eu/xirosshop
- drylin® ▶ www.igus.eu/drylinshop

Visit our website and make use of all the advantages
▶ www.igus.eu

Quality from the igus® laboratory

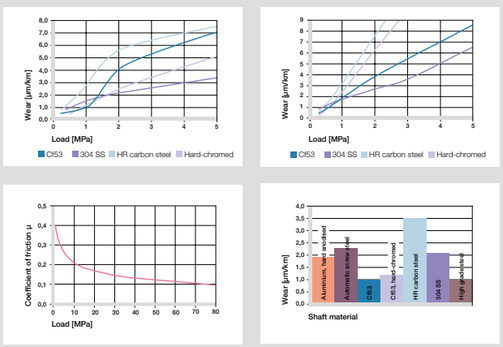
Tested thousands of times, proven millions of times.

Applications involving high cycle counts, speeds and acceleration or demanding environmental conditions require proven systems providing durable and reliable operation, especially when it comes to energy chains, cables, polymer plain bearings and linear systems. igus® constantly conducts tests at its own laboratory under realistic conditions. Every year, we conduct more than 4,100 tests on e-chains® and cables, and over 9,600 tests on plain bearings. These tests focus on push-/pull forces, friction values, wear rates, drive forces and abrasion under all possible conditions at varying speeds.

Influential factors like speed, load, dirt ingress, weathering, temperatures and impact are examined.

Our laboratory is at your disposal. Should we happen to lack a ready solution for your special system, we will gladly conduct tests according to your requirements.

▶ www.igus.eu/dry-tech-labor-film



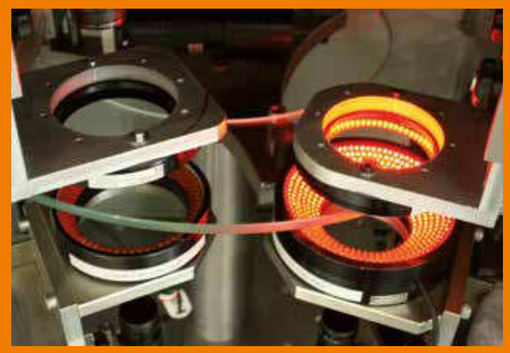
The results of more than 15,000 tests are fed to our database annually.

All products are tested and available from a single source.
Examples of test certificates and quality seals for igus® products:

ISO 9001:2008 TS16949

... more instances are available on request

igus® quality assurance ...



... 100 % visual inspection ...

... tested in the 250 m² dry-tech® lab

10,000 tribological tests per year on 52 test rigs ...

... 1,000 customer tests per year ...

... or heavy duty tests up to 250 MPa

Worldwide, quick and reliable – the igus® service

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

No minimum order quantity, delivery from 24 h, over 100,000 products from stock. Order an iglidur® bearing or a pre-assembled standard portal from stock in 24 hours at no extra cost. Rapid delivery is guaranteed worldwide. Spare parts are delivered ex 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** keeps you regularly informed about new igus® solutions. Register here ▶ **www.igus.eu/newsletter**

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

24 h

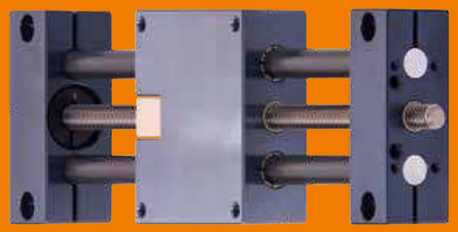
Single components
For example:
iglidur® W300 plain bearings; igubal® spherical bearings or drylin® linear bearings.

24–48 h

Custom made linear systems
Example:
2.46 m drylin® T rail with 2 carriages.

24–72 h

Complete systems
Example:
Linear leadscrew tables made to your individual requirements and dimensions.



3–10 days

Machined components
Example:
Machined shafts made to design or machined bearings.

speedigus® – custom parts manufacturing services by igus®

3–6 weeks

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

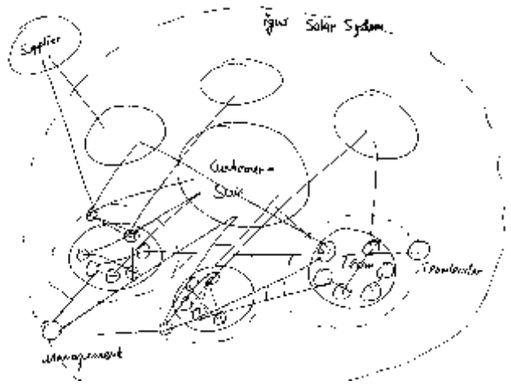
myigus space online

igus®-Newsletter

The flexible igus® factory

Investments in better technology and faster delivery times

Nearly 200,000 customers worldwide trust "plastics for longer life®" – Manufacturing products at low-cost, while also ensuring quality. Plastics are becoming increasingly affordable and technical benefits continue to grow. We have been developing, making and selling our products according to this principle for years. Wear resistant parts as catalogue items have to be 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 innovations and investments.



"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

Assembling factory

Toolmaking

Open offices

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® already has many years of experience and specialised resources for many industries 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

No lubrication necessary in the overload element of carat 9 (intensive grubber).

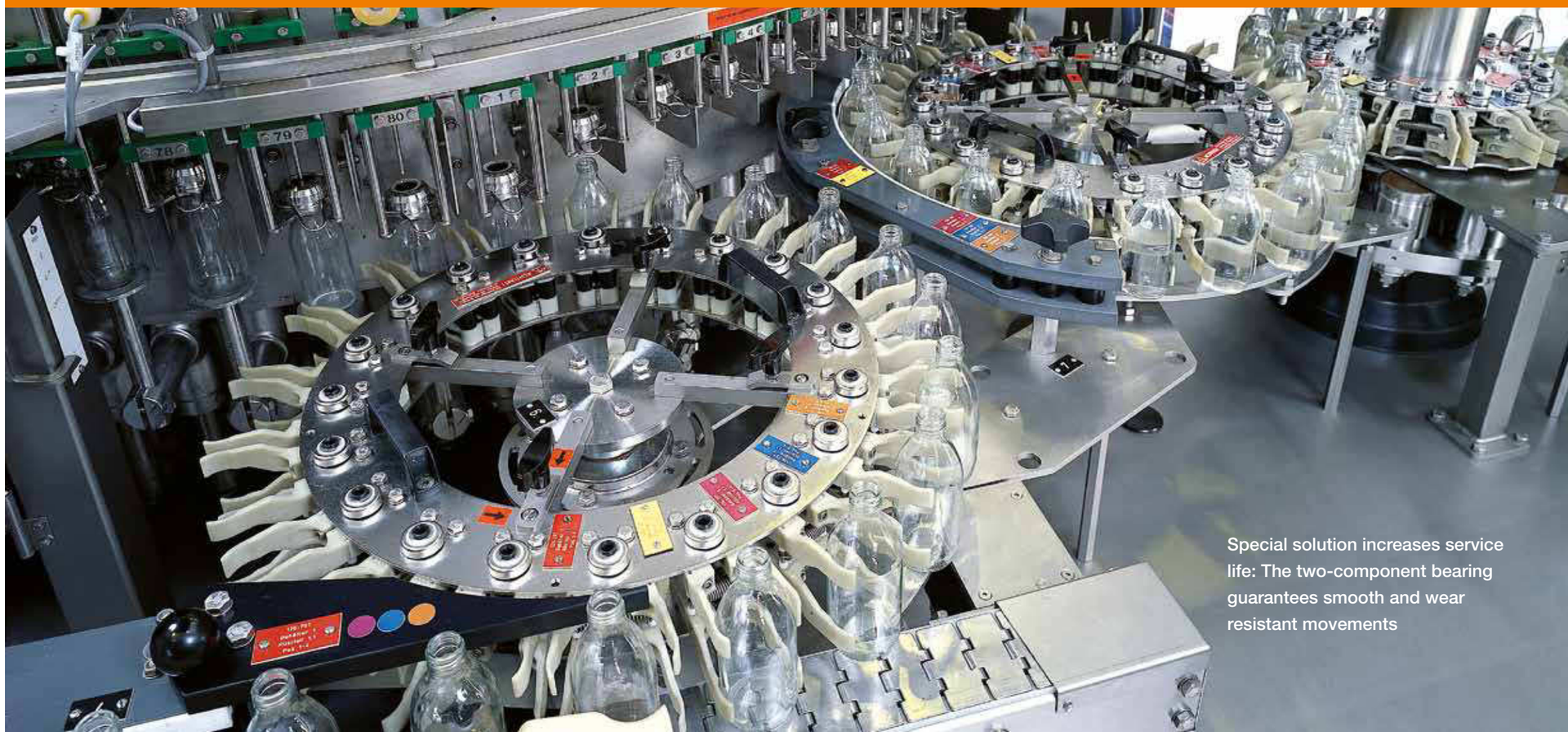
Extremely wear-resistant iglidur® bearings in a hip joint system.

drylin® linear guiding system in the EURO-C welding tongue for the automotive industry.

Lead screw unit with accessories ensures speedy, precisely repeatable format adjustments.

Flexible without fault: Adjustable camera tripod with drylin® W bearings for quiet operation.

igubal® rod end bearings made from plastic display their strength in the demanding environment.



Special solution increases service life: The two-component bearing guarantees smooth and wear resistant movements

Worldwide individual consultation by igus® – via phone or on your premises

igus® in your vicinity.
35 subsidiaries worldwide.

A large network of sales engineers is at your disposal in Germany and worldwide. We gladly provide consultation on your premises, supply assembly instructions and aids to installation sites, as well as measure installation spaces and register ambient conditions on location.
There are 2,950 employees in Germany and 35 international subsidiaries, plus distributors in another 55 countries to guarantee a rapid delivery worldwide.

- **Customer-specific projects and special solutions:**
  For every challenge, we 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 polymer bearing consultants remain at your disposal at any time.
- Hands-on scrutiny of our products at 175 trade fairs worldwide
- Individually on your premises with our mobile company trade fair stand

In a face-to-face meeting

Technical consultation on your premises

Worldwide open offices – for example in China

igus® at trade fairs

igus® company trade fair stand

Worldwide modular factories – for example in the USA

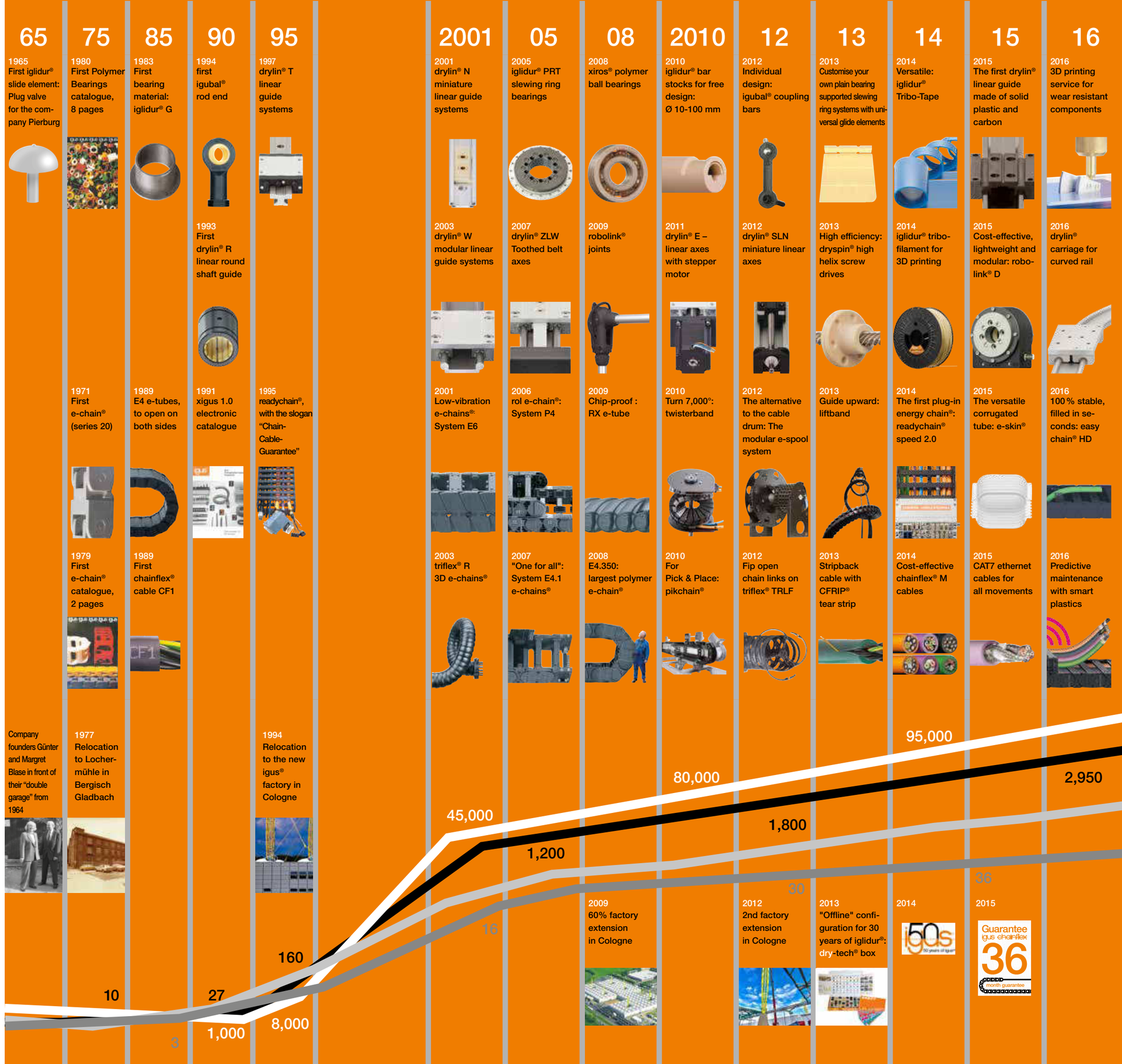
All addresses on last page.

igus® – close to the customer since 1964

From a garage to the global market with tribopolymers

What began in 1964 with a single injection moulding machine in a backyard in Cologne has become a globally operating enterprise within half a century. It all started more than 50 years ago when Günter Blase, who established the company, had an idea and had confidence in the potential of polymer materials. A mere one year after the company was established, an injection moulding machine about the same size as a sewing machine was used to make the very first products; in 1983, a lubrication-free and maintenance-free iglidur® bearing was made for the first time in a serial production process. From then up to today, the company has developed around 50 different catalogue materials, which are known as components of "dry-tech®" bearing technology and are being used in innumerable applications all over the world.

Today, the 2,950 employees come up with new ideas daily, make high-quality products, ensure streamlined processes and delivery times and, above all, are a guarantee of close proximity to the customer. On average, igus® dispatches around 5,500 consignments per day. In order to ensure speedy and individual delivery, the customer receives exactly the product he needs for his application from 14 storage and assembly/installation centres worldwide: as a single component or as a complete system, also installed or assembled on site on request.



igus® WebGuide – the "TV magazine" for technicians

The WebGuide is the first technical printed catalogue that is entirely designed as a quick selection, and on selection of the desired product leads straight to the internet. "Zapping" online ... find, configure, order **... followed by speedy delivery**. Also available as an App for Android and iOS

More information ▶ www.igus.eu/webguide

iglidur®

Polymer plain bearings

...plastics

Application examples: iglidur®

Improve technology ... Reduce cost.

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 practise show the proven employment from iglidur® bearings in a wide variety of applications.

ROLLERCOASTER

Here iglidur® Z bearings led to significant reduction of the costs. This was achieved by eliminating the maintenance work completely during the season. With iglidur® Z bearings it is not necessary to check or relubricate the units and shafts. Also it was possible to reduce the weight.
(Six Flags Theme Park)

SURGICAL LIGHT

The motor-powered swivelling LED wings are adjusted with the aid of iglidur® JVFM bearings. Lubrication and maintenance-free.
(Trumpf iLED Medical Systems Inc.)

WASHING CHAIN BEARINGS

Reduction of the drive power for bottle washing machines by using iglidur® under the most difficult conditions in a 2–3 % caustic soda and temperature of +80 °C. (Krones AG)

SPREADERS

Main reasons for iglidur® bearings: The special design to complement the centrifugal arm results in a significant reduction of manufacturing costs. It is also maintenance-free and has high wear resistance.
(Fella Werke GmbH & Co. KG)

TOOL CHANGER CHAIN

Main reasons for iglidur® bearings: Enormous cost advantages in comparison to standard metallic rolled bearings as well as low coefficient of friction also with soft shaft materials.
(Deckel Maho Seebach GmbH)

AXLE BOX ARRANGEMENT

The edge load is usually a deciding factor for or against the use of bearings. iglidur® G bearings solve this, also giving high wear resistance, low-costs, resistance to corrosion and dirt.
(Zunhammer GmbH Gülletechnik)

TUBULAR BAG MACHINES

The continuous operating temperature in the bonding arms frequently reach +160 °C and higher. These requirements are met by iglidur® Z bearings which also offer particularly high resistance to wear.
(Affeldt Verpackungsmaschinen GmbH)

iglidur® plain bearings made from tribo plastics: All-rounder

All-rounder materials for general purpose

The classic all-rounder:
iglidur® G
▶ Page 79

The robust all-rounder according to DIN 2795:
iglidur® M250
▶ Page 95

Specialist for pivoting, rolling applications and more:
iglidur® P210
▶ Page 105

The cost-effective outdoor all-rounder:
iglidur® P
▶ Page 113

Versatile and cost-effective:
iglidur® K
▶ Page 123

Low-cost material for mass production:
iglidur® GLW
▶ Page 131

iglidur® plain bearings made from tribo plastics: Endurance runner

Endurance runner materials for long service life

The versatile long distance runner:
iglidur® J
▶ Page 141

The classic endurance runner up to 30 MPa:
iglidur® W300
▶ Page 153

Specialist for pulsating loads:
iglidur® J3
▶ Page 165

Endurance runner with high dimensional stability at high temperature: iglidur® J350
▶ Page 173

Ideal for plastics shafts:
iglidur® J260
▶ Page 181

Endurance runner up to +180 °C:
iglidur® W360
▶ Page 189

For fast rotating applications:
iglidur® L250
▶ Page 197

iglidur® plain bearings made from tribo plastics: Endurance runner

New

For extreme rotational speeds:
iglidur® L500
▶ Page 205

Low-cost:
iglidur® R
▶ Page 213

Low-cost with silicone:
iglidur® D
▶ Page 221

Specialist for aluminium shafts:
iglidur® J200
▶ Page 227

iglidur® plain bearings made from tribo plastics: High temperature

Materials for use at high temperatures

The chemical and temperature specialist:
iglidur® X
▶ Page 237

Extremely long service life under extreme conditions:
iglidur® Z
▶ Page 247

The high temperature specialists up to +250 °C:
iglidur® X6
▶ Page 257

For soft shafts and high temperatures:
iglidur® V400
▶ Page 265

For hot liquids:
iglidur® UW500
▶ Page 273

iglidur® plain bearings made from tribo plastics: High media resistance

Materials with good media resistance

Endurance runner with high media resistance:
iglidur® H1
▶ Page 283

Extremely long service life under water:
iglidur® H370
▶ Page 291

The classic with high resistance to media and temperature: iglidur® H
▶ Page 299

High temperature endurance runner:
iglidur® C500
▶ Page 307

The low-cost specialist for chemicals and temperatures: iglidur® H2
▶ Page 315

iglidur® plain bearings | Product overview

iglidur® plain bearings made from tribo plastics: For contact with food

Materials for contact with food

The universal bearing for contact with food:
iglidur® A181
▶ Page 325

The endurance runner at higher temperatures in the food sector:
iglidur® A350
▶ Page 333

The media and temperature specialist in the food sector:
iglidur® A500
▶ Page 341

The "Food-all-rounder":
iglidur® A180
▶ Page 349

The "food-classic" for low speeds:
iglidur® A200
▶ Page 357

"Food" bearing with high media resistance up to +90 °C: iglidur® A160
▶ Page 368

The Robust:
iglidur® A290
▶ Page 375

iglidur® plain bearings made from tribo plastics: For contact with food

Suitable for contact with drinking water:
iglidur® UW160
▶ Page 383

For the tobacco industry:
iglidur® T220
▶ Page 391

iglidur® plain bearings made from tribo plastics: For high loads

Materials for heavy duty applications

The durable heavy duty bearing:
iglidur® Q2
▶ Page 401

The peak of stability:
iglidur® Q
▶ Page 409

New

Heavy-duty on soft shafts:
iglidur® Q290
▶ Page 417

The high load bearing up to 200 MPa static and 140 MPa: dynamic: iglidur® TX1
▶ Page 423

iglidur® plain bearings made from tribo plastics: Specialists

Materials for special application areas

Electrically conductive:
iglidur® F
▶ Page 435

ESD compatible all-rounder:
iglidur® F2
▶ Page 443

The automotive standard:
iglidur® H4
▶ Page 451

For fast rotation under water:
iglidur® UW
▶ Page 459

The biopolymer:
iglidur® N54
▶ Page 467

Low-cost all-rounder for fire protection:
iglidur® G V0
▶ Page 475

Versatile and cost-effective:
iglidur® J2
▶ Page 483

iglidur® plain bearings made from tribo plastics: Specialists

New

The first antibacterial iglidur® bearing:
iglidur® AB
▶ Page 491

The flexible:
iglidur® B
▶ Page 499

Free from PTFE and silicone:
iglidur® C
▶ Page 505

iglidur® plain bearings | Selection according to main criteria

iglidur®	G	M250	P210	P	K	GLW	J	W300	J3	J350	J260	W360	L250	L500	R	D	J200
Installation tolerances	E10	D11	E10	E10	E10	E10	E10	E10	E10	F10	E10	E10	E10	F10	E10	E10	E10
Descriptive technical specifications																	
Wear resistance at +23 °C																	
Wear resistance at +90 °C																	
Wear resistance at +150 °C																	
Low coefficients of friction																	
Low humidity absorption																	
Wear resistance under water																	
High media resistance																	
Resistant to edge loads																	
Resistant to impacts/shock																	
Resistant to dirt																	
For high loads (>60 MPa)	●					●				●		●					
Corrosion-free	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Electrically conductive																	
Approvals and standards																	
Dimensions in accordance with DIN	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		
RoHS-II 2011/65/EC	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
FDA- and EC 10/2011 compliant																	
Fire class in accordance with UL-94	HB	V-2	HB	HB	HB	HB	HB	HB	HB	V-0	V-2	HB	HB	V-0	HB	HB	HB
Availabilities / variants																	
Type S, sleeve	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Type F, with flange	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Type T, thrust washer	●	●					●	●									
Bar stock, round material		●	●				●	●	●	●	●				●		●
Stock plate							●										
Bar stock, tube							●										
Available for speedicut machined components		●	●				●	●	●	●	●				●		●
Tribo-Tape liner																	
Moulded special parts	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

iglidur® plain bearings | Selection according to main criteria

iglidur®	X	Z	X6	V400	UW500	H1	H370	H	C500	H2	A181	A350	A500	A180	A200	A160	A290
Installation tolerances	F10	F10	F10	F10	F10	F10	F10	F10	F10	F10	E10	F10	F10	E10	D11	E10	D11
Descriptive technical specifications																	
Wear resistance at +23 °C	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Wear resistance at +90 °C	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Wear resistance at +150 °C	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Low coefficients of friction	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Low humidity absorption	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Wear resistance under water	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
High media resistance	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Resistant to edge loads	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Resistant to impacts/shock	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Resistant to dirt	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
For high loads (>60 MPa)	●	●	●		●	●	●	●	●	●		●	●				
Corrosion-free	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
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 3547	ISO 3547	ISO 3547	ISO 2795	ISO 3547	ISO 3547
RoHS-II 2011/65/EC	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
FDA- and EC 10/2011 compliant											●	●	●	●	●	●	
Fire class in accordance with UL-94	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	HB	V-0	V-1	HB	V-2	HB	HB
Availabilities / variants																	
Type S, sleeve	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●
Type F, with flange	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●
Type T, thrust washer	●	●															
Bar stock, round material	●					●		●	●		●	●		●		●	
Stock plate												●					
Bar stock, tube																	
Available for speedicut machined components	●					●		●	●		●	●		●		●	
Tribo-Tape liner				●												●	
Moulded special parts	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

iglidur® plain bearings | Selection according to main criteria

iglidur®	UW160	T220	Q2	Q	Q290	F	F2	H4	UW	N54	G V0	J2	AB	B	C
Installation tolerances	E10	E10	E10	E10	D11	D11	E10	F10	E10	E10	E10	E10	E10	D11	D11
Descriptive technical specifications															
Wear resistance at +23 °C															
Wear resistance at +90 °C															
Wear resistance at +150 °C															
Low coefficients of friction															
Low humidity absorption															
Wear resistance under water															
High media resistance															
Resistant to edge loads															
Resistant to impacts/shock															
Resistant to dirt															
For high loads (>60 MPa)			●	●	●	●	●	●			●				
Corrosion-free	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
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 3547	ISO 3547	ISO 3547	
RoHS-II 2011/65/EC	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
FDA- and EC 10/2011 compliant															
Fire class in accordance with UL-94	HB	HB	HB	HB	HB	HB	HB	V-0	HB	HB	V-0	HB	HB	HB	HB
Availabilities / variants															
Type S, sleeve	●		●	●	●	●	●	●	●	●	●		●		
Type F, with flange	●		●	●	●	●	●	●	●	●	●		●		
Type T, thrust washer															
Bar stock, round material	●	●					●					●	●		
Stock plate															
Bar stock, tube															
Available for speedicut machined components	●	●					●					●	●		
Tribo-Tape liner															
Moulded special parts	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

iglidur® plain bearings | Material properties table

iglidur®	Unit	G	M250	P210	P	K	GLW	J	W300	J3	J350	J260	W360	L250	L500	R	D	J200
General properties																		
Density	**[g/cm³]**	1.46	1.14	1.40	1.58	1.52	1.36	1.49	1.24	1.42	1.44	1.35	1.34	1.5	1.53	1.39	1.4	1.72
Colour																		
Max. moisture absorption at +23 °C and 50 % relative humidity	**[% weight]**	0.7	1.4	0.3	0.2	0.1	1.3	0.3	1.3	0.3	0.3	0.2	0.2	0.7	0.1	0.2	0.3	0.2
Max. water absorption	**[% weight]**	4.0	7.6	0.5	0.4	0.6	5.5	1.3	6.5	1.3	1.6	0.4	1.6	3.9	0.3	1.1	1.1	0.7
Coefficient of sliding friction, dynamic against steel	**[µ]**	0.08–0.15	0.18–0.40	0.07–0.19	0.06–0.21	0.06–0.21	0.10–0.24	0.06–0.18	0.08–0.23	0.06–0.20	0.10–0.20	0.06–0.20	0.07–0.21	0.08–0.19	0.19–0.26	0.09–0.25	0.08–0.26	0.11–0.17
pv value, max. (dry)	**[MPa·m/s]**	0.42	0.12	0.4	0.39	0.3	0.3	0.34	0.23	0.5	0.45	0.35	0.35	0.4	4.0	0.27	0.27	0.3
Mechanical properties																		
Flexural modulus	**[MPa]**	7,800	2,700	2,500	5,300	3,500	7,700	2,400	3,500	2,700	2,000	2,200	3,829	1,950	12,015	1,950	2,000	2,800
Flexural strength at +20 °C	**[MPa]**	210	112	70	120	80	235	73	125	70	55	60	119	67	201	70	72	58
Compressive strength	**[MPa]**	78	52	50	66	60	74	60	61	60	60	50	n.s.	47	70	68	70	43
Max. permissible surface pressure at +20 °C	**[MPa]**	80	20	50	50	50	80	35	60	45	60	40	75	45	70	23	23	23
Shore-D-Hardness		81	79	75	75	72	78	74	77	73	80	77	n.s.	68	81	77	78	70
Physical and thermal properties																		
Max. long-term application temperature	**[°C]**	+130	+80	+100	+130	+170	+100	+90	+90	+90	+180	+120	+180	+90	+250	+90	+90	+90
Max. short-term application temperature	**[°C]**	+220	+170	+160	+200	+240	+160	+120	+180	+120	+220	+140	+200	+180	+315	+110	+110	+120
Min. application temperature	**[°C]**	–40	–40	–40	–40	–40	–40	–50	–40	–50	–100	–100	–40	–40	–100	–50	–50	–50
Thermal conductivity	**[W/m · K]**	0.24	0.24	0.25	0.25	0.25	0.24	0.25	0.24	0.25	0.24	0.24	0.24	0.24	0.45	0.25	0.25	0.24
Coefficient of thermal expansion at +23 °C	**[$K^{-1} \cdot 10^{-5}$]**	9	10	8	4	3	17	10	9	13	7	13	6	10	6	11	11	8
Electrical properties																		
Specific volume resistance	**[Ωcm]**	> 10^{13}	> 10^{13}	> 10^{12}	> 10^{13}	> 10^{12}	> 10^{11}	> 10^{13}	> 10^{13}	> 10^{12}	> 10^{13}	> 10^{12}	> 10^{13}	> 10^{10}	> 10^{10}	> 10^{12}	> 10^{14}	> 10^{8}
Surface resistance	**[Ω]**	> 10^{11}	> 10^{11}	> 10^{11}	> 10^{12}	> 10^{12}	> 10^{11}	> 10^{12}	> 10^{12}	> 10^{12}	> 10^{10}	> 10^{10}	> 10^{12}	> 10^{11}	> 10^{12}	> 10^{12}	> 10^{14}	> 10^{8}

iglidur® plain bearings | Material properties table

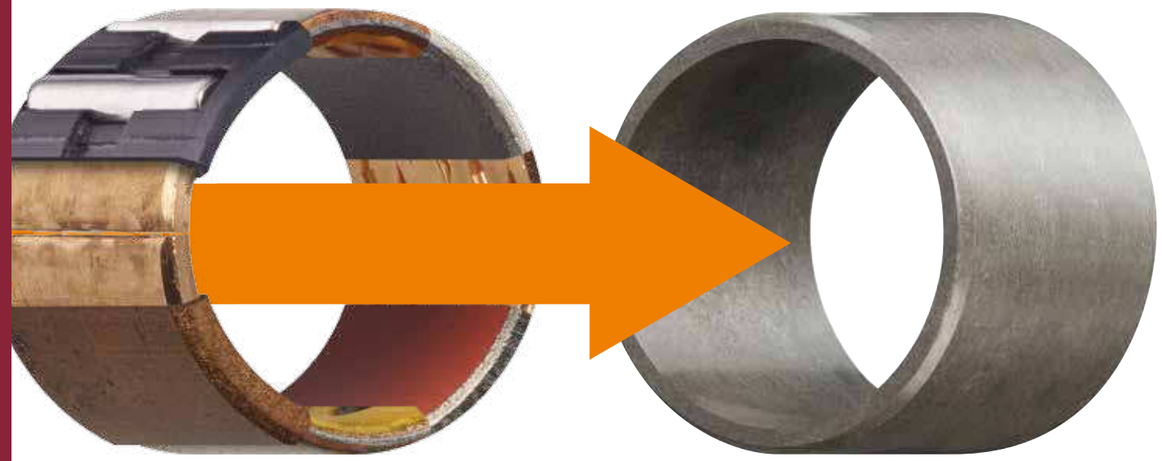
iglidur®	Unit	X	Z	X6	V400	UW500	H1	H370	H	C500	H2	A181	A350	A500	A180	A200	A160	A290
General properties																		
Density	**[g/cm³]**	1.44	1.4	1.53	1.51	1.49	1.53	1.66	1.71	1.37	1.72	1.38	1.42	1.28	1.46	1.14	1.00	1.41
Colour																		
Max. moisture absorption at +23 °C and 50 % relative humidity	**[% weight]**	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.2	0.6	0.3	0.2	1.5	0.1	1.7
Max. water absorption	**[% weight]**	0.5	1.1	0.5	0.2	0.5	0.3	0.1	0.3	0.5	0.2	1.3	1.9	0.5	1.3	7.6	0.1	7.3
Coefficient of sliding friction, dynamic against steel	**[µ]**	0.09–0.27	0.06–0.14	0.09–0.25	0.15–0.20	0.20–0.36	0.06–0.20	0.07–0.17	0.07–0.20	0.07–0.19	0.07–0.30	0.10–0.21	0.10–0.20	0.26–0.41	0.05–0.23	0.10–0.40	0.09–0.19	0.13–0.40
pv value, max. (dry)	**[MPa·m/s]**	1.32	0.84	1.35	0.5	0.35	0.80	0.74	1.37	0.7	0.58	0.31	0.40	0.28	0.31	0.09	0.25	0.23
Mechanical properties																		
Flexural modulus	**[MPa]**	8,100	2,400	16,000	4,500	16,000	2,800	11,100	12,500	3,000	10,300	1,913	2,000	3,600	2,300	2,500	1,151	8,800
Flexural strength at +20 °C	**[MPa]**	170	95	290	95	260	55	135	175	100	210	48	110	140	88	116	19	250
Compressive strength	**[MPa]**	100	65	190	47	140	78	79	81	110	109	60	78	118	78	54	37	91
Max. permissible surface pressure at +20 °C	**[MPa]**	150	150	150	45	140	80	75	90	110	110	31	60	120	28	18	15	70
Shore-D-Hardness		85	81	89	74	86	77	82	87	81	88	76	76	83	76	81	60	88
Physical and thermal properties																		
Max. long-term application temperature	**[°C]**	+250	+250	+250	+200	+250	+200	+200	+200	+250	+200	+90	+180	+250	+90	+80	+90	+140
Max. short-term application temperature	**[°C]**	+315	+310	+315	+240	+300	+240	+240	+240	+300	+240	+110	+210	+300	+110	+170	+100	+180
Min. application temperature	**[°C]**	–100	–100	–100	–50	–100	–40	–40	–40	–100	–40	–50	–100	–100	–50	–40	–50	–40
Thermal conductivity	**[W/m · K]**	0.60	0.62	0.55	0.24	0.6	0.24	0.5	0.6	0.24	0.24	0.25	0.24	0.24	0.25	0.24	0.30	0.24
Coefficient of thermal expansion at +23 °C	**[$K^{-1} \cdot 10^{-5}$]**	5	4	1.1	3	4	6	5	4	9	4	11	8	9	11	10	11	7
Electrical properties																		
Specific volume resistance	**[Ωcm]**	$< 10^5$	$> 10^{11}$	$< 10^5$	$> 10^{12}$	$< 10^9$	$> 10^{12}$	$< 10^5$	$< 10^5$	$> 10^{14}$	$> 10^{15}$	$> 10^{12}$	$> 10^{11}$	$> 10^{14}$	$> 10^{12}$	$> 10^{13}$	$> 10^{12}$	$> 10^{11}$
Surface resistance	**[Ω]**	$< 10^3$	$> 10^{11}$	$< 10^3$	$> 10^{12}$	$< 10^9$	$> 10^{11}$	$< 10^5$	$< 10^2$	$> 10^{13}$	$> 10^{14}$	$> 10^{12}$	$> 10^{11}$	$> 10^{13}$	$> 10^{11}$	$> 10^{12}$	$> 10^{12}$	$> 10^{11}$

iglidur® plain bearings | Material properties table

iglidur®	Unit	UW160	T220	Q2	Q	Q290	TX1	F	F2	H4	UW	N54	G V0	J2	AB	B	C
General properties																	
Density	**[g/cm³]**	1.04	1.28	1.46	1.4	1.27	2.1	1.25	1.52	1.79	1.52	1.13	1.53	1.44	1.11	1.15	1.1
Colour																	
Max. moisture absorption at +23 °C and 50 % relative humidity	**[% weight]**	0.1	0.3	1.1	0.9	3.0	n.s.	1.8	0.2	0.1	0.2	1.6	0.7	0.2	0.8	1.0	1.0
Max. water absorption	**[% weight]**	0.1	0.5	4.6	4.9	9.3	0.1	8.4	0.4	0.2	0.8	3.6	4.0	1.3	1.6	6.3	6.9
Coefficient of sliding friction, dynamic against steel	**[µ]**	0.17–0.31	0.20–0.32	0.22–0.42	0.05–0.15	0.14–0.26	0.09–0.37	0.10–0.39	0.16–0.22	0.08–0.25	0.15–0.35	0.15–0.23	0.07–0.20	0.11–0.27	0.18–0.31	0.18–0.28	0.17–0.25
pv value, max. (dry)	**[MPa·m/s]**	0.22	0.28	0.7	0.55	0.70	0.89	0.34	0.31	0.70	0.11	0.5	0.5	0.23	0.25	0.15	0.10
Mechanical properties																	
Flexural modulus	**[MPa]**	1,349	1,800	8,370	4,500	3,074	12,000	11,600	7,418	7,500	9,600	1,800	7,900	3,605	1,850	1,800	1,900
Flexural strength at +20 °C	**[MPa]**	22	65	240	120	97	55	260	93	120	90	70	140	101	50	55	60
Compressive strength	**[MPa]**	32	55	130	89	68	220	98	61	50	70	30	100	77	40	20	30
Max. permissible surface pressure at +20 °C	**[MPa]**	15	40	120	100	55	200	105	47	65	40	36	75	46	25	40	40
Shore-D-Hardness		60	76	80	83	80	n.s.	84	72	80	78	74	80	n.s.	70	69	72
Physical and thermal properties																	
Max. long-term application temperature	**[°C]**	+90	+100	+130	+135	+140	+120	+140	+120	+200	+90	+80	+130	+90	+70	+100	+90
Max. short-term application temperature	**[°C]**	+100	+160	+200	+155	+180	+170	+180	+165	+240	+110	+120	+210	+110	+140	+130	+130
Min. application temperature	**[°C]**	–50	–40	–40	–40	–40	–60	–40	–40	–40	–50	–40	–40	–50	–40	–40	–40
Thermal conductivity	**[W/m · K]**	0.50	0.24	0.24	0.23	0.24	0.24	0.65	0.61	0.24	0.6	0.24	0.25	0.25	0.24	0.24	0.24
Coefficient of thermal expansion at +23 °C	**[$K^{-1} \cdot 10^{-5}$]**	18	11	8	5	7	3	12	5	5	6	9	9	7	10	12	15
Electrical properties																	
Specific volume resistance	**[Ωcm]**	> 10^{12}	> 10^{10}	> 10^{13}	> 10^{15}	>10^{12}	> 10^{11}	< 10^{3}	< 10^{9}	> 10^{13}	< 10^{5}	> 10^{13}	> 10^{12}	> 10^{13}	> 10^{12}	> 10^{10}	> 10^{10}
Surface resistance	**[Ω]**	> 10^{12}	> 10^{10}	> 10^{11}	> 10^{12}	>10^{12}	> 10^{13}	< 10^{2}	< 10^{9}	> 10^{12}	< 10^{5}	> 10^{11}	> 10^{11}	> 10^{12}	> 10^{12}	> 10^{9}	> 10^{9}

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

Change now and save up to 40 %



dry-tech®: Enhance technology without lubrication – Reduce cost by using tribopolymers

igus® dry-tech® bearings offer an alternative to lubricated plain, linear and roller bearings. igus® develops tribopolymers for continuous dry-running 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, from vacuum to extreme humidity. Reduce cost with igus® dry-tech® bearings. A direct product comparison shows that you can reduce your current costs for bearing components by as much as 50 %.

Tested thousands of times. Proven millions of times

Applications with high cycle rates, speeds and accelerations in demanding environmental conditions require tested and reliable systems for all igus® products. igus® constantly conducts tests in its in-house laboratory under real-world conditions. Every year, more than 9,600 tests are conducted on plain bearings and over 4,100 tests on e-chains® and cables. The findings go into a unique knowledge database on the tribology of maintenance-free plastic plain bearings. Our laboratory is at your disposal. Should we happen to lack a ready solution for your special applications, we will gladly conduct tests according to your requirements.

igus® lab: 15,000 tribological tests (friction and wear) in 300 test set-ups in the industry's largest laboratory (2,750m²). View inside bearing laboratory in Cologne.

iglidur® | High performance polymers

Properties and design

iglidur® plain bearings made of high performance polymers

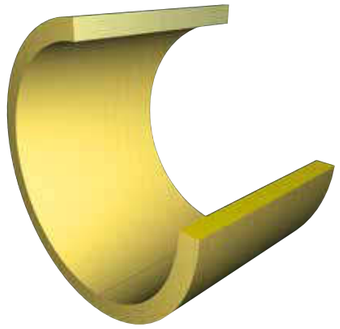
Extremely wear-resistant tribopolymers improved by precisely harmonised additions of strengthening materials and solid lubricants, tested a thousand times and proved a million times – that is iglidur®. igus® engineers develop and test more than 100 new plastic compounds every year. The finely harmonised combination of plastic matrix, strengthening components and solid lubricants in every single tribopolymer results in an individual properties profile in each case. In more than 10,000 individual tests a year on over 200 test stands in the igus® test laboratory, all existing and potential iglidur® materials, as well as other 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® range. In addition, freely accessible online tools simply to use enable every user to select his personal sliding bearing from iglidur® product range. Whether iglidur® product finder or iglidur® service life calculation, piston ring or bar stock configurator: with few clicks and applications related information a suitable bearing is quickly found.

▶ www.igus.eu/online-tools

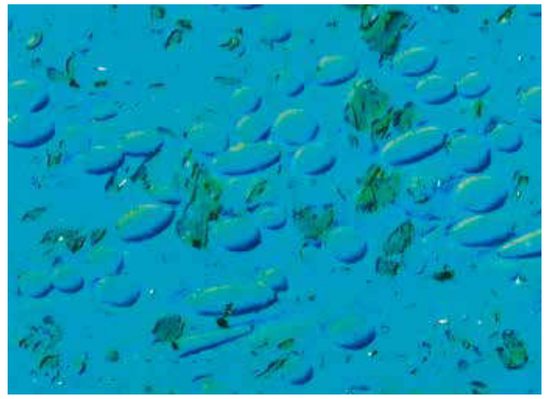
General properties of iglidur® plain bearings

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

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



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



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

Properties and design

The traditional solution

Hard shells with soft coating. Every lubricated bearing works according to this principle, and also a number of maintenance-free bearings that are equipped with special slide layers. However, this soft slide 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 microscopically small particles, embedded in millions of tiny chambers of the mostly fibre reinforced 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 pressed 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® bearings

The iglidur® solution: the self-lubricating effect

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

- Base polymer
- Fibers and filling material
- Solid lubricants

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

1. The coefficient of friction, which is determined especially by the surface of the bearing, should be as low as possible.

2. The surface cannot be removed by forces that act on the bearing.

3. The wearing force acts especially on the surface of the bearing, for this the bearing must be capable of high resistance.

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

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

Load

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

Radial bearing:

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

Thrust bearing:

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

In these equations:

F **load in [N]**
d1 **bearing inner diameter in [mm]**
b1 **bearing length in [mm]**
d2 **outer diameter of the bearing in [mm]**

Max. permissible surface pressure

A comparative value of the iglidur® material is the recommended maximum 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 0.01 m/s are tolerated under this pressure. Higher pressures than those indicated are possible if the duration of the load is short.

▶ Material table, **page 56**

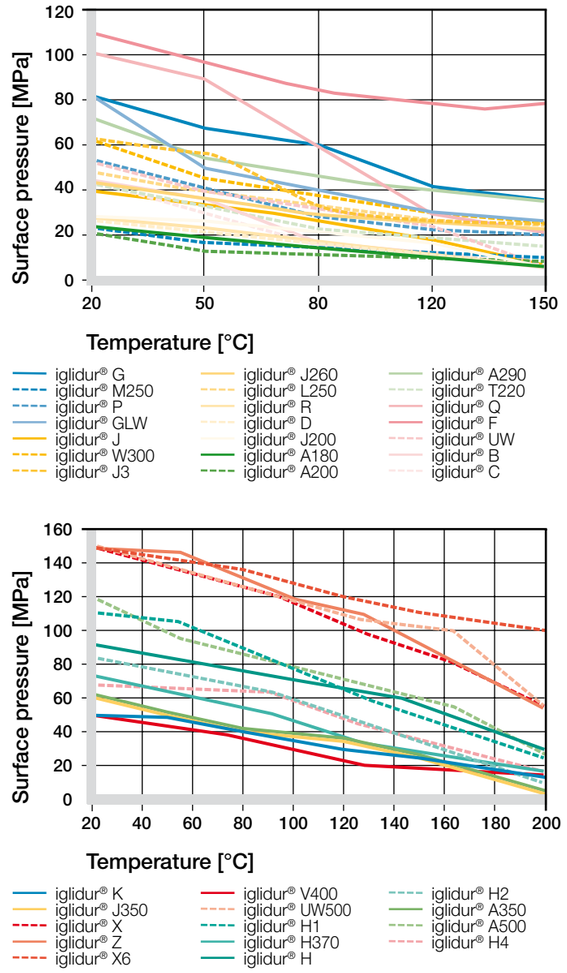


Diagram 02–03: Permissible maximum surface pressure as a function of temperature

Load and temperature

Diagram 02 up to 08 show the recommended maximum 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] can be understood as a measurement for the frictional heat of the bearing. This relationship is shown by the pv diagram that is the first in the respective chapter for each iglidur® material.

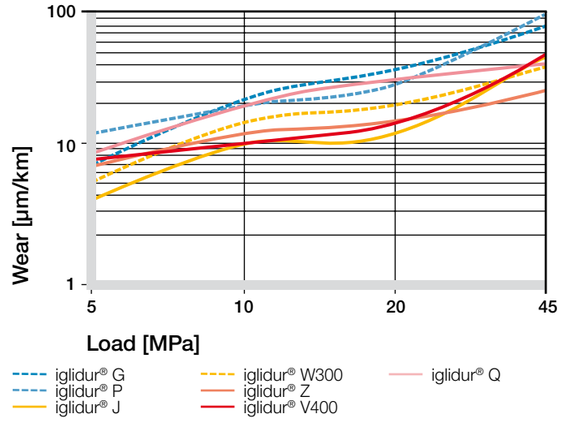
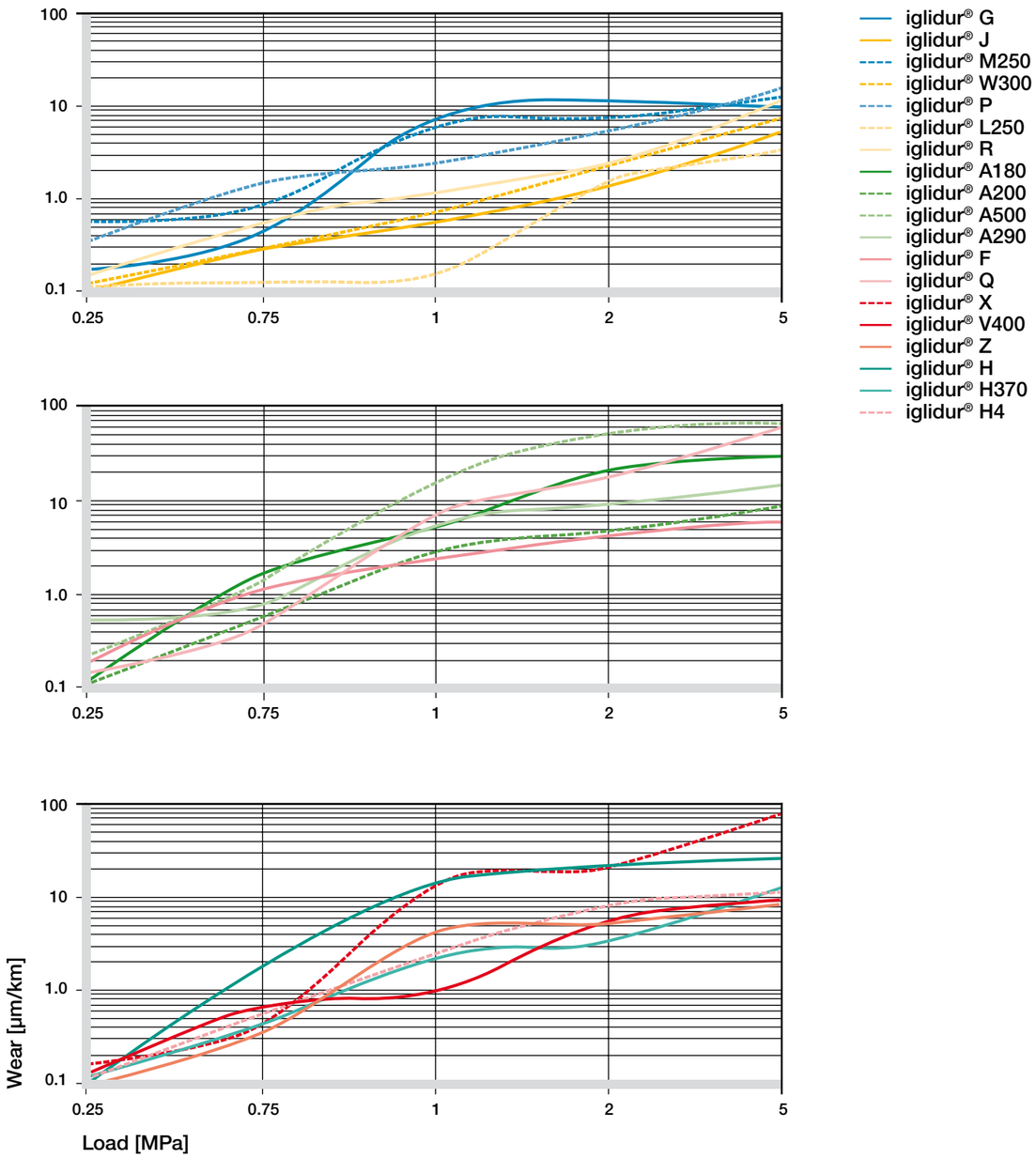


Diagram 04: Wear of iglidur® plain bearings under medium and high pressures

Pressure and wear

The load of the plain bearing has an effect on the wear of the bearing. 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

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 87**

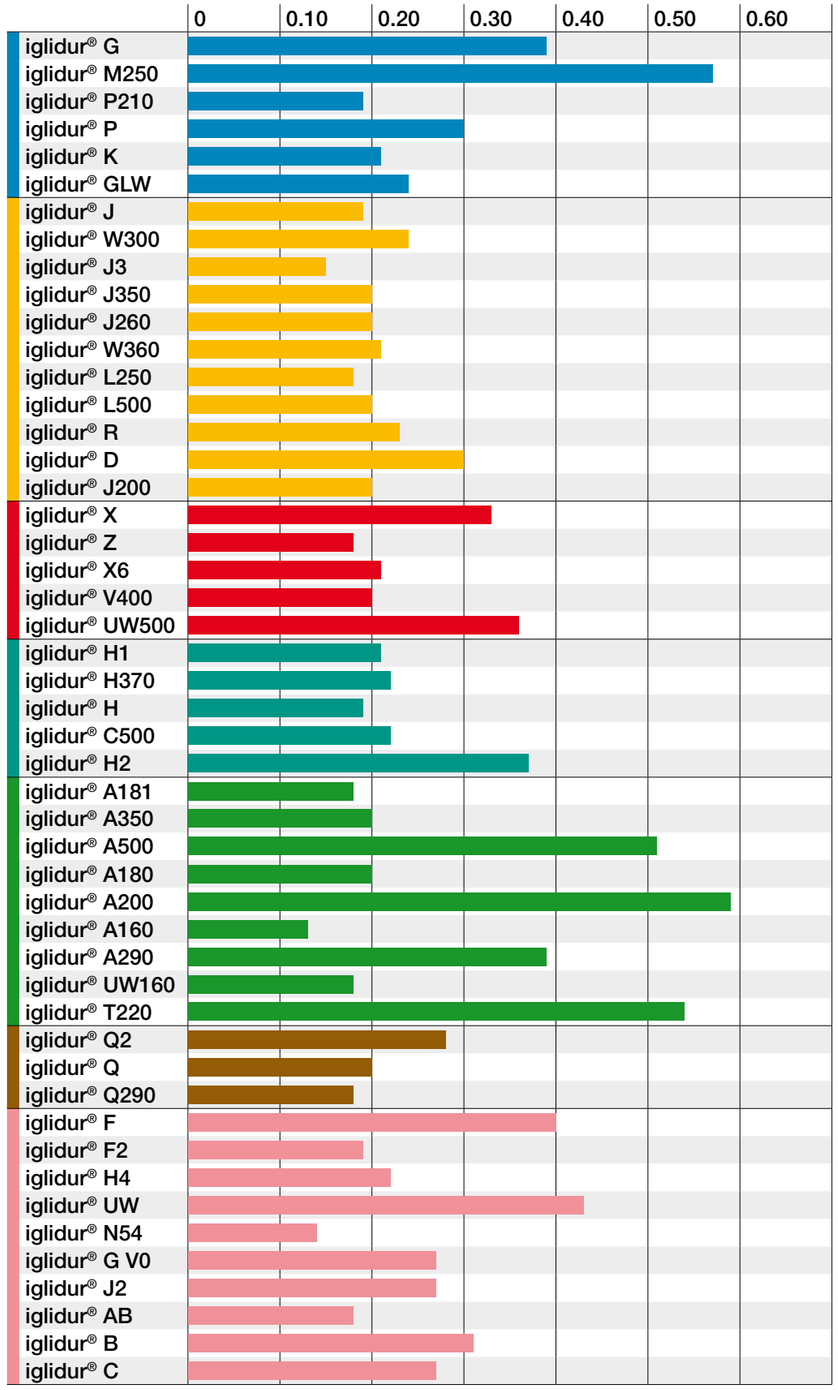


Diagram 08: Coefficient of friction of iglidur® materials with Cf53 shaft, rotating

Surface Speed

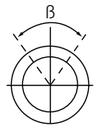
The peripheral speed is always significant in plain bearings. Crucial is not the absolute rotation speed, but the relative speed between the shaft and the bearing. The surface speed is expressed in meters per second [m/s] and calculated from the rotary speed n [rpm] with the following formula. With varying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

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

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

In these equations:

d1 = shaft diameter [mm]
f = frequency in Hertz
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, oscillating, and linear movements. These surface speeds are limit values assuming minimum pressure loading of the bearing. In practice, these limit values are rarely reached due to an inverse relationship between load and speed. All increases of the pressure leads unavoidably to a reduction of the allowable 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 sliding 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 cold rolled steel shaft (Cf53) with a load of 0.7 MPa.

Material	Rotating		Oscillating		Linear	
	Long-term	Short-term	Long-term	Short-term	Long-term	Short-term
iglidur® G	1.0	2.0	0.7	1.4	4.0	5.0
iglidur® M250	0.8	2.0	0.6	1.4	2.5	5.0
iglidur® P210	1.0	2.0	0.7	1.4	3.0	4.0
iglidur® P	1.0	2.0	0.7	1.4	3.0	4.0
iglidur® K	1.0	2.0	0.7	1.4	3.0	4.0
iglidur® GLW	0.8	1.0	0.6	0.7	2.5	3.0
iglidur® J	1.5	3.0	1.1	2.1	8.0	10.0
iglidur® W300	1.0	2.5	0.7	1.8	4.0	6.0
iglidur® J3	1.5	3.0	1.1	2.1	8.0	10.0
iglidur® J350	1.3	3.0	1.0	2.3	4.0	8.0
iglidur® J260	1.0	2.0	0.7	1.4	3.0	4.0
iglidur® W360	1.2	2.7	0.9	2.0	3.0	5.0
iglidur® L250	1.0	1.5	0.7	1.1	2.0	3.0
iglidur® L500	3.0	4.0	1.5	3.0	5.0	8.0
iglidur® R	0.8	1.2	0.6	1.0	3.5	5.0
iglidur® D	1.5	3.0	1.1	2.1	8.0	10.0
iglidur® J200	1.0	1.5	0.7	1.1	10.0	15.0
iglidur® X	1.5	3.5	1.1	2.5	5.0	10.0
iglidur® Z	1.5	3.5	1.1	2.5	5.0	6.0
iglidur® X6	1.5	3.5	1.1	2.5	5.4	10.0
iglidur® V400	0.9	1.3	0.6	0.9	2.0	3.0
iglidur® UW500	0.8	1.5	0.6	1.1	2.0	3.0
iglidur® H1	2.0	2.5	1.0	1.5	5.0	7.0
iglidur® H370	1.2	1.5	0.8	1.1	4.0	5.0
iglidur® H	1.0	1.5	0.7	1.1	3.0	4.0
iglidur® C500	0.9	1.1	0.7	1.0	2.4	2.8
iglidur® H2	0.9	1.0	0.6	0.7	2.5	3.0
iglidur® A181	0.8	1.2	0.6	1.0	3.5	5.0
iglidur® A350	1.0	1.2	0.8	0.9	2.5	3.0
iglidur® A500	0.6	1.0	0.4	0.7	1.0	2.0
iglidur® A180	0.8	1.2	0.6	1.0	3.5	5.0
iglidur® A200	0.8	1.5	0.6	1.1	2.0	3.0
iglidur® A160	0.5	0.7	0.4	0.6	2.0	3.0
iglidur® A290	1.0	2.0	0.7	1.4	3.0	4.0
iglidur® UW160	0.3	0.5	0.3	0.4	1.0	2.5
iglidur® T220	0.4	1.0	0.3	0.7	1.0	2.0
iglidur® Q2	1.0	2.0	0.7	1.4	4.0	5.0
iglidur® Q	1.0	2.0	0.7	1.4	5.0	6.0
iglidur® Q290	0.8	2.0	0.6	1.4	1.0	2.0
iglidur® TX1	0.4	0.9	0.2	0.5	1.0	2.0
iglidur® F	0.8	1.5	0.6	1.1	3.0	5.0
iglidur® F2	0.8	1.4	0.7	1.1	3.0	5.0
iglidur® H4	1.0	1.5	0.7	1.1	1.0	2.0
iglidur® UW	0.5	1.5	0.4	1.1	2.0	3.0
iglidur® N54	0.8	1.5	0.6	1.1	1.0	2.0
iglidur® G V0	1.0	2.0	0.7	1.4	4.0	5.0
iglidur® J2	0.8	1.9	0.7	1.1	3.0	5.0
iglidur® AB	0.7	1.0	0.5	0.7	1.0	1.8
iglidur® B	0.7	1.0	0.5	0.7	2.0	3.0
iglidur® C	1.0	1.5	0.7	1.1	2.0	3.0

Table 01: Surface speeds of iglidur® bearings in m/s; long and short-term

pv value and coefficients 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 p x v value is compared with a permitted p x v 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 (3 x means that the dwell time is three times longer than the operating time).

Lubrication

Although iglidur® plain bearings are designed to run dry, 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 03 shows the correction factors for pv value using lubrication.

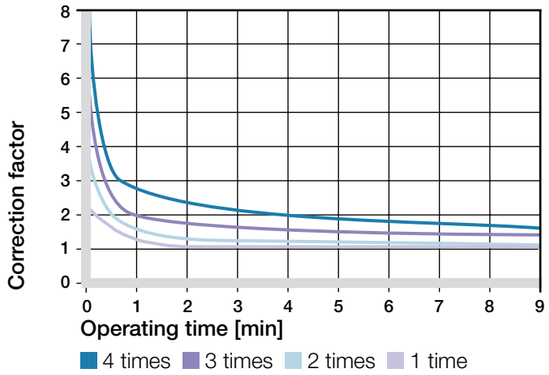


Diagram 09: Correction factor for p · v

Lubrication	Correction factor
Dry-running	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
Plastics	0.24

Table 03: Heat conductivity values of shaft or housing materials

pv value and lubrication

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

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]

Coefficients of friction

iglidur® plain bearings are self-lubricating by 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 choice is made between static friction coefficient and the dynamic friction coefficient.

Coefficients of friction and surfaces

At study here is the relationship between coefficients of friction and surface roughness 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 roughness of the shafts.

Picture 06: Better products for less – a key element is the industry's largest test lab. 2,750 m² lab, more than 15,000 tests and 2 billion test strokes per year.

Temperatures

The temperature resistance of high performance polymer plain bearings is usually underestimated. Data is often found in the literature about the continuous use temperature. The continuous use 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 which the material can endure 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.

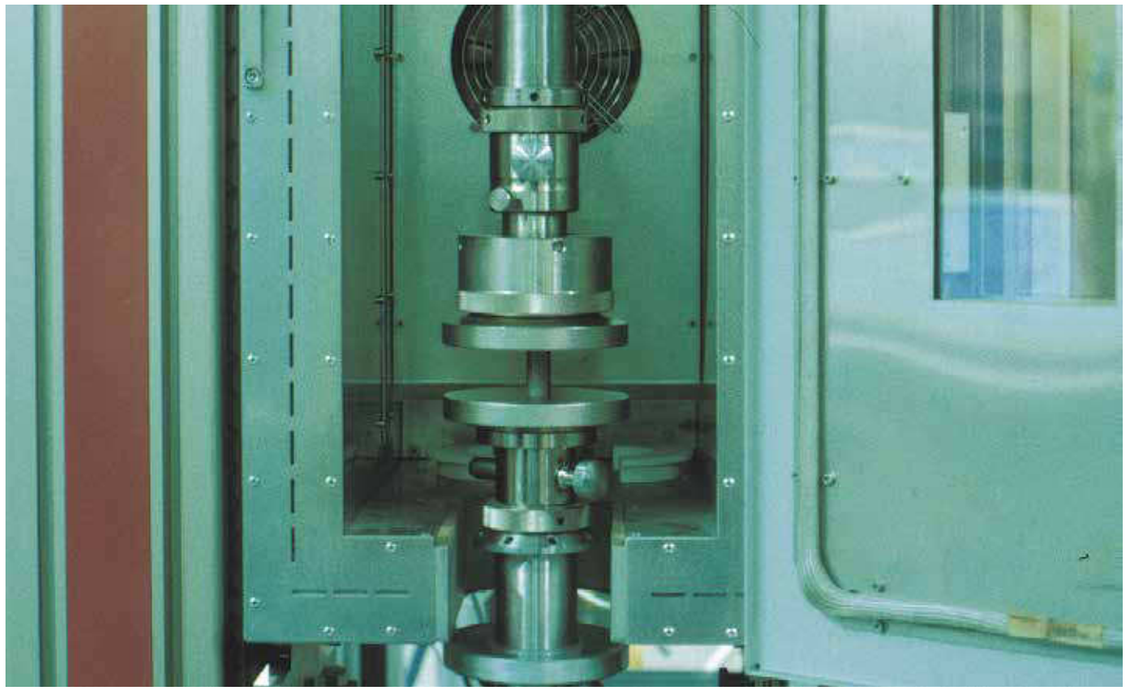
If the plain bearings are moved axially or axial forces occur, there is more opportunity for the bearing to lose press-fit. In these cases, axial securing of the bearing is necessary in addition to the press-fit. The table 04 shows the temperature at which additional securing of the iglidur® plain bearing 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 81**) show the maximum permissible 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 required play in the bearing. 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 07: Material tests are possible up to +250 °C

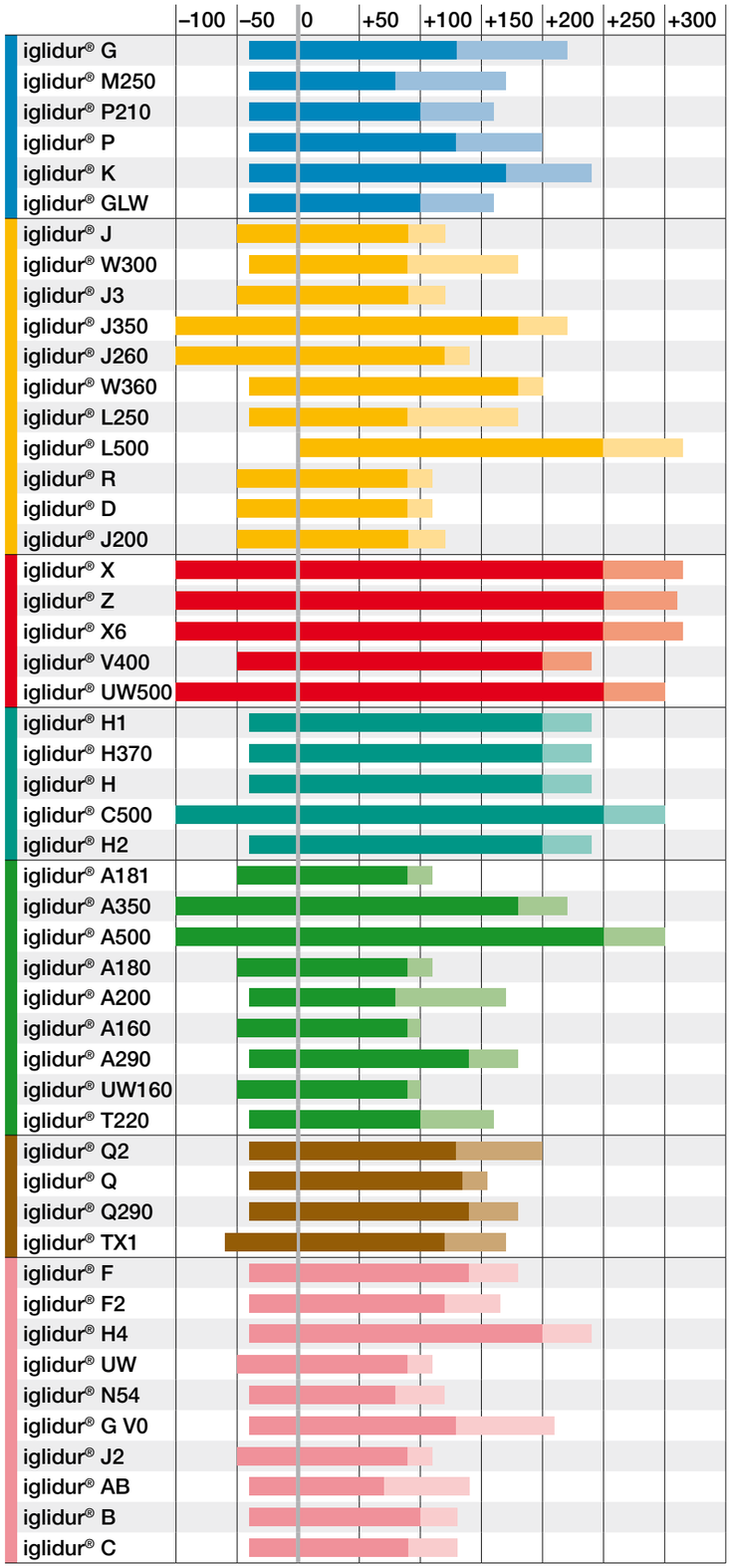


Diagram 10: Comparison of the continuous and short-term upper application temperature limits [°C]

Material	Temperature [°C]
iglidur® G	+80
iglidur® M250	+60
iglidur® P210	+50
iglidur® P	+90
iglidur® K	+70
iglidur® GLW	+80
iglidur® J	+60
iglidur® W300	+90
iglidur® J3	+60
iglidur® J350	+140
iglidur® J260	+80
iglidur® W360	+90
iglidur® L250	+55
iglidur® L500	+135
iglidur® R	+50
iglidur® D	+50
iglidur® J200	+60
iglidur® X	+135
iglidur® Z	+145
iglidur® X6	+165
iglidur® V400	+100
iglidur® UW500	+150
iglidur® H1	+80
iglidur® H370	+100
iglidur® H	+120
iglidur® C500	+130
iglidur® H2	+110
iglidur® A181	+60
iglidur® A350	+140
iglidur® A500	+130
iglidur® A180	+60
iglidur® A200	+50
iglidur® A160	+60
iglidur® A290	+110
iglidur® UW160	+70
iglidur® T220	+50
iglidur® Q2	+70
iglidur® Q	+50
iglidur® Q290	+80
iglidur® TX1	+100
iglidur® F	+105
iglidur® F2	+70
iglidur® H4	+110
iglidur® UW	+80
iglidur® N54	+60
iglidur® G V0	+100
iglidur® J2	+60
iglidur® AB	+50
iglidur® B	+50
iglidur® C	+40

Table 04: 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 materials pairings that run well together.

▶ Shaft materials, **page 52**

Wear and pressure

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.

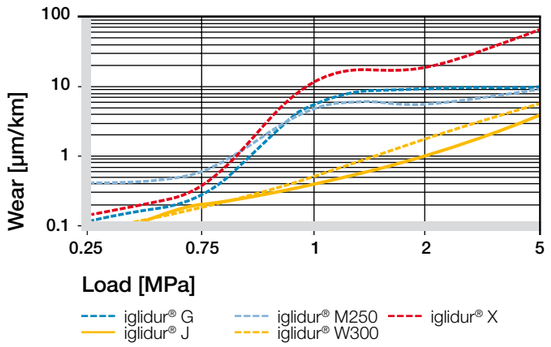


Diagram 11: Wear of iglidur® plain bearings under low pressures, Cf53 shaft, v = 0.1 m/s

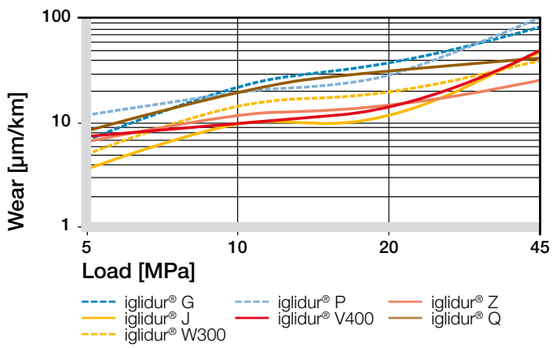


Diagram 12: Wear of iglidur® plain bearings at medium and high pressures, Cf53 shaft, v = 0.1 m/s

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. Table 05 compares the "wear limits". One particular exception is represented by iglidur® X. The wear resistance of iglidur® X increases greatly 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 self lubrication process result in the highest service life time. As no oil or grease is on the bearing, dirt particles can not 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 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 coefficients 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 surfaces of the sliding face can be so large that normal material blow-outs occur.

It is significant to note that wear by erosion is non linear. Moreover, it is random and can not be accurately predicted.

Picture 08: High wear resistance. Plain bearing in contact with sand

Picture 9: Wear experiments with aluminium shafts

Picture 10: Erosion damage due to shafts that are too smooth

Wear and shaft materials

The shaft is, next to 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. Fundamentally, the shaft is also worn, however, modern bearing systems are designed in a way that the wear of the shafts is so small that it can not be detected with traditional methods of measurement technology. Shafts can be distinguished and classified according to their hardness and according to the surface roughness.

▶ Coefficient of friction, **page 87**
▶ Wear resistance, **page 50**

The hardness of the shaft likewise 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 diagrams, 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 diagrams.

The small 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 in many bearing pairs. 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 typically small surface roughness, the danger of stick slip on hard chromed shafts is especially high.
With high-grade stainless steel 1.4112, a similarly good result is obtained. Case-hardened steel shafts (material key 1.1213) 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 load, good to very good results can be found with the right bearing material. It must be said on the other side, that no other shaft material shows a bigger variation of wear results with different bearing materials. Therefore, the choice of the most suitable bearing material is particularly important with the shaft materials 304 stainless steel and HR carbon steel.
The test results give only a sample of the existing data. All of the results shown were made with same loads and speeds.

Picture 11: Oscillating wear test rig for testing the wear in oscillating movements at low loads

Picture 12: Oscillating wear test rig for testing the wear in oscillating movements at medium loads

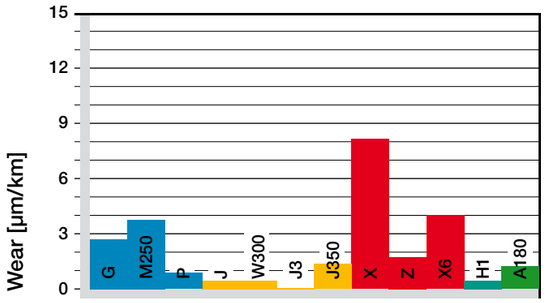


Diagram 13: Wear with Cf53 shaft, p = 1 MPa, v = 0.30 m/s Ra = 0.20 µm

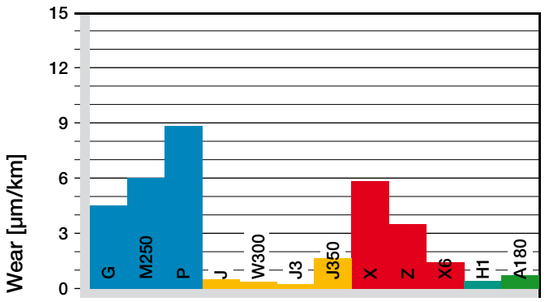


Diagram 14: Wear with 304 stainless steel shaft, p = 1 MPa, v = 0.30 m/s Ra = 0.20 µm

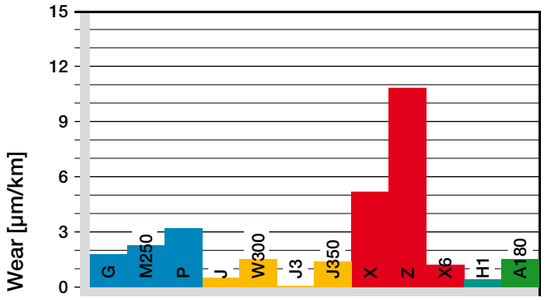


Diagram 15: Wear with HR carbon steel shaft, p = 1 MPa, v = 0.30 m/s Ra = 0.20 µm

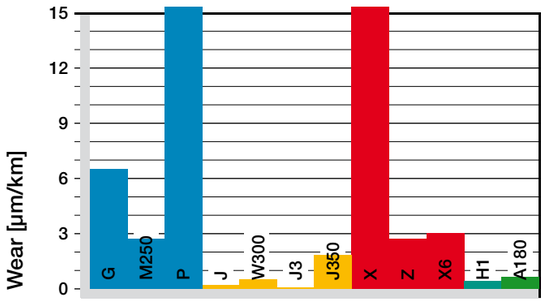


Diagram 16: Wear with hard chromed shaft, p = 1 MPa, v = 0.30 m/s Ra = 0.20 µm

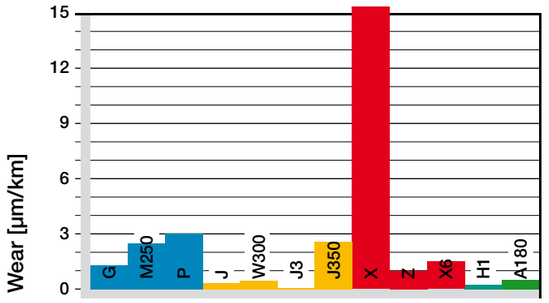


Diagram 17: Wear with hard chromed aluminium shaft, p = 1 MPa, v = 0.30 m/s Ra = 0.20 µm

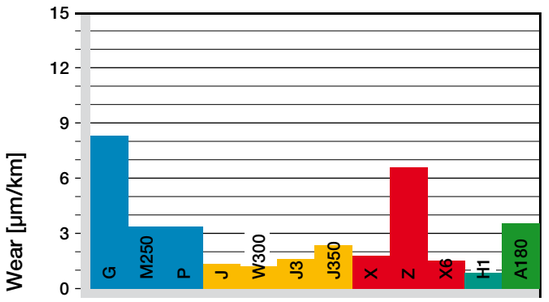


Diagram 18: Wear with a machine steel shaft, p = 1 MPa, v = 0.30 m/s Ra = 0.20 µm

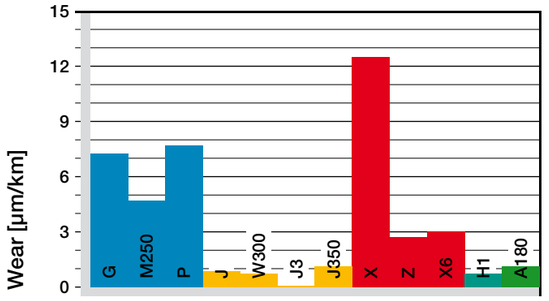


Diagram 19: Wear with high grade steel shaft, p = 1 MPa, v = 0.30 m/s Ra = 0.20 µm

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 loading. 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 running dry. The following overview should quickly assist you. You'll find a detailed list of chemical resistances in the rear of the catalogue.

▶ Chemical table, **page 1424**

Applications in the food industry

The iglidur® programme 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 serie (except of iglidur® A290) and of the iglidur® T220 are made according to the requirements of the American Food and Drugs Administration (FDA) for the repeated contact with food. iglidur® A290 material is made according to the requirements of the German federal agency BfR (Federal Institute for Risk Assessment).

Material	Hydro-carbons	Greases, oils without additives	Weak acids	Weak alkaline
iglidur® G	+	+	0 to –	+
iglidur® M250	+	+	0 to –	+
iglidur® P210	–	–	0	–
iglidur® P	–	+	0	–
iglidur® K	+	+	0 to –	+
iglidur® GLW	+	+	0 to –	+
iglidur® J	+	+	0 to –	+
iglidur® W300	+	+	0 to –	+
iglidur® J3	+	+	0 to –	+
iglidur® J350	+ to 0	+	+	+
iglidur® J260	+	0 to –	–	+ to 0
iglidur® W360	+	+	0 to –	+
iglidur® L250	+	+	0 to –	+
iglidur® L500	+	+	+	+
iglidur® R	+	+	0 to –	+
iglidur® D	+	+	0 to –	+
iglidur® J200	+	+	0 to –	+
iglidur® X	+	+	+	+
iglidur® Z	+	+	+	+
iglidur® X6	+	+	+	+
iglidur® V400	+	+	+	+
iglidur® UW500	+	+	+	+
iglidur® H1	+	+	+ to 0	+
iglidur® H370	+	+	+ to 0	+
iglidur® H	+	+	+ to 0	+
iglidur® C500	+	+	+	+
iglidur® H2	+	+	+ to 0	+
iglidur® A181	+	+	0 to –	+
iglidur® A350	+ to 0	+	+	+
iglidur® A500	+	+	+	+
iglidur® A180	+	+	0 to –	+
iglidur® A200	+	+	0 to –	+
iglidur® A160	+	+	+	+
iglidur® A290	+	+	0 to –	+
iglidur® UW160	+	+	+	+
iglidur® T220	–	+	0	–
iglidur® Q2	+	+	0 to –	+
iglidur® Q	+	+	0 to –	+
iglidur® Q290	+	+	0 to –	+
iglidur® TX1	+	+	+	+
iglidur® F	+	+	0 to –	+
iglidur® F2	–	+	0	–
iglidur® H4	+	+	+ to 0	+
iglidur® UW	+	+	0 to –	+
iglidur® N54	+	+	0 to –	+
iglidur® G V0	+	+	0 to –	+
iglidur® J2	+	+	0 to –	+
iglidur® AB	+	+	0 to –	+
iglidur® B	–	–	0 to –	–
iglidur® C	+	+	0 to –	+

Table 05 (right):
Chemical resistance of iglidur® materials
+ resistant
0 conditionally resistant
– not resistant
All data given concerns the chemical resistance at room temperature [+20 °C]

UV resistance

Radioactive radiation

A comparison of the resistance to radioactive radiation is shown in table 07. By a wide margin iglidur® X, UW500, and Z are the most resistant materials.

UV resistance

Plain bearings can be exposed to constant weathering when they are used outside. 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 the 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 09: Electrical properties 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 iglidur® 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, J, W300, P210, J260, J200, R, D, C500, A180, A290, UW160, T220, F, F2, Q, Q2, UW, G V0, J2, B, GLW, L500, Q290, AB	$3 \cdot 10^2$ Gy
J350, H, H1, H370, H2, H4, A181, A350, W360, TX1	$2 \cdot 10^2$ Gy

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

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	$< 10^5$

Table 07: Electrical properties of conductive iglidur® plain bearings

Material	UV resistance
iglidur® G	5
iglidur® M250	4
iglidur® P210	3
iglidur® P	5
iglidur® K	4
iglidur® GLW	5
iglidur® J	3
iglidur® W300	3
iglidur® J3	3
iglidur® J350	2
iglidur® J260	1
iglidur® W360	3
iglidur® L250	3

Material	UV resistance
iglidur® L500	5
iglidur® R	4
iglidur® D	4
iglidur® J200	4
iglidur® X	5
iglidur® Z	3
iglidur® X6	5
iglidur® V400	3
iglidur® UW500	5
iglidur® H1	2
iglidur® H370	5
iglidur® H	2
iglidur® C500	4

Material	UV resistance
iglidur® H2	1
iglidur® A181	3
iglidur® A350	4
iglidur® A500	3
iglidur® A180	3
iglidur® A200	4
iglidur® A160	4
iglidur® A290	4
iglidur® UW160	4
iglidur® T220	2
iglidur® Q2	5
iglidur® Q	2
iglidur® Q290	4

Material	UV resistance
iglidur® F	5
iglidur® F2	3
iglidur® H4	1
iglidur® UW	3
iglidur® N54	4
iglidur® G V0	3
iglidur® J2	2
iglidur® AB	2
iglidur® B	1
iglidur® C	1

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

Assembly instructions

iglidur® bearings are press-fit bearings. The inner diameter adjusts only after press-fit in the proper housing bore with a recommended (H7) tolerance. The before press-fit oversized dimension can be up to 2 % of the inner diameter. In this manner, the secure press-fitting of the bearing is achieved. Axial or radial shifts in the housing are also prevented.
The bore in the housing should be finished in the recommended tolerance (usually H7) for all bearings. The bearing should be press-fitted using a flat press. The use of centring or calibrating pins can cause damage to the bearing and create a larger amount of clearance.

Adhesion

Using an adhesive to fit an iglidur® bearing is not usually necessary. If the press-fit of the bearing could be lost because of high temperatures, the use of a plain bearing having a higher temperature resistance is recommended. If however, the securing of the bearing by adhesives is planned, individual tests are necessary in each case. The transfer of successful results to other application cases is not possible.

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 running surfaces is to be avoided if possible. Higher wear rate is most often the result.
An exception is the iglidur® M250 which is very suitable for secondary machining. In other iglidur® plain bearings, disadvantages of a sliding surface machining can be counteracted by lubrication during installation.

Picture 14: The bearing should be press-fitted using a flat press

Press-fitting plain bearings made easy

iglidur® plain bearings are press-fit bearings, which are dimensionally oversized and pressed into a housing with H7 tolerance. This is not always done in an assembly line using suitable tools. The igus® assembly aid flexibly and reliably accepts plain bearings for shaft diameters from 13–50 mm (PT-1350) and 6–20 mm (PT-0620) and even permits assembly using a hammer – simple and fast.

PT-1350

PT-0620

Process	Turning	Drilling	Milling
Tool material	SS	SS	SS
Feed [mm]	0.1…0.5	0.1…0.5	to 0.5
Tool relief angle	5…15	10…12	3
Tool rake angle	0…10	3…5	
Cutting speed [m/min]	200…500	50…100	to 1,000

Table 09: Guidelines for machining

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 tolerance. For wall thickness, the rule is: The thicker the bearings are, the larger the tolerances must be. Thus, different tolerance classes exist for iglidur® plain bearings. Within these tolerances, iglidur® plain bearings can operate in the permissible temperature range and in humidity conditions up to 70 % according to the installation recommendations. Should higher air moisture levels be present, or the bearing is used under water, we provide advice with regard to applications, in order to help you use your bearings correctly.

Testing methods

iglidur® bearings are press-fit bearings for housings with an H7 standard bore. 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 test is performed when the bearing is installed in a bore with the minimum specified dimension; both using a 3 point probe and a Go-No-Go gauge.

- The "Go-Side" of the Go-No-Go gauge, pressed into the bore, must pass easily through the bearing
- With the 3 point probe, the inner diameter of the bearing must lie within the prescribed tolerance on the measurement plane (diagram 20)

Troubleshooting

In spite of careful manufacturing and assembly of the bearings, differences and questions regarding the recommended installation dimensions 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 bore 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 bore does not meet the recommended housing bore specifications (usually H7)
- The housing is made out of a soft material that was expanded by the bearing installation
- The shaft is not within recommended tolerances
- The measuring doesn't take place within the measuring lines

Picture 13: Measurement of the inner diameter of a press-fit plain bearings

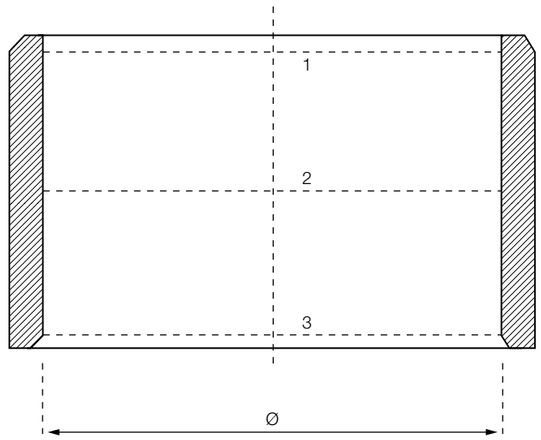


Diagram 20: Positions of the measurement lines

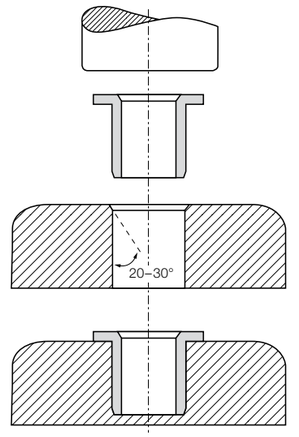


Diagram 21: Press-fit of the bearing (section view)

Tolerances

Installation tolerances

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

ISO tolerances for iglidur® bearings [mm]

Diameter	Housing	Shaft	Tolerances according to ISO 3547-1		
d1	H7	h9	E10	F10	D11
up to 3	0 +0.010	0–0.025	+0.014 +0.054	+0.006 +0.046	+0.014 +0.054
> 3 to 6	0 +0.012	0–0.030	+0.020 +0.068	+0.010 +0.058	+0.020 +0.068
> 6 to 10	0 +0.015	0–0.036	+0.025 +0.083	+0.013 +0.071	+0.025 +0.083
> 10 to 18	0 +0.018	0–0.043	+0.032 +0.102	+0.016 +0.086	+0.032 +0.102
> 18 to 30	0 +0.021	0–0.052	+0.040 +0.124	+0.020 +0.104	+0.040 +0.124
> 30 to 50	0 +0.025	0–0.062	+0.050 +0.150	+0.025 +0.125	+0.050 +0.150
> 50 to 80	0 +0.030	0–0.074	+0.060 +0.180	+0.030 +0.150	+0.060 +0.180
> 80 to 120	0 +0.035	0–0.087	+0.072 +0.212	+0.036 +0.120	+0.072 +0.212
>120 to 180	0 +0.040	0–0.100	+0.085 +0.245	+0.043 +0.143	+0.145 +0.395

Material	E10	F10	D11
iglidur® G	●		
iglidur® M250			●
iglidur® P210	●		
iglidur® P	●		
iglidur® K	●		
iglidur® GLW	●		
iglidur® J	●		
iglidur® W300	●		
iglidur® J3	●		
iglidur® J350		●	
iglidur® J260	●		
iglidur® W360	●		
iglidur® L250	●		
iglidur® L500		●	
iglidur® R	●		
iglidur® D	●		
iglidur® J200	●		
iglidur® X		●	
iglidur® Z		●	
iglidur® X6		●	
iglidur® V400		●	
iglidur® UW500		●	
iglidur® H1		●	
iglidur® H370		●	
iglidur® H		●	

Material	E10	F10	D11
iglidur® C500		●	
iglidur® H2		●	
iglidur® A181	●		
iglidur® A350		●	
iglidur® A500		●	
iglidur® A180	●		
iglidur® A200			●
iglidur® A160	●		
iglidur® A290			●
iglidur® UW160	●		
iglidur® T220	●		
iglidur® Q2	●		
iglidur® Q	●		
iglidur® Q290	●		
iglidur® TX1	●		
iglidur® F			●
iglidur® F2	●		
iglidur® H4		●	
iglidur® UW	●		
iglidur® N54	●		
iglidur® G V0	●		
iglidur® J2	●		
iglidur® AB	●		
iglidur® B			●
iglidur® C			●

Table 10: Tolerances of iglidur® materials

igus® formula

Surface pressure

Radial bearing:

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

axial bearing:

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

Surface speed

Rotational motion:

$$v = \frac{n \cdot d1 \cdot \pi}{60 \cdot 1.000} \left[\frac{m}{s}\right]$$

Oscillating motion:

$$v = d1 \cdot \pi \cdot \frac{2 \cdot ß}{360} \cdot \frac{f}{1.000} \left[\frac{m}{s}\right]$$

pv value

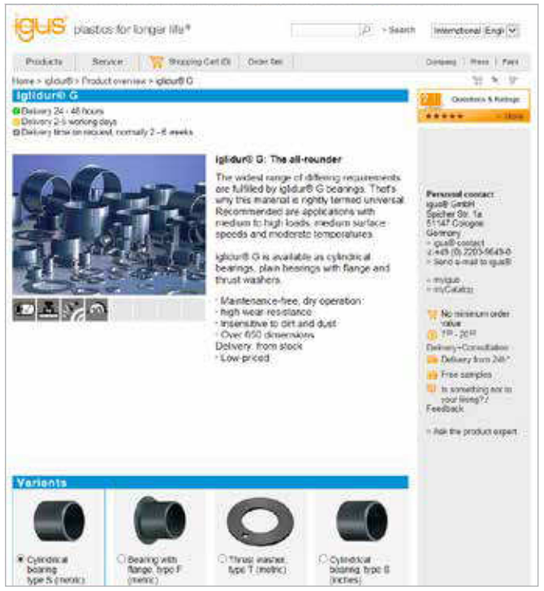
$$pv_{perm.} = \left(\frac{[K1 \cdot \pi \cdot \lambda k \cdot \Delta T]}{\mu \cdot s} + \frac{[K2 \cdot \pi \cdot \lambda s \cdot \Delta T]}{\mu \cdot b1 \cdot 2}\right) \cdot 10^{-3}$$

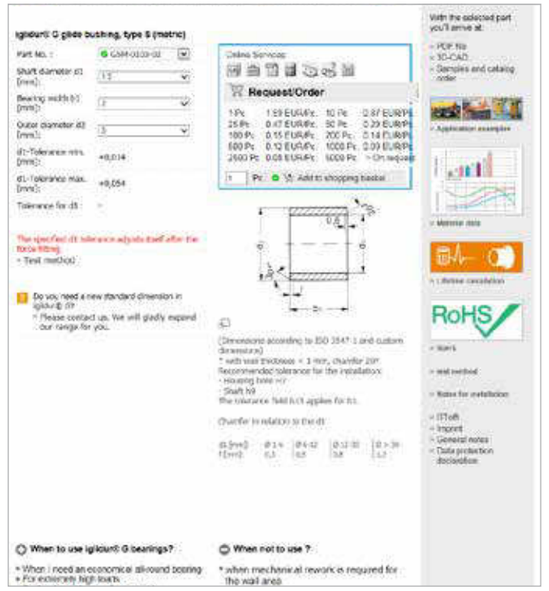
Coefficient of friction

$$F_R = \mu \cdot F$$

Short cuts and formulas for polymer plain bearings			
F	=	load	[N]
F_R	=	coefficient of friction	[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 of motion per cycle	[°]
f	=	frequency in Hertz	
$K1, K2$	=	constant for heat dissipation	
		(K1 = 0.5 K2 = 0.042)	[N]
s	=	bearing wall thickness	[mm]
μ	=	coefficient of friction	
λs	=	thermal conductivity of the shaft	
λk	=	thermal conductivity of the bearing	
ΔT	=	$(T_a - T_u)$	
T_u	=	ambient temperature	[°C]
T_a	=	max. application temperature	[°C]

Quicklinks

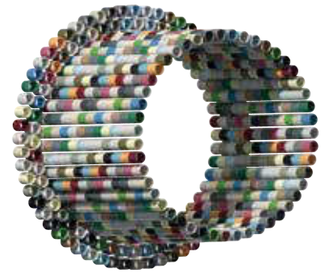




Quicklinks for more information and additional features. Visit directly your chosen product online, e.g. ▶ www.igus.eu/G and you'll find more details, 3D-CAD files, DXF-files, PDF-downloads, application examples and many more for your chosen igus® product.

iglidur® standards: More than 3,000 articles from stock

- Choice of 16 standard iglidur® materials
- Sizes up to shaft diameter 50 mm according to DIN ISO3547
- Lubrication and maintenance-free
- Service life can be calculated online



iglidur® standards | Materials overview

iglidur® for all kind of applications – from stock

All-rounder
▶ From page 75

G
The classic all-rounder
▶ From page 79

M250
The robust all-rounder according to DIN 2795
▶ From page 95

P210
Specialist for pivoting, rolling applications and more
▶ From page 105

P
The cost-effective outdoor all-rounder
▶ From page 113

K
Versatile and cost-effective

GLW
Low-cost material for mass production

Endurance runner
▶ From page 137

J
The versatile long distance runner
▶ From page 141

W300
The classic endurance runner up to 30 MPa
▶ From page 153

J3
The new endurance runner: specialist for pivoting and pulsating loads
▶ From page 165

J350
Endurance runner with high dimensional stability at high temperature
▶ From page 173

J260
Ideal for plastics shafts

W360
Endurance runner up to +180 °C

L250
For fast rotating applications

L500
For extreme rotational speeds

R
Low-cost

D
Low-cost with silicone

J200
Specialist for aluminium shafts

High temperatures
up to +250 °C
▶ From page 233

X
The specialist for chemicals and temperatures
▶ From page 237

Z
Extremely long service life under extreme conditions
▶ From page 247

X6
The high temperature specialist up to +250 °C

V400
For soft shafts and high temperatures

UW500
For hot liquids

High media resistance
▶ From page 279

H1
Endurance runner with high media resistance
▶ From page 283

H370
Extremely long service life under water
▶ From page 291

H
The classic with a high level of media and temperature-resistance

C500
High temperature endurance runner

H2
The low-cost specialist for chemicals and temperatures

Contact with food
▶ From page 321

A181
The universal bearing for contact with food
▶ From page 325

A350
The endurance runner at higher temperatures in the food sector
▶ From page 333

A500
The media and temperature specialist in the food sector
▶ From page 341

A180
The "Food-all-rounder"

A200
The "food-classic" for low speeds

A160
"Food" bearing with high media resistance up to 90 °C

A290
The Robust

UW160
Suitable for contact with drinking water

T220
For the tobacco industry

Applications with high loads
▶ From page 397

Q2
The durable heavy duty bearing
▶ From page 401

Q
The peak of stability

Q290
Heavy-duty on soft shafts

TX1
The high load bearing up to 200 MPa static and 140 MPa dynamic

Special application areas
▶ From page 431

F
Electrically conductive

F2
ESD compatible all-rounder

H4
The automotive standard

UW
For fast rotation under water

N54
The biopolymer

G V0
Low-cost all-rounder for fire protection

J2
Versatile and cost-effective

AB
The first antibacterial iglidur® bearing

B
The flexible

C
Free from PTFE and silicone

16 iglidur® standards with more than 3,000 articles from stock

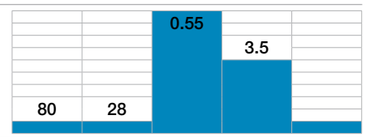
The most affordable bearing that works in a suitable size for any application

16 iglidur® standards, 1321 new articles: The iglidur® standard product range now features standardisation for 16 central materials with the most common standard dimensions (up to a 50 mm shaft diameter) – with or without flange. This expands the standard product range to more than 3,000 available sizes up to a 195 mm shaft diameter. Finding, calculating and ordering the most affordable bearing that is guaranteed to work has never been easier; for (virtually) any application from high-temperature to salt water, from foodstuffs to automotive.

- Lubrication and maintenance-free
- Service life can be calculated online
- No minimum order value
- From batch size 1

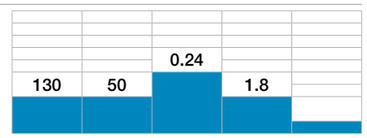
iglidur® G – The classic all-rounder
Excellent price-performance ratio
▶ Page 79

iglidur® M250 – The robust all-rounder according to DIN ISO 2795
Excellent vibration dampening
▶ Page 95

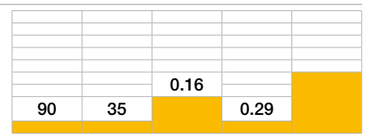


iglidur® P210 – Specialist for pivoting, rolling applications and more
Good coefficients of friction and wear on almost every shaft
▶ Page 105

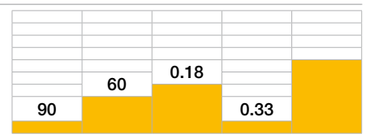
iglidur® P – The cost-effective outdoor all-rounder
No moisture absorption even with high ambient humidity
▶ Page 113



iglidur® J – The versatile endurance runner
High wear resistance on (almost) all shafts, very low coefficients of friction
▶ Page 141



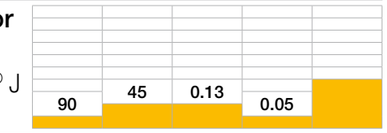
iglidur® W300 – The classic endurance runner up to 30 MPa
Excellent wear resistance on (virtually) all shafts
▶ Page 153



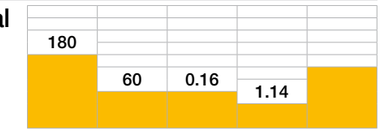
[123] Max. long-term application temperature; [124] Max. permissible surface pressure at +20 °C; [125] Best combination for p = 1 MPa, v = 0.3 m/s, rotating

iglidur® standards | Advantages

iglidur® J3 – The new endurance runner: specialist for panning and pulsating loads
Up to 10 MPa up to three times more wear resistant than iglidur® J
▶ Page 165

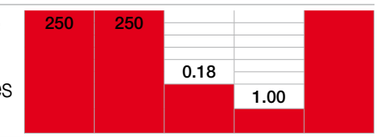


iglidur® J350 – Endurance runner with high dimensional stability at high temperature
Can be used with many kinds of shafts and loads
▶ Page 173

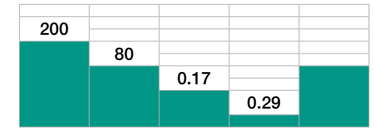


iglidur® X – The chemical and temperature specialist
Up to 150 MPa static
▶ Page 237

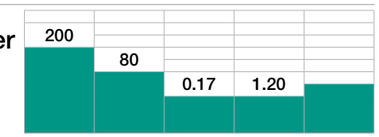
iglidur® Z – Extremely long service life under extreme conditions
Resistant to wear and impact even at high loads and temperatures
▶ Page 247



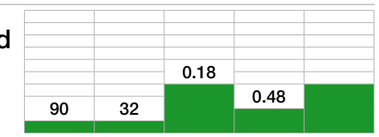
iglidur® H1 – Endurance runner with high media resistance
Excellent coefficients of friction and wear
▶ Page 283



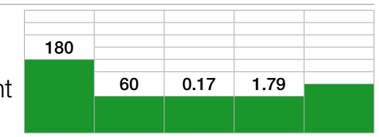
iglidur® H370 – Extremely long service life under water
High media resistance
▶ Page 291



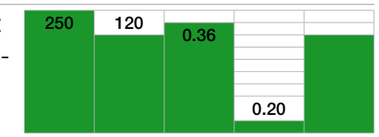
iglidur® A181 – The universal bearing for contact with food
FDA- and EC10/2011 compliant
▶ Page 325



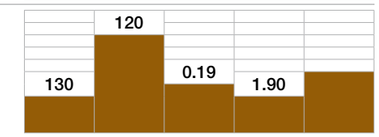
iglidur® A350 – The endurance runner at higher temperatures in the food sector
FDA- and EC10/2011 compliant, extremely wear-resistant
▶ Page 333



iglidur® A500 – The media and temperature specialist in the food sector; FDA- and EC10/2011 compliant; extremely wear-resistant for high temperatures
▶ Page 341



iglidur® Q2 – The durable heavy duty bearing
Combined wear resistance and compressive strength at high loads
▶ Page 401



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

iglidur® standards | Selection according to main criteria

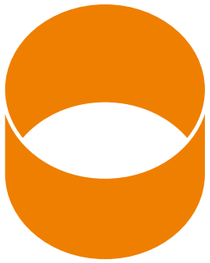
iglidur®	G	M250	P210	P	J	W300	J3	J350	X	Z	H1	H370	A181	A350	A500	Q2
Installation tolerances	E10	D11	E10	E10	E10	E10	E10	F10	F10	F10	F10	F10	E10	F10	F10	E10
Descriptive technical specifications																
Wear resistance at +23 °C																
Wear resistance at +90 °C																
Wear resistance at +150 °C																
Low coefficients of friction																
Low moisture absorption																
Wear resistance under water																
High media resistance																
Edge pressure																
Resistant to impacts/shock																
Resistant to dirt																
For high loads (>60 MPa)	●							●	●	●	●	●		●	●	●
Corrosion-free	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Electrically conductive									●			●				
Approvals and standards																
Dimensions in accordance with DIN	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
RoHS-II 2011/65/EC	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
FDA- and EC 10/2011 compliant													●	●	●	
Fire class in accordance with UL-94	HB	V-2	HB	HB	HB	HB	HB	V-0	V-0	V-0	V-0	V-0	HB	V-0	V-1	HB
Availabilities / variants																
Type S, sleeve	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Type F, with flange	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Type T, thrust washer	●	●			●	●			●	●						
Bar stock, round material / tube		●	●		●	●	●	●	●		●		●	●		
Stock plate					●									●		
Available for speedicut machined components		●	●		●	●	●	●	●		●		●	●		
Moulded special parts	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

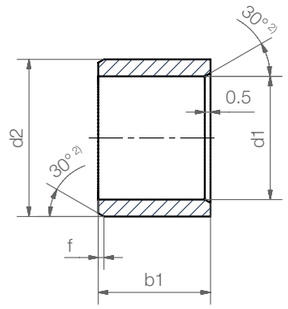
iglidur® standards | Material properties table

iglidur®	Unit	G	M250	P210	P	J	W300	J3	J350	X	Z	H1	H370	A181	A350	A500	Q2
General properties																	
Density	[g/cm³]	1.46	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	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. water absorption	[% weight]	4.0	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	0.18–0.40	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	0.12	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	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	112	70	120	73	125	70	55	170	95	55	135	48	110	140	240
Compressive strength	[MPa]	78	52	50	66	60	61	60	60	100	65	78	79	60	78	118	130
Max. permissible surface pressure at +20 °C	[MPa]	80	20	50	50	35	60	45	60	150	150	80	75	31	60	120	120
Shore-D-Hardness		81	79	75	75	74	77	73	80	85	81	77	82	76	76	83	80
Physical and thermal properties																	
Max. long-term application temperature	[°C]	+130	+80	+100	+130	+90	+90	+90	+180	+250	+250	+200	+200	+90	+180	+250	+130
Max. short-term application temperature	[°C]	+220	+170	+160	+200	+120	+180	+120	+220	+315	+310	+240	+240	+110	+210	+300	+200
Min. application temperature	[°C]	–40	–40	–40	–40	–50	–40	–50	–100	–100	–100	–40	–40	–50	–100	–100	–40
Thermal conductivity	[W/m · K]	0.24	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	10	8	4	10	9	13	7	5	4	6	5	11	8	9	8
Electrical properties																	
Specific volume resistance	[Ωcm]	$> 10^{13}$	$> 10^{13}$	$> 10^{12}$	$> 10^{13}$	$> 10^{13}$	$> 10^{13}$	$> 10^{12}$	$> 10^{13}$	$< 10^{5}$	$> 10^{11}$	$> 10^{12}$	$< 10^{5}$	$> 10^{12}$	$> 10^{11}$	$> 10^{14}$	$> 10^{13}$
Surface resistance	[Ω]	$> 10^{11}$	$> 10^{11}$	$> 10^{11}$	$> 10^{12}$	$> 10^{12}$	$> 10^{12}$	$> 10^{12}$	$> 10^{10}$	$< 10^{3}$	$> 10^{11}$	$> 10^{11}$	$< 10^{5}$	$> 10^{12}$	$> 10^{11}$	$> 10^{13}$	$> 10^{11}$

iglidur® standards | Product range

Sleeve bearing (Form S)





2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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 1337

G	The classic all-rounder
P210	Specialist for pivoting, rolling applications and more
P	The cost-effective outdoor all-rounder
J	The versatile long distance runner
W(300)	The classic endurance runner up to 30 MPa
J3	The new endurance runner: specialist for pivoting and pulsating loads
J350	Endurance runner with high dimensional stability at high temperature
X	The chemical and temperature specialist
Z	Extremely long service life under extreme conditions
H1	Endurance runner with high media resistance
H370	Extremely long service life under water
A181	The universal bearing for contact with food
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.
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)

Dimensions [mm]

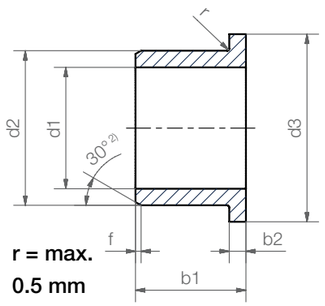
d1 126)	d2	b1	Part No.
22	25	25	☐SM-2225-25
22	25	30	☐SM-2225-30
24	27	15	☐SM-2427-15
24	27	20	☐SM-2427-20
24	27	25	☐SM-2427-25
24	27	30	☐SM-2427-30
25	28	15	☐SM-2528-15
25	28	20	☐SM-2528-20
25	28	25	☐SM-2528-25
25	28	30	☐SM-2528-30
28	32	20	☐SM-2832-20
28	32	25	☐SM-2832-25
28	32	30	☐SM-2832-30
30	34	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)

iglidur® standards | Product range

Flange bearing (Form F)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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 1337

iglidur® standards | Product range

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 long distance runner
W(300)	The classic endurance runner up to 30 MPa
J3	The new endurance runner: specialist for pivoting and pulsating loads
J350	Endurance runner with high dimensional stability at high temperature
X	The chemical and temperature specialist
Z	Extremely long service life under extreme conditions
H1	Endurance runner with high media resistance
H370	Extremely long service life under water
A181	The universal bearing for contact with food
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

_FM

Dimensions [mm]

d1[126]	d2	d3 d13	b1 h13	b2 –0.14	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)

Dimensions [mm]

d1[126]	d2	d3 d13	b1 h13	b2 –0.14	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® all-rounder materials for general purpose

All-rounder materials for general purpose

The iglidur® materials are summarised in this group, which have a universal use under normal conditions (temperature, media, etc.).
iglidur® G is the decathlete among iglidur® materials. It performs exceedingly well in almost all technical disciplines. 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.

- Lubrication and maintenance-free
- Lightweight
- Good price / performance ratio
- Predictable service life

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

Ø 1–195 mm
More dimensions on request

Imperial dimensions available
▶ From page 1337

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

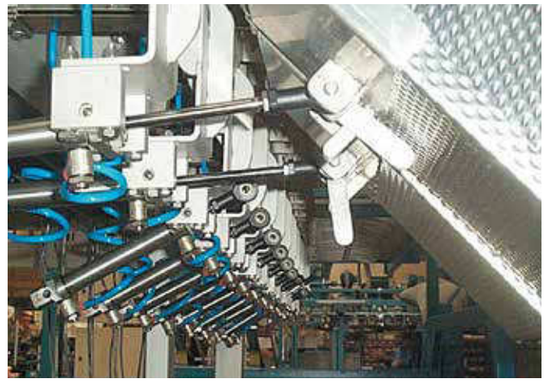
	Temperature [°C] [123]	Surface pressure [MPa] [124]	Coefficient of friction [µ] [125]	Wear [µm/km] [125]	Price index
iglidur® G – The classic all-rounder Excellent price-performance ratio ▶ Page 79	130	80	0.22	1.75	
iglidur® M250 – The robust all-rounder according to DIN ISO 2795 Excellent vibration dampening ▶ Page 95	80	20	0.56	2.10	
iglidur® P210 – Specialist for pivoting, rolling applications and more Good coefficients of friction and wear on almost every shaft ▶ Page 105	100	50	0.17	0.38	
iglidur® P – The cost-effective outdoor all-rounder No moisture absorption even with high ambient humidity ▶ Page 113	130	50	0.24	1.80	

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

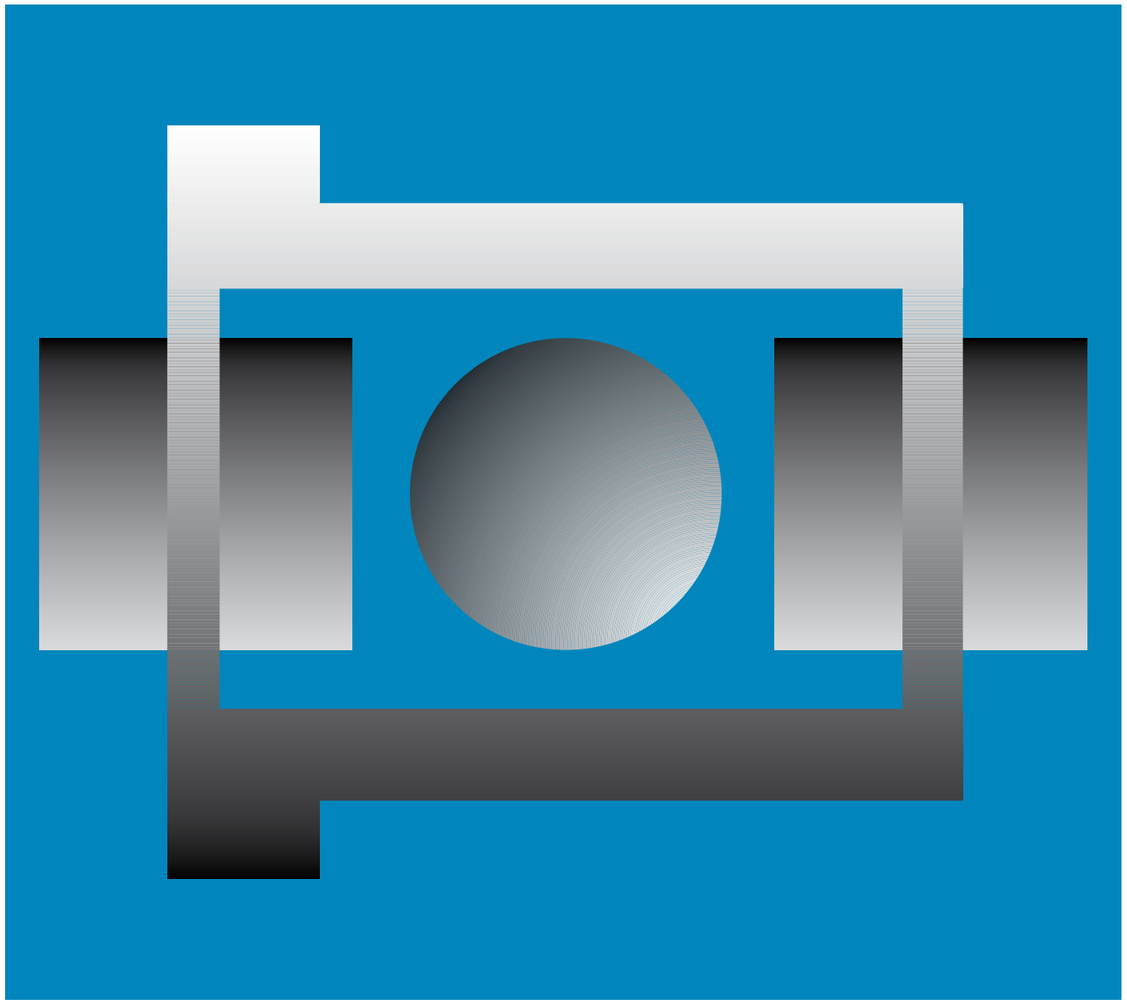
	Temperature [°C] [123]	Surface pressure [MPa] [124]	Coefficient of friction [µ] [125]	Wear [µm/km] [125]	Price index
iglidur® K – Versatile and cost-effective For medium temperatures and wet environments ▶ Page 123	170	50	0.16	0.60	
iglidur® GLW – Low-cost material for high quantities For applications with mostly static loads ▶ Page 131	100	80	0.23	8.30	

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

The special feature here is the economical plastic bearings, which serve as rear axle bearing in the housing and allows the sensors to last considerably longer.



Due to the noise-dampening properties of the polymer bearings, they contribute to a significant noise reduction.



The classic all-rounder – iglidur® G

- Over 650 sizes available from stock
- High wear resistance
- Resistance to dust and dirt
- Low-cost
- Lubrication and maintenance-free

iglidur® G | The classic all-rounder

Excellent price-performance ratio

iglidur® G bearings cover an extremely wide range of different requirements – they are truly "all-round". The material is ideal for universal applications, a truly "all-round". Typical applications include medium to high loads, medium sliding speeds and medium temperatures.

When to use it?

- Economical all-round performance bearing
- For low to average surface speeds
- When the bearing needs to run on different shaft materials
- For oscillating and rotational movements

When not to use it?

- When mechanical reaming of the wall surface is necessary
  ▶ iglidur® M250, page 95
- When the highest wear resistance is required
  ▶ iglidur® W300, page 153
- When universal chemical resistance is required
  ▶ iglidur® X, page 237
- When temperatures are constantly higher than +130 °C
  ▶ iglidur® H, page 299
  ▶ iglidur® X, page 237
  ▶ iglidur® H370, page 291
- For underwater use
  ▶ iglidur® H370, page 291

Typical application areas

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

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +130 °C
min. –40 °C

Ø 1.5–195 mm
More dimensions on request

Imperial dimensions available
▶ From page 1337

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

iglidur® G | Technical data

Material properties table

General properties	Unit	iglidur® G	Testing method
Density	g/cm³	1.46	
Colour		dark grey	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.7	DIN 53495
Max. water absorption	% weight	4.0	
Coefficient of sliding 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. long-term application temperature	°C	+130	
Max. short-term application temperature	°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 volume resistance	Ωcm	> 10^{13}	DIN IEC 93
Surface resistance	Ω	> 10^{11}	DIN 53482

Table 01: Material properties table

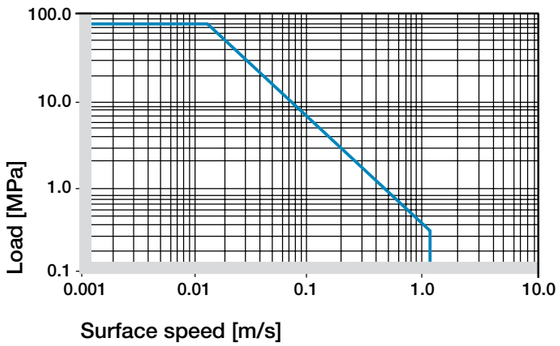


Diagram 01: Permissible pv values for iglidur® G bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® G plain bearings is approximately 0.7 % weight in standard climatic conditions. The saturation limit submerged in water is 4 % weight. This must be taken into account for these types of applications.

▶ Diagram, www.igus.eu/g-moisture

Vacuum

iglidur® G plain bearings outgas in a vacuum. Use in vacuum is only possible with dehumidified bearings.

Radiation resistance

Plain bearings made from iglidur® G are resistant to radiation up to an intensity of 3 · 10^2 Gy.

UV resistance

iglidur® G plain bearings are permanently resistant to UV radiation.

Medium	Resistance
Alcohol	+ to 0
Hydrocarbons	+
Greases, oils without additives	+
Fuels	+
Diluted acids	0 to –
Strong acids	–
Diluted alkalines	+
Strong alkalines	0

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

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.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® G plain bearings decreases. The diagram 02 shows this inverse relationship. However, at the long-term maximum temperature of +130 °C the permissible surface pressure is almost 35 MPa. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

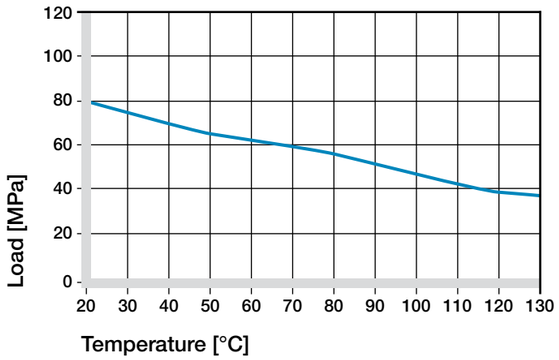


Diagram 02: Permissible maximum surface pressure as a function of temperature (80 MPa at +20 °C)

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

▶ Surface pressure, **page 41**

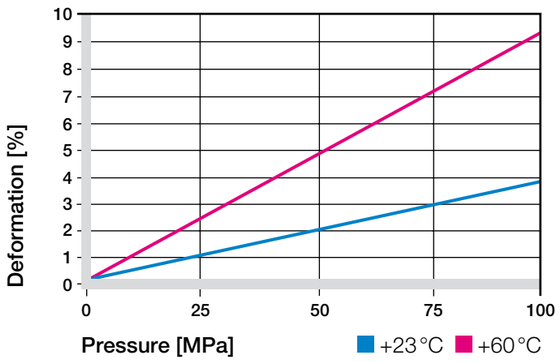


Diagram 03: Deformation under pressure and temperature

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 temperature level is rarely reached due to varying application conditions.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Constant	1	0.7	4
Short-term	2	1.4	5

Table 03: Maximum surface speeds

Temperatures

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

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

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

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

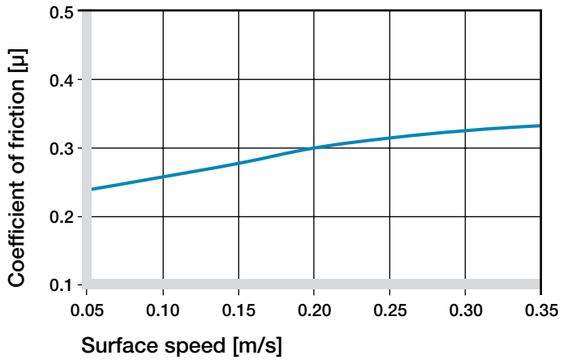


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

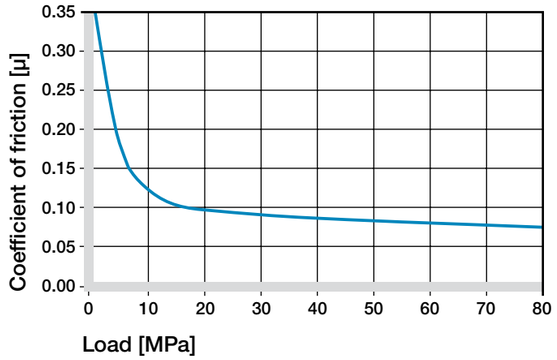


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

The friction and wear are also dependent to a large degree on the shaft material. 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 roughness Ra = 0.8 µm 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 more easily and thus the wear of the overall system. If the loads exceed 2 MPa 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 52**

iglidur® G	Dry	Greases	Oil	Water
C. o. f. μ	0.08–0.15	0.09	0.04	0.04

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

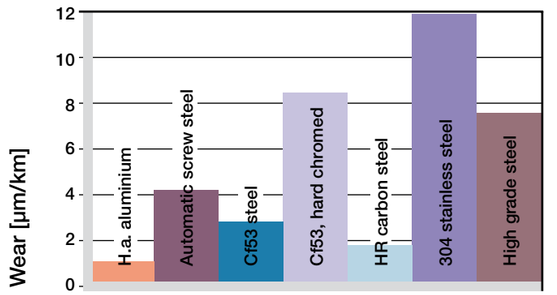


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

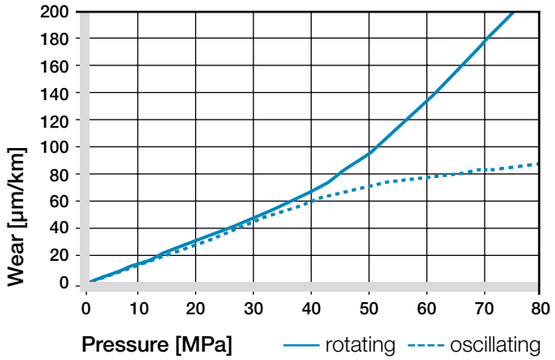


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Installation tolerances

iglidur® G plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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).

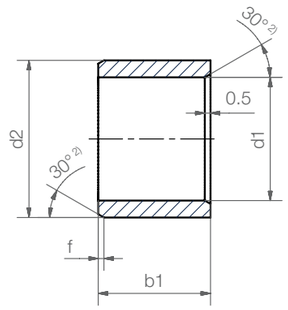
▶ Testing methods, **page 57**

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

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

iglidur® G | Product range

Sleeve bearing (Form S)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
G	S	M	-	0103	-	02
iglidur® material	Form S	Metric		Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

Imperial dimensions available
▶ From page 1348

Dimensions [mm]

d1	d1- Tolerance 3)	d2	b1 h13	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
4.5	+0.068	6.0	8.0	GSM-0406-08
4.0		7.0	5.5	GSM-0407-05
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		7.0	12.0	GSM-0607-12
6.0	+0.010	7.0	17.0	GSM-0607-17
6.0	+0.040	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
6.0		8.0	8.0	GSM-0608-08
6.0	+0.020	8.0	9.5	GSM-0608-09
6.0	+0.068	8.0	10.0	GSM-0608-10
6.0		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	+0.025	10.0	12.0	GSM-0810-12
8.0	+0.083	10.0	13.8	GSM-0810-13
8.0		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

3) After press-fit. Testing methods ▶ Page 57

iglidur® G | Product range

Sleeve bearing (Form S)

GSM

Dimensions [mm]

d1	d1- Tolerance 3)	d2	b1 h13	Part No.
8.0	+0.025	10.0	22.0	GSM-0810-22
8.0	+0.083	10.1	25.0	GSM-0810-25
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	+0.032 +0.102	14.0	10.0	GSM-1214-10
12.0		14.0	12.0	GSM-1214-12
12.0		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	+0.032 +0.102	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 +0.160	16.0	10.0	GSM-1216-10
12.0		16.0	20.0	GSM-1216-20
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 +0.102	16.0	3.0	GSM-1416-03
14.0		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 +0.059	16.0	10.0	GSM-1516-10
15.0		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 +0.102	18.0	10.0	GSM-1618-10
16.0		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	+0.032 +0.102	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

3) After press-fit. Testing methods ▶ Page 57

iglidur® G | Product range

Sleeve bearing (Form S)

Dimensions [mm]

d1	d1- Tolerance[3]	d2	b1 h13	Part No.
18.0	+0.032 +0.102	20.0	15.0	**GSM-1820-15**
18.0		20.0	20.0	**GSM-1820-20**
18.0		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**
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		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	+0.040	23.0	25.0	**GSM-2023-25**
20.0	+0.124	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	27.0	6.0	**GSM-2427-06**
24.0	+0.124	27.0	15.0	**GSM-2427-15**
24.0		27.0	20.0	**GSM-2427-20**
24.0	+0.040	27.0	24.0	**GSM-2427-24**
24.0	+0.124	27.0	25.0	**GSM-2427-25**
24.0		27.0	30.0	**GSM-2427-30**
25.0	+0.020	26.0	23.0	**GSM-2526-23**
25.0	+0.072	26.0	25.0	**GSM-2526-25**
25.0		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**
25.0		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	+0.040 +0.124	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	35.0	19.0	**GSM-2835-19**
28.0	+0.195	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		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	+0.040 +0.124	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		36.0	15.0	**GSM-3236-15**
32.0		36.0	20.0	**GSM-3236-20**
32.0	+0.050 +0.150	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**

[3] After press-fit. Testing methods ▶ Page 57

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Sleeve bearing (Form S)

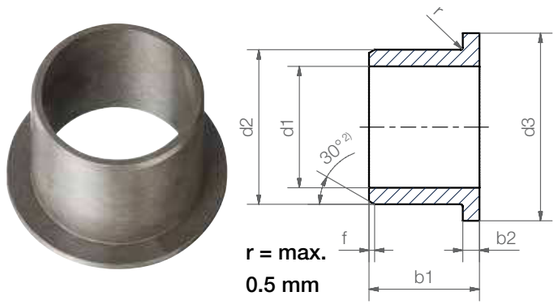
Dimensions [mm]

d1	d1- Tolerance[3]	d2	b1 h13	Part No.
35.0	+0.050 +0.150	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**
40.0		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	+0.060 +0.180	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**
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		130.0	100.0	**GSM-125130-100**
130.0		135.0	100.0	**GSM-130135-100**
135.0	+0.085 +0.245	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 57

iglidur® G | Product range

Flange bearing (Form F)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]				
G F M	- 03	04	- 02		
iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

Imperial dimensions available
▶ From page 1374

Dimensions [mm]

d1	d1- Tolerance 3)	d2	d3 d13	b1 h13	b2 –0.14	Part No.
3.0		4.5	7.5	2.0	0.5	GFM-0304-02
3.0	+0.014	4.5	7.5	2.7	0.75	GFM-0304-0275
3.0	+0.054	4.5	7.5	3.0	0.75	GFM-0304-03
3.0		4.5	7.5	5.0	0.75	GFM-0304-05
3.0		4.5	7.0	5.0	0.75	GFM-030407-05
4.0	+0.010	5.0	9.5	4.0	0.5	GFM-04050-04
4.0	+0.040	5.0	9.5	6.0	0.5	GFM-04050-06
4.0		5.5	9.5	2.5	0.75	GFM-0405-0255
4.0	+0.020	5.5	9.5	3.0	0.75	GFM-0405-03
4.0	+0.068	5.5	9.5	4.0	0.75	GFM-0405-04
4.0		5.5	9.5	6.0	0.75	GFM-0405-06
4.0		5.5	8.0	10.0	1.0	GFM-040508-10
5.0		6.0	10.0	3.5	0.5	GFM-0506-035
5.0	+0.010	6.0	10.0	4.0	0.5	GFM-0506-04
5.0	+0.040	6.0	10.0	5.0	0.5	GFM-0506-05
5.0		6.0	10.0	6.0	0.5	GFM-0506-06
5.0		6.0	10.0	15.3	0.5	GFM-0506-15
5.0		7.0	11.0	3.5	1.0	GFM-0507-03
5.0		7.0	11.0	4.0	1.0	GFM-0507-04
5.0		7.0	11.0	5.0	1.0	GFM-0507-05
5.0	+0.020	7.0	11.0	7.0	1.0	GFM-0507-07
5.0	+0.068	7.0	11.0	11.0	1.0	GFM-0507-11
5.0		7.0	11.0	14.5	1.0	GFM-0507-145
5.0		7.0	11.0	30.0	1.0	GFM-0507-30
5.0		7.0	9.5	5.0	1.0	GFM-050709-05
5.0		7.0	15.0	4.0	1.0	GFM-050715-04
6.0	+0.010	7.0	11.0	2.4	0.5	GFM-0607-024
6.0	+0.040	7.0	11.0	4.5	0.5	GFM-0607-045
6.0	+0.010	7.0	11.0	6.0	0.5	GFM-0607-06
6.0	+0.040	7.0	11.0	10.0	0.5	GFM-0607-10
6.0		8.0	12.0	2.5	1.0	GFM-0608-025
6.0		8.0	12.0	4.0	1.0	GFM-0608-04
6.0		8.0	12.0	4.8	1.0	GFM-0608-048
6.0		8.0	12.0	5.0	1.0	GFM-0608-05
6.0		8.0	12.0	6.0	1.0	GFM-0608-06
6.0	+0.020	8.0	12.0	7.0	1.0	GFM-0608-07
6.0	+0.068	8.0	12.0	8.0	1.0	GFM-0608-08
6.0		8.0	12.0	10.0	1.0	GFM-0608-10
6.0		8.0	12.0	25.0	1.0	GFM-0608-25
6.0		8.0	12.0	35.0	1.0	GFM-0608-35
6.0		8.0	14.0	2.8	1.0	GFM-060814-028
6.0		8.0	14.0	12.0	1.0	GFM-060814-12
7.0		8.0	12.0	1.7	0.5	GFM-0708-017
7.0	+0.013	8.0	12.0	3.0	0.5	GFM-0708-03
7.0	+0.049	8.0	12.0	6.0	0.5	GFM-0708-06
7.0		8.0	12.0	8.0	0.5	GFM-0708-08
7.0		9.0	15.0	3.5	1.0	GFM-0709-035
7.0	+0.025	9.0	15.0	6.0	1.0	GFM-0709-06
7.0	+0.083	9.0	15.0	10.0	1.0	GFM-0709-10
7.0		9.0	15.0	12.0	1.0	GFM-0709-12
7.0		9.0	19.0	10.0	1.0	GFM-070919-10
8.0		9.0	15.0	3.0	0.5	GFM-0809-03
8.0	+0.013	9.0	13.0	3.5	0.5	GFM-0809-035
8.0	+0.049	9.0	13.0	5.5	0.5	GFM-0809-055
8.0		9.0	13.0	8.0	0.5	GFM-0809-08
8.0		9.0	13.0	12.0	0.5	GFM-0809-12

3) After press-fit. Testing methods ▶ Page 57

GFM

iglidur® G | Product range

Flange bearing (Form F)

Dimensions [mm]

d1	d1- Tolerance 3)	d2	d3 d13	b1 h13	b2 –0.14	Part No.
8.0		10.0	15.0	3.0	1.0	GFM-0810-03
8.0		10.0	15.0	4.0	1.0	GFM-0810-04
8.0		10.0	15.0	5.5	1.0	GFM-0810-05
8.0		10.0	15.0	6.5	1.0	GFM-0810-065
8.0		10.0	15.0	7.5	1.0	GFM-0810-07
8.0	+0.025	10.0	15.0	9.5	1.0	GFM-0810-09
8.0	+0.083	10.0	15.0	10.0	1.0	GFM-0810-10
8.0		10.0	14.0	11.0	1.0	GFM-0810-11
8.0		10.0	15.0	15.0	1.0	GFM-0810-15
8.0		10.0	15.0	25.0	1.0	GFM-0810-25
8.0		10.0	15.0	30.0	1.0	GFM-0810-30
8.0		10.0	12.0	12.5	1.0	GFM-081012-125
8.0		10.0	13.0	8.0	1.0	GFM-081013-08
8.0	+0.040 +0.098	10.0	14.0	5.0	1.0	GFM-081014-05
8.0	+0.025	10.0	14.0	6.0	1.0	GFM-081014-06
8.0	+0.083	10.0	14.0	8.0	1.0	GFM-081014-08
8.0	+0.040 +0.098	10.0	14.0	10.0	1.0	GFM-081014-10
8.0		10.0	16.0	11.5	1.5	GFM-081016-11
8.0	+0.025	10.0	16.0	15.0	1.5	GFM-081016-15
8.0	+0.083	10.0	17.0	15.0	1.0	GFM-081017-15
8.0		10.0	18.0	3.0	1.0	GFM-081018-03
8.0	+0.040	12.0	16.0	6.0	2.0	GFM-0812-06
8.0	+0.130	12.0	21.0	8.0	2.0	GFM-081221-08
9.0	+0.013	10.0	15.0	6.5	0.5	GFM-0910-065
9.0	+0.049	10.0	15.0	17.5	0.5	GFM-0910-17
10.0	+0.013 +0.046	11.0	20.0	3.5	0.5	GFM-1011-03
10.0	+0.013	11.0	15.0	4.4	0.5	GFM-1011-044
10.0	+0.049	11.0	15.0	10.0	0.5	GFM-1011-10
10.0		12.0	18.0	3.5	1.0	GFM-1012-035
10.0		12.0	18.0	4.0	1.0	GFM-1012-04
10.0		12.0	18.0	5.0	1.0	GFM-1012-05
10.0		12.0	18.0	6.0	1.0	GFM-1012-06
10.0		12.0	18.0	7.0	1.0	GFM-1012-07
10.0		12.0	18.0	9.0	1.0	GFM-1012-09
10.0	+0.025	12.0	18.0	10.0	1.0	GFM-1012-10
10.0	+0.083	12.0	18.0	12.0	1.0	GFM-1012-12
10.0		12.0	18.0	15.0	1.0	GFM-1012-15
10.0		12.0	18.0	17.0	1.0	GFM-1012-17
10.0		12.0	15.0	12.0	1.0	GFM-101215-12
10.0		12.0	16.0	6.0	1.0	GFM-101216-06
10.0		12.0	16.0	9.0	1.0	GFM-101216-09
10.0		12.0	16.0	15.0	1.0	GFM-101216-15
11.0		12.0	16.0	6.0	0.5	GFM-1112-06
12.0	+0.016	13.0	17.0	3.0	0.5	GFM-1213-03
12.0	+0.059	13.0	15.0	12.0	0.5	GFM-121315-12
12.0		13.0	17.0	12.0	0.5	GFM-1213-12
12.0		14.0	20.0	3.0	1.0	GFM-1214-03
12.0		14.0	20.0	5.0	1.0	GFM-1214-05
12.0		14.0	20.0	6.0	1.0	GFM-1214-06
12.0		14.0	20.0	7.0	1.0	GFM-1214-07
12.0		14.0	20.0	9.0	1.0	GFM-1214-09
12.0		14.0	20.0	10.0	1.0	GFM-1214-10
12.0		14.0	20.0	11.0	1.0	GFM-1214-11
12.0		14.0	20.0	12.0	1.0	GFM-1214-12
12.0		14.0	20.0	15.0	1.0	GFM-1214-15
12.0		14.0	20.0	17.0	1.0	GFM-1214-17
12.0		14.0	20.0	20.0	1.0	GFM-1214-20
12.0		14.0	20.0	24.0	1.0	GFM-1214-24
12.0		14.0	20.0	31.0	1.0	GFM-1214-31
12.0		14.0	20.0	40.0	1.0	GFM-1214-40
12.0	+0.032	14.0	18.0	4.0	1.0	GFM-121418-04
12.0	+0.102	14.0	18.0	8.0	1.0	GFM-121418-08
12.0		14.0	18.0	10.0	1.0	GFM-121418-10
12.0		14.0	18.0	12.0	1.0	GFM-121418-12
12.0		14.0	18.0	15.0	1.0	GFM-121418-15
12.0		14.0	18.0	20.0	1.0	GFM-121418-20
13.0		15.0	22.0	6.0	1.0	GFM-1315-06
13.0		15.0	22.0	8.0	1.0	GFM-1315-08
13.0		15.0	22.0	40.0	1.0	GFM-131522-40
14.0		16.0	22.0	3.0	1.0	GFM-1416-03
14.0		16.0	22.0	4.0	1.0	GFM-1416-04
14.0		16.0	22.0	6.0	1.0	GFM-1416-06
14.0		16.0	22.0	8.0	1.0	GFM-1416-08
14.0		16.0	22.0	10.0	1.0	GFM-1416-10
14.0		16.0	22.0	12.0	1.0	GFM-1416-12
14.0		16.0	22.0	17.0	1.0	GFM-1416-17
14.0		16.0	22.0	21.0	1.0	GFM-1416-21
15.0		16.0	20.0	2.0	0.5	GFM-1516-02
15.0	+0.016	16.0	20.0	2.5	0.5	GFM-1516-025
15.0	+0.059	16.0	20.0	3.0	0.5	GFM-1516-03
15.0		16.0	20.0	15.0	0.5	GFM-1516-15
15.0		17.0	23.0	4.0	1.0	GFM-1517-04
15.0		17.0	23.0	4.5	1.0	GFM-1517-045
15.0	+0.032	17.0	23.0	5.0	1.0	GFM-1517-05
15.0	+0.102	17.0	23.0	9.0	1.0	GFM-1517-09
15.0		17.0	23.0	12.0	1.0	GFM-1517-12
15.0		17.0	23.0	17.0	1.0	GFM-1517-17

3) After press-fit. Testing methods ▶ Page 57

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Flange bearing (Form F)

Dimensions [mm]

d1	d1- Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
15.0		17.0	23.0	20.0	1.0	**GFM-1517-20**
15.0		18.0	24.0	32.0	1.5	**GFM-151824-32**
16.0		18.0	24.0	4.0	1.0	**GFM-1618-04**
16.0		18.0	24.0	5.0	1.0	**GFM-1618-05**
16.0		18.0	24.0	6.0	1.0	**GFM-1618-06**
16.0		18.0	24.0	9.0	1.0	**GFM-1618-09**
16.0		18.0	24.0	12.0	1.0	**GFM-1618-12**
16.0		18.0	24.0	16.0	1.0	**GFM-1618-16**
16.0		18.0	24.0	17.0	1.0	**GFM-1618-17**
16.0		18.0	24.0	21.0	1.0	**GFM-1618-21**
17.0		19.0	25.0	9.0	1.0	**GFM-1719-09**
17.0	+0.032	19.0	25.0	16.0	1.0	**GFM-1719-16**
17.0	+0.102	19.0	25.0	25.0	1.0	**GFM-1719-25**
18.0		20.0	26.0	4.0	1.0	**GFM-1820-04**
18.0		20.0	26.0	6.0	1.0	**GFM-1820-06**
18.0		20.0	26.0	9.0	1.0	**GFM-1820-09**
18.0		20.0	26.0	11.0	1.0	**GFM-1820-11**
18.0		20.0	26.0	12.0	1.0	**GFM-1820-12**
18.0		20.0	26.0	17.0	1.0	**GFM-1820-17**
18.0		20.0	26.0	22.0	1.0	**GFM-1820-22**
18.0		20.0	26.0	30.0	1.0	**GFM-1820-30**
18.0		20.0	26.0	32.0	1.0	**GFM-1820-32**
18.0		20.0	22.0	6.0	1.0	**GFM-182022-06**
18.0		22.0	26.0	28.0	2.0	**GFM-1822-28**
20.0	+0.020 +0.072	21.0	26.0	3.5	0.5	**GFM-2021-035**
20.0		21.0	25.0	15.0	0.5	**GFM-2021-15**
20.0		21.0	25.0	20.0	0.5	**GFM-2021-20**
20.0		23.0	30.0	7.0	1.5	**GFM-2023-07**
20.0		23.0	30.0	11.5	1.5	**GFM-2023-11**
20.0		23.0	30.0	16.5	1.5	**GFM-2023-16**
20.0		23.0	30.0	21.5	1.5	**GFM-2023-21**
20.0		23.0	26.0	7.0	1.5	**GFM-202326-07**
20.0		23.0	26.0	21.5	1.5	**GFM-202326-21**
20.0	+0.040 +0.124	23.0	28.0	15.0	1.5	**GFM-202328-15**
20.0		23.0	29.0	20.0	1.5	**GFM-202329-20**
22.0		24.0	30.0	25.0	1.0	**GFM-2224-25**
22.0		25.0	29.0	4.5	1.5	**GFM-222529-045**
22.0		25.0	30.0	21.5	1.5	**GFM-222530-215**
22.0		25.0	30.0	25.0	1.5	**GFM-222530-25**
22.0		25.0	35.0	31.5	1.5	**GFM-222535-315**
24.0		27.0	32.0	7.0	1.5	**GFM-2427-07**
24.0		27.0	32.0	10.5	1.5	**GFM-2427-10**
25.0	+0.020 +0.072	26.0	30.0	25.0	0.5	**GFM-2526-25**
25.0		27.0	32.0	7.0	1.0	**GFM-2527-07**
25.0		27.0	32.0	48.0	1.0	**GFM-2527-48**
25.0		28.0	35.0	11.5	1.5	**GFM-2528-11**
25.0		28.0	35.0	16.5	1.5	**GFM-2528-16**
25.0		28.0	35.0	21.5	1.5	**GFM-2528-21**
25.0		28.0	30.0	10.0	1.5	**GFM-252830-10**
26.0		30.0	37.0	12.0	2.0	**GFM-2630-12**
27.0		30.0	38.0	20.0	1.5	**GFM-2730-20**
28.0		30.0	36.0	10.0	1.0	**GFM-2830-10**
28.0		30.0	35.0	36.0	1.0	**GFM-2830-36**
28.0		30.0	35.0	48.0	1.0	**GFM-2830-48**
28.0		30.0	36.0	31.0	1.0	**GFM-283036-31**
28.0	+0.040	32.0	39.0	20.0	2.0	**GFM-283239-20**
28.0	+0.124	32.0	50.0	35.0	2.0	**GFM-283250-35**
30.0		31.0	36.0	20.0	0.5	**GFM-3031-20**
30.0		31.0	35.0	30.0	0.5	**GFM-3031-30**
30.0		32.0	37.0	4.0	1.0	**GFM-3032-04**
30.0		32.0	37.0	12.0	1.0	**GFM-3032-12**
30.0		32.0	37.0	17.5	1.0	**GFM-3032-17**
30.0		32.0	37.0	22.0	1.0	**GFM-3032-22**
30.0		34.0	42.0	9.0	2.0	**GFM-3034-09**
30.0		34.0	42.0	16.0	2.0	**GFM-3034-16**
30.0		34.0	42.0	20.0	2.0	**GFM-3034-20**
30.0		34.0	42.0	26.0	2.0	**GFM-3034-26**
30.0		34.0	42.0	37.0	2.0	**GFM-3034-37**
30.0		34.0	40.0	10.0	2.0	**GFM-303440-10**
32.0		36.0	40.0	16.0	2.0	**GFM-3236-16**
32.0		36.0	40.0	26.0	2.0	**GFM-3236-26**
34.0		38.0	50.0	35.0	2.0	**GFM-343850-35**
35.0		39.0	47.0	5.8	2.0	**GFM-3539-058**
35.0		39.0	47.0	7.0	2.0	**GFM-3539-07**
35.0		39.0	47.0	12.0	2.0	**GFM-3539-12**
35.0		39.0	47.0	16.0	2.0	**GFM-3539-16**
35.0		39.0	47.0	26.0	2.0	**GFM-3539-26**
35.0	+0.050	39.0	47.0	36.0	2.0	**GFM-3539-36**
38.0	+0.150	42.0	54.0	22.0	2.0	**GFM-3842-22**
40.0		44.0	52.0	7.0	2.0	**GFM-4044-07**
40.0		44.0	52.0	14.0	2.0	**GFM-4044-14**
40.0		44.0	52.0	20.0	2.0	**GFM-4044-20**
40.0		44.0	52.0	30.0	2.0	**GFM-4044-30**
40.0		44.0	52.0	40.0	2.0	**GFM-4044-40**
40.0		44.0	52.0	50.0	2.0	**GFM-4044-50**
40.0		46.0	50.0	20.0	2.0	**GFM-4046-20**
42.0		46.0	53.0	19.0	2.0	**GFM-4246-19**

[3] **After press-fit. Testing methods ▶ Page 57**

GFM

iglidur® G | Product range

Flange bearing (Form F)

Dimensions [mm]

d1	d1- Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
45.0		50.0	58.0	25.0	2.0	**GFM-4550-25**
45.0		50.0	58.0	30.0	2.0	**GFM-4550-30**
45.0		50.0	58.0	50.0	2.0	**GFM-4550-50**
50.0	+0.050	55.0	63.0	7.0	2.0	**GFM-5055-07**
50.0	+0.150	55.0	63.0	10.0	2.0	**GFM-5055-10**
50.0		55.0	63.0	25.0	2.0	**GFM-5055-25**
50.0		55.0	63.0	40.0	2.0	**GFM-5055-40**
50.0		55.0	63.0	50.0	2.0	**GFM-5055-50**
60.0		65.0	73.0	7.0	2.0	**GFM-6065-07**
60.0		65.0	73.0	22.0	2.0	**GFM-6065-22**
60.0		65.0	73.0	30.0	2.0	**GFM-6065-30**
60.0	+0.060 +0.180	65.0	73.0	50.0	2.0	**GFM-6065-50**
60.0		65.0	80.0	62.0	2.0	**GFM-606580-62**
65.0		70.0	78.0	50.0	2.0	**GFM-6570-50**
70.0		75.0	83.0	50.0	2.0	**GFM-7075-50**
70.0		75.0	83.0	85.5	2.0	**GFM-7075-855**
75.0		80.0	88.0	50.0	2.0	**GFM-7580-50**
80.0	+0.060 +0.180	85.0	93.0	50.0	2.5	**GFM-8085-50**
80.0		85.0	93.0	100.0	2.5	**GFM-8085-100**
85.0		90.0	98.0	100.0	2.5	**GFM-8590-100**
90.0		95.0	103.0	100.0	2.5	**GFM-9095-100**
95.0		100.0	108.0	100.0	2.5	**GFM-95100-100**
100.0	+0.072 +0.212	105.0	113.0	42.5	2.5	**GFM-100105-425**
100.0		105.0	113.0	100.0	2.5	**GFM-100105-100**
110.0		115.0	123.0	100.0	2.5	**GFM-110115-100**
120.0		125.0	133.0	80.0	2.5	**GFM-120125-80**
120.0		125.0	133.0	100.0	2.5	**GFM-120125-100**
125.0		130.0	138.0	100.0	2.5	**GFM-125130-100**
130.0	+0.085 +0.245	135.0	143.0	100.0	2.5	**GFM-130135-100**
140.0		145.0	153.0	100.0	2.5	**GFM-140145-100**
150.0		155.0	163.0	40.0	2.5	**GFM-150155-40**
150.0		155.0	163.0	100.0	2.5	**GFM-150155-100**
195.0	+0.100 +0.285	205.0	240.0	65.0	5.0	**GFM-195205240-65**

[3] **After press-fit. Testing methods ▶ Page 57**

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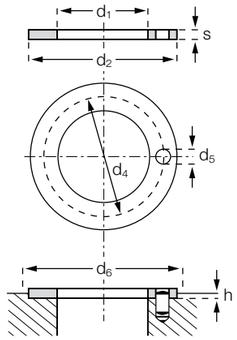
iglidur® G | Product range

Thrust washer (Form T)



Order key

Type	Dimensions [mm]					
G	T	M	-04	08	-005	
iglidur® material	Form T	Metric	Inner-Ø d1	Outer-Ø d2	Thickness s	

Dimensions according to ISO 3547-1 and special dimensions

Inch Imperial dimensions available
▶ From page 1391

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.
4.0	8.0	0.5	[4]	[4]	0.2	8.0	**GTM-0408-005**
4.0	9.0	0.6	[4]	[4]	0.3	9.0	**GTM-0409-006**
4.0	9.0	1.6	[4]	[4]	0.3	9.0	**GTM-0409-016**
4.0	10.0	0.5	[4]	[4]	0.2	10.0	**GTM-0410-005**
4.0	11.0	0.5 (-0.06)	[4]	[4]	0.2	11.0	**GTM-0411-005**
5.0	9.5	0.6	[4]	[4]	0.3	9.5	**GTM-0509-006**
6.0	11.0	1.0	[4]	[4]	0.7	11.0	**GTM-0611-010**
6.0	12.0	1.5	[4]	[4]	1.0	12.0	**GTM-0612-015**
6.0	15.0	1.5	[4]	[4]	1.0	15.0	**GTM-0615-015**
6.0	20.0	1.5	13.0	1.5	1.0	20.0	**GTM-0620-015**
7.0	12.0	0.5	[4]	[4]	0.2	12.0	**GTM-0712-005**
7.0	13.0	0.5	[4]	[4]	0.2	13.0	**GTM-0713-005**
8.0	15.0	0.5	[4]	[4]	0.2	15.0	**GTM-0815-005**
8.0	15.0	1.5	[4]	[4]	1.0	15.0	**GTM-0815-015**
8.0	18.0	1.0	[4]	[4]	0.7	18.0	**GTM-0818-010**
8.0	18.0	1.5	13.0	1.5	1.0	18.0	**GTM-0818-015**
8.0	18.0	2.0	[4]	[4]	1.5	18.0	**GTM-0818-020**
9.0	13.0	1.0	[4]	[4]	0.7	13.0	**GTM-0913-010**
9.0	18.0	1.5	13.5	1.5	1.0	18.0	**GTM-0918-015**
10.0	17.8	0.5	[4]	[4]	0.2	17.8	**GTM-1018-005**
10.0	18.0	1.0	[4]	[4]	0.7	18.0	**GTM-1018-010**
10.0	18.0	1.5	[4]	[4]	1.0	18.0	**GTM-1018-015**
10.0	18.0	2.0	[4]	[4]	1.5	18.0	**GTM-1018-020**
10.0	20.0	1.5	[4]	[4]	0.7	20.0	**GTM-1020-015**
11.0	15.0	1.0	[4]	[4]	0.7	15.0	**GTM-1115-010**
11.0	27.0	0.5	[4]	[4]	0.2	27.0	**GTM-1127-005**
12.0	24.0	1.5	18.0	1.5	1.0	24.0	**GTM-1224-015**
12.2	30.0	1.5	[4]	[4]	1.0	30.0	**GTM-1230-015**

[4] Design without fixing bore

Thrust washer

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.
14.0	20.0	1.5	[4]	[4]	1.0	20.0	**GTM-1420-015**
14.0	26.0	1.5	20.0	2.0	1.0	26.0	**GTM-1426-015**
15.0	22.0	0.8	[4]	[4]	0.5	22.0	**GTM-1522-008**
15.0	19.0	0.8	[4]	[4]	0.5	19.0	**GTM-1519-008**
15.0	24.0	1.5	19.5	1.5	1.0	24.0	**GTM-1524-015**
15.0	24.0	2.75	[4]	[4]	2.0	24.0	**GTM-1524-0275**
16.0	28.0	1.0	[4]	[4]	0.7	28.0	**GTM-1628-010**
16.0	30.0	1.5	22.0	2.0	1.0	30.0	**GTM-1630-015**
18.0	32.0	1.5	25.0	2.0	1.0	32.0	**GTM-1832-015**
20.0	36.0	1.5	28.0	3.0	1.0	36.0	**GTM-2036-015**
22.0	30.0	1.5	[4]	[4]	1.0	30.0	**GTM-2230-015**
22.0	38.0	1.5	30.0	3.0	1.0	38.0	**GTM-2238-015**
24.0	42.0	1.5	33.0	3.0	1.0	42.0	**GTM-2442-015**
26.0	44.0	1.5	35.0	3.0	1.0	44.0	**GTM-2644-015**
28.5	35.8	0.5	[4]	[4]	0.2	35.8	**GTM-2835-005**
28.0	48.0	1.5	38.0	4.0	1.0	48.0	**GTM-2848-015**
32.0	45.8	1.0	[4]	[4]	0.7	45.8	**GTM-3246-010**
32.0	54.0	1.5	43.0	4.0	1.0	54.0	**GTM-3254-015**
38.0	62.0	1.5	50.0	4.0	1.0	62.0	**GTM-3862-015**
42.0	66.0	1.5	54.0	4.0	1.0	66.0	**GTM-4266-015**
48.0	60.0	2.0	61.0	4.0	1.5	74.0	**GTM-4860-020**
48.0	74.0	2.0	61.0	4.0	1.5	74.0	**GTM-4874-020**
52.0	78.0	2.0	65.0	4.0	1.5	78.0	**GTM-5278-020**
52.5	69.0	2.0	[4]	[4]	1.5	69.0	**GTM-52569-020**
62.0	78.0	2.0	[4]	[4]	1.5	78.0	**GTM-6278-020**
62.0	90.0	1.0	[4]	[4]	0.7	90.0	**GTM-6290-010**
62.0	90.0	2.0	76.0	4.0	1.5	90.0	**GTM-6290-020**
68.0	81.0	2.0	[4]	[4]	1.5	81.0	**GTM-6881-020**
78.0	114.0	1.5	[4]	[4]	1.0	114.0	**GTM-78114-015**
80.5	114.0	1.5	[4]	[4]	1.0	114.0	**GTM-80114-015**

[4] Design without fixing bore

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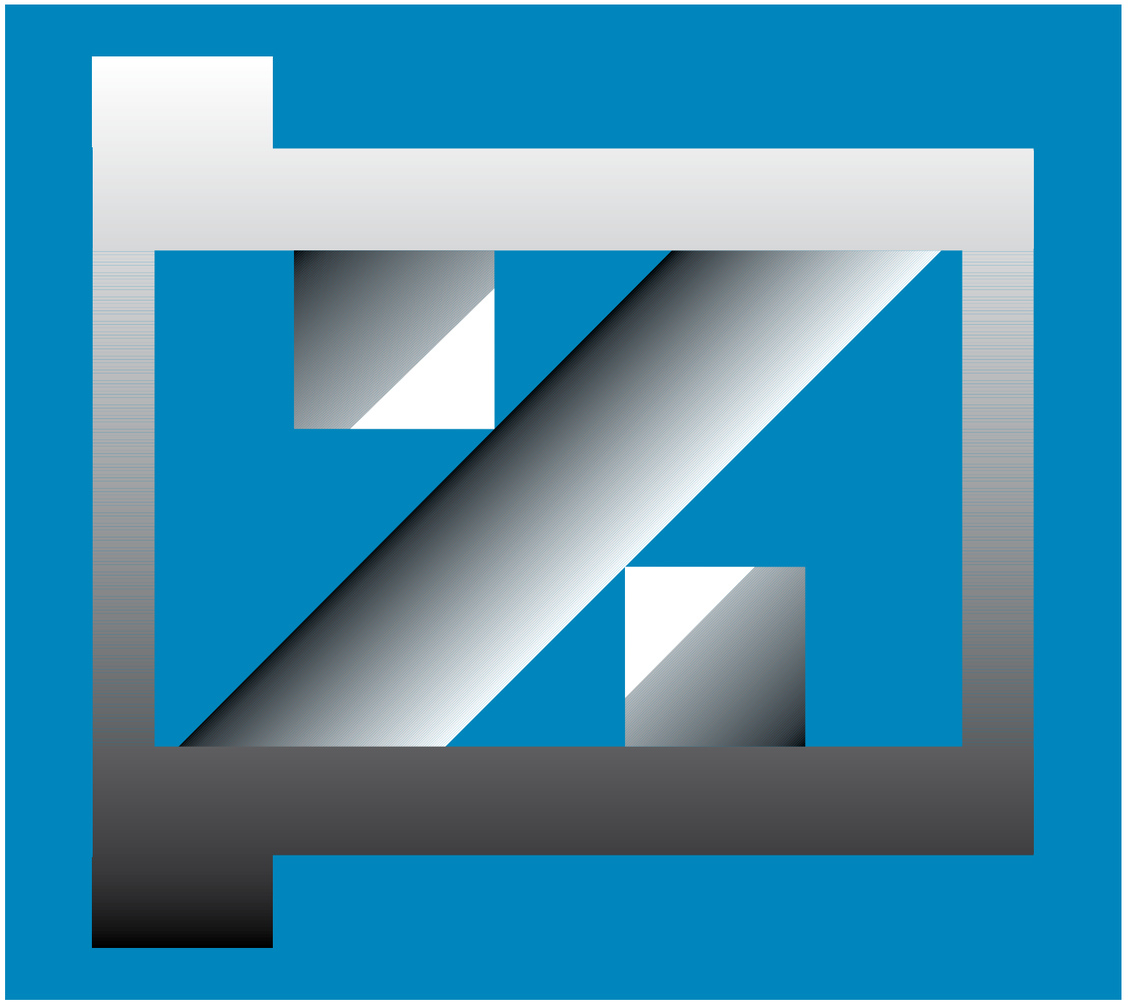
My sketches

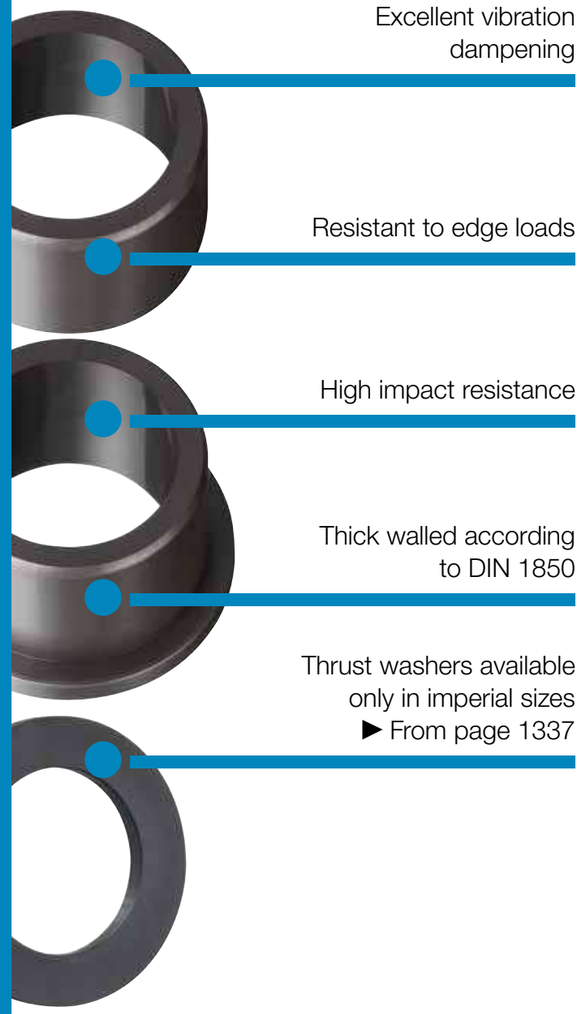


The robust all-rounder according to DIN 2795 – iglidur® M250

- Over 450 dimensions available from stock
- Excellent vibration dampening
- Resistant to edge loads
- High impact resistance
- Thick walled according to DIN 1850
- Dirt can become embedded for shaft protection
- Lubrication and maintenance-free

iglidur® M250 | The robust all-rounder according to DIN 2795

Excellent vibration dampening



The self lubricating plain bearings made from iglidur® M250 are defined by their impact strength, vibration dampening, and wear resistant properties. They excel in applications in which vibration dampening is necessary, for example, in fitness and packaging machines.

When to use it?

- When the bearings are exposed to high amounts of dirt
- When high vibration damping is necessary
- For low to medium speeds
- When mechanical reaming of the wall surface is necessary
- Resistant to edge loads
- High impact resistance
- Thick walled according to DIN 1850

When not to use it?

- For applications in wet areas
  ▶ iglidur® H, page 299
- When very high precision is necessary
  ▶ iglidur® P, page 113
- For very smooth shafts
  ▶ iglidur® J, page 141
- When a cost-effective wear resistant bearing is required
  ▶ iglidur® R, page 213

Typical application areas

- Agricultural
- Furniture/Industrial design
- Textile industry
- Doors and gates
- Machine building

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +80 °C
min. –40 °C

Ø 1–75 mm
More dimensions on request

Imperial dimensions available
▶ From page 1337

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

iglidur® M250 | Technical data

Material properties table

General properties	Unit	iglidur® M250	Testing method
Density	g/cm³	1.14	
Colour		charcoal	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	1.4	DIN 53495
Max. water absorption	% weight	7.6	
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	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. long-term application temperature	°C	+80	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{13}$	DIN IEC 93
Surface resistance	Ω	$> 10^{11}$	DIN 53482

Table 01: Material properties table

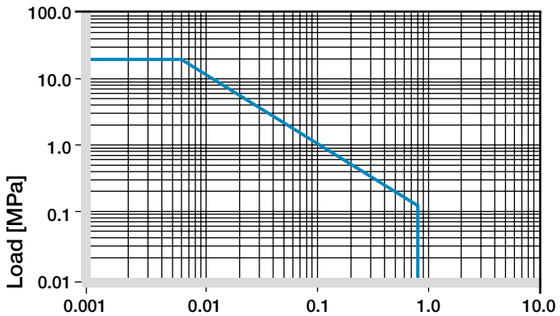


Diagram 01: Permissible pv values for iglidur® M250 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The humidity absorption of iglidur® M250 bearings amounts to about 1.4 % weight in standard climatic conditions. The saturation limit in water is 7.6 % weight. This must be taken into account for these types of applications.

▶ Diagram, www.igus.eu/m250-moisture

Vacuum

iglidur® M250 plain bearings outgas in a vacuum. The relatively high moisture absorption of the bearing allows only limited use in vacuum.

Radiation resistance

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

UV resistance

iglidur® M250 plain bearings are permanently resistant to UV radiation.

Medium	Resistance
Alcohol	+ to 0
Hydrocarbons	+
Greases, oils without additives	+
Fuels	+
Diluted acids	0 to –
Strong acids	–
Diluted alkalines	+
Strong alkalines	0

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® M250 | Technical data

The self lubricating plain bearings made from iglidur® M250 are defined by their impact strength, vibration dampening, and wear resistant properties. They excel in applications in which vibration dampening is necessary, for example, in fitness and packaging machines. Since they are additionally able to absorb dirt, they are also suited for agricultural machines and garden appliances.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® M250 plain bearings decreases. Diagram 02 clarifies this relationship. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

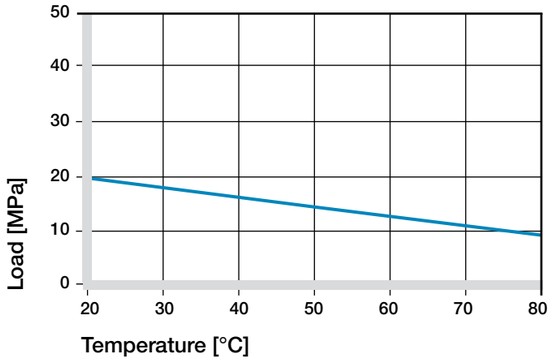


Diagram 02: Permissible maximum surface pressure as a function of temperature (20 MPa at +20 °C)

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

▶ Surface pressure, **page 41**

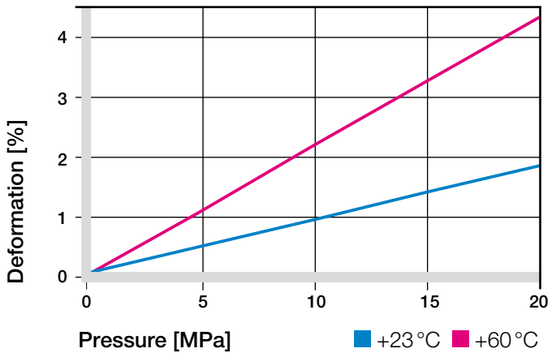


Diagram 03: Deformation under pressure and temperature

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 speed for dry running applications is 0.8 m/s (rotating) or 2.5 m/s (linear). In practice, though, this temperature level is rarely reached due to varying application conditions.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Constant	0.8	0.6	2.5
Short-term	2	1.4	5

Table 03: Maximum surface speeds

Temperatures

The maximum permissible short-term temperature is +170 °C. However iglidur® M250 plain bearings may only be exposed to this temperature without any additional load. The long-term permissible application temperature is +80 °C. This is also the point of the wear limit, i. e. the temperature over which the wear increases exponentially. At temperatures over +60 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

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).

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

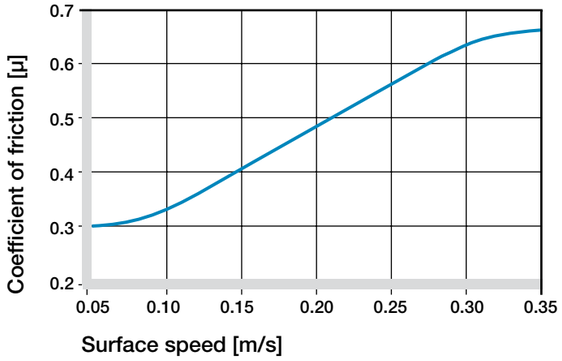


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

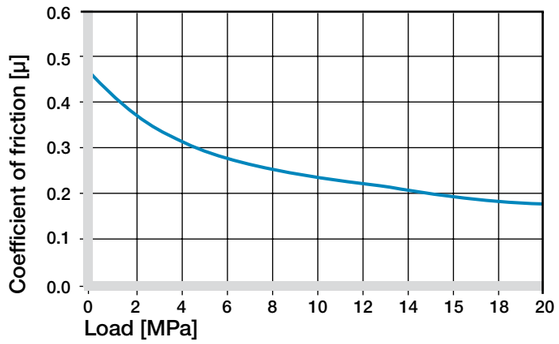


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

Friction and wear also depend to a high degree on the reverse partner. If you observe the coefficient of friction, then the ideal shaft surface finish for iglidur® M250 bearings is Ra = 0.6 mm. Diagrams 06 and 07 show results of testing different shaft materials with plain bearings made of iglidur® M250. Up to loads of 2 MPa 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 cold-rolled steel or hard chromed shafts. Diagram 07 makes it clear that iglidur® M250 is considerably better for rotational than for oscillating operation. However, it must be mentioned that in oscillating movements, often the vibrations acting on the bearing are especially high. Here, iglidur® M250 can utilise its special dampening properties. In our test, these vibrations are excluded so that the comparison between rotation and oscillating operation is captured first.

▶ Shaft materials, **page 52**

iglidur® M250	Dry	Greases	Oil	Water
C. o. f. μ	0.18–0.40	0.09	0.04	0.04

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

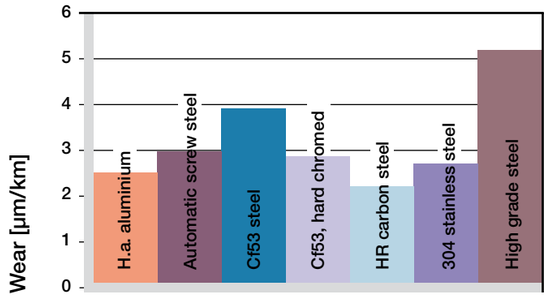


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1 MPa, v = 0.3 m/s

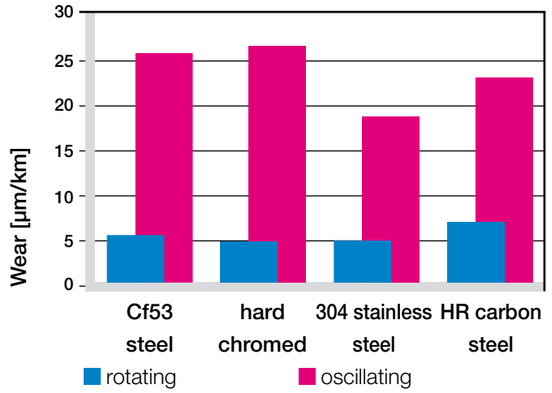


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2 MPa

Installation tolerances

iglidur® M250 plain bearings require a relatively large amount of 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, in standard cases 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.

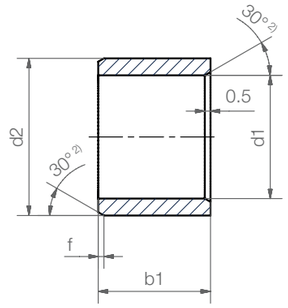
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® M250 D11 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.020 +0.080	0 +0.010
> 3 to 6	0–0.030	+0.030 +0.105	0 +0.012
> 6 to 10	0–0.036	+0.040 +0.130	0 +0.015
> 10 to 18	0–0.043	+0.050 +0.160	0 +0.018
> 18 to 30	0–0.052	+0.065 +0.195	0 +0.021
> 30 to 50	0–0.062	+0.080 +0.240	0 +0.025
> 50 to 80	0–0.074	+0.100 +0.290	0 +0.030

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

iglidur® M250 | Product range

Sleeve bearing (Form S)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]										
M	S	M	-	0	1	0	3	-	0	2	-	02
iglidur® material	Form S	Metric		Inner-Ø d1			Outer-Ø d2			Length b1	

Dimensions according to DIN 1850 and special dimensions

Imperial dimensions available
▶ From page 1357

Dimensions [mm]

d1	d1- Tolerance[3]	d2	b1 h13	Part No.
1.0		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	+0.020	5.0	3.0	MSM-0205-03
2.5	+0.080	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		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	+0.030	7.0	10.0	MSM-0507-10
5.0	+0.105	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
6.0		10.0	4.0	MSM-0610-04
6.0		10.0	6.0	MSM-0610-06
6.0	+0.030	10.0	8.0	MSM-0610-08
6.0	+0.105	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		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	+0.040	11.0	8.0	MSM-0811-08
8.0	+0.130	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

3) After press-fit. Testing methods ▶ Page 57

Dimensions [mm]

d1	d1- Tolerance[3]	d2	b1 h13	Part No.
10.0		12.0	10.0	MSM-1012-10
10.0		12.0	12.0	MSM-1012-12
10.0		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	+0.040	14.0	8.0	MSM-1014-08
10.0	+0.130	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		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	+0.050	16.0	20.0	MSM-1416-20
14.0	+0.160	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
16.0		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	+0.050	22.0	16.0	MSM-1622-16
16.0	+0.160	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		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	+0.065	24.0	8.0	MSM-2224-08
22.0	+0.195	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

3) After press-fit. Testing methods ▶ Page 57

iglidur® M250 | Product range

Sleeve bearing (Form S)

Dimensions [mm]

d1	d1- Tolerance[3]	d2	b1 h13	Part No.
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**
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	+0.065	30.0	20.0	**MSM-2630-20**
26.0	+0.195	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		34.0	40.0	**MSM-2734-40**
28.0		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**
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		40.0	20.0	**MSM-3236-20**
32.0		40.0	20.0	**MSM-3236-30**
32.0		40.0	20.0	**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	30.0	**MSM-4044-30**
40.0	+0.240	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 57

Couldn't find your size?

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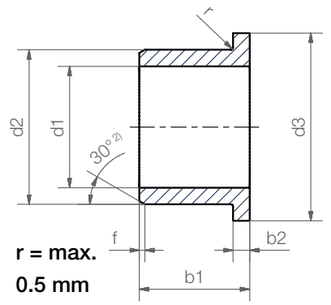
iglidur® M250 | Product range

Flange bearing (Form F)



r = max. 0.5 mm

[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the d1

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

Dimensions [mm]

d1	d1- Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
1.0		3.0	5.0	2.0	1.0	**MFM-0103-02**
1.5	+0.020	4.0	6.0	2.0	1.0	**MFM-0104-02**
2.0	+0.080	5.0	8.0	3.0	1.5	**MFM-0205-03**
2.5		6.0	9.0	3.0	1.5	**MFM-0206-03**
3.0		6.0	9.0	4.0	1.5	**MFM-0306-04**
4.0		8.0	12.0	4.0	2.0	**MFM-0408-04**
4.0		8.0	12.0	6.0	2.0	**MFM-0408-06**
4.0		8.0	12.0	8.0	2.0	**MFM-0408-08**
5.0		9.0	13.0	5.0	2.0	**MFM-0509-05**
5.0		9.0	13.0	6.0	2.0	**MFM-0509-06**
5.0		9.0	13.0	8.0	2.0	**MFM-0509-08**
6.0	+0.030	8.0	12.0	4.0	1.0	**MFM-0608-04**
6.0	+0.105	8.0	12.0	8.0	1.0	**MFM-0608-08**
6.0		10.0	14.0	4.0	2.0	**MFM-0610-04**
6.0		10.0	14.0	6.0	2.0	**MFM-0610-06**
6.0		10.0	14.0	10.0	2.0	**MFM-0610-10**
6.0		11.0	14.0	4.0	2.0	**MFM-0611-04**
6.0		12.0	14.0	6.0	3.0	**MFM-0612-06**
6.0		12.0	14.0	10.0	3.0	**MFM-0612-10**
7.0		11.0	15.0	6.0	2.0	**MFM-0711-06**
7.0		11.0	15.0	8.0	2.0	**MFM-0711-08**
8.0		9.0	13.0	5.5	0.5	**MFM-0809-055**
8.0	+0.040	10.0	15.0	5.5	1.0	**MFM-0810-05**
8.0	+0.130	10.0	15.0	7.5	1.0	**MFM-0810-07**
8.0		10.0	15.0	9.5	1.0	**MFM-0810-09**
8.0		11.0	13.0	5.0	2.0	**MFM-0811-05**
8.0		11.0	13.0	8.0	2.0	**MFM-0811-08**
8.0		12.0	16.0	6.0	2.0	**MFM-0812-06**
8.0		12.0	16.0	8.0	2.0	**MFM-0812-08**
8.0		12.0	16.0	12.0	2.0	**MFM-0812-12**
8.0		14.0	18.0	6.0	3.0	**MFM-0814-06**
8.0		14.0	18.0	10.0	3.0	**MFM-0814-10**
8.0		14.0	16.0	6.0	3.0	**MFM-081416-06**
8.0		14.0	16.0	10.0	3.0	**MFM-081416-10**
9.0		14.0	19.0	6.0	2.0	**MFM-0914-06**
9.0		14.0	19.0	10.0	2.0	**MFM-0914-10**
9.0		14.0	19.0	14.0	2.0	**MFM-0914-14**
10.0		12.0	18.0	7.0	1.0	**MFM-1012-07**
10.0		12.0	18.0	9.0	1.0	**MFM-1012-09**
10.0		12.0	18.0	12.0	1.0	**MFM-1012-12**
10.0	+0.040	12.0	18.0	17.0	1.0	**MFM-1012-17**
10.0	+0.130	14.0	19.0	10.0	2.0	**MFM-1014-10**
10.0		14.0	17.5	14.0	1.0	**MFM-1014-14**
10.0		14.0	17.5	19.0	1.0	**MFM-1014-19**
10.0		14.0	17.5	24.0	1.0	**MFM-1014-24**
10.0		14.0	17.5	34.0	1.0	**MFM-1014-34**
10.0		14.0	19.0	8.0	2.0	**MFM-101419-08**
10.0		14.0	19.0	12.0	1.5	**MFM-101419-12**
10.0		14.0	20.0	12.0	2.0	**MFM-101420-12**
10.0		16.0	22.0	8.0	3.0	**MFM-1016-08**
10.0		16.0	22.0	10.0	3.0	**MFM-1016-10**
10.0		16.0	22.0	16.0	3.0	**MFM-1016-16**
10.0		16.0	20.0	6.0	3.0	**MFM-101620-06**
10.0		16.0	20.0	10.0	3.0	**MFM-101620-10**
12.0	+0.050	14.0	20.0	7.0	1.0	**MFM-1214-07**
12.0	+0.160	14.0	20.0	9.0	1.0	**MFM-1214-09**

[3] After press-fit. Testing methods ▶ Page 57

Order key

Type	Dimensions [mm]

M F M - 0103-02

iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to DIN 1850 and special dimensions

Imperial dimensions available ▶ From page 1381

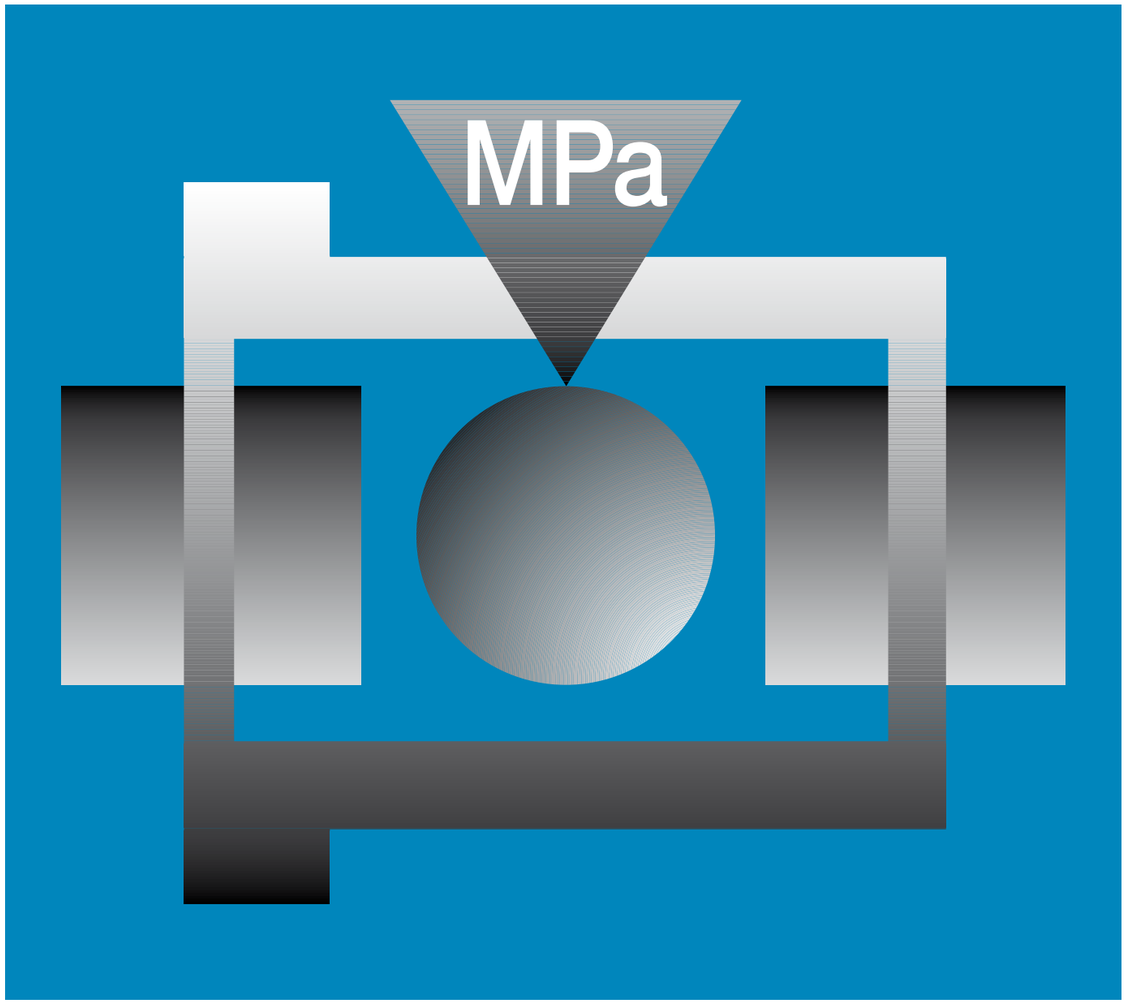
iglidur® M250 | Product range

Flange bearing (Form F)

Dimensions [mm]

d1	d1- Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
12.0		14.0	20.0	12.0	1.0	**MFM-1214-12**
12.0		14.0	20.0	17.0	1.0	**MFM-1214-17**
12.0		16.0	22.0	10.0	2.0	**MFM-1216-10**
12.0		16.0	22.0	20.0	2.0	**MFM-1216-20**
12.0		18.0	24.0	8.0	3.0	**MFM-1218-08**
12.0		18.0	22.0	10.0	3.0	**MFM-1218-10**
12.0		18.0	24.0	12.0	3.0	**MFM-1218-12**
12.0		18.0	22.0	15.0	3.0	**MFM-1218-15**
12.0		18.0	22.0	20.0	3.0	**MFM-1218-20**
13.0		15.0	20.0	14.0	2.0	**MFM-1315-14**
13.0		16.0	24.0	8.0	2.0	**MFM-131624-08**
14.0		16.0	22.0	12.0	1.0	**MFM-1416-12**
14.0		16.0	22.0	17.0	1.0	**MFM-1416-17**
14.0		20.0	25.0	7.0	3.0	**MFM-1420-07**
14.0		20.0	25.0	10.0	3.0	**MFM-1420-10**
14.0		20.0	25.0	15.0	3.0	**MFM-1420-15**
14.0		20.0	25.0	20.0	3.0	**MFM-1420-20**
15.0		17.0	23.0	9.0	1.0	**MFM-1517-09**
15.0		17.0	23.0	12.0	1.0	**MFM-1517-12**
15.0	+0.050	17.0	23.0	17.0	1.0	**MFM-1517-17**
15.0	+0.160	21.0	27.0	10.0	3.0	**MFM-1521-10**
15.0		21.0	27.0	15.0	3.0	**MFM-1521-15**
15.0		21.0	27.0	20.0	3.0	**MFM-1521-20**
15.0		21.0	27.0	25.0	3.0	**MFM-1521-25**
16.0		18.0	28.0	8.0	2.0	**MFM-1618-08/02**
16.0		18.0	24.0	12.0	1.0	**MFM-1618-12**
16.0		18.0	24.0	17.0	1.0	**MFM-1618-17**
16.0		22.0	28.0	12.0	3.0	**MFM-1622-12**
16.0		22.0	28.0	15.0	3.0	**MFM-1622-15**
16.0		22.0	28.0	20.0	3.0	**MFM-1622-20**
16.0		22.0	28.0	25.0	3.0	**MFM-1622-25**
18.0		20.0	26.0	12.0	1.0	**MFM-1820-12**
18.0		20.0	26.0	17.0	1.0	**MFM-1820-17**
18.0		20.0	26.0	22.0	1.0	**MFM-1820-22**
18.0		24.0	30.0	8.0	3.0	**MFM-1824-08**
18.0		24.0	30.0	12.0	3.0	**MFM-1824-12**
18.0		24.0	30.0	18.0	3.0	**MFM-1824-18**
18.0		24.0	30.0	20.0	3.0	**MFM-1824-20**
18.0		24.0	30.0	30.0	3.0	**MFM-1824-30**
18.0		24.0	26.0	7.8	3.0	**MFM-182426-078**
19.0	+0.065	24.0	27.0	12.0	2.0	**MFM-192427-12**
20.0	+0.195	23.0	30.0	11.5	1.5	**MFM-2023-11**
20.0		23.0	30.0	16.5	1.5	**MFM-2023-16**
20.0		23.0	30.0	21.5	1.5	**MFM-2023-21**
20.0		26.0	32.0	15.0	3.0	**MFM-2026-15**
20.0		26.0	32.0	20.0	3.0	**MFM-2026-20**
20.0		26.0	28.0	12.0	3.0	**MFM-202628-12**
20.0		26.0	32.0	30.0	3.0	**MFM-2026-30**
22.0		28.0	34.0	15.0	3.0	**MFM-2228-15**
22.0		28.0	34.0	20.0	3.0	**MFM-2228-20**
22.0		28.0	34.0	30.0	3.0	**MFM-2228-30**
24.0		30.0	36.0	15.0	3.0	**MFM-2430-15**
24.0		30.0	36.0	20.0	3.0	**MFM-2430-20**
24.0		30.0	36.0	30.0	3.0	**MFM-2430-30**
25.0		28.0	35.0	11.5	1.5	**MFM-2528-11**
25.0		28.0	35.0	16.5	1.5	**MFM-2528-16**
25.0		28.0	35.0	21.5	1.5	**MFM-2528-21**
25.0	+0.065	32.0	38.0	12.0	4.0	**MFM-2532-12**
25.0	+0.195	32.0	38.0	15.0	4.0	**MFM-2532-15**
25.0		32.0	38.0	20.0	4.0	**MFM-2532-20**
25.0		32.0	38.0	30.0	4.0	**MFM-2532-30**
25.0		32.0	38.0	40.0	4.0	**MFM-2532-40**
27.0		34.0	40.0	20.0	4.0	**MFM-2734-20**
27.0		34.0	40.0	30.0	4.0	**MFM-2734-30**
27.0		34.0	40.0	40.0	4.0	**MFM-2734-40**
28.0		36.0	42.0	20.0	4.0	**MFM-2836-20**
28.0		36.0	42.0	30.0	4.0	**MFM-2836-30**
28.0		36.0	42.0	40.0	4.0	**MFM-2836-40**
30.0		34.0	42.0	16.0	2.0	**MFM-3034-16**
30.0		34.0	42.0	26.0	2.0	**MFM-3034-26**
30.0		35.0	44.0	20.0	4.0	**MFM-3035-20**
30.0		38.0	44.0	20.0	4.0	**MFM-3038-20**
30.0		38.0	44.0	30.0	4.0	**MFM-3038-30**
30.0		38.0	44.0	40.0	4.0	**MFM-3038-40**
32.0		40.0	46.0	20.0	4.0	**MFM-3240-20**
32.0		40.0	46.0	30.0	4.0	**MFM-3240-30**
32.0		40.0	46.0	40.0	4.0	**MFM-3240-40**
35.0	+0.080	39.0	47.0	16.0	2.0	**MFM-3539-16**
35.0	+0.240	39.0	47.0	26.0	2.0	**MFM-3539-26**
40.0		44.0	52.0	30.0	2.0	**MFM-4044-30**
40.0		44.0	52.0	40.0	2.0	**MFM-4044-40**
45.0		50.0	58.0	50.0	2.0	**MFM-4550-50**

[3] After press-fit. Testing methods ▶ Page 57

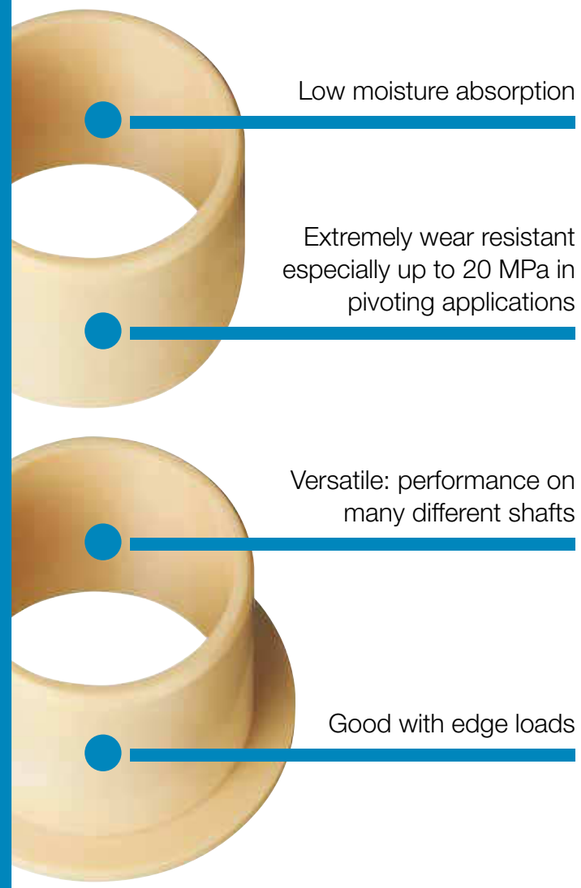


Specialist for pivoting, rolling applications and more – iglidur® P210

- Low moisture absorption
- Extremely wear resistant especially up to 20 MPa in pivoting applications
- Versatile: performance on many different shafts
- Good with edge loads
- Lubrication and maintenance-free
- Standard range from stock

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

Good coefficients 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 pretensioned design as well as vehicle interior applications are possible. Now available in a standard size range.

When to use it?

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

When not to use it?

- When you need a universal bearing with the largest possible range of dimensions
  ▶ iglidur® G, page 79
- When you need a bearing for highly loaded pivoting applications
  ▶ iglidur® Q, page 409
  ▶ iglidur® Q2, page 401
- When temperatures in excess of +100 °C occur
  ▶ iglidur® G, page 79
  ▶ iglidur® J350, page 173

Typical application areas

- Agricultural
- Furniture/Industrial design
- Textile industry
- Doors and gates
- Machine building

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +100 °C
min. –40 °C

Ø 4–50 mm
More dimensions on request

Imperial dimensions available
▶ **From page 1337**

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

iglidur® P210 | Technical data

Material properties table

General properties	Unit	iglidur® P210	Testing method
Density	g/cm³	1.40	
Colour		yellow	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.3	DIN 53495
Max. water absorption	% weight	0.5	
Coefficient of sliding friction, dynamic against steel	µ	0.07–0.19	
pv value, max. (dry)	MPa · m/s	0.4	
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. long-term application temperature	°C	+100	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{12}$	DIN IEC 93
Surface resistance	Ω	$> 10^{11}$	DIN 53482

Table 01: Material properties table

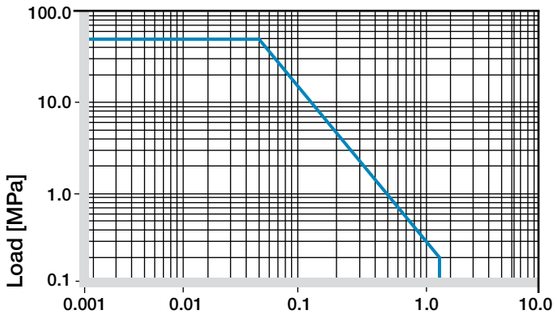


Diagram 01: Permissible pv values for iglidur® P210 bearings with a wall thickness of 1 mm dry running against a steel shaft, at 20 °C, mounted in a steel housing

Moisture absorption

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

▶ **Diagram, www.igus.eu/p210-moisture**

Vacuum

In a vacuum environment, any existing moisture in iglidur® P210 plain bearings is released as a vapour. Use in vacuum is limited.

Radiation resistance

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

UV resistance

iglidur® P210 bearings have a good resistance to UV radiation.

Medium	Resistance
Alcohol	+
Hydrocarbons	–
Greases, oils without additives	+
Fuels	+
Diluted acids	0
Strong acids	–
Diluted alkalines	–
Strong alkalines	–

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® P210 | Technical data

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 20 MPa.

Mechanical properties

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

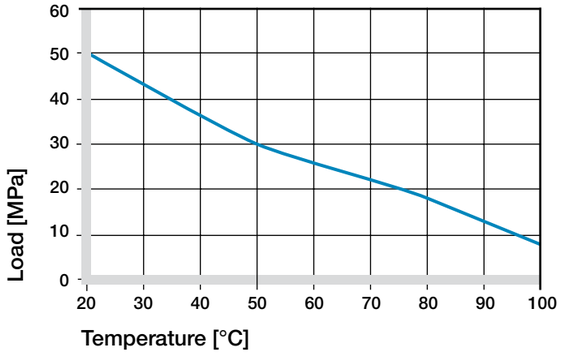


Diagram 02: Permissible maximum surface pressure as a function of temperature (50 MPa at +20 °C)

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

▶ Surface pressure, **page 41**

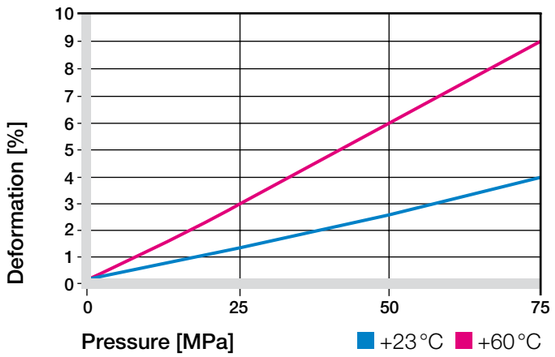


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

Plain bearings made from iglidur® P210 are maintenance-free plain bearings, which were developed for low to average 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 44**

m/s	Rotating	Oscillating	Linear
Constant	1	0.7	3
Short-term	2	1.4	4

Table 03: Maximum surface speeds

Temperatures

With its highest long-term application temperature of +100 °C, iglidur® P210 is suitable for a large application spectrum. If higher temperatures are required, iglidur® G with a max. long-term temperature of +130 °C can be used. The temperatures prevailing in the bearing system also have an influence on the bearing wear. The wear rises with increasing temperatures. At temperatures over +50 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

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

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

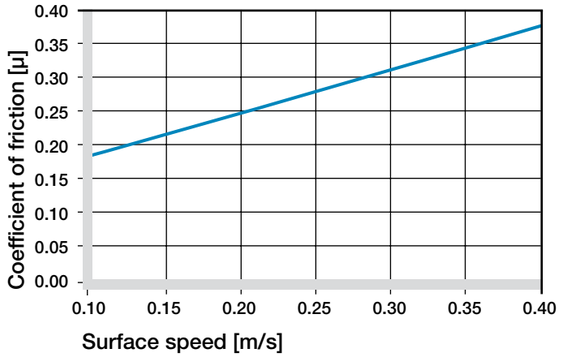


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1 MPa

iglidur® P210 | Technical data

P210
+100 °C
50 MPa

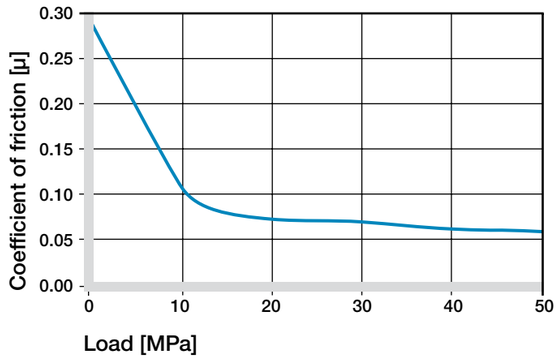


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® P210.
For rotating motions at radial loads below 1 MPa, 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 25 MPa (diagram 07).

▶ Shaft materials, **page 52**

iglidur® P210	Dry	Greases	Oil	Water
C. o. f. µ	0.07 – 0.19	0.09	0.04	0.04

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

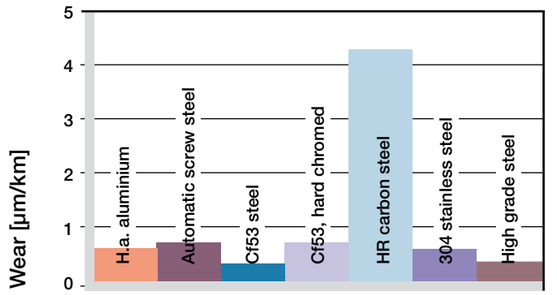


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

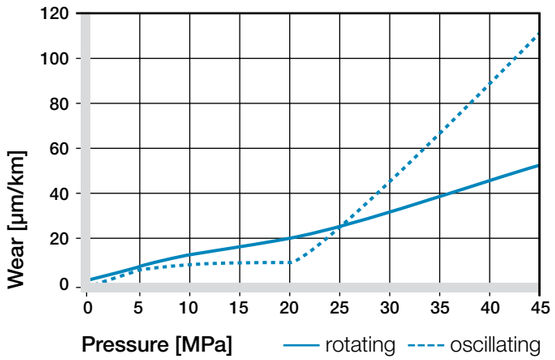


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Installation tolerances

iglidur® P210 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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).

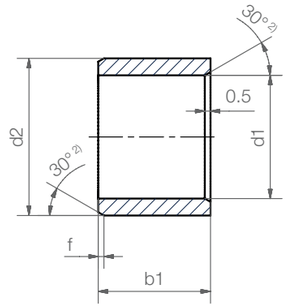
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® P210 E10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.014 +0.054	0 +0.010
> 3 to 6	0–0.030	+0.020 +0.068	0 +0.012
> 6 to 10	0–0.036	+0.025 +0.083	0 +0.015
> 10 to 18	0–0.043	+0.032 +0.102	0 +0.018
> 18 to 30	0–0.052	+0.040 +0.124	0 +0.021
> 30 to 50	0–0.062	+0.050 +0.150	0 +0.025
> 50 to 80	0–0.074	+0.060 +0.180	0 +0.030
> 80 to 120	0–0.087	+0.072 +0.212	0 +0.035
>120 to 180	0–0.100	+0.085 +0.245	0 +0.040

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

iglidur® P210 | Product range

Sleeve bearing (Form S)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
P210	S	M	-04	05	-04	
iglidur® material	Form S	Metric	Inner-Ø d1	Outer-Ø d2	Length b1	

Dimensions according to ISO 3547-1 and special dimensions

Imperial dimensions available
▶ From page 1361

Dimensions [mm]

d1	d1- Tolerance[3]	d2	b1 h13	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	+0.032 +0.102	18.0	20.0	P210SM-1618-20
16.0		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		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	+0.040 +0.124	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

3) After press-fit. Testing methods ▶ Page 57

iglidur® P210 | Product range

Sleeve bearing (Form S)

Dimensions [mm]

d1	d1- Tolerance[3]	d2	b1 h13	Part No.
30.0	+0.040 +0.124	34.0	40.0	P210SM-3034-40
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
40.0		44.0	50.0	P210SM-4044-50
45.0	+0.050 +0.150	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 57

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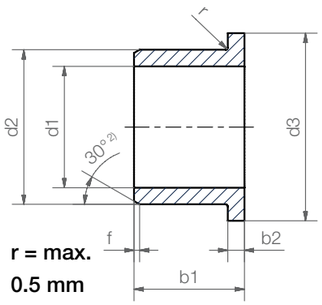
▶ www.igus.eu/iglidur-specialbearings

iglidur® P210 | Product range

Flange bearing (Form F)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
P210	F	M	-0608			-04
iglidur® material	Form F	metric	Inner-Ø d1		Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

Inch Imperial dimensions available
▶ From page 1384

Dimensions [mm]

d1	d1-Tolerance 3)	d2	d3 d13	b1 h13	b2 –0.14	Part No.
6.0	+0.020 +0.068	8.0	12.0	4.0	1.0	P210FM-0608-04
6.0		8.0	12.0	6.0	1.0	P210FM-0608-06
6.0		8.0	12.0	8.0	1.0	P210FM-0608-08
8.0		10.0	15.0	5.5	1.0	P210FM-0810-05
8.0		10.0	15.0	7.5	1.0	P210FM-0810-07
8.0		10.0	15.0	9.5	1.0	P210FM-0810-09
8.0		10.0	15.0	10.0	1.0	P210FM-0810-10
8.0	+0.025 +0.083	10.0	16.0	15.0	1.0	P210FM-081016-15
10.0		12.0	18.0	7.0	1.0	P210FM-1012-07
10.0		12.0	18.0	9.0	1.0	P210FM-1012-09
10.0		12.0	18.0	10.0	1.0	P210FM-1012-10
10.0		12.0	18.0	12.0	1.0	P210FM-1012-12
10.0		12.0	18.0	17.0	1.0	P210FM-1012-17
12.0		14.0	20.0	7.0	1.0	P210FM-1214-07
12.0		14.0	20.0	9.0	1.0	P210FM-1214-09
12.0		14.0	20.0	12.0	1.0	P210FM-1214-12
12.0	+0.032 +0.102	14.0	20.0	17.0	1.0	P210FM-1214-17
14.0		16.0	22.0	12.0	1.0	P210FM-1416-12
14.0		16.0	22.0	17.0	1.0	P210FM-1416-17
15.0		17.0	23.0	9.0	1.0	P210FM-1517-09
15.0		17.0	23.0	12.0	1.0	P210FM-1517-12
15.0		17.0	23.0	17.0	1.0	P210FM-1517-17
16.0	+0.032 +0.102	18.0	24.0	12.0	1.0	P210FM-1618-12
16.0		18.0	24.0	17.0	1.0	P210FM-1618-17
18.0		20.0	26.0	12.0	1.0	P210FM-1820-12
18.0		20.0	26.0	17.0	1.0	P210FM-1820-17
18.0		20.0	26.0	22.0	1.0	P210FM-1820-22
20.0		23.0	30.0	11.5	1.5	P210FM-2023-11
20.0		23.0	30.0	16.5	1.5	P210FM-2023-16
20.0		23.0	30.0	21.5	1.5	P210FM-2023-21
25.0		28.0	35.0	11.5	1.5	P210FM-2528-11
25.0		28.0	35.0	16.5	1.5	P210FM-2528-16
25.0	+0.040 +0.124	28.0	35.0	21.0	1.5	P210FM-2528-21
30.0		34.0	42.0	16.0	2.0	P210FM-3034-16
30.0		34.0	42.0	26.0	2.0	P210FM-3034-26
35.0		39.0	47.0	16.0	2.0	P210FM-3539-16
35.0		39.0	47.0	26.0	2.0	P210FM-3539-26
40.0		44.0	52.0	30.0	2.0	P210FM-4044-30
40.0		44.0	52.0	40.0	2.0	P210FM-4044-40
45.0		50.0	58.0	50.0	2.0	P210FM-4550-50

3) After press-fit. Testing methods ▶ Page 57

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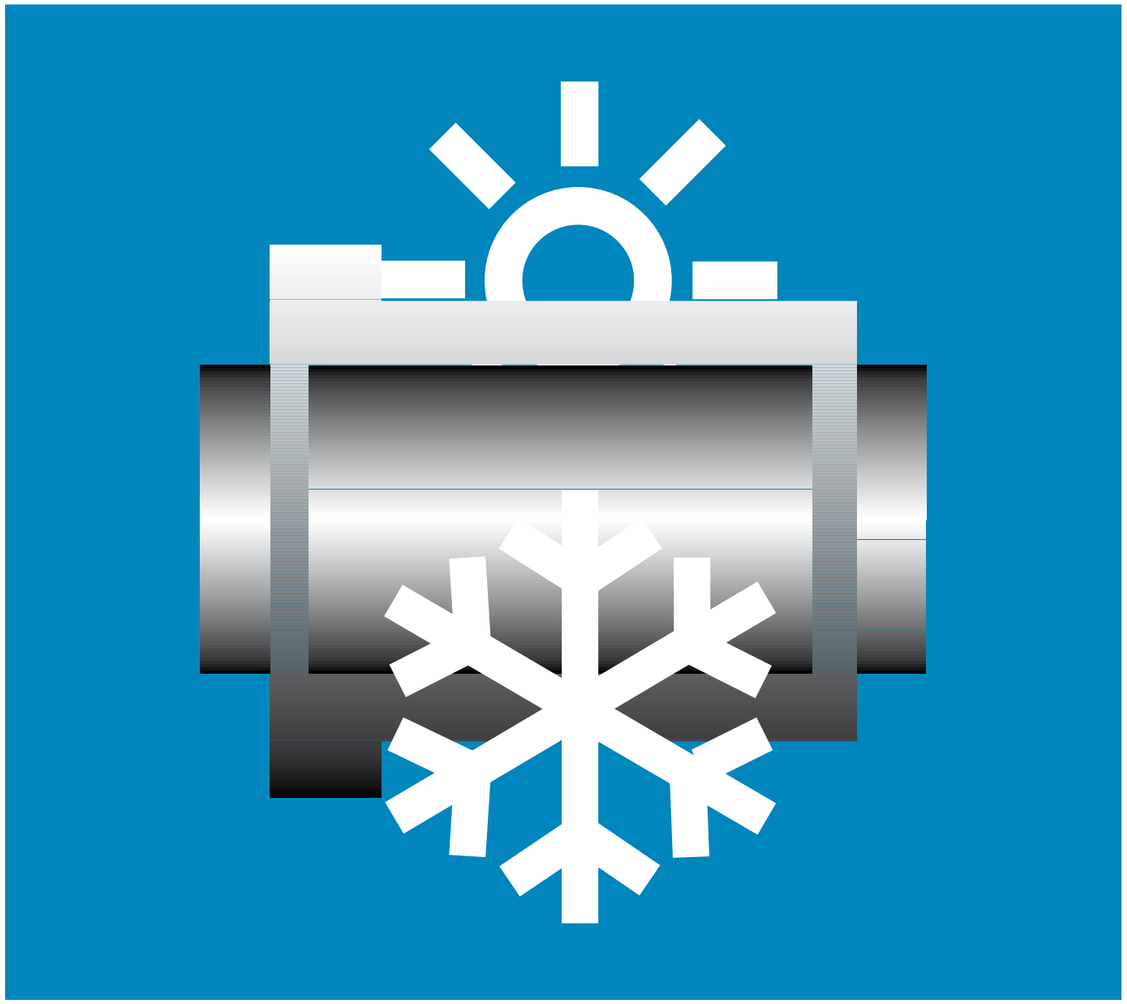
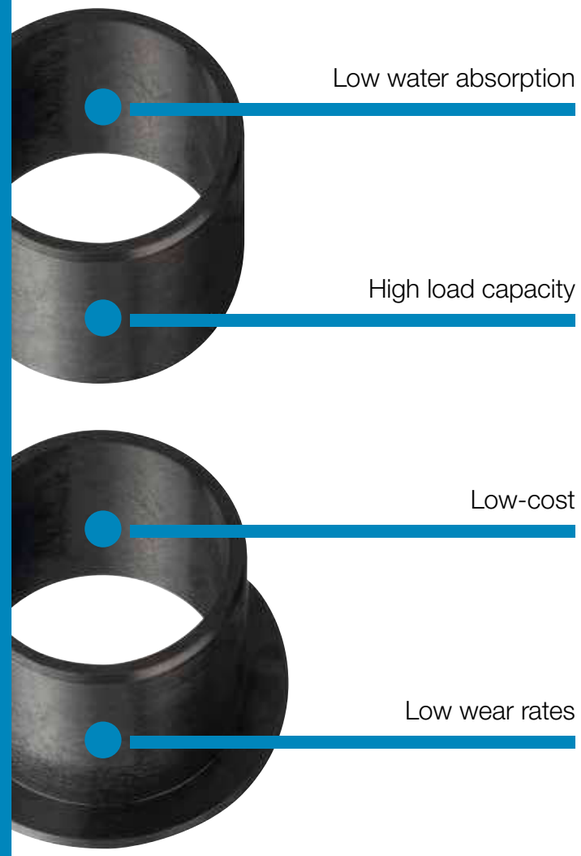


The cost-effective outdoor all-rounder – iglidur® P

- Low water absorption
- Low wear rates
- High load capacity
- Economic
- Lubrication and maintenance-free
- Standard range from stock

iglidur® P | 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 stable all-round bearings under varying environmental conditions. iglidur® P bearings are recommended for oscillating and rotating movements at average loads.

When to use it?

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

When not to use it?

- When the maximum application temperature is above +120 °C
  ▶ iglidur® K, page 123
- When mechanical reaming of the wall surface is necessary
  ▶ iglidur® M250, page 95
- When highest wear resistance is required
  ▶ iglidur® W300, page153

Typical application areas

- Solar technology
- Sports and leisure
- Machine building
- Doors and gates
- Railway technology

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +130 °C
min. –40 °C

Ø 3–95 mm
More dimensions on request

Imperial dimensions available
▶ From page 1337

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

iglidur® P | Technical data

Material properties table

General properties	Unit	iglidur® P	Testing method
Density	g/cm³	1.58	
Colour		black	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.2	DIN 53495
Max. water absorption	% weight	0.4	
Coefficient of sliding 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. long-term application temperature	°C	+130	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{13}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

Table 01: Material properties table

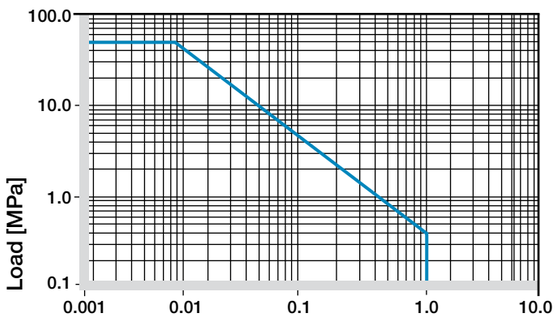


Diagram 01: Permissible pv values for iglidur® P bearings with a wall thickness of 1 mm dry running against a steel shaft, at 20 °C, mounted in a steel housing

Moisture absorption

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

▶ Diagram, www.igus.eu/p-moisture

Vacuum

The existent humidity of iglidur® P bearings degasses in the vacuum. Use in vacuum can be limited. Use in vacuum can be limited.

Radiation resistance

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

UV resistance

iglidur® P bearings have a good resistance to UV radiation.

Medium	Resistance
Alcohol	+
Hydrocarbons	–
Greases, oils without additives	+
Fuels	+
Diluted acids	0
Strong acids	–
Diluted alkalines	–
Strong alkalines	–

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

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

Mechanical properties

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

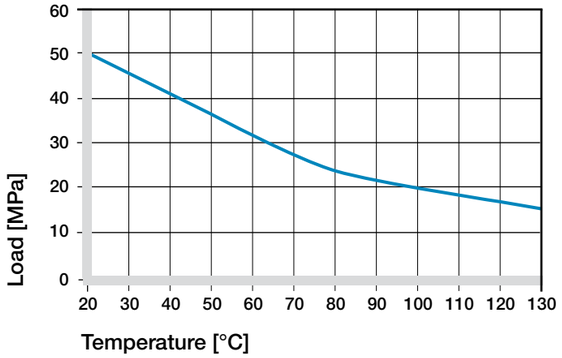


Diagram 02: Permissible maximum surface pressure as a function of temperature (50 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® P as a function of radial pressure. At the permissible maximum surface pressure of 50 MPa the deformation is less than 4 %.

▶ Surface pressure, **page 41**

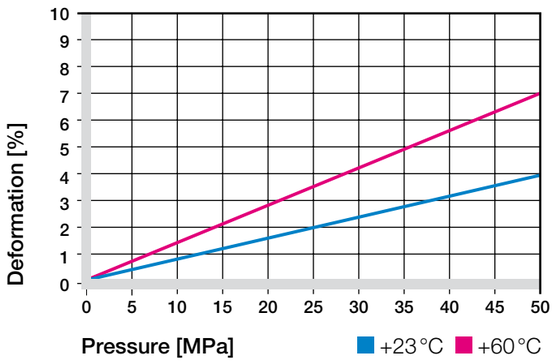


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

Plain bearings made from iglidur® P are maintenance-free plain bearings, which were developed for low to average 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 44**

m/s	Rotating	Oscillating	Linear
Constant	1	0.7	3
Short-term	2	1.4	4

Table 03: Maximum surface speeds

Temperatures

Even at its highest long-term application temperature of +130 °C, iglidur® P does not quite reach the values of iglidur® G. The ambient application temperature has a direct impact on bearing wear. The wear rises with increasing temperatures. At temperatures over +90 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

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

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

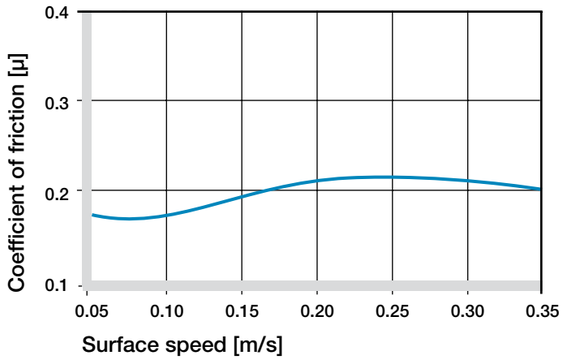


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

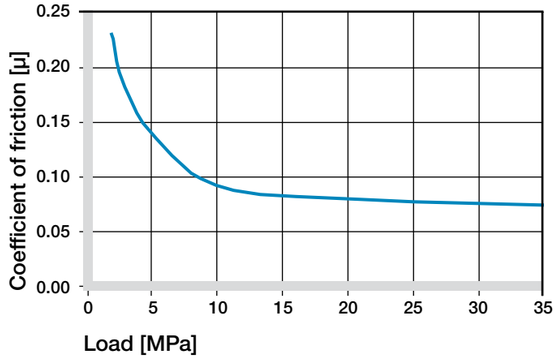


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

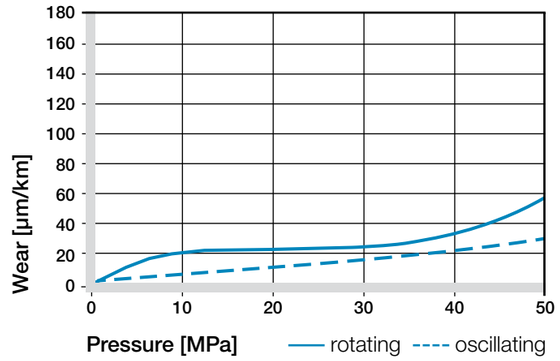


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® P.
For rotating movements, the wear of iglidur® P with cold rolled steel and HR carbon steel shafts is very low. On the other hand, the bearings on 304 stainless steel shafts as well as hard-chromed shafts result in higher wear than other shaft materials even in the low load range. For example at a load of 2 MPa, cold rolled steel is six times better than 304 stainless steel. For oscillating movements, however, is the „soft“ HR carbon steel shaft significantly less favorable than the hardened shaft versions or the 304 stainless steel shafts.

▶ Shaft materials, **page 52**

iglidur® P	Dry	Greases	Oil	Water
C. o. f. µ	0.06 – 0.21	0.09	0.04	0.04

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

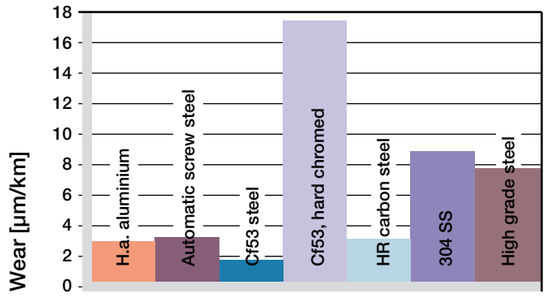


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

Installation tolerances

iglidur® P plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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).

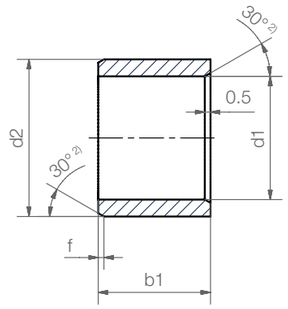
▶ Testing methods, **page 57**

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

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

iglidur® P | Product range

Sleeve bearing (Form S)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]							
P	S	M	-	03	04	-	03
iglidur® material	Form S	metric		Inner-Ø d1	Outer-Ø d2		Length b1

Dimensions according to ISO 3547-1 and special dimensions

Imperial dimensions available
▶ From page 1360

Dimensions [mm]

d1	d1- Tolerance[3]	d2	b1 h13	Part No.
3.0	+0.014 +0.054	4.5	3.0	**PSM-0304-03**
4.0		5.5	4.0	**PSM-0405-04**
4.0		5.5	6.0	**PSM-0405-06**
5.0	+0.020 +0.068	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		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	+0.025 +0.083	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		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	+0.032	14.0	25.0	**PSM-1214-25**
13.0	+0.102	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**
15.0		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	+0.032 +0.102	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		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	+0.040 +0.124	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**

3) After press-fit. Testing methods ▶ Page 57

Dimensions [mm]

d1	d1- Tolerance[3]	d2	b1 h13	Part No.
23.0		25.0	58.0	**PSM-2325-58**
23.0		25.0	68.0	**PSM-2325-68**
24.0		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	+0.040	28.0	30.0	**PSM-2528-30**
25.0	+0.124	28.0	35.0	**PSM-2528-35**
26.0		30.0	25.0	**PSM-2630-25**
28.0		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		36.0	20.0	**PSM-3236-20**
32.0	+0.050	36.0	30.0	**PSM-3236-30**
32.0	+0.150	36.0	40.0	**PSM-3236-40**
35.0		39.0	20.0	**PSM-3539-20**
35.0		39.0	30.0	**PSM-3539-30**
35.0		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	+0.050 +0.150	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		65.0	50.0	**PSM-6065-50**
60.0	+0.060	65.0	60.0	**PSM-6065-60**
65.0	+0.180	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 57

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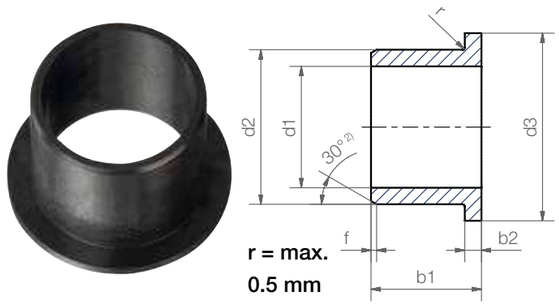
iglidur® P | Product range

Flange bearing (Form F)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]				
P	F	M	-0405	-04
iglidur® material	Form F	metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

Imperial dimensions available
▶ From page 1384

Dimensions [mm]

d1	d1- Tolerance[3]	d2	d3 d13	b1 h13	b2	Part No.
4.0		5.5	9.5	4.0	0.75	**PFM-0405-04**
5.0		6.0	10.0	3.0	0.5	**PFM-0506-03**
5.0	+0.020	7.0	11.0	5.0	1.0	**PFM-0507-05**
6.0	+0.068	8.0	12.0	4.0	1.0	**PFM-0608-04**
6.0		8.0	12.0	6.0	1.0	**PFM-0608-06**
6.0		8.0	12.0	8.0	1.0	**PFM-0608-08**
7.0		9.0	15.0	4.0	1.0	**PFM-0709-04**
8.0		10.0	15.0	5.5	1.0	**PFM-0810-05**
8.0		10.0	15.0	7.5	1.0	**PFM-0810-07**
8.0		10.0	15.0	9.5	1.0	**PFM-0810-09**
8.0		10.0	15.0	10.0	1.0	**PFM-0810-10**
8.0	+0.025	10.0	15.0	15.0	1.0	**PFM-0810-15**
8.0	+0.083	10.0	12.0	10.0	1.0	**PFM-081012-10**
10.0		12.0	18.0	7.0	1.0	**PFM-1012-07**
10.0		12.0	18.0	9.0	1.0	**PFM-1012-09**
10.0		12.0	18.0	10.0	1.0	**PFM-1012-10**
10.0		12.0	18.0	12.0	1.0	**PFM-1012-12**
10.0		12.0	18.0	17.0	1.0	**PFM-1012-17**
12.0		14.0	20.0	7.0	1.0	**PFM-1214-07**
12.0		14.0	20.0	9.0	1.0	**PFM-1214-09**
12.0		14.0	20.0	10.0	1.0	**PFM-1214-10**
12.0		14.0	20.0	12.0	1.0	**PFM-1214-12**
12.0	+0.032	14.0	20.0	15.0	1.0	**PFM-1214-15**
12.0	+0.102	14.0	20.0	17.0	1.0	**PFM-1214-17**
12.0		14.0	18.0	8.0	1.0	**PFM-121418-08**
12.0		14.0	20.0	10.0	1.0	**PFM-121420-10**
14.0		16.0	22.0	4.0	1.0	**PFM-1416-04**
14.0		16.0	22.0	8.0	1.0	**PFM-1416-08**
14.0		16.0	22.0	12.0	1.0	**PFM-1416-12**
14.0	+0.032 +0.102	16.0	22.0	17.0	1.0	**PFM-1416-17**
14.0		16.0	24.0	25.0	1.0	**PFM-141624-25**
14.0	+0.050 +0.160	20.0	25.0	10.0	3.0	**PFM-1420-10**
15.0		17.0	23.0	9.0	1.0	**PFM-1517-09**
15.0		17.0	23.0	12.0	1.0	**PFM-1517-12**
15.0		17.0	23.0	17.0	1.0	**PFM-1517-17**
15.0		17.0	23.0	22.0	1.0	**PFM-1517-22**
15.0		18.0	24.0	32.0	1.5	**PFM-151824-32**
16.0	+0.032 +0.102	18.0	24.0	12.0	1.0	**PFM-1618-12**
16.0		18.0	24.0	17.0	1.0	**PFM-1618-17**
16.0		18.0	24.0	40.0	1.0	**PFM-161824-40**
17.0		19.0	25.0	25.0	1.0	**PFM-1719-25**
18.0		20.0	26.0	12.0	1.0	**PFM-1820-12**
18.0		20.0	26.0	17.0	1.0	**PFM-1820-17**
18.0		20.0	26.0	22.0	1.0	**PFM-1820-22**
20.0		23.0	28.0	11.5	1.5	**PFM-2023-11**
20.0		23.0	28.0	15.0	1.5	**PFM-202328-15**
20.0		23.0	30.0	16.5	1.5	**PFM-2023-16**
20.0		23.0	30.0	21.0	1.5	**PFM-2023-21**
20.0		23.0	30.0	30.0	1.5	**PFM-2023-30**
24.0	+0.040 +0.124	27.0	32.0	22.0	1.5	**PFM-2427-22**
25.0		28.0	35.0	11.5	1.5	**PFM-2528-11**
25.0		28.0	35.0	16.5	1.5	**PFM-2528-16**
25.0		28.0	35.0	21.5	1.5	**PFM-2528-21**
30.0		34.0	42.0	16.0	2.0	**PFM-3034-16**
30.0		34.0	42.0	26.0	2.0	**PFM-3034-26**

3) After press-fit. Testing methods ▶ Page 57

PFM

iglidur® P | Product range

Flange bearing (Form F)

Dimensions [mm]

d1	d1- Tolerance[3]	d2	d3 d13	b1 h13	b2	Part No.
30.0	+0.040	34.0	42.0	30.0	2.0	**PFM-3034-30**
30.0	+0.124	34.0	42.0	37.0	2.0	**PFM-3034-37**
35.0		39.0	47.0	16.0	2.0	**PFM-3539-16**
35.0	+0.050	39.0	47.0	26.0	2.0	**PFM-3539-26**
40.0	+0.150	44.0	52.0	30.0	2.0	**PFM-4044-30**
40.0		44.0	52.0	40.0	2.0	**PFM-4044-40**
45.0	+0.050	50.0	58.0	50.0	2.0	**PFM-4550-50**
50.0	+0.150	55.0	63.0	50.0	2.0	**PFM-5055-50**
60.0		65.0	73.0	40.0	2.0	**PFM-6065-40**
60.0	+0.060	65.0	73.0	50.0	2.0	**PFM-6065-50**
70.0	+0.180	75.0	83.0	50.0	2.0	**PFM-7075-50**
80.0		85.0	93.0	100.0	2.5	**PFM-8085-100**

3) After press-fit. Testing methods ▶ Page 57

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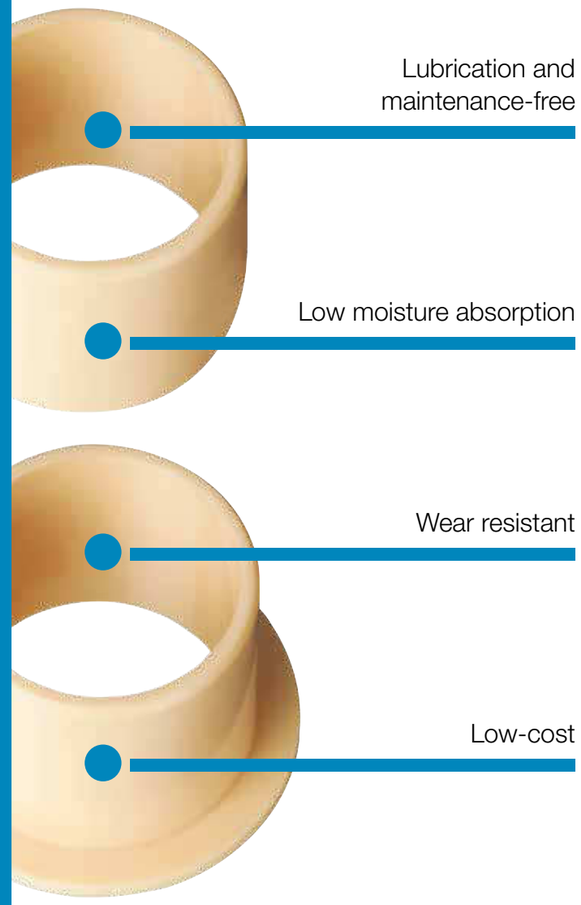
My sketches

Versatile and cost-effective – iglidur® K

- Low moisture absorption
- Wear resistant
- Economic
- Lubrication and maintenance-free
- Standard range from stock

iglidur® K | Versatile and cost-effective

For medium temperatures and wet environments



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

When to use it?

- When you need a cost-effective general purpose bearing
- For use in wet environments
- When good wear resistance is required at medium loads

When not to use it?

- When highest wear resistance is necessary
  ▶ iglidur® W300, page 153
- If high media resistance is required
  ▶ iglidur® X6, page 257
- When a high-temperature bearing is needed
  ▶ iglidur® H, page 299

Typical application areas

- Printing industry
- Electronic industries
- Packaging
- Medical technology
- Polymer processing machines

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +170 °C
min. –40 °C

Ø 6–20 mm
More dimensions on request

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

iglidur® K | Technical data

Material properties table

General properties	Unit	iglidur® K	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. water absorption	% weight	0.6	
Coefficient of sliding 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. long-term application temperature	°C	+170	
Max. short-term application temperature	°C	+240	
Lower usage 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 volume resistance	Ωcm	$> 10^{12}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

Table 01: Material properties table

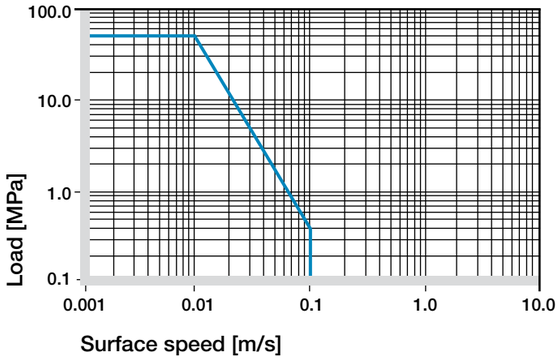


Diagram 01: Permissible pv values for iglidur® K bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The humidity absorption of iglidur® K bearings amounts to about 0.1 % weight in standard climatic conditions. 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.

▶ Diagram, www.igus.eu/k-moisture

Vacuum

When used in vacuum, the iglidur® K plain bearings release moisture as a vapour. Only dehumidified bearings are suitable in vacuum.

Radiation resistance

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

UV resistance

iglidur® K plain bearings become discoloured under UV radiation. However, the material properties do not change.

Medium	Resistance
Alcohol	+ to 0
Hydrocarbons	+
Greases, oils without additives	+
Fuels	+
Diluted acids	0 to –
Strong acids	–
Diluted alkalines	+
Strong alkalines	0

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

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.

Mechanical properties

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

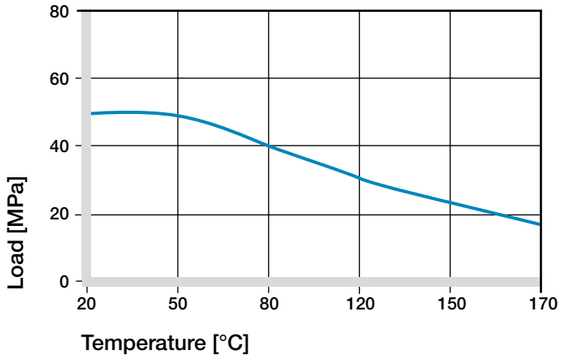


Diagram 02: Permissible maximum surface pressure as a function of temperature (50 MPa at +20 °C)

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

▶ Surface pressure, **page 41**

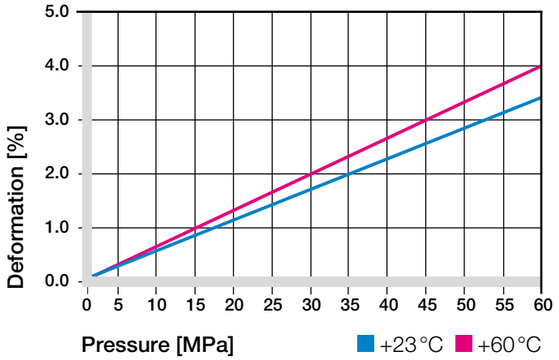


Diagram 03: Deformation under pressure and temperature

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 temperature level is rarely reached due to varying application conditions.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Constant	1	0.7	3
Short-term	2	1.4	4

Table 03: Maximum surface speeds

Temperatures

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

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

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

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

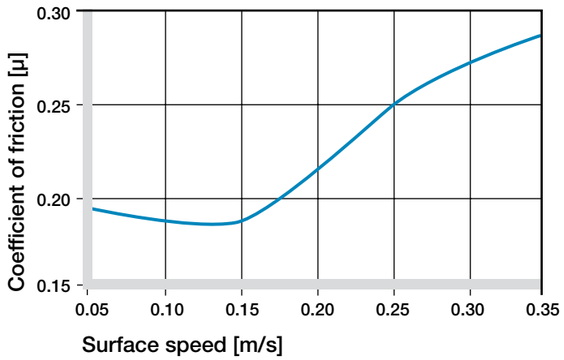


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

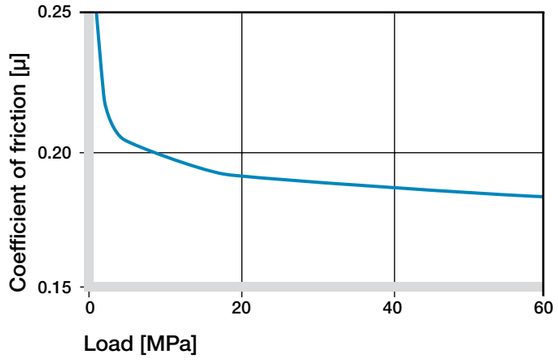


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

The friction and wear are also dependent to a large degree on the shaft material. 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 roughness Ra = 0.15–0.20 µm 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 2 MPa. The comparison of rotational movements to oscillating movements shows that the wear is almost identical at a pressure up to 5 MPa. The higher the loads, the greater the difference (diagram 07).

▶ Shaft materials, **page 52**

iglidur® K	Dry	Grease	Oil	Water
C.o.f. µ	0.06 – 0.21	0.09	0.04	0.04

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

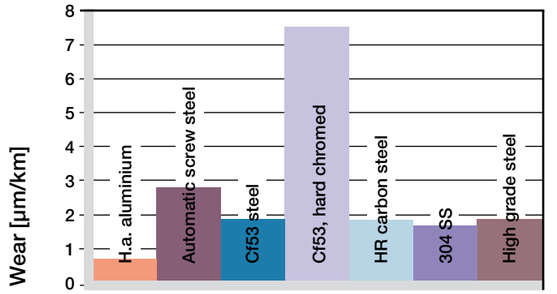


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

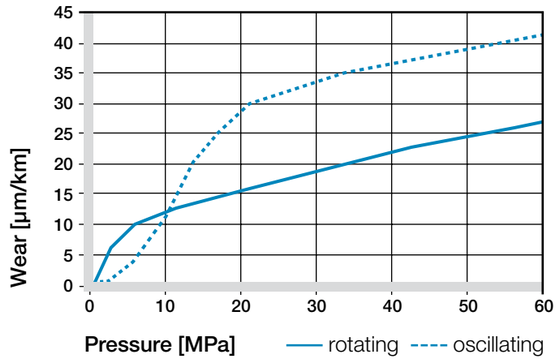


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Installation tolerances

iglidur® K plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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.

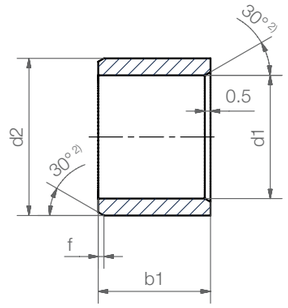
▶ Testing methods, **page 57**

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

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

iglidur® K | Product range

Sleeve bearing (Form S)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]		
K	S	M	-06	08	-06
iglidur® material	Form S	metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

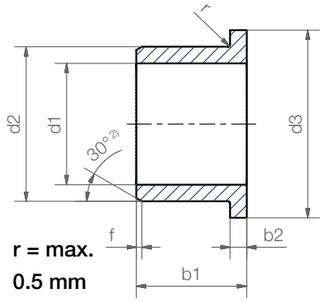
Dimensions [mm]

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

[3] After press-fit. Testing methods ▶ Page 57

iglidur® K | Product range

Flange bearing (Form F)



r = max. 0.5 mm

[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]		
K	F	M	-06	08	-06
iglidur® material	Form F	metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

Dimensions [mm]

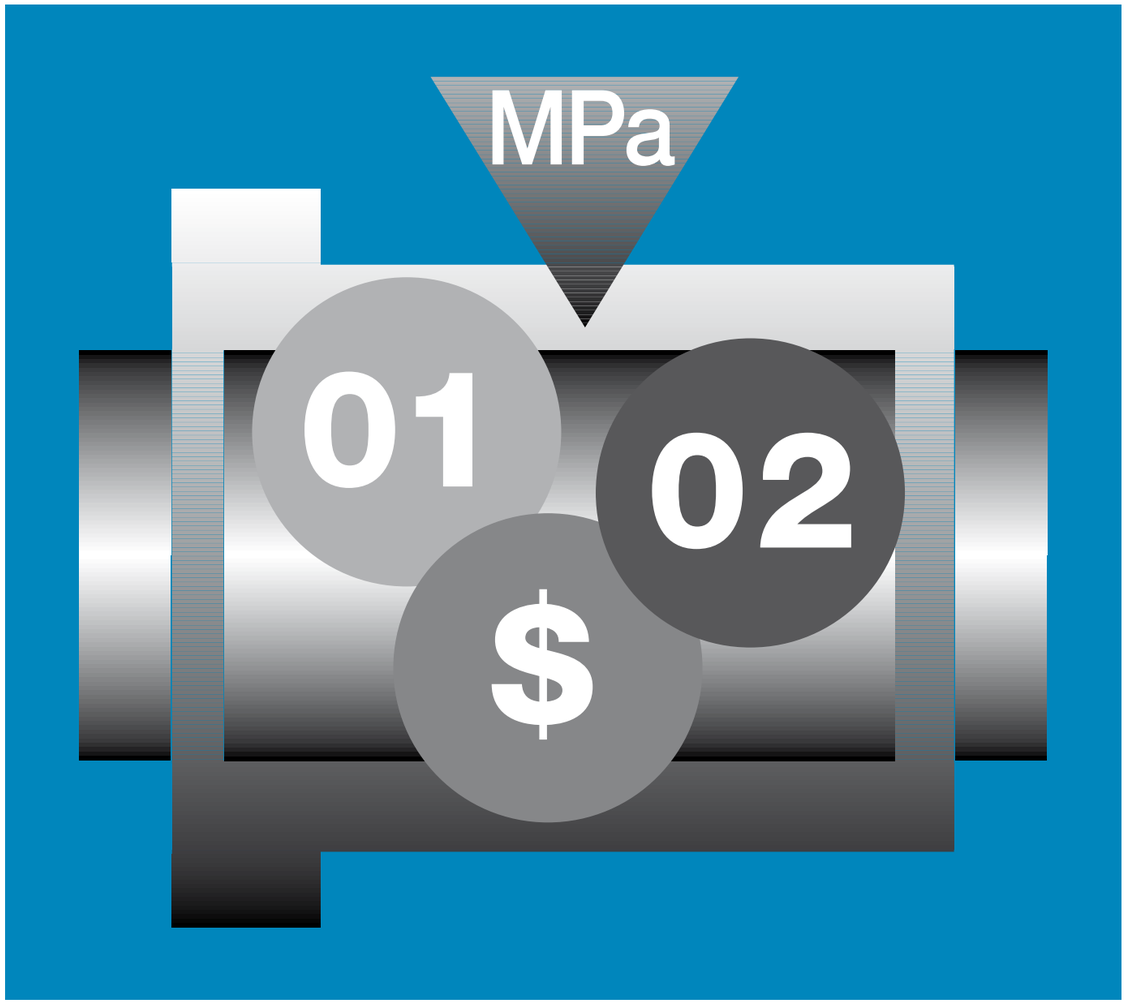
d1	d1-Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
6.0	+0.020 +0.068	8.0	12.0	6.0	1.0	**KFM-0608-06**
8.0	+0.025 +0.083	10.0	15.0	10.0	1.0	**KFM-0810-10**
10.0	+0.025 +0.083	12.0	18.0	10.0	1.0	**KFM-1012-10**
12.0	+0.032 +0.102	14.0	20.0	12.0	1.0	**KFM-1214-12**
16.0	+0.032 +0.102	18.0	24.0	17.0	1.0	**KFM-1618-17**
20.0	+0.040 +0.124	23.0	30.0	21.5	1.5	**KFM-2023-21**

[3] After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

My sketches



Low-cost material for high quantities – iglidur® GLW

- Applications with static loads
- Economic
- Dirt-resistant
- Resistant to vibrations
- Lubrication and maintenance-free

iglidur® GLW | Low-cost material for high quantities

For applications with mostly static loads

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

When to use it?

- When you need an economical universal bearing for mass production
- For high, primarily static loads
- For low to medium speeds

When not to use it?

- When mechanical reaming of the wall surface is necessary
  ▶ iglidur® M250, page 95
- For primarily dynamic loads
  ▶ iglidur® G, page 79
- When highest wear resistance is required
  ▶ iglidur® W300, page 153
- When temperatures continuously exceed +130 °C
  ▶ iglidur® K, page 123
- For underwater applications
  ▶ iglidur® H2, page 315

Typical application areas

- Automation
- Automotive
- Industrial handling

Available on request
Detailed information about delivery time online.

Order-related

max. +100 °C
min. –40 °C

Order-related

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

iglidur® GLW | Technical data

Material properties table

General properties	Unit	iglidur® GLW	Testing method
Density	g/cm³	1.36	
Colour		black	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	1.3	DIN 53495
Max. water absorption	% weight	5.5	
Coefficient of sliding friction, dynamic against steel	µ	0.1–0.24	
pv value, max. (dry)	MPa · m/s	0.3	
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. long-term application temperature	°C	+100	
Max. short-term application temperature	°C	+160	
Lower usage 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 volume resistance	Ωcm	> 10^{11}	DIN IEC 93
Surface resistance	Ω	> 10^{11}	DIN 53482

Table 01: Material properties table

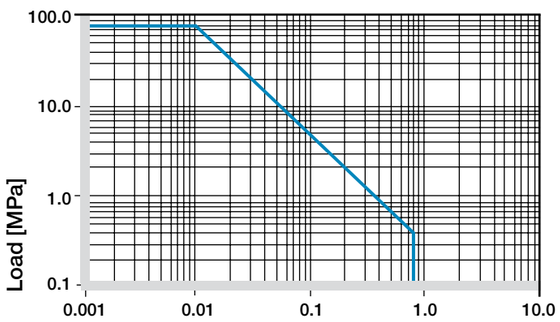


Diagram 01: Permissible pv values for iglidur® GLW bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

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

▶ Diagram, www.igus.eu/glw-moisture

Vacuum

When used in vacuum, the iglidur® GLW plain bearings release moisture as a vapour. Use in a vacuum should be tested beforehand.

Radiation resistance

Plain bearings made from iglidur® GLW are resistant to radiation up to an intensity of 3 · 10^2 Gy.

UV resistance

iglidur® GLW plain bearings are permanently resistant to UV radiation.

Medium	Resistance
Alcohol	+ to 0
Hydrocarbons	+
Greases, oils without additives	+
Fuels	+
Diluted acids	0 to –
Strong acids	–
Diluted alkalines	+
Strong alkalines	0

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® GLW | Technical data

With plain bearings made from iglidur® GLW we can offer our customers an alternative to iglidur® G for mass 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 very cost-effective alternative.

Mechanical properties

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

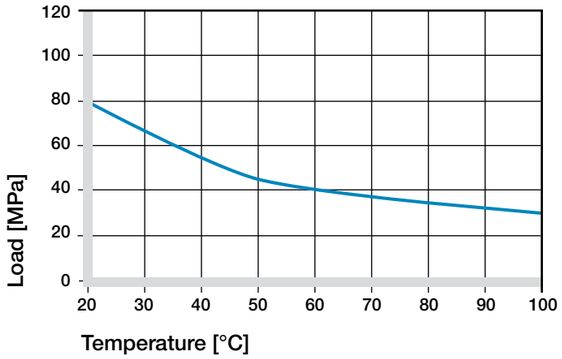


Diagram 02: Permissible maximum surface pressure as a function of temperature (80 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® GLW at radial loads. At the maximum permissible surface pressure of 80 MPa at room temperature the deformation is less than 3 %. At this load the plastic deformation is minimal. It is however also dependent on the duty cycle of the load.

▶ Surface pressure, **page 41**

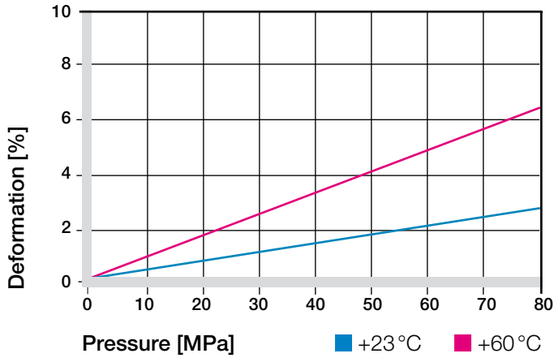


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

iglidur® GLW was developed for low to average surface speeds. In constant operation, a maximum speed of 0.8 m/s (rotating) or 2.5 m/s (linear) is permitted. Please note that the maximum values shown in table 03 are only possible at the lowest pressures. In practice, these values are rarely reached, due to the increasing temperatures approaching or exceeding the maximum permitted value.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Constant	0.8	0.6	2.5
Short-term	1	0.7	3

Table 03: Maximum surface speeds

Temperatures

The ambient temperatures greatly influence the wear performance of plastic bearings. Diagram 02 clarifies this relationship. With increasing temperatures in the bearing system, the wear also increases. At temperatures over +80 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

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

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

iglidur® GLW | Technical data

GLW
+100 °C
80 MPa

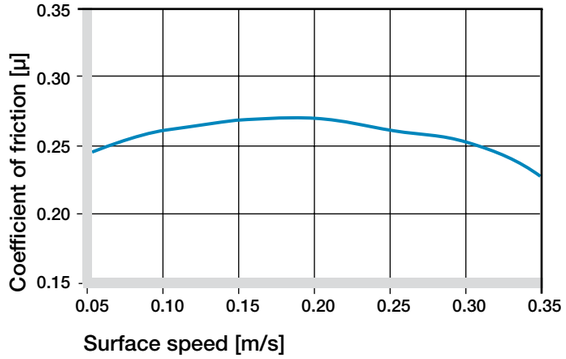


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

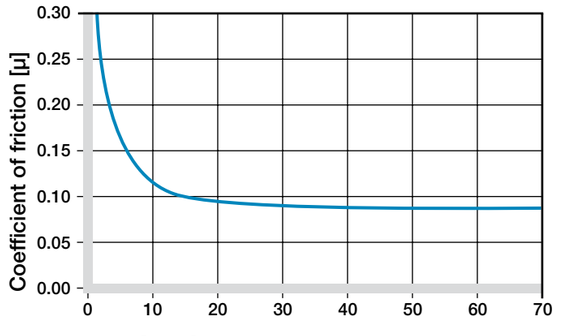


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

The friction and wear are also dependent to a large degree on the shaft material. Shafts that are too smooth, increase both the coefficient of friction and the wear of the bearing. A ground surface with an average roughness Ra between 0.1 and 0.2 µm is the most suitable. The diagram 06 shows an extract of the results of tests with different shaft materials carried out with iglidur® GLW plain bearings.
If the shaft material you plan on using is not shown in these test results, please contact us.

▶ Shaft materials, **page 52**

iglidur® GLW	Dry	Grease	Oil	Water
C. o. f. μ	0.10 – 0.24	0.09	0.04	0.04

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

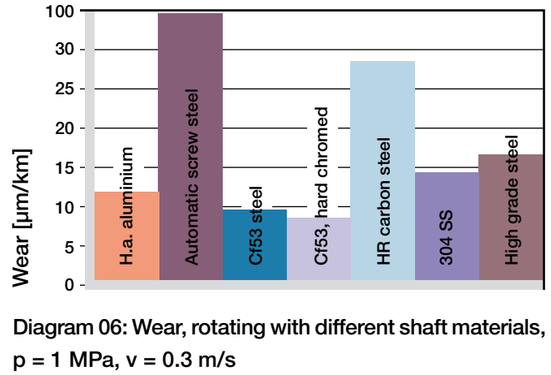


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

Installation tolerances

iglidur® GLW plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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 57**

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

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

Product range

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

iglidur® endurance runner materials for long service life

Endurance runner

Every iglidur® bearing is naturally optimised for wear, but the materials in this group are characterised by, like the standards iglidur® J and iglidur® W300, particularly low rates of wear, or in other words a long service life.
Besides the absolute service life and price level, they differ inter alia in terms of potential temperature and load ranges, and the suitability in conjunction with special shaft materials.

- Lubrication and maintenance-free
- Lightweight
- Good price / performance ratio
- Predictable service life

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

Ø 1.5–139 mm
More dimensions on request

Imperial dimensions available
▶ From page 1337

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

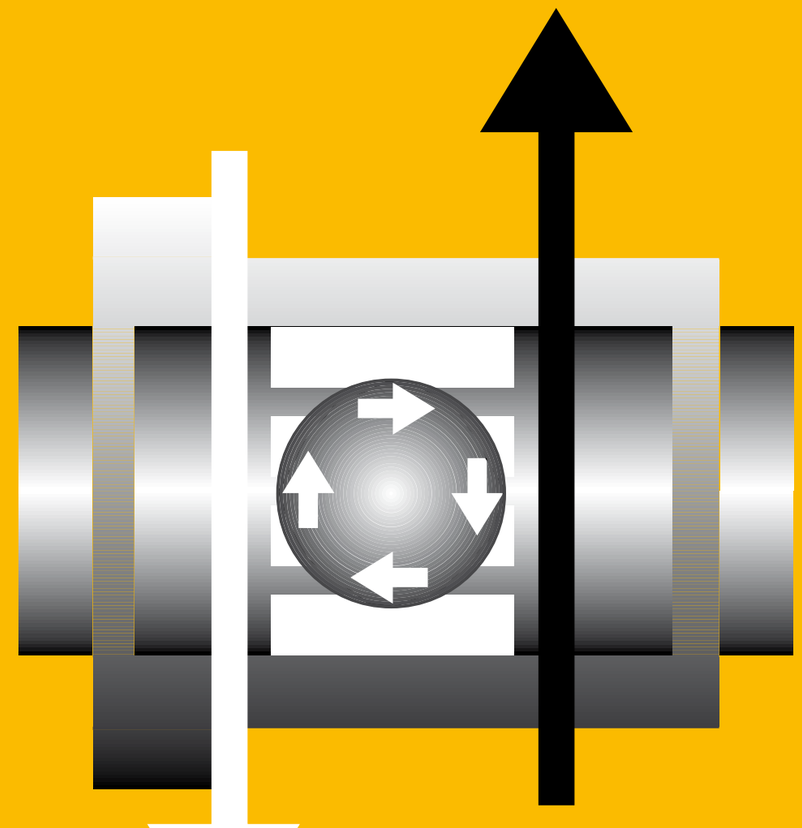
	Temperature [°C] [123]	Surface pressure [MPa] [124]	Coefficient of friction [µ] [125]	Wear [µm/km] [125]	Price index
iglidur® J – The versatile endurance runner High wear resistance on (almost) all shafts, very low coefficients of friction ▶ Page 141	90	35	0.16	0.29	
iglidur® W300 – The classic endurance runner up to 30 MPa Excellent wear resistance on (virtually) all shafts ▶ Page 153	90	60	0.18	0.33	
iglidur® J3 – The new endurance runner: specialist for pulsating loads Up to 10 MPa, up to three times more wear resistant than iglidur® J ▶ Page 165	90	45	0.13	0.07	
iglidur® J350 – Endurance runner with high dimensional stability at high temperature Can be used with many kinds of shafts and loads ▶ Page 173	180	60	0.16	1.14	

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

iglidur® plain bearings | Advantages

	Temperature [°C] [123]	Surface pressure [MPa] [124]	Coefficient of friction [µ] [125]	Wear [µm/km] [125]	Price index
iglidur® J260 – Ideal for plastic shafts Wear resistant at medium temperatures and loads ▶ Page 181	120	40	0.16	0.11	
iglidur® W360 – Endurance runner up to +180 °C For applications with no significant influence from media or humidity ▶ Page 189	180	75	0.07	0.24	
iglidur® L250 – For fast rotating applications Low coefficient of friction at low load applications ▶ Page 197	90	45	0.18	0.20	
New iglidur® L500 – For extreme rotational speeds Temperature-resistant and media-resistant ▶ Page 205	250	70	0.19	1.00	
iglidur® R – Low-cost Good abrasion resistance ▶ Page 213	90	23	0.20	0.95	
iglidur® D – Low-cost material with silicone Good abrasion resistance ▶ Page 221	90	23	0.25	1.91	
iglidur® J200 – Specialist for aluminium shafts Low wear with low coefficient of friction ▶ Page 227	90	23	0.15	1.30	

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

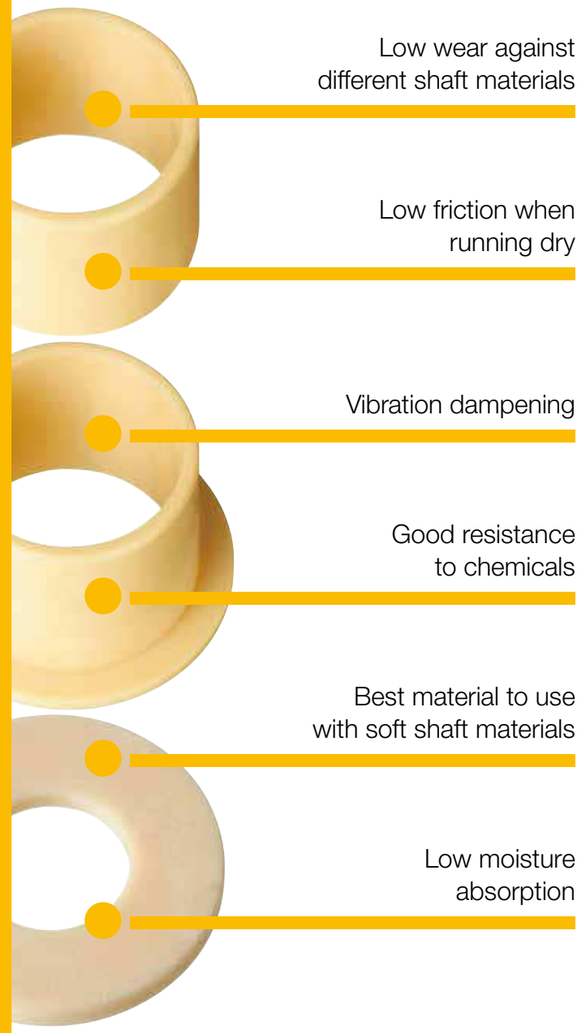


The versatile endurance runner – iglidur® J

- Over 250 dimensions available from stock
- Low wear against different shaft materials
- Low coefficients of friction running dry
- Vibration dampening
- Good resistance to chemicals
- Best material to use with soft shaft materials
- Low moisture absorption

iglidur® J | The versatile endurance runner

High wear resistance on (almost) all shafts, very low coefficients of friction



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

When to use it?
- For high speeds
- For highest wear resistance at low to medium pressures
- Low wear against different shafts
- Low coefficient of friction in dry operation
- Vibration dampening
- Good chemical resistance
- Best performance with soft shaft materials
- Low moisture absorption

When not to use it?
- When high pressures occur
  ▶ iglidur® G, page 79
  ▶ iglidur® W300, page 153
- When short-term temperatures occur that are higher +120 °C
  ▶ iglidur® G, page 79
  ▶ iglidur® Z, page 247
- When a cost-effective bearing for occasional movements is necessary
  ▶ iglidur® G, page 79

Typical application areas
- Automation
- Printing industry
- Beverage technology
- Aerospace engineering
- Clean room

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +90 °C
min. –50 °C

Ø 1.5–139 mm
More dimensions on request

Imperial dimensions available
▶ From page 1337

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

iglidur® J | Technical data

Material properties table

General properties	Unit	iglidur® J	Testing method
Density	g/cm³	1.49	
Colour		yellow	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.3	DIN 53495
Max. water absorption	% weight	1.3	
Coefficient of sliding 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. 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 volume resistance	Ωcm	$> 10^{13}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

Table 01: Material properties table

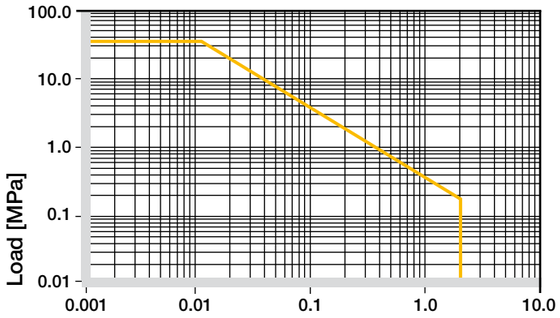


Diagram 01: Permissible pv values for iglidur® J bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption
The moisture absorption of iglidur® J plain bearings is 0.3 % weight in standard climatic conditions. The saturation limit in water is 1.3 % weight. These values are so low that design changes due to absorption are only necessary in extreme cases.

▶ Diagram, www.igus.eu/j-moisture

Vacuum
iglidur® J plain bearings outgas in a vacuum. Therefore, only dehumidified bearings are suitable in vacuum.

Radiation resistance
Plain bearings made from iglidur® J are resistant to radiation up to an intensity of $3 \cdot 10^2$ Gy.

UV resistance
iglidur® J plain bearings become discoloured under UV radiation. However, the material properties do not change.

Medium	Resistance
Alcohol	+
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 02: Chemical resistance

▶ Chemical table, **page 1424**

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

Mechanical properties

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

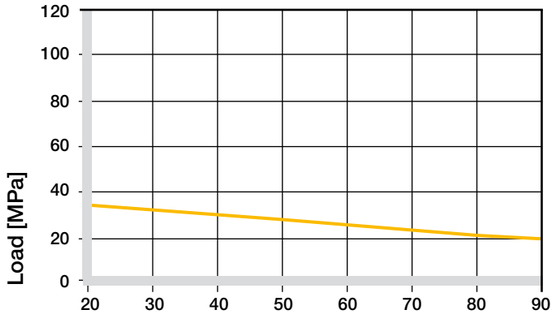


Diagram 02: Permissible maximum surface pressure of as a function of temperature (35 MPa at +20 °C)

With a permissible maximum surface pressure of 35 MPa, 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 41**

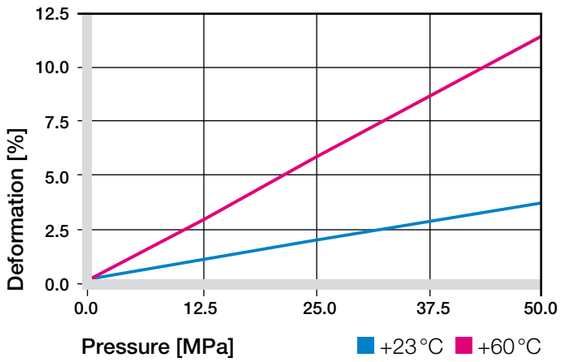


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

The low coefficient of friction and the extremely low stick slip tendency of iglidur® J plain bearings are especially important at very low speeds. However, iglidur® J material can also be used for high speeds of over 1 m/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 temperature level is rarely reached due to varying application conditions.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	1.5	1.1	8
Short-term	3	2.1	10

Table 03: Maximum surface speeds

Temperatures

iglidur® J plain bearings can be used between –50 °C and +90 °C; the short-term maximum permissible temperature is +120 °C. Also, the wear increases significantly above +80 °C. At temperatures over +60 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

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

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

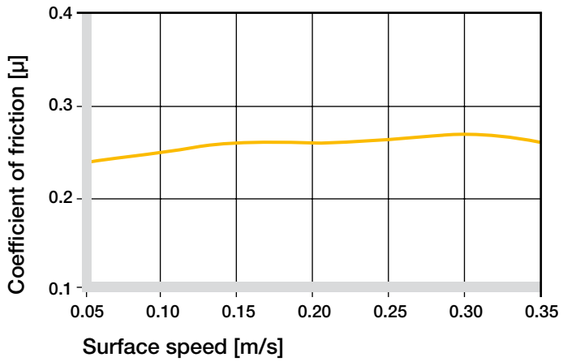


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

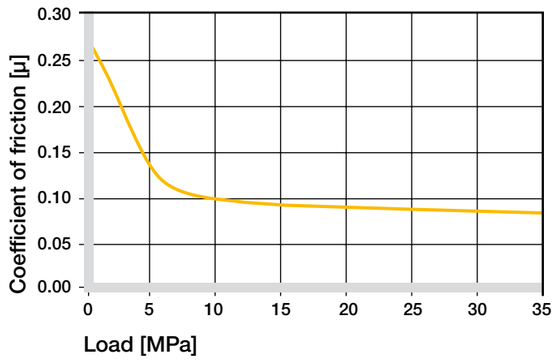


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

Friction and wear are also dependent, to a large extent, on the shaft material. With increasing shaft roughness, the coefficient of friction also increases. The best case is a ground surface with an average roughness Ra = 0.1–0.3 µm. Diagrams 06 and 07 show results of testing different shaft materials with plain bearings made from iglidur® J. When compared to most iglidur® materials, iglidur® J has very low wear results at low loads compared with all shaft materials tested. Also, for increasing pressures up to 5 MPa, the wear resistance of iglidur® J is excellent. If the shaft material you plan on using is not shown in these test results, please contact us.

▶ Shaft materials, **page 52**

iglidur® J	Dry	Greases	Oil	Water
C. o. f. µ	0.06–0.18	0.09	0.04	0.04

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

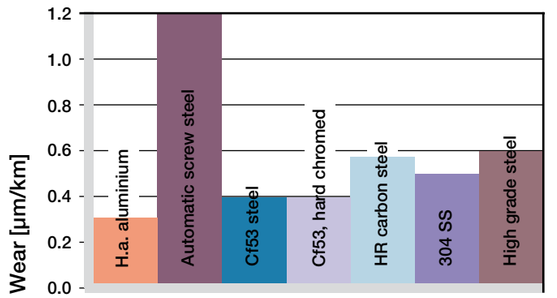


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1 MPa, v = 0,3 m/s

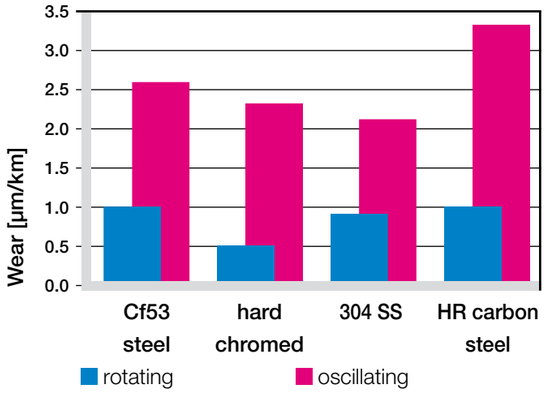


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2 MPa

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 specific dimensions the tolerance differs depending on the wall thickness (please see the product range table).

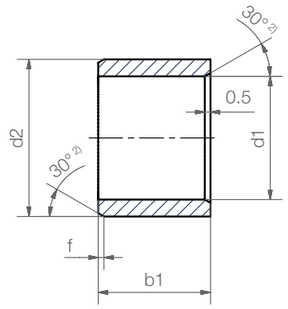
▶ Testing methods, **page 57**

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

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

iglidur® J | Product range

Sleeve bearing (Form S)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
J	S	M	-	0104	-	02
iglidur® material	Form S	Metric		Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

Imperial dimensions available
▶ From page 1353

Dimensions [mm]

d1	d1- Tolerance 3)	d2	b1 h13	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 +0.068	7.0	4.6	JSM-0507-046
5.0		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 +0.058	7.0	8.0	JSM-0607-08
6.0		7.0	12.5	JSM-0607-12.5
6.0		7.0	14.0	JSM-0607-14
6.0	+0.020	8.0	4.3	JSM-0608-043
6.0	+0.068	8.0	6.0	JSM-0608-06
6.0	+0.020 +0.068	8.0	8.0	JSM-0608-08
6.0		8.0	10.0	JSM-0608-10
6.0	+0.030 +0.105	9.0	6.0	JSM-0609-06
6.0		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	+0.025 +0.083	10.0	3.0	JSM-0810-03
8.0		10.0	4.0	JSM-0810-04
8.0		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 +0.083	12.0	10.0	JSM-1012-10
10.0		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 +0.130	14.0	10.0	JSM-1014-10

3) After press-fit. Testing methods ▶ Page 57

iglidur® J | Product range

Sleeve bearing (Form S)

JSM

Dimensions [mm]

d1	d1- Tolerance 3)	d2	b1 h13	Part No.
10.0	+0.040 +0.130	14.0	16.0	JSM-1014-16
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 +0.102	14.0	10.0	JSM-1214-10
12.0		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		20.0	16.0	JSM-1620-16
16.0	+0.050 +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	+0.040	22.0	20.0	JSM-2022-20
20.0	+0.124	22.0	30.0	JSM-2022-30
20.0	+0.040 +0.124	23.0	10.0	JSM-2023-10
20.0		23.0	15.0	JSM-2023-15
20.0		23.0	20.0	JSM-2023-20
20.0	+0.020 +0.104	23.0	25.0	JSM-2023-25
20.0		23.0	30.0	JSM-2023-30
20.0		26.0	6.0	JSM-2026-06
20.0	+0.065 +0.195	26.0	20.0	JSM-2026-20
20.0		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 +0.124	27.0	20.0	JSM-2427-20
24.0		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 +0.195	32.0	25.0	JSM-2532-25
25.0		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 +0.195	32.0	20.0	JSM-2832-20
28.0		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 +0.124	34.0	25.0	JSM-3034-25
30.0		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	+0.050 +0.150	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

3) After press-fit. Testing methods ▶ Page 57

iglidur® J | Product range

Sleeve bearing (Form S)

Dimensions [mm]

d1	d1- Tolerance[3]	d2	b1 h13	Part No.
32.0		37.0	25.0	**JSM-3237-25**
32.0		38.0	50.0	**JSM-3238-50**
35.0		39.0	20.0	**JSM-3539-20**
35.0		39.0	30.0	**JSM-3539-30**
35.0		39.0	40.0	**JSM-3539-40**
35.0	+0.050	39.0	50.0	**JSM-3539-50**
36.0	+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		50.0	20.0	**JSM-4550-20**
45.0	+0.025 +0.125	50.0	30.0	**JSM-4550-30**
45.0		50.0	40.0	**JSM-4550-40**

d1	d1- Tolerance[3]	d2	b1 h13	Part No.
45.0	+0.025 +0.125	50.0	50.0	**JSM-4550-50**
50.0		55.0	20.0	**JSM-5055-20**
50.0		55.0	30.0	**JSM-5055-30**
50.0	+0.050	55.0	40.0	**JSM-5055-40**
50.0	+0.150	55.0	50.0	**JSM-5055-50**
50.0		55.0	60.0	**JSM-5055-60**
55.0		60.0	60.0	**JSM-5560-60**
60.0		65.0	60.0	**JSM-6065-60**
65.0		70.0	50.0	**JSM-6570-50**
70.0	+0.060	75.0	60.0	**JSM-7075-60**
75.0	+0.180	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

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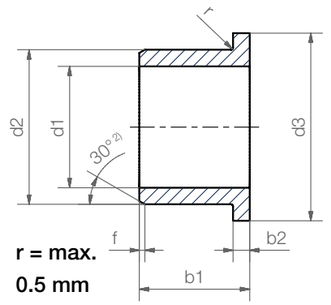
iglidur® J | Product range

Flange bearing (Form F)



r = max. 0.5 mm

[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the d1

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

Dimensions [mm]

d1	d1- Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	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	1.5	**JFM-0306-10**
4.0		5.5	9.5	3.0	0.75	**JFM-0405-03**
4.0		5.5	9.5	6.0	0.75	**JFM-0405-06**
5.0		6.0	10.0	5.0	0.5	**JFM-0506-05**
5.0	+0.020	7.0	11.0	3.0	1.0	**JFM-0507-03**
5.0	+0.068	7.0	11.0	5.0	1.0	**JFM-0507-05**
6.0		8.0	12.0	4.0	1.0	**JFM-0608-04**
6.0		8.0	12.0	6.0	1.0	**JFM-0608-06**
6.0		8.0	12.0	8.0	1.0	**JFM-0608-08**
6.0		8.0	12.0	10.0	1.0	**JFM-0608-10**
6.0	+0.030 +0.105	10.0	14.0	10.0	2.0	**JFM-0610-10**
8.0		10.0	15.0	3.8	1.0	**JFM-0810-038**
8.0		10.0	15.0	5.0	1.0	**JFM-0810-05**
8.0		10.0	15.0	6.0	1.0	**JFM-0810-06**
8.0		10.0	15.0	7.0	1.0	**JFM-0810-07**
8.0		10.0	15.0	8.0	1.0	**JFM-0810-08**
8.0	+0.025	10.0	15.0	9.5	1.0	**JFM-0810-09**
8.0	+0.083	10.0	15.0	10.0	1.0	**JFM-0810-10**
8.0		10.0	12.5	10.0	1.0	**JFM-0810125-10**
8.0		10.0	12.0	16.0	1.0	**JFM-081012-16**
8.0		10.0	14.0	10.0	1.0	**JFM-081014-10**
8.0		10.0	16.0	11.0	2.0	**JFM-081016-11**
8.0		12.0	16.0	6.0	2.0	**JFM-0812-06**

d1	d1- Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
8.0		12.0	16.0	9.0	2.0	**JFM-0812-09**
10.0		12.0	18.0	5.0	1.0	**JFM-1012-05**
10.0		12.0	18.0	7.0	1.0	**JFM-1012-07**
10.0		12.0	18.0	9.0	1.0	**JFM-1012-09**
10.0		12.0	18.0	10.0	1.0	**JFM-1012-10**
10.0	+0.025 +0.083	12.0	18.0	12.0	1.0	**JFM-1012-12**
10.0		12.0	18.0	15.0	1.0	**JFM-1012-15**
10.0		12.0	18.0	17.0	1.0	**JFM-1012-17**
10.0		12.0	18.0	18.0	1.0	**JFM-1012-18**
10.0		12.0	15.0	3.5	1.0	**JFM-101215-035**
10.0		14.0	17.5	14.0	1.0	**JFM-1014-14**
11.0		13.0	18.0	5.0	1.0	**JFM-1113-05**
12.0		14.0	20.0	4.0	1.0	**JFM-1214-04**
12.0		14.0	20.0	5.0	1.0	**JFM-1214-05**
12.0		14.0	20.0	7.0	1.0	**JFM-1214-07**
12.0	+0.032	14.0	20.0	9.0	1.0	**JFM-1214-09**
12.0	+0.102	14.0	20.0	12.0	1.0	**JFM-1214-12**
12.0		14.0	20.0	15.0	1.0	**JFM-1214-15**
12.0		14.0	20.0	17.0	1.0	**JFM-1214-17**
12.0		14.0	18.0	4.5	1.0	**JFM-121418-045**
12.0		14.0	18.0	10.0	1.0	**JFM-121418-10**
12.0	+0.050 +0.160	18.0	24.0	8.0	3.0	**JFM-1218-08**
12.0		18.0	24.0	12.0	3.0	**JFM-1218-12**
12.0		18.0	22.0	20.0	3.0	**JFM-1218-20**
14.0		16.0	22.0	3.0	1.0	**JFM-1416-03**
14.0	+0.032	16.0	22.0	10.0	1.0	**JFM-1416-10**
14.0	+0.102	16.0	22.0	12.0	1.0	**JFM-1416-12**
14.0		16.0	22.0	17.0	1.0	**JFM-1416-17**

[3] After press-fit. Testing methods ▶ Page 57

Order key

Type	Dimensions [mm]
J F M	-03 04-03

iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

Imperial dimensions available ▶ From page 1378

iglidur® J | Product range

Flange bearing (Form F)

Dimensions [mm]

d1	d1- Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
14.0		18.0	22.0	20.0	2.0	**JFM-141822-20**
14.0		18.0	25.0	24.0	2.0	**JFM-141825-24**
15.0		17.0	23.0	4.0	1.0	**JFM-1517-04**
15.0	+0.032 +0.102	17.0	23.0	5.5	1.0	**JFM-1517-055**
15.0		17.0	23.0	9.0	1.0	**JFM-1517-09**
15.0		17.0	23.0	12.0	1.0	**JFM-1517-12**
15.0		17.0	23.0	17.0	1.0	**JFM-1517-17**
15.0	+0.050 +0.160	21.0	27.0	20.0	3.0	**JFM-1521-20**
16.0		18.0	24.0	6.0	1.0	**JFM-1618-06**
16.0	+0.032	18.0	24.0	12.0	1.0	**JFM-1618-12**
16.0	+0.102	18.0	24.0	16.0	1.0	**JFM-1618-16**
16.0		18.0	24.0	17.0	1.0	**JFM-1618-17**
16.0	+0.050	22.0	28.0	12.0	3.0	**JFM-1622-12**
16.0	+0.160	22.0	28.0	15.0	3.0	**JFM-1622-15**
17.0		19.0	25.0	9.0	1.0	**JFM-1719-09**
17.0		19.0	25.0	21.0	1.0	**JFM-1719-21**
18.0		20.0	26.0	4.0	1.0	**JFM-1820-04**
18.0	+0.032	20.0	26.0	12.0	1.0	**JFM-1820-12**
18.0	+0.102	20.0	26.0	17.0	1.0	**JFM-1820-17**
18.0		20.0	26.0	22.0	1.0	**JFM-1820-22**
18.0		21.0	25.0	12.0	1.0	**JFM-1821-12**
19.0		22.0	26.0	23.0	1.0	**JFM-1922-23**
19.0		22.0	26.0	36.0	1.0	**JFM-1922-36**
20.0		23.0	30.0	11.5	1.5	**JFM-2023-11**
20.0	+0.040	23.0	30.0	15.5	1.5	**JFM-2023-15.5**
20.0	+0.124	23.0	30.0	16.5	1.5	**JFM-2023-16**
20.0		23.0	30.0	21.5	1.5	**JFM-2023-21**
20.0		26.0	32.0	15.0	3.0	**JFM-2026-15**
20.0	+0.065 +0.195	26.0	32.0	20.0	3.0	**JFM-2026-20**
20.0		26.0	32.0	25.0	3.0	**JFM-2026-25**
22.0		25.0	32.0	8.0	1.5	**JFM-222532-08**
24.0	+0.040	30.0	36.0	30.0	3.0	**JFM-2430-30**
25.0	+0.124	28.0	35.0	6.0	1.5	**JFM-2528-06**
25.0		28.0	35.0	11.5	1.5	**JFM-2528-11**
25.0		28.0	35.0	12.0	1.5	**JFM-2528-12**
25.0		28.0	35.0	14.5	1.5	**JFM-2528-14.5**
25.0	+0.040	28.0	35.0	21.5	1.5	**JFM-2528-21**
25.0	+0.124	28.0	39.0	5.0	1.5	**JFM-252839-05**
25.0		28.0	39.0	7.5	1.5	**JFM-252839-075**
25.0		32.0	38.0	20.0	4.0	**JFM-2532-20**
25.0	+0.065 +0.195	32.0	38.0	25.0	4.0	**JFM-2532-25**
28.0		32.0	35.0	7.0	2.0	**JFM-283235-07**
28.0		32.0	39.0	20.0	2.0	**JFM-283239-20**
30.0		32.0	40.0	12.0	1.0	**JFM-303240-12**
30.0	+0.040 +0.124	34.0	42.0	16.0	2.0	**JFM-3034-16**
30.0		34.0	42.0	20.0	2.0	**JFM-3034-20**
30.0		34.0	42.0	26.0	2.0	**JFM-3034-26**
30.0	+0.080 +0.240	38.0	44.0	20.0	4.0	**JFM-3038-20**
30.0	+0.065	38.0	44.0	30.0	4.0	**JFM-3038-30**
30.0	+0.195	38.0	44.0	36.0	4.0	**JFM-3038-36**
35.0		39.0	47.0	12.0	2.0	**JFM-3539-12**
35.0		39.0	47.0	16.0	2.0	**JFM-3539-16**
35.0		39.0	47.0	26.0	2.0	**JFM-3539-26**
40.0		44.0	52.0	20.0	2.0	**JFM-4044-20**
40.0	+0.050 +0.150	44.0	52.0	30.0	2.0	**JFM-4044-30**
40.0		44.0	52.0	40.0	2.0	**JFM-4044-40**
45.0		50.0	58.0	12.0	2.0	**JFM-4550-12**
45.0		50.0	58.0	20.0	2.0	**JFM-4550-20**
45.0		50.0	58.0	50.0	2.0	**JFM-4550-50**
50.0		55.0	63.0	11.5	2.0	**JFM-5055-115**
50.0		55.0	63.0	50.0	2.0	**JFM-5055-50**
55.0		60.0	68.0	50.0	2.0	**JFM-5560-50**
60.0	+0.060 +0.180	65.0	73.0	37.0	2.0	**JFM-6065-37**
60.0		65.0	73.0	50.0	2.0	**JFM-6065-50**
65.0		70.0	78.0	60.0	2.0	**JFM-6570-60**
70.0		75.0	83.0	50.0	2.0	**JFM-7075-50**
90.0		95.0	103.0	100.0	2.5	**JFM-9095-100**
100.0	+0.072	105.0	113.0	100.0	2.5	**JFM-100105-100**
110.0	+0.212	115.0	123.0	100.0	2.5	**JFM-110115-100**
120.0		125.0	133.0	100.0	2.5	**JFM-120125-100**

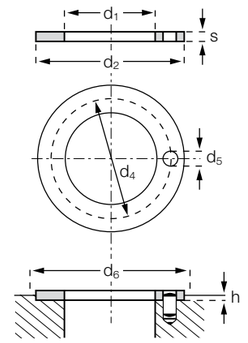
[3] **After press-fit. Testing methods ▶ Page 57**

Couldn't find your size?
Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

Even more dimensions from stock
More than 300 dimensions are now available. Search online for your required bearing.
▶ www.igus.eu/iglidur-specialbearings

iglidur® J | Product range

Thrust washer (Form T)



Order key

Type	Dimensions [mm]
J T M	-1224-015

iglidur® material | Form T | Metric | Inner-Ø d1 | Outer-Ø d2 | Thickness s

Dimensions according to ISO 3547-1 and special dimensions

Imperial dimensions available ▶ From page 1378

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.
12.0	24.0	1.5	18.0	1.5	1.0	24.0	**JTM-1224-015**
12.0	34.0	1.5	[4]	[4]	1.0	34.0	**JTM-1234-015**
14.0	20.0	1.5	[4]	[4]	1.0	20.0	**JTM-1420-015**
20.0	36.0	1.5	28.0	3.0	1.0	36.0	**JTM-2036-015**
28.0	42.0	2.0	38.0	4.0	1.0	48.0	**JTM-2842-020**
30.0	39.0	1.5	[4]	[4]	1.0	39.0	**JTM-3039-015**
56.0	70.0	1.0	[4]	[4]	0.7	70.0	**JTM-5670-010**
139.0	188.0	2.0	[4]	[4]	1.5	188.0	**JTM-139188-020**

[4] **Design without fixing bore**

Couldn't find your size?
Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

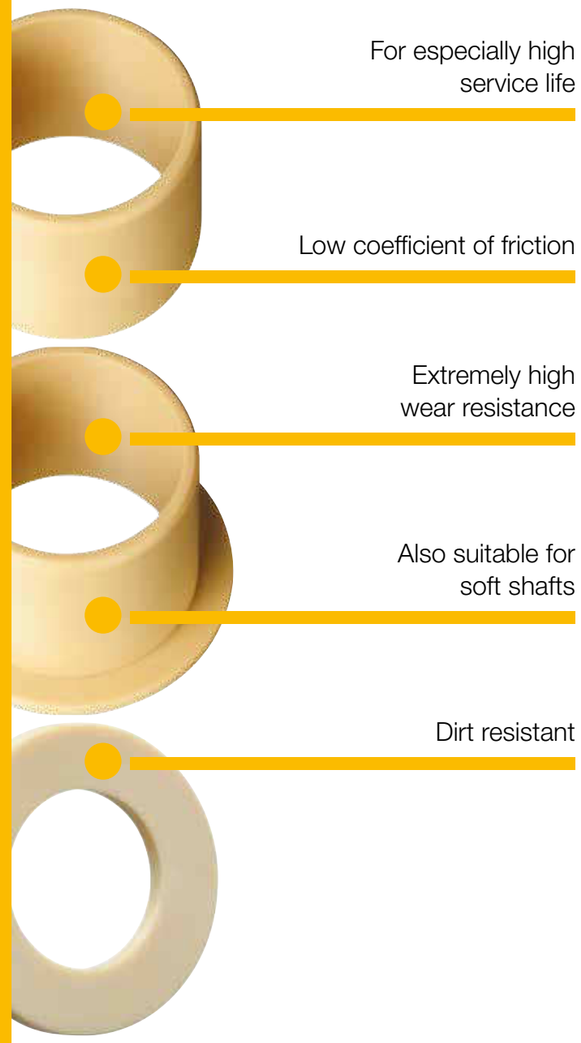
My sketches

The classic endurance runner up to 30 MPa – iglidur® W300

- Over 400 dimensions available from stock
- For especially long service life
- Low coefficient of friction
- Extremely high wear resistance
- Also suitable for soft shafts
- Resistant to dirt
- Lubrication and maintenance-free

iglidur® W300 | The classic endurance runner up to 30 MPa

Excellent wear resistance on (virtually) all shafts



The iglidur® W300 material 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.

When to use it?

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

When not to use it?

- For high loads starting at 50 MPa
  ▶ iglidur® Q, page 409
- When constant temperatures exceed +90 °C
  ▶ iglidur® H, page 299
  ▶ iglidur® X, page 237
- For very wet environments
  ▶ iglidur® P, page 113
- When an economical bearing is required
  ▶ iglidur® G, page 79

Typical application areas

- Automation
- Printing industry
- Wood machining
- Mechatronics
- Test engineering and quality assurance

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +90 °C
min. –40 °C

Ø 2–120 mm
More dimensions on request

Imperial dimensions available
▶ **From page 1337**

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

iglidur® W300 | Technical data

Material properties table

General properties	Unit	iglidur® W300	Testing method
Density	g/cm³	1.24	
Colour		yellow	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	1.3	DIN 53495
Max. water absorption	% weight	6.5	
Coefficient of sliding 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. long-term application temperature	°C	+90	
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)	$K^{-1} \cdot 10^{-5}$	9	DIN 53752
Electrical properties			
Specific volume resistance	Ωcm	$> 10^{13}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

Table 01: Material properties table

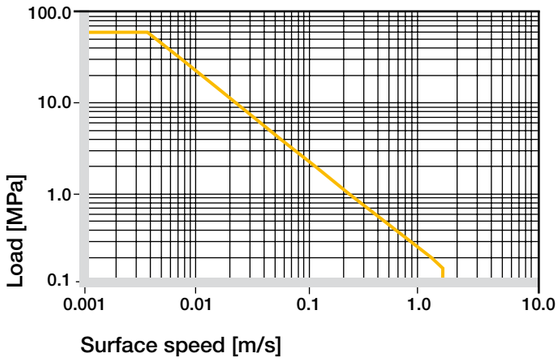


Diagram 01: Permissible pv values for iglidur® W300 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® W300 bearings amounts to about 1.3 % weight in standard climatic conditions. The saturation limit submerged in water is 6.5 % weight. This must be taken into account for these types of applications.

▶ **Diagram, www.igus.eu/w300-moisture**

Vacuum

iglidur® W300 plain bearings outgas in a vacuum. Use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® W300 are resistant to radiation up to an intensity of $3 \cdot 10^2$ Gy.

UV resistance

iglidur® W300 plain bearings are permanently resistant to UV radiation. A slight change in colour will not significantly influence their properties.

Medium	Resistance
Alcohol	+ to 0
Hydrocarbons	+
Greases, oils without additives	+
Fuels	+
Diluted acids	0 to –
Strong acids	–
Diluted alkalines	+
Strong alkalines	0

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

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.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® W300 plain bearings decreases. Diagram 02 clarifies this relationship. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

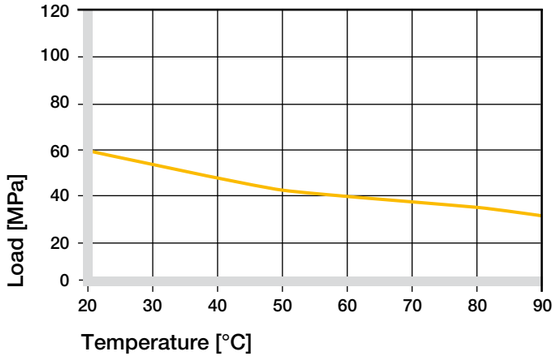


Diagram 02: Permissible maximum surface pressure of as a function of temperature (60 MPa at +20 °C)

iglidur® W300 presents a very high compression strength in spite of its high elasticity. Diagram 03 shows the elastic deformation of iglidur® W300 under radial loads.
At the maximum permissible surface pressure of 60 MPa the deformation is less than 3 %.

▶ Surface pressure, **page 41**

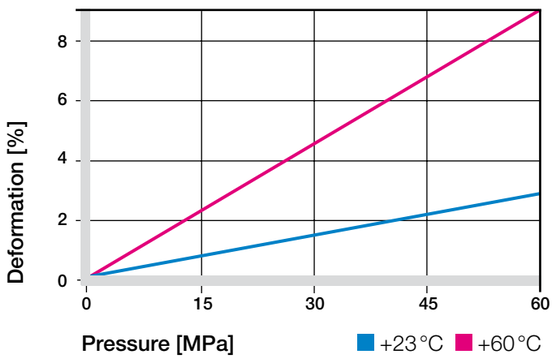


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

Even at higher surface speeds, the coefficients of friction for iglidur® W300 do not increase. Therefore, compared to other materials, higher surface speeds can be obtained, for example, up to 1.5 m/s rotating and up to 5 m/s linear. The bearing wear remains low when used for long periods at high speeds, due to exceptional wear resistance. Relatively high speeds can be obtained with iglidur® W300 bearings on hardened shafts with the recommended surface finish.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	1	0.7	4
Short-term	1.5	1.8	6

Table 03: Maximum surface speeds

Temperatures

iglidur® W300 bearings maintain their exceptional wear resistance even up to the highest permissible application temperatures and at the same time resist becoming brittle at low temperatures. At temperatures over +60 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

Similar to wear resistance, the coefficient of friction 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.

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

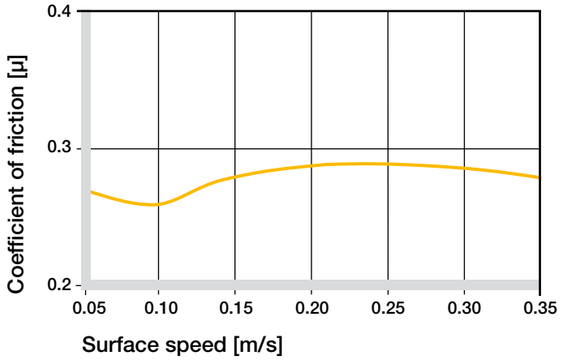


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

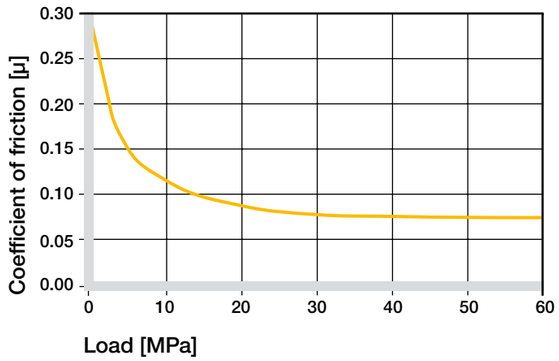


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

Friction and wear are to a large extent also highly dependent on the shaft materials. 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 roughnesses of 0.4 to 0.5 µm have proven to be the best. Tests with iglidur® W300 have shown the wear resistance at this roughness is very high, while the friction reduces to the lowest 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 52**

iglidur® W300	Dry	Greases	Oil	Water
C. o. f. µ	0.08–0.23	0.09	0.04	0.04

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

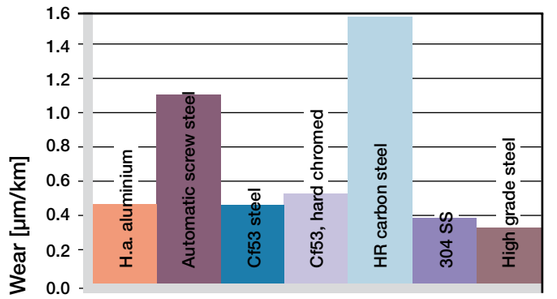


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

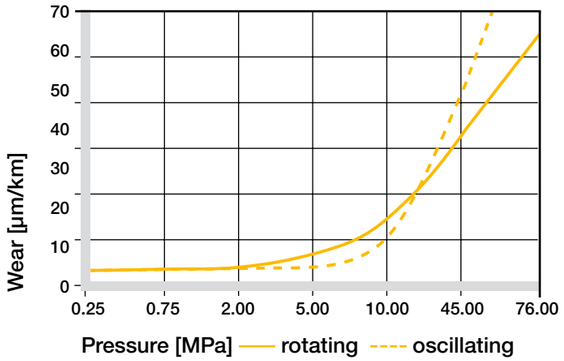


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Installation tolerances

iglidur® W300 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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 specific dimensions the tolerance differs depending on the wall thickness (please see the product range table).

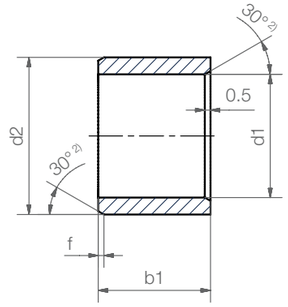
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® W300 E10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.014 +0.054	0 +0.010
> 3 to 6	0–0.030	+0.020 +0.068	0 +0.012
> 6 to 10	0–0.036	+0.025 +0.083	0 +0.015
> 10 to 18	0–0.043	+0.032 +0.102	0 +0.018
> 18 to 30	0–0.052	+0.040 +0.124	0 +0.021
> 30 to 50	0–0.062	+0.050 +0.150	0 +0.025
> 50 to 80	0–0.074	+0.060 +0.180	0 +0.030
> 80 to 120	0–0.087	+0.072 +0.212	0 +0.035
>120 to 180	0–0.100	+0.085 +0.245	0 +0.040

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

iglidur® W300 | Product range

Sleeve bearing (Form S)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]								
W	S	M	-	02	03	-	03		
iglidur® material	Form S	Metric		Inner-Ø d1		Outer-Ø d2		Length b1	

Dimensions according to ISO 3547-1 and special dimensions

Imperial dimensions available
▶ From page 1365

Dimensions [mm]

d1	d1- Tolerance[3]	d2	b1 h13	Part No.
2.0		3.5	3.0	WSM-0203-03
2.5		4.0	1.8	WSM-0204-018
2.5	+0.014	4.0	3.0	WSM-0204-03
3.0	+0.054	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		5.5	4.0	WSM-0405-04
4.0		5.5	6.0	WSM-0405-06
4.0	+0.020	5.5	8.0	WSM-0405-08
4.0	+0.068	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		8.0	6.0	WSM-0608-06
6.0		8.0	8.0	WSM-0608-08
6.0	+0.020	8.0	9.5	WSM-0608-09
6.0	+0.068	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		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	+0.025	10.0	6.0	WSM-0810-06
8.0	+0.083	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
8.0		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	+0.025	12.0	6.0	WSM-1012-06
10.0	+0.083	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		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	+0.032	14.0	10.0	WSM-1214-10
12.0	+0.102	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

3) After press-fit. Testing methods ▶ Page 57

iglidur® W300 | Product range

Sleeve bearing (Form S)

Dimensions [mm]

d1	d1- Tolerance[3]	d2	b1 h13	Part No.
13.0		15.0	15.0	WSM-1315-15
13.0		15.0	20.0	WSM-1315-20
14.0		16.0	7.25	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	+0.032	18.0	8.0	WSM-1618-08
16.0	+0.102	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		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	+0.040	23.0	10.0	WSM-2023-10
20.0	+0.124	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
22.0		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	+0.040 +0.124	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		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	+0.050 +0.150	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

3) After press-fit. Testing methods ▶ Page 57

iglidur® W300 | Product range

Sleeve bearing (Form S)

Dimensions [mm]

d1	d1- Tolerance[3]	d2	b1 h13	Part No.
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	+0.050	50.0	50.0	**WSM-4550-50**
50.0	+0.150	55.0	20.0	**WSM-5055-20**
50.0		55.0	30.0	**WSM-5055-30**
50.0		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**

d1	d1- Tolerance[3]	d2	b1 h13	Part No.
55.0		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**
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	95.0	100.0	**WSM-9095-100**
100.0	+0.212	105.0	100.0	**WSM-100105-100**

[3] After press-fit. Testing methods ▶ Page 57

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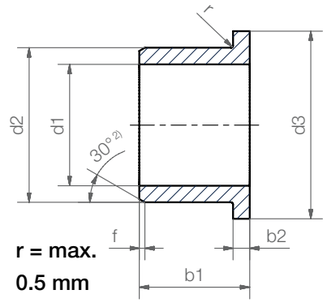
Flange bearing (Form F)



r = max. 0.5 mm

[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the d1

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

Dimensions [mm]

d1	d1- Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	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	5.5	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**
8.0		10.0	15.0	5.0	1.00	**WFM-081015-05**
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**

[3] After press-fit. Testing methods ▶ Page 57

Order key

Type	Dimensions [mm]

W F M - 02 04 - 03

iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

Inch Imperial dimensions available ▶ From page 1387

d1	d1- Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	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**

iglidur® W300 | Product range

Flange bearing (Form F)

Dimensions [mm]

d1	d1- Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
15.0		17.0	23.0	20.0	1.00	**WFM-1517-20**
16.0		18.0	24.0	9.0	1.00	**WFM-1618-09**
16.0		18.0	24.0	12.0	1.00	**WFM-1618-12**
16.0		18.0	24.0	17.0	1.00	**WFM-1618-17**
17.0	+0.032	19.0	25.0	12.0	1.00	**WFM-1719-12**
17.0	+0.102	19.0	25.0	18.0	1.00	**WFM-1719-18**
17.0		19.0	25.0	25.0	1.00	**WFM-1719-25**
18.0		20.0	26.0	6.0	1.00	**WFM-1820-06**
18.0		20.0	26.0	12.0	1.00	**WFM-1820-12**
18.0		20.0	26.0	17.0	1.00	**WFM-1820-17**
18.0		20.0	26.0	22.0	1.00	**WFM-1820-22**
20.0		23.0	30.0	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	+0.040	28.0	35.0	11.5	1.50	**WFM-2528-11**
25.0	+0.124	28.0	35.0	16.5	1.50	**WFM-2528-16**
25.0		28.0	35.0	21.0	1.50	**WFM-2528-21**
25.0		28.0	32.0	30.0	1.50	**WFM-2528-30**
25.0		28.0	31.0	13.5	1.50	**WFM-252831-13**
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**
30.0		34.0	42.0	16.0	2.00	**WFM-3034-16**
30.0	+0.040	34.0	42.0	26.0	2.00	**WFM-3034-26**
30.0	+0.124	34.0	42.0	37.0	2.00	**WFM-3034-37**
32.0		36.0	40.0	16.0	2.00	**WFM-3236-16**
32.0		36.0	40.0	26.0	2.00	**WFM-3236-26**
35.0		39.0	47.0	9.0	2.00	**WFM-3539-09**
35.0		39.0	47.0	16.0	2.00	**WFM-3539-16**
35.0		39.0	47.0	26.0	2.00	**WFM-3539-26**
35.0	+0.050	39.0	50.0	35.0	2.00	**WFM-353950-35**
38.0	+0.150	42.0	50.0	22.0	2.00	**WFM-3842-22**
40.0		44.0	52.0	30.0	2.00	**WFM-4044-30**
40.0		44.0	52.0	40.0	2.00	**WFM-4044-40**
45.0		50.0	58.0	50.0	2.00	**WFM-4550-50**
50.0		55.0	63.0	40.0	2.00	**WFM-5055-40**
50.0		55.0	63.0	50.0	2.00	**WFM-5055-50**
55.0		60.0	68.0	60.0	2.00	**WFM-5560-60**
57.0		62.0	67.0	40.0	2.00	**WFM-5762-40**
60.0		65.0	73.0	60.0	2.00	**WFM-6065-60**
65.0	+0.060	70.0	78.0	60.0	2.00	**WFM-6570-60**
70.0	+0.180	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	95.0	103.0	100.0	2.50	**WFM-9095-100**
100.0	+0.212	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 57**

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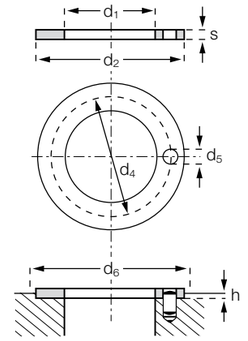
iglidur® W300 | Product range

Thrust washer (Form T)



Order key

Type	Dimensions [mm]
W T M	-0509-006

iglidur® material	Form T	Metric	Inner-Ø d1	Outer-Ø d2	Thickness s

Dimensions according to ISO 3547-1 and special dimensions

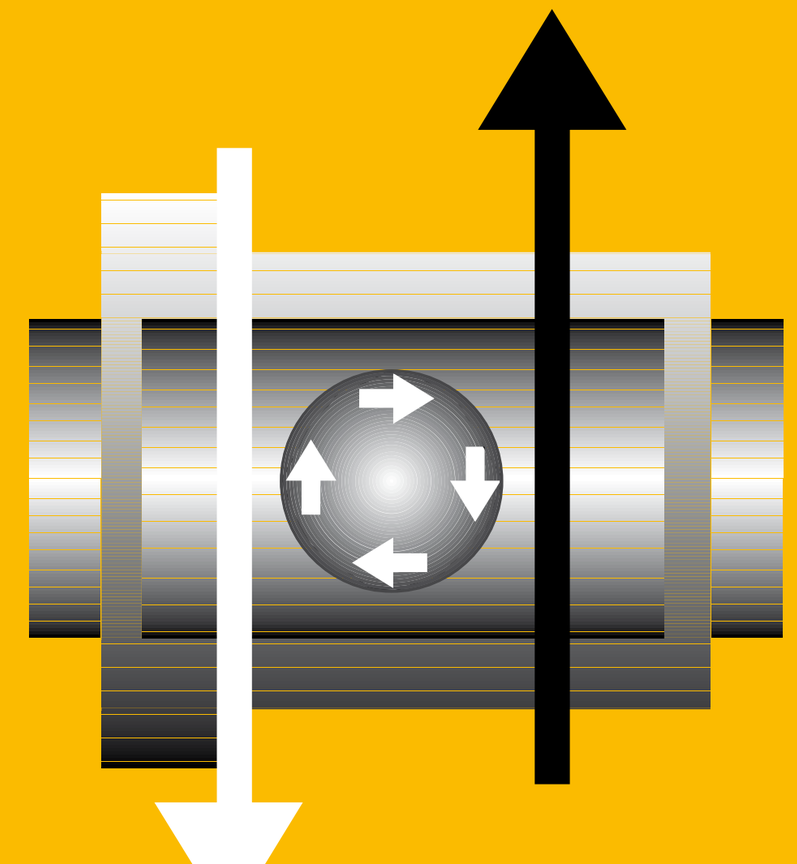
Imperial dimensions available ▶ From page 1392

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.
5.0	9.5	0.6	[4]	[4]	0.3	9.5	**WTM-0509-006**
6.0	20.0	1.5	13.0	1.5	1.0	20.0	**WTM-0620-015**
8.0	18.0	1.5	13.0	1.5	1.0	18.0	**WTM-0818-015**
10.0	18.0	1.0	[4]	[4]	0.7	18.0	**WTM-1018-010**
10.0	18.0	1.5	[4]	[4]	1.0	18.0	**WTM-1018-015**
12.0	24.0	1.5	18.0	1.5	1.0	24.0	**WTM-1224-015**
14.0	26.0	1.5	20.0	2.0	1.0	26.0	**WTM-1426-015**
15.0	24.0	1.5	19.5	1.5	1.0	24.0	**WTM-1524-015**
16.0	30.0	1.5	23.0	2.0	1.0	30.0	**WTM-1630-015**
18.0	32.0	1.5	25.0	2.0	1.0	32.0	**WTM-1832-015**
18.0	44.0	1.5	30.0	7.0	1.0	44.0	**WTM-1844-015**
20.0	36.0	1.5	28.0	3.0	1.0	36.0	**WTM-2036-015**
22.0	38.0	1.5	30.0	3.0	1.0	38.0	**WTM-2238-015**
24.0	42.0	1.5	33.0	3.0	1.0	42.0	**WTM-2442-015**
26.0	44.0	1.5	35.0	3.0	1.0	44.0	**WTM-2644-015**
28.0	40.0	1.5	38.0	4.0	1.0	48.0	**WTM-2840-015**
28.0	48.0	1.5	38.0	4.0	1.0	48.0	**WTM-2848-015**
32.0	54.0	1.5	43.0	4.0	1.0	54.0	**WTM-3254-015**
38.0	62.0	1.5	50.0	4.0	1.0	62.0	**WTM-3862-015**
42.0	66.0	1.5	54.0	4.0	1.0	66.0	**WTM-4266-015**
48.0	74.0	2.0	61.0	4.0	1.5	74.0	**WTM-4874-020**
52.0	78.0	2.0	65.0	4.0	1.5	78.0	**WTM-5278-020**
62.0	90.0	2.0	76.0	4.0	1.5	90.0	**WTM-6290-020**
82.0	110.0	2.0	[4]	[4]	1.5	110.0	**WTM-82110-020**
102.0	130.0	2.0	[4]	[4]	1.5	130.0	**WTM-102130-020**
120.0	150.0	2.0	[4]	[4]	1.5	150.0	**WTM-120150-020**

[4] **Design without fixing bore**

My sketches



The new endurance runner: specialist for pivoting and pulsating loads – iglidur® J3

- Low coefficients of friction
- Good liquid media resistance
- Low moisture absorption
- PTFE-free
- Lubrication and maintenance-free
- Standard range from stock

iglidur® J3 | The new endurance runner: specialist for pulsating loads

Up to 10 MPa up to three times more wear resistant than iglidur® J

Low coefficients of friction

Good media resistance

Low moisture absorption

PTFE-free

iglidur® J3 is a material with improved wear resistance at low to medium loads and high speed. The lifetime is up to 300 % longer than iglidur® J – the previous iglidur® champion.

When to use it?

- If wear resistance rotating or oscillating of iglidur® J should be optimised
- When very low coefficients of friction in dry operation are required
- If high wear resistance at low loads is required
- If low moisture absorption is requested
- If good liquid media resistance is required

When not to use it?

- If you need a wear-resistant bearing for linear motion
  ▶ iglidur® J, page 141
- If permanent temperatures exceed +90 °C
  ▶ iglidur® J260, page 181
- If radial surface pressure is higher than 45 MPa
  ▶ iglidur® W300, page 153

Typical application areas

- Automation
- Printing industry
- Beverage technology
- Glass industry
- Aerospace engineering

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +90 °C
min. –50 °C

Ø 2–50 mm
More dimensions on request

Imperial dimensions available
▶ **From page 1337**

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

iglidur® J3 | Technical data

Material properties table

General properties	Unit	iglidur® J3	Testing method
Density	g/cm³	1.42	
Colour		yellow	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.3	DIN 53495
Max. water absorption	% weight	1.3	
Coefficient of sliding friction, dynamic against steel	µ	0.06–0.20	
pv value, max. (dry)	MPa · m/s	0.5	
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. 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)	$K^{-1} \cdot 10^{-5}$	13	DIN 53752
Electrical properties			
Specific volume resistance	Ωcm	$> 10^{12}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

Table 01: Material properties table

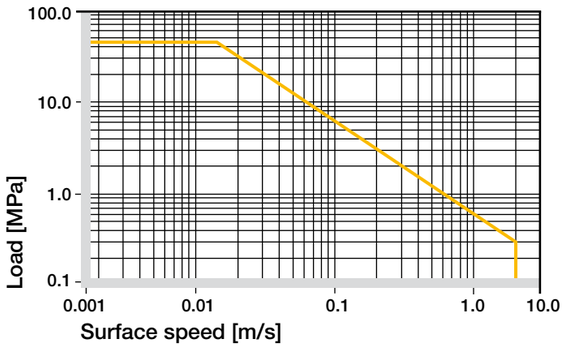


Diagram 01: Permissible pv values for iglidur® J3 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® J3 bearings amounts to about 0.3% weight in standard climatic conditions. The saturation limit submerged in water is 1.3 % weight. Due to these low values considering expansion by moisture absorption is only required in extreme cases.

▶ **Diagram, www.igus.eu/j3-moisture**

Vacuum

In vacuum, any absorbed moisture content is outgassed. Only dehumidified iglidur® J3 bearings are suitable for vacuum.

Radiation resistance

Resistant to radiation up to an intensity of $1 \cdot 10^4$ Gy.

UV resistance

iglidur® J3 plain bearings become discoloured under UV radiation. However, hardness, compressive strength and the wear resistance of the material do not change.

Medium	Resistance
Alcohol	+
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 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® J3 | Technical data

With respect to its general mechanical and thermal specifications, iglidur® J3 is directly comparable to our classic, iglidur® J.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® J3 plain bearings decreases. Diagram 02 clarifies this relationship. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

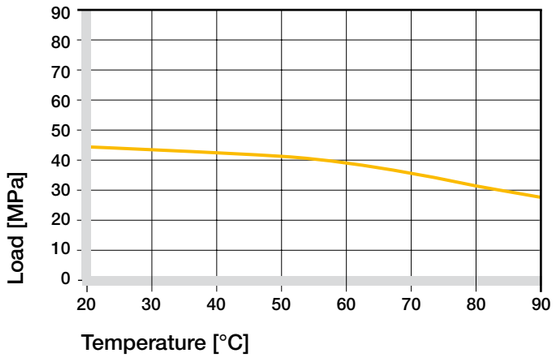


Diagram 02: Permissible maximum surface pressure of as a function of temperature (45 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® J3 at radial loads. At the maximum permissible surface pressure of 45 MPa at room temperature the deformation is less than 6 %. A possible deformation could be, among others, dependant on the duty cycle of the load.

▶ Surface pressure, **page 41**

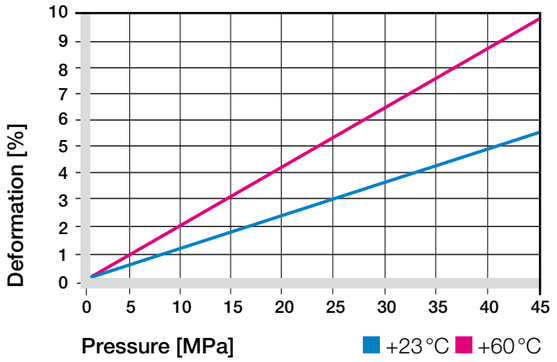


Diagram 03: Deformation under pressure and temperature

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 temperature level is rarely reached, due to varying application conditions.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	1.5	1.1	8
Short-term	3	2.1	10

Table 03: Maximum surface speeds

Temperatures

The ambient application temperature has a direct impact on bearing wear, an increase in temperature results in an increase in wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +90 °C. At temperatures over +60 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

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

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

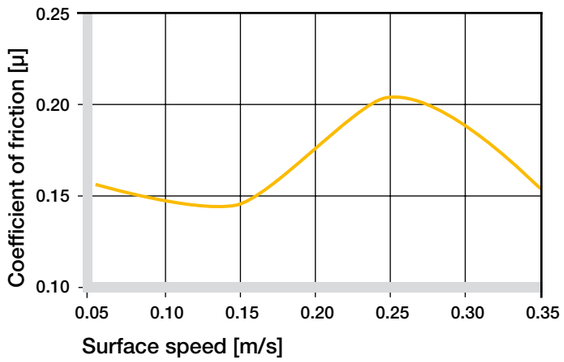


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

iglidur® J3 | Technical data

J3
+90 °C
45 MPa

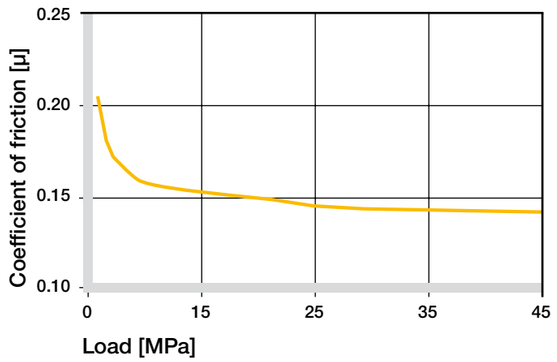


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

The friction and wear are also dependent, to a large degree, on the shaft material. 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 roughness Ra = 0.1–0.3 µm is recommended. The diagram 06 shows that iglidur® J3 can be combined with various shaft materials. Diagram 07 shows rotating and oscillating tests in comparison. With higher load, the wear increases more for rotating than for oscillating movements.

▶ Shaft materials, **page 52**

iglidur® J3	Dry	Greases	Oil	Water
C. o. f. μ	0.06 – 0.20	0.09	0.04	0.04

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

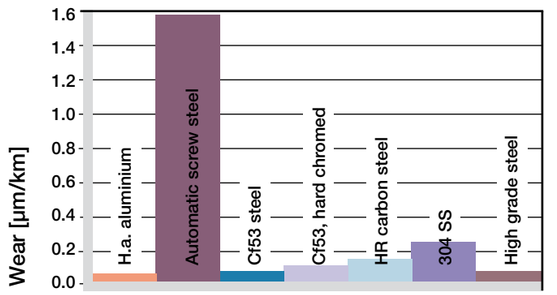


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

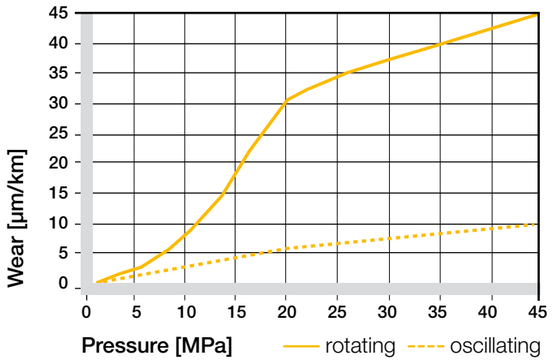


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Installation tolerances

iglidur® J3 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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.

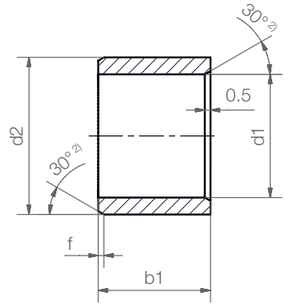
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® J3 E10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.014 +0.054	0 +0.010
> 3 to 6	0–0.030	+0.020 +0.068	0 +0.012
> 6 to 10	0–0.036	+0.025 +0.083	0 +0.015
> 10 to 18	0–0.043	+0.032 +0.102	0 +0.018
> 18 to 30	0–0.052	+0.040 +0.124	0 +0.021
> 30 to 50	0–0.062	+0.050 +0.150	0 +0.025
> 50 to 80	0–0.074	+0.060 +0.180	0 +0.030
> 80 to 120	0–0.087	+0.072 +0.212	0 +0.035
>120 to 180	0–0.100	+0.085 +0.245	0 +0.040

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

iglidur® J3 | Product range

Sleeve bearing (Form S)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the d1

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

Dimensions [mm]

d1	d1- Tolerance[3]	d2	b1 h13	Part No.
3.0	+0.014 +0.054	4.5	5.0	**J3SM-0304-05**
4.0		5.5	4.0	**J3SM-0405-04**
4.0		5.5	6.0	**J3SM-0405-06**
5.0	+0.020 +0.068	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		10.0	8.0	**J3SM-0810-08**
8.0		10.0	10.0	**J3SM-0810-10**
8.0		10.0	12.0	**J3SM-0810-12**
10.0	+0.025 +0.083	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	10.0	**J3SM-1012-20**
12.0		14.0	10.0	**J3SM-1214-10**
12.0		14.0	12.0	**J3SM-1214-12**
12.0		14.0	15.0	**J3SM-1214-15**
12.0		14.0	20.0	**J3SM-1214-20**
13.0	+0.032 +0.102	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**
15.0		17.0	30.0	**J3SM-1517-30**
16.0		18.0	15.0	**J3SM-1618-15**
16.0		18.0	20.0	**J3SM-1618-20**
16.0	+0.032 +0.102	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		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	+0.040 +0.124	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**

3) After press-fit. Testing methods ▶ Page 57

Order key

Type	Dimensions [mm]
J3 S M	-0304-05

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

Dimensions according to ISO 3547-1 and special dimensions

Imperial dimensions available
▶ From page 1355

iglidur® J3 | Product range

Sleeve bearing (Form S)

Dimensions [mm]

d1	d1- Tolerance[3]	d2	b1 h13	Part No.
28.0	+0.040 +0.124	32.0	30.0	**J3SM-2832-30**
30.0		34.0	20.0	**J3SM-3034-20**
30.0		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		36.0	20.0	**J3SM-3236-20**
32.0		36.0	30.0	**J3SM-3236-30**
32.0		36.0	40.0	**J3SM-3236-40**
35.0	+0.050 +0.150	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		44.0	40.0	**J3SM-4044-40**
40.0		44.0	50.0	**J3SM-4044-50**
45.0		50.0	20.0	**J3SM-4550-20**
45.0		50.0	30.0	**J3SM-4550-30**
45.0	+0.050 +0.150	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 57

Couldn't find your size?
Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

Even more dimensions from stock
More than 300 dimensions are now available. Search online for your required bearing.
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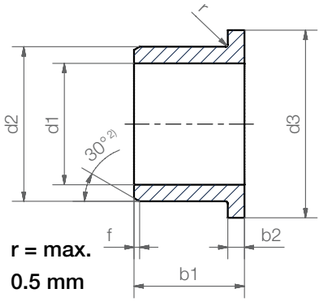
iglidur® J3 | Product range

Flange bearing (Form F)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]				
J3	F	M	-03	04	-05
iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

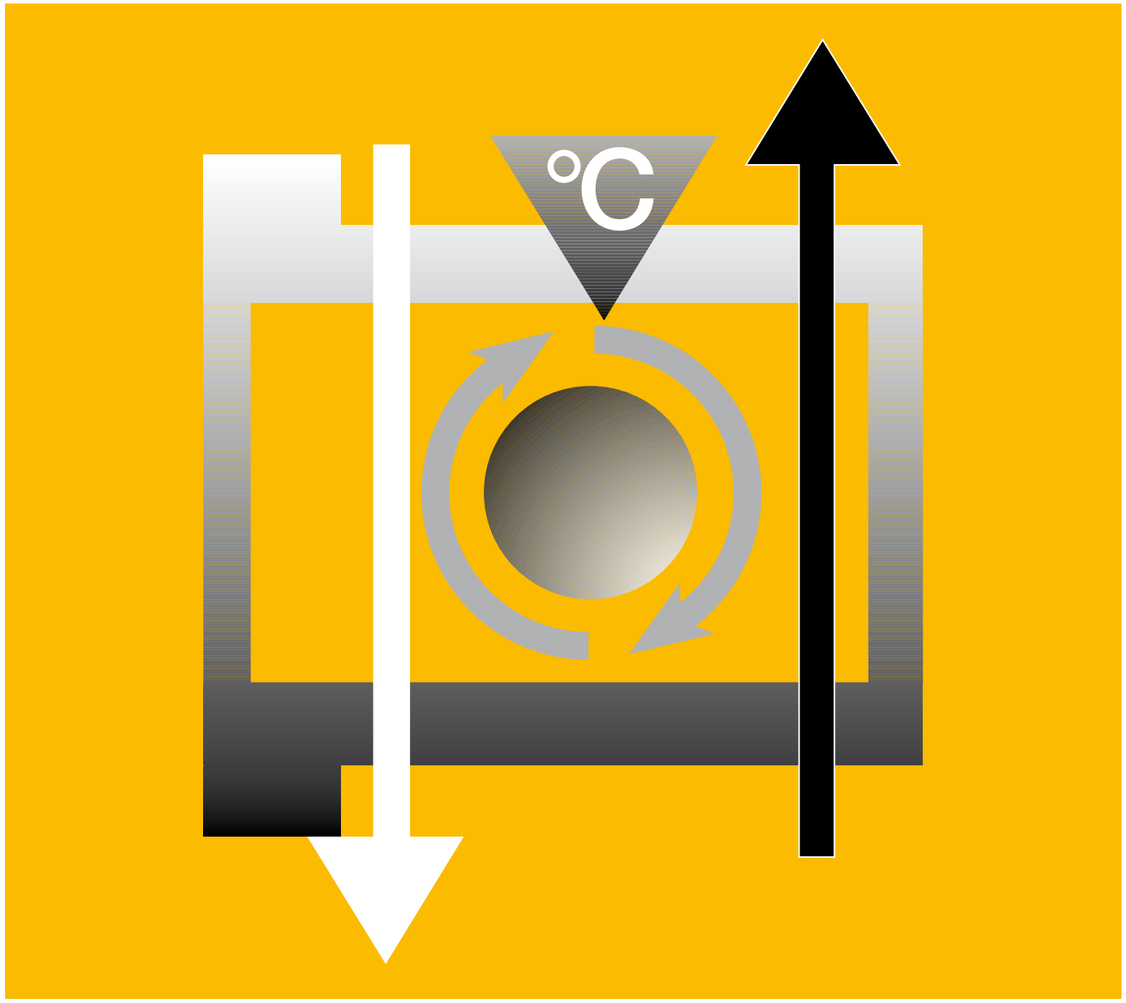
Imperial dimensions available
▶ From page 1379

Dimensions [mm]

d1	d1- Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	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	1.0	J3FM-0507-05
6.0	+0.020	8.0	12.0	4.0	1.0	J3FM-0608-04
6.0	+0.068	8.0	12.0	6.0	1.0	J3FM-0608-06
6.0		8.0	12.0	8.0	1.0	J3FM-0608-08
8.0		10.0	15.0	5.5	1.0	J3FM-0810-05
8.0		10.0	15.0	7.5	1.0	J3FM-0810-07
8.0		10.0	15.0	9.5	1.0	J3FM-0810-09
8.0		10.0	15.0	10.0	1.0	J3FM-0810-10
10.0	+0.025 +0.083	12.0	18.0	7.0	1.0	J3FM-1012-07
10.0		12.0	18.0	9.0	1.0	J3FM-1012-09
10.0		12.0	18.0	10.0	1.0	J3FM-1012-10
10.0		12.0	18.0	12.0	1.0	J3FM-1012-12
10.0		12.0	18.0	17.0	1.0	J3FM-1012-17
12.0		14.0	20.0	7.0	1.0	J3FM-1214-07
12.0		14.0	20.0	9.0	1.0	J3FM-1214-09
12.0		14.0	20.0	12.0	1.0	J3FM-1214-12
12.0	+0.032 +0.102	14.0	20.0	17.0	1.0	J3FM-1214-17
14.0		16.0	22.0	12.0	1.0	J3FM-1416-12
14.0		16.0	22.0	17.0	1.0	J3FM-1416-17
15.0		17.0	23.0	9.0	1.0	J3FM-1517-09
15.0		17.0	23.0	12.0	1.0	J3FM-1517-12
15.0	+0.032	17.0	23.0	17.0	1.0	J3FM-1517-17
16.0	+0.102	18.0	24.0	12.0	1.0	J3FM-1618-12
16.0		18.0	24.0	17.0	1.0	J3FM-1618-17
18.0		20.0	26.0	12.0	1.0	J3FM-1820-12
18.0		20.0	26.0	17.0	1.0	J3FM-1820-17
18.0		20.0	26.0	22.0	1.0	J3FM-1820-22
18.0		21.0	25.0	12.0	1.0	J3FM-1821-12
20.0		23.0	30.0	11.5	1.5	J3FM-2023-11
20.0	+0.040	23.0	30.0	16.5	1.5	J3FM-2023-16
20.0	+0.124	23.0	30.0	21.5	1.5	J3FM-2023-21
25.0		28.0	35.0	11.5	1.5	J3FM-2528-11
25.0		28.0	35.0	16.5	1.5	J3FM-2528-16
25.0		28.0	35.0	21.0	1.5	J3FM-2528-21
30.0		34.0	42.0	16.0	2.0	J3FM-3034-16
30.0		34.0	42.0	26.0	2.0	J3FM-3034-26
35.0		39.0	47.0	16.0	2.0	J3FM-3539-16
35.0	+0.050	39.0	47.0	26.0	2.0	J3FM-3539-26
40.0	+0.150	44.0	52.0	30.0	2.0	J3FM-4044-30
40.0		44.0	52.0	40.0	2.0	J3FM-4044-40
45.0		50.0	58.0	50.0	2.0	J3FM-4550-50

[3] After press-fit. Testing methods ▶ Page 57

Couldn't find your size?
Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.



Endurance runner with high dimensional stability at high temperature – iglidur® J350

- Excellent coefficient of friction against steel
- Continuous service temperature up to +180 °C
- For medium and high loads
- Particularly well suited to rotating movement
- Lubrication and maintenance-free
- Standard range from stock

iglidur® J350 | Endurance runner with high dimensional stability at high temperature

Can be used with many kinds of shafts and loads

Very low coefficient of friction with steel

Continuous service temperature up to +180 °C

For medium and high loads

Particularly well suited to rotating movement

An outstanding bearing for rotating applications – and for a wide range of different shaft materials: With iglidur® J350 bearings, the lifetime can often be increased for applications between 2 and 50 MPa. In addition, the high temperature resistance makes it a very versatile material.

When to use it?

- If a high wear-resistant bearing for rotating movement at medium and high loads is required
- If an economic bearing is required for use at high temperatures
- If pressfit up to +150 °C is necessary
- If high wear resistance is required at high loads
- If the bearing is exposed to shock loading

When not to use it?

- If permanent temperatures exceed +180 °C
  ▶ iglidur® X, page 237
- If low friction is required
  ▶ iglidur® J, page 141
- When a cost-effective bearing with a low friction is needed
  ▶ iglidur® D, page 221
  ▶ iglidur® R, page 213
- With high rotational speeds
  ▶ iglidur® J, page 141

Typical application areas

- Automation
- Mechanical engineering
- Automotive
- Glass industry

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +180 °C
min. –100 °C

Ø 4–50 mm
More dimensions on request

Imperial dimensions available
▶ From page 1337

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

iglidur® J350 | Technical data

Material properties table

General properties	Unit	iglidur® J350	Testing method
Density	g/cm³	1.44	
Colour		yellow	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.3	DIN 53495
Max. water absorption	% weight	1.6	
Coefficient of sliding friction, dynamic against steel	µ	0.1–0.2	
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. long-term application temperature	°C	+180	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{13}$	DIN IEC 93
Surface resistance	Ω	$> 10^{10}$	DIN 53482

Table 01: Material properties table

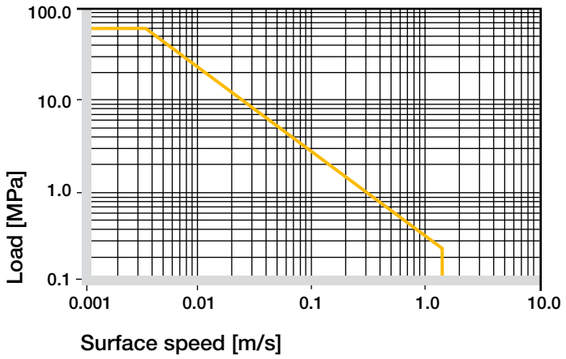


Diagram 01: Permissible pv values for iglidur® J350 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® J350 is low and can be ignored when using standard-bearings. Even when saturated with water, iglidur® J350 does not absorb more than 1.6 % weight of water.

▶ Diagram, www.igus.eu/j350-moisture

Vacuum

iglidur® J350 plain bearings outgas to a very limited extent. Use in vacuum is possible with dehumidified bearings.

Radiation resistance

Plain bearings made from iglidur® J350 are resistant to radiation up to an intensity of $2 \cdot 10^2$ Gy.

UV resistance

iglidur® J350 plain bearings are partially resistant to UV radiation.

Medium	Resistance
Alcohol	+
Hydrocarbons	+ to 0
Greases, oils without additives	+
Fuels	+
Diluted acids	+
Strong acids	+ to 0
Diluted alkalines	+
Strong alkalines	+

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® J350 | Technical data

iglidur® J350 blends universally good wear resistance, flexibility and temperature resistance into a very versatile iglidur® material with a broad application spectrum.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® J350 plain bearings decreases. Diagram 02 clarifies this relationship. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

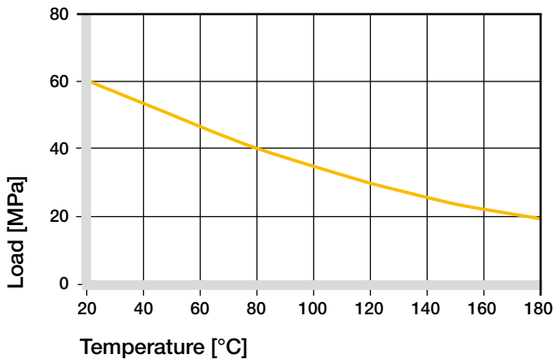


Diagram 02: Permissible maximum surface pressure of as a function of temperature (60 MPa at +20 °C)

iglidur® J350 bearings are adequate for medium and high loads. Diagram 03 shows the elastic deformation of iglidur® J350 under different loads. It shows the material behaviour submitted to a short-term load. The surrounding temperatures are only noticeable at 60 MPa.

▶ Surface pressure, **page 41**

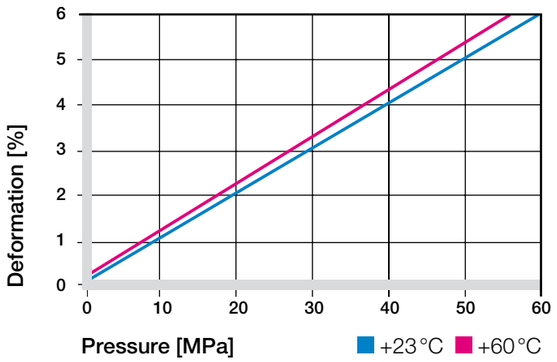


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

iglidur® J350 bearings are suitable for low and medium speeds in rotating and oscillating use. The wear rates are much better in rotating applications. And linear motions can be well mounted with iglidur® J350.

▶ Surface speed, page 44

m/s	Rotating	Oscillating	Linear
Continuous	1.3	1	4
Short-term	3	2.3	8

Table 03: Maximum surface speeds

Temperatures

The ambient application temperature has a direct impact on bearing wear, an increase in temperature results in an increase in wear. The wear-rate of iglidur® J350 bearings changes very little at high temperatures. In some cases, the wear even decreases at +100 °C. At temperatures over +140 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

The coefficients of friction of iglidur® J350 in dry operation against steel lie in a very good range. They decrease significantly at higher surface speeds. This benefits the service life of the bearings in continuous operations with high surface speeds. Diagram 04 shows this inverse relationship. Especially with loads larger than 2 MPa, the iglidur® J350 bearings are clearly superior to other bearings in rotating applications.

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

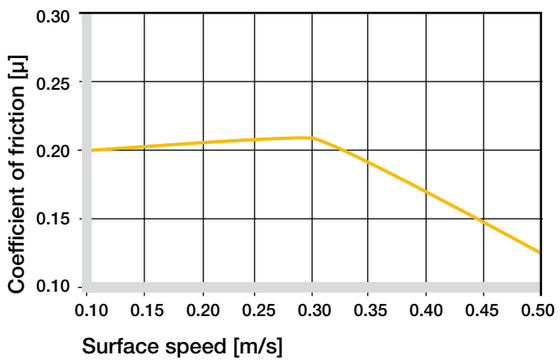


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1 MPa

iglidur® J350 | Technical data

J350
+180 °C
60 MPa

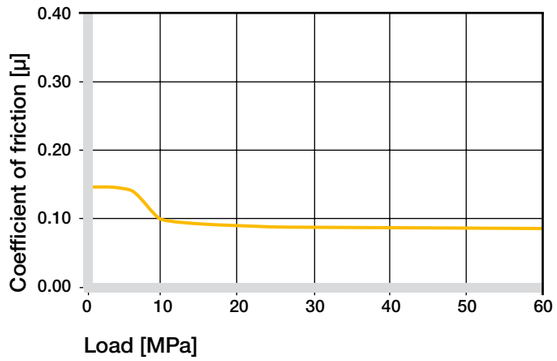


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

Diagrams 06 and 07 show results of testing different shaft materials with plain bearings made from iglidur® J350. iglidur® 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, iglidur® J350 shows good properties with hard anodised aluminium shafts. If the shaft material you plan to use is not contained in this list, please contact us.

▶ Shaft materials, **page 52**

iglidur® J350	Dry	Greases	Oil	Water
C. o. f. µ	0.1–0.2	0.09	0.04	0.04

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

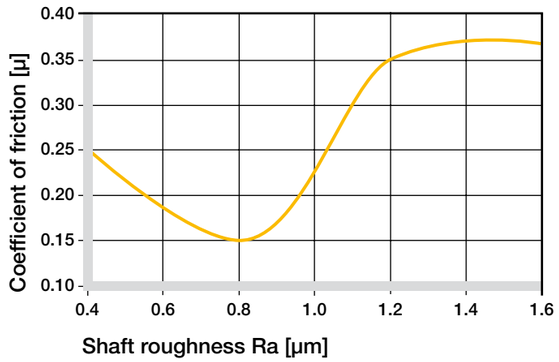


Diagram 06: Coefficient of friction as function of the shaft surface (Cf53 hardened and ground steel)

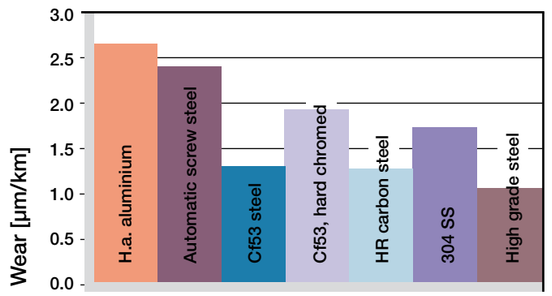


Diagram 07: Wear, rotating with different shaft materials, pressure, p = 1 MPa, v = 0.3 m/s

Installation tolerances

iglidur® J350 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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).

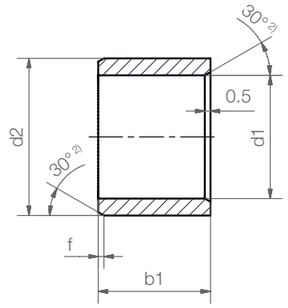
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® J350 F10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.006 +0.046	0 +0.010
> 3 to 6	0–0.030	+0.010 +0.058	0 +0.012
> 6 to 10	0–0.036	+0.013 +0.071	0 +0.015
> 10 to 18	0–0.043	+0.016 +0.086	0 +0.018
> 18 to 30	0–0.052	+0.020 +0.104	0 +0.021
> 30 to 50	0–0.062	+0.025 +0.125	0 +0.025
> 50 to 80	0–0.074	+0.030 +0.150	0 +0.030

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

iglidur® J350 | Product range

Sleeve bearing (Form S)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
J350	S	M	-04	05	-04
iglidur® material	Form S	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

Inch Imperial dimensions available
▶ From page 1356

Dimensions [mm]

d1	d1- Tolerance[3]	d2	b1 h13	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	+0.016 +0.086	18.0	15.0	J350SM-1618-15
16.0		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	+0.025 +0.125	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

[3] After press-fit. Testing methods ▶ Page 57

Dimensions [mm]

d1	d1- Tolerance[3]	d2	b1 h13	Part No.
30.0	+0.020 +0.104	34.0	25.0	J350SM-3034-25
30.0		34.0	30.0	J350SM-3034-30
30.0		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

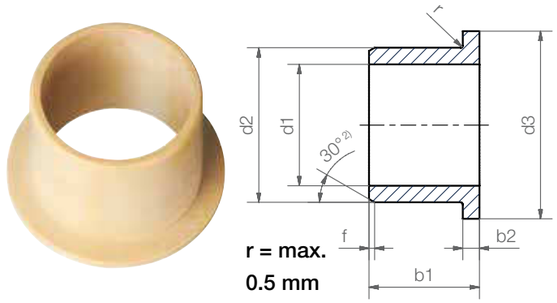
[3] After press-fit. Testing methods ▶ Page 57

Couldn't find your size?
Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

Even more dimensions from stock
More than 300 dimensions are now available. Search online for your required bearing.
▶ **www.igus.eu/iglidur-specialbearings**

iglidur® J350 | Product range

Flange bearing (Form F)



r = max. 0.5 mm

2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]		
J350	F	M	-0608	-04	
iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

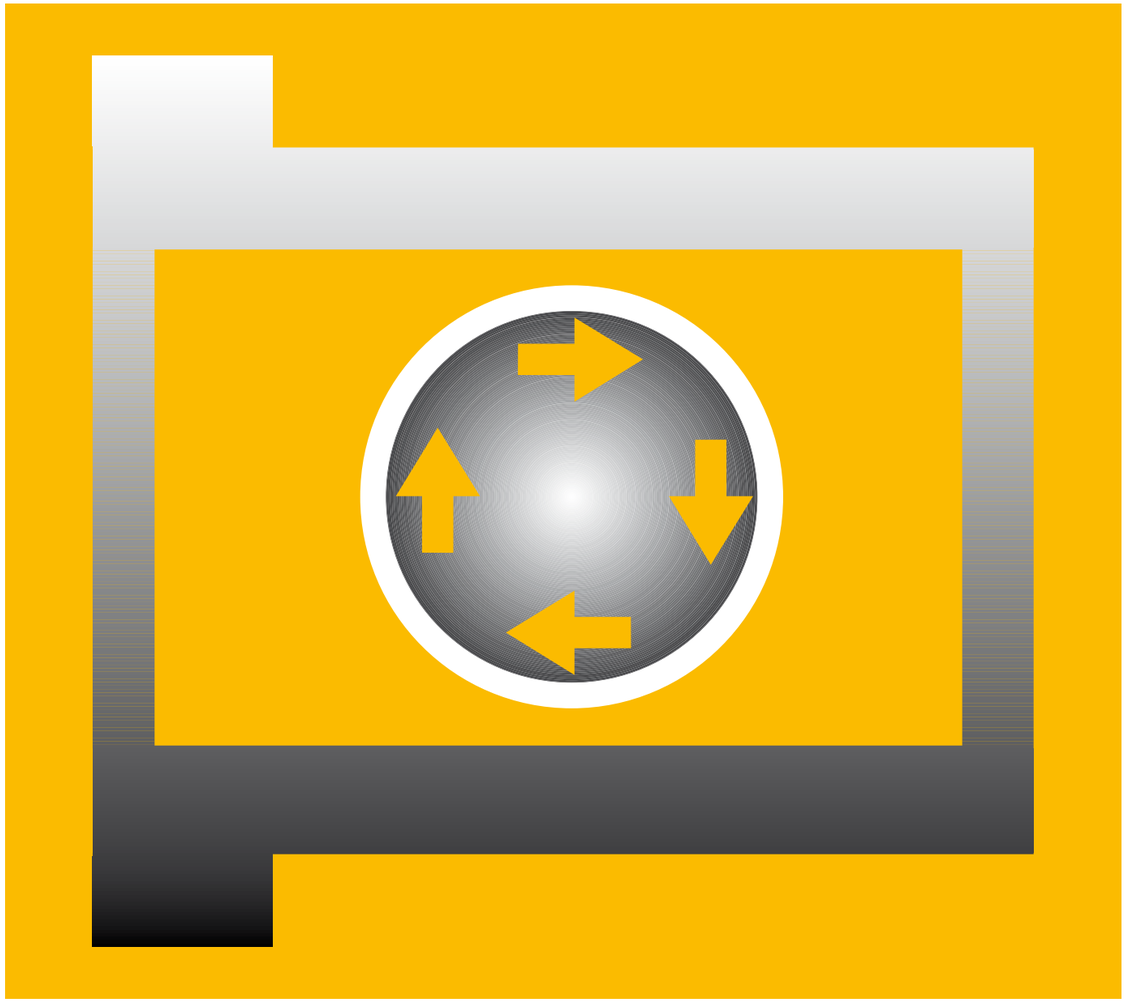
Inch Imperial dimensions available
▶ From page 1380

Dimensions [mm]

d1	d1- Tolerance 3)	d2	d3 d13	b1 h13	b2 –0.14	Part No.
6.0	+0.010 +0.058	8.0	12.0	4.0	1.0	J350FM-0608-04
6.0		8.0	12.0	6.0	1.0	J350FM-0608-06
6.0		8.0	12.0	8.0	1.0	J350FM-0608-08
8.0	+0.013 +0.071	10.0	15.0	5.5	1.0	J350FM-0810-05
8.0		10.0	15.0	7.5	1.0	J350FM-0810-07
8.0		10.0	15.0	9.5	1.0	J350FM-0810-09
8.0		10.0	15.0	10.0	1.0	J350FM-0810-10
10.0		12.0	18.0	7.0	1.0	J350FM-1012-07
10.0		12.0	18.0	9.0	1.0	J350FM-1012-09
10.0		12.0	18.0	10.0	1.0	J350FM-1012-10
10.0		12.0	18.0	12.0	1.0	J350FM-1012-12
10.0		12.0	18.0	17.0	1.0	J350FM-1012-17
12.0	+0.016 +0.086	14.0	20.0	7.0	1.0	J350FM-1214-07
12.0		14.0	20.0	9.0	1.0	J350FM-1214-09
12.0		14.0	20.0	12.0	1.0	J350FM-1214-12
12.0		14.0	20.0	17.0	1.0	J350FM-1214-17
14.0		16.0	22.0	12.0	1.0	J350FM-1416-12
14.0		16.0	22.0	17.0	1.0	J350FM-1416-17
15.0		17.0	23.0	9.0	1.0	J350FM-1517-09
15.0		17.0	23.0	12.0	1.0	J350FM-1517-12
15.0		17.0	23.0	17.0	1.0	J350FM-1517-17
16.0	+0.016 +0.086	18.0	24.0	12.0	1.0	J350FM-1618-12
16.0		18.0	24.0	17.0	1.0	J350FM-1618-17
18.0		20.0	26.0	12.0	1.0	J350FM-1820-12
18.0		20.0	26.0	17.0	1.0	J350FM-1820-17
18.0		20.0	26.0	22.0	1.0	J350FM-1820-22
20.0	+0.020 +0.104	23.0	30.0	11.5	1.5	J350FM-2023-11
20.0		23.0	30.0	16.5	1.5	J350FM-2023-16
20.0		23.0	30.0	21.5	1.5	J350FM-2023-21
25.0		28.0	35.0	11.5	1.5	J350FM-2528-11
25.0		28.0	35.0	16.5	1.5	J350FM-2528-16
25.0		28.0	35.0	21.5	1.5	J350FM-2528-21
30.0		34.0	42.0	16.0	2.0	J350FM-3034-16
30.0		34.0	42.0	22.0	2.0	J350FM-3034-22
30.0		34.0	42.0	26.0	2.0	J350FM-3034-26
30.0		34.0	42.0	37.0	2.0	J350FM-3034-37
35.0	+0.025 +0.125	39.0	47.0	16.0	2.0	J350FM-3539-16
35.0		39.0	47.0	26.0	2.0	J350FM-3539-26
40.0		44.0	52.0	30.0	2.0	J350FM-4044-30
40.0		44.0	52.0	40.0	2.0	J350FM-4044-40
45.0		50.0	58.0	50.0	2.0	J350FM-4550-50

3) After press-fit. Testing methods ▶ Page 57

Couldn't find your size?
Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

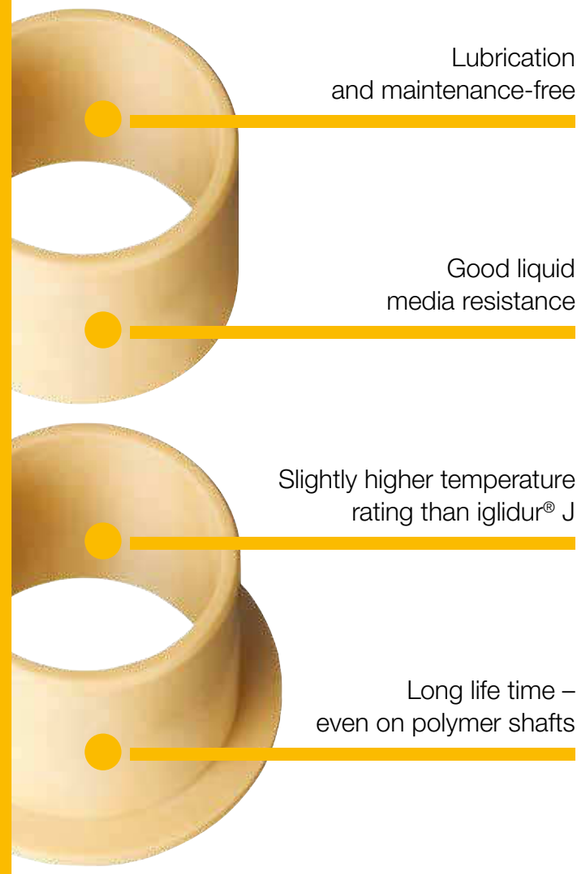


Ideal for plastic shafts – iglidur® J260

- Very good c. o. f. for low or medium loads
- Good liquid media resistance
- Slightly higher temperature rating than iglidur® J
- Long life time – even on polymer shafts and other special cases
- Lubrication and maintenance-free
- Standard range from stock

iglidur® J260 | 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 friction coefficients are required under special application conditions – particularly in connection with plastic shafts!

When to use it?

- When polymer shafts are used
- When the temperature rating of iglidur® J is not sufficient
- If a bearing with a good coefficient of friction is required
- If high wear resistance is required at medium loads
- If good liquid media resistance is required

When not to use it?

- When high surface pressures occur
  ▶ iglidur® Z, page 247
- When temperatures are continuously greater than +120 °C
  ▶ iglidur® J350, page 173
- When maximum universal wear resistance possible is required
  ▶ iglidur® J, page 141

Typical application areas

- Automation
- Plant construction
- Test engineering and quality assurance
- Robotics
- Electronics industry

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +120 °C
min. –100 °C

Ø 6–20 mm
More dimensions on request

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

iglidur® J260 | Technical data

Material properties table

General properties	Unit	iglidur® J260	Testing method
Density	g/cm³	1.35	
Colour		Yellow	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.2	DIN 53495
Max. water absorption	% weight	0.4	
Coefficient of sliding 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. long-term application temperature	°C	+120	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{12}$	DIN IEC 93
Surface resistance	Ω	$> 10^{10}$	DIN 53482

Table 01: Material properties table

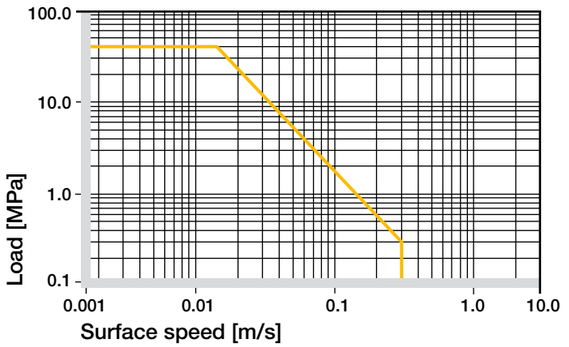


Diagram 01: Permissible pv values for iglidur® J260 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® J260 plain bearings is approximately 0.2% weight in standard climatic conditions. The saturation limit submerged in water is 0.4 % weight. Due to these low values considering expansion by moisture absorption is only required in extreme cases.

▶ Diagram, www.igus.eu/j260-moisture

Vacuum

In vacuum, any absorbed moisture content is outgassed. Only dehumidified iglidur® J260 bearings are suitable for vacuum.

Radiation resistance

Resistant to radiation up to an intensity of $3 \cdot 10^2$ Gy.

UV resistance

iglidur® J260 plain bearings are partially resistant to UV radiation.

Medium	Resistance
Alcohol	+ to 0
Hydrocarbons	+
Greases, oils without additives	0 to –
Fuels	–
Diluted acids	–
Strong acids	–
Diluted alkalines	+ to 0
Strong alkalines	+ to 0

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

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.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® J260 plain bearings decreases. Diagram 02 clarifies this relationship. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

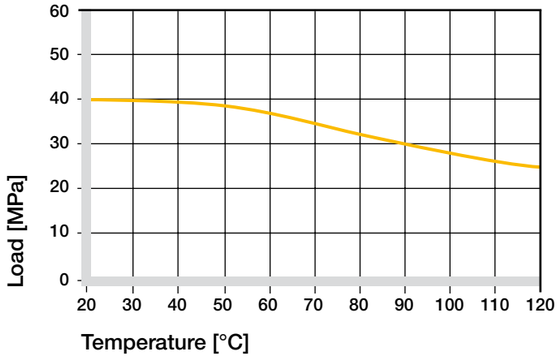


Diagram 02: Permissible maximum surface pressure of as a function of temperature (40 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® J260 at radial loads. At the maximum permissible surface pressure of 40 MPa at room temperature the deformation is less than 2.5 %. A possible deformation could be, among others, dependant on the duty cycle of the load.

▶ Surface pressure, **page 41**

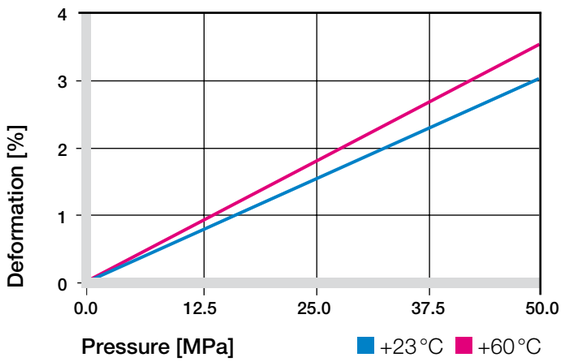


Diagram 03: Deformation under pressure and temperature

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 temperature level is rarely reached due to varying application conditions.

▶ Surface speed, page 44

m/s	Rotating	Oscillating	Linear
Continuous	1	0.7	3
Short-term	2	1.4	4

Table 03: Maximum surface speeds

Temperatures

The ambient temperature in the application also has an impact on the wear of the bearing, an increase in temperature will result in an increase in wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +80 °C. The At temperatures over +80 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

Similar to wear resistance, the coefficient of friction μ also changes with the load. The coefficient of friction decreases with increasing loads, whereas an increase in surface speed causes an increase of the coefficient of friction (diagrams 04 and 05).

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

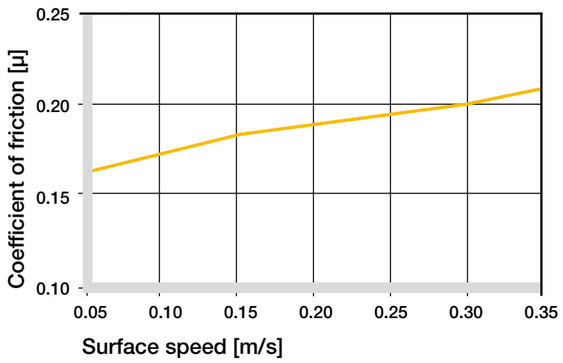


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

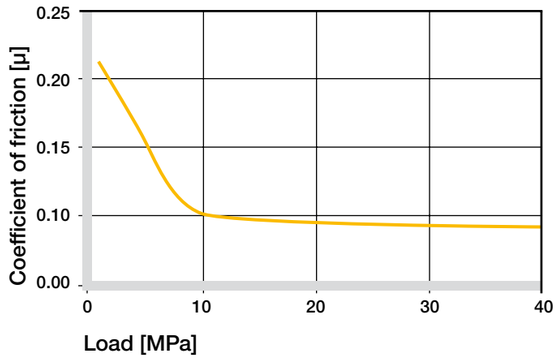


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

The friction and wear are also dependent, to a large degree, on the shaft material. 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 roughness Ra = 0.8 μm is recommended. Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® J260. In this connection it is important to note 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 2 MPa. The comparison of rotation and oscillating in diagram 07 makes it very clear where iglidur® J260 bearings are best used, especially in rotating operations.

▶ Shaft materials, **page 52**

iglidur® J260	Dry	Greases	Oil	Water
C. o. f. μ	0.06 – 0.20	0.09	0.04	0.04

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

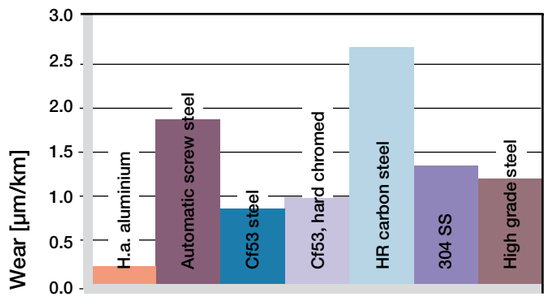


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

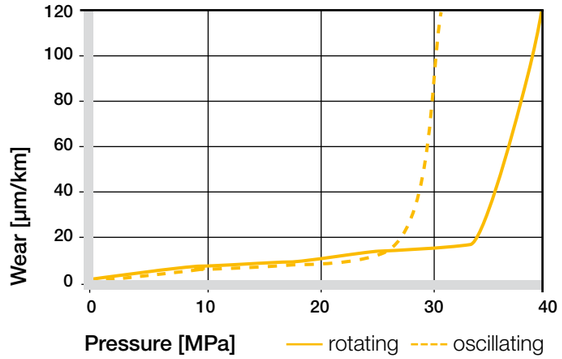


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Installation tolerances

iglidur® J260 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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).

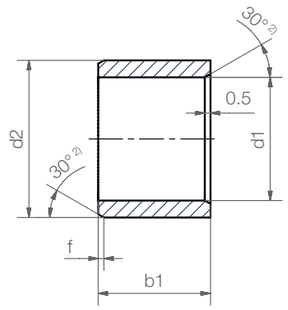
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® J260 E10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.014 +0.054	0 +0.010
> 3 to 6	0–0.030	+0.020 +0.068	0 +0.012
> 6 to 10	0–0.036	+0.025 +0.083	0 +0.015
> 10 to 18	0–0.043	+0.032 +0.102	0 +0.018
> 18 to 30	0–0.052	+0.040 +0.124	0 +0.021
> 30 to 50	0–0.062	+0.050 +0.150	0 +0.025
> 50 to 80	0–0.074	+0.060 +0.180	0 +0.030
> 80 to 120	0–0.087	+0.072 +0.212	0 +0.035
>120 to 180	0–0.100	+0.085 +0.245	0 +0.040

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

iglidur® J260 | Product range

Sleeve bearing (Form S)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]		
J260	S	M	-06	08	-06
iglidur® material	Form S	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

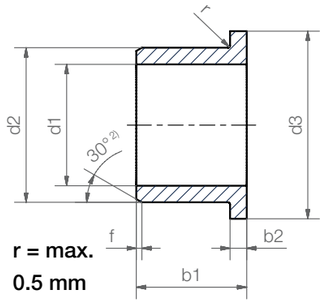
Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	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	+0.025 +0.083	10.0	10.0	**J260SM-0810-10**
10.0	+0.025 +0.083	12.0	10.0	**J260SM-1012-10**
12.0	+0.032 +0.102	14.0	12.0	**J260SM-1214-12**
12.0	+0.032 +0.102	14.0	15.0	**J260SM-1214-15**
16.0	+0.032 +0.102	18.0	15.0	**J260SM-1618-15**
16.0	+0.032 +0.102	18.0	13.5	**J260SM-1618-135**
18.0	+0.032 +0.102	20.0	12.0	**J260SM-1820-12**
18.0	+0.032 +0.102	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 57

iglidur® J260 | Product range

Flange bearing (Form F)



r = max. 0.5 mm

[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]		
J260	F	M	-06	08	-06
iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

Dimensions [mm]

d1	d1-Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
6.0	+0.020 +0.068	8.0	12.0	6.0	1.0	**J260FM-0608-06**
8.0	+0.025 +0.083	10.0	15.0	10.0	1.0	**J260FM-0810-10**
10.0	+0.025 +0.083	12.0	18.0	10.0	1.0	**J260FM-1012-10**
12.0	+0.032 +0.102	14.0	20.0	12.0	1.0	**J260FM-1214-12**
16.0	+0.032 +0.102	18.0	24.0	17.0	1.0	**J260FM-1618-17**
20.0	+0.040 +0.124	23.0	30.0	21.5	1.5	**J260FM-2023-21**

[3] After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

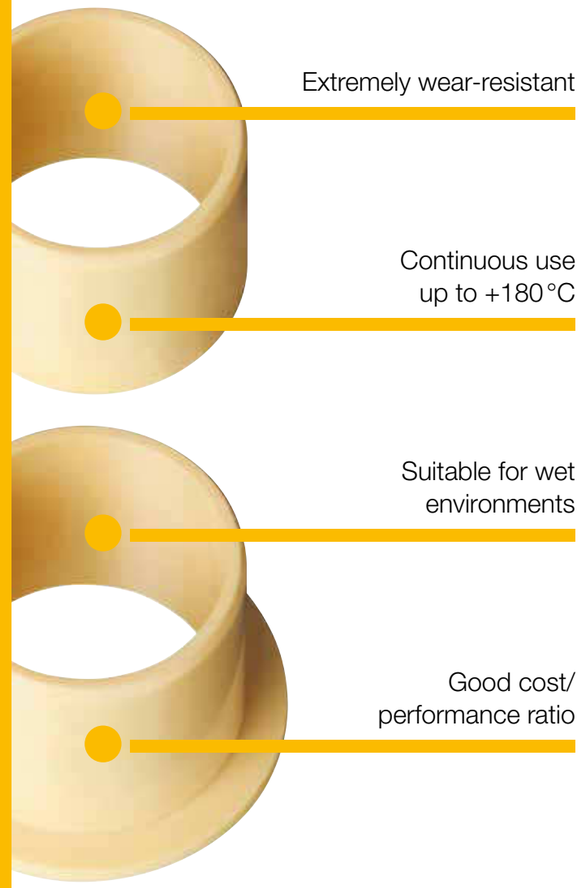
My sketches

Endurance runner up to +180 °C – iglidur® W360

- Extremely wear-resistant
- Continuous use up to +180 °C
- Suitable for wet environments
- Good price/performance ratio
- Lubrication and maintenance-free
- Standard range from stock

iglidur® W360 | Endurance runner up to +180 °C

For applications with no significant influence from media or humidity



The new iglidur® material combines outstanding continuous running properties with excellent temperature resistance, reduced moisture absorption and good value for money – a real all-rounder in the endurance field.

When to use it?

- When extremely wear resistant bearings are required for average loads
- When regular contact with moisture occurs
- When sustained temperatures above +90 °C occur

When not to use it?

- When an extremely wear resistant bearing is sought for the standard temperature range and low to medium loads
  ▶ iglidur® J, page 141
- When the maximum temperature resistance and high wear resistance is required
  ▶ iglidur® Z, page 247
  ▶ iglidur® J350, page 173
  ▶ iglidur® V400, page 265
- When the highest wear resistance under water is required
  ▶ iglidur® UW, page 459
  ▶ iglidur® H370, page 291

Typical application areas

- Material handling
- Automation
- Two-wheel technology
- Electromobility

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +180 °C
min. –40 °C

Ø 6–20 mm
More dimensions on request

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

iglidur® W360 | Technical data

Material properties table

General properties	Unit	iglidur® W360	Testing method
Density	g/cm³	1.34	
Colour		Yellow	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.2	DIN 53495
Max. water absorption	% weight	1.6	
Coefficient of sliding 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	n.s.	
Max. permissible surface pressure (+20 °C)	MPa	75	
Shore-D hardness		n.s.	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+180	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{13}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

Table 01: Material properties table

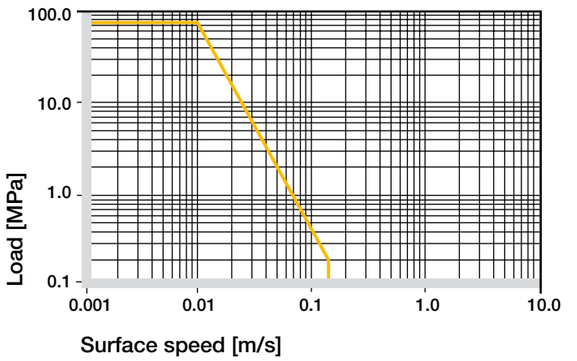


Diagram 01: Permissible pv values for iglidur® W360 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

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.

▶ Diagram, www.igus.eu/w360-moisture

Vacuum
In a vacuum, iglidur® W360 bearing outgases only to a very small extent. Use in vacuum is possible with dehumidified bearings.

Radiation resistance
Plain bearings made from iglidur® W360 are resistant to radiation up to an intensity of $2 \cdot 10^2$ Gy.

UV resistance
iglidur® W360 plain bearings are partially resistant to UV radiation.

Medium	Resistance
Alcohol	0 to –
Hydrocarbons	+
Greases, oils without additives	+
Fuels	+
Diluted acids	0 to –
Strong acids	0 to –
Diluted alkalines	+
Strong alkalines	+

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

Low moisture absorption and high temperature resistance result in an extremely broad range of uses for this extremely wear resistant material.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® W360 plain bearings decreases. Diagram 02 clarifies this relationship. At +180 °C the surface pressure is still 10 MPa. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

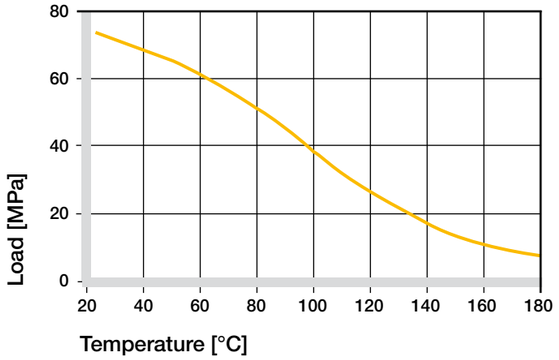


Diagram 02: Permissible maximum surface pressure of as a function of temperature (75 MPa at +20 °C)

iglidur® W360 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 41**

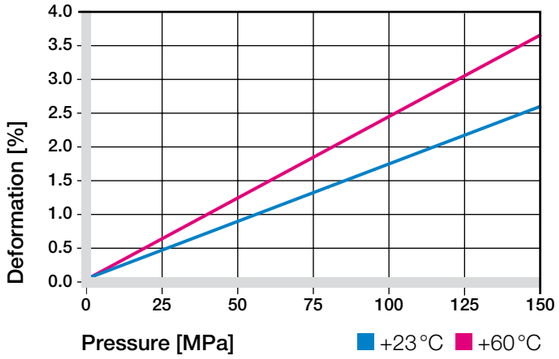


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

iglidur® W360 bearings are suitable for low to medium speeds in both rotating and oscillating applications. Even linear movements can often be realised with iglidur® W360.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	1.2	0.9	3.0
Short-term	2.7	2.0	5.0

Table 03: Maximum surface speeds

Temperatures

The temperature resistance makes iglidur® W360 a very universal material for plain bearings in different industries. Application temperatures up to +200 °C are permitted on the short-term. Please note that from +90 °C the press-in fastening of the bearings is not sufficient and an additional securing of the bearing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

The coefficients of friction of iglidur® W360 in dry operation against steel lie in a very good range. They constantly remain at a low level regardless of the speed. The Diagram 04 shows this inverse relationship. As the load increases, the coefficient of friction decreases. The correlation is especially strong up to approx. 15 MPa (diagram 05).

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

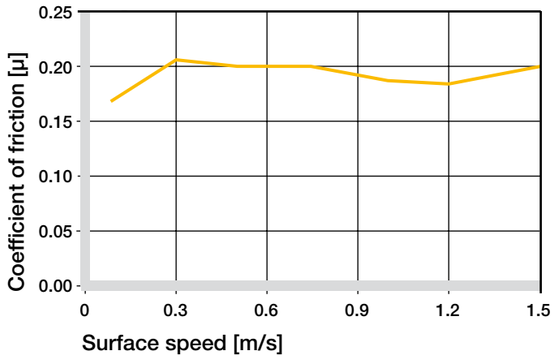


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1 MPa

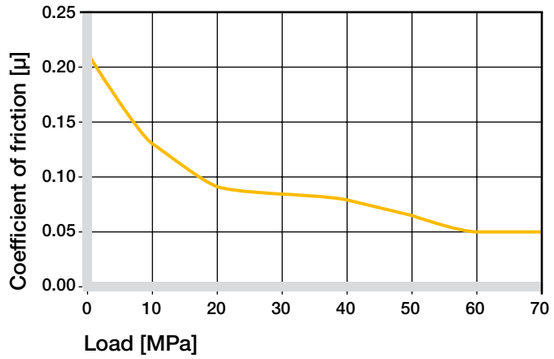


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

In the case of iglidur® W360, the shaft's surface finish has practically no effect on the coefficient of friction in the range of up to 1.6 MPa (diagram 06). Diagram 07 shows an extract of results of tests with different shaft materials. iglidur® W360 bearings are suitable for all gliding partners. During rotation with a load of 1 MPa, all aluminium hc, Cf53 and stainless steel shafts stand out. A similar picture also exists with other loads or pivoting movements.
If the shaft material you plan to use is not contained in this list, please contact us.

▶ Shaft materials, **page 52**

iglidur® W360	Dry	Greases	Oil	Water
C. o. f. µ	0.07–0.21	0.09	0.04	0.04

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

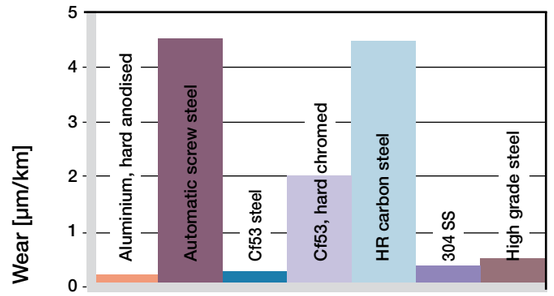


Diagram 07: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

Installation tolerances

iglidur® W360 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® W360 E10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.014 +0.054	0 +0.010
> 3 to 6	0–0.030	+0.020 +0.068	0 +0.012
> 6 to 10	0–0.036	+0.025 +0.083	0 +0.015
> 10 to 18	0–0.043	+0.032 +0.102	0 +0.018
> 18 to 30	0–0.052	+0.040 +0.124	0 +0.021
> 30 to 50	0–0.062	+0.050 +0.150	0 +0.025
> 50 to 80	0–0.074	+0.060 +0.180	0 +0.030

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

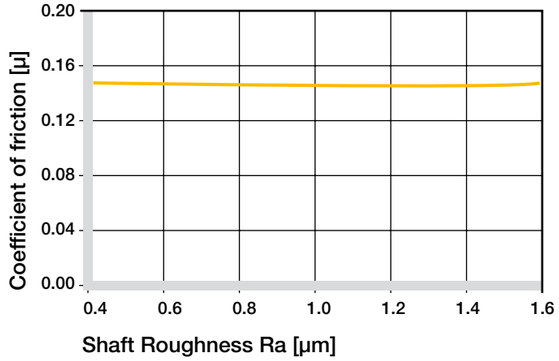
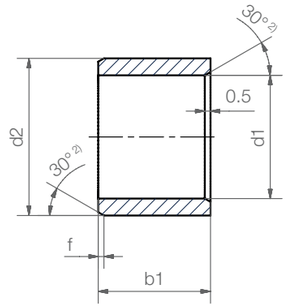


Diagram 06: Coefficient of friction as function of the shaft surface (Cf53)

iglidur® W360 | Product range

Sleeve bearing (Form S)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
W360	S	M	-06	08	-06	
	iglidur® material	Form S	metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

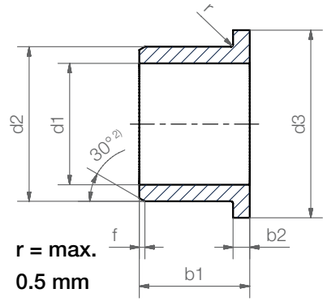
Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	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	+0.025 +0.083	12.0	10.0	**W360SM-1012-10**
12.0	+0.032 +0.102	14.0	12.0	**W360SM-1214-12**
16.0	+0.032 +0.102	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 57

iglidur® W360 | Product range

Flange bearing (Form F)



r = max. 0.5 mm

2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
W360	F	M	-06	08	-06	
	iglidur® material	Form F	metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

Dimensions [mm]

d1	d1-Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
6.0	+0.020 +0.068	8.0	12.0	6.0	1.0	**W360FM-0608-06**
8.0	+0.025 +0.083	10.0	15.0	10.0	1.0	**W360FM-0810-10**
10.0	+0.025 +0.083	12.0	18.0	10.0	1.0	**W360FM-1012-10**
12.0	+0.032 +0.102	14.0	20.0	12.0	1.0	**W360FM-1214-12**
16.0	+0.032 +0.102	18.0	24.0	17.0	1.0	**W360FM-1618-17**
20.0	+0.040 +0.124	23.0	30.0	21.5	1.5	**W360FM-2023-21**

3) After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

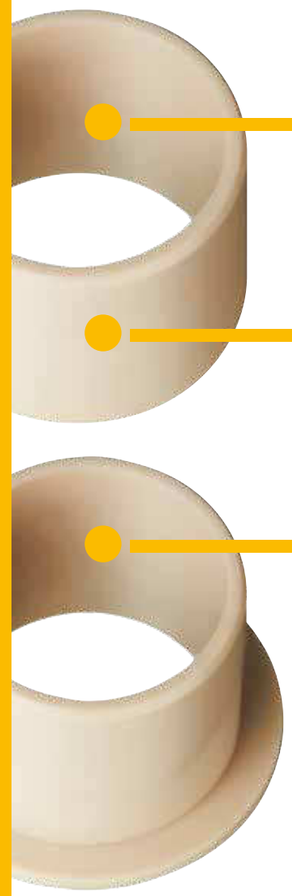
My sketches

For fast rotating applications – iglidur® L250

- Specially made for fast rotating applications
- Very low coefficients of friction
- Excellent wear resistance
- Lubrication and maintenance-free
- Standard range from stock

iglidur® L250 | For fast rotating applications

Low coefficient of friction at low load applications



Plain bearings for high speed rotation applications, especially for fan- and motors.

When to use it?

- For rotating applications at high speed
- If highest service life is required
- Low load applications
- If low noise level is required
- For very low coefficients of friction

When not to use it?

- When high pressure loads occur
  - ▶ iglidur® Q, page 409
  - ▶ iglidur® W300, page 153
- When sustained temperatures above +90 °C is a condition
  - ▶ iglidur® V400, page 265
- When low moisture absorption is required
  - ▶ iglidur® H1, page 283
  - ▶ iglidur® J, page 141

Typical application areas

- Automotive
- Electronics industry
- Mechatronics
- Optical industry
- Test engineering and quality assurance

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +90 °C
min. –40 °C

Ø 6–20 mm
More dimensions on request

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

iglidur® L250 | Technical data

Material properties table

General properties	Unit	iglidur® L250	Testing method
Density	g/cm³	1.50	
Colour		beige	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.7	DIN 53495
Max. water absorption	% weight	3.9	
Coefficient of sliding friction, dynamic against steel	µ	0.08–0.19	
pv value, max. (dry)	MPa · m/s	0.4	
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. long-term application temperature	°C	+90	
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)	$K^{-1} \cdot 10^{-5}$	10	DIN 53752
Electrical properties			
Specific volume resistance	Ωcm	$> 10^{10}$	DIN IEC 93
Surface resistance	Ω	$> 10^{11}$	DIN 53482

Table 01: Material properties table

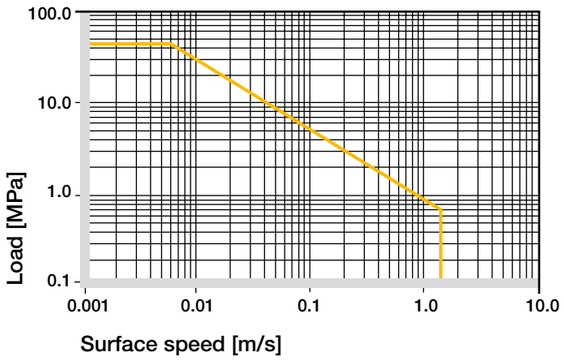


Diagram 01: Permissible pv values for iglidur® L250 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

With regard to applications where the smallest bearing clearances are concerned, please take the moisture absorption into consideration.

▶ Diagram, www.igus.eu/l250-moisture

Vacuum

In vacuum, any absorbed moisture content is outgassed. Therefore, only dehumidified bearings of iglidur® L250 are suitable for a vacuum application.

Radiation resistance

iglidur® L250 bearings are resistant to radiation up to a radiation intensity of $3 \cdot 10^4$ Gy. Higher radiation affects the material and may result in a significant decrease in mechanical properties.

UV resistance

When subjected to UV radiation, iglidur® L250 plain bearings change colour. Their properties, however, are not affected.

Medium	Resistance
Alcohol	+ to 0
Hydrocarbons	+
Greases, oils without additives	+
Fuels	+
Diluted acids	0 to –
Strong acids	–
Diluted alkalines	+
Strong alkalines	0

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® L250 | Technical data

iglidur® L250 is a bearing material for high rotation speeds and low coefficients of friction. The iglidur® L250 material can feature these advantages particularly with low loads. Applications which feature these advantages are fans, small motors, fast-running sensors or the magnet technology.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® L250 plain bearings decreases. Diagram 02 clarifies this relationship. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

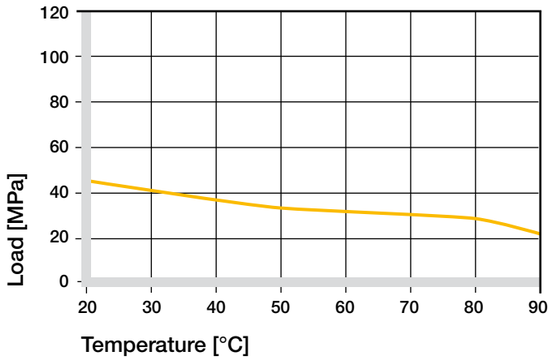


Diagram 02: Permissible maximum surface pressure of as a function of temperature (45 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® L250 at radial load. At the maximum permissible surface pressure of 45 MPa at room temperature the deformation is less than 3 %. 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 41**

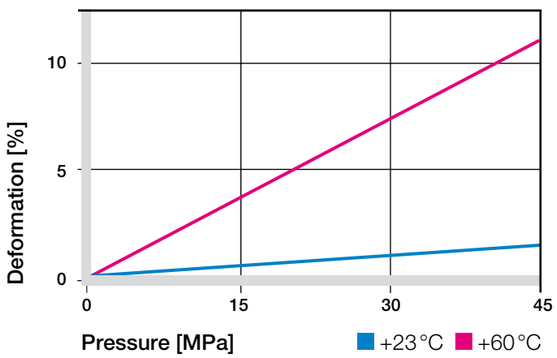


Diagram 03: Deformation under pressure and temperature

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 coefficients of wear also act 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 44**

m/s	Rotating	Oscillating	Linear
Continuous	1	0.7	2
Short-term	1.5	1.1	3

Table 03: Maximum surface speeds

Temperatures

The iglidur® L250 bearings can be used in temperatures up to +180 °C for the short-term. Note that a mechanical securing of the bearing is required from temperatures of +55 °C. Higher temperatures can also cause the bearing to lose its press-fit seating and move in the bore.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

In the best pairing (with 304 stainless steel shafts), coefficients of friction of 0.14 are already reached with low loads. Coefficients of friction under 0.1 were measured already below 10 MPa (diagrams 04 and 05).

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

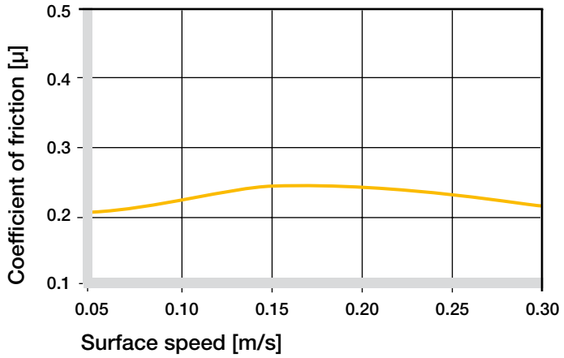


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

iglidur® L250 | Technical data

L250
+90 °C
45 MPa

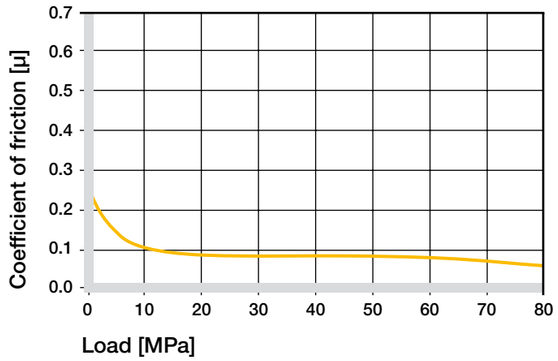


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

As seen in diagram 06, many shafts are recommendable for low loads and low rotations. The good coefficients of friction are additionally retained over a wide range of recommendable shaft surfaces finish. For loads higher than 1 MPa, particular attention should be paid to the shaft material used.

▶ Shaft materials, **page 52**

iglidur® L250	Dry	Greases	Oil	Water
C. o. f. µ	0.08–0.19	0.09	0.04	0.04

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

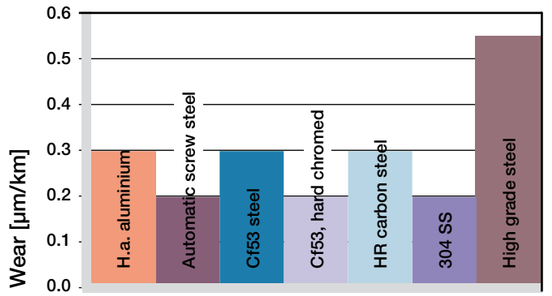


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

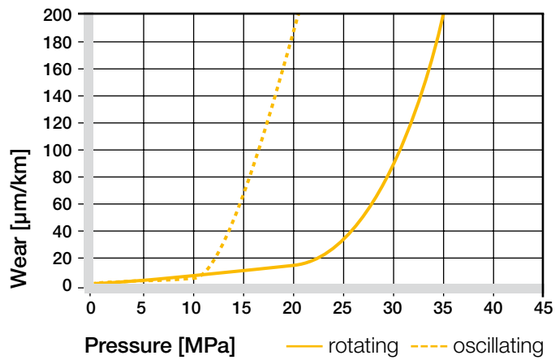


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Installation tolerances

iglidur® L250 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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).

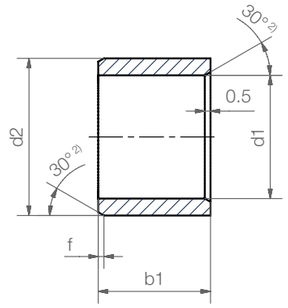
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® L250 E10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.014 +0.054	0 +0.010
> 3 to 6	0–0.030	+0.020 +0.068	0 +0.012
> 6 to 10	0–0.036	+0.025 +0.083	0 +0.015
> 10 to 18	0–0.043	+0.032 +0.102	0 +0.018
> 18 to 30	0–0.052	+0.040 +0.124	0 +0.021
> 30 to 50	0–0.062	+0.050 +0.150	0 +0.025
> 50 to 80	0–0.074	+0.060 +0.180	0 +0.030
> 80 to 120	0–0.087	+0.072 +0.212	0 +0.035
>120 to 180	0–0.100	+0.085 +0.245	0 +0.040

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

iglidur® L250 | Product range

Sleeve bearing (Form S)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]		
L250	S	M	-06	08	-06
iglidur® material	Form S	metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

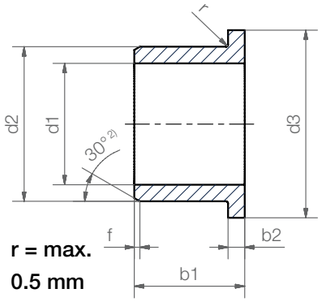
Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	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	+0.025 +0.083	12.0	10.0	**L250SM-1012-10**
12.0	+0.032 +0.102	14.0	12.0	**L250SM-1214-12**
16.0	+0.032 +0.102	18.0	15.0	**L250SM-1618-15**
20.0	+0.040 +0.124	23.0	20.0	**L250SM-2023-20**

[3] After press-fit. Testing methods ▶ Page 57

iglidur® L250 | Product range

Flange bearing (Form F)



r = max. 0.5 mm

[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]		
L250	F	M	-06	08	-06
iglidur® material	Form F	metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

Dimensions [mm]

d1	d1-Tolerance[3]	d2	d3 d13	b1 h13	b2 -0.14	Part No.
6.0	+0.020 +0.068	8.0	12.0	6.0	1.0	**L250FM-0608-06**
8.0	+0.025 +0.083	10.0	15.0	10.0	1.0	**L250FM-0810-10**
10.0	+0.025 +0.083	12.0	18.0	10.0	1.0	**L250FM-1012-10**
12.0	+0.032 +0.102	14.0	20.0	12.0	1.0	**L250FM-1214-12**
16.0	+0.032 +0.102	18.0	24.0	17.0	1.0	**L250FM-1618-17**
20.0	+0.040 +0.124	23.0	30.0	21.5	1.5	**L250FM-2023-21**

[3] After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

My sketches

For extreme rotational speeds – iglidur® L500

- Continuous use up to +250 °C
- Up to 5 m/s rotating
- Excellent wear resistance
- Low moisture absorption
- Low thermal expansion
- Lubrication and maintenance-free
- Standard range from stock

iglidur® L500 | For extreme rotational speeds

Temperature-resistant and media-resistant

Continuous use up to +250 °C

Up to 5 m/s rotating

Excellent wear resistance

Low moisture absorption

Specially developed for fast continuous operation under low loads, iglidur® L500, inter alia, is intended for fan and electric motor applications.

When to use it?

- For rotating applications at high speed
- If highest service life is required
- For high pv values with low loads
- At operating temperatures up to +250 °C (long-term, short-term up to max. +350 °C)

When not to use it?

- If a universal bearing for high temperatures is needed
  ▶ iglidur® X, page 237
- If moderate to high pressure loads occur
  ▶ iglidur® G, page 79
  ▶ iglidur® Q, page 409
- For oscillating applications
  ▶ iglidur® W300, page 153
  ▶ iglidur® J350, page 173

Typical application areas

- Cooling fans
- Electric motors
- Fans

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +250 °C
min. –100 °C

Ø 3–10 mm
More dimensions on request

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

iglidur® L500 | Technical data

Material properties table

General properties	Unit	iglidur® L500	Testing method
Density	g/cm³	1.53	
Colour		black	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.1	DIN 53495
Max. water absorption	% weight	0.3	
Coefficient of sliding friction, dynamic against steel	µ	0.19–0.26	
pv value, max. (dry)	MPa · m/s	4.0	
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. long-term application temperature	°C	+250	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{10}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

Table 01: Material properties table

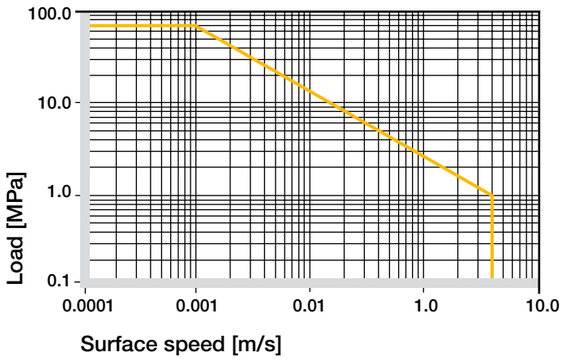


Diagram 01: Permissible pv values for iglidur® L500 bearings running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The very low moisture absorption of 0.1% weight in a normal climate and 0.3% weight at maximum water absorption also enables continuous operation in high humidity or in liquid media.

▶ Diagram, www.igus.eu/l500-moisture

Vacuum

In vacuum, the moisture content is released as vapour. Due to its low moisture absorption, use in a vacuum is possible.

Radiation resistance

iglidur® L500 bearings are resistant to radiation up to a radiation intensity of $3 \cdot 10^2$ Gy. Higher radiation affects the material and may result in a significant decrease in mechanical properties.

UV resistance

The material properties of iglidur® L500 bearings do not change under UV rays or other weathering influences.

Medium	Resistance
Alcohol	+
Hydrocarbons	+
Greases, oils without additives	+
Fuels	+
Diluted acids	+
Strong acids	+
Diluted alkalines	+
Strong alkalines	+

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® L500 | Technical data

iglidur® L500 is a 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 minimal potential to expand. Applications which feature these advantages are fans, small motors, fast-running sensors or the magnet technology.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® L500 plain bearings decreases. Diagram 02 clarifies this relationship. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

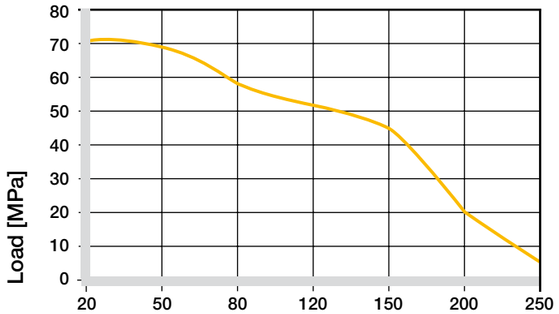


Diagram 02: Permissible maximum surface pressure of as a function of temperature

Diagram 03 shows the elastic deformation of iglidur® L500 at radial load. At the maximum permissible surface pressure of 70 MPa at room temperature the deformation is less than 2.5 %. 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 41**

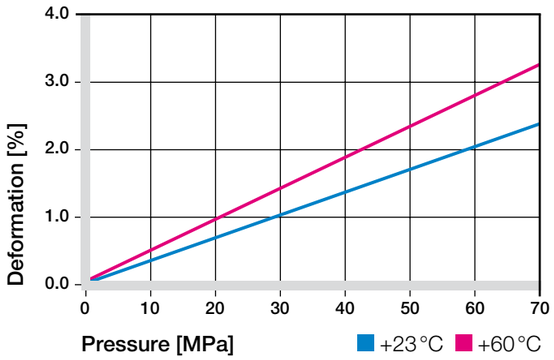


Diagram 03: Deformation under pressure and temperature

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 shifted upward 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 44**

m/s	Rotating	Oscillating	Linear
Continuous	4.0	1.5	5.0
Short-term	5.0	3.0	8.0

Table 03: Maximum surface speeds

Temperatures

The iglidur® L500 bearings can be used in temperatures up to +315 °C for the short-term. Note that a mechanical securing of the bearing is required from temperatures of +130 °C. Higher temperatures can also cause the bearing to lose its press-fit seating and move in the bore.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

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 20 MPa (Diagram 05).

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

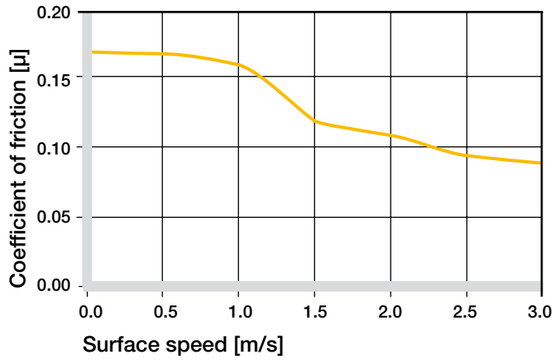


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

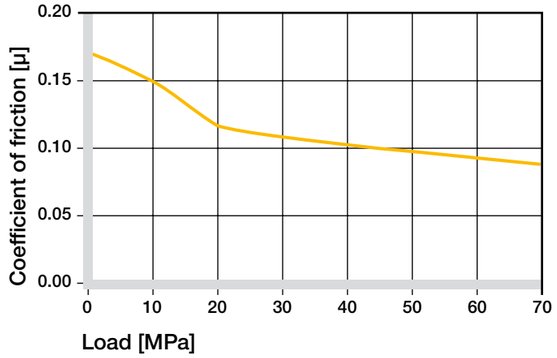


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Wear tests

Diagram 06 shows the result of a comparison test between iglidur® L500 and a sintered bearing. The wear of the sintered bearing increases exponentially after 1.5 m/s, while the iglidur® L500 bearing retains a nearly constant wear rate up to and over 4 m/s.

▶ Shaft materials, **page 52**

iglidur® L500	Dry	Greases	Oil	Water
C. o. f. µ	0.08–0.15	0.09	0.04	0.04

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

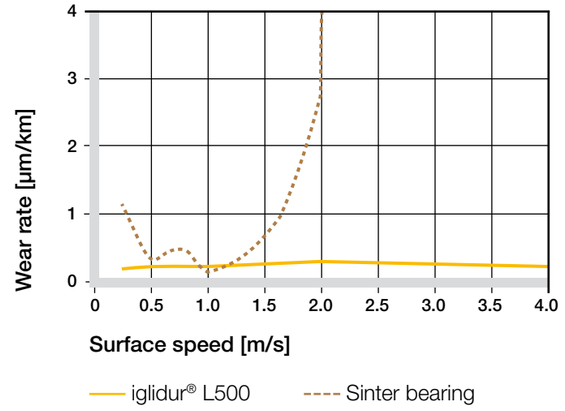


Diagram 06: Rotary wear against Cf53, p = 0.25 MPa, T = +23 °C

Installation tolerances

iglidur® L500 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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).

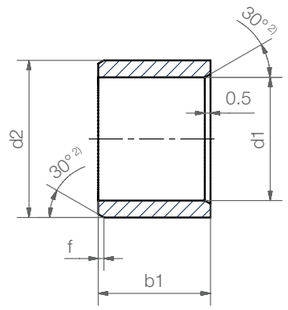
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® L500 F10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.006 +0.046	0 +0.010
> 3 to 6	0–0.030	+0.010 +0.058	0 +0.012
> 6 to 10	0–0.036	+0.013 +0.071	0 +0.015
> 10 to 18	0–0.043	+0.016 +0.086	0 +0.018
> 18 to 30	0–0.052	+0.020 +0.104	0 +0.021

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

iglidur® L500 | Product range

Sleeve bearing (Form S)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]		
L500	S	M	-03	04	-03
iglidur® material	Form S	metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

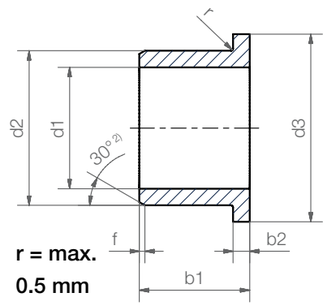
Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	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	+0.010 +0.058	7.0	5.0	**L500SM-0507-05**
6.0	+0.010 +0.058	8.0	6.0	**L500SM-0608-06**
8.0	+0.013 +0.071	10.0	10.0	**L500SM-0810-10**
10.0	+0.013 +0.071	12.0	10.0	**L500SM-1012-10**

[3] After press-fit. Testing methods ▶ Page 57

iglidur® L500 | Product range

Flange bearing (Form F)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]		
L500	F	M	-03	04	-05
iglidur® material	Form F	metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

Dimensions [mm]

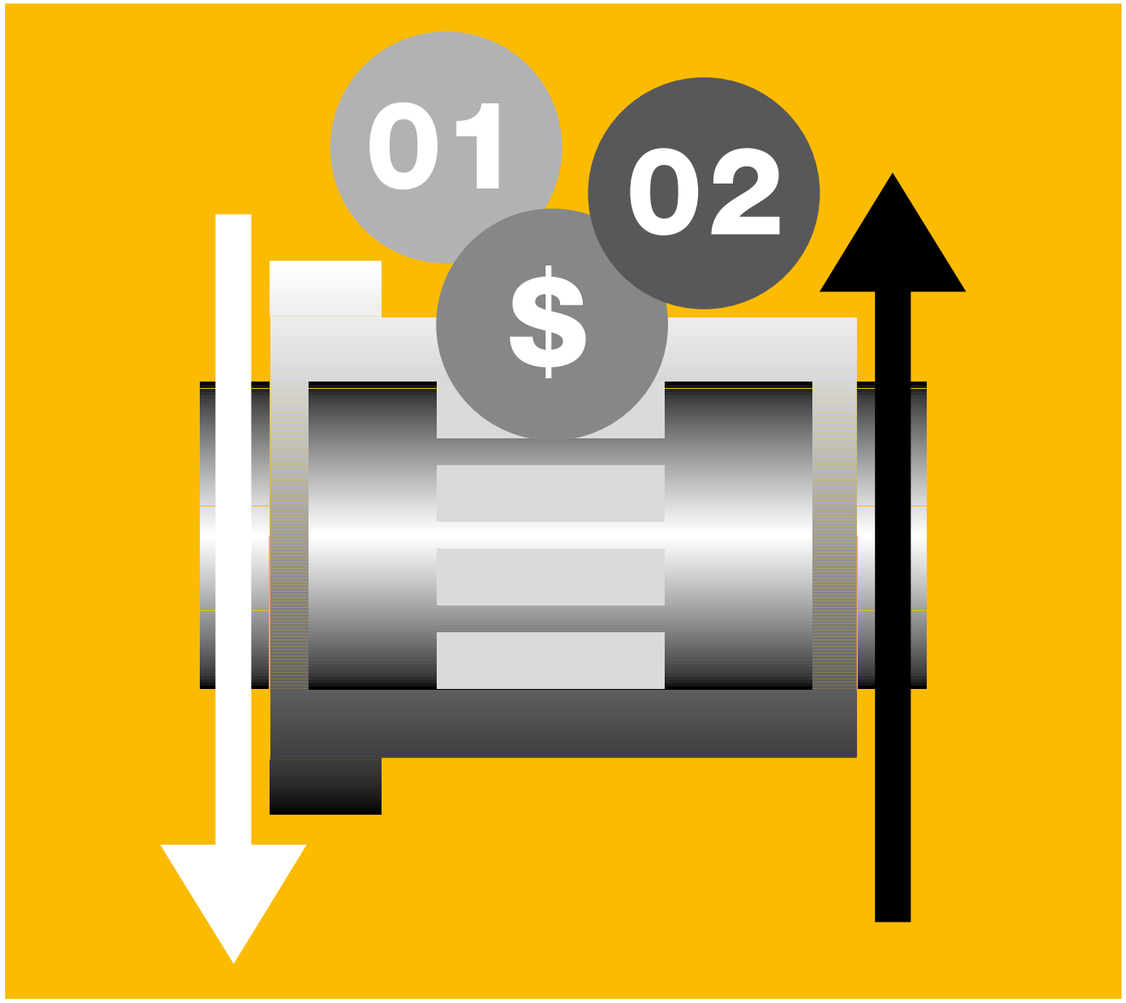
d1	d1-Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
3.0	+0.006 +0.046	4.5	7.5	5.0	0.75	**L500FM-0304-05**
4.0	+0.010 +0.058	5.5	9.5	6.0	0.75	**L500FM-0405-06**
5.0	+0.010 +0.058	7.0	11.0	7.0	1.0	**L500FM-0507-07**
6.0	+0.010 +0.058	8.0	12.0	8.0	1.0	**L500FM-0608-08**
8.0	+0.013 +0.071	10.0	15.0	9.0	1.0	**L500FM-0810-09**
10.0	+0.013 +0.071	12.0	18.0	9.0	1.0	**L500FM-1012-09**

[3] After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

My sketches

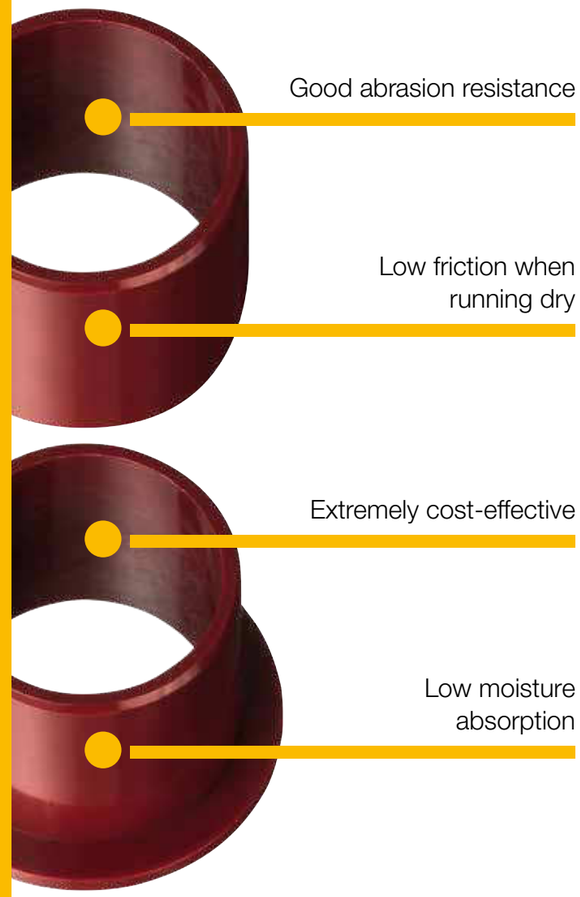


Low-cost – iglidur® R

- Good abrasion resistance
- Low coefficients of friction running dry
- Cost-effective
- Low moisture absorption
- Lubrication and maintenance-free
- Standard range from stock

iglidur® R | low-cost

Good abrasion resistance



Low-cost-material with low coefficients of friction and good wear resistance at low to medium loads.

When to use it?

- If high wear resistance at low loads is required
- If you are looking for a very cost-effective bearing
- When very low coefficients of friction in dry operation are required
- If edge loads occur
- If you are looking for low water absorption
- If PTFE and silicone are prohibited in the application

When not to use it?

- If high pressure occurs
  ▶ iglidur® G, page 79
- When constant temperatures exceed +90 °C
  ▶ iglidur® G, page 79
  ▶ iglidur® P, page 113
- If best wear resistance is required
  ▶ iglidur® J, page 141

Typical application areas

- Sports and leisure
- Model making
- Furniture industry
- Mechatronics

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +90 °C
min. –50 °C

Ø 2–35 mm
More dimensions on request

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

iglidur® R | Technical data

Material properties table

General properties	Unit	iglidur® R	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. water absorption	% weight	1.1	
Coefficient of sliding 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. long-term application temperature	°C	+90	
Max. short-term application temperature	°C	+110	
Lower usage 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 volume resistance	Ωcm	$> 10^{12}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

Table 01: Material properties table

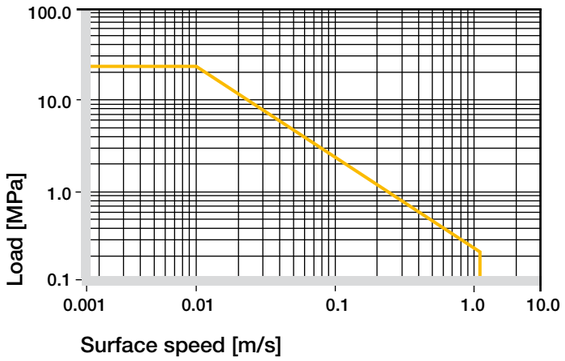


Diagram 01: Permissible pv values for iglidur® R bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® R bearings amounts to about 0.2% weight in standard climatic conditions. The saturation limit submerged in water is 1.1% weight. This must be taken into account for these types of applications.

▶ Diagram, www.igus.eu/r-moisture

Vacuum

In vacuum, iglidur® R plain bearings release gases. Use in vacuum is only possible to a limited extent.

Radiation resistance

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

UV resistance

iglidur® R plain bearings are resistant to UV radiation, but the tribological properties are reduced by permanent exposure.

Medium	Resistance
Alcohol	+
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 02: Chemical resistance

▶ Chemical table, **page 1424**

The development of the iglidur® R as a bearing material focused on high performance and very low-cost. Especially in the dry operation low coefficients of friction and wear were to be achieved. Bearings made from iglidur® R are selectively supported by a combination of solid lubricants. The PTFE- and silicon-free material achieves extremely low coefficients of friction in dry operation and runs largely free of stick-slip effects.

Mechanical properties

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

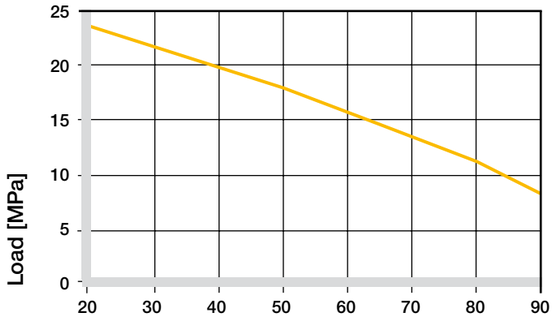


Diagram 02: Permissible maximum surface pressure of as a function of temperature (23 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® R at radial loads. At the maximum permissible load of 23 MPa, the deformation is approximately 4 %. Plastic deformation is not detectable up to this value. However, it is also dependent on the service time.

▶ Surface pressure, **page 41**

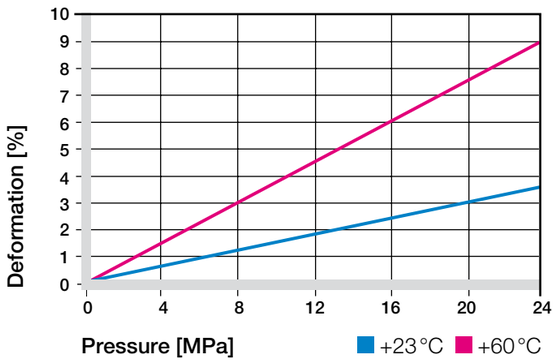


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

iglidur® R bearings are suitable for high surface speeds. Speeds of up to 10 m/s are permitted in linear motions. Here too the specified maximum values can be achieved only with minimum pressure loads. 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 44**

m/s	Rotating	Oscillating	Linear
Continuous	0.8	0.6	3.5
Short-term	1.2	1	5

Table 03: Maximum surface speeds

Temperatures

With increasing temperatures, the compressive strength of iglidur® R plain bearings decreases. Diagram 02 clarifies this relationship. The ambient temperature in the application also has an impact on the wear of the bearing, an increase in temperature will result in an increase in wear. At temperatures over +50 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

The coefficient of friction decreases like the wear resistance with increasing load. iglidur® R is suitable for applications in which high pv values are given mainly through the high surface speed and not as much through the surface pressure. Less distinct is the dependency of the coefficient of friction of the iglidur® R bearings on the shaft surface.

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

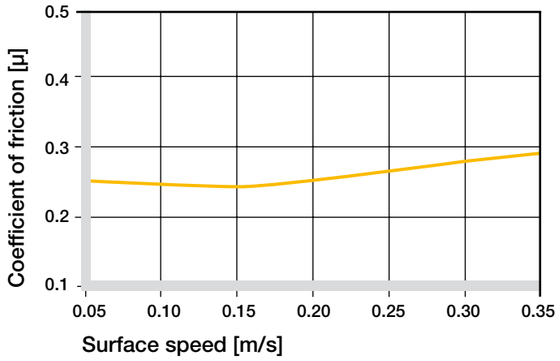


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

iglidur® R | Technical data

R
+90 °C
23 MPa

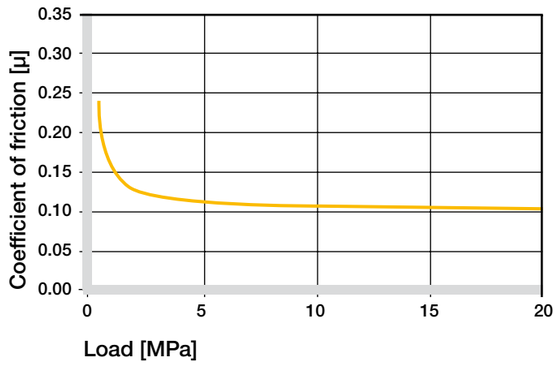


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

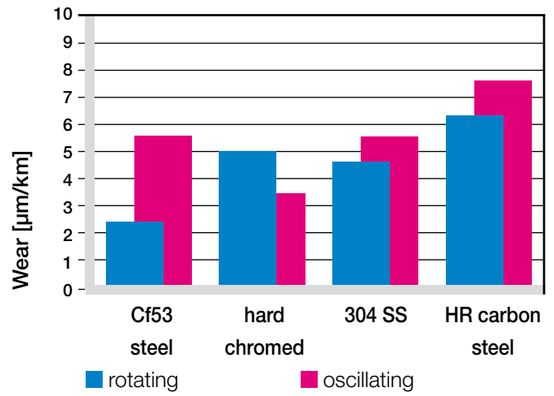


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2 MPa

Shaft materials

Diagrams 06 and 07 display a summary of the results of tests with different shaft materials conducted with bearings made from iglidur® R. At 0.3 m/s and 1 MPa, 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 oscillating applications, the hard chromed shaft proves to be the ideal material.
If the shaft material you plan to use is not contained in this list, please contact us.

▶ Shaft materials, **page 52**

iglidur® R	Dry	Greases	Oil	Water
C. o. f. µ	0.09–0.25	0.09	0.04	0.04

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

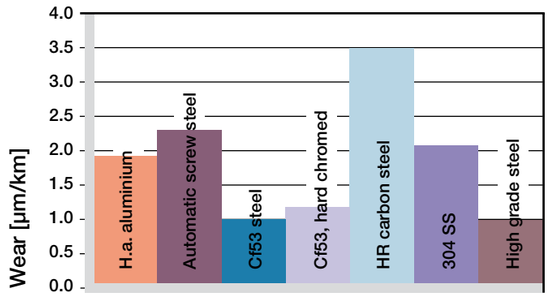


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

Installation tolerances

iglidur® R plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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).

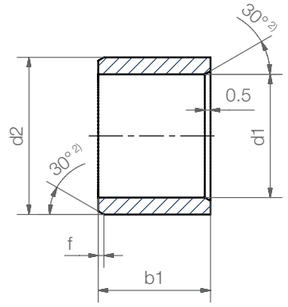
▶ Testing methods, **page 57**

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

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

iglidur® R | Product range

Sleeve bearing (Form S)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
R	S	M	-02	03	-07	
iglidur® material	Form S	metric	Inner-Ø d1	Outer-Ø d2	Length b1	

Dimensions according to ISO 3547-1 and special dimensions

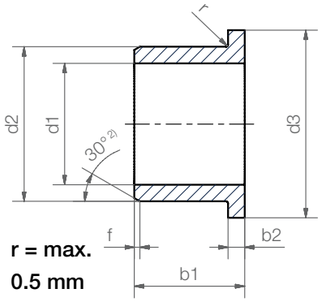
Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	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	+0.020 +0.068	7.0	5.0	**RSM-0507-05**
6.0	+0.020 +0.068	8.0	6.0	**RSM-0608-06**
8.0	+0.025 +0.083	10.0	10.0	**RSM-0810-10**
10.0	+0.025 +0.083	12.0	5.0	**RSM-1012-05**
10.0	+0.025 +0.083	12.0	10.0	**RSM-1012-10**
10.0	+0.025 +0.083	12.0	15.0	**RSM-1012-15**
12.0	+0.032 +0.102	14.0	12.0	**RSM-1214-12**
14.0	+0.032 +0.102	16.0	15.0	**RSM-1416-15**
15.0	+0.032 +0.102	17.0	15.0	**RSM-1517-15**
16.0	+0.032 +0.102	18.0	15.0	**RSM-1618-15**
18.0	+0.032 +0.102	20.0	25.0	**RSM-1820-25**
20.0	+0.040 +0.124	23.0	15.0	**RSM-2023-15**
20.0	+0.040 +0.124	23.0	20.0	**RSM-2023-20**
25.0	+0.040 +0.124	28.0	25.0	**RSM-2528-25**
28.0	+0.040 +0.124	32.0	12.0	**RSM-2832-12**
30.0	+0.040 +0.124	34.0	25.0	**RSM-3034-25**
30.0	+0.040 +0.124	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 57

iglidur® R | Product range

Flange bearing (Form F)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
R	F	M	-04	05	-04	
iglidur® material	Form F	metric	Inner-Ø d1	Outer-Ø d2	Length b1	

Dimensions according to ISO 3547-1 and special dimensions

Dimensions [mm]

d1	d1-Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
4.0	+0.020 +0.068	5.0	9.0	3.0	0.5	**RFM-0405-03**
4.0	+0.020 +0.068	5.5	9.5	4.0	0.75	**RFM-0405-04**
5.0	+0.020 +0.068	7.0	11.0	5.0	1.0	**RFM-0507-05**
6.0	+0.020 +0.068	8.0	12.0	6.0	1.0	**RFM-0608-06**
8.0	+0.025 +0.083	10.0	15.0	5.0	1.0	**RFM-0810-05**
8.0	+0.025 +0.083	10.0	15.0	10.0	1.0	**RFM-0810-10**
10.0	+0.025 +0.083	12.0	18.0	10.0	1.0	**RFM-1012-10**
10.0	+0.025 +0.083	12.0	18.0	18.0	1.0	**RFM-1012-18**
12.0	+0.032 +0.102	14.0	20.0	10.0	1.0	**RFM-1214-10**
12.0	+0.032 +0.102	14.0	20.0	12.0	1.0	**RFM-1214-12**
14.0	+0.032 +0.102	16.0	22.0	17.0	1.0	**RFM-1416-17**
15.0	+0.032 +0.102	17.0	23.0	17.0	1.0	**RFM-1517-17**
16.0	+0.032 +0.102	18.0	24.0	17.0	1.0	**RFM-1618-17**
18.0	+0.032 +0.102	20.0	26.0	17.0	1.0	**RFM-1820-17**
20.0	+0.040 +0.124	23.0	30.0	21.5	1.5	**RFM-2023-21**
22.0	+0.040 +0.124	25.0	29.0	4.5	1.5	**RFM-222529-045**
25.0	+0.040 +0.124	28.0	35.0	21.5	1.5	**RFM-2528-21**

[3] After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

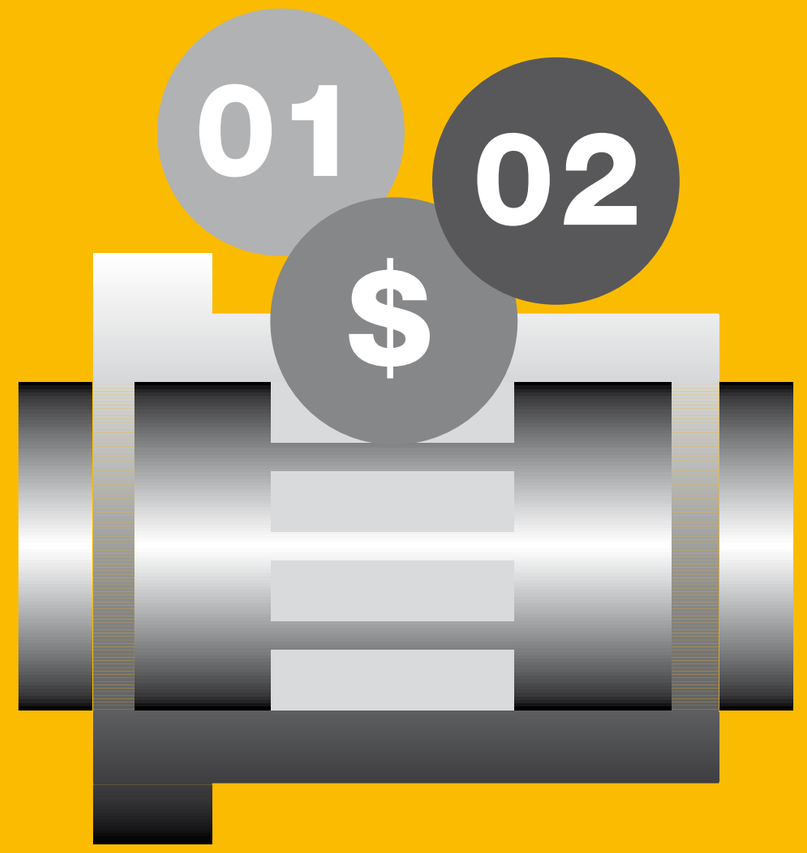
Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

Even more dimensions from stock

More than 300 dimensions are now available. Search online for your required bearing.

▶ **www.igus.eu/iglidur-specialbearings**

My sketches

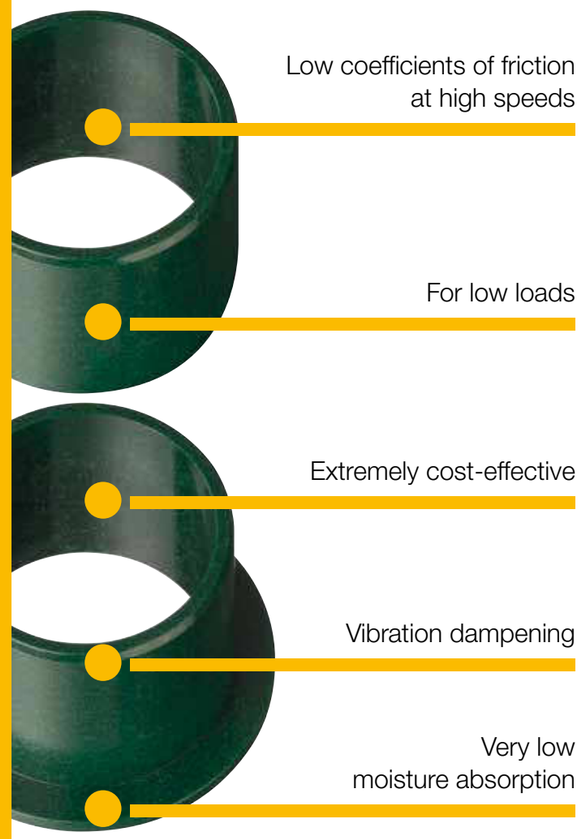


Low-cost material with silicone – iglidur® D

- Low coefficients of friction at high speeds
- For low loads
- Cost-effective
- Vibration dampening
- Very low moisture absorption
- Lubrication and maintenance-free

iglidur® D | Low-cost material with silicone

Good abrasion resistance



Low-cost-material with low coefficients of friction and good wear resistance at low loads.

When to use it?

- When low coefficients of friction are needed
- For high speeds
- For low load
- If you are looking for a very cost-effective bearing

When not to use it?

- When high pressure occurs
  ▶ iglidur® G, page 79
- When the part should be free of silicon
  ▶ iglidur® J, page 141
  ▶ iglidur® R, page 213
- When constant temperatures exceed +90 °C
  ▶ iglidur® G, page 79
  ▶ iglidur® P, page 113

Typical application areas

- Sports and leisure
- Model making
- Furniture industry
- Mechatronics

Available on request
Detailed information about delivery time online.

Order-related

max. +90 °C
min. –50 °C

Order-related

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

iglidur® D | Technical data

Material properties table

General properties	Unit	iglidur® D	Testing method
Density	g/cm³	1.40	
Colour		green	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.3	DIN 53495
Max. water absorption	% weight	1.1	
Coefficient of sliding 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. long-term application temperature	°C	+90	
Max. short-term application temperature	°C	+110	
Lower usage 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 volume resistance	Ωcm	$> 10^{14}$	DIN IEC 93
Surface resistance	Ω	$> 10^{14}$	DIN 53482

Table 01: Material properties table

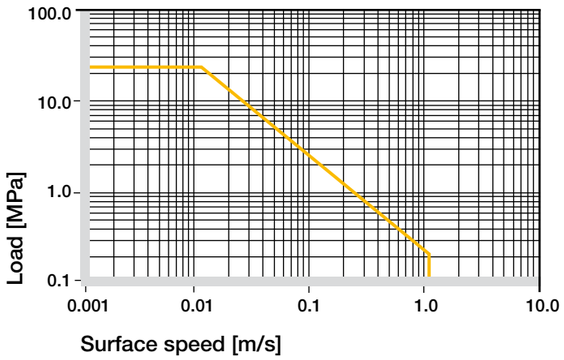


Diagram 01: Permissible pv values for iglidur® D bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® D bearings amounts to about 0.3% weight in standard climatic conditions. The saturation limit in water is 1.1 % weight. This low moisture absorption allows for design in wet environments.

▶ Diagram, www.igus.eu/d-moisture

Vacuum

In vacuum, iglidur® D plain bearings release gases. Use in vacuum is only possible to a limited extent.

Radiation resistance

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

UV resistance

iglidur® D plain bearings are resistant to UV radiation, but the tribological properties are reduced by permanent exposure.

Medium	Resistance
Alcohol	+
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 02: Chemical resistance

▶ Chemical table, **page 1424**

During the development process of iglidur® D as a bearing material, high performance and a very low price were the top requirements. In particular, low coefficients of friction were needed at high speeds when running dry. This material containing silicone achieves excellently low friction values in dry operation and runs with virtually no stick-slip.

Mechanical properties

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

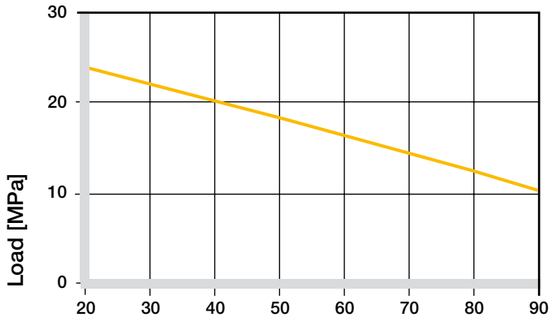


Diagram 02: Permissible maximum surface pressure of as a function of temperature (23 MPa at +20 °C)

iglidur® D bearings were specially developed for low radial loads. Diagram 03 shows the elastic deformation of iglidur® D at radial loads. At the permissible maximum surface pressure of 23 MPa the deformation is less than 3 %. Plastic deformation is not detectable up to this value. However, it is also dependent on the service time.

▶ Surface pressure, **page 41**

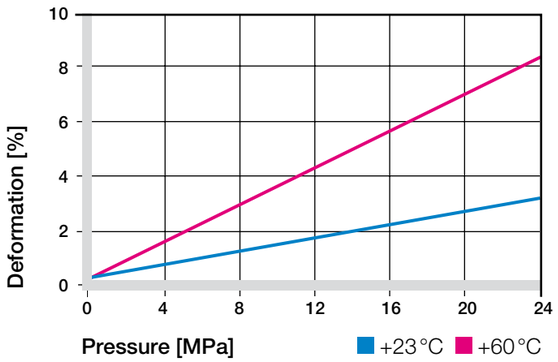


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

iglidur® D bearings are suitable for high surface speeds. Speeds of up to 10 m/s are permitted in linear motions. Here too the specified maximum values can be achieved only with minimum pressure loads. 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 44**

m/s	Rotating	Oscillating	Linear
Continuous	1.5	1.1	8
Short-term	3	2.1	10

Table 03: Maximum surface speeds

Temperatures

With increasing temperatures, the compressive strength of iglidur® D plain bearings decreases. Diagram 02 clarifies this relationship. The ambient application temperature has a direct impact on bearing wear, an increase in temperature results in an increase in wear. At temperatures over +50 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

The coefficient of friction decreases like the wear resistance with increasing load. In the Ra range between 0.4 and 0.6 µm, the coefficient of friction attains the optimum value.

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

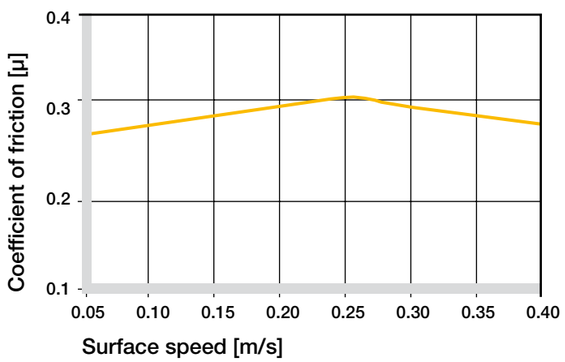


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

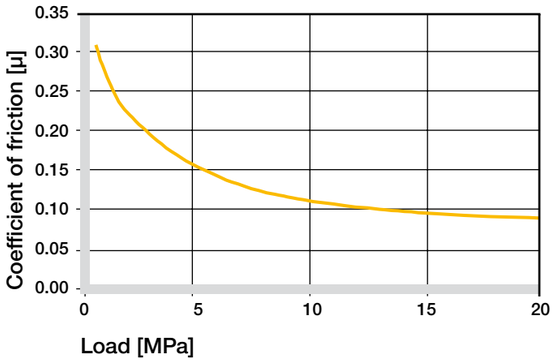


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

Diagrams 06 and 07 display a summary of the results of tests with different shaft materials conducted with bearings made from iglidur® D.
Please contact us if you would like to use a shaft material not included in this list.

▶ Shaft materials, **page 52**

iglidur® D	Dry	Greases	Oil	Water
C. o. f. µ	0.08–0.26	0.09	0.04	0.04

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

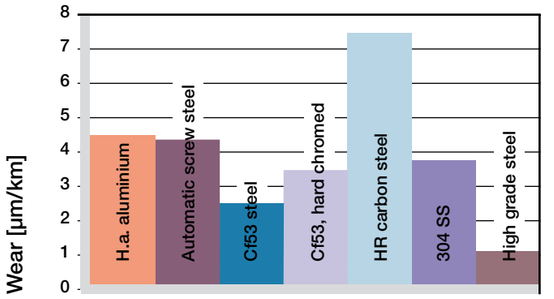


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

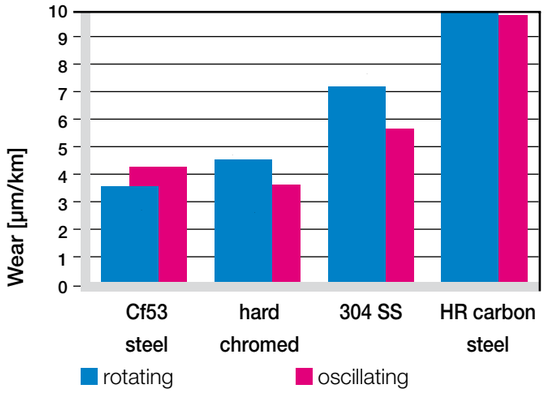


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2 MPa

Installation tolerances

iglidur® D plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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 57**

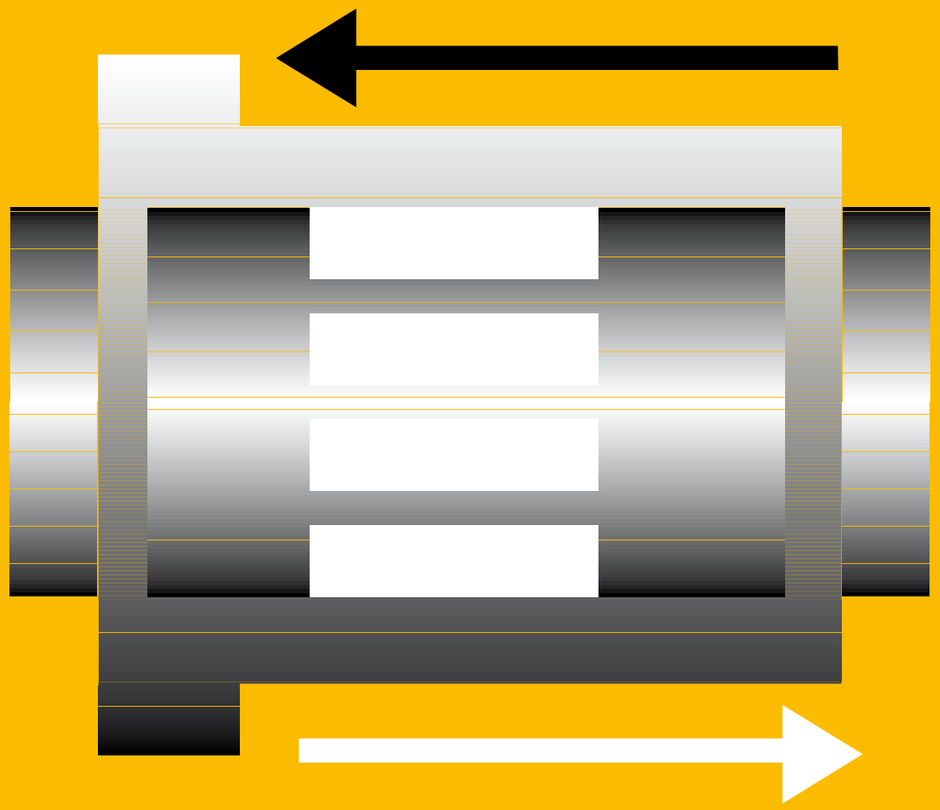
Diameter d1 [mm]	Shaft h9 [mm]	iglidur® D E10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.014 +0.054	0 +0.010
> 3 to 6	0–0.030	+0.020 +0.068	0 +0.012
> 6 to 10	0–0.036	+0.025 +0.083	0 +0.015
> 10 to 18	0–0.043	+0.032 +0.102	0 +0.018
> 18 to 30	0–0.052	+0.040 +0.124	0 +0.021
> 30 to 50	0–0.062	+0.050 +0.150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

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

Product range

iglidur® D plain bearings are manufactured to special order.

My sketches

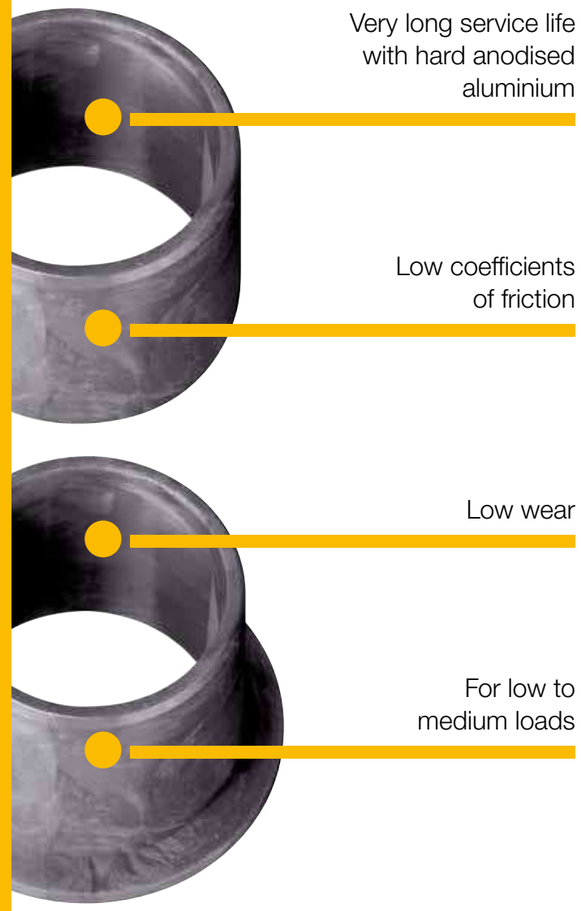


Specialist for aluminium shafts – iglidur® J200

- Very long service life with hard anodised aluminium
- Low coefficients of friction
- Low wear
- For low to medium loads
- Lubrication and maintenance-free

iglidur® J200 | Specialist for aluminium shafts

Low wear with low coefficient of friction



The specialist for low friction-values and minimal wear with hard anodised aluminium shaft.

When to use it?

- For applications with anodised aluminium shafts
- When lowest coefficients of friction are required
- When it comes to high service life with low loads

When not to use it?

- For steel shafts
  ▶ iglidur® J, page 141
  ▶ iglidur® W300, page 153
- When temperatures are continuously higher than +90 °C
  ▶ iglidur® V400, page 265
- When a cost-effective universal bearing is required
  ▶ iglidur® G, page 79
  ▶ iglidur® P, page 113

Typical application areas

- Automation
- Linear technology
- Actuator

Available on request
Detailed information about delivery time online.

Order-related

max. +90 °C
min. –50 °C

Order-related

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

iglidur® J200 | Technical data

Material properties table

General properties	Unit	iglidur® J200	Testing method
Density	g/cm³	1.72	
Colour		dark grey	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.2	DIN 53495
Max. water absorption	% weight	0.7	
Coefficient of sliding 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. long-term application temperature	°C	+90	
Max. short-term application temperature	°C	+120	
Lower usage 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 volume resistance	Ωcm	$> 10^8$	DIN IEC 93
Surface resistance	Ω	$> 10^8$	DIN 53482

Table 01: Material properties table

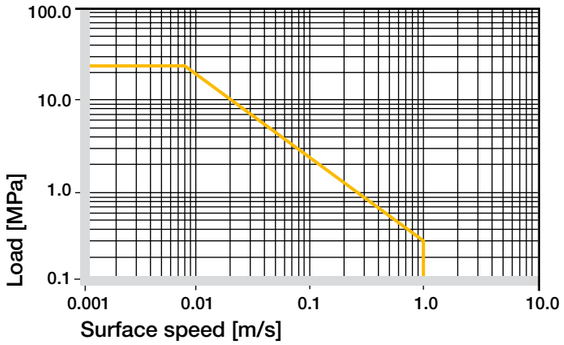


Diagram 01: Permissible pv values for iglidur® J200 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® J200 plain bearings in standard climatic conditions is approximately 0.2 % weight. The saturation limit in water is 0.7 % weight. Due to these low values considering expansion by moisture absorption is only required in extreme cases.

▶ Diagram, www.igus.eu/j200-moisture

Vacuum

Use in vacuum is only possible to a limited extent. Only dehumidified iglidur® J200 bearings should be used in vacuum.

Radiation resistance

Plain bearings made from iglidur® J200 are resistant to radiation up to an intensity of $3 \cdot 10^2$ Gy.

UV resistance

iglidur® J200 plain bearings are very resistant to UV radiation.

Medium	Resistance
Alcohol	+
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 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® J200 | Technical data

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 coefficients of friction under high loads, but iglidur® J200 can give excellent friction values even at low loads.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® J200 plain bearings decreases. Diagram 02 clarifies this relationship. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

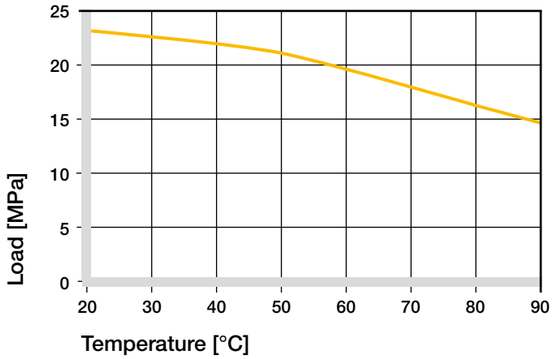


Diagram 02: Permissible maximum surface pressure of as a function of temperature (23 MPa at +20 °C)

At maximum permissible surface pressure of 23 MPa at room temperature, the deformation of iglidur® J200 is 3.5% (diagram 03). A plastic deformation can be ignored up to this value. However, it is also dependent on the service time.

▶ Surface pressure, **page 41**

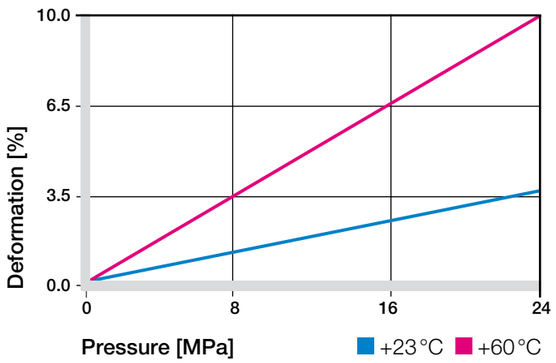


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

iglidur® J200 attains high surface speeds through its excellent coefficients of friction. Continuous rotation speeds of 1 m/s are possible. The permitted speeds are clearly higher yet in linear movements or in short-term operation. Speeds of over 15 m/s were successfully tested in linear movements.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	1	0.7	10
Short-term	1.5	1.1	15

Table 03: Maximum surface speeds

Temperatures

The maximum permitted temperature of +120 °C should not be exceeded. Therefore the ambient temperature generated by friction has to be added. From +60 °C onward, the bearing should be mechanically fastened, so that the danger of bearings creeping out of the bores is avoided. The wear resistance too declines disproportionately from +70 °C.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

Among all the iglidur® materials, iglidur® J200 exhibits the lowest coefficients of friction. The average coefficient of friction of all measurements, even with different shaft materials, is 0.11 µ. The use of hard anodised aluminium as a shaft material is also of importance. The comparison with the rest of the iglidur® materials makes it clear that iglidur® J200 bearings are suitable for rather low loads. The influence of sliding speed and load on the wear is small. The change of the coefficient of friction at high loads is in the normal range (Diagrams 04 and 05). The optimum shaft roughness is between 0.2 and 0.4 µm Ra. The influence of the shaft material on the wear is significant. Even at low loads, we recommend to have a closer look into the wear database.

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

iglidur® J200 | Technical data

J200
+90 °C
23 MPa

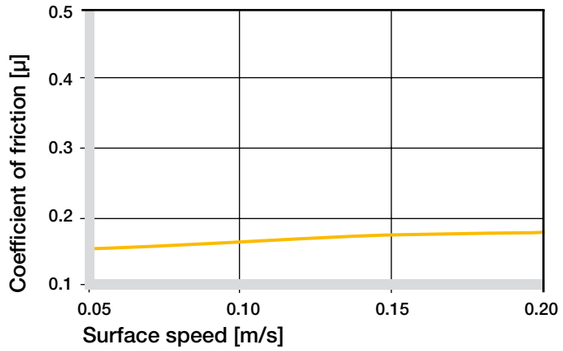


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

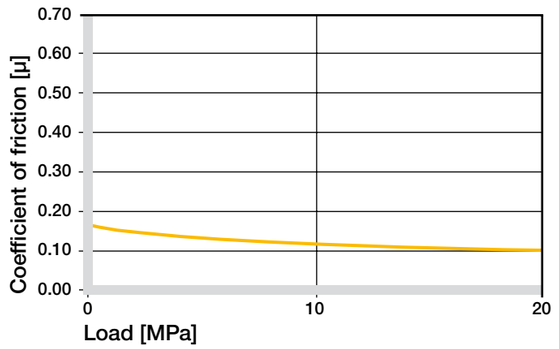


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

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 52**

iglidur® J200	Dry	Greases	Oil	Water
C. o. f. µ	0.11–0.17	0.09	0.04	0.04

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

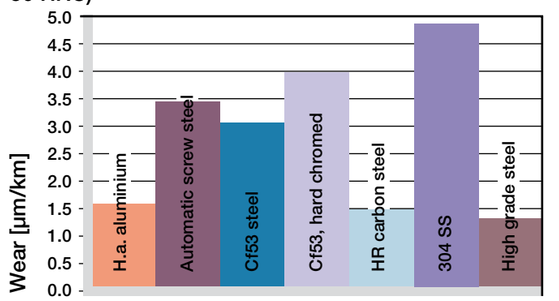


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

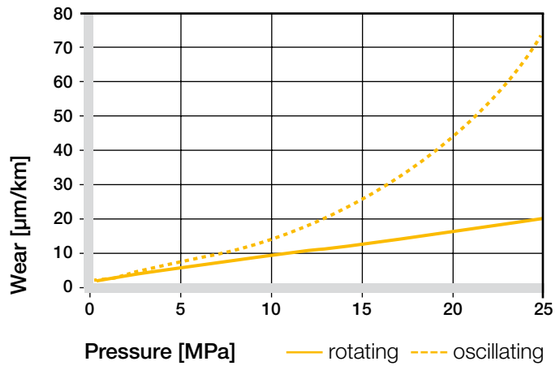


Diagram 07: Wear for pivoting and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Installation tolerances

iglidur® J200 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® J200 E10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.014 +0.054	0 +0.010
> 3 to 6	0–0.030	+0.020 +0.068	0 +0.012
> 6 to 10	0–0.036	+0.025 +0.083	0 +0.015
> 10 to 18	0–0.043	+0.032 +0.102	0 +0.018
> 18 to 30	0–0.052	+0.040 +0.124	0 +0.021
> 30 to 50	0–0.062	+0.050 +0.150	0 +0.025
> 50 to 80	0–0.074	+0.060 +0.180	0 +0.030
> 80 to 120	0–0.087	+0.072 +0.212	0 +0.035
>120 to 180	0–0.100	+0.085 +0.245	0 +0.040

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

Product range

At present, iglidur® J200 plain bearings are made to special order.

iglidur® plain bearing materials for high temperatures

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.

- Lubrication and maintenance-free
- Lightweight
- Good price / performance ratio
- Predictable service life

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

Ø 2–120 mm
More dimensions on request

Imperial dimensions available
▶ From page 1337

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

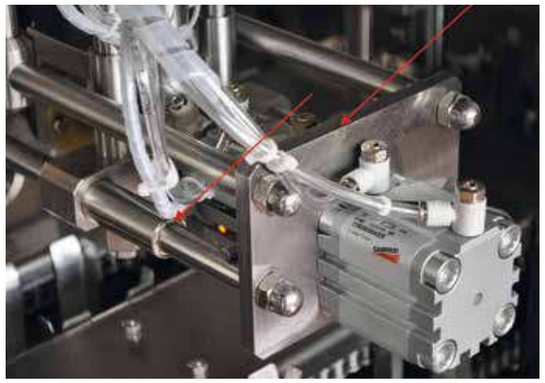
	Temperature [°C] [123]	Surface pressure [MPa] [124]	Coefficient of friction [µ] [125]	Wear [µm/km] [125]	Price index
iglidur® X – The chemical and temperature specialist Up to 150 MPa static ▶ Page 237	250	150	0.31	6.30	
iglidur® Z – Extremely long service life under extreme conditions Resistant to wear and impact even at high loads and temperatures ▶ Page 247	250	150	0.18	1.00	
iglidur® X6 – The high temperature specialist up to +250 °C Up to six times more wear resistant than iglidur® X ▶ Page 257	250	150	0.16	1.20	
iglidur® V400 – For soft shafts and high temperatures Wear and media resistant ▶ Page 265	200	45	0.19	0.30	

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

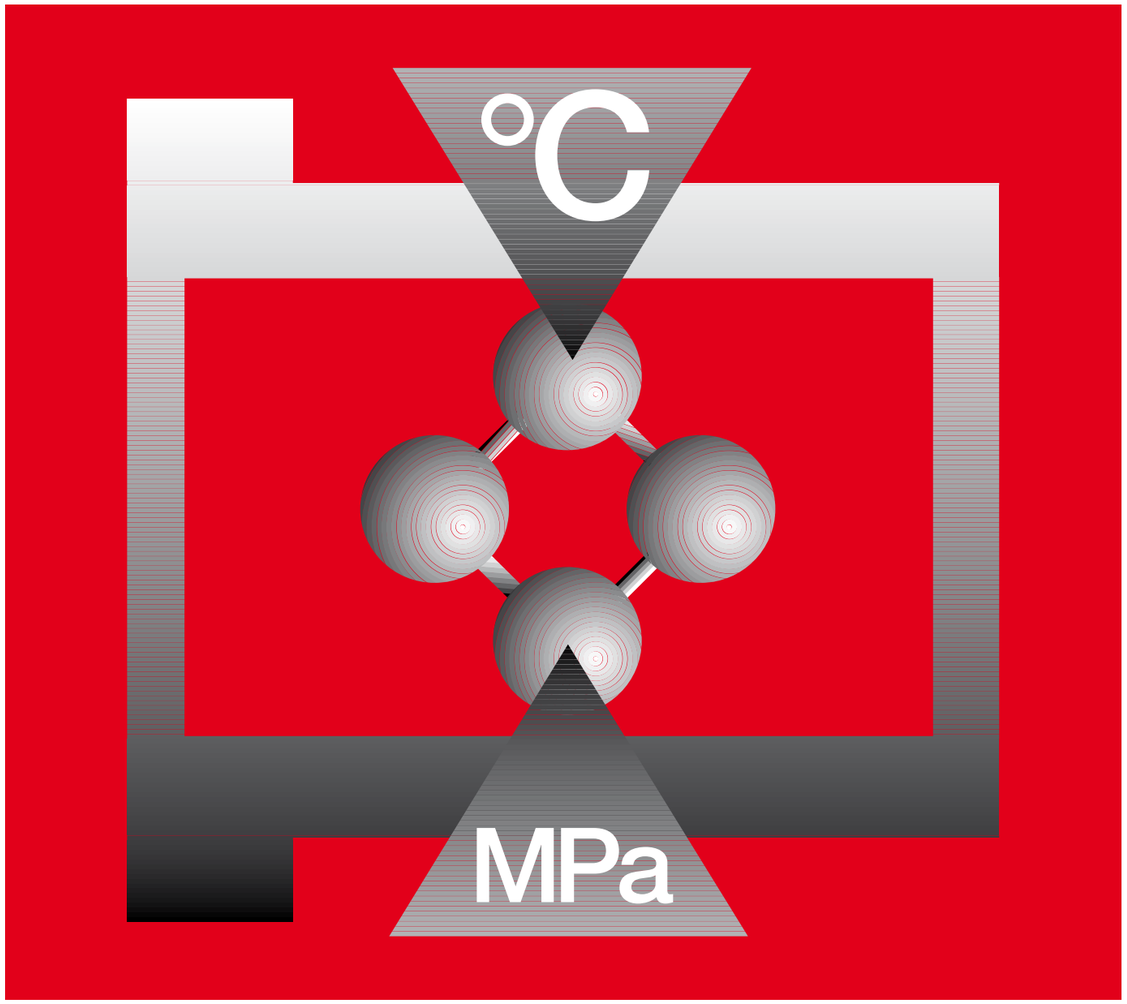
	Temperature [°C] [123]	Surface pressure [MPa] [124]	Coefficient of friction [µ] [125]	Wear [µm/km] [125]	Price index
iglidur® UW500 – For hot liquids Wear resistant in liquid at long-term operation ▶ Page 273	250	140	0.33	2.20	

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

Efficient hardening with ultraviolet radiation: The used iglidur® bearings are chemically resistant and are also resistant to the temperatures of +120 °C generated here.



Lubrication-free iglidur® bearings in a filling system for milk are resistant to disinfectants and high temperatures.



The chemical and temperature specialist – iglidur® X

- Over 250 dimensions available from stock
- Temperature resistant from –100 °C to +250 °C in continuous operation
- Universal resistance to chemicals
- High compressive strength
- Very low humidity absorption
- Excellent wear resistance through the entire temperature range

iglidur® X | The chemical and temperature specialist

Up to 150 MPa static

Temperature resistant from –100 °C to +250 °C in continuous operation

Universal resistance to chemicals

High compressive strength

Very low moisture absorption

Excellent wear resistance through the entire temperature range

iglidur® X is defined by its combination of high temperature resistance with compressive strength, along with high resistance to chemicals. iglidur® X is designed for higher speeds than other iglidur® bearings.

When to use it?

- For pressure loads up to 150 MPa
- For linear movements with stainless steel at high temperatures
- Universal resistance to chemicals
- Temperature resistant from –100 °C to +250 °C in continuous operation (short-term to +315 °C)
- Very low moisture absorption
- High wear resistance over the entire temperature range

When not to use it?

- For very low wear at high loads
  - ▶ iglidur® Q, page 409
  - ▶ iglidur® Z, page 247
- For economical underwater applications
  - ▶ iglidur® H, page 299
  - ▶ iglidur® H370, page 291
- For edge pressure
  - ▶ iglidur® Z, page 247

Typical application areas

- Beverage technology
- Woodworking
- Plastic processing industry
- Aerospace engineering
- Cleanroom

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +250 °C
min. –100 °C

Ø 2–120 mm
More dimensions on request

Imperial dimensions available
▶ From page 1337

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

iglidur® X | Technical data

Material properties table

General properties	Unit	iglidur® X	Testing method
Density	g/cm³	1.44	
Colour		black	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.1	DIN 53495
Max. water absorption	% weight	0.5	
Coefficient of sliding 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. long-term application temperature	°C	+250	
Max. short-term application temperature	°C	+315	
Min. application temperature	°C	–100	
Thermal conductivity	W/m · K	0.6	ASTM C 177
Coefficient of thermal expansion (at +23 °C)	$K^{-1} \cdot 10^{-5}$	5	DIN 53752
Electrical properties[5]			
Specific volume resistance	Ωcm	$< 10^5$	DIN IEC 93
Surface resistance	Ω	$< 10^3$	DIN 53482

Table 01: Material properties table

[5] The good conductivity of this plastic material under certain circumstances can favour the generation of corrosion on the metallic contact components.

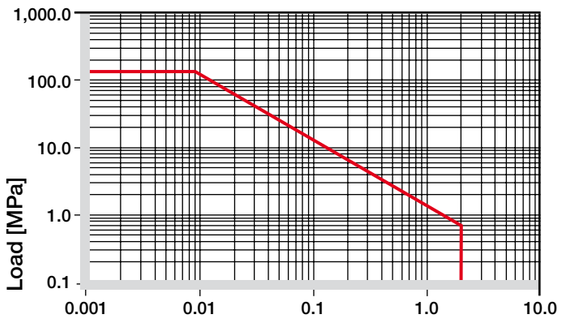


Diagram 01: Permissible pv values for iglidur® X bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® X plain bearings is very low. It is approximately 0.1% weight in standard climatic conditions. The maximum moisture absorption is 0.5 % weight.

▶ Diagram, www.igus.eu/x-moisture

Vacuum

In a vacuum environment iglidur® X plain bearings can be used virtually without restrictions. Outgassing takes place to a very limited extent.

Radiation resistance

Plain bearings made from iglidur® X are resistant to radiation up to an intensity of $1 \cdot 10^5$ Gy.

UV resistance

The excellent material properties of iglidur® X do not change under UV radiation and other weathering effects.

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

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® X | Technical data

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 diagram.

Mechanical properties

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

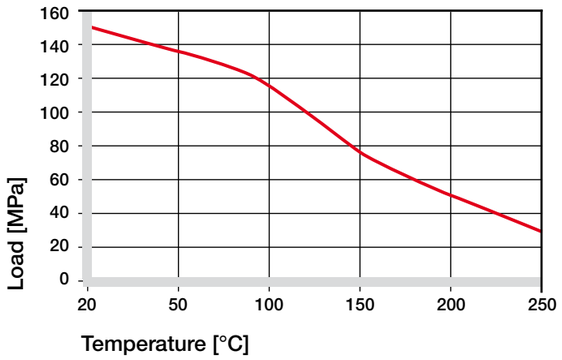


Diagram 02: Permissible maximum surface pressure as a function of temperature (150 MPa at +20 °C)

Diagram 03 shows how iglidur® X plain bearings deform elastically under load.

▶ Surface pressure, **page 41**

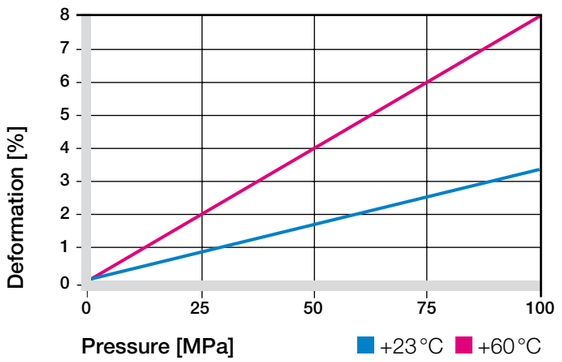


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

iglidur® X is designed for higher speeds than other iglidur® bearings. This is due to its high temperature resistance and excellent thermal conductivity. One benefit of this is seen in the maximum pv value of 1.32 MPa · m/s.
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 44**

m/s	Rotating	Oscillating	Linear
Continuous	1.5	1.1	5
Short-term	3.5	2.5	10

Table 03: Maximum surface speeds

Temperatures

Having a permissible long-term application, temperature of +250 °C, iglidur® X will even withstand +315 °C short-term. As with all thermoplastics, the compression resistance of iglidur® X decreases with increasing temperature. At 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 49**
▶ Additional securing, **page 49**

Friction and wear

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

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

iglidur® X | Technical data

X
+250 °C
150 MPa

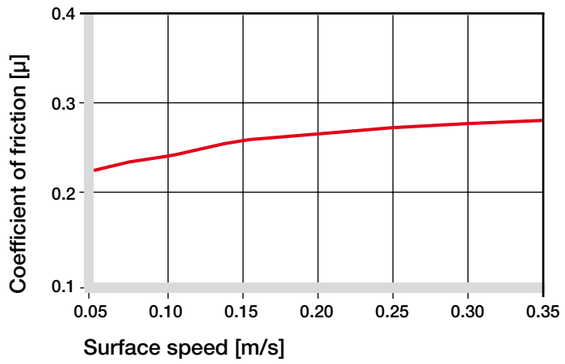


Diagram 04: Coefficient of friction as a function of the pressure,v = 0.01 m/s

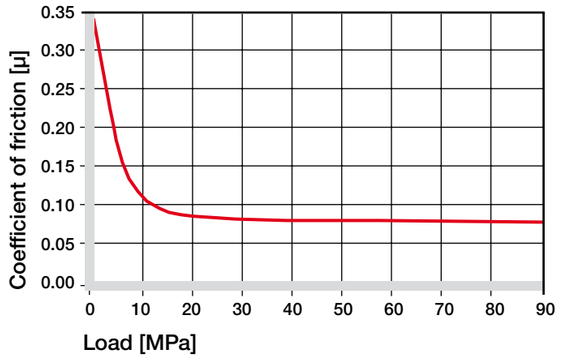


Diagram 05: Coefficient of friction as function of the shaft surface (Cf53 hardened and ground steel)

Shaft materials

The friction and wear are also dependent, to a large degree, on the shaft material. Shafts that are too smooth increase the coefficient of friction of the bearing. Ground surfaces with an average roughness Ra of 0.6 to 0.8 µm are ideal. Diagrams 06 and 07 show results of testing different shaft materials with plain bearings made from iglidur® X.
If the shaft material you plan on using is not shown in these test results, please contact us.

▶ Shaft materials, **page 52**

iglidur® X	Dry	Greases	Oil	Water
C. o. f. µ	0.09–0.27	0.09	0.04	0.04

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

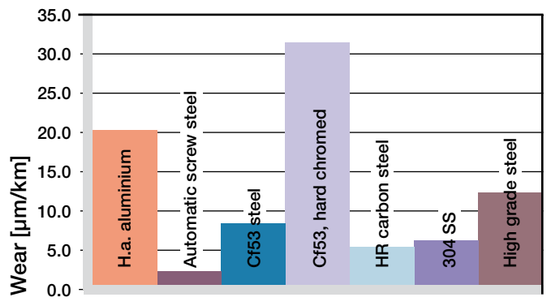


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1 MPa, v = 0,3 m/s

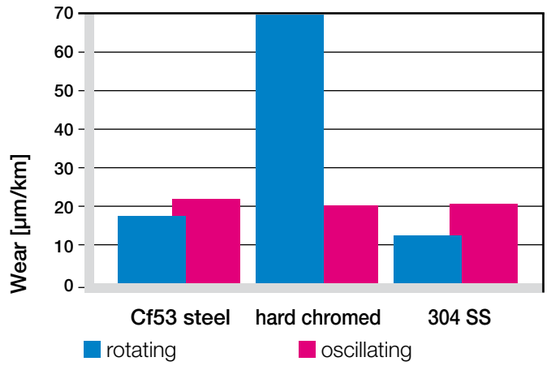


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2 MPa

Installation tolerances

iglidur® X plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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 specific dimensions the tolerance differs depending on the wall thickness (please see the product range table).

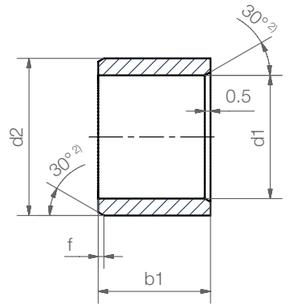
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® X F10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.006 +0.046	0 +0.010
> 3 to 6	0–0.030	+0.010 +0.058	0 +0.012
> 6 to 10	0–0.036	+0.013 +0.071	0 +0.015
> 10 to 18	0–0.043	+0.016 +0.086	0 +0.018
> 18 to 30	0–0.052	+0.020 +0.104	0 +0.021
> 30 to 50	0–0.062	+0.025 +0.125	0 +0.025
> 50 to 80	0–0.074	+0.030 +0.150	0 +0.030

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

iglidur® X | Product range

Sleeve bearing (Form S)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
X	S	M	-02	03	-03	
iglidur® material	Form S	Metric	Inner-Ø d1	Outer-Ø d2	Length b1	

Dimensions according to ISO 3547-1 and special dimensions

Imperial dimensions available
▶ From page 1367

Dimensions [mm]

d1	d1- Tolerance[3]	d2	b1 h13	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		5.5	4.0	XSM-0405-04
4.0		5.5	6.0	XSM-0405-06
4.0		5.0	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	+0.010 +0.058	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		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	+0.013 +0.071	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	+0.013 +0.071	12.0	20.0	XSM-1012-20
12.0		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	+0.016 +0.086	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

3) After press-fit. Testing methods ▶ Page 57

Dimensions [mm]

d1	d1- Tolerance[3]	d2	b1 h13	Part No.
18.0	+0.016 +0.086	20.0	20.0	XSM-1820-20
18.0		20.0	25.0	XSM-1820-25
20.0		22.0	14.0	XSM-2022-140
20.0		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	+0.020 +0.104	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	15.0	XSM-3034-15
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		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	+0.025 +0.125	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
50.0		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		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	+0.030 +0.150	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		95.0	100.0	XSM-9095-100
100.0	+0.036 +0.176	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 57

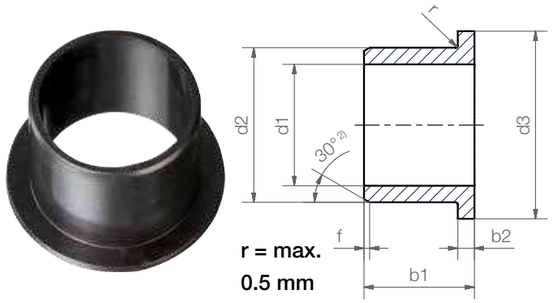
Even more dimensions from stock

More than 300 dimensions are now available. Search online for your required bearing.

▶ www.igus.eu/iglidur-specialbearings

iglidur® X | Product range

Flange bearing (Form F)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
X	F	M	-03	04	-05	
iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1	

Dimensions according to ISO 3547-1 and special dimensions

Imperial dimensions available ▶ From page 1388

Dimensions [mm]

d1	d1- Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
2.0	+0.006	4.0	6.0	3.0	1.0	**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		5.5	8.0	6.0	0.75	**XFM-040508-06**
5.0	+0.010 +0.058	7.0	11.0	5.0	1.0	**XFM-0507-05**
6.0		8.0	12.0	4.0	1.0	**XFM-0608-04**
6.0		8.0	12.0	8.0	1.0	**XFM-0608-08**
6.0		8.0	12.0	10.0	1.0	**XFM-0608-10**
8.0		10.0	15.0	5.5	1.0	**XFM-0810-05**
8.0		10.0	15.0	7.5	1.0	**XFM-0810-07**
8.0		10.0	15.0	8.0	1.0	**XFM-0810-08**
8.0		10.0	15.0	9.0	1.0	**XFM-0810-09**
8.0		10.0	12.0	4.0	1.0	**XFM-081012-04**
8.0		10.0	14.0	31.5	1.0	**XFM-081014-31**
9.0		11.0	15.0	18.0	0.5	**XFM-0911-18**
10.0		12.0	18.0	5.0	1.0	**XFM-1012-05**
10.0	+0.013	12.0	18.0	6.0	1.0	**XFM-1012-06**
10.0	+0.071	12.0	18.0	7.0	1.0	**XFM-1012-07**
10.0		12.0	15.0	8.0	1.0	**XFM-1012-08**
10.0		12.0	18.0	9.0	1.0	**XFM-1012-09**
10.0		12.0	18.0	12.0	1.0	**XFM-1012-12**
10.0		12.0	18.0	15.0	1.0	**XFM-1012-15**
10.0		12.0	18.0	17.0	1.0	**XFM-1012-17**
10.0		12.0	18.0	18.0	1.0	**XFM-1012-18**
10.0		12.0	15.0	22.0	1.0	**XFM-1012-22**
10.0		12.0	18.0	25.0	1.0	**XFM-1012-25**
12.0		14.0	20.0	5.5	1.0	**XFM-1214-055**
12.0		14.0	20.0	7.0	1.0	**XFM-1214-07**
12.0		14.0	20.0	9.0	1.0	**XFM-1214-09**
12.0	+0.016 +0.086	14.0	20.0	12.0	1.0	**XFM-1214-12**
12.0		14.0	20.0	15.0	1.0	**XFM-1214-15**
12.0		14.0	20.0	17.0	1.0	**XFM-1214-17**
12.0		14.0	18.0	3.9	1.0	**XFM-121418-039**
12.0		14.0	18.0	5.9	1.0	**XFM-121418-059**
14.0		16.0	22.0	10.0	1.0	**XFM-1416-10**
14.0		16.0	22.0	12.0	1.0	**XFM-1416-12**
14.0		16.0	22.0	17.0	1.0	**XFM-1416-17**
15.0		17.0	23.0	6.0	1.0	**XFM-1517-06**
15.0		17.0	23.0	9.0	1.0	**XFM-1517-09**
15.0	+0.016 +0.086	17.0	23.0	12.0	1.0	**XFM-1517-12**
15.0		17.0	23.0	17.0	1.0	**XFM-1517-17**
16.0		18.0	24.0	12.0	1.0	**XFM-1618-12**
16.0		18.0	24.0	17.0	1.0	**XFM-1618-17**
18.0		20.0	26.0	12.0	1.0	**XFM-1820-12**
18.0		20.0	26.0	17.0	1.0	**XFM-1820-17**
18.0		20.0	26.0	22.0	1.0	**XFM-1820-22**
20.0		23.0	30.0	6.5	1.5	**XFM-2023-065**
20.0		23.0	30.0	7.5	1.5	**XFM-2023-075**
20.0		23.0	30.0	11.0	1.5	**XFM-2023-11**
20.0	+0.020 +0.104	23.0	30.0	16.5	1.5	**XFM-2023-16**
20.0		23.0	30.0	21.0	1.5	**XFM-2023-21**
25.0		28.0	35.0	11.5	1.5	**XFM-2528-11**
25.0		28.0	35.0	13.5	1.5	**XFM-2528-13**

3) After press-fit. Testing methods ▶ Page 57

Dimensions [mm]

d1	d1- Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
25.0		28.0	35.0	16.5	1.5	**XFM-2528-16**
25.0		28.0	35.0	21.0	1.5	**XFM-2528-21**
25.0	+0.020 +0.104	28.0	33.0	8.0	1.0	**XFM-252833-08**
27.0		30.0	38.0	20.0	1.5	**XFM-2730-20**
30.0		34.0	42.0	16.0	2.0	**XFM-3034-16**
30.0		34.0	42.0	26.0	2.0	**XFM-3034-26**
30.0		34.0	42.0	40.0	2.0	**XFM-3034-40**
32.0		36.0	45.0	15.0	2.0	**XFM-3236-15**
32.0	+0.025 +0.125	36.0	45.0	26.0	2.0	**XFM-3236-26**
35.0		39.0	47.0	16.0	2.0	**XFM-3539-16**
35.0		39.0	47.0	26.0	2.0	**XFM-3539-26**
40.0		44.0	52.0	22.0	2.0	**XFM-4044-22**
40.0	+0.025	44.0	52.0	30.0	2.0	**XFM-4044-30**
40.0	+0.125	44.0	52.0	40.0	2.0	**XFM-4044-40**
45.0		50.0	58.0	50.0	2.0	**XFM-4550-50**
50.0		55.0	63.0	40.0	2.0	**XFM-5055-40**
60.0	+0.030	65.0	73.0	40.0	2.0	**XFM-6065-40**
70.0	+0.150	75.0	83.0	40.0	2.0	**XFM-7075-40**
75.0		80.0	88.0	50.0	2.0	**XFM-7580-50**

3) After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

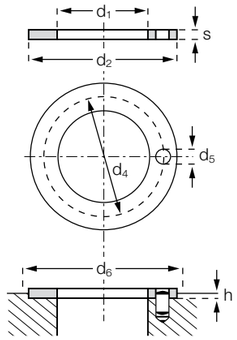
Even more dimensions from stock

More than 300 dimensions are now available. Search online for your required bearing.

▶ **www.igus.eu/iglidur-specialbearings**

iglidur® X | Product range

Thrust washer (Form T)



Order key

Type			Dimensions [mm]		
X	T	M	-0620		-015
iglidur® material	Form T	Metric	Inner-Ø d1	Outer-Ø d2	Thickness s

Dimensions according to ISO 3547-1 and special dimensions

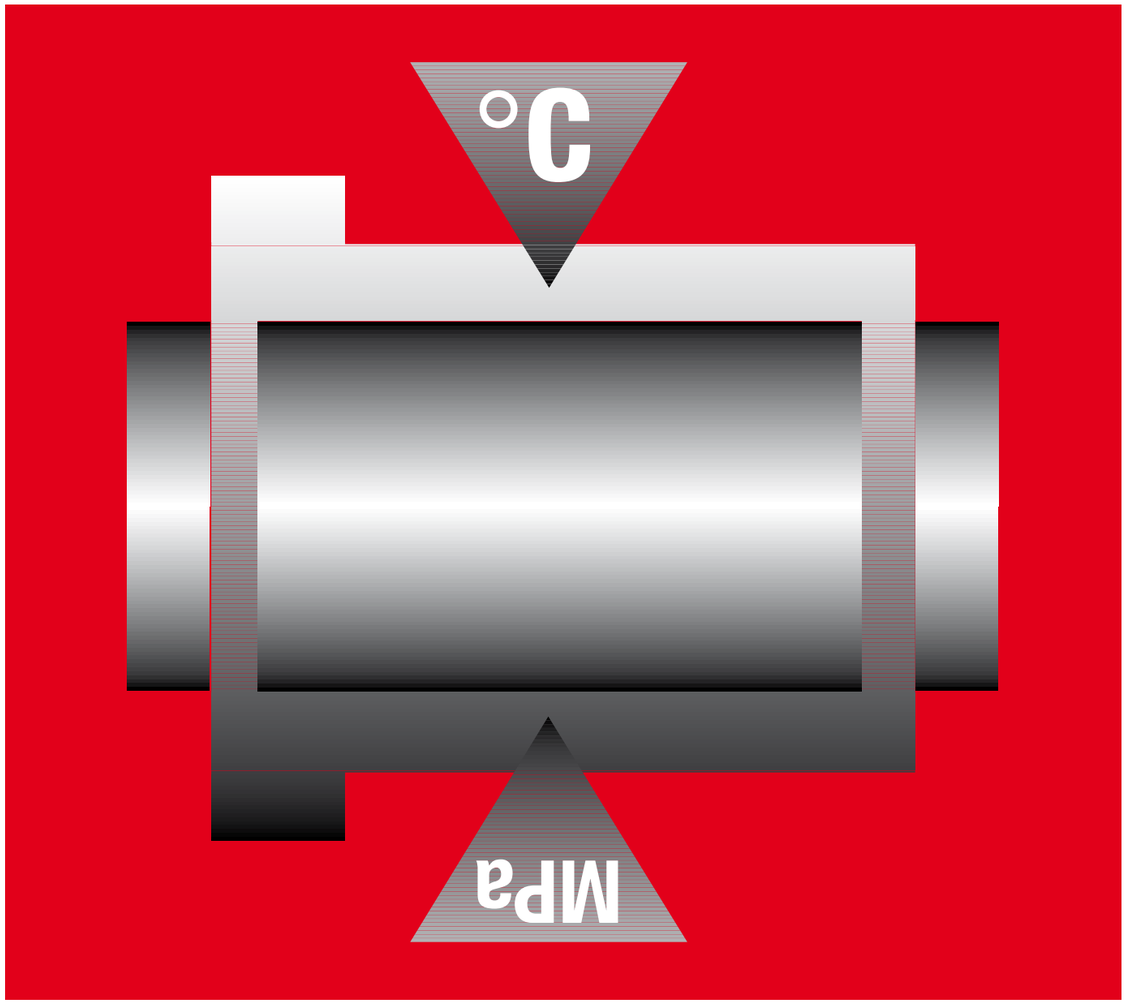
Inch Imperial dimensions available
▶ From page 1392

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	**XTM-0620-015**
8.0	18.0	1.5	13.0	1.5	1.0	18.0	**XTM-0818-015**
8.0	29.0	1.5	[4]	[4]	1.0	29.0	**XTM-0829-015**
8.0	30.0	1.5	[4]	[4]	1.0	30.0	**XTM-0830-015**
10.0	18.0	1.0	[4]	[4]	0.7	18.0	**XTM-1018-010**
12.0	24.0	1.5	18.0	1.5	1.0	24.0	**XTM-1224-015**
14.0	26.0	1.5	20.0	2.0	1.0	26.0	**XTM-1426-015**
15.0	22.0	0.8	[4]	[4]	0.5	22.0	**XTM-1522-008**
15.0	24.0	1.5	19.5	1.5	1.0	24.0	**XTM-1524-015**
16.0	30.0	1.5	22.0	2.0	1.0	30.0	**XTM-1630-015**
18.0	32.0	1.5	25.0	2.0	1.0	32.0	**XTM-1832-015**
20.0	36.0	1.5	28.0	3.0	1.0	36.0	**XTM-2036-015**
22.0	38.0	1.5	30.0	3.0	1.0	38.0	**XTM-2238-015**
24.0	42.0	1.5	33.0	3.0	1.0	42.0	**XTM-2442-015**
26.0	44.0	1.5	35.0	3.0	1.0	44.0	**XTM-2644-015**
28.0	48.0	1.5	38.0	4.0	1.0	48.0	**XTM-2848-015**
32.0	54.0	1.5	43.0	4.0	1.0	54.0	**XTM-3254-015**
38.0	62.0	1.5	50.0	4.0	1.0	62.0	**XTM-3862-015**
42.0	66.0	1.5	54.0	4.0	1.0	66.0	**XTM-4266-015**
48.0	74.0	2.0	61.0	4.0	1.5	74.0	**XTM-4874-020**
52.0	78.0	2.0	65.0	4.0	1.5	78.0	**XTM-5278-020**
62.0	90.0	2.0	76.0	4.0	1.5	90.0	**XTM-6290-020**

[4] Design without fixing bore

Even more dimensions from stock
More than 300 dimensions are now available. Search online for your required bearing.
▶ **www.igus.eu/iglidur-specialbearings**

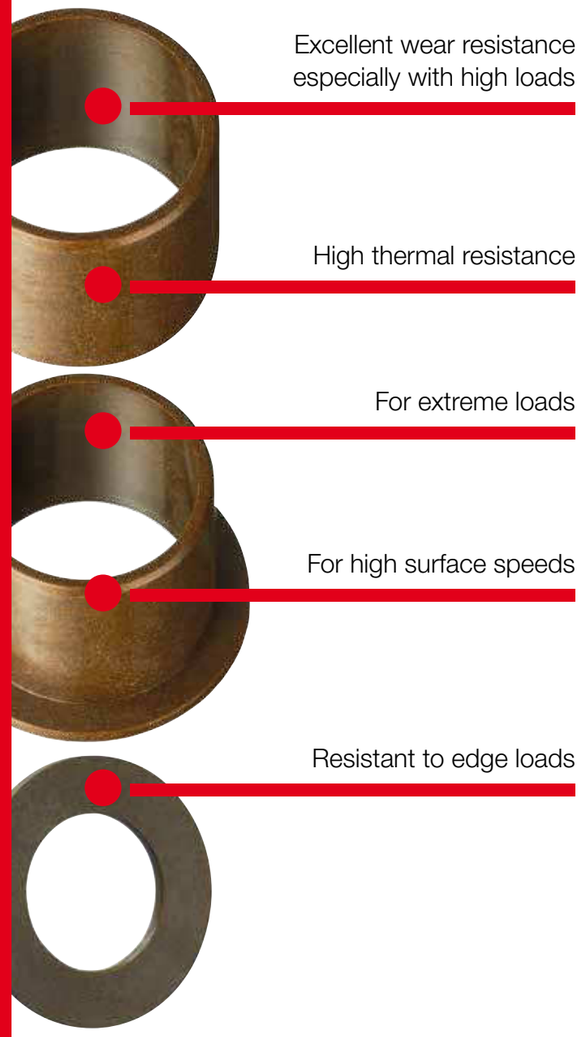


Extremely long service life under extreme conditions – iglidur® Z

- Excellent wear resistance especially with high loads
- High thermal resistance
- For extreme loads
- For high surface speeds
- Resistant to edge loads
- Lubrication and maintenance-free
- Standard range from stock

iglidur® Z | Extremely long service life under extreme conditions

Resistant to wear and impact even at high loads and temperatures



Excellent wear resistance especially with high loads

High thermal resistance

For extreme loads

For high surface speeds

Resistant to edge loads

Extremely high compressive strength coupled with high elasticity enables iglidur® Z bearings to attain their prominent features in association with soft shafts, edge loads and impacts. The bearings are at the same time suitable for temperatures up to +250 °C.

When to use it?

- For continuous temperatures up to +250 °C long-term or +310 °C short-term
- When high wear resistance is required especially under high radial loads
- For high surface speeds
- For edge loading in connection with high surface pressures

When not to use it?

- For low loads and temperatures
  ▶ iglidur® P, page 113
- When a cost-effective general purpose bearing is required
  ▶ iglidur® G, page 79
- When electrically conductive bearings are needed
  ▶ iglidur® F, page 435
  ▶ iglidur® H, page 299
  ▶ iglidur® H370, page 291

Typical application areas

- Construction machinery
- Machine building
- Textile industry
- Aerospace engineering
- Glass industry

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +250 °C
min. –100 °C

Ø 4–120 mm
More dimensions on request

Imperial dimensions available
▶ **From page 1337**

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

iglidur® Z | Technical data

Material properties table

General properties	Unit	iglidur® Z	Testing method
Density	g/cm³	1.40	
Colour		brown	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.3	DIN 53495
Max. water absorption	% weight	1.1	
Coefficient of sliding 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. long-term application temperature	°C	+250	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{11}$	DIN IEC 93
Surface resistance	Ω	$> 10^{11}$	DIN 53482

Table 01: Material properties table

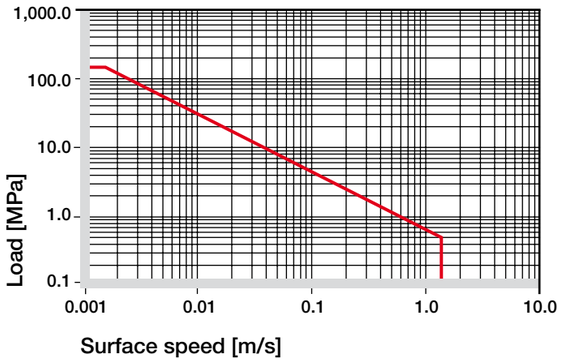


Diagram 01: Permissible pv values for iglidur® Z bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The humidity absorption of iglidur® Z bearings amounts to about 0.3 % weight in standard climatic conditions. The saturation limit in water is 1.1 % weight.

▶ **Diagram, www.igus.eu/z-moisture**

Vacuum

In vacuum, moisture is released as a vapour. Only dehumidified bearings made from iglidur® Z are suitable for vacuum.

Radiation resistance

Plain bearings made from iglidur® Z are resistant to radiation up to an intensity of $1 \cdot 10^5$ Gy.

UV resistance

Exposed to UV radiation, iglidur® Z bearings lose approximately 50 % of their tribological properties (wear resistance).

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

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

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).

Mechanical properties

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

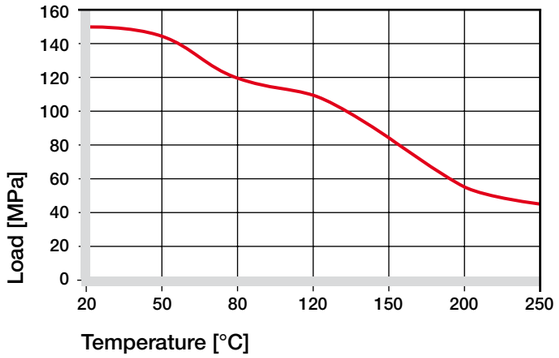


Diagram 02: Permissible maximum surface pressure as a function of temperature (150 MPa at +20 °C)

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 permissible maximum surface pressure of 150 MPa the deformation is about 5.5 % at room temperature.

▶ Surface pressure, **page 41**

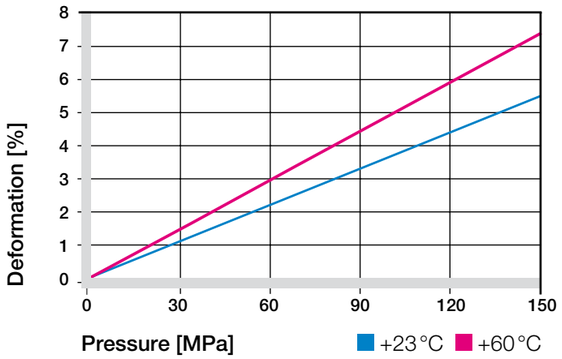


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

iglidur® Z is a high temperature bearing material, which is suited for applications with 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 temperature level is rarely reached due to varying application conditions.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	1.5	1.1	5
Short-term	3.5	2.5	6

Table 03: Maximum surface speeds

Temperatures

The maximum permissible short-term temperature is +310 °C. The ambient temperatures in the bearing system also have an effect on the bearing wear. The wear rate rises with increasing temperatures. At high temperatures iglidur® Z is also the most wear resistant material when running dry. At temperatures over +145 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

The coefficient of friction declines just as the wear resistance with increasing load (diagrams 04 and 05).

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

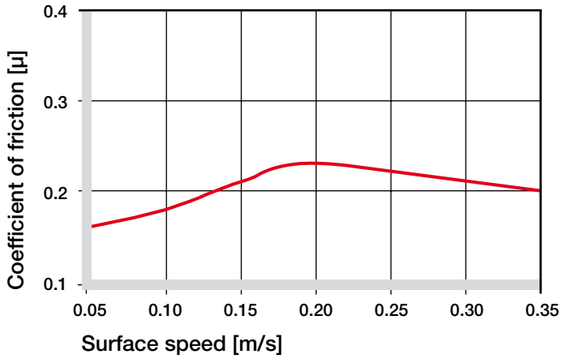


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

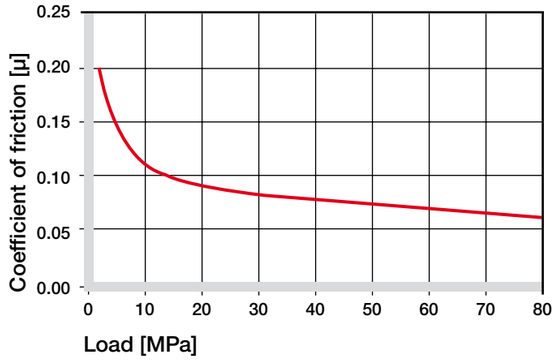


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

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 at 45 MPa still only 15 µm/km.
At low loads iglidur® Z plain bearings wear less in oscillating operation than in rotation. 304 stainless steel and hard chromed shaft are of interest here.

▶ Shaft materials, **page 52**

iglidur® Z	Dry	Grease	Oil	Water
C. o. f. µ	0.06–0.14	0.09	0.04	0.04

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

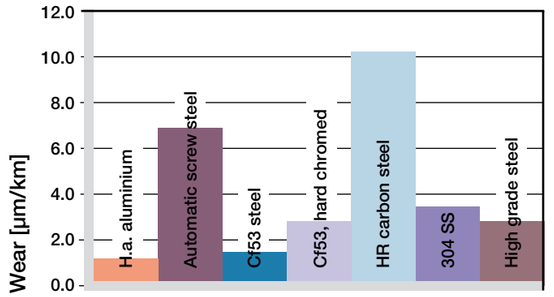


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

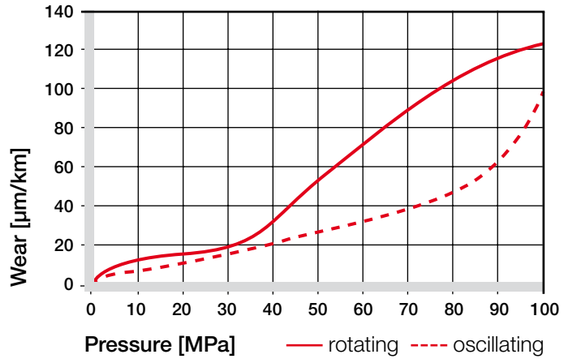


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Installation tolerances

iglidur® H plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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).

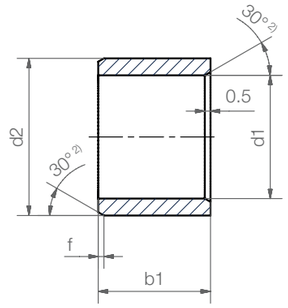
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® Z F10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.006 +0.046	0 +0.010
> 3 to 6	0–0.030	+0.010 +0.058	0 +0.012
> 6 to 10	0–0.036	+0.013 +0.071	0 +0.015
> 10 to 18	0–0.043	+0.016 +0.086	0 +0.018
> 18 to 30	0–0.052	+0.020 +0.104	0 +0.021
> 30 to 50	0–0.062	+0.025 +0.125	0 +0.025
> 50 to 80	0–0.074	+0.030 +0.150	0 +0.030
> 80 to 120	0–0.087	+0.036 +0.176	0 +0.035

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

iglidur® Z | Product range

Sleeve bearing (Form S)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
Z	S	M	-04	05	-04	
iglidur® material	Form S	Metric	Inner-Ø d1	Outer-Ø d2	Length b1	

Dimensions according to ISO 3547-1 and special dimensions

Imperial dimensions available
▶ From page 1369

Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	Part No.
4.0		5.5	4.0	ZSM-0405-04
4.0		5.5	6.0	ZSM-0405-06
4.0		5.5	8.0	ZSM-0405-08
5.0		7.0	5.0	ZSM-0507-05
5.0		7.0	9.0	ZSM-0507-09
5.0	+0.010 +0.058	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		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	+0.013 +0.071	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		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	+0.016	14.0	15.0	ZSM-1214-15
12.0	+0.086	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
14.0		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	+0.016	18.0	12.0	ZSM-1618-12
16.0	+0.086	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		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	+0.020	24.0	30.0	ZSM-2224-30
22.0	+0.104	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

[3] After press-fit. Testing methods ▶ Page 57

Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	Part No.
24.0		27.0	30.0	ZSM-2427-30
25.0		28.0	15.0	ZSM-2528-15
25.0		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	+0.020	30.0	34.0	ZSM-2630-34
28.0	+0.104	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		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	+0.025	39.0	20.0	ZSM-3539-20
35.0	+0.125	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
40.0		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	+0.025 +0.125	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		60.0	60.0	ZSM-5560-60
60.0		65.0	60.0	ZSM-6065-60
70.0	+0.030 +0.150	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		90.0	60.0	ZSM-8590-60
85.0	+0.036 +0.176	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 57

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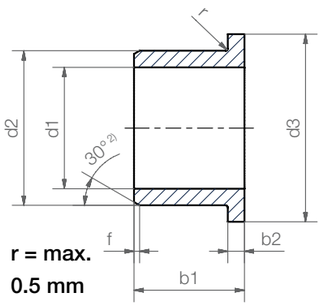
Flange bearing (Form F)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
Z	F	M	- 04	05	- 04	
iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1	

Dimensions according to ISO 3547-1 and special dimensions

Inch Imperial dimensions available ▶ From page 1390

Dimensions [mm]

d1	d1- Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	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	1.0	**ZFM-0507-05**
6.0	+0.058	8.0	12.0	4.0	1.0	**ZFM-0608-04**
6.0		8.0	12.0	8.0	1.0	**ZFM-0608-08**
8.0		10.0	15.0	5.5	1.0	**ZFM-0810-05**
8.0		10.0	15.0	7.5	1.0	**ZFM-0810-07**
8.0		10.0	15.0	9.0	1.0	**ZFM-0810-09**
9.0		11.0	17.0	20.0	0.5	**ZFM-091117-20**
10.0	+0.013	12.0	18.0	5.0	1.0	**ZFM-1012-05**
10.0	+0.071	12.0	18.0	7.0	1.0	**ZFM-1012-07**
10.0		12.0	18.0	9.0	1.0	**ZFM-1012-09**
10.0		12.0	18.0	12.0	1.0	**ZFM-1012-12**
10.0		12.0	18.0	15.0	1.0	**ZFM-1012-15**
10.0		12.0	18.0	17.0	1.0	**ZFM-1012-17**
10.0		13.0	15.0	5.5	1.5	**ZFM-101315-05**
12.0		14.0	20.0	7.0	1.0	**ZFM-1214-07**
12.0		14.0	20.0	9.0	1.0	**ZFM-1214-09**
12.0		14.0	20.0	12.0	1.0	**ZFM-1214-12**
12.0		14.0	20.0	17.0	1.0	**ZFM-1214-17**
12.0		14.0	20.0	20.0	1.0	**ZFM-1214-20**
14.0	+0.016	16.0	22.0	12.0	1.0	**ZFM-1416-12**
14.0	+0.086	16.0	22.0	17.0	1.0	**ZFM-1416-17**
15.0		17.0	23.0	9.0	1.0	**ZFM-1517-09**
15.0		17.0	23.0	11.0	1.0	**ZFM-1517-11**
15.0		17.0	23.0	12.0	1.0	**ZFM-1517-12**
15.0		17.0	23.0	15.0	1.0	**ZFM-1517-15**
15.0		17.0	23.0	17.0	1.0	**ZFM-1517-17**
15.0		17.0	23.0	23.0	1.0	**ZFM-151723-23**
16.0		18.0	24.0	12.0	1.0	**ZFM-1618-12**
16.0		18.0	24.0	17.0	1.0	**ZFM-1618-17**
18.0	+0.016	20.0	26.0	4.0	1.0	**ZFM-1820-04**
18.0	+0.086	20.0	26.0	12.0	1.0	**ZFM-1820-12**
18.0		20.0	26.0	17.0	1.0	**ZFM-1820-17**
18.0		20.0	26.0	22.0	1.0	**ZFM-1820-22**
20.0		22.0	30.0	21.0	1.0	**ZFM-2022-21**
20.0		23.0	30.0	11.5	1.5	**ZFM-2023-11**
20.0		23.0	30.0	16.5	1.5	**ZFM-2023-16**
20.0		23.0	30.0	21.5	1.5	**ZFM-2023-21**
20.0		23.0	30.0	15.5	1.5	**ZFM-2023-155**
20.0		23.0	30.0	16.5	1.5	**ZFM-2023-16**
20.0		23.0	30.0	21.5	1.5	**ZFM-2023-21**
20.0		23.0	30.0	31.5	1.5	**ZFM-2023-31**
25.0	+0.020	28.0	35.0	11.5	1.5	**ZFM-2528-11**
25.0	+0.104	28.0	35.0	16.5	1.5	**ZFM-2528-16**
25.0		28.0	35.0	21.5	1.5	**ZFM-2528-21**
25.0		28.0	35.0	31.5	1.5	**ZFM-2528-31**
30.0		34.0	42.0	13.0	2.0	**ZFM-3034-13**
30.0		34.0	42.0	16.0	2.0	**ZFM-3034-16**
30.0		34.0	42.0	20.0	2.0	**ZFM-3034-20**
30.0		34.0	42.0	26.0	2.0	**ZFM-3034-26**
30.0		34.0	42.0	37.0	2.0	**ZFM-3034-37**
35.0		39.0	47.0	16.0	2.0	**ZFM-3539-16**
35.0	+0.025	39.0	47.0	26.0	2.0	**ZFM-3539-26**
40.0	+0.125	44.0	52.0	20.0	2.0	**ZFM-4044-20**
40.0		44.0	52.0	30.0	2.0	**ZFM-4044-30**
40.0		44.0	52.0	40.0	2.0	**ZFM-4044-40**

3) After press-fit. Testing methods ▶ Page 57

iglidur® Z | Product range

Flange bearing (Form F)

Dimensions [mm]

d1	d1- Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
45.0	+0.025	50.0	58.0	50.0	2.0	**ZFM-4550-50**
50.0	+0.125	55.0	63.0	20.0	2.0	**ZFM-5055-20**
50.0		55.0	63.0	50.0	2.0	**ZFM-5055-50**
60.0	+0.030	65.0	73.0	50.0	2.5	**ZFM-6065-50**
75.0	+0.150	80.0	88.0	50.0	2.5	**ZFM-7580-50**
75.0		80.0	94.0	65.0	3.0	**ZFM-758094-65**

3) After press-fit. Testing methods ▶ Page 57

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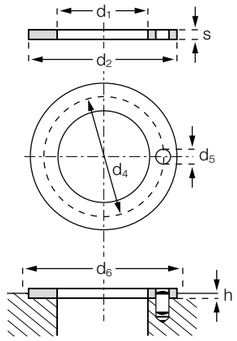
iglidur® Z | Product range

Thrust washer (Form T)



Order key

Type			Dimensions [mm]		
Z	T	M	-1430		-015
iglidur® material	Form T	Metric	Inner-Ø d1	Outer-Ø d2	Thickness s

Dimensions according to ISO 3547-1 and special dimensions

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.
14.0	30.0	1.5	25+/-0.20	2+0.10	1.0	30.0	**ZTM-1430-015**
15.0	27.0	1.5	[4]	[4]	1.0	27.0	**ZTM-1527-015**
15.0	35.0	1.5	[4]	[4]	1.0	35.0	**ZTM-1535-015**
15.0	40.0	1.5	[4]	[4]	1.0	35.0	**ZTM-1540-015**
16.0	23.0	1.5	[4]	[4]	1.0	23.0	**ZTM-1623-015**
20.0	36.0	1.5	28.0	3.0	1.0	36.0	**ZTM-2036-015**
22.0	38.0	1.5	30.0	3.0	1.0	38.0	**ZTM-2238-015**
22.0	50.0	0.5	30.0	3.0	1.0	38.0	**ZTM-2250-005**
22.0	50.0	1.5	30.0	3.0	1.0	38.0	**ZTM-2250-015**
28.0	38.0	1.5	[4]	[4]	1.0	38.0	**ZTM-2838-015**
32.0	54.0	1.5	43.0	4.0	1.0	54.0	**ZTM-3254-015**
62.0	90.0	2.0	[4]	[4]	1.5	90.0	**ZTM-6290-020**

[4] **Design without fixing bore**

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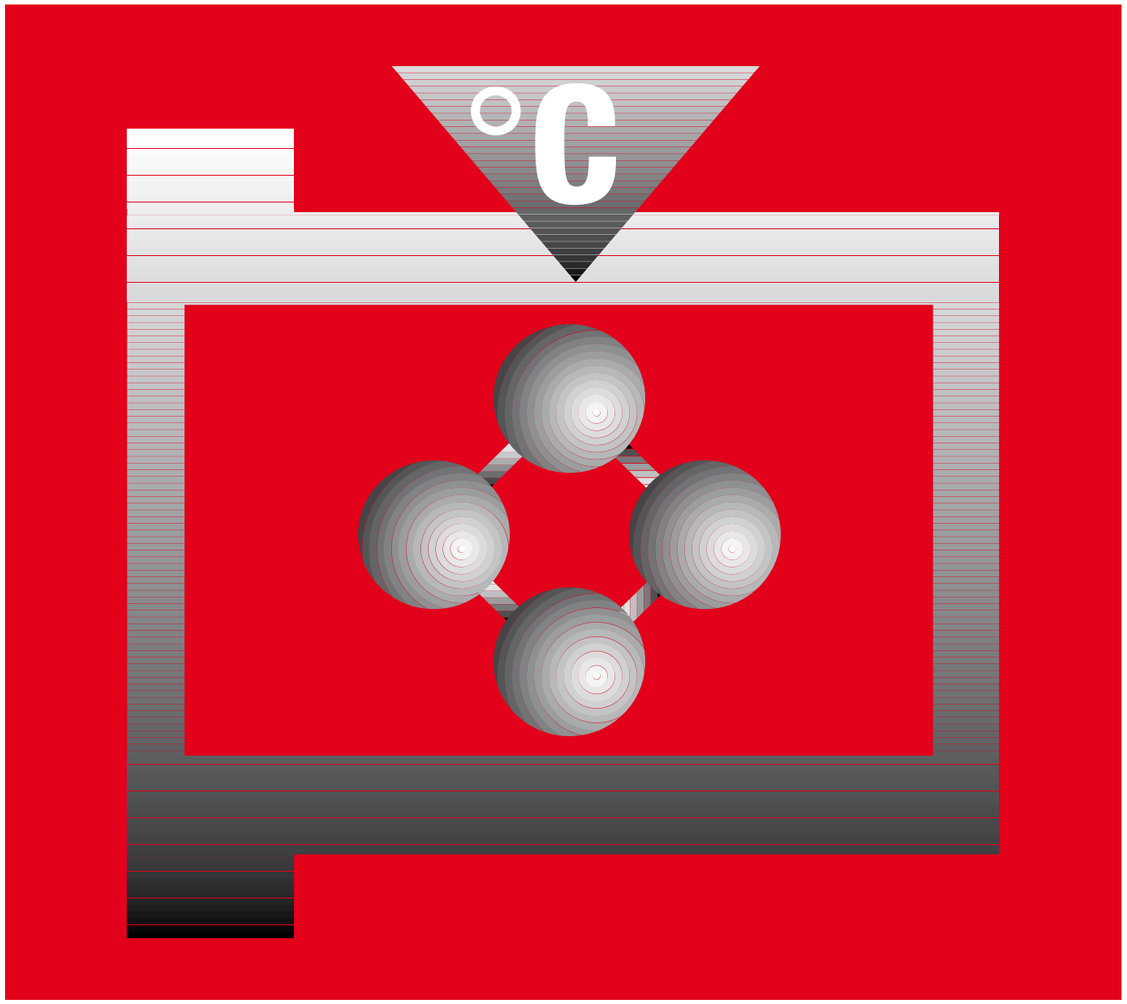
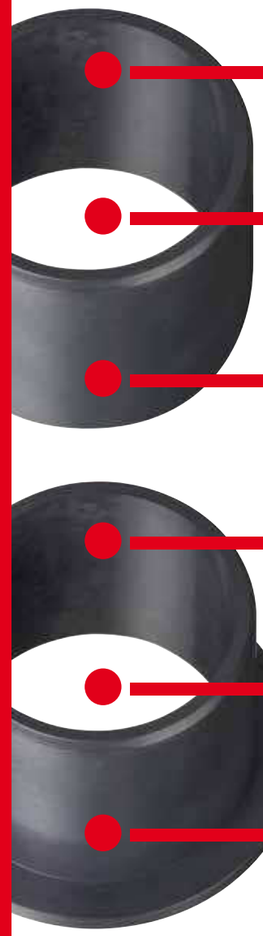


The high temperature specialist up to +250 °C – iglidur® X6

- Long-term service temperature up to +250 °C
- Up to 50 % better press fit than iglidur® X
- High compressive strength
- Excellent chemical resistance
- PTFE-free
- Lubrication and maintenance-free
- Standard range from stock

iglidur® X6 | The high temperature specialist up to +250 °C

Up to six times more wear resistant than iglidur® X



Lubrication and maintenance-free

Long-term service temperature up to +250 °C

Up to 50 % better press fit than iglidur® X

High compressive strength

Very good chemical resistance

PTFE-free

Due to nano-technology, iglidur® X6 shows up to six times better performance than iglidur® X in many oscillating and rotating applications – even at temperatures over +100 °C.

When to use it?

- If temperatures are higher than +150 °C
- When the wear performance of iglidur® X in oscillation and rotation is not sufficient
- If the pressfit should be improved over iglidur® X
- If high media resistance is required
- If you need a bearing which is free of PTFE

When not to use it?

- When you need a cost-effective universal bearing
  ▶ iglidur® G, page 79
- If you need a bearing for underwater use
  ▶ iglidur® UW500, page 273
  ▶ iglidur® H370, page 291
- When a wear-resistant high temperature bearing for linear movements is needed
  ▶ iglidur® Z, page 247

Typical application areas

- Glass industry
- Food industry
- Fluid technology
- Textile industry
- Machine building

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +250 °C
min. –100 °C

Ø 3–50 mm
More dimensions on request

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

iglidur® X6 | Technical data

Material properties table

General properties	Unit	iglidur® X6	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. water absorption	% weight	0.5	
Coefficient of sliding 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. long-term application temperature	°C	+250	
Max. short-term application temperature	°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 volume resistance	Ωcm	$< 10^5$	DIN IEC 93
Surface resistance	Ω	$< 10^3$	DIN 53482

Table 01: Material properties table

[5)] The good conductivity of this plastic material under certain circumstances can favour the generation of corrosion on the metallic contact components.

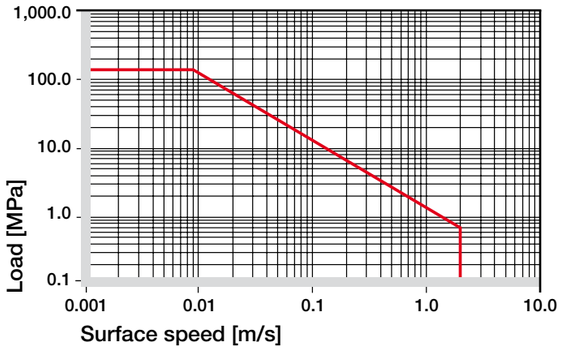


Diagram 01: Permissible pv values for iglidur® X6 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® X6 plain bearings is approximately 0.1 % weight in standard climatic conditions. 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.

▶ Diagram, www.igus.eu/x6-moisture

Vacuum

In vacuum environment iglidur® X6 plain bearings can be used virtually without restrictions.

Radiation resistance

Resistant to radiation up to an intensity of $2 \cdot 10^5$ Gy.

UV resistance

iglidur® X6 plain bearings are partially resistant to UV radiation.

Medium	Resistance
Alcohols	+
Hydrocarbons	+
Greases, oils without additives	+
Fuels	+
Diluted acids	+
Strong acids	+
Diluted alkalines	+
Strong alkalines	+

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

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.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® X6 plain bearings decreases. The diagram 02 shows this inverse relationship. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

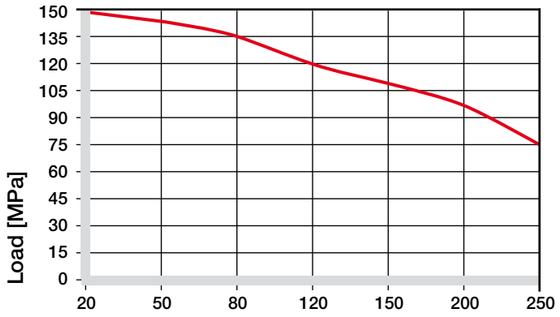


Diagram 02: Permissible maximum surface pressure as a function of temperature (150 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® X6 at radial load. At the permissible maximum surface pressure of 100 MPa the deformation is less than 2 %. A possible deformation could be, among others, dependant on the duty cycle of the load.

▶ Surface pressure, **page 41**

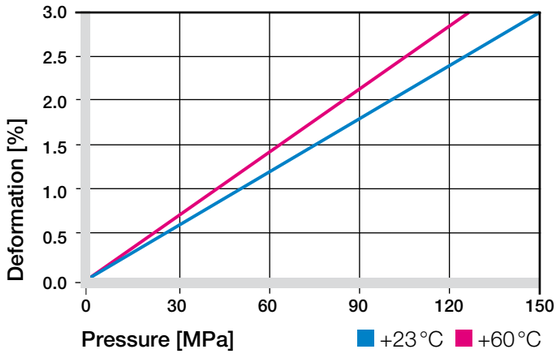


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

The high temperature resistance and good thermal conductivity values mean than 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 temperature level is rarely reached due to varying application conditions.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	1.5	1.1	5
Short-term	3.5	2.5	10

Table 03: Maximum surface speeds

Temperatures

The ambient temperatures greatly influence the wear performance of plastic bearings. The temperature resistance of iglidur® X6 is among the highest in the iglidur® range. In many tests it has shown a six times higher wear performance compared to the established high-temperature specialist iglidur® X. iglidur® X6 bearings require additional axial securing only above +165 °C.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

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 30 MPa. A higher speed of the shaft also results in a lower coefficient of friction (diagram 04 and 05).

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

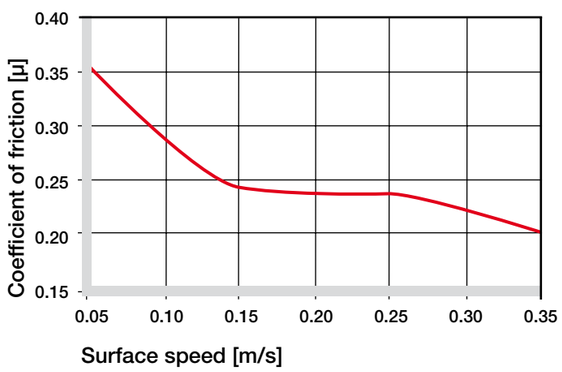


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

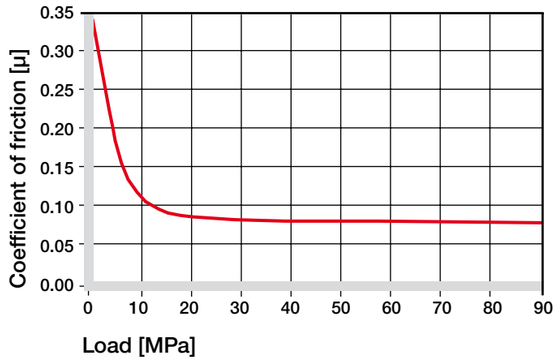


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

The friction and wear are also dependent, to a large degree, on the shaft material. 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 roughness Ra = 0.4–0.7 µm. Diagram 06 shows results of testing different shaft materials with plain bearings made from 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 2 MPa. The wear database shows that iglidur® X6 is more suitable for rotating than for oscillating applications (diagram 07). If the shaft material you plan on using is not shown in these test results, please contact us.

▶ Shaft materials, **page 52**

iglidur® X6	Dry	Grease	Oil	Water
C. o. f. μ	0.09–0.25	0.09	0.04	0.04

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

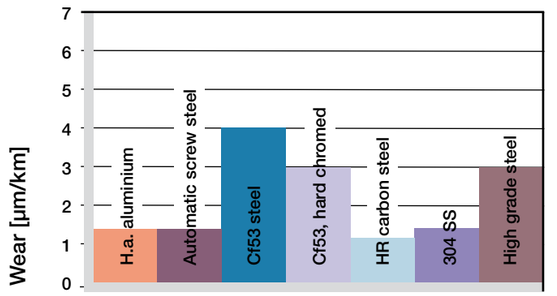


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

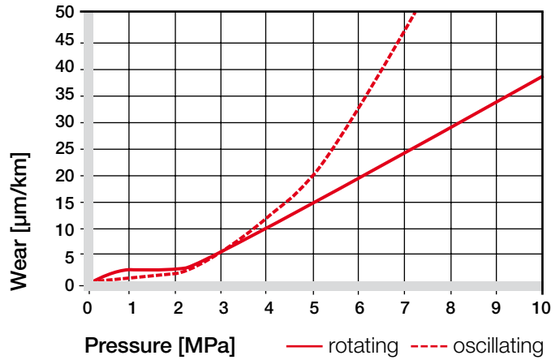


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Installation tolerances

iglidur® X6 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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.

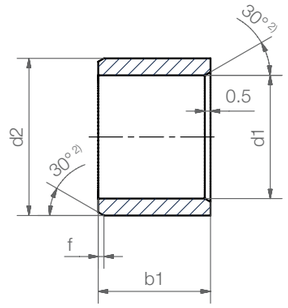
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® X6 F10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.006 +0.046	0 +0.010
> 3 to 6	0–0.030	+0.010 +0.058	0 +0.012
> 6 to 10	0–0.036	+0.013 +0.071	0 +0.015
> 10 to 18	0–0.043	+0.016 +0.086	0 +0.018
> 18 to 30	0–0.052	+0.020 +0.104	0 +0.021
> 30 to 50	0–0.062	+0.025 +0.125	0 +0.025
> 50 to 80	0–0.074	+0.030 +0.150	0 +0.030

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

iglidur® X6 | Product range

Sleeve bearing (Form S)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
X6	S	M	-03	04	-03	
iglidur® material	Form S	Metric	Inner-Ø d1	Outer-Ø d2	Length b1	

Dimensions according to ISO 3547-1 and special dimensions

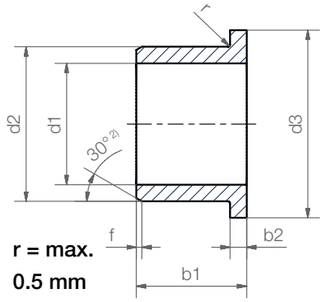
Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	Part No.
3.0	+0.010 +0.058	4.5	3.0	**X6SM-0304-03**
5.0	+0.010 +0.058	7.0	5.0	**X6SM-0507-05**
6.0	+0.010 +0.058	8.0	6.0	**X6SM-0608-06**
8.0	+0.013 +0.071	10.0	10.0	**X6SM-0810-10**
10.0	+0.013 +0.071	12.0	10.0	**X6SM-1012-10**
12.0	+0.016 +0.086	14.0	12.0	**X6SM-1214-12**
16.0	+0.016 +0.086	18.0	15.0	**X6SM-1618-15**
20.0	+0.020 +0.104	23.0	20.0	**X6SM-2023-20**
25.0	+0.020 +0.104	28.0	30.0	**X6SM-2528-30**
30.0	+0.020 +0.104	34.0	30.0	**X6SM-3034-30**
35.0	+0.025 +0.125	39.0	40.0	**X6SM-3539-40**
40.0	+0.025 +0.125	44.0	40.0	**X6SM-4044-40**
50.0	+0.025 +0.125	55.0	40.0	**X6SM-5055-40**

[3] After press-fit. Testing methods ▶ Page 57

iglidur® X6 | Product range

Flange bearing (Form F)



r = max. 0.5 mm

[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
X6	F	M	-03	04	-05	
iglidur® material	Form F	metric	Inner-Ø d1	Outer-Ø d2	Length b1	

Dimensions according to ISO 3547-1 and special dimensions

Dimensions [mm]

d1	d1-Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
3.0	+0.010 +0.058	4.5	7.5	5.0	0.75	**X6FM-0304-05**
5.0	+0.010 +0.058	7.0	11.0	5.0	1.0	**X6FM-0507-05**
6.0	+0.010 +0.058	8.0	12.0	6.0	1.0	**X6FM-0608-06**
8.0	+0.013 +0.071	10.0	15.0	10.0	1.0	**X6FM-0810-10**
10.0	+0.013 +0.071	12.0	18.0	10.0	1.0	**X6FM-1012-10**
10.0	+0.013 +0.071	12.0	18.0	25.0	1.0	**X6FM-1012-25**
12.0	+0.016 +0.086	14.0	20.0	12.0	1.0	**X6FM-1214-12**
16.0	+0.016 +0.086	18.0	24.0	12.0	1.0	**X6FM-1618-12**
16.0	+0.016 +0.086	18.0	24.0	17.0	1.0	**X6FM-1618-17**
20.0	+0.020 +0.104	23.0	30.0	21.5	1.5	**X6FM-2023-21**
25.0	+0.020 +0.104	28.0	35.0	21.5	1.5	**X6FM-2528-21**
30.0	+0.020 +0.104	34.0	42.0	40.0	2.0	**X6FM-3034-40**
35.0	+0.025 +0.125	39.0	47.0	26.0	2.0	**X6FM-3539-26**
40.0	+0.025 +0.125	44.0	52.0	40.0	2.0	**X6FM-4044-40**

[3] After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

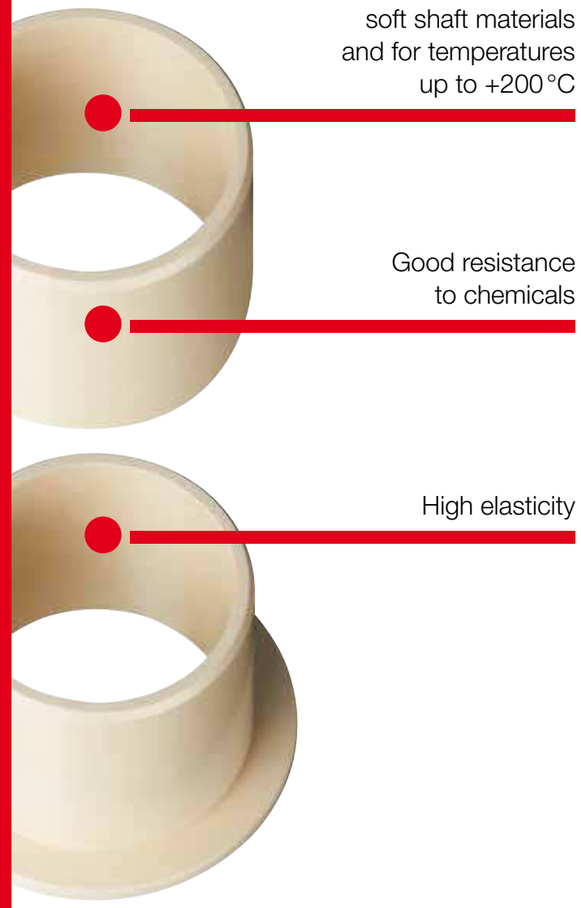
My sketches

For soft shafts and high temperatures – iglidur® V400

- Excellent wear resistance with soft shaft materials and for temperatures up to +200 °C
- Good chemical resistance
- High elasticity
- Lubrication and maintenance-free
- Standard range from stock

iglidur® V400 | For soft shafts and high temperatures

Wear and media resistant



Extremely wear-resistant bearing for soft shafts and temperatures up to +200 °C with low moisture absorption and excellent resistance to chemicals.

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 pressure are present
- When the bearing should be resistant to chemicals

When not to use it?

- For hardened shafts
  ▶ iglidur® W300, page 153
- For applications at normal temperatures
  ▶ iglidur® G, page 79
  ▶ iglidur® J, page 141
  ▶ iglidur® W300, page 153
- When a cost-effective universal bearing is required
  ▶ iglidur® G, page 79

Typical application areas

- Plant construction
- Automotive
- Automation
- Aerospace engineering
- Mechatronics

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +200 °C
min. –50 °C

Ø 6–20 mm
More dimensions on request

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

iglidur® V400 | Technical data

Material properties table

General properties	Unit	iglidur® V400	Testing method
Density	g/cm³	1.51	
Colour		white	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.1	DIN 53495
Max. water absorption	% weight	0.2	
Coefficient of sliding 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. long-term application temperature	°C	+200	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{12}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

Table 01: Material properties table

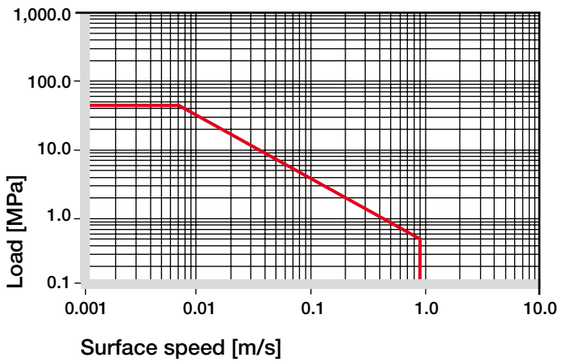


Diagram 01: Permissible pv values for iglidur® V400 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® V400 plain bearings is only 0.2 % weight after saturation in water.

▶ Diagram, www.igus.eu/v400-moisture

Vacuum

In a vacuum, iglidur® V400 plain bearings can only be used to a limited degree. Outgassing takes place.

Radiation resistance

iglidur® V400 bearings are resistant to a radiation intensity of $2 \cdot 10^4$ Gy. Higher radiation affects their mechanical characteristics.

UV resistance

iglidur® V400 plain bearings are resistant to UV radiation to a large extent.

Medium	Resistance
Alcohols	+
Hydrocarbons	+
Greases, oils without additives	+
Fuels	+
Diluted acids	+
Strong acids	+
Diluted alkalines	+
Strong alkalines	–

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® V400 | Technical data

iglidur® V400 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 permissible surface pressure.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® V400 plain bearings decreases. The diagram 02 shows this inverse relationship. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

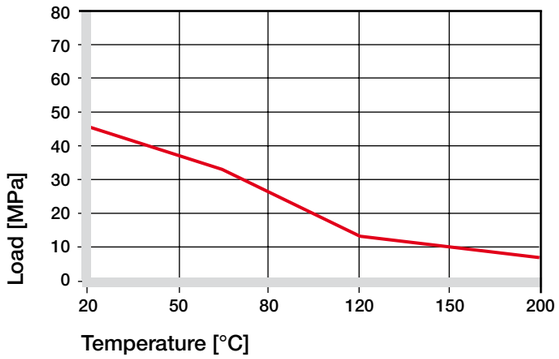


Diagram 02: Permissible maximum surface pressure as a function of temperature (45 MPa at +20 °C)

Moreover the limit of the permitted loads at +100 °C is still high with 20 MPa. The high elasticity is shown in diagram 03.

▶ Surface pressure, **page 41**

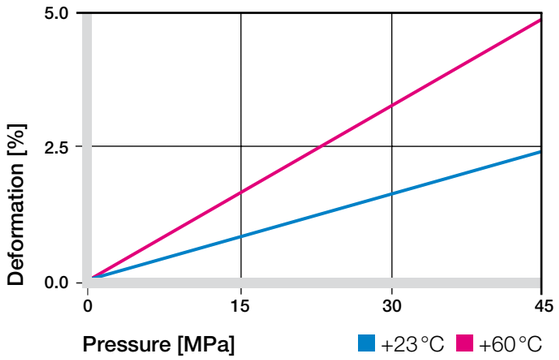


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

iglidur® V400 also permits high surface speeds due to the high temperature resistance. The very favorable coefficients of friction of the bearing enable maximum surface speeds up to 1.3 m/s. Even higher are the permitted speeds for linear movement and 3 m/s can be attained on the short-term.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	0.9	0.6	2
Short-term	1.3	0.9	3

Table 03: Maximum surface speeds

Temperatures

The long-term maximum permissible application temperature is +200 °C. For temperatures over +100 °C and additional securing is required. Then, however, the wear resistance of the bearings is very good and adopts a leading position among all iglidur® materials. The compressive strength of iglidur® V400 plain bearings decreases with increasing temperatures. Diagram 02 shows this relationship.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

The coefficient of friction is dependent on the bearing's stressing capacity (diagrams 04 and 05). The coefficients of friction of iglidur® V400 are very constant. No other iglidur® bearing material exhibits a lower variance in the coefficients of friction, even when the shaft material is altered.

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

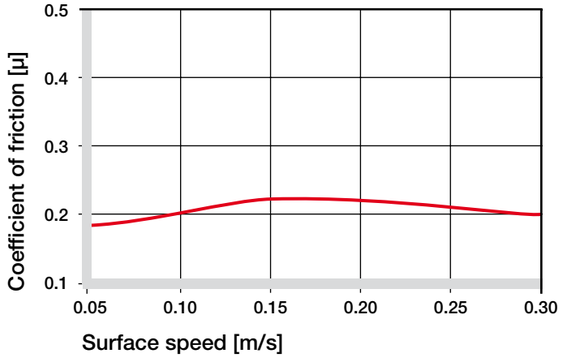


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

iglidur® V400 | Technical data

V400
+200 °C
45 MPa

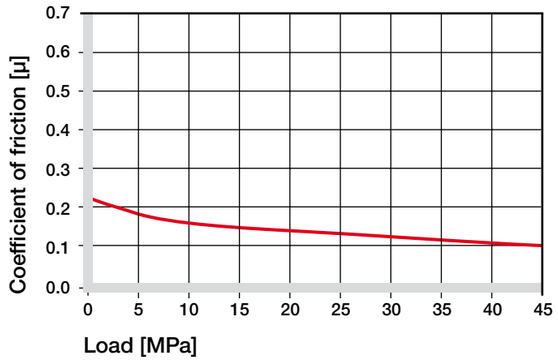


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

The influence of the shaft material on the wear resistance is bigger than on the friction. Here, even at low loads (0.75 MPa), significant differences occur, as shown in diagram 06. With regard to wear, iglidur® V400 is more suitable for rotating applications rather than oscillating applications (diagram 07).

▶ Shaft materials, **page 52**

iglidur® V400	Dry	Grease	Oil	Water
C. o. f. µ	0.15–0.20	0.09	0.04	0.04

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

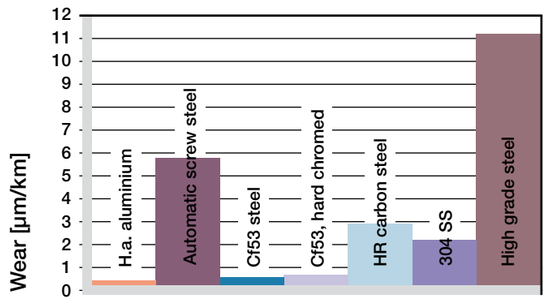


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

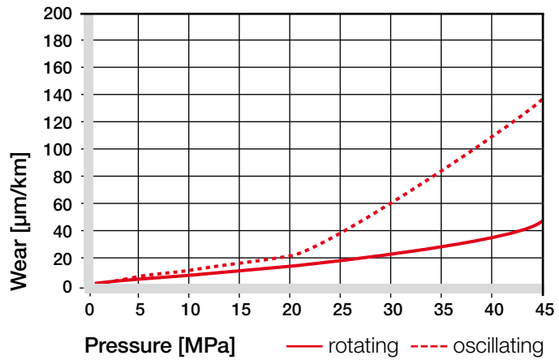


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Installation tolerances

iglidur® V400 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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).

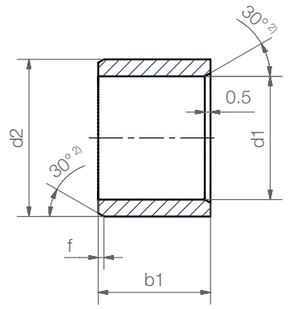
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® V400 F10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.006 +0.046	0 +0.010
> 3 to 6	0–0.030	+0.010 +0.058	0 +0.012
> 6 to 10	0–0.036	+0.013 +0.071	0 +0.015
> 10 to 18	0–0.043	+0.016 +0.086	0 +0.018
> 18 to 30	0–0.052	+0.020 +0.104	0 +0.021
> 30 to 50	0–0.062	+0.025 +0.125	0 +0.025
> 50 to 80	0–0.074	+0.030 +0.150	0 +0.030

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

iglidur® V400 | Product range

Sleeve bearing (Form S)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]		
V	S	M	-06	08	-06
iglidur® material	Form S	metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

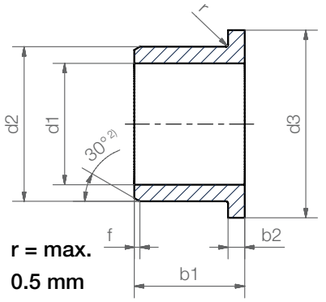
Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	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	+0.013 +0.071	12.0	10.0	**VSM-1012-10**
12.0	+0.016 +0.086	14.0	12.0	**VSM-1214-12**
16.0	+0.016 +0.086	18.0	15.0	**VSM-1618-15**
20.0	+0.020 +0.104	23.0	20.0	**VSM-2023-20**

[3] After press-fit. Testing methods ▶ Page 57

iglidur® V400 | Product range

Flange bearing (Form F)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]		
V	F	M	-06	08	-06
iglidur® material	Form F	metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

Dimensions [mm]

d1	d1-Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
6.0	+0.010 +0.058	8.0	12.0	6.0	1.0	**VFM-0608-06**
8.0	+0.013 +0.071	10.0	15.0	10.0	1.0	**VFM-0810-10**
10.0	+0.013 +0.071	12.0	18.0	10.0	1.0	**VFM-1012-10**
12.0	+0.016 +0.086	14.0	20.0	12.0	1.0	**VFM-1214-12**
16.0	+0.016 +0.086	18.0	24.0	17.0	1.0	**VFM-1618-17**
18.0	+0.020 +0.104	20.0	26.0	20.0	1.0	**VFM-1820-20**
20.0	+0.020 +0.104	23.0	30.0	21.5	1.5	**VFM-2023-21**

[3] After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

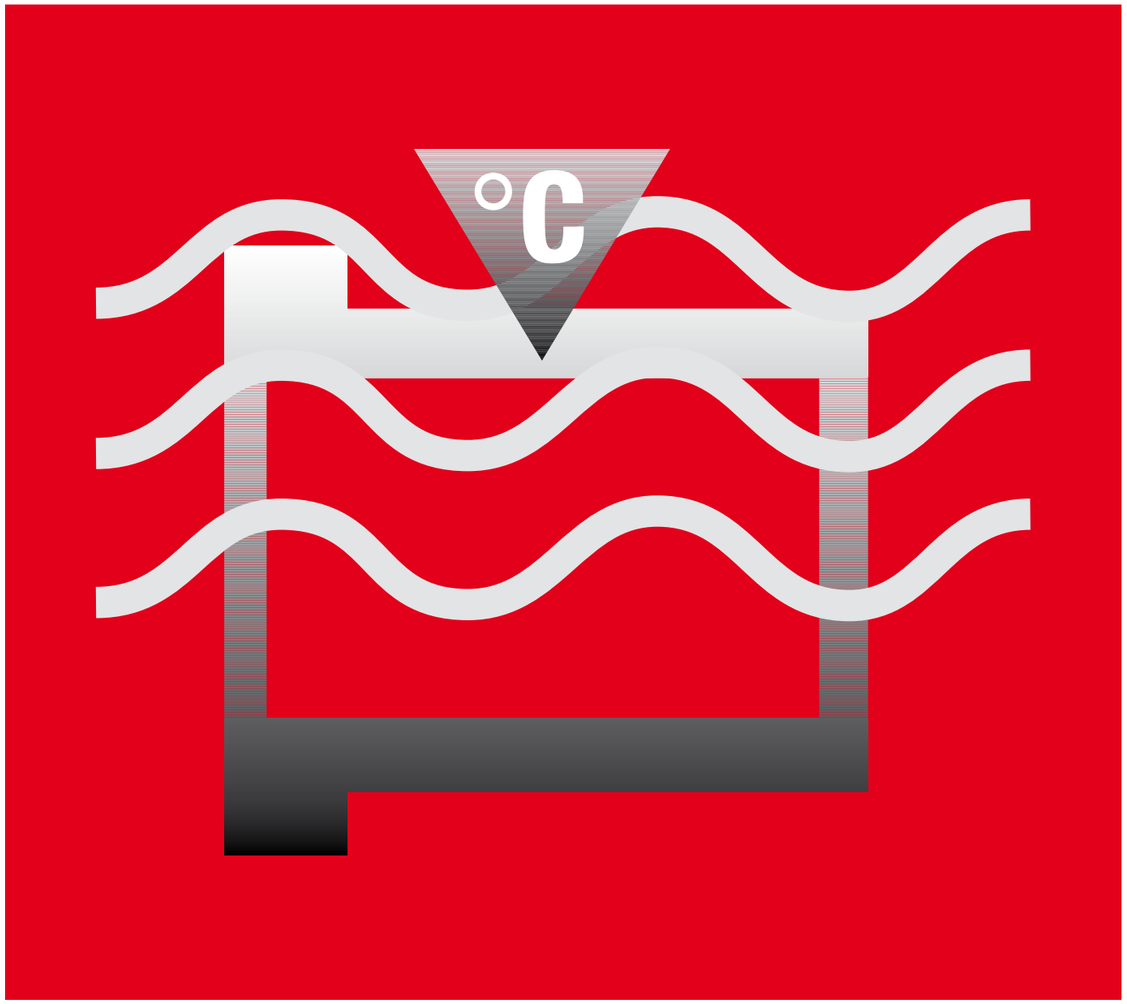
Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

Even more dimensions from stock

More than 300 dimensions are now available. Search online for your required bearing.

▶ **www.igus.eu/iglidur-specialbearings**

My sketches

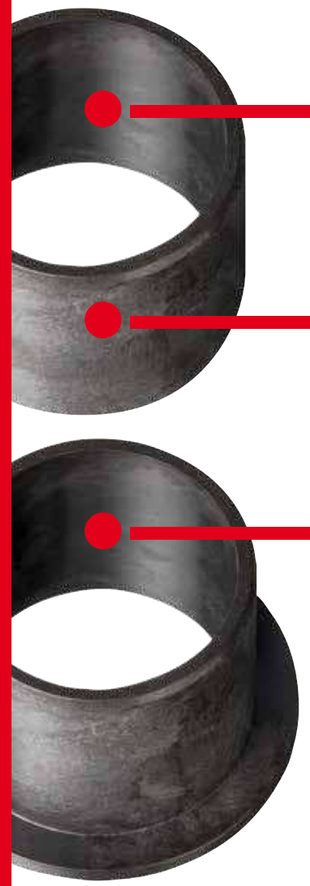


For hot liquids – iglidur® UW500

- For underwater use at high temperatures
- For fast and constant movement
- Lubrication and maintenance-free

iglidur® UW500 | For hot liquids

Wear resistant in liquid at long-term operation



For underwater use at high temperatures

For fast and constant movement

Excellent chemical resistance

iglidur® UW500 was developed for underwater applications at temperatures up to +250 °C. In addition, the bearings will run in chemicals which would act as a lubricant.

When to use it?

- When 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 bearing is required
  ▶ iglidur® UW, page 459
- When a cost-efficient underwater bearing is required for rare operations
  ▶ iglidur® H, page 299
- When a cost-effective universal bearing is required
  ▶ iglidur® G, page 79

Typical application areas

- Plant construction
- Pumps
- Chemical industry

Available on request
Detailed information about delivery time online.

Order-related

max. +250 °C
min. –100 °C

Order-related

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

iglidur® UW500 | Technical data

Material properties table

General properties	Unit	iglidur® UW500	Testing method
Density	g/cm³	1.49	
Colour		black	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.1	DIN 53495
Max. water absorption[6]	% weight	0.5	
Coefficient of sliding 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. long-term application temperature	°C	+250	
Max. short-term application temperature	°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 volume resistance	Ωcm	$< 10^9$	DIN IEC 93
Surface resistance	Ω	$< 10^9$	DIN 53482

[5] The good conductivity of this plastic material under certain circumstances can favour the generation of corrosion on the metallic contact components.
[6] With respect to the use of the material in direct contact with water, it has to be pointed out that all results have been attained under laboratory conditions DW (fully demineralised water). We therefore recommend custom-designed tests under real application conditions.

Table 01: Material properties table

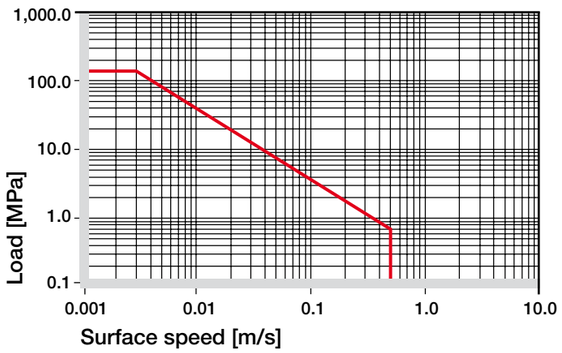


Diagram 01: Permissible pv values for iglidur® UW500 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® UW500 plain bearings in standard climatic conditions is below 0.1 % weight. The maximum moisture absorption is 0.5 % weight. iglidur® UW500 plain bearings can be used for underwater applications.

▶ Diagram, www.igus.eu/uw500-moisture

Vacuum

Also in vacuum, iglidur® UW500 plain bearings can be used almost without restrictions.

Medium	Resistance
Alcohols	+
Hydrocarbons	+
Greases, oils without additives	+
Fuels	+
Diluted acids	+
Strong acids	+
Diluted alkalines	+
Strong alkalines	+

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® UW500 | Technical data

Radiation resistance

Plain bearings of iglidur® UW500 are resistant up to a radiation intensity of $1 \cdot 10^5$ Gy. They resist to hard gamma radiation (1,000 Mrad) and alpha or beta radiation (10,000 Mrad).

UV resistance

iglidur® UW500 bearings are permanently resistant to UV radiation.

The plain bearings of 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 when running dry.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® UW500 plain bearings decreases. The diagram 02 shows this inverse relationship. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

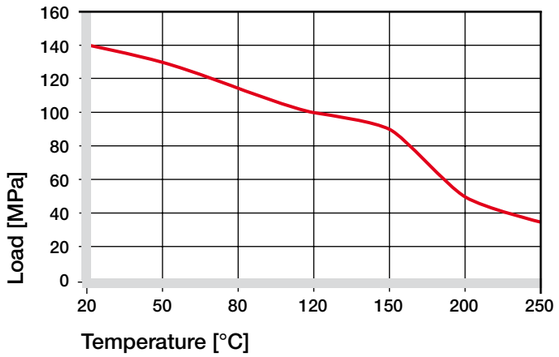


Diagram 02: Permissible maximum surface pressure as a function of temperature (140 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® UW500 bearings at radial load.

▶ Surface pressure, **page 41**

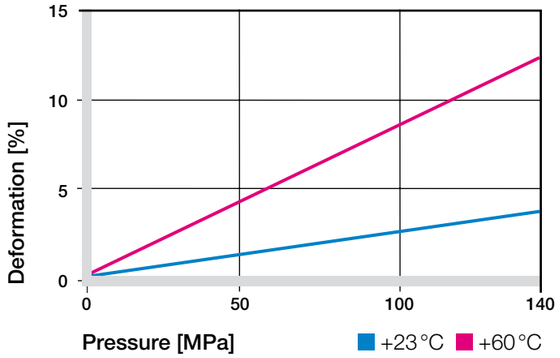


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

iglidur® UW500 bearings can be used both dry running and in media like water in a wide range of conditions. Through a hydrodynamic lubrication, attained under water with high speeds, surface speeds far above 1.5 m/s can be achieved.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	0.8	0.6	2
Short-term	1.5	1.1	3

Table 03: Maximum surface speeds

Temperatures

iglidur® UW500 can be used in applications with permanent temperatures of +150 °C. If the bearings are fixed specially, the temperatures can even be higher than +200 °C. iglidur® UW500 is one of the most temperature resistant iglidur® material. At temperatures over +150 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

Diagrams 04 and 05 show the coefficient of friction of iglidur® UW500 bearings as function of speed and pressure. Friction and wear also depend to a high degree on the shaft surface. Ideal are smoothed surfaces with an average surface finish of Ra of 0.1 to 0.4.

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

iglidur® UW500 | Technical data

UW500
+250 °C
140 MPa

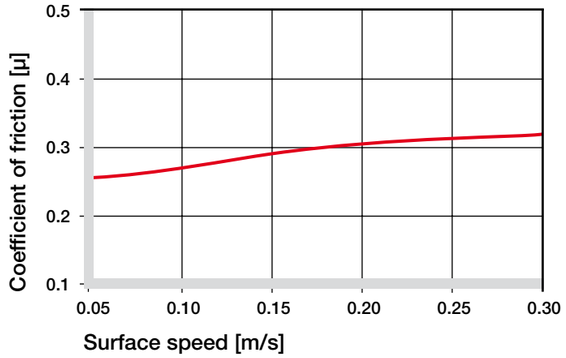


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

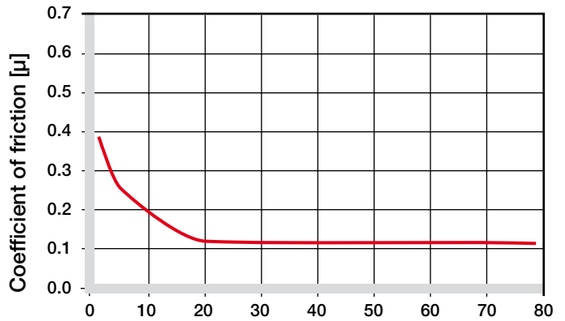


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

Diagram 06 displays a summary of the results of tests with different shaft materials conducted with bearings made from iglidur® UW500.

▶ Shaft materials, **page 52**

iglidur® UW500	Dry	Grease	Oil	Water
C. o. f. µ	0.2–0.36	0.09	0.04	0.04

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

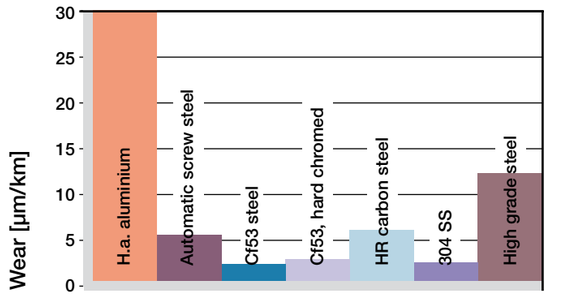


Diagram 07: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

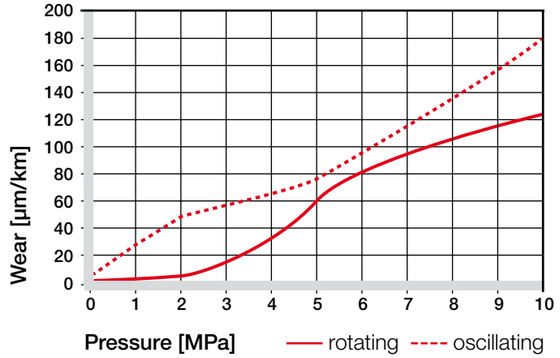


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Installation tolerances

iglidur® UW500 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® UW500 F10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.006 +0.046	0 +0.010
> 3 to 6	0–0.030	+0.010 +0.058	0 +0.012
> 6 to 10	0–0.036	+0.013 +0.071	0 +0.015
> 10 to 18	0–0.043	+0.016 +0.086	0 +0.018
> 18 to 30	0–0.052	+0.020 +0.104	0 +0.021
> 30 to 50	0–0.062	+0.025 +0.125	0 +0.025
> 50 to 80	0–0.074	+0.030 +0.150	0 +0.030

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

Product range

iglidur® UW500 plain bearings are manufactured to special order.

iglidur® plain bearing materials with good media resistance

High 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 and iglidur® H1, the endurance runner of this group.

- Lubrication and maintenance-free
- Lightweight
- Good price / performance ratio
- Predictable service life

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

Ø 3–75 mm
More dimensions on request

Imperial dimensions available
▶ From page 1337

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

	Temperature [°C] [123]	Surface pressure [MPa] [124]	Coefficient of friction [µ] [125]	Wear [µm/km] [125]	Price index
iglidur® H1 – Endurance runner with high media resistance Excellent coefficients of friction and wear ▶ Page 283	200	80	0.17	0.29	
iglidur® H370 – Extremely long service life under water High media resistance ▶ Page 291	200	75	0.17	1.20	
iglidur® H – The classic with high resistance to media and temperature Up to +200 °C ▶ Page 299	200	90	0.17	2.10	
iglidur® C500 – High temperature endurance runner Extremely wear and media resistant up to +250 °C ▶ Page 307	250	110	0.19	0.48	

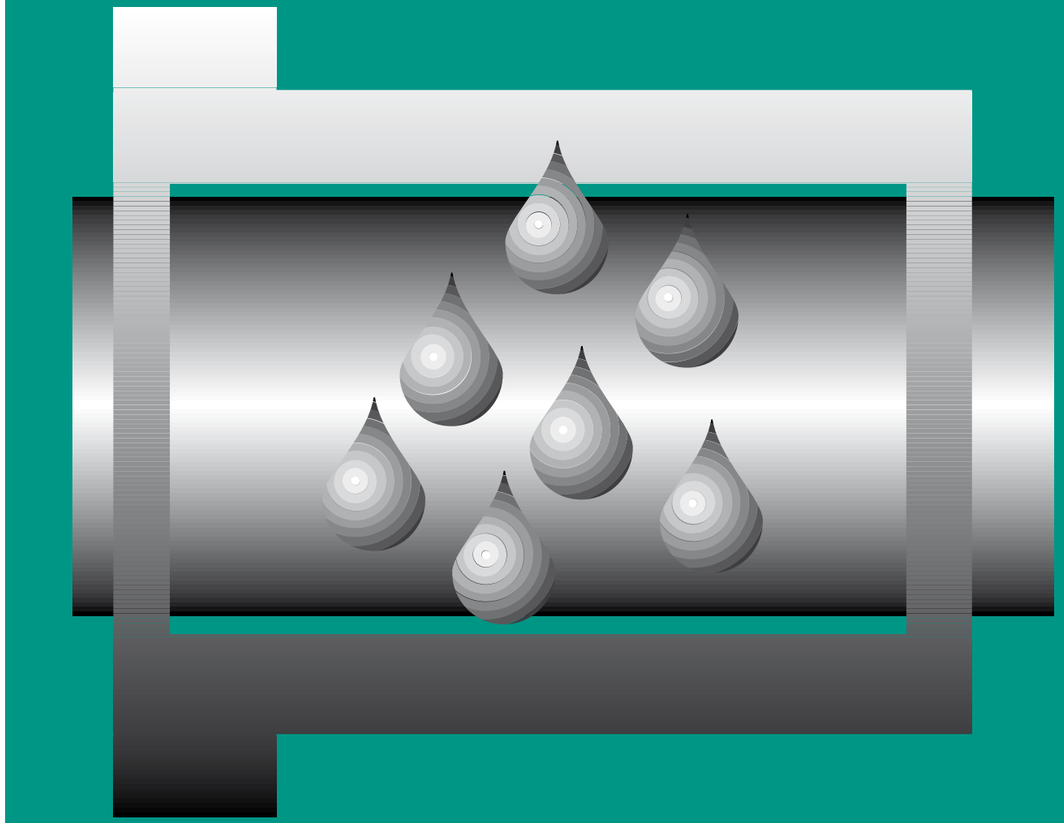
[123] Max. long-term application temperature; [124] Max. permissible surface pressure at +20 °C;
[125] Best combination for p = 1 MPa, v = 0.3 m/s, rotating

	Temperature [°C] [123]	Surface pressure [MPa] [124]	Coefficient of friction [µ] [125]	Wear [µm/km] [125]	Price index
iglidur® H2 – The low-cost specialist for chemicals and temperatures Up to +200 °C, for high static load ▶ Page 315	200	110	0.32	4.80	

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

This bottle-filling system for thin to viscous materials works fast and precisely, thanks to numerous igus® products.

Corrosion resistant iglidur® bearings in use in a meat roller - also resistant to aggressive detergents.

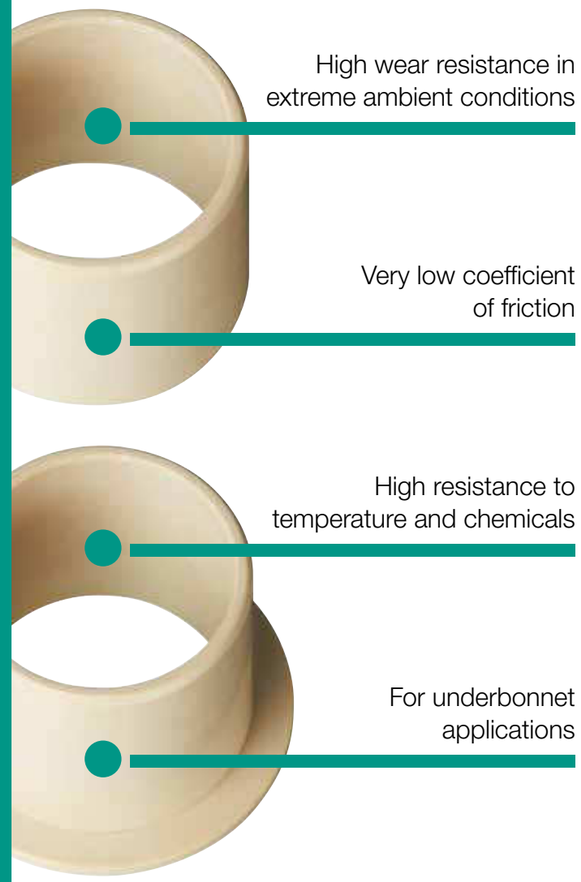


Endurance runner with high media resistance – iglidur® H1

- High wear resistance in extreme ambient conditions
- Very low coefficient of friction
- High resistance to temperature and chemicals
- For underbonnet applications
- Lubrication and maintenance-free
- Standard range from stock

iglidur® H1 | Endurance runner with high media resistance

Excellent coefficients of friction and wear



iglidur® H1 is the first choice when long life is required in extreme environmental conditions. Extreme wear resistance is coupled with excellent resistance to temperature and chemicals – not only in the packaging and foodstuff industries or the automotive industry.

When to use it?

- When extreme service life is required under the influence of temperature and humidity
- When low coefficients of friction at high temperature are important
- When normal aggressive cleaning is required (splashes, steam blasting)
- When the bearings are used in the engine compartment

When not to use it?

- When high surface pressures occur
  ▶ iglidur® Z, page 247
- When the best universal chemical resistance is required
  ▶ iglidur® X, page 237
- When a cost-efficient high temperature bearing is required, not the ideal wear resistance
  ▶ iglidur® H2, page 315
- When an FDA-compliant plain bearing with high temperature resistance is required
  ▶ iglidur® A500, page 341

Typical application areas

- Beverage technology
- Automation
- Packaging
- Textile industry
- Optical industry

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +200 °C
min. –40 °C

Ø 3–50 mm
More dimensions on request

Imperial dimensions available
▶ From page 1337

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

iglidur® H1 | Technical data

Material properties table

General properties	Unit	iglidur® H1	Testing method
Density	g/cm³	1.53	
Colour		cream	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.1	DIN 53495
Max. water absorption	% weight	0.3	
Coefficient of sliding friction, dynamic against steel	µ	0.06–0.20	
pv value, max. (dry)	MPa · m/s	0.8	
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. long-term application temperature	°C	+200	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{12}$	DIN IEC 93
Surface resistance	Ω	$> 10^{11}$	DIN 53482

Table 01: Material properties table

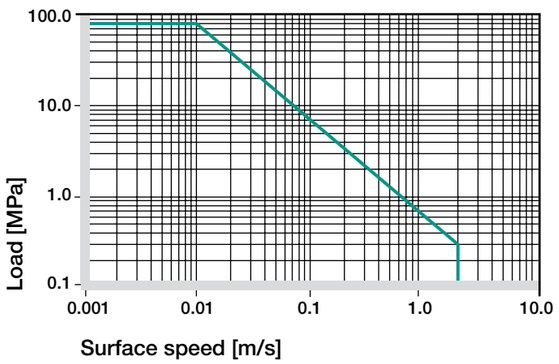


Diagram 01: Permissible pv values for iglidur® H1 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® H1 bearings is about 0.1 % weight in standard climatic conditions. The saturation limit in water is 0.3 % weight. Therefore iglidur® H1 is very well suited for use in wet environments.

▶ Diagram, www.igus.eu/h1-moisture

Vacuum

For use in a vacuum environment, it must be taken into account that a small amount of moisture is released as vapour. The use in vacuum is generally possible.

Radiation resistance

Resistant to radiation up to an intensity of $2 \cdot 10^2$ Gy.

UV resistance

iglidur® H1 bearings are only conditionally resistant to UV radiation.

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

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® H1 | Technical data

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 coefficients of friction even in applications in which the bearing is exposed to extreme temperatures and/or aggressive chemicals. iglidur® H1 bearings can be used completely free of lubrication; in wet area applications, the surrounding medium acts as additional lubricant.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® H1 plain bearings decreases. The diagram 02 shows this relationship. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

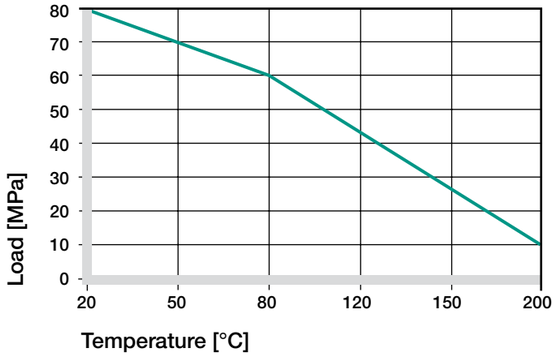


Diagram 02: Permissible maximum surface pressure as a function of temperature (80 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® H1 at radial load. Among the iglidur® H materials, iglidur® H1 material has the greatest elasticity. This must be considered for applications with high pressure or strong edge pressure.

▶ Surface pressure, **page 41**

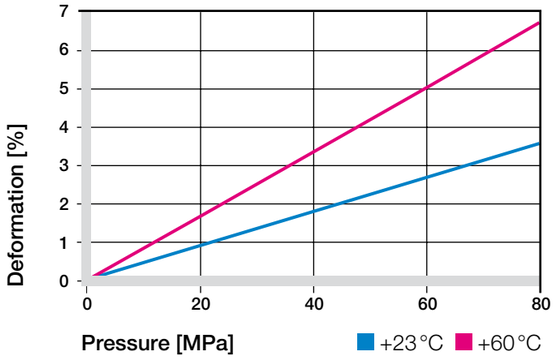


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

Due to the excellent coefficients of friction, rotating surface speeds up to 2 m/s are possible with iglidur® H1 plain bearings in dry operation. Linear speeds up to 5 m/s are 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 44**

m/s	Rotating	Oscillating	Linear
Continuous	2	1.0	5
Short-term	2.5	1.5	7

Table 03: Maximum surface speeds

Temperatures

iglidur® H1 is an extremely temperature-resistant material. The ambient temperatures prevalent in the bearing system also have an effect on the bearing wear. The wear rate rises with increasing temperatures. In iglidur® H1 in particular, this increase however is very low. At temperatures over +80 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

The coefficient of friction alters like the wear resistance with increasing load and speed (diagrams 04 and 05).

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

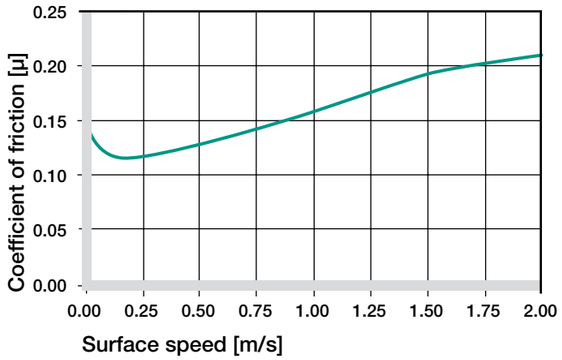


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

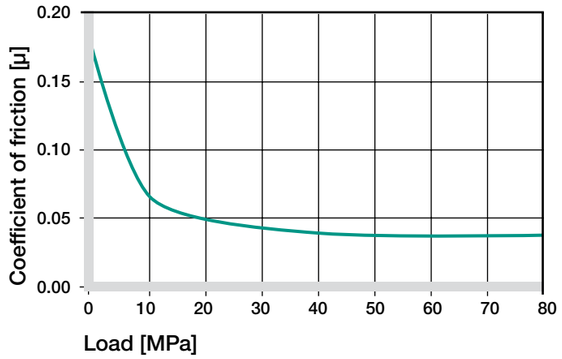


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

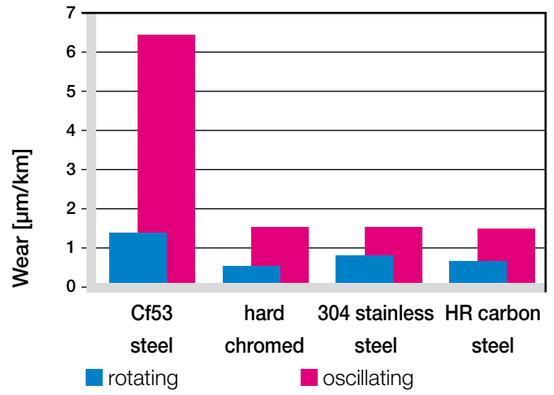


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2 MPa

Shaft materials

Diagrams 06 and 07 display a summary of the results of tests with different shaft materials conducted with iglidur® H1 plain bearings in the igus® laboratory.
The iglidur® H1 plain bearings display excellent wear behaviour in combination with a wide variety of shaft materials both in rotating and pivoting operations. On the 304 stainless steel shafts in particular, iglidur® H1 attains very low wear rates both in rotating and pivoting operations. Even on hard-coated aluminium shafts, iglidur® H1 plain bearings attain high service life in rotating applications with low to medium loads.

▶ Shaft materials, **page 52**

iglidur® H1	Dry	Grease	Oil	Water
C. o. f. µ	0.06–0.20	0.09	0.04	0.04

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

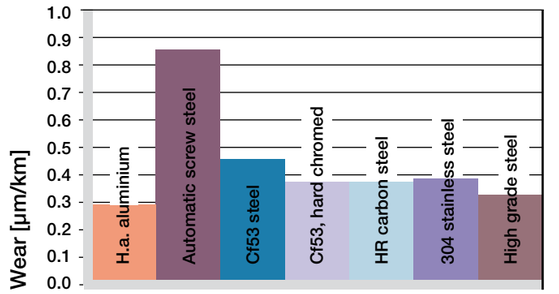


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

Installation tolerances

iglidur® H1 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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).

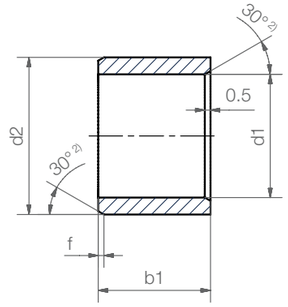
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® H1 F10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.006 +0.046	0 +0.010
> 3 to 6	0–0.030	+0.010 +0.058	0 +0.012
> 6 to 10	0–0.036	+0.013 +0.071	0 +0.015
> 10 to 18	0–0.043	+0.016 +0.086	0 +0.018
> 18 to 30	0–0.052	+0.020 +0.104	0 +0.021
> 30 to 50	0–0.062	+0.025 +0.125	0 +0.025
> 50 to 80	0–0.074	+0.030 +0.150	0 +0.030

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

iglidur® H1 | Product range

Sleeve bearing (Form S)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
H1	S	M	-03	04	-05
		iglidur® material	Inner-Ø d1	Outer-Ø d2	Length b1
	Form S				
		Metric			

Dimensions according to ISO 3547-1 and special dimensions

Inch Imperial dimensions available
▶ From page 1350

Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	Part No.
3.0	+0.006 +0.046	4.5	5.0	**H1SM-0304-05**
4.0		5.5	4.0	**H1SM-0405-04**
4.0		5.5	6.0	**H1SM-0405-06**
5.0		7.0	5.0	**H1SM-0507-05**
5.0	+0.010 +0.058	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		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	+0.013 +0.071	12.0	8.0	**H1SM-1012-08**
10.0		12.0	10.0	**H1SM-1012-10**
10.0		12.0	12.0	**H1SM-1012-12**
10.0		12.0	15.0	**H1SM-1012-15**
10.0		12.0	20.0	**H1SM-1012-20**
12.0		14.0	10.0	**H1SM-1214-10**
12.0		14.0	12.0	**H1SM-1214-12**
12.0		14.0	15.0	**H1SM-1214-15**
12.0		14.0	20.0	**H1SM-1214-20**
13.0	+0.016 +0.086	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		17.0	25.0	**H1SM-1517-25**
16.0		18.0	15.0	**H1SM-1618-15**
16.0	+0.016 +0.086	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		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	+0.020 +0.104	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**

3) After press-fit. Testing methods ▶ Page 57

Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	Part No.
30.0	+0.020 +0.104	34.0	20.0	**H1SM-3034-20**
30.0		34.0	25.0	**H1SM-3034-25**
30.0		34.0	30.0	**H1SM-3034-30**
30.0		34.0	40.0	**H1SM-3034-40**
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		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 57

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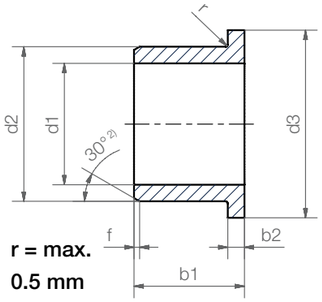
More than 300 dimensions are now available. Search online for your required bearing.

▶ **www.igus.eu/iglidur-specialbearings**

iglidur® H1 | Product range

Flange bearing (Form F)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
H1	F	M	-03	04	-05	
		iglidur® material		Inner-Ø d1		
			Outer-Ø d2			
				Length b1		

Dimensions according to ISO 3547-1 and special dimensions

Imperial dimensions available
▶ From page 1376

Dimensions [mm]

d1	d1- Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
3.0	+0.006 +0.046	4.5	7.5	5.0	0.75	**H1FM-0304-05**
5.0	+0.010 +0.058	7.0	11.0	5.0	1.0	**H1FM-0507-05**
6.0		8.0	12.0	4.0	1.0	**H1FM-0608-04**
6.0		8.0	12.0	6.0	1.0	**H1FM-0608-06**
6.0		8.0	12.0	8.0	1.0	**H1FM-0608-08**
6.0		8.0	12.0	10.0	1.0	**H1FM-0608-10**
8.0	+0.013 +0.071	10.0	15.0	5.5	1.0	**H1FM-0810-05**
8.0		10.0	15.0	6.5	1.0	**H1FM-0810-065**
8.0		10.0	15.0	7.5	1.0	**H1FM-0810-07**
8.0		10.0	15.0	9.5	1.0	**H1FM-0810-09**
8.0		10.0	15.0	10.0	1.0	**H1FM-0810-10**
10.0		12.0	18.0	7.0	1.0	**H1FM-1012-07**
10.0		12.0	18.0	9.0	1.0	**H1FM-1012-09**
10.0		12.0	18.0	10.0	1.0	**H1FM-1012-10**
10.0		12.0	18.0	12.0	1.0	**H1FM-1012-12**
10.0		12.0	18.0	17.0	1.0	**H1FM-1012-17**
12.0	+0.016 +0.086	14.0	20.0	7.0	1.0	**H1FM-1214-07**
12.0		14.0	20.0	9.0	1.0	**H1FM-1214-09**
12.0		14.0	20.0	12.0	1.0	**H1FM-1214-12**
12.0		14.0	20.0	17.0	1.0	**H1FM-1214-17**
12.0		14.0	20.0	20.0	1.0	**H1FM-1214-20**
14.0		16.0	22.0	12.0	1.0	**H1FM-1416-12**
14.0		16.0	22.0	17.0	1.0	**H1FM-1416-17**
15.0	+0.016 +0.086	17.0	23.0	9.0	1.0	**H1FM-1517-09**
15.0		17.0	23.0	12.0	1.0	**H1FM-1517-12**
15.0		17.0	23.0	17.0	1.0	**H1FM-1517-17**
16.0		18.0	24.0	12.0	1.0	**H1FM-1618-12**
16.0		18.0	24.0	17.0	1.0	**H1FM-1618-17**
16.0		18.0	24.0	25.0	1.0	**H1FM-1618-25**
18.0		20.0	26.0	12.0	1.0	**H1FM-1820-12**
18.0		20.0	26.0	17.0	1.0	**H1FM-1820-17**
18.0		20.0	26.0	22.0	1.0	**H1FM-1820-22**
20.0	+0.020 +0.104	23.0	30.0	11.5	1.5	**H1FM-2023-11**
20.0		23.0	30.0	16.5	1.5	**H1FM-2023-16**
20.0		23.0	30.0	21.5	1.5	**H1FM-2023-21**
20.0		23.0	30.0	30.0	1.5	**H1FM-2023-30**
25.0		28.0	35.0	11.5	1.5	**H1FM-2528-11**
25.0		28.0	35.0	16.5	1.5	**H1FM-2528-16**
25.0		28.0	35.0	21.0	1.5	**H1FM-2528-21**
30.0		34.0	42.0	16.0	2.0	**H1FM-3034-16**
30.0		34.0	42.0	26.0	2.0	**H1FM-3034-26**
35.0	+0.025 +0.125	39.0	47.0	16.0	2.0	**H1FM-3539-16**
35.0		39.0	47.0	26.0	2.0	**H1FM-3539-26**
40.0		44.0	52.0	30.0	2.0	**H1FM-4044-30**
40.0		44.0	52.0	40.0	2.0	**H1FM-4044-40**
45.0		50.0	58.0	50.0	2.0	**H1FM-4550-50**

3) After press-fit. Testing methods ▶ Page 57

Couldn't find your size?
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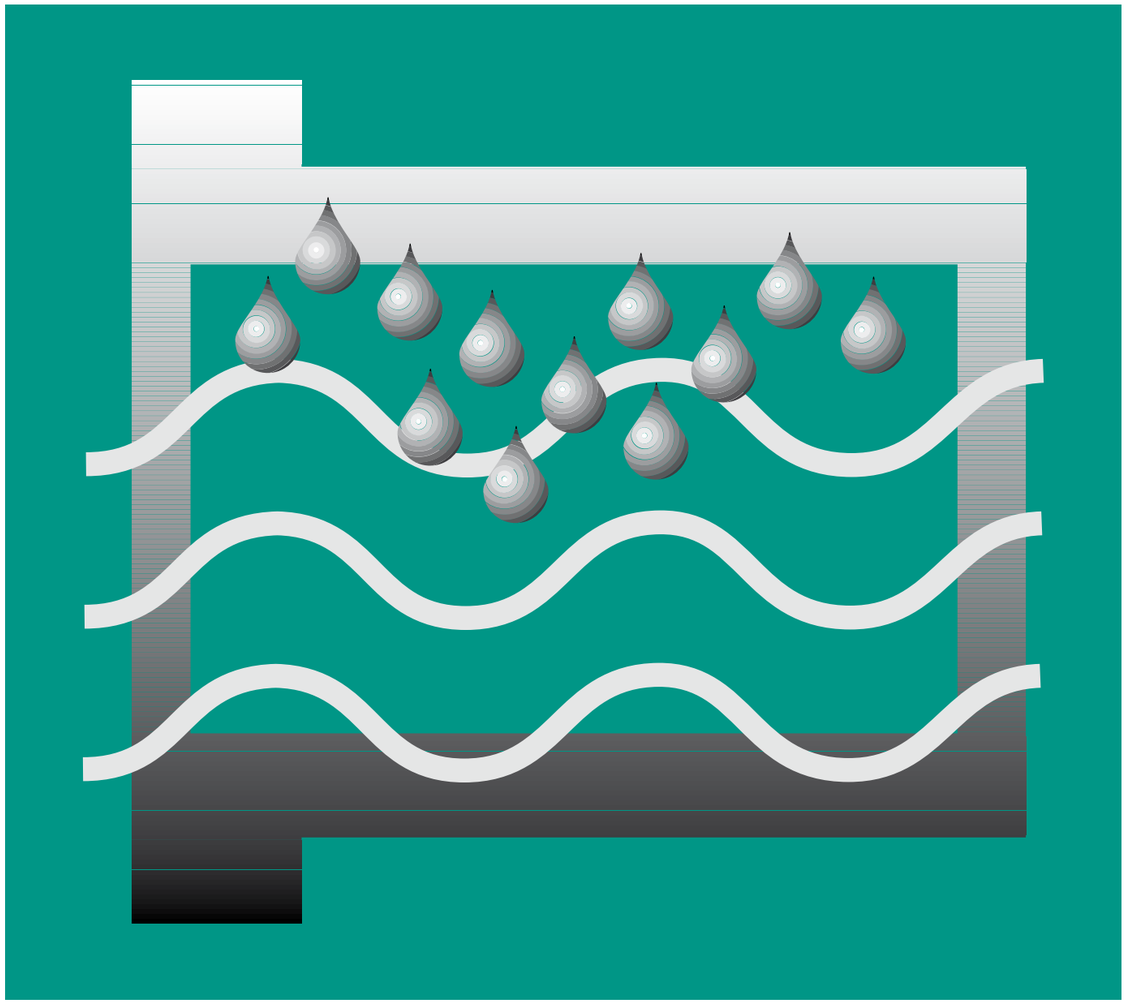


Extremely long service life under water – iglidur® H370

- Wear-resistant – especially under water
- High temperature resistance –40 °C to +200 °C
- High resistance to chemicals
- Lubrication and maintenance-free
- Standard range from stock

iglidur® H370 | Extremely long service life under water

High media resistance

Wear-resistant – especially under water

High temperature resistance –40 °C to +200 °C

Excellent chemical resistance

iglidur® H370 is the right solution for underwater applications. The bearings absorb extremely high loads, resist to chemicals and can be used at temperatures up to +200 °C.

When to use it?

- For underwater use
- When it is dependent on high temperature resistance
- When high mechanical loading and wear resistance is required
- When good resistance to chemicals is required

When not to use it?

- When mechanical reaming of the wall surface is necessary
  ▶ iglidur® M250, page 95
- When high wear resistance in temperatures is required
  ▶ iglidur® H1, page 283
- For use in dirty surroundings
  ▶ iglidur® Z, page 247
- When a cost-efficient, large-volume solution is required
  ▶ iglidur® H2, page 315

Typical application areas

- Offshore
- Marine engineering
- Fluid technology
- Packaging
- Plant construction

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +200 °C
min. –40 °C

Ø 3–75 mm
More dimensions on request

Imperial dimensions available
▶ From page 1337

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

iglidur® H370 | Technical data

Material properties table

General properties	Unit	iglidur® H370	Testing method
Density	g/cm³	1.66	
Colour		grey	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.1	DIN 53495
Max. water absorption	% weight	0.1	
Coefficient of sliding 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. long-term application temperature	°C	+200	
Max. short-term application temperature	°C	+240	
Min. application temperature	°C	–40	
Thermal conductivity	W/m · K	0.5	ASTM C 177
Coefficient of thermal expansion (at +23 °C)	$K^{-1} \cdot 10^{-5}$	5	DIN 53752
Electrical properties[5]			
Specific volume resistance	Ωcm	$< 10^5$	DIN IEC 93
Surface resistance	Ω	$< 10^5$	DIN 53482

Table 01: Material properties table

[5] The good conductivity of this plastic material under certain circumstances can favour the generation of corrosion on the metallic contact components.

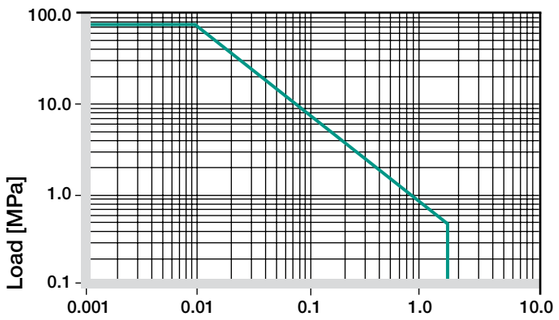


Diagram 01: Permissible pv values for iglidur® H370 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® H370 plain bearings is below 0.1 % weight in standard climatic conditions. The saturation limit in water is also below 0.1 % weight. For this reason, iglidur® H370 plain bearings are often used for underwater applications.

▶ Diagram, www.igus.eu/h370-moisture

Vacuum

In vacuum, the moisture content is released as vapour. Due to its low moisture absorption, use in a vacuum is possible.

Radiation resistance

iglidur® H370 withstands neutron and gamma particle radiation. Plain bearings made from iglidur® H370 are resistant to radiation up to an intensity of $2 \cdot 10^2$ Gy.

UV resistance

iglidur® H370 plain bearings are resistant to UV radiation.

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

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® H370 | Technical data

iglidur® H370 is an advanced development of the iglidur® H series. The material is characterised by particularly low water absorption and clearly enhanced wear resistance. With regard to the mechanical and thermal characteristic values, iglidur® H370 shows the same features as iglidur® H.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® H370 bearings decreases. The diagram 02 shows this relationship. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

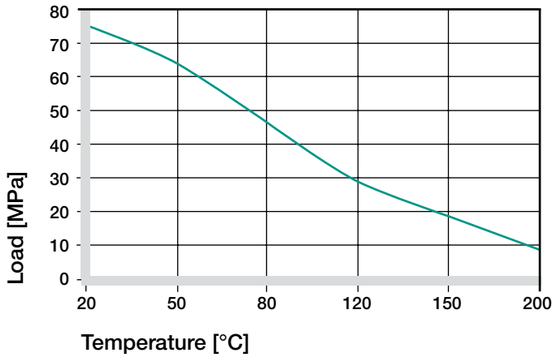


Diagram 02: Permissible maximum surface pressure as a function of temperature (75 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® H370 bearings at radial load. At the maximum permissible surface pressure of 75 MPa, the deformation at room temperature is about 2.5 %.

▶ Surface pressure, **page 41**

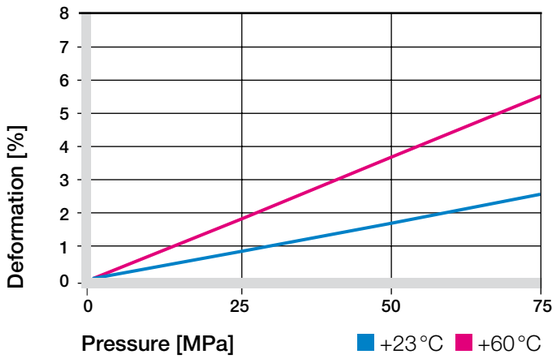


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

The maximum permitted surface speed is dependent on whether the temperature in the bearing location rises strongly or not. iglidur® H370 is suitable for surface speeds up to 1.2 m/s (rotating) and 4 m/s (linear) respectively.
The maximum values stated in table 03 are valid only with minimum pressure loads and are often not attained in practice.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	1.2	0.8	4
Short-term	1.5	1.1	5

Table 03: Maximum surface speeds

Temperatures

With increasing temperatures, the compressive strength of iglidur® H370 bearings decreases. The temperatures prevailing in the bearing system also have an influence on the bearing wear. The wear rises with increasing temperatures. At temperatures over +100 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

The coefficient of friction alters only little, like the wear resistance with increasing load and surface speed (diagrams 04 and 05).

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

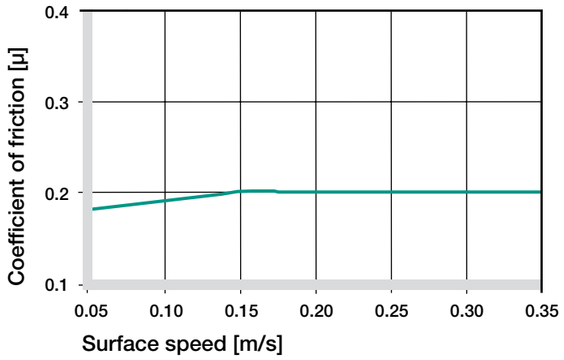


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

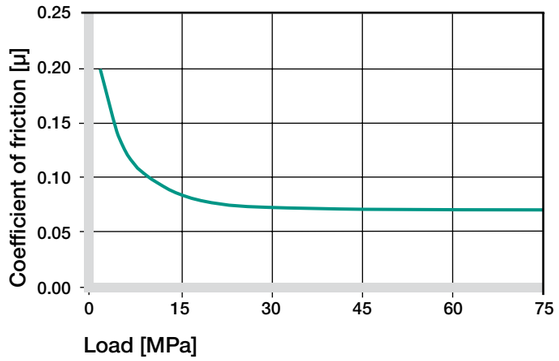


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

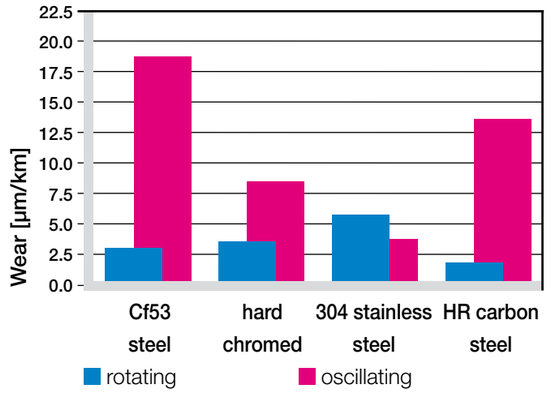


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2 MPa

Shaft materials

Diagrams 06 and 07 show the test results of iglidur® H370 bearings running against various shaft materials.
For loads up to 2 MPa in rotating applications, the hard-chromed shaft is the best material for the iglidur® H370 bearings. The high wear values with 304 stainless steel shafts, which due to their extremely smooth surfaces are prone to the stick-slip effect, are striking. Despite same values in the lowest range, the HR carbon steel shaft shows already better values than Cf53 with loads of 2 MPa. On the other hand, the 304 stainless steel shaft shows a clear advantage in pivoting movements.

▶ Shaft materials, **page 52**

iglidur® H370	Dry	Grease	Oil	Water
C. o. f. µ	0.07–0.17	0.09	0.04	0.04

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

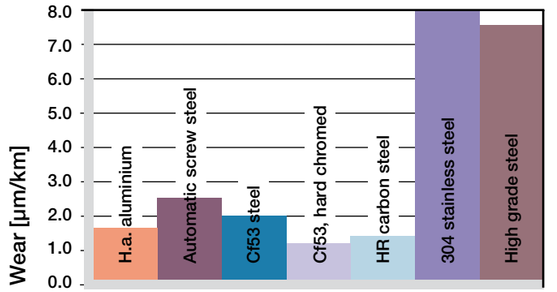


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

Installation tolerances

iglidur® H370 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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).

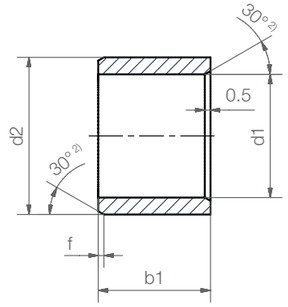
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® H370 F10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.006 +0.046	0 +0.010
> 3 to 6	0–0.030	+0.010 +0.058	0 +0.012
> 6 to 10	0–0.036	+0.013 +0.071	0 +0.015
> 10 to 18	0–0.043	+0.016 +0.086	0 +0.018
> 18 to 30	0–0.052	+0.020 +0.104	0 +0.021
> 30 to 50	0–0.062	+0.025 +0.125	0 +0.025
> 50 to 80	0–0.074	+0.030 +0.150	0 +0.030

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

iglidur® H370 | Product range

Sleeve bearing (Form S)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]
H370 S M	-0304-03

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

Dimensions according to ISO 3547-1 and special dimensions

Inch Imperial dimensions available
▶ From page 1352

Dimensions [mm]

d1	d1- Tolerance[3]	d2	b1 h13	Part No.
3.0	+0.006 +0.046	4.5	3.0	**H370SM-0304-03**
4.0		5.5	4.0	**H370SM-0405-04**
4.0		5.5	6.0	**H370SM-0405-06**
4.0		5.5	12.0	**H370SM-0405-12**
5.0	+0.010 +0.058	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		10.0	8.0	**H370SM-0810-08**
8.0		10.0	10.0	**H370SM-0810-10**
8.0		10.0	12.0	**H370SM-0810-12**
8.0		10.0	15.0	**H370SM-0810-15**
10.0	+0.013 +0.071	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		14.0	10.0	**H370SM-1214-10**
12.0		14.0	12.0	**H370SM-1214-12**
12.0		14.0	15.0	**H370SM-1214-15**
12.0		14.0	20.0	**H370SM-1214-20**
13.0	+0.016 +0.086	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		17.0	20.0	**H370SM-1517-20**
15.0		17.0	25.0	**H370SM-1517-25**
16.0		18.0	15.0	**H370SM-1618-15**
16.0	+0.016 +0.086	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		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	+0.020 +0.104	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**

3) After press-fit. Testing methods ▶ Page 57

iglidur® H370 | Product range

Sleeve bearing (Form S)

Dimensions [mm]

d1	d1- Tolerance[3]	d2	b1 h13	Part No.
28.0	+0.020 +0.104	32.0	30.0	**H370SM-2832-30**
30.0		34.0	20.0	**H370SM-3034-20**
30.0		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		36.0	20.0	**H370SM-3236-20**
32.0		36.0	30.0	**H370SM-3236-30**
32.0		36.0	40.0	**H370SM-3236-40**
35.0		39.0	20.0	**H370SM-3539-20**
35.0	+0.025 +0.125	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		44.0	50.0	**H370SM-4044-50**
45.0	+0.025 +0.125	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		55.0	20.0	**H370SM-5055-20**
50.0		55.0	30.0	**H370SM-5055-30**
50.0	+0.000 +0.100	55.0	40.0	**H370SM-5055-40**
50.0		55.0	50.0	**H370SM-5055-50**
50.0		55.0	60.0	**H370SM-5055-60**
55.0	+0.030 +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**

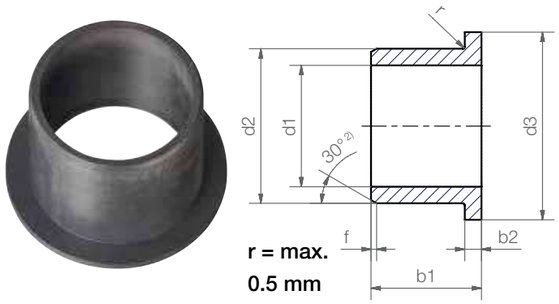
3) After press-fit. Testing methods ▶ Page 57

Couldn't find your size?
Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

Even more dimensions from stock
More than 300 dimensions are now available. Search online for your required bearing.
▶ **www.igus.eu/iglidur-specialbearings**

iglidur® H370 | Product range

Flange bearing (Form F)



r = max. 0.5 mm

2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]

H370 F M -04 05-04

iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

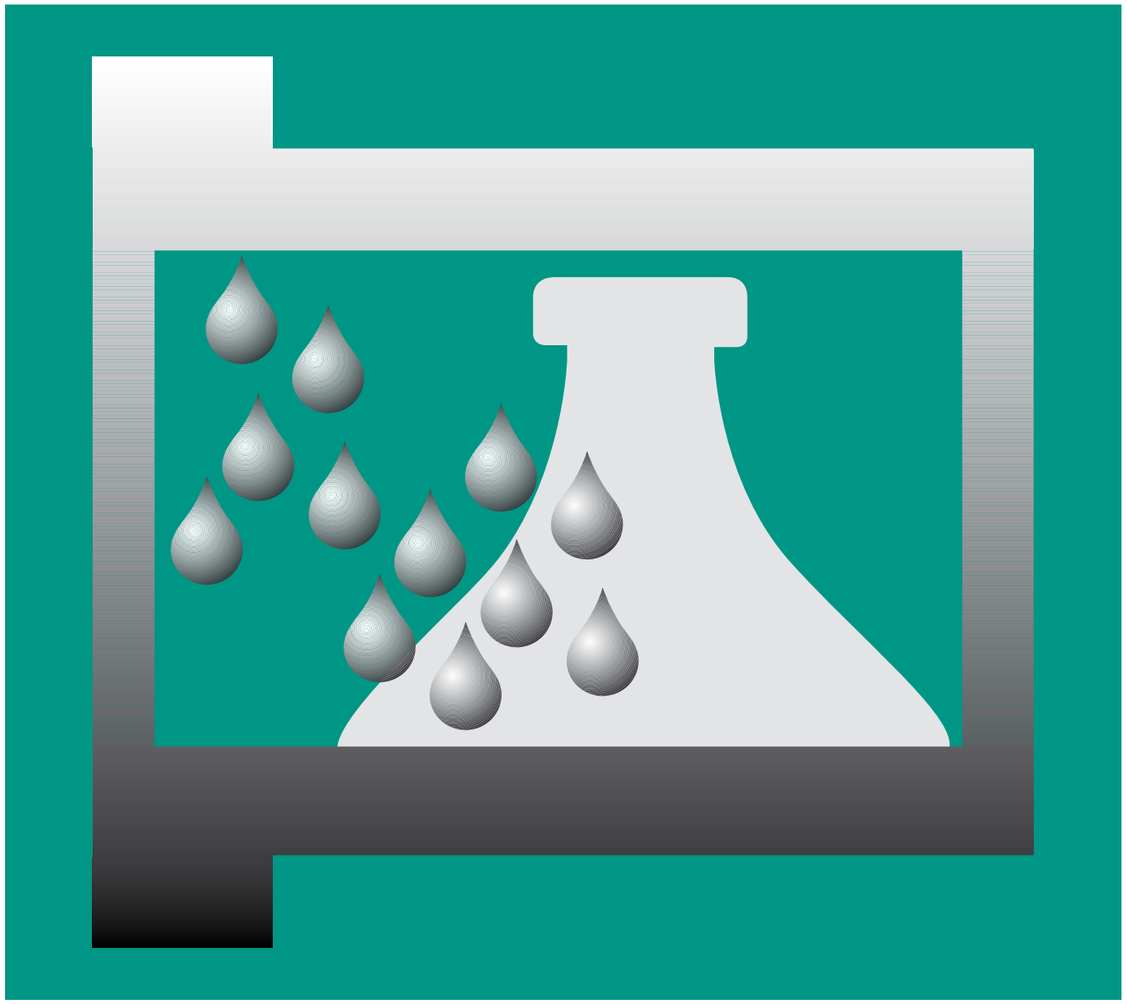
Dimensions according to ISO 3547-1 and special dimensions

Inch Imperial dimensions available
▶ From page 1377

Dimensions [mm]

d1	d1- Tolerance 3)	d2	d3 d13	b1 h13	b2 –0.14	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	1.0	H370FM-0507-05
6.0		8.0	12.0	4.0	1.0	H370FM-0608-04
6.0		8.0	12.0	6.0	1.0	H370FM-0608-06
6.0		8.0	12.0	8.0	1.0	H370FM-0608-08
8.0	+0.013 +0.071	10.0	15.0	5.5	1.0	H370FM-0810-05
8.0		10.0	15.0	6.0	1.0	H370FM-0810-06
8.0		10.0	15.0	7.5	1.0	H370FM-0810-07
8.0		10.0	15.0	9.5	1.0	H370FM-0810-09
8.0		10.0	15.0	10.0	1.0	H370FM-0810-10
8.0		10.0	15.0	15.0	1.0	H370FM-0810-15
10.0		12.0	18.0	7.0	1.0	H370FM-1012-07
10.0		12.0	18.0	9.0	1.0	H370FM-1012-09
10.0		12.0	18.0	10.0	1.0	H370FM-1012-10
10.0		12.0	18.0	12.0	1.0	H370FM-1012-12
10.0		12.0	18.0	17.0	1.0	H370FM-1012-17
10.0		12.0	18.0	20.0	1.0	H370FM-1012-20
10.0		12.0	18.0	14.5	1.0	H370FM-1012-145
12.0	+0.016 +0.086	14.0	20.0	7.0	1.0	H370FM-1214-07
12.0		14.0	20.0	9.0	1.0	H370FM-1214-09
12.0		14.0	20.0	12.0	1.0	H370FM-1214-12
12.0		14.0	20.0	15.0	1.0	H370FM-1214-15
12.0		14.0	20.0	17.0	1.0	H370FM-1214-17
12.0		14.0	20.0	20.0	1.0	H370FM-1214-20
14.0		16.0	22.0	12.0	1.0	H370FM-1416-12
14.0		16.0	22.0	17.0	1.0	H370FM-1416-17
15.0		17.0	23.0	9.0	1.0	H370FM-1517-09
15.0		17.0	23.0	12.0	1.0	H370FM-1517-12
15.0		17.0	23.0	17.0	1.0	H370FM-1517-17
16.0	+0.016 +0.086	18.0	22.0	10.0	1.0	H370FM-161822-10
16.0		18.0	24.0	10.0	1.0	H370FM-1618-10
16.0		18.0	24.0	12.0	1.0	H370FM-1618-12
16.0		18.0	24.0	17.0	1.0	H370FM-1618-17
16.0		18.0	24.0	17.0	1.0	H370FM-1618-17
16.0		18.0	24.0	25.0	1.0	H370FM-1618-25
18.0		20.0	26.0	12.0	1.0	H370FM-1820-12
18.0		20.0	26.0	17.0	1.0	H370FM-1820-17
18.0		20.0	26.0	22.0	1.0	H370FM-1820-22
20.0		23.0	30.0	11.5	1.5	H370FM-2023-11
20.0		23.0	30.0	16.0	1.5	H370FM-2023-16
20.0		23.0	30.0	21.5	1.5	H370FM-2023-21
20.0		23.0	30.0	30.0	1.5	H370FM-2023-30
22.0		25.0	32.0	21.5	1.5	H370FM-222532-215
25.0	+0.020 +0.104	28.0	35.0	11.5	1.5	H370FM-2528-11
25.0		28.0	35.0	16.5	1.5	H370FM-2528-16
25.0		28.0	35.0	21.5	1.5	H370FM-2528-21
25.0		28.0	35.0	30.0	1.5	H370FM-2528-30
30.0		34.0	42.0	16.0	2.0	H370FM-3034-16
30.0		34.0	42.0	26.0	2.0	H370FM-3034-26
30.0		34.0	42.0	40.0	2.0	H370FM-3034-40
35.0		39.0	47.0	16.0	2.0	H370FM-3539-16
35.0		39.0	47.0	26.0	2.0	H370FM-3539-26
40.0	+0.025 +0.125	44.0	52.0	30.0	2.0	H370FM-4044-30
40.0		44.0	52.0	40.0	2.0	H370FM-4044-40
45.0		50.0	58.0	50.0	2.0	H370FM-4550-50
50.0		55.0	63.0	50.0	2.0	H370FM-5055-50
60.0	+0.030 +0.150	65.0	73.0	50.0	2.0	H370FM-6065-50
70.0		75.0	83.0	50.0	2.0	H370FM-7075-50

3) After press-fit. Testing methods ▶ Page 57

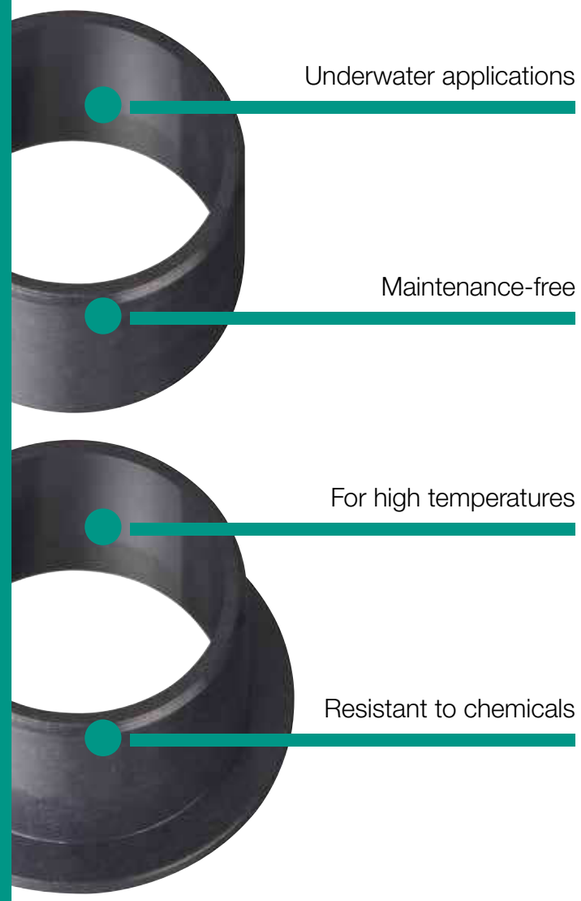


The classic with high resistance to media and temperature – iglidur® H

- Can be used underwater
- For high temperatures
- Resistant to chemicals
- Lubrication and maintenance-free
- Standard range from stock

iglidur® H | The classic with high resistance to media and temperature

Up to +200 °C



Suitable for temperatures up to +200 °C. Very low coefficients of friction when used with hardened shafts.

When to use it?
- For underwater applications
- When it is dependent on high temperature resistance
- 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, page 291
- When universal resistance to chemicals is needed
  ▶ iglidur® X, page 237
- For the maximum pressure at higher temperatures
  ▶ iglidur® X, page 237
  ▶ iglidur® Z, page 247

Typical application areas
- Offshore
- Marine engineering
- Beverage technology
- Medical technology
- Mechatronics

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +200 °C
min. –40 °C

Ø 3–70 mm
More dimensions on request

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

iglidur® H | Technical data

Material properties table

General properties	Unit	iglidur® H	Testing method
Density	g/cm³	1.71	
Colour		grey	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.1	DIN 53495
Max. water absorption	% weight	0.3	
Coefficient of sliding friction, dynamic against steel	µ	0.07–0.2	
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. long-term application temperature	°C	+200	
Max. short-term application temperature	°C	+240	
Min. application temperature	°C	–40	
Thermal conductivity	W/m · K	0.6	ASTM C 177
Coefficient of thermal expansion (at +23 °C)	$K^{-1} \cdot 10^{-5}$	4	DIN 53752
Electrical properties[5]			
Specific volume resistance	Ωcm	$< 10^5$	DIN IEC 93
Surface resistance	Ω	$< 10^2$	DIN 53482

[5] The good conductivity of this plastic material under certain circumstances can favour the generation of corrosion on the metallic contact components.

Table 01: Material properties table

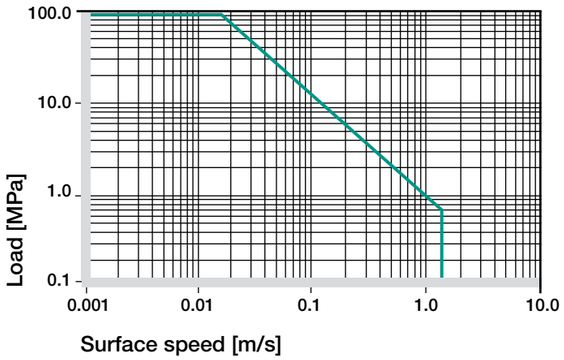


Diagram 01: Permissible pv values for iglidur® H bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® H plain bearings is below 0.1 % in standard climatic conditions. The saturation limit in water is 0.3 % weight. iglidur® H is very well suited for use in wet applications.

▶ Diagram, www.igus.eu/h-moisture

Vacuum

For use in a vacuum environment, it must be taken into account that a small amount of moisture is released as vapour.

Radiation resistance

iglidur® H plain bearings are resistant to radiation up to an intensity of $2 \cdot 10^2$ Gy. They also withstand neutron and gamma particle radiation.

UV resistance

iglidur® H plain bearings are only conditionally resistant to UV radiation.

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

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® H is a fibre-reinforced thermoplastic material especially developed for applications in high atmospheric humidity or under water. Bearings made from iglidur® H can be used completely free of lubrication; in wet applications, the surrounding media acts as additional lubricant.

Mechanical properties

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

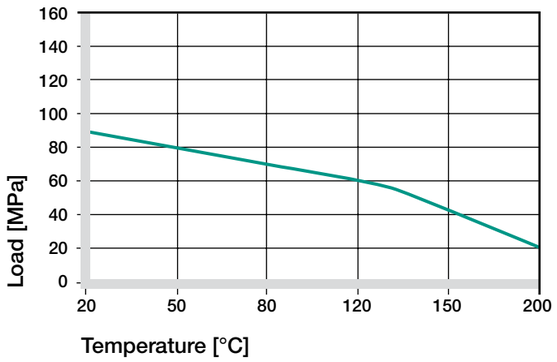


Diagram 02: Permissible maximum surface pressure as a function of temperature (90 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® H at radial loads. At the permissible maximum surface pressure of 90 MPa the deformation is about 2.5 % at room temperature.

▶ Surface pressure, **page 41**

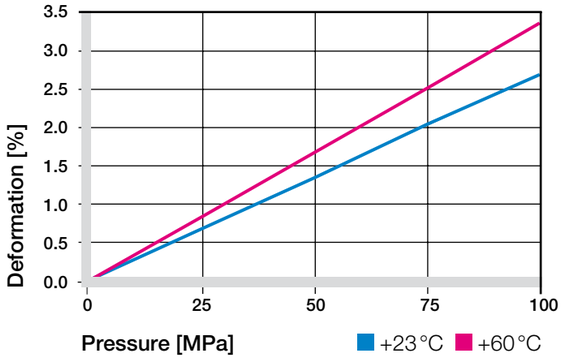


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

The maximum permitted surface speed is dependent on whether the temperature in the bearing location rises or not. Running dry, iglidur® H can be used at a maximum surface speed of 1 m/s (rotating) and 4 m/s (linear) respectively. Linear movements enable higher surface speeds, as a large area of the shaft contributes to the cooling.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	1	0.7	3
Short-term	1.5	1.1	4

Table 03: Maximum surface speeds

Temperatures

With increasing temperatures, the compressive strength of iglidur® H plain bearings decreases. The diagram 02 shows this relationship. The ambient application temperature has a direct impact on bearing wear, an increase in temperature results in an increase in wear. At temperatures over +120 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

Both the wear rate and the coefficient of friction values change depending on the pressure. Interestingly, the friction coefficient μ lowers slightly with the increase of surface speed at constant load (see diagrams 04 and 05).

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

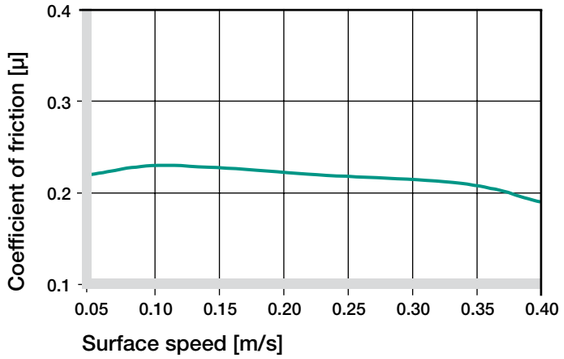


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

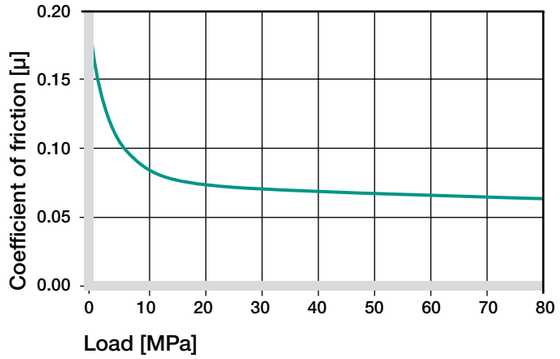


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

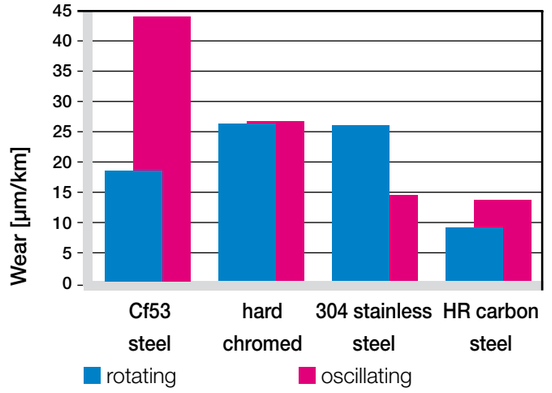


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2 MPa

Shaft materials

Diagrams 06 and 07 show the test results of iglidur® H bearings running against various shaft materials.
The iglidur® H bearings give different results when used in rotating and pivoting applications. 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 oscillating applications. Hard chromed shafts only give an advantage at low pressures when used with iglidur® H bearings.

▶ Shaft materials, **page 52**

iglidur® H	Dry	Greases	Oil	Water
C. o. f. μ	0.07–0.2	0.09	0.04	0.04

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

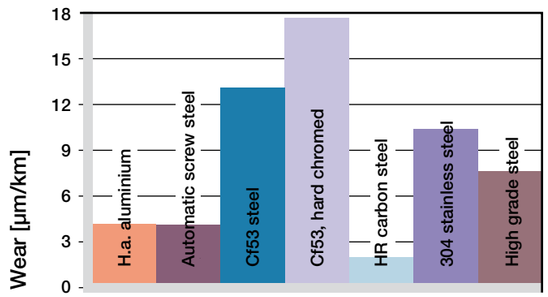


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

Installation tolerances

iglidur® H plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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).

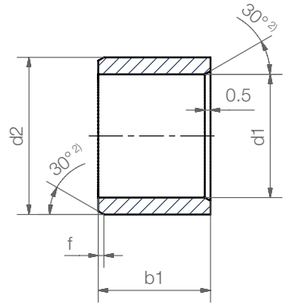
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® H F10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.006 +0.046	0 +0.010
> 3 to 6	0–0.030	+0.010 +0.058	0 +0.012
> 6 to 10	0–0.036	+0.013 +0.071	0 +0.015
> 10 to 18	0–0.043	+0.016 +0.086	0 +0.018
> 18 to 30	0–0.052	+0.020 +0.104	0 +0.021
> 30 to 50	0–0.062	+0.025 +0.125	0 +0.025
> 50 to 80	0–0.074	+0.030 +0.150	0 +0.030

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

iglidur® H | Product range

Sleeve bearing (Form S)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
H	S	M	-03	04	-03	
iglidur® material	Form S	Metric	Inner-Ø d1	Outer-Ø d2	Length b1	

Dimensions according to ISO 3547-1 and special dimensions

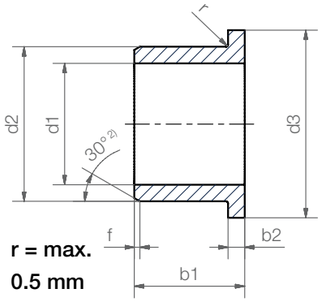
Dimensions [mm]

d1	d1- Tolerance[3]	d2	b1 h13	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**
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 57

iglidur® H | Product range

Flange bearing (Form F)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
H	F	M	-04	05	-04	
iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1	

Dimensions according to ISO 3547-1 and special dimensions

Dimensions [mm]

d1	d1- Tolerance[3]	d2	d3 d13	b1 h13	b2 -0.14	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	1.0	**HFM-0507-05**
5.0		7.0	11.0	8.0	1.0	**HFM-0507-08**
6.0		8.0	12.0	4.0	1.0	**HFM-0608-04**
6.0		8.0	12.0	6.0	1.0	**HFM-0608-06**
6.0		8.0	12.0	10.0	1.0	**HFM-0608-10**
8.0	+0.013 +0.071	10.0	15.0	7.0	1.0	**HFM-0810-07**
8.0		10.0	15.0	10.0	1.0	**HFM-0810-10**
8.0		10.0	15.0	15.0	1.0	**HFM-0810-15**
10.0		12.0	18.0	4.0	1.0	**HFM-1012-04**
10.0		12.0	18.0	9.0	1.0	**HFM-1012-09**
10.0		12.0	18.0	15.0	1.0	**HFM-1012-15**
10.0		12.0	18.0	20.0	1.0	**HFM-1012-20**
12.0	+0.016 +0.086	14.0	20.0	7.0	1.0	**HFM-1214-07**
12.0		14.0	20.0	10.0	1.0	**HFM-1214-10**
12.0		14.0	20.0	15.0	1.0	**HFM-1214-15**
14.0		16.0	22.0	12.0	1.0	**HFM-1416-12**
15.0	+0.020 +0.104	17.0	23.0	17.0	1.0	**HFM-1517-17**
16.0		18.0	24.0	13.0	1.0	**HFM-1618-13**
16.0		18.0	24.0	17.0	1.0	**HFM-1618-17**
18.0		20.0	26.0	17.0	1.0	**HFM-1820-17**
20.0		23.0	30.0	7.0	1.0	**HFM-2023-07**
20.0		23.0	30.0	16.5	1.5	**HFM-2023-16**
20.0		23.0	30.0	30.0	1.5	**HFM-2023-30**
25.0		28.0	35.0	30.0	1.5	**HFM-2528-30**
27.0		30.0	38.0	20.0	1.5	**HFM-2730-20**
30.0		34.0	42.0	40.0	2.0	**HFM-3034-40**
34.0	+0.025 +0.125	38.0	46.0	13.0	2.0	**HFM-3438-13**
35.0		39.0	47.0	26.0	2.0	**HFM-3539-26**
40.0		44.0	52.0	40.0	2.0	**HFM-4044-40**
45.0		50.0	58.0	50.0	2.0	**HFM-4550-50**
50.0		55.0	63.0	50.0	2.0	**HFM-5055-50**
60.0	+0.030 +0.150	65.0	73.0	50.0	2.0	**HFM-6065-50**
70.0		75.0	83.0	50.0	2.0	**HFM-7075-50**

[3] After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

Even more dimensions from stock

More than 300 dimensions are now available. Search online for your required bearing.

▶ **www.igus.eu/iglidur-specialbearings**

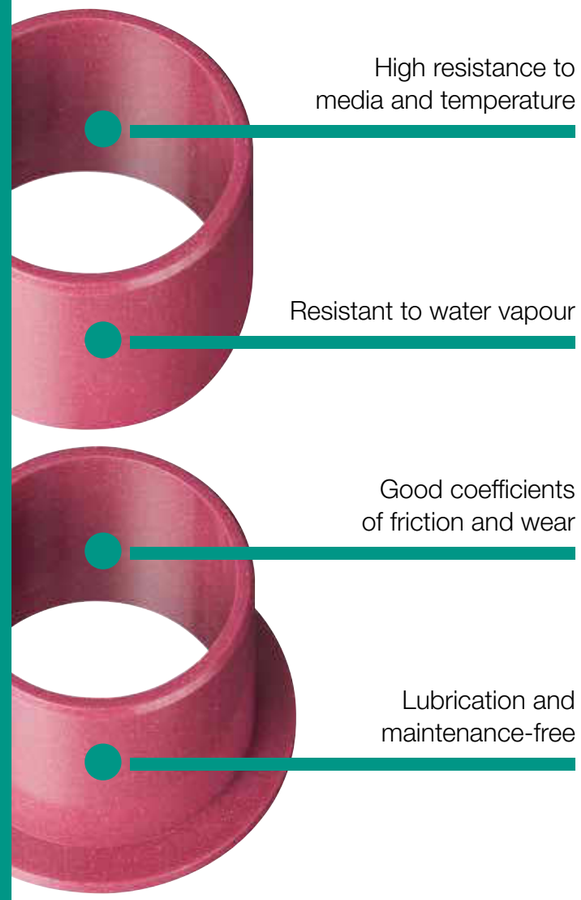
My sketches

High temperature endurance runner – iglidur® C500

- High resistance to media and temperature
- Resistant to water vapour
- Good coefficients of friction and wear
- Lubrication and maintenance-free
- Standard range from stock

iglidur® C500 | High temperature endurance runner

Extremely wear and media resistant up to +250 °C



iglidur® C500 can be used up to +250 °C and is extremely resistant to media – even in cleaning processes using hydrogen peroxide – it is also wear resistant and has low coefficients of friction. Also suitable for various special designs. The colour represents extreme environmental conditions.

When to use it?

- When you need an extremely media resistant bearing with high flexibility
- When you need a very wear-resistant and media resistant bearing

When not to use it?

- When you need an FDA-compliant high temperature material
  ▶ iglidur® A500, page 341
- When you need a media resistant high-temperature bearing with the largest possible range of dimensions
  ▶ iglidur® X, page 237

Typical application areas

- Plant construction
- Valves
- Chemical industry
- Process technology

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +250 °C
min. –100 °C

Ø 6–40 mm
More dimensions on request

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

iglidur® C500 | Product range

Material properties table

General properties	Unit	iglidur® C500	Testing method
Density	g/cm³	1.37	
Colour		magenta	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.3	DIN 53495
Max. water absorption	% weight	0.5	
Coefficient of sliding friction, dynamic against steel	µ	0.07–0.19	
pv value, max. (dry)	MPa · m/s	0.7	
Mechanical properties			
Flexural modulus	MPa	3,000	DIN 53457
Flexural strength at +20 °C	MPa	100	DIN 53452
Compressive strength	MPa	110	
Max. permissible surface pressure (+20 °C)	MPa	110	
Shore-D hardness		81	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+250	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{14}$	DIN IEC 93
Surface resistance	Ω	$> 10^{13}$	DIN 53482

Table 01: Material properties table

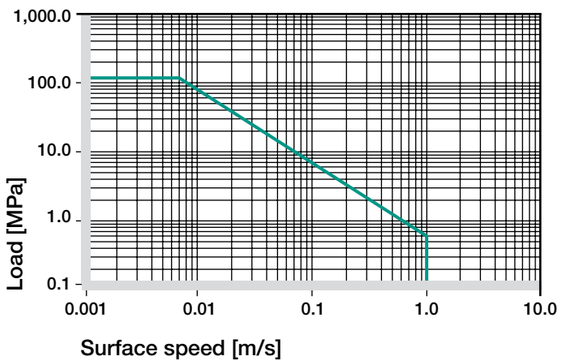


Diagram 01: Permissible pv values for iglidur® C500 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® C500 plain bearings is below 0.3 % in standard climatic conditions. The saturation limit in water is also below 0.5 %.

▶ Diagram, www.igus.eu/c500-moisture

Vacuum

iglidur® C500 plain bearings outgas in a vacuum. Due to its low moisture absorption, use in a vacuum is 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 to radiation up to an intensity of $3 \cdot 10^2$ Gy.

UV resistance

iglidur® C500 plain bearings are permanently resistant to UV radiation.

Medium	Resistance
Alcohols	+
Hydrocarbons	+
Greases, oils without additives	+
Fuels	+
Diluted acids	+
Strong acids	+
Diluted alkalines	+
Strong alkalines	+

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® C500 | Technical data

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 flexibility – for instance as a piston ring.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® C500 plain bearings decreases. The diagram 02 shows this relationship. However, at an operation temperature of +200 °C the permissible surface pressure is close to 20 MPa. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

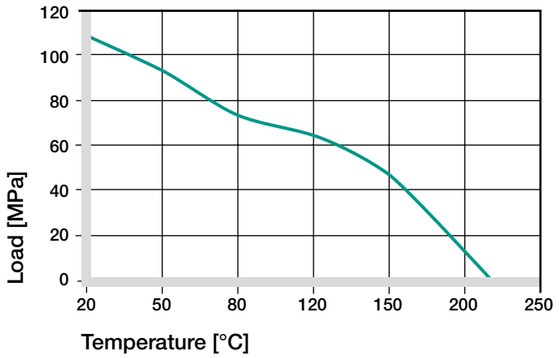


Diagram 02: Permissible maximum surface pressure as a function of temperature (110 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® C500 bearings as a function of radial pressure. At the maximum permissible surface pressure of 110 MPa, the deformation at room temperature is only 4.5 %.

▶ Surface pressure, **page 41**

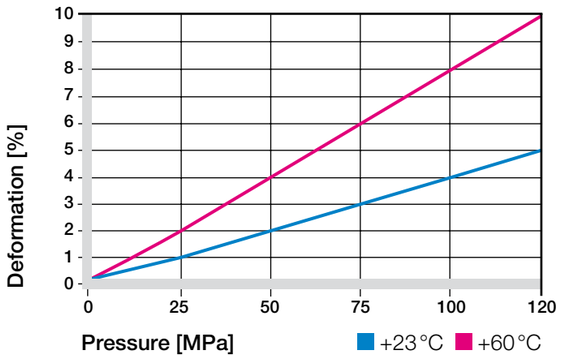


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

The maximum allowable sliding speed is based on the friction 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 44**

m/s	Rotating	Oscillating	Linear
Continuous	0.9	0.7	2.4
Short-term	1.1	1.0	2.8

Table 03: Maximum surface speeds

Temperatures

iglidur® C500 belongs to the most temperature resistant iglidur® materials. Similar to all thermoplastics, with increasing temperatures, the compressive strength of iglidur® C500 bearings decreases. The temperatures prevailing in the bearing system also have an influence on the bearing wear. The wear rises with increasing temperatures. At temperatures over +130 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

The coefficients of friction and wear in iglidur® C500 are more favorable than in the other high temperature materials iglidur® X and A500. The friction value increases moderately as the sliding speed increases. The friction value initially drops rapidly to less than 0.1 under loads of up to approx. 20 MPa, and then only marginally increases as loads continue to increase.
Friction and wear also depend to a high degree on the reverse partner. Shafts that are too smooth, increase both the coefficient of friction and the wear of the bearing. The ideal shaft has an average surface finish of Ra = 0.6 to 0.8 µm.

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

iglidur® C500 | Technical data

C500
+250 °C
110 MPa

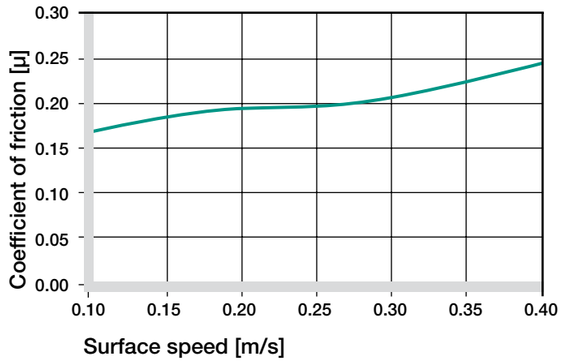


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1 MPa

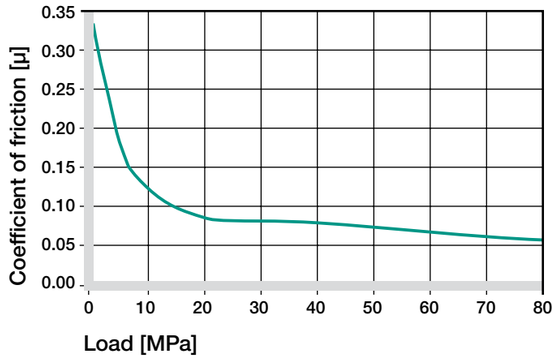


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

Diagram 06 shows the test results of iglidur® C500 bearings running against various shaft materials.
Using the example of a rotating motion at 1 MPa and a speed of 0.3 m/s, it becomes apparent that iglidur® C500 has very consistent wear characteristics across a variety of shaft types. This wear rate spikes upward in combination with free-machining steel, and, notably so, spikes downward in combination with HC aluminium.
The wear under rotational loads is higher, specifically with increasing radial loads as compared to pivoting motions (diagram 07).

▶ Shaft materials, **page 52**

iglidur® C500	Dry	Greases	Oil	Water
C. o. f. µ	0.07–0.19	0.09	0.04	0.04

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

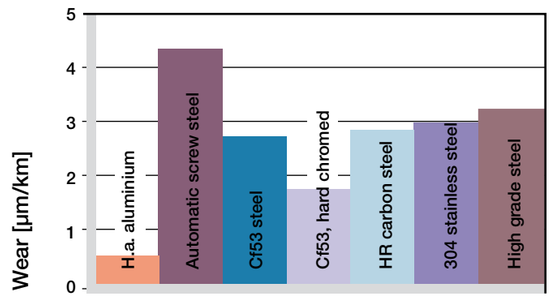


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1 MPa, v = 0.3 m/s

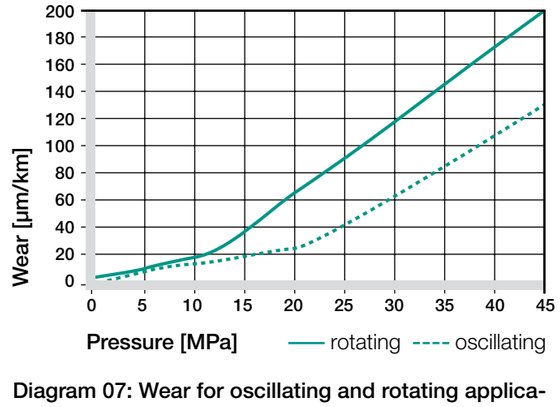


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Installation tolerances

iglidur® C500 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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.

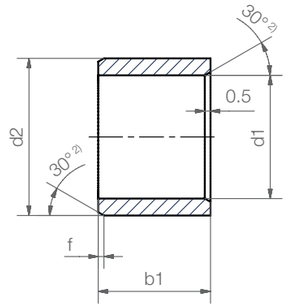
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® C500 F10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.006 +0.046	0 +0.010
> 3 to 6	0–0.030	+0.010 +0.058	0 +0.012
> 6 to 10	0–0.036	+0.013 +0.071	0 +0.015
> 10 to 18	0–0.043	+0.016 +0.086	0 +0.018
> 18 to 30	0–0.052	+0.020 +0.104	0 +0.021
> 30 to 50	0–0.062	+0.025 +0.125	0 +0.025
> 50 to 80	0–0.074	+0.030 +0.150	0 +0.030

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

iglidur® C500 | Product range

Sleeve bearing (Form S)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]		
C500	S	M	-06	08	-06
iglidur® material	Form S	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

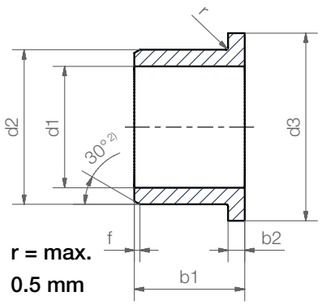
Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	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	+0.013 +0.071	12.0	10.0	**C500SM-1012-10**
12.0	+0.016 +0.086	14.0	12.0	**C500SM-1214-12**
16.0	+0.016 +0.086	18.0	15.0	**C500SM-1618-15**
20.0	+0.020 +0.104	23.0	20.0	**C500SM-2023-20**
40.0	+0.025 +0.125	44.0	30.0	**C500SM-4044-30**

3) After press-fit. Testing methods ▶ Page 57

iglidur® C500 | Product range

Flange bearing (Form F)



r = max. 0.5 mm

2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]		
C500	F	M	-06	08	-06
iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

Dimensions [mm]

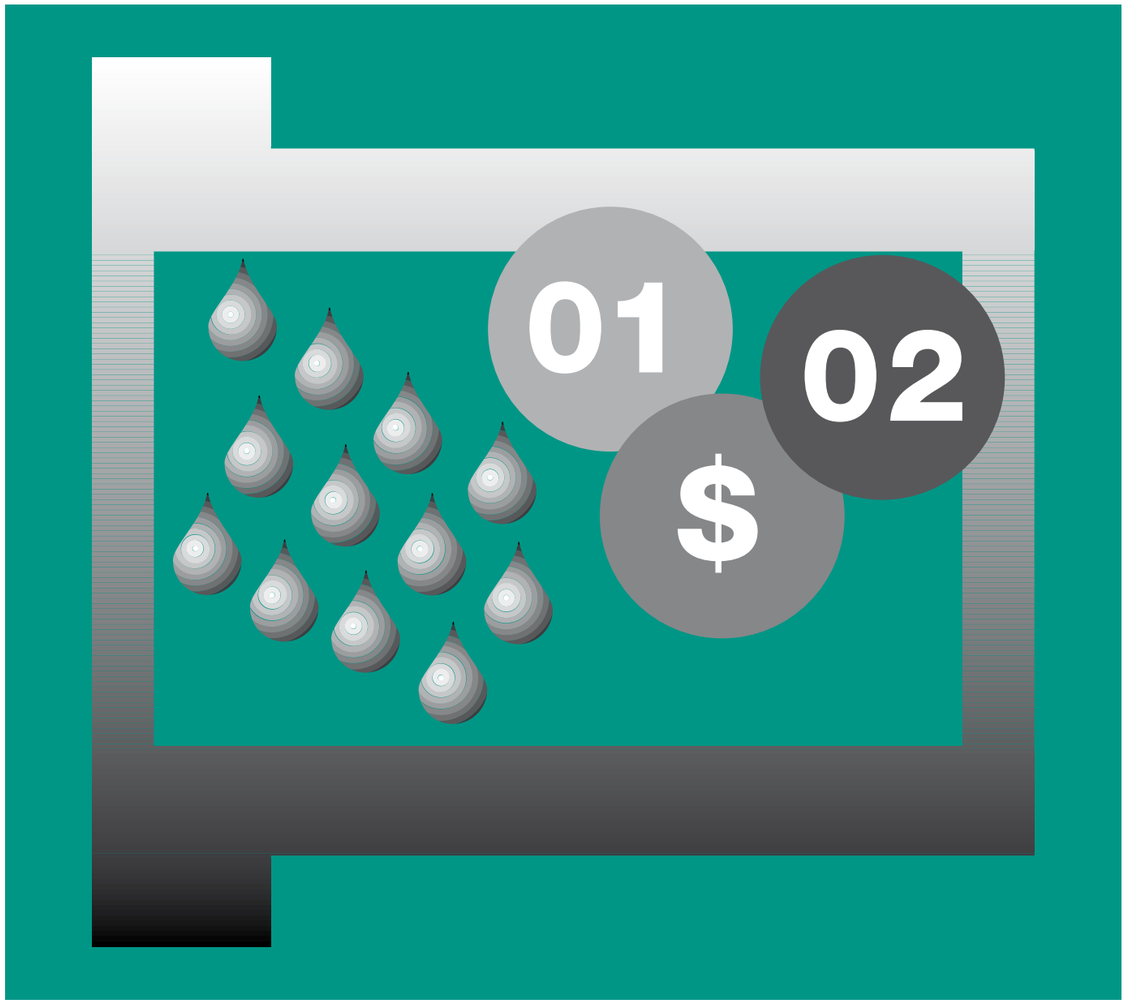
d1	d1-Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
6.0	+0.010 +0.058	8.0	12.0	6.0	1.0	**C500FM-0608-06**
8.0	+0.013 +0.071	10.0	15.0	10.0	1.0	**C500FM-0810-10**
10.0	+0.013 +0.071	12.0	18.0	10.0	1.0	**C500FM-1012-10**
12.0	+0.016 +0.086	14.0	20.0	12.0	1.0	**C500FM-1214-12**
16.0	+0.016 +0.086	18.0	24.0	17.0	1.0	**C500FM-1618-17**
20.0	+0.020 +0.104	23.0	30.0	21.5	1.5	**C500FM-2023-21**

3) After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

My sketches

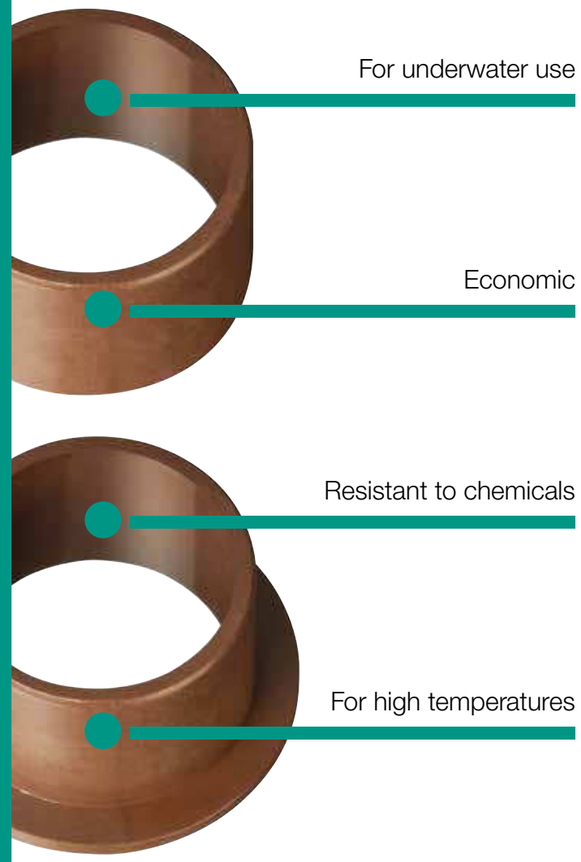


The low-cost specialist for chemicals and temperatures – iglidur® H2

- Can be used underwater
- Cost-effective
- Resistant to chemicals
- For high temperatures
- Lubrication and maintenance-free

iglidur® H2 | The low-cost specialist for chemicals and temperatures

Up to +200 °C, for high static load



For application with high temperature requirements. Can be conditionally used in dry operation; excellent properties with additional lubrication.

When to use it?
- For underwater use
- If an economic bearing is required for use at high temperatures
- For applications with fuels, oils, etc.
- Resistant to chemicals

When not to use it?
- When the highest wear resistance is required
  - ▶ iglidur® H1, page 283
  - ▶ iglidur® H4, page 451
  - ▶ iglidur® W300, page 153
- When vibration dampening is necessary
  - ▶ iglidur® B, page 499
  - ▶ iglidur® M250, page 95
- When neither increased temperatures nor media contact occur
  - ▶ iglidur® GLW, page 131

Typical application areas
- Automotive
- Actuator
- Bicycle industry

Available on request
Detailed information about delivery time online.

Order-related

max. +200 °C
min. –40 °C

Order-related

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

iglidur® H2 | Technical data

Material properties table

General properties	Unit	iglidur® H2	Testing method
Density	g/cm³	1.72	
Colour		brown	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.1	DIN 53495
Max. water absorption	% weight	0.2	
Coefficient of sliding friction, dynamic against steel	µ	0.07–0.3	
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. long-term application temperature	°C	+200	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{15}$	DIN IEC 93
Surface resistance	Ω	$> 10^{14}$	DIN 53482

Table 01: Material properties table

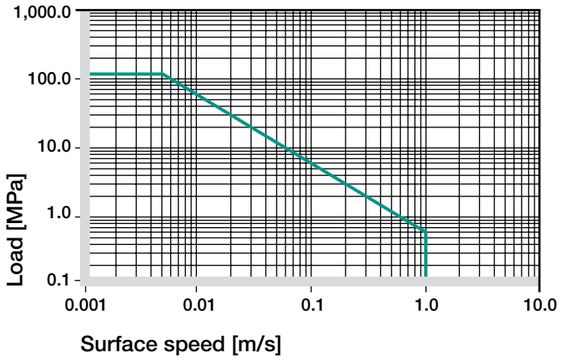


Diagram 01: Permissible pv values for iglidur® H2 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The humidity absorption of iglidur® H2 bearings is about 0.1 % weight in standard climatic conditions. The saturation limit in water is 0.2 % weight. iglidur® H2 is an ideal material for wet environments.

▶ Diagram, www.igus.eu/h2-moisture

Vacuum

In a vacuum, any moisture content will outgas. It is possible to use iglidur® H2 in a vacuum.

Radiation resistance

iglidur® H2 withstands neutron and gamma particle radiation. Plain bearings of iglidur® H2 are radiation resistant up to a radiation intensity of $2 \cdot 10^2$ Gy.

UV resistance

The use of iglidur® H2 in applications that are permanently exposed to weathering should be checked.

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

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® H2 | Technical data

In applications with the iglidur® H2 bearings, economical aspects are in focus. It is the first time that it is possible to offer such a high-performance bearing for large volume applications with these technical advantages at such a low price: Temperatures up to +200 °C, permitted surface pressure up to 110 N/mm², and excellent chemical resistance. The iglidur® H2 bearings are self-lubricating and suitable for all motions.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® H2 plain bearings decreases. The diagram 02 shows this inverse relationship. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

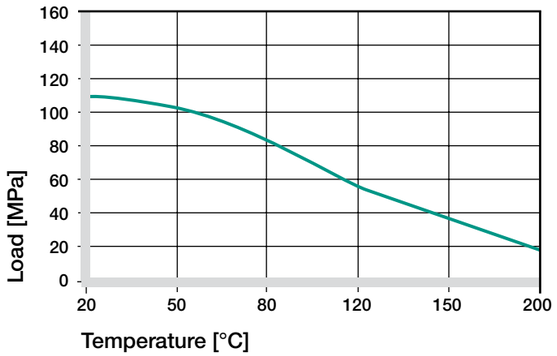


Diagram 02: Permissible maximum surface pressure as a function of temperature (110 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® H2 at radial loads. At the maximum permissible surface pressure of 110 MPa at room temperature the deformation is less than 3 %. The values for tensile and compressive strength are higher than those of iglidur® H at room temperature.

▶ Surface pressure, **page 41**

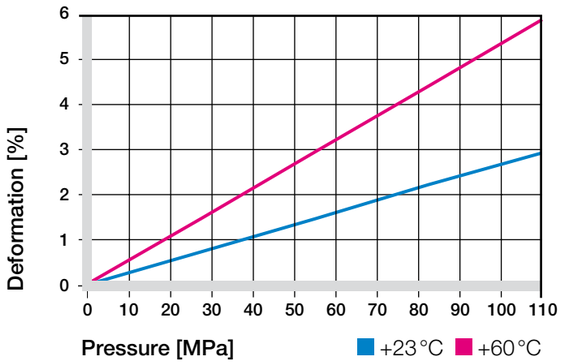


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

In the development of iglidur® H2, cost aspects and mechanical stability were in focus. 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 44**

m/s	Rotating	Oscillating	Linear
Continuous	0.9	0.6	2.5
Short-term	1	0.7	3

Table 03: Maximum surface speeds

Temperatures

iglidur® H2 is an extremely temperature-resistant material. The short-term permitted maximum temperature is +240 °C and this enables the iglidur® H2 bearings to be subjected, for instance to a paint drying process without further load. The temperatures prevailing in the bearing system also have an influence on the bearing wear. The wear rises with increasing temperatures. At temperatures over +110 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

The coefficients of friction of iglidur® H2 plain bearings change with different surface speeds, loads and roughness, as indicated in the diagrams 04 and 05.

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

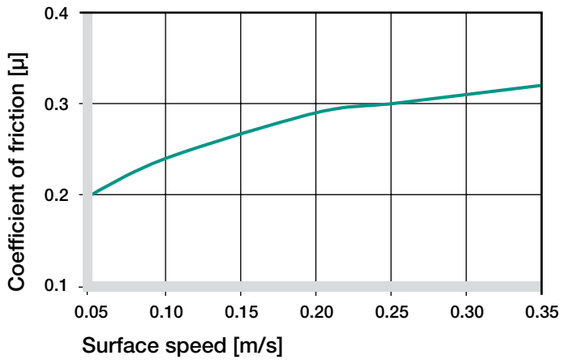


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

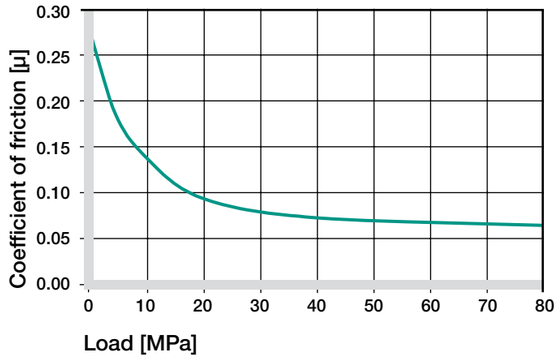


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

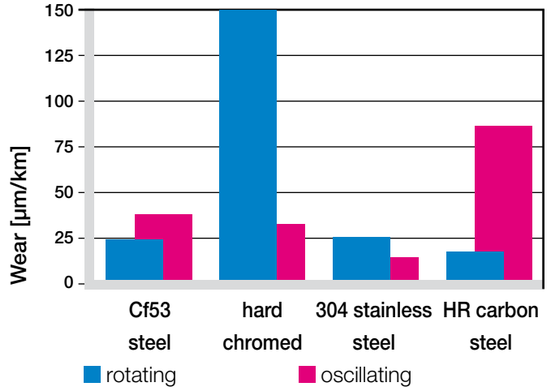


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2 MPa

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 52**

iglidur® H2	Dry	Grease	Oil	Water
C. o. f. µ	0.07–0.30	0.09	0.04	0.04

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

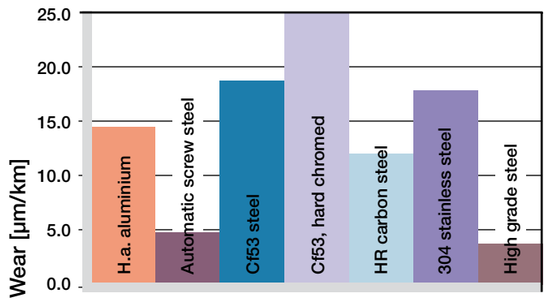


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

Installation tolerances

iglidur® H2 bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® H2 F10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.006 +0.046	0 +0.010
> 3 to 6	0–0.030	+0.010 +0.058	0 +0.012
> 6 to 10	0–0.036	+0.013 +0.071	0 +0.015
> 10 to 18	0–0.043	+0.016 +0.086	0 +0.018
> 18 to 30	0–0.052	+0.020 +0.104	0 +0.021
> 30 to 50	0–0.062	+0.025 +0.125	0 +0.025
> 50 to 80	0–0.074	+0.030 +0.150	0 +0.030

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

Product range

Plain bearings made from iglidur® H2 are manufactured to special order. Please request iglidur® H2 bearings as an alternative to iglidur® H and iglidur® H4 bearings in high volume applications.

iglidur® plain bearing materials for contact with food

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.

- Lubrication and maintenance-free
- Lightweight
- Good price / performance ratio
- Predictable service life

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

Ø 1–50 mm
More dimensions on request

Imperial dimensions available
▶ From page 1337

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

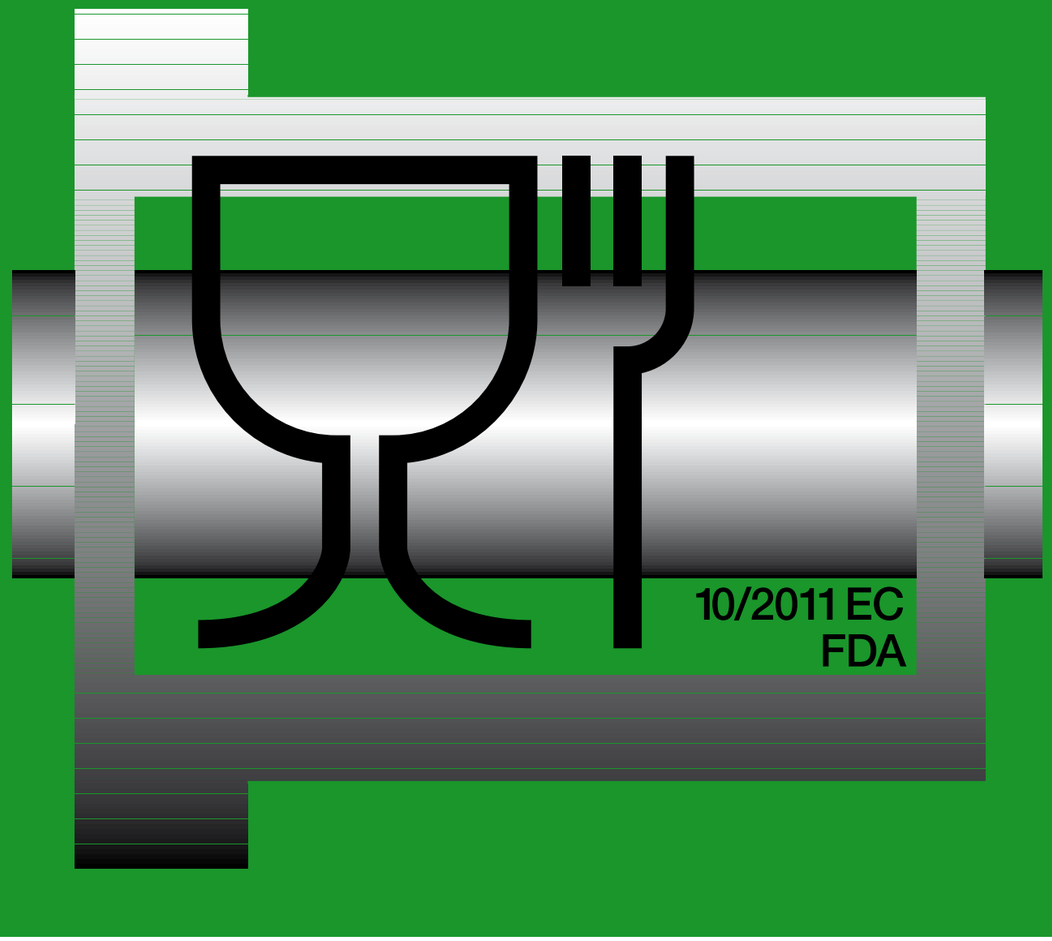
	Temperature [°C] [123]	Surface pressure [MPa] [124]	Coefficient of friction [µ] [125]	Wear [µm/km] [125]	Price index
iglidur® A181 – The universal bearing for food contact FDA- and EC 10/2011 compliant ▶ Page 325	90	31	0.18	0.48	
iglidur® A350 – The endurance runner at higher temperatures in the food sector FDA- and EC 10/2011 compliant ▶ Page 333	180	60	0.17	1.79	
iglidur® A500 – The media and temperature specialist in the food sector FDA- and EC 10/2011 compliant ▶ Page 341	250	120	0.36	4.10	
iglidur® A180 – The food all-rounder FDA-compliant ▶ Page 349	90	28	0.17	0.50	

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

iglidur® plain bearings | Advantages

	Temperature [°C] [123]	Surface pressure [MPa] [124]	Coefficient of friction [µ] [125]	Wear [µm/km] [125]	Price index
iglidur® A200 – The "food-classic" for low speeds FDA-compliant ▶ Page 357	80	18	0.45	1.62	
iglidur® A160 – "Food" bearing with high media resistance up to +90 °C FDA- and EC 10/2011 compliant ▶ Page 368	90	15	0.09	0.33	
iglidur® A290 – Robust Complies with the requirements of the BfR ▶ Page 375	140	70	0.33	4.78	
iglidur® UW160 – For contact with drinking water KTW-compliant ▶ Page 383	90	15	0.17	2.00	
iglidur® T220 – For the tobacco industry FDA-compliant ▶ Page 391	100	40	0.36	0.80	

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

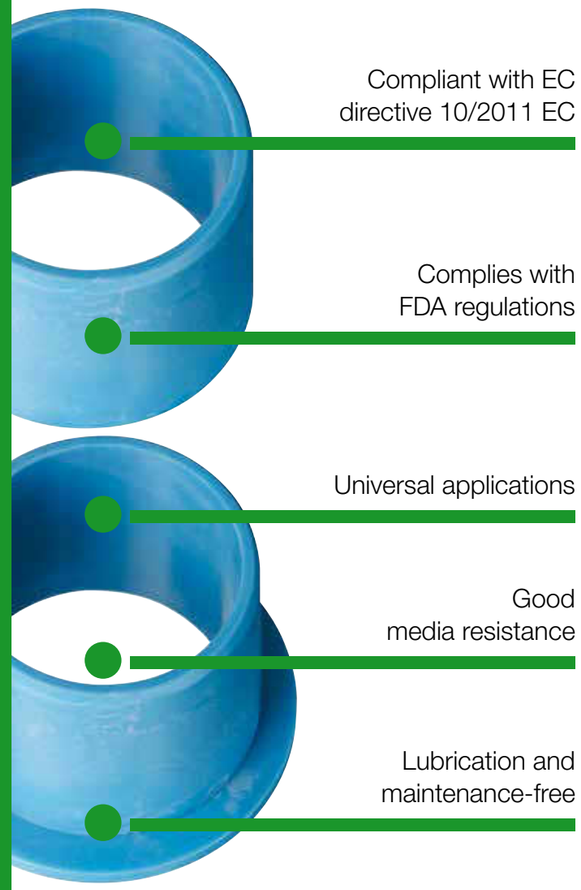


The universal bearing for contact with food – iglidur® A181

- Compliant with EC directive 10/2011 EC
- FDA-compliant
- Universally applicable
- Good media resistance
- Wear resistant
- Lubrication and maintenance-free
- Standard range from stock

iglidur® A181 | The universal bearing for contact with food

FDA- and EC 10/2011 compliant



The iglidur® A181 material is food compliant with directive 10/2011 EC and also to FDA specifications. The blue colour also facilitates the often required “optical detectability” in the food industry.

When to use it?

- When FDA-compliance is required
- When a material compliant with the 10/2011 EC is required
- When an universal material suitable for direct contact with food is required

When not to use it?

- When FDA and 10/2011 EC directive compliance are not required
  ▶ iglidur® J, page 141
- When temperatures are continuously greater than +90 °C
  ▶ iglidur® A350, page 333
- When a cost-effective universal bearing is required
  ▶ iglidur® G, page 79
  ▶ iglidur® P, page 113

Typical application areas

- Food industry
- Beverage technology
- Medical technology

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +90 °C
min. –50 °C

Ø 4–50 mm
More dimensions on request

Imperial dimensions available
▶ From page 1337

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

iglidur® A181 material complies with EC Directive 10/2011 EC and also with FDA (Food and Drug Administration) specifications for repeated contact with food.

iglidur® A181 | Technical data

Material properties table

General properties	Unit	iglidur® A181	Testing method
Density	g/cm³	1.38	
Colour		blue	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.2	DIN 53495
Max. water absorption	% weight	1.3	
Coefficient of sliding 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. long-term application temperature	°C	+90	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{12}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

Table 01: Material properties table

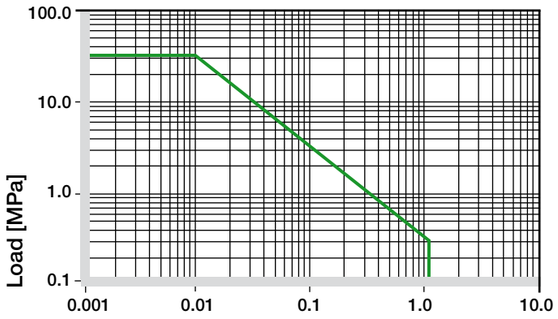


Diagram 01: Permissible pv values for iglidur® A181 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

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.

▶ Diagram, www.igus.eu/a181-moisture

Vacuum

When used in a vacuum environment, the iglidur® A181 plain bearings release moisture as a vapour. Use in a vacuum environment is only possible with dehumidified bearings.

Radiation resistance

Plain bearings made from iglidur® A181 are resistant to radiation up to an intensity of $2 \cdot 10^2$ Gy.

UV resistance

iglidur® A181 bearings are only conditionally resistant to UV radiation.

Medium	Resistance
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 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® A181 | Technical data

Due to their technical properties and their conformity with the relevant regulations, iglidur® A181 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.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® A181 plain bearings decreases. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

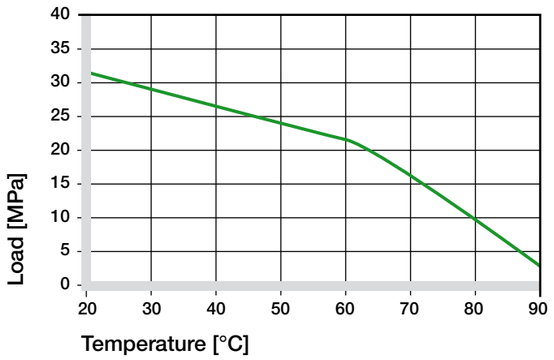


Diagram 02: Permissible maximum surface pressure as a function of temperature (31 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® A181 during radial loading.

▶ Surface pressure, **page 41**

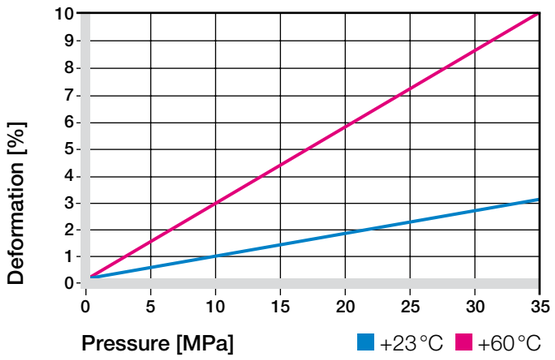


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

iglidur® A181 was developed for low surface speeds. Maximum speeds up to 0.8 m/s (rotating) and 3.5 m/s (linear) respectively are permitted for continuous application in 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 temperature level is rarely reached, due to varying application conditions.

▶ Surface speed, **page 44**
▶ pv value and lubrication, **page 86**

m/s	Rotating	Oscillating	Linear
Continuous	0.8	0.6	3.5
Short-term	1.2	1.0	5.0

Table 03: Maximum surface speeds

Temperatures

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. At temperatures over +60 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

Coefficient of friction and wear resistance alter with the application parameters (diagrams 04 and 05). For iglidur® A181 bearings, the alteration of the coefficient of friction μ depends on surface speed and the shaft surface finish.

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

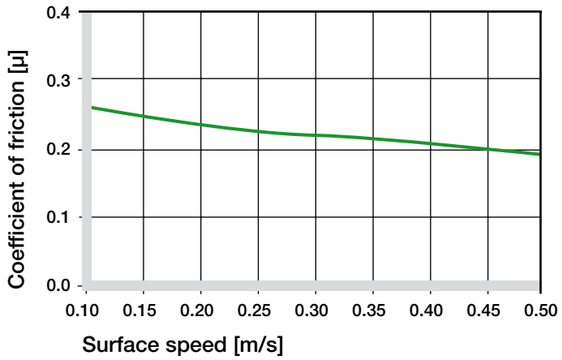


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1.0 MPa

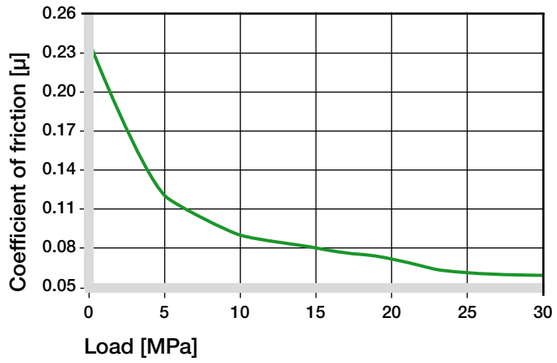


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

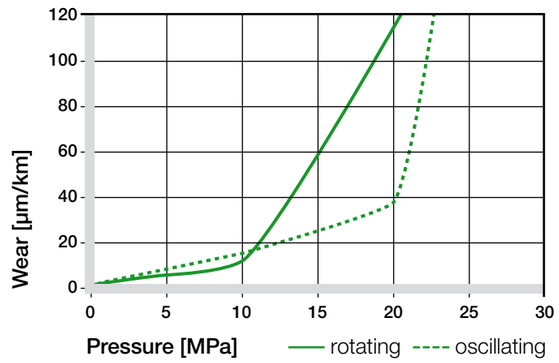


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

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 52**

iglidur® A181	Dry	Greases	Oil	Water
C. o. f. μ	0.10–0.21	0.08	0.03	0.04

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

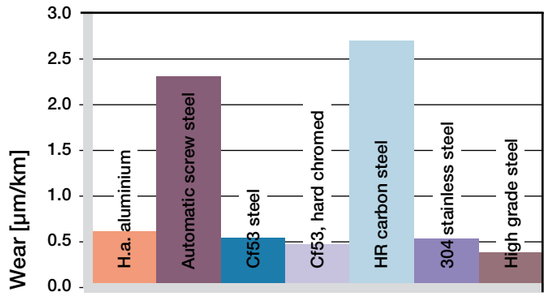


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1 MPa, v = 0.3 m/s

Installation tolerances

iglidur® A181 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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 E10 tolerances.

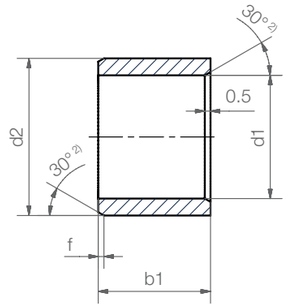
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® A181 E10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.014 +0.054	0 +0.010
> 3 to 6	0–0.030	+0.020 +0.068	0 +0.012
> 6 to 10	0–0.036	+0.025 +0.083	0 +0.015
> 10 to 18	0–0.043	+0.032 +0.102	0 +0.018
> 18 to 30	0–0.052	+0.040 +0.124	0 +0.021
> 30 to 50	0–0.062	+0.050 +0.150	0 +0.025
> 50 to 80	0–0.074	+0.060 +0.180	0 +0.030
> 80 to 120	0–0.087	+0.072 +0.212	0 +0.035
>120 to 180	0–0.100	+0.085 +0.245	0 +0.040

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

iglidur® A181 | Product range

Sleeve bearing (Form S)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
A181	S	M	-04	05	-04	
iglidur® material	Form S	Metric	Inner-Ø d1	Outer-Ø d2	Length b1	

Dimensions according to ISO 3547-1 and special dimensions

Imperial dimensions available
▶ From page 1344

Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	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	10.0	A181SM-1012-10
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	+0.032 +0.102	18.0	20.0	A181SM-1618-20
16.0		18.0	25.0	A181SM-1618-25
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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	25.0	A181SM-2832-25
28.0		32.0	30.0	A181SM-2832-30
30.0		34.0	20.0	A181SM-3034-20
30.0		34.0	25.0	A181SM-3034-25
30.0		34.0	30.0	A181SM-3034-30

3) After press-fit. Testing methods ▶ Page 57

iglidur® A181 | Product range

Sleeve bearing (Form S)

A181SM

Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	Part No.
30.0	+0.040 +0.124	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
32.0		36.0	40.0	A181SM-3236-40
35.0		39.0	20.0	A181SM-3539-20
35.0		39.0	30.0	A181SM-3539-30
35.0		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
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 57

Couldn't find your size?

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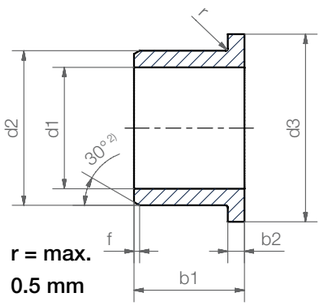
Even more dimensions from stock

More than 300 dimensions are now available. Search online for your required bearing.
▶ **www.igus.eu/iglidur-specialbearings**

iglidur® A181 | Product range

Flange bearing (Form F)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
A181	F	M	-0608	-04		
iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1	

Dimensions according to ISO 3547-1 and special dimensions

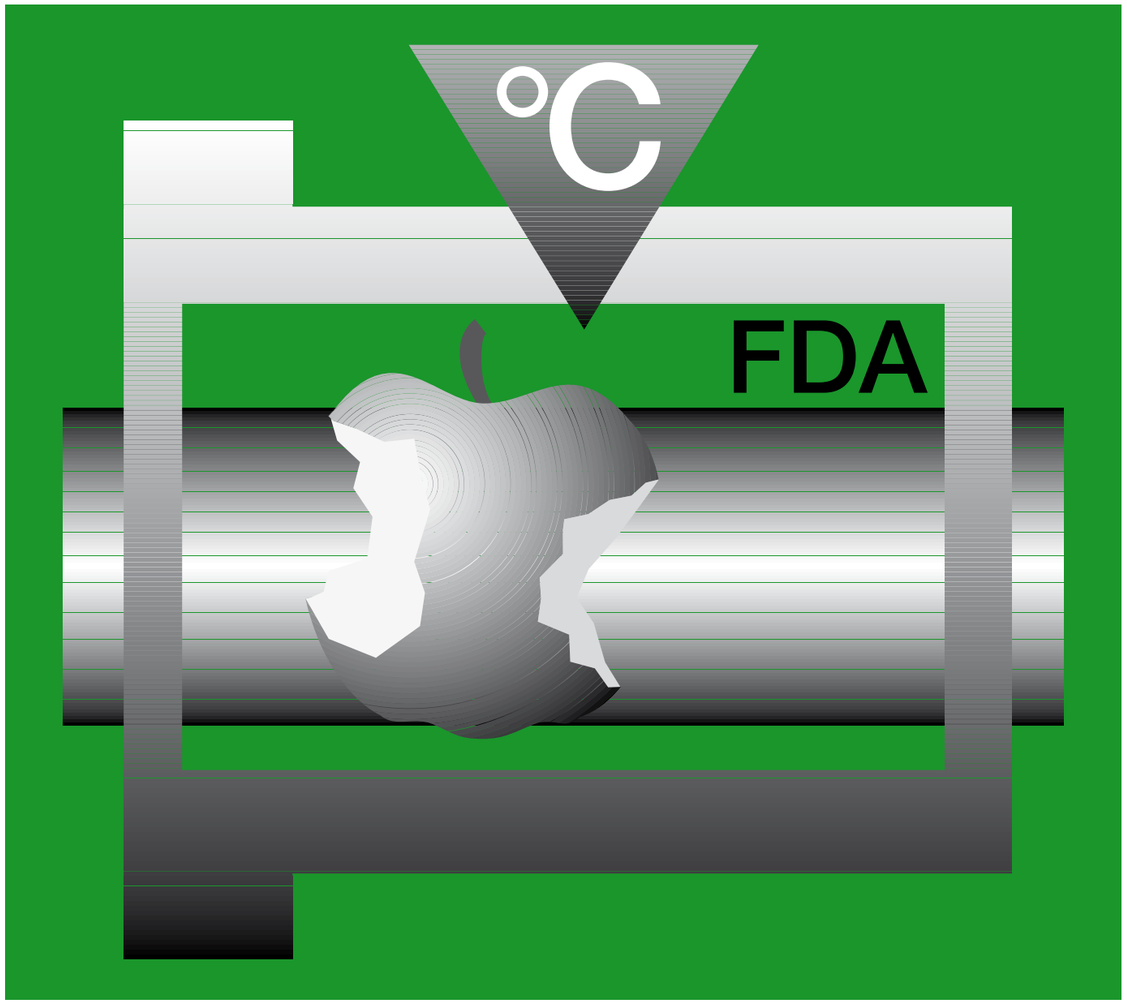
Inch Imperial dimensions available
▶ From page 1371

Dimensions [mm]

d1	d1- Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
6.0	+0.020 +0.068	8.0	12.0	4.0	1.0	**A181FM-0608-04**
6.0		8.0	12.0	6.0	1.0	**A181FM-0608-06**
6.0		8.0	12.0	8.0	1.0	**A181FM-0608-06**
8.0		10.0	15.0	5.5	1.0	**A181FM-0810-05**
8.0		10.0	15.0	7.5	1.0	**A181FM-0810-07**
8.0		10.0	15.0	9.5	1.0	**A181FM-0810-09**
8.0	+0.025 +0.083	10.0	15.0	10.0	1.0	**A181FM-0810-10**
10.0		12.0	18.0	7.0	1.0	**A181FM-1012-07**
10.0		12.0	18.0	9.0	1.0	**A181FM-1012-09**
10.0		12.0	18.0	10.0	1.0	**A181FM-1012-10**
10.0		12.0	18.0	12.0	1.0	**A181FM-1012-12**
10.0		12.0	18.0	17.0	1.0	**A181FM-1012-17**
12.0		14.0	20.0	7.0	1.0	**A181FM-1214-07**
12.0		14.0	20.0	9.0	1.0	**A181FM-1214-09**
12.0		14.0	20.0	12.0	1.0	**A181FM-1214-12**
12.0	+0.032	14.0	20.0	17.0	1.0	**A181FM-1214-17**
14.0	+0.102	16.0	22.0	12.0	1.0	**A181FM-1416-12**
14.0		16.0	22.0	17.0	1.0	**A181FM-1416-17**
15.0		17.0	23.0	9.0	1.0	**A181FM-1517-09**
15.0		17.0	23.0	12.0	1.0	**A181FM-1517-12**
15.0		17.0	23.0	17.0	1.0	**A181FM-1517-17**
16.0		18.0	24.0	12.0	1.0	**A181FM-1618-12**
16.0	+0.032	18.0	24.0	17.0	1.0	**A181FM-1618-17**
18.0	+0.102	20.0	26.0	12.0	1.0	**A181FM-1820-12**
18.0		20.0	26.0	17.0	1.0	**A181FM-1820-17**
18.0		20.0	26.0	22.0	1.0	**A181FM-1820-22**
20.0		23.0	30.0	11.5	1.5	**A181FM-2023-11**
20.0		23.0	30.0	16.5	1.5	**A181FM-2023-16**
20.0		23.0	30.0	21.5	1.5	**A181FM-2023-21**
25.0		28.0	35.0	11.5	1.5	**A181FM-2528-11**
25.0		28.0	35.0	16.5	1.5	**A181FM-2528-16**
25.0	+0.040 +0.124	28.0	35.0	21.5	1.5	**A181FM-2528-21**
30.0		34.0	42.0	16.0	2.0	**A181FM-3034-16**
30.0		34.0	42.0	26.0	2.0	**A181FM-3034-26**
35.0		39.0	47.0	16.0	2.0	**A181FM-3539-16**
35.0		39.0	47.0	26.0	2.0	**A181FM-3539-26**
40.0		44.0	52.0	30.0	2.0	**A181FM-4044-30**
40.0		44.0	52.0	40.0	2.0	**A181FM-4044-40**
45.0		50.0	58.0	50.0	2.0	**A181FM-4550-50**

[3] After press-fit. Testing methods ▶ Page 57

Couldn't find your size?
Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

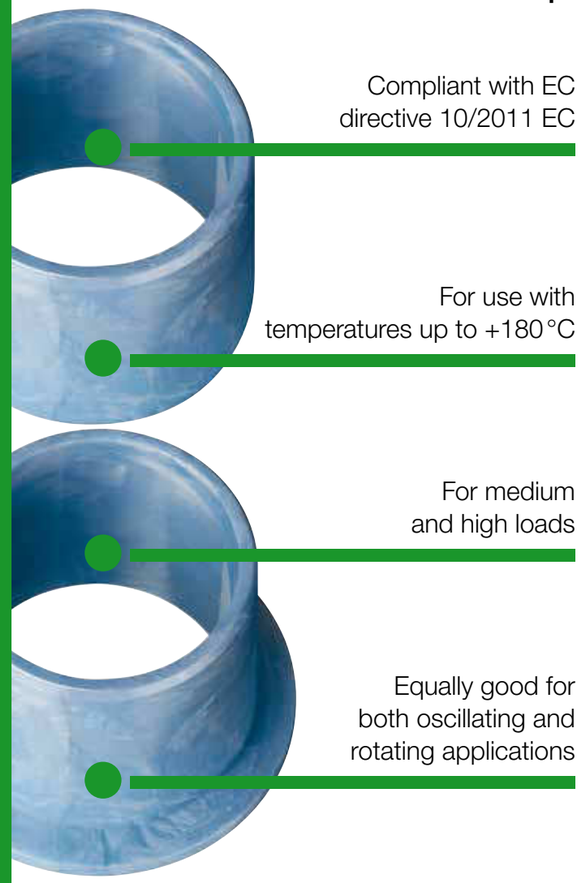


The endurance runner at higher temperatures in the food sector – iglidur® A350

- Compliant with EC directive 10/2011 EC
- FDA-compliant
- For use with temperatures up to +180 °C
- For medium and high loads
- Equally good for both oscillating and rotating applications
- Lubrication and maintenance-free
- Standard range from stock

iglidur® A350 | The endurance runner at higher temperatures in the food sector

FDA- and EC 10/2011 compliant



Compliant with EC directive 10/2011 EC

For use with temperatures up to +180 °C

For medium and high loads

Equally good for both oscillating and rotating applications

An universal bearing for use in the area of food and pharmaceutical industries. Composition of FDA-conform materials allows the use in areas where due to the contact with food other bearings cannot be used. With good tribological and mechanical properties, iglidur® A350 bearings are suitable for general purpose use in food machinery.

When to use it?

- When FDA-compliance is required
- If wear-resistance and FDA-compliance is necessary at high loads
- If the bearing is use in acid environment

When not to use it?

- When temperatures are continuously greater than +180 °C
  ▶ iglidur® A500, page 341
- When the maximum abrasion resistance is necessary
  ▶ iglidur® J, page 141
- When a cost-effective FDA bearing is required
  ▶ iglidur® A200, page 357
  ▶ iglidur® A180, page 349
- For high speeds
  ▶ iglidur® J, page 141

Typical application areas

- Food industry
- Beverage technology
- Medical technology

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +180 °C
min. –100 °C

Ø 4–50 mm
More dimensions on request

Imperial dimensions available
▶ **From page 1337**

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

iglidur® A350 material complies with EC Directive 10/2011 EC and also with FDA (Food and Drug Administration) specifications for repeated contact with food.

iglidur® A350 | Technical data

Material properties table

General properties	Unit	iglidur® A350	Testing method
Density	g/cm³	1.42	
Colour		blue	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.6	DIN 53495
Max. water absorption	% weight	1.9	
Coefficient of sliding friction, dynamic against steel	µ	0.1–0.2	
pv value, max. (dry)	MPa · m/s	0.4	
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. long-term application temperature	°C	+180	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{11}$	DIN IEC 93
Surface resistance	Ω	$> 10^{11}$	DIN 53482

Table 01: Material properties table

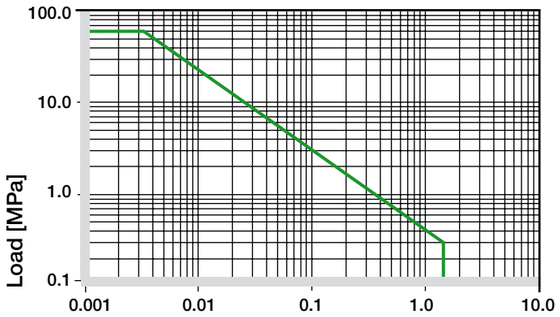


Diagram 01: Permissible pv values for iglidur® A350 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The humidity absorption of iglidur® A350 is low and can be ignored when using standard-bearings. Even when saturated with water, iglidur® A350 does not absorb more than 1.9 % weight of water.

▶ **Diagram, www.igus.eu/a350-moisture**

Vacuum

When used in a vacuum, the iglidur® A350 plain bearings release moisture as a vapour. Only dehumidified bearings are suitable in vacuum.

Radiation resistance

Plain bearings made from iglidur® A350 are resistant to radiation up to an intensity of $2 \cdot 10^2$ Gy.

UV resistance

iglidur® A350 bearings are resistant to UV radiation.

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

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® A350 | Technical data

iglidur® A350 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.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® A350 plain bearings decreases. The diagram 02 shows this inverse relationship. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

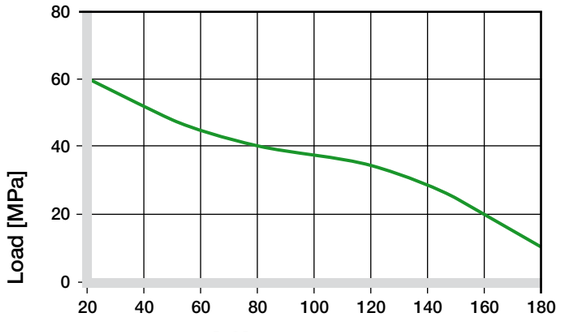


Diagram 02: Permissible maximum surface pressure as a function of temperature (60 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® A350 under different loads. At the permissible maximum surface pressure of 60 MPa the deformation at room temperature is less than 5 %.

▶ Surface pressure, **page 41**

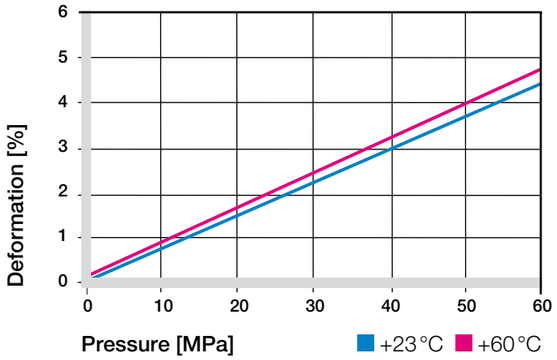


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

iglidur® A350 bearings are suitable for low and medium speeds in rotating and oscillating use. Even linear movements can often be realised with iglidur® A350. With high sliding speeds, iglidur® J or iglidur® L250 can be interesting alternatives because the wear rate of these materials is better.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	1	0.8	2.5
Short-term	1.2	0.9	3

Table 03: Maximum surface speeds

Temperatures

Its temperature resistance makes iglidur® A350 an ideal material for bearing in the area of foodstuffs. At temperatures over +140 °C an additional securing is required. The wear-rate of iglidur® A350 bearings rises only little with higher temperatures. Tests have shown good wear results at +100 °C on all tested shaft materials.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

The coefficient of friction of iglidur® A350 on a steel shaft are in the mid range (diagrams 04 and 05).

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

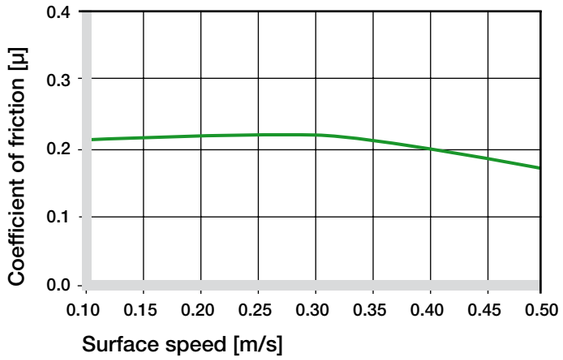


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1 MPa

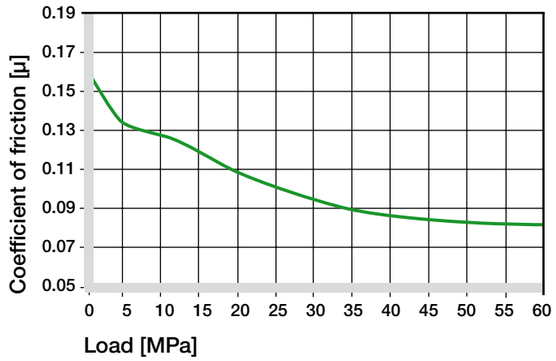


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

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 chrome plated steel are all suitable. Hard-anodised aluminium is also well suited for both linear and rotating movements.

▶ Shaft materials, **page 52**

iglidur® A350	Dry	Greases	Oil	Water
C. o. f. µ	0.1–0.2	0.09	0.04	0.04

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

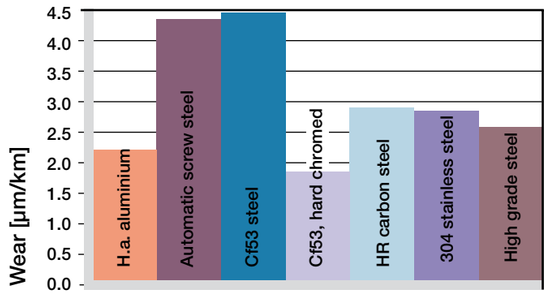


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1 MPa, v = 0.3 m/s

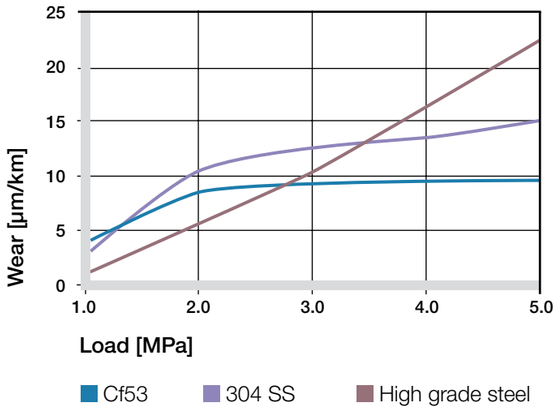


Diagram 07: Wear, rotating with different shaft materials, as a function of the pressure

Installation tolerances

iglidur® A350 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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).

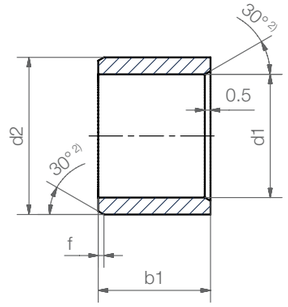
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® A350 F10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.006 +0.046	0 +0.010
> 3 to 6	0–0.030	+0.010 +0.058	0 +0.012
> 6 to 10	0–0.036	+0.013 +0.071	0 +0.015
> 10 to 18	0–0.043	+0.016 +0.086	0 +0.018
> 18 to 30	0–0.052	+0.020 +0.104	0 +0.021
> 30 to 50	0–0.062	+0.025 +0.125	0 +0.025
> 50 to 80	0–0.074	+0.030 +0.150	0 +0.030

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

iglidur® A350 | Product range

Sleeve bearing (Form S)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
A350	S	M	-04	05	-04
		iglidur® material	Inner-Ø d1	Outer-Ø d2	Length b1
	Form S				
		Metric			

Dimensions according to ISO 3547-1 and special dimensions

Inch Imperial dimensions available
▶ From page 1346

Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	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		10.0	8.0	**A350SM-0810-08**
8.0		10.0	10.0	**A350SM-0810-10**
8.0		10.0	12.0	**A350SM-0810-12**
10.0	+0.013 +0.071	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		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	+0.016 +0.068	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	+0.016 +0.068	18.0	20.0	**A350SM-1618-20**
16.0		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**

3) After press-fit. Testing methods ▶ Page 57

iglidur® A350 | Product range

Sleeve bearing (Form S)

Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	Part No.
30.0	+0.020 +0.104	34.0	30.0	**A350SM-3034-30**
30.0		34.0	40.0	**A350SM-3034-40**
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**
40.0		44.0	50.0	**A350SM-4044-50**
45.0	+0.025 +0.125	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**

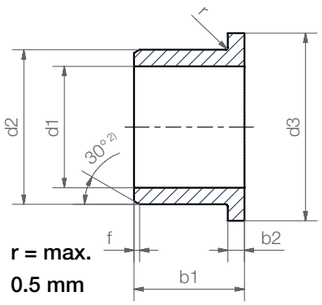
3) After press-fit. Testing methods ▶ Page 57

Couldn't find your size?
Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

Even more dimensions from stock
More than 300 dimensions are now available. Search online for your required bearing.
▶ **www.igus.eu/iglidur-specialbearings**

iglidur® A350 | Product range

Flange bearing (Form F)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
A350	F	M	-06	08	-06	
iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1	

Dimensions according to ISO 3547-1 and special dimensions

Imperial dimensions available
▶ From page 1372

Dimensions [mm]

d1	d1- Tolerance 3)	d2	d3 d13	b1 h13	b2 –0.14	Part No.
5.0		7.0	11.0	5.0	1.0	A350FM-0507-05
6.0	+0.010	8.0	12.0	4.0	1.0	A350FM-0608-04
6.0	+0.058	8.0	12.0	6.0	1.0	A350FM-0608-06
6.0		8.0	12.0	8.0	1.0	A350FM-0608-08
8.0		10.0	15.0	5.5	1.0	A350FM-0810-05
8.0		10.0	15.0	7.5	1.0	A350FM-0810-07
8.0		10.0	15.0	9.5	1.0	A350FM-0810-09
8.0		10.0	15.0	10.0	1.0	A350FM-0810-10
10.0	+0.013 +0.071	12.0	18.0	7.0	1.0	A350FM-1012-07
10.0		12.0	18.0	9.0	1.0	A350FM-1012-09
10.0		12.0	18.0	10.0	1.0	A350FM-1012-10
10.0		12.0	18.0	12.0	1.0	A350FM-1012-12
10.0		12.0	18.0	17.0	1.0	A350FM-1012-17
12.0		14.0	20.0	7.0	1.0	A350FM-1214-07
12.0		14.0	20.0	9.0	1.0	A350FM-1214-09
12.0		14.0	20.0	12.0	1.0	A350FM-1214-12
12.0	+0.016 +0.068	14.0	20.0	17.0	1.0	A350FM-1214-17
14.0		16.0	22.0	12.0	1.0	A350FM-1416-12
14.0		16.0	22.0	17.0	1.0	A350FM-1416-17
15.0		17.0	23.0	9.0	1.0	A350FM-1517-09
15.0		17.0	23.0	12.0	1.0	A350FM-1517-12
15.0		17.0	23.0	17.0	1.0	A350FM-1517-17
16.0	+0.016 +0.068	18.0	24.0	12.0	1.0	A350FM-1618-12
16.0		18.0	24.0	17.0	1.0	A350FM-1618-17
18.0		20.0	26.0	12.0	1.0	A350FM-1820-12
18.0		20.0	26.0	17.0	1.0	A350FM-1820-17
18.0		20.0	26.0	22.0	1.0	A350FM-1820-22
20.0		23.0	30.0	11.5	1.5	A350FM-2023-11
20.0		23.0	30.0	16.5	1.5	A350FM-2023-16
20.0		23.0	30.0	21.5	1.5	A350FM-2023-21
25.0	+0.020	28.0	35.0	11.5	1.5	A350FM-2528-11
25.0	+0.104	28.0	35.0	16.5	1.5	A350FM-2528-16
25.0		28.0	35.0	21.5	1.5	A350FM-2528-21
30.0		34.0	42.0	16.0	2.0	A350FM-3034-16
30.0		34.0	42.0	26.0	2.0	A350FM-3034-26
35.0		39.0	47.0	16.0	2.0	A350FM-3539-16
35.0	+0.025 +0.125	39.0	47.0	26.0	2.0	A350FM-3539-26
40.0		44.0	52.0	30.0	2.0	A350FM-4044-30
40.0		44.0	52.0	40.0	2.0	A350FM-4044-40
45.0		50.0	58.0	50.0	2.0	A350FM-4550-50

3) After press-fit. Testing methods ▶ Page 57

Couldn't find your size?
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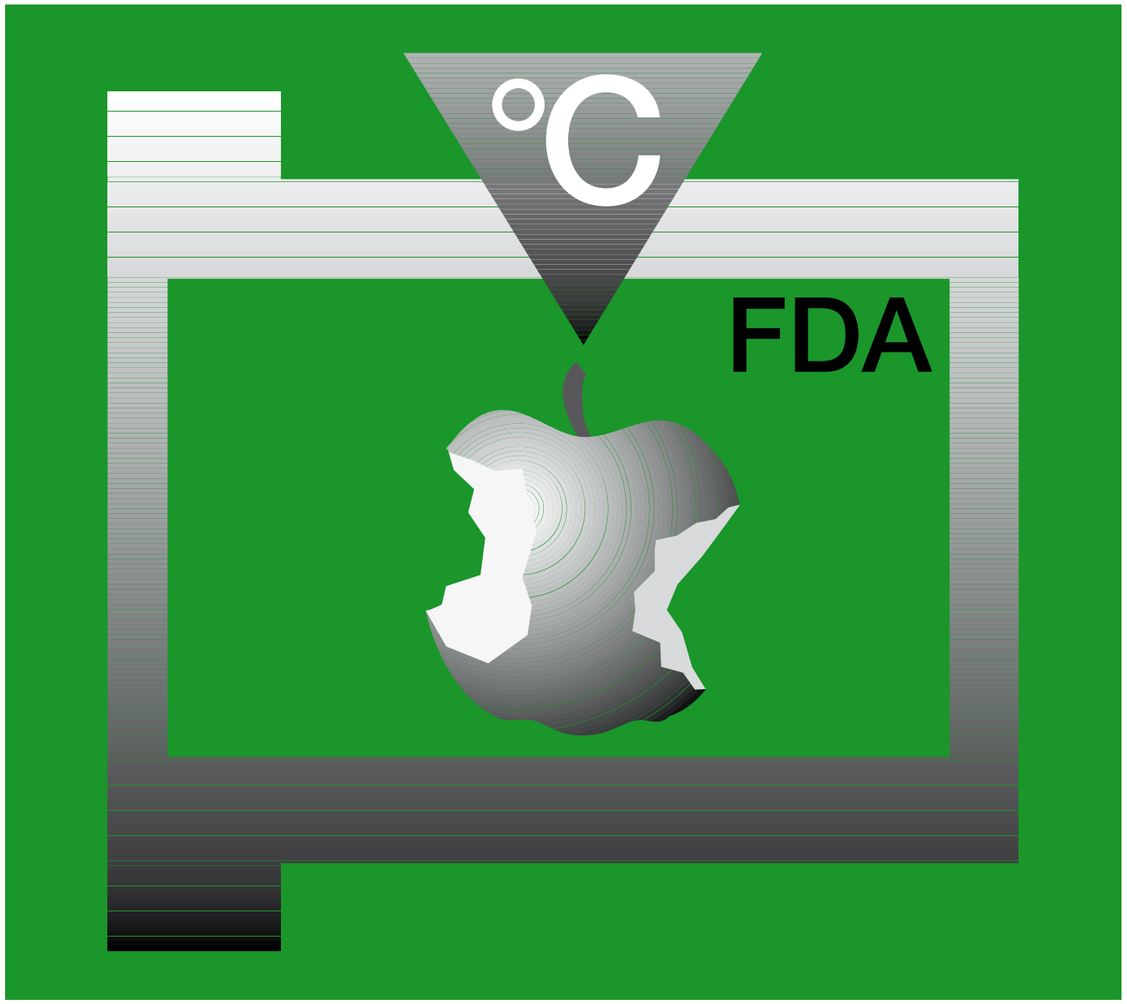


The media and temperature specialist in the food sector – iglidur® A500

- Compliant with EC directive 10/2011 EC
- FDA-compliant
- Temperature resistant from –100 °C to +250 °C
- High chemical resistance
- Lubrication and maintenance-free
- Standard range from stock

iglidur® A500 | The media and temperature specialist in the food sector

FDA- and EC 10/2011 compliant

Compliant with EC directive 10/2011 EC

Temperature resistant from –100 °C to +250 °C

High chemical resistance

Polymer bearings made from iglidur® A500 can be exposed to extremely high temperatures and consist of materials suitable for direct contact with food (FDA-compliant).

When to use it?

- When FDA-compliance is required
- When a high chemical resistance is required
- Good abrasion resistance
- Temperature resistant from –100 °C to +250 °C

When not to use it?

- When extremely high wear resistance is required
  ▶ iglidur® X6, page 257
  ▶ iglidur® Z, page 247
- If no resistance to temperature or chemicals is required
  ▶ iglidur® A180, page 349
  ▶ iglidur® A200, page 357
- When a cost-effective universal bearing is required
  ▶ iglidur® G, page 79
  ▶ iglidur® P, page 113

Typical application areas

- Food industry
- Beverage technology
- Medical technology

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +250 °C
min. –100 °C

Ø 4–50 mm
More dimensions on request

Imperial dimensions available
▶ From page 1337

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

iglidur® A500 material complies with EC Directive 10/2011 EC and also with FDA (Food and Drug Administration) specifications for repeated contact with food.

iglidur® A500 | Technical data

Material properties table

General properties	Unit	iglidur® A500	Testing method
Density	g/cm³	1.28	
Colour		brown	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.3	DIN 53495
Max. water absorption	% weight	0.5	
Coefficient of sliding 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. long-term application temperature	°C	+250	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{14}$	DIN IEC 93
Surface resistance	Ω	$> 10^{13}$	DIN 53482

Table 01: Material properties table

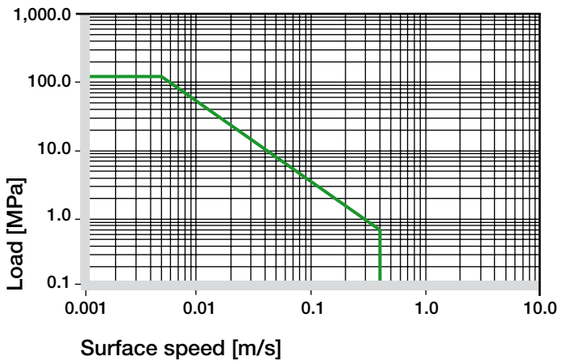


Diagram 01: Permissible pv values for iglidur® A500 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® A500 plain bearings is only 0.5 % weight when saturated.

▶ Diagram, www.igus.eu/a500-moisture

Vacuum

In a vacuum, iglidur® A500 plain bearings can only be used to a limited degree.

Radiation resistance

The iglidur® A500 bearings are resistant up to a radiation intensity of $2 \cdot 10^5$ Gy.

UV resistance

To a large extent, iglidur® A500 plain bearings are resistant to UV radiation.

Medium	Resistance
Alcohols	+
Hydrocarbons	+
Greases, oils without additives	+
Fuels	+
Diluted acids	+
Strong acids	+
Diluted alkalines	+
Strong alkalines	+

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® A500 | Technical data

Bearings made from iglidur® A500 can be used at high temperatures and are permitted for use in direct contact with foodstuffs (FDA-compliant). They exhibit an exceptionally good chemical resistance and are suitable for heavy-duty use in machinery for the food industry. Though iglidur® A500 is an extremely soft material, it simultaneously possesses an excellent compressive strength even at high temperatures.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® A500 plain bearings decreases. The diagram 02 shows this inverse relationship. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

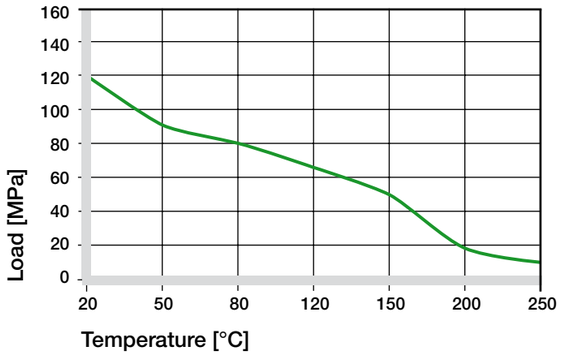


Diagram 02: Permissible maximum surface pressure as a function of temperature (120 MPa at +20 °C)

Diagram 02 shows the maximum permissible surface pressure of the bearing dependent on the temperature. This combination of high stability and high flexibility acts very positively with vibrations and edge loads. As the wear of the bearing rapidly escalates from pressures of 10 to 20 MPa, we recommend a particularly accurate testing of the application above these limits.

▶ Surface pressure, **page 41**

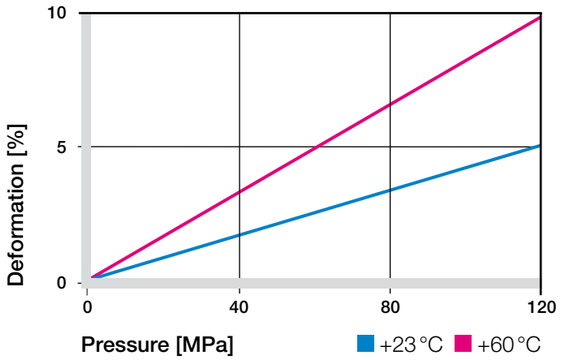


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

iglidur® A500 also permits high surface speeds due to the high temperature resistance. The coefficient of friction rises however by these high rotatory speeds leading to a higher heating up of the bearing. Tests show that bearings made from iglidur® A500 have a better wear resistance and higher permitted pv values in pivoting applications.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	0.6	0.4	1
Short-term	1	0.7	2

Table 03: Maximum surface speeds

Temperatures

The short-term permitted maximum application temperature is +300 °C. With increasing temperatures, the compressive strength of iglidur® J500 plain bearings decreases. The diagram 02 shows this inverse relationship. The temperatures prevailing in the bearing system also have an influence on the bearing wear. At temperatures over +130 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

The coefficient of friction is dependent on the load that acts on the bearing (diagrams 04 and 05).

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

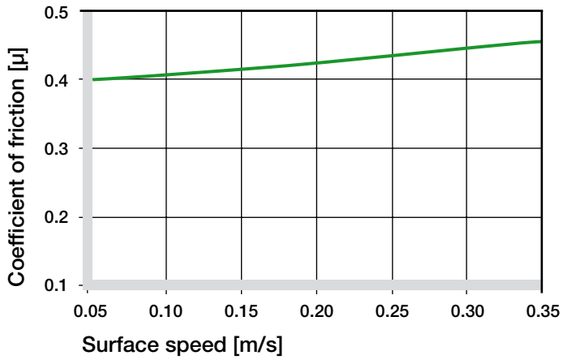


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

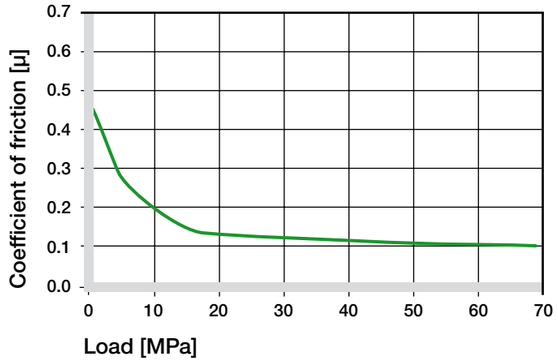


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

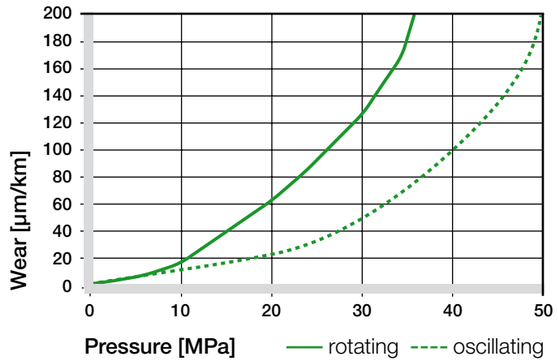


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Shaft materials

Diagram 06 displays a summary of the results of tests with different shaft materials conducted with bearings made from iglidur® A500. The combination “iglidur® A500/hard-chromed shaft” clearly stands out in rotating application. Up to about 2.0 MPa, 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.
Please contact us in case the shaft material scheduled by you is not included in these figures.

▶ Shaft materials, **page 52**

iglidur® A500	Dry	Greases	Oil	Water
C. o. f. µ	0.26–0.41	0.09	0.04	0.04

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

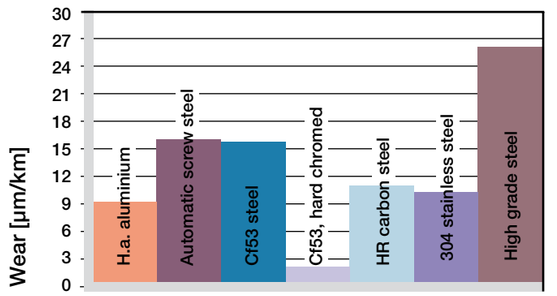


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1 MPa, v = 0.3 m/s

Installation tolerances

iglidur® A500 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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).

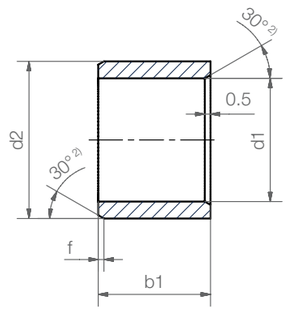
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® A500 F10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.006 +0.046	0 +0.010
> 3 to 6	0–0.030	+0.010 +0.058	0 +0.012
> 6 to 10	0–0.036	+0.013 +0.071	0 +0.015
> 10 to 18	0–0.043	+0.016 +0.086	0 +0.018
> 18 to 30	0–0.052	+0.020 +0.104	0 +0.021
> 30 to 50	0–0.062	+0.025 +0.125	0 +0.025
> 50 to 80	0–0.074	+0.030 +0.150	0 +0.030

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

iglidur® A500 | Product range

Sleeve bearing (Form S)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
A500	S	M	-04	05	-04
	Form S	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

Imperial dimensions available
▶ From page 1347

Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	Part No.
4.0		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	+0.010 +0.058	7.0	10.0	A500SM-0507-10
6.0		8.0	6.0	A500SM-0608-06
6.0		8.0	8.0	A500SM-0608-08
6.0		8.0	10.0	A500SM-0608-10
8.0		10.0	6.0	A500SM-0810-06
8.0		10.0	8.0	A500SM-0810-08
8.0		10.0	10.0	A500SM-0810-10
8.0		10.0	12.0	A500SM-0810-12
10.0	+0.013 +0.071	12.0	8.0	A500SM-1012-08
10.0		12.0	10.0	A500SM-1012-10
10.0		12.0	12.0	A500SM-1012-12
10.0		12.0	15.0	A500SM-1012-15
10.0		12.0	20.0	A500SM-1012-20
12.0		14.0	10.0	A500SM-1214-10
12.0		14.0	12.0	A500SM-1214-12
12.0		14.0	15.0	A500SM-1214-15
12.0		14.0	20.0	A500SM-1214-20
12.0		15.0	15.0	A500SM-1215-15
13.0	+0.016	15.0	10.0	A500SM-1315-10
13.0	+0.086	15.0	20.0	A500SM-1315-20
14.0		16.0	15.0	A500SM-1416-15
14.0		16.0	16.0	A500SM-1416-16
14.0		16.0	20.0	A500SM-1416-20
14.0		16.0	25.0	A500SM-1416-25
15.0		17.0	15.0	A500SM-1517-15
15.0		17.0	20.0	A500SM-1517-20
15.0		17.0	25.0	A500SM-1517-25
16.0		18.0	15.0	A500SM-1618-15
16.0	+0.016	18.0	20.0	A500SM-1618-20
16.0	+0.086	18.0	25.0	A500SM-1618-25
18.0		20.0	15.0	A500SM-1820-15
18.0		20.0	20.0	A500SM-1820-20
18.0		20.0	25.0	A500SM-1820-25
20.0		23.0	10.0	A500SM-2023-10
20.0		23.0	15.0	A500SM-2023-15
20.0		23.0	20.0	A500SM-2023-20
20.0		23.0	25.0	A500SM-2023-25
20.0		23.0	30.0	A500SM-2023-30
22.0		25.0	15.0	A500SM-2225-15
22.0		25.0	20.0	A500SM-2225-20
22.0		25.0	25.0	A500SM-2225-25
22.0		25.0	30.0	A500SM-2225-30
24.0	+0.020	27.0	15.0	A500SM-2427-15
24.0	+0.104	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

3) After press-fit. Testing methods ▶ Page 57

iglidur® A500 | Product range

Sleeve bearing (Form S)

Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	Part No.
30.0		34.0	20.0	A500SM-3034-20
30.0	+0.020	34.0	25.0	A500SM-3034-25
30.0	+0.104	34.0	30.0	A500SM-3034-30
30.0		34.0	40.0	A500SM-3034-40
32.0		36.0	20.0	A500SM-3236-20
32.0		36.0	30.0	A500SM-3236-30
32.0		36.0	40.0	A500SM-3236-40
35.0	+0.025	39.0	20.0	A500SM-3539-20
35.0	+0.125	39.0	30.0	A500SM-3539-30
35.0		39.0	40.0	A500SM-3539-40
35.0		39.0	50.0	A500SM-3539-50
40.0		44.0	20.0	A500SM-4044-20
40.0		44.0	30.0	A500SM-4044-30
40.0		44.0	40.0	A500SM-4044-40
40.0		44.0	50.0	A500SM-4044-50
45.0		50.0	20.0	A500SM-4550-20
45.0		50.0	30.0	A500SM-4550-30
45.0	+0.025	50.0	40.0	A500SM-4550-40
45.0	+0.125	50.0	50.0	A500SM-4550-50
50.0		55.0	20.0	A500SM-5055-20
50.0		55.0	30.0	A500SM-5055-30
50.0		55.0	40.0	A500SM-5055-40
50.0		55.0	50.0	A500SM-5055-50
50.0		55.0	60.0	A500SM-5055-60

3) After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

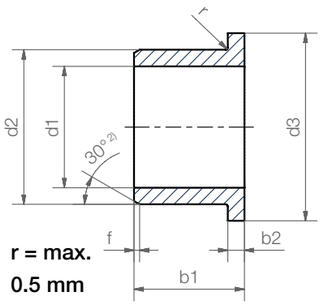
Even more dimensions from stock

More than 300 dimensions are now available. Search online for your required bearing.

▶ **www.igus.eu/iglidur-specialbearings**

iglidur® A500 | Product range

Flange bearing (Form F)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
A500	F	M	-04	05	-04	
iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1	

Dimensions according to ISO 3547-1 and special dimensions

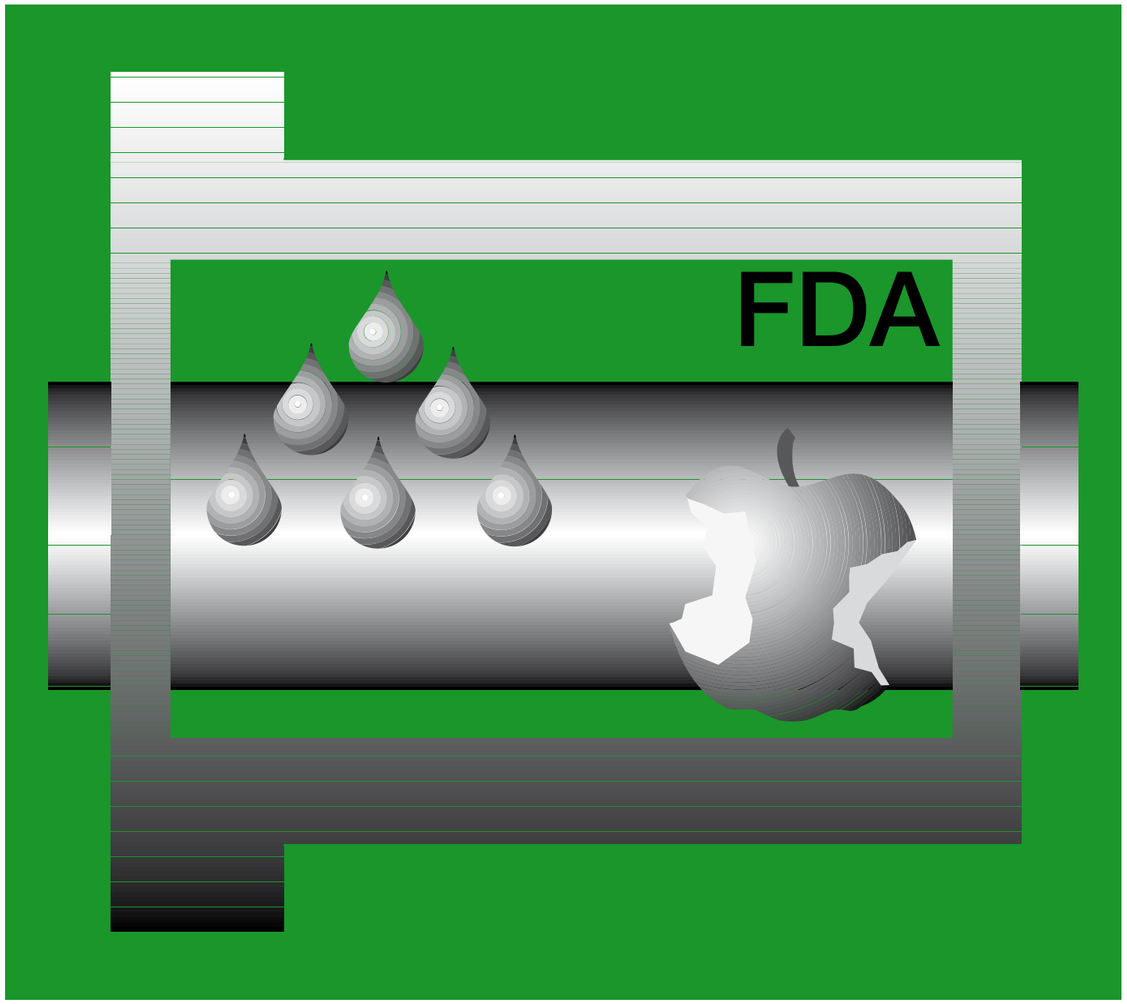
Imperial dimensions available
▶ From page 1373

Dimensions [mm]

d1	d1- Tolerance 3)	d2	d3 d13	b1 h13	b2 –0.14	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	2.0	A500FM-0408-06
6.0		8.0	12.0	4.0	1.0	A500FM-0608-04
6.0		8.0	12.0	6.0	1.0	A500FM-0608-06
6.0		8.0	12.0	8.0	1.0	A500FM-0608-08
8.0		10.0	15.0	5.5	1.0	A500FM-0810-05
8.0		10.0	15.0	7.5	1.0	A500FM-0810-07
8.0		10.0	15.0	9.5	1.0	A500FM-0810-09
8.0		10.0	15.0	10.0	1.0	A500FM-0810-10
10.0	+0.013 +0.071	12.0	18.0	7.0	1.0	A500FM-1012-07
10.0		12.0	18.0	9.0	1.0	A500FM-1012-09
10.0		12.0	18.0	12.0	1.0	A500FM-1012-12
10.0		12.0	18.0	15.0	1.0	A500FM-1012-15
10.0		12.0	18.0	17.0	1.0	A500FM-1012-17
12.0		14.0	20.0	7.0	1.0	A500FM-1214-07
12.0		14.0	20.0	9.0	1.0	A500FM-1214-09
12.0		14.0	20.0	12.0	1.0	A500FM-1214-12
12.0	+0.016 +0.086	14.0	20.0	13.0	1.0	A500FM-1214-13
12.0		14.0	20.0	15.0	1.0	A500FM-1214-15
12.0		14.0	20.0	17.0	1.0	A500FM-1214-17
14.0		16.0	22.0	12.0	1.0	A500FM-1416-12
14.0		16.0	22.0	17.0	1.0	A500FM-1416-17
15.0		17.0	23.0	9.0	1.0	A500FM-1517-09
15.0	+0.016 +0.086	17.0	23.0	12.0	1.0	A500FM-1517-12
15.0		17.0	23.0	17.0	1.0	A500FM-1517-17
16.0		18.0	24.0	12.0	1.0	A500FM-1618-12
16.0		18.0	24.0	17.0	1.0	A500FM-1618-17
18.0		20.0	26.0	12.0	1.0	A500FM-1820-12
18.0		20.0	26.0	17.0	1.0	A500FM-1820-17
18.0		20.0	26.0	22.0	1.0	A500FM-1820-22
20.0		23.0	30.0	11.5	1.5	A500FM-2023-11
20.0		23.0	30.0	16.5	1.5	A500FM-2023-16
25.0		28.0	35.0	11.5	1.5	A500FM-2528-11
25.0	+0.020 +0.104	28.0	35.0	16.5	1.5	A500FM-2528-16
25.0		28.0	35.0	21.5	1.5	A500FM-2528-21
20.0		23.0	30.0	21.5	1.5	A500FM-2023-21
30.0		34.0	42.0	16.0	2.0	A500FM-3034-16
30.0		34.0	42.0	26.0	2.0	A500FM-3034-26
30.0		34.0	42.0	40.0	2.0	A500FM-3034-40
35.0		39.0	47.0	16.0	2.0	A500FM-3539-16
35.0		39.0	47.0	26.0	2.0	A500FM-3539-26
35.0	+0.025	39.0	47.0	40.0	2.0	A500FM-3539-40
40.0	+0.125	44.0	52.0	30.0	2.0	A500FM-4044-30
40.0		44.0	52.0	40.0	2.0	A500FM-4044-40
45.0		50.0	58.0	50.0	2.0	A500FM-4550-50

3) After press-fit. Testing methods ▶ Page 57

Couldn't find your size?
Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.



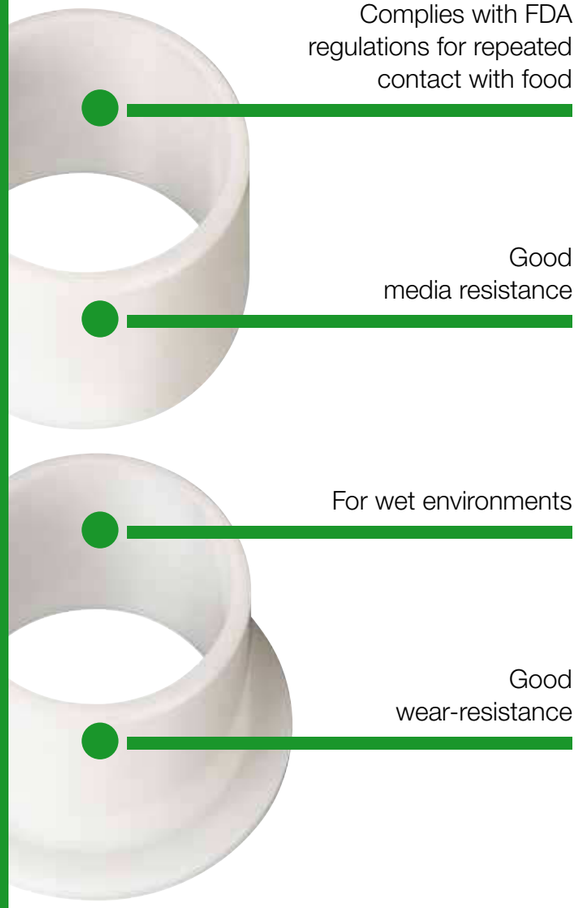
The food all-rounder – iglidur® A180

The iglidur® A180 material complies with food and drug administration (FDA) regulations for repeated contact with food

- Good media resistance
- For wet environments
- Good wear-resistance
- Lubrication and maintenance-free
- Standard range from stock

iglidur® A180 | The food all-rounder

FDA-compliant



Complies with FDA regulations for repeated contact with food

Good media resistance

For wet environments

Good wear-resistance

FDA-compliant material for applications with low to medium loads in immediate environs of (or contact with) food or drugs, as well as humidity.

When to use it?

- If the bearings have direct contact with food
- When FDA-compliance is required
- If low noise level is required
- If low moisture absorption is requested

When not to use it?

- When the maximum abrasion resistance is necessary
  ▶ iglidur® J, page 141
- When temperatures are continuously higher than +80 °C
  ▶ iglidur® A350, page 333
  ▶ iglidur® A500, page 341
- When a cost-effective universal bearing is required
  ▶ iglidur® G, page 79
  ▶ iglidur® P, page 113

Typical application areas

- Food industry
- Beverage technology
- Medical technology

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +90 °C
min. –50 °C

Ø 6–30 mm
More dimensions on request

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

iglidur® A180 material complies with the requirements of the FDA (Food and Drug Administration) specifications for repeated contact with food.

iglidur® A180 | Technical data

Material properties table

General properties	Unit	iglidur® A180	Testing method
Density	g/cm³	1.46	
Colour		white	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.2	DIN 53495
Max. water absorption	% weight	1.3	
Coefficient of sliding 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. long-term application temperature	°C	+90	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{12}$	DIN IEC 93
Surface resistance	Ω	$> 10^{11}$	DIN 53482

Table 01: Material properties table

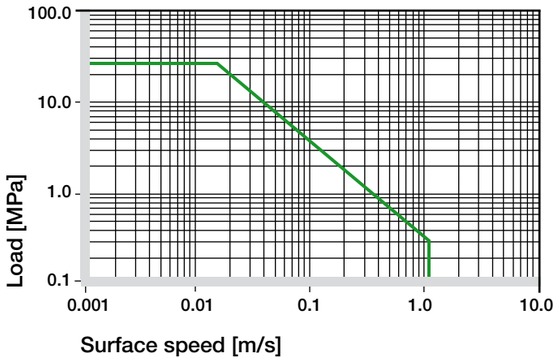


Diagram 01: Permissible pv values for iglidur® A180 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

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.

▶ Diagram, www.igus.eu/a180-moisture

Vacuum

When used in vacuum, the iglidur® A180 plain bearings release moisture as a vapour. Only dehumidified bearings are suitable in vacuum.

Radiation resistance

Plain bearings made from iglidur® A180 are resistant to radiation up to an intensity of $3 \cdot 10^2$ Gy.

UV resistance

iglidur® A180 bearings are resistant to UV radiation, but the tribological properties deteriorate with continuous exposure.

Medium	Resistance
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 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® A180 | Technical data

Bearings made from iglidur® A180 are suitable for application in direct contact with foodstuffs. Hence they are the ideal solution for bearing positions on machines for the food and packaging industries, the medical equipment manufacturing, for small equipment for households, etc. The iglidur® A180 distinguishes itself also in wet cleaning or where process-dependent contact with wet media is the business of the day by its extremely low humidity absorption.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® A180 plain bearings decreases. The diagram 02 shows this inverse relationship. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

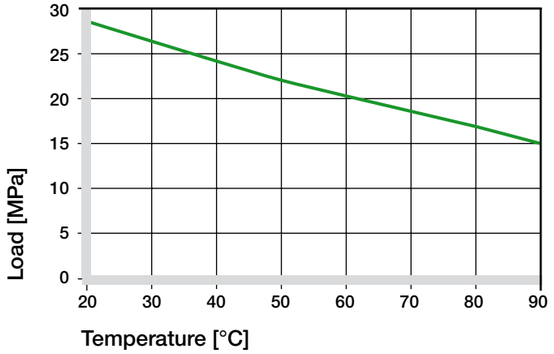


Diagram 02: Permissible maximum surface pressure as a function of temperature (28 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® A180 as a function of radial pressure. At the permissible maximum surface pressure of 20 MPa the deformation is less than 2.5 %.
Plastic deformation is minimal up to this radial load. It is nonetheless depending on the duration of the applied force.

▶ Surface pressure, **page 41**

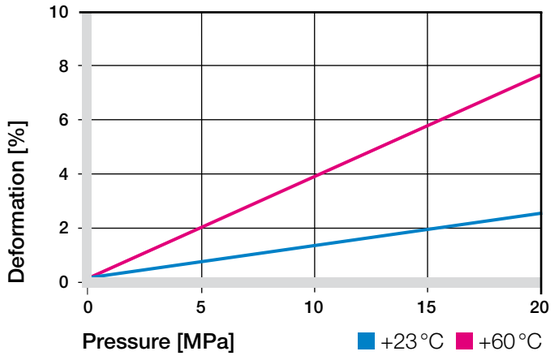


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

iglidur® A180 is 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. In practice these limit values are not always reached due to interactions.

▶ Surface speed, **page 44**
▶ pv value and lubrication, **page 86**

m/s	Rotating	Oscillating	Linear
Continuous	0.8	0.6	3.5
Short-term	1.2	1	5

Table 03: Maximum surface speeds

Temperatures

The short-term maximum application temperature is +110 °C. With increasing temperatures, the compressive strength of iglidur® A180 plain bearings decreases. The diagram 02 shows this inverse relationship. The temperatures prevailing in the bearing system also have an influence on the bearing wear. At temperatures over +60 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

Coefficient of friction and wear alter with the application parameters. With increasing load, the coefficient of friction however sinks markedly (diagrams 04 and 05).

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

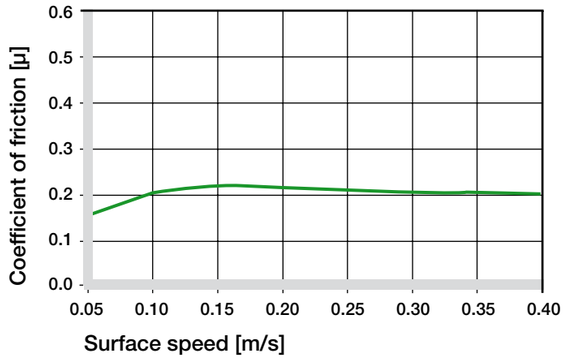


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

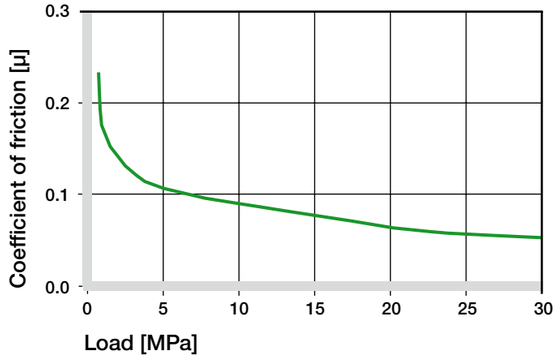


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

Diagram 06 shows the test results of iglidur® A180 bearings running against various shaft materials.
The combination "iglidur® A180/hard-anodised aluminium" 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 52**

iglidur® A180	Dry	Greases	Oil	Water
C. o. f. µ	0.05–0.23	0.09	0.04	0.04

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

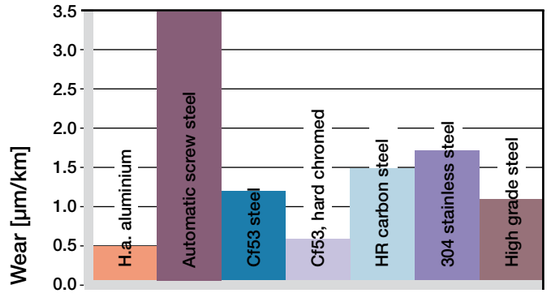


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1 MPa, v = 0.3 m/s

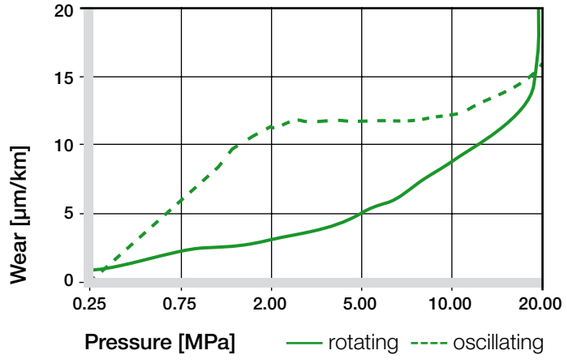


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Installation tolerances

iglidur® A180 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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 E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

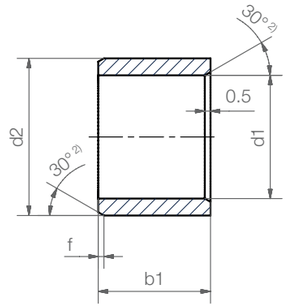
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® A180 E10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.014 +0.054	0 +0.010
> 3 to 6	0–0.030	+0.020 +0.068	0 +0.012
> 6 to 10	0–0.036	+0.025 +0.083	0 +0.015
> 10 to 18	0–0.043	+0.032 +0.102	0 +0.018
> 18 to 30	0–0.052	+0.040 +0.124	0 +0.021
> 30 to 50	0–0.062	+0.050 +0.150	0 +0.025

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

iglidur® A180 | Product range

Sleeve bearing (Form S)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
A180	S	M	-06	08	-10	
iglidur® material	Form S	Metric	Inner-Ø d1	Outer-Ø d2	Length b1	

Dimensions according to ISO 3547-1 and special dimensions

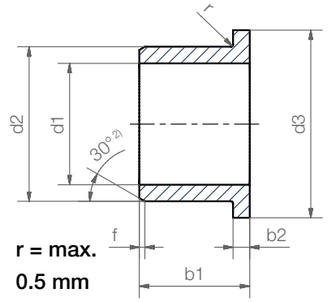
Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	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	+0.025 +0.083	12.0	10.0	**A180SM-1012-10**
12.0	+0.032 +0.102	14.0	15.0	**A180SM-1214-15**
16.0	+0.032 +0.102	18.0	15.0	**A180SM-1618-15**
20.0	+0.040 +0.124	23.0	20.0	**A180SM-2023-20**
25.0	+0.040 +0.124	28.0	30.0	**A180SM-2528-30**
30.0	+0.040 +0.124	34.0	20.0	**A180SM-3034-20**

[3] After press-fit. Testing methods ▶ Page 57

iglidur® A180 | Product range

Flange bearing (Form F)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
A180	F	M	-06	08	-06	
iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1	

Dimensions according to ISO 3547-1 and special dimensions

Dimensions [mm]

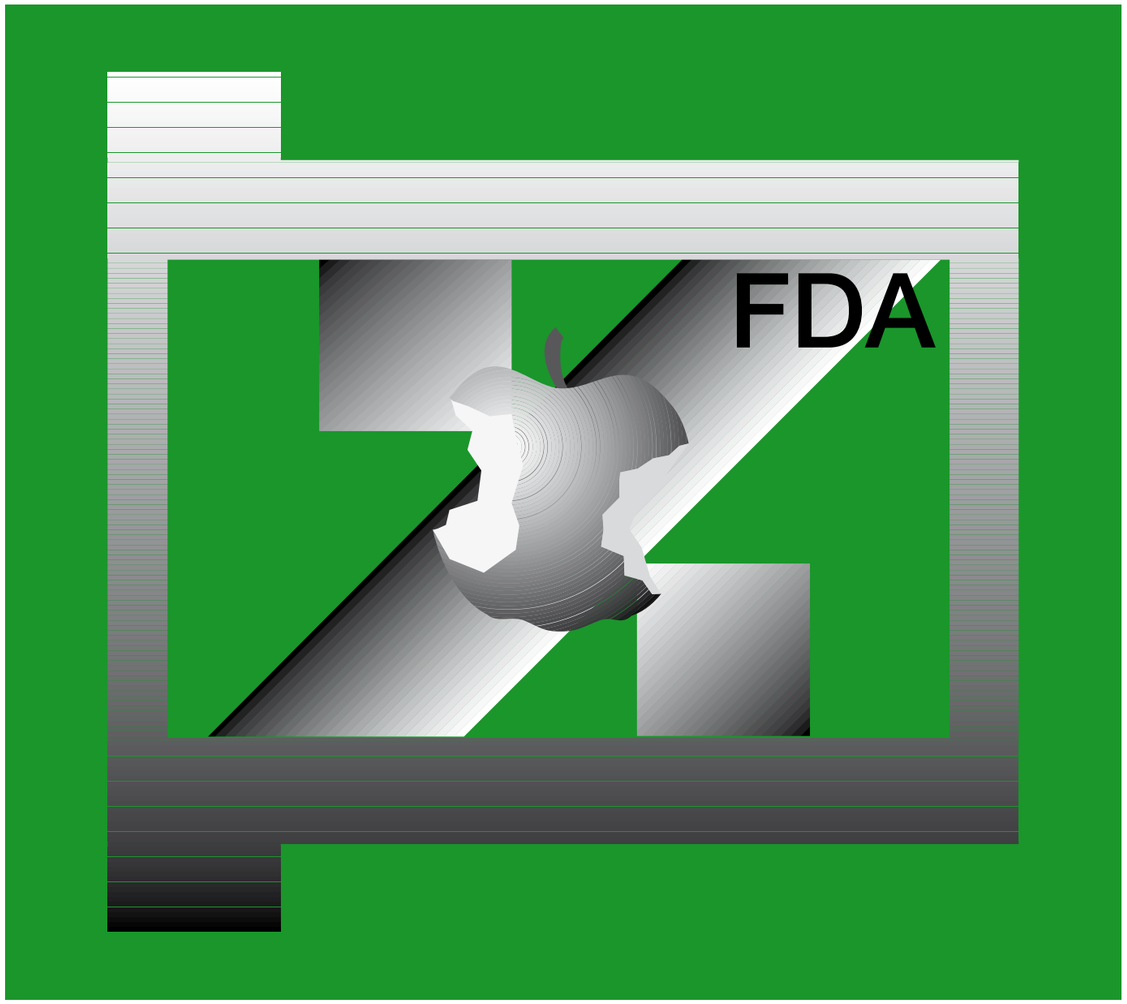
d1	d1-Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
6.0	+0.020 +0.068	8.0	12.0	6.0	1.0	**A180FM-0608-06**
8.0	+0.025 +0.083	10.0	15.0	10.0	1.0	**A180FM-0810-10**
10.0	+0.025 +0.083	12.0	18.0	10.0	1.0	**A180FM-1012-10**
12.0	+0.032 +0.102	14.0	20.0	15.0	1.0	**A180FM-1214-15**
16.0	+0.032 +0.102	18.0	24.0	17.0	1.0	**A180FM-1618-17**
20.0	+0.040 +0.124	23.0	30.0	21.5	1.5	**A180FM-2023-21**
25.0	+0.040 +0.124	28.0	35.0	21.5	1.5	**A180FM-2528-21**
30.0	+0.040 +0.124	34.0	42.0	26.0	2.0	**A180FM-3034-26**

[3] After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

My sketches



The "food-classic" for low speeds – iglidur® A200

iglidur® A200 material complies with food and drug administration (FDA) regulations

For direct contact with food

For low speeds

Lubrication and maintenance-free

Standard range from stock

iglidur® A200 | The "food-classic" for low speeds

FDA-compliant

Complies with FDA regulations

For direct contact with food

Thrust washers available only in imperial sizes
▶ From page 1337

FDA-compliant material for applications with low to medium loads in immediate environs of (or contact) with food or drugs.

When to use it?
- Suitable for contact with food
- If low noise level is required
- When dirt needs to become embedded
- When FDA-compliance is required

When not to use it?
- When the maximum abrasion resistance is necessary
  ▶ iglidur® W300, page 153
- When temperatures are continuously higher than +80 °C
  ▶ iglidur® A350, page 333
  ▶ iglidur® A500, page 341
- When a cost-effective universal bearing is required
  ▶ iglidur® G, page 79
- For operations in wet environments
  ▶ iglidur® A180, page 349

Typical application areas
- Food industry

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +80 °C
min. –40 °C

Ø 1–32 mm
More dimensions on request

Imperial dimensions available
▶ From page 1337

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

iglidur® A200 material complies with the requirements of the FDA (Food and Drug Administration) specifications for repeated contact with food.

iglidur® A200 | Technical data

Material properties table

General properties	Unit	iglidur® A200	Testing method
Density	g/cm³	1.14	
Colour		white	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	1.5	DIN 53495
Max. water absorption	% weight	7.6	
Coefficient of sliding 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. long-term application temperature	°C	+80	
Max. short-term application temperature	°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 volume resistance	Ωcm	> 10^{13}	DIN IEC 93
Surface resistance	Ω	> 10^{12}	DIN 53482

Table 01: Material properties table

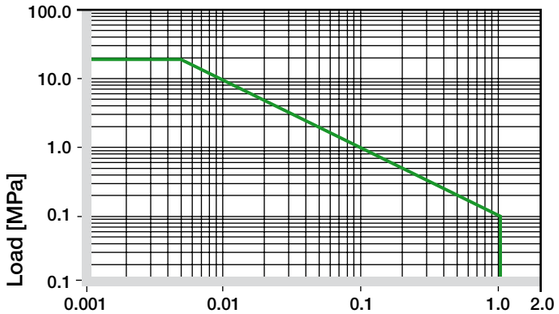


Diagram 01: Permissible pv values for iglidur® A200 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® A200 plain bearings is approximately 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.

▶ **Diagram, www.igus.eu/a200-moisture**

Vacuum

In a vacuum environment, iglidur® A200 plain bearings have restricted use.

Radiation resistance

Plain bearings made from iglidur® A200 are resistant to radiation up to an intensity of 1 · 104 Gy.

UV resistance

iglidur® A200 plain bearings are resistant to UV radiation.

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

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® A200 | Technical data

Bearings made from iglidur® A200 are suitable for application in direct contact with foodstuffs. Hence they are the ideal solution for bearing positions in machines for the food industry, medical equipment manufacturing, for small equipment for households, etc. As the admixture of lubricants should be foregone in favor of food compatibility, the thermoplastic composition of iglidur® A200 is particularly 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.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® A200 plain bearings decreases. The diagram 02 shows this inverse relationship. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

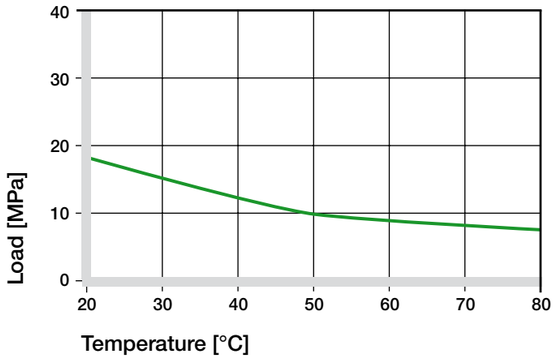


Diagram 02: Permissible maximum surface pressure as a function of temperature (18 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® A200 at radial load. At the permissible maximum surface pressure of 18 MPa the deformation is less than 2 %. A plastic deformation can be ignored up to this value. It is nonetheless depending on the duration of the applied force.

▶ Surface pressure, **page 41**

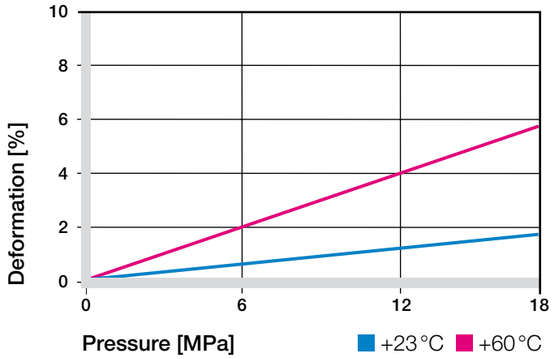


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

iglidur® A200 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 these limit values are not always reached due to interactions.

▶ Surface speed, **page 44**
▶ pv value, **page 86**

m/s	Rotating	Oscillating	Linear
Continuous	0.8	0.6	2
Short-term	1.5	1.1	3

Table 03: Maximum surface speeds

Temperatures

The maximum permissible short-term temperature is +170 °C. With increasing temperatures, the compressive strength of iglidur® A200 plain bearings decreases. The diagram 02 shows this inverse relationship. The temperatures prevailing in the bearing system also have an influence on the bearing wear. At temperatures over +50 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

Just as the wear resistance, the coefficient of friction also changes with the load (diagrams 04 and 05).

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

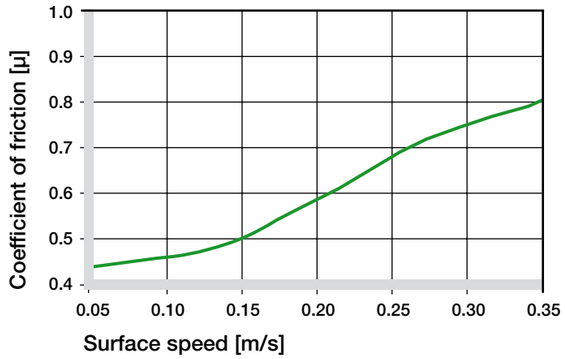


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

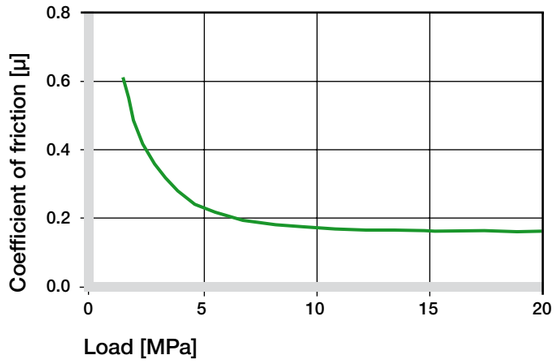


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

Diagrams 06 and 07 show the test results of iglidur® A200 bearings running against various shaft materials.
In pivoting applications below a load p = 2 MPa, the wear of iglidur® A200 bearings is higher than in rotating applications with equal load. Here the HR carbon steel shaft is a positive exception.

▶ Shaft materials, **page 52**

iglidur® A200	Dry	Greases	Oil	Water
C. o. f. µ	0.1–0.4	0.09	0.04	0.04

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

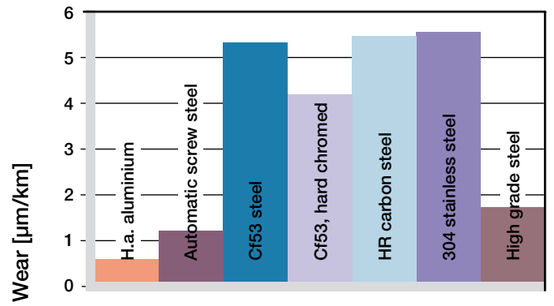


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1 MPa, v = 0.3 m/s

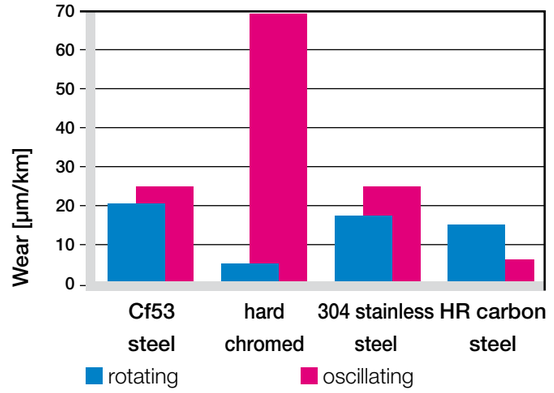


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2 MPa

Installation tolerances

iglidur® A200 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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 D11 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

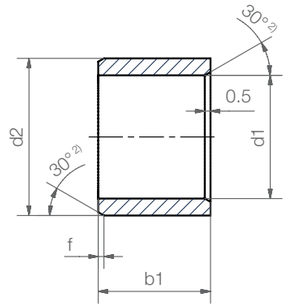
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® A200 D11 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.020 +0.080	0 +0.010
> 3 to 6	0–0.030	+0.030 +0.105	0 +0.012
> 6 to 10	0–0.036	+0.040 +0.130	0 +0.015
> 10 to 18	0–0.043	+0.050 +0.160	0 +0.018
> 18 to 30	0–0.052	+0.065 +0.195	0 +0.021
> 30 to 50	0–0.062	+0.080 +0.240	0 +0.025

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

iglidur® A200 | Product range

Sleeve bearing (Form S)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
A	S	M	-	0103	-	02
iglidur® material	Form S	Metric		Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

Inch Imperial dimensions available
▶ From page 1345

Dimensions [mm]

d1	d1- Tolerance[3]	d2	b1 h13	Part No.
1.0		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	+0.020 +0.080	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		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	+0.030 +0.105	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		10.0	5.0	ASM-0710-05
7.0	+0.040 +0.130	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
8.0		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	+0.040 +0.130	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		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	+0.050 +0.160	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

3) After press-fit. Testing methods ▶ Page 57

iglidur® A200 | Product range

Sleeve bearing (Form S)

ASM

Dimensions [mm]

d1	d1- Tolerance[3]	d2	b1 h13	Part No.
14.0		16.0	20.0	ASM-1416-20
14.0		20.0	10.0	ASM-1420-10
14.0		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	+0.050 +0.160	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		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	+0.065 +0.195	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
22.0		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	+0.065 +0.195	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

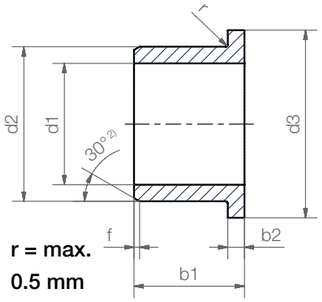
3) After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

iglidur® A200 | Product range

Flange bearing (Form F)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]								
A	F	M	-	0	1	0	3	-	0	2
iglidur® material	Form F	Metric		Inner-Ø d1			Outer-Ø d2			Length b1

Dimensions according to ISO 3547-1 and special dimensions

Inch Imperial dimensions available
▶ From page 1372

Dimensions [mm]

d1	d1- Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
1.0	+0.020 +0.080	3.0	5.0	2.0	1.0	**AFM-0103-02**
1.5		4.0	6.0	2.0	1.0	**AFM-0104-02**
2.0		5.0	8.0	3.0	1.5	**AFM-0205-03**
2.5		6.0	9.0	3.0	1.5	**AFM-0206-03**
3.0		6.0	9.0	4.0	1.5	**AFM-0306-04**
4.0	+0.030 +0.105	8.0	12.0	4.0	2.0	**AFM-0408-04**
4.0		8.0	12.0	6.0	2.0	**AFM-0408-06**
5.0		7.0	11.0	5.0	1.0	**AFM-0507-05**
5.0		9.0	13.0	5.0	2.0	**AFM-0509-05**
5.0		9.0	13.0	6.0	2.0	**AFM-0509-06**
5.0		9.0	13.0	8.0	2.0	**AFM-0509-08**
6.0		10.0	14.0	4.0	2.0	**AFM-0610-04**
6.0		10.0	14.0	6.0	2.0	**AFM-0610-06**
6.0		10.0	14.0	10.0	2.0	**AFM-0610-10**
6.0		12.0	14.0	6.0	3.0	**AFM-0612-06**
6.0		12.0	14.0	10.0	3.0	**AFM-0612-10**
7.0	+0.040 +0.130	11.0	15.0	8.0	2.0	**AFM-0711-08**
8.0		11.0	13.0	8.0	2.0	**AFM-0811-08**
8.0		12.0	16.0	6.0	2.0	**AFM-0812-06**
8.0		12.0	16.0	8.0	2.0	**AFM-0812-08**
8.0		12.0	16.0	12.0	2.0	**AFM-0812-12**
8.0		12.0	16.0	22.0	2.0	**AFM-0812-22**
8.0		14.0	18.0	6.0	3.0	**AFM-0814-06**
8.0		14.0	18.0	10.0	3.0	**AFM-0814-10**
9.0		14.0	19.0	6.0	2.0	**AFM-0914-06**
9.0		14.0	19.0	10.0	2.0	**AFM-0914-10**
9.0		14.0	19.0	14.0	2.0	**AFM-0914-14**
10.0		16.0	22.0	6.0	3.0	**AFM-1016-06**
10.0	+0.040 +0.130	16.0	22.0	8.0	3.0	**AFM-1016-08**
10.0		16.0	22.0	10.0	3.0	**AFM-1016-10**
10.0		16.0	22.0	16.0	3.0	**AFM-1016-16**
10.0		16.0	20.0	10.0	3.0	**AFM-101620-10**
12.0	+0.050 +0.160	14.0	20.0	12.0	1.0	**AFM-1214-12**
12.0		18.0	24.0	8.0	3.0	**AFM-1218-08**
12.0		18.0	22.0	10.0	3.0	**AFM-1218-10**
12.0		18.0	24.0	12.0	3.0	**AFM-1218-12**
12.0		18.0	22.0	15.0	3.0	**AFM-1218-15**
12.0		18.0	22.0	20.0	3.0	**AFM-1218-20**
14.0		20.0	25.0	10.0	3.0	**AFM-1420-10**
14.0		20.0	25.0	15.0	3.0	**AFM-1420-15**
14.0		20.0	25.0	20.0	3.0	**AFM-1420-20**
15.0		21.0	27.0	10.0	3.0	**AFM-1521-10**
15.0		21.0	27.0	15.0	3.0	**AFM-1521-15**
15.0		21.0	27.0	20.0	3.0	**AFM-1521-20**
15.0		21.0	27.0	25.0	3.0	**AFM-1521-25**
16.0		22.0	28.0	12.0	3.0	**AFM-1622-12**
16.0		22.0	28.0	15.0	3.0	**AFM-1622-15**
16.0		22.0	28.0	20.0	3.0	**AFM-1622-20**
16.0		22.0	28.0	25.0	3.0	**AFM-1622-25**
18.0	+0.065 +0.195	24.0	30.0	12.0	3.0	**AFM-1824-12**
18.0		24.0	30.0	18.0	3.0	**AFM-1824-18**
18.0		24.0	30.0	20.0	3.0	**AFM-1824-20**
18.0		24.0	30.0	30.0	3.0	**AFM-1824-30**
20.0		26.0	32.0	15.0	3.0	**AFM-2026-15**
20.0		26.0	32.0	20.0	3.0	**AFM-2026-20**
20.0		26.0	32.0	30.0	3.0	**AFM-2026-30**

[3] After press-fit. Testing methods ▶ Page 57

iglidur® A200 | Product range

Flange bearing (Form F)

Dimensions [mm]

d1	d1- Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
22.0	+0.065 +0.195	28.0	34.0	15.0	3.0	**AFM-2228-15**
22.0		28.0	34.0	20.0	3.0	**AFM-2228-20**
22.0		28.0	34.0	30.0	3.0	**AFM-2228-30**
24.0		30.0	36.0	15.0	3.0	**AFM-2430-15**
24.0		30.0	36.0	20.0	3.0	**AFM-2430-20**
24.0		30.0	36.0	30.0	3.0	**AFM-2430-30**
25.0		32.0	38.0	20.0	4.0	**AFM-2532-20**
25.0		32.0	38.0	30.0	4.0	**AFM-2532-30**
25.0		32.0	38.0	40.0	4.0	**AFM-2532-40**
27.0		34.0	40.0	20.0	4.0	**AFM-2734-20**
27.0		34.0	40.0	30.0	4.0	**AFM-2734-30**
27.0	+0.065 +0.195	34.0	40.0	40.0	4.0	**AFM-2734-40**
28.0		36.0	42.0	20.0	4.0	**AFM-2836-20**
28.0		36.0	42.0	30.0	4.0	**AFM-2836-30**
28.0		36.0	42.0	40.0	4.0	**AFM-2836-40**
30.0		38.0	44.0	20.0	4.0	**AFM-3038-20**
30.0		38.0	44.0	30.0	4.0	**AFM-3038-30**
30.0		38.0	44.0	40.0	4.0	**AFM-3038-40**
32.0	+0.080 +0.240	40.0	46.0	20.0	4.0	**AFM-3240-20**
32.0		40.0	46.0	30.0	4.0	**AFM-3240-30**
32.0		40.0	46.0	40.0	4.0	**AFM-3240-40**

[3] After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

Even more dimensions from stock

More than 300 dimensions are now available. Search online for your required bearing.
▶ www.igus.eu/iglidur-specialbearings

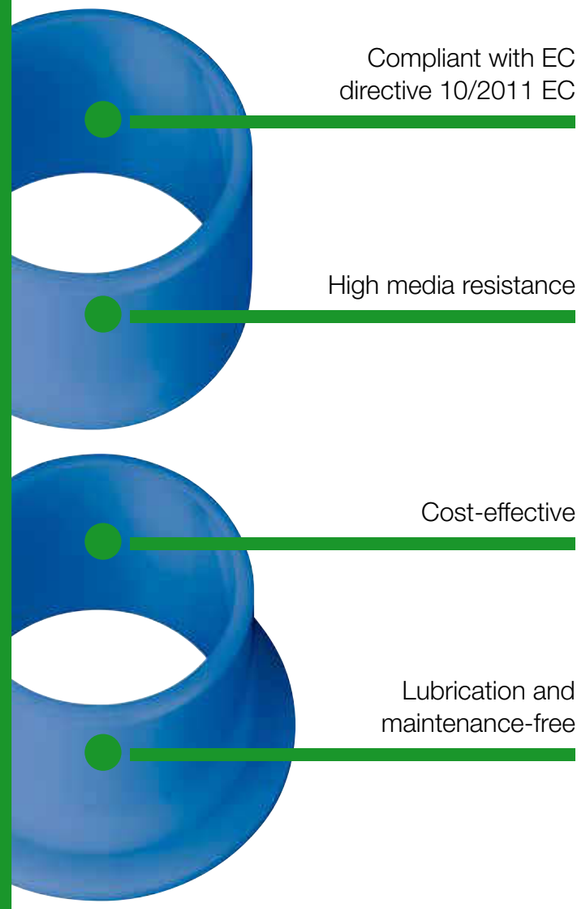
My sketches

"Food" bearing with high media resistance up to +90 °C – iglidur® A160

- Compliant with EC directive 10/2011 EC
- FDA-compliant
- High media resistance
- Cost-effective
- Lubrication and maintenance-free
- Standard range from stock

iglidur® A160 | "Food" bearing with high media resistance up to +90 °C

FDA- and EC 10/2011 compliant



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.

When to use it?

- When a bearing with maximum media resistance is required at normal temperatures
- When a very cost-effective bearing with high media resistance is required
- When a material compliant with the 10/2011 EC is required

When not to use it?

- When a universal material for the food industry is required
  ▶ iglidur® A180, page 349
  ▶ iglidur® A181, page 325
- When a very media resistant bearing is required for applications at more than +90 °C
  ▶ iglidur® A500, page 341
  ▶ iglidur® X, page 237
- When a low-cost material with high wear resistance is required for dry running
  ▶ iglidur® R, page 213

Typical application areas

- Food industry
- Beverage technology
- Medical technology

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +90 °C
min. –50 °C

Ø 6–20 mm
More dimensions on request

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

iglidur® A160 material complies with EC Directive 10/2011 EC and also with FDA (Food and Drug Administration) specifications for repeated contact with food.

iglidur® A160 | Technical data

Material properties table

General properties	Unit	iglidur® A160	Testing method
Density	g/cm³	1.00	
Colour		blue	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.1	DIN 53495
Max. water absorption	% weight	0.1	
Coefficient of sliding 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	15	
Shore-D hardness		60	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+90	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{12}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

Table 01: Material properties table

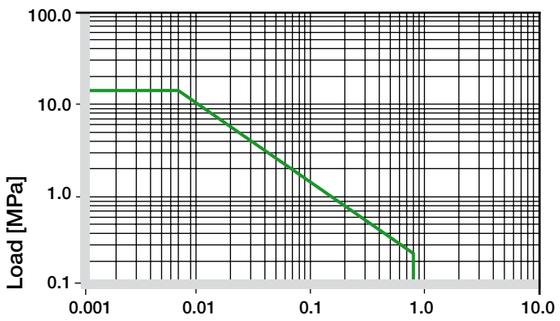


Diagram 01: Permissible pv values for iglidur® A160 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption
The humidity absorption of iglidur® A160 bearings amounts to about 0.1 % weight in standard climatic conditions. The saturation limit submerged in water is also approximately 0.1 % weight.

▶ Diagram, www.igus.eu/a160-moisture

Vacuum
When used in a vacuum, the iglidur® A160 plain bearings release moisture as a vapour. Use in a vacuum environment is only possible with dehumidified bearings.

Radiation resistance
Plain bearings made from iglidur® A160 are resistant to radiation up to an intensity of $1 \cdot 10^5$ Gy.

UV resistance
iglidur® A160 plain bearings are partially resistant to UV radiation.

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

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® A160 | Technical data

iglidur® A160 plain bearings are characterised by extreme media resistance at a low-cost. Tribologically optimised, the material can be used in up to +90 °C and also possesses conformities demanded in the food processing sector. The profile of properties is completed by the "optical detectability", i.e. the blue colour, often required in the industry.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® A160 plain bearings decreases. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

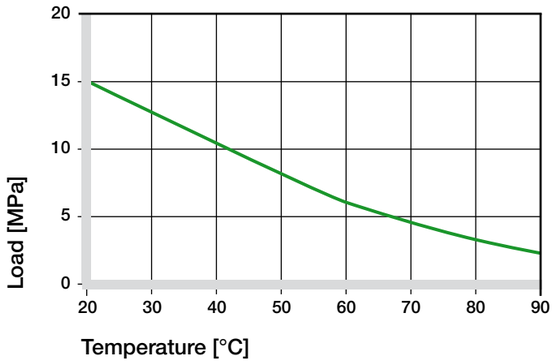


Diagram 02: Permissible maximum surface pressure as a function of temperature (15 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® A160 during radial loading. Plastic deformation is minimal up to a radial load of 15 MPa. It is nonetheless depending on the duration of the applied force.

▶ Surface pressure, **page 41**

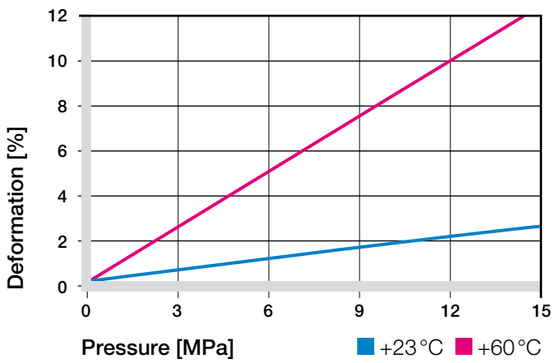


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

iglidur® A160 was developed for low surface speeds. Maximum speeds up to 0.5 m/s (rotating) and 2.0 m/s (linear) respectively are permitted for continuous application in 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 temperature level is rarely reached, due to varying application conditions.

▶ Surface speed, **page 44**
▶ pv value and lubrication, **page 86**

m/s	Rotating	Oscillating	Linear
Continuous	0.5	0.4	2
Short-term	0.7	0.6	3

Table 03: Maximum surface speeds

Temperatures

With increasing temperatures, the compressive strength of iglidur® A160 plain bearings decreases. The diagram 02 shows this inverse relationship. The temperatures prevailing in the bearing system also have an influence on the bearing wear. At temperatures over +60 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

Coefficient of friction and wear resistance alter with the application parameters. For iglidur® A160 bearings, the alteration of the coefficient of friction μ depends on surface speed and the shaft surface finish is only negligently pronounced. With increasing load, the coefficient of friction however sinks markedly. In the Ra range between 0.6 and 0.7 µm, the coefficient of friction attains the optimum value.

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

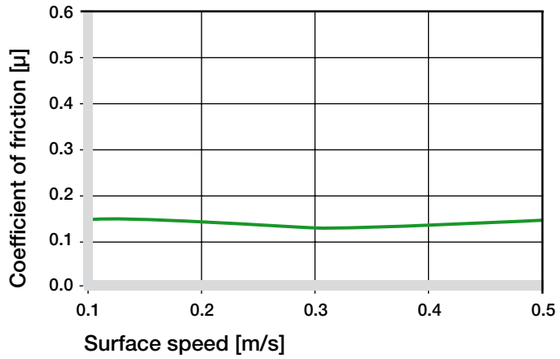


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1 MPa

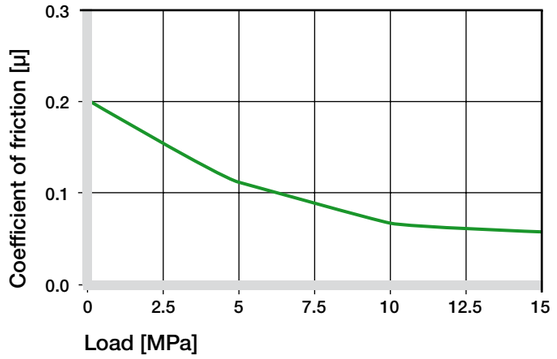


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® A160 running dry. For rotational applications with low loads, the most interesting, media- and corrosion-resistant shaft materials 304 stainless steel, high grade steel and hard chrome-plated steel reveal themselves as particularly good counter 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 52**

iglidur® A160	Dry	Greases	Oil	Water
C. o. f. µ	0.09–0.19	0.08	0.03	0.04

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

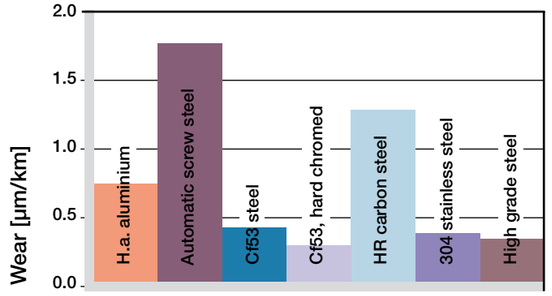


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1 MPa, v = 0.3 m/s

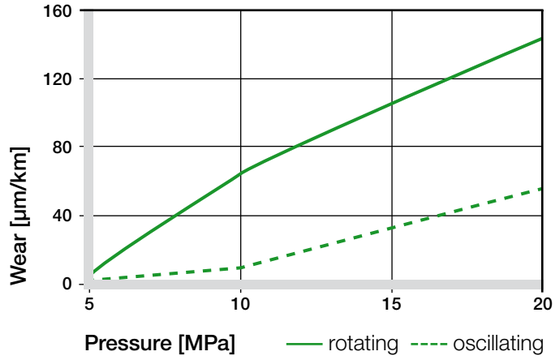


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Installation tolerances

iglidur® A160 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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 E10 tolerances.

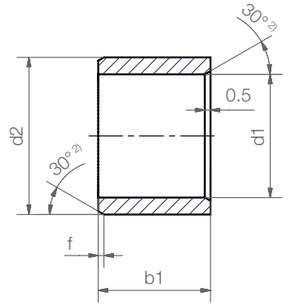
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® A160 E10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.014 +0.054	0 +0.010
> 3 to 6	0–0.030	+0.020 +0.068	0 +0.012
> 6 to 10	0–0.036	+0.025 +0.083	0 +0.015
> 10 to 18	0–0.043	+0.032 +0.102	0 +0.018
> 18 to 30	0–0.052	+0.040 +0.124	0 +0.021
> 30 to 50	0–0.062	+0.050 +0.150	0 +0.025

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

iglidur® A160 | Product range

Sleeve bearing (Form S)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]		
A160	S	M	-0608	-06	
iglidur® material	Form S	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

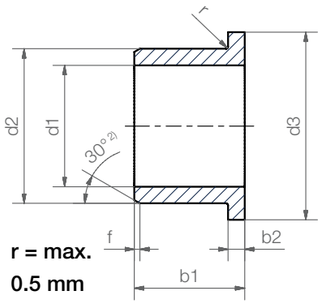
Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	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	+0.025 +0.083	12.0	10.0	**A160SM-1012-10**
12.0	+0.032 +0.102	14.0	12.0	**A160SM-1214-12**
16.0	+0.032 +0.102	18.0	15.0	**A160SM-1618-15**
20.0	+0.040 +0.124	23.0	20.0	**A160SM-2023-20**

[3] After press-fit. Testing methods ▶ Page 57

iglidur® A160 | Product range

Flange bearing (Form F)



r = max. 0.5 mm

[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]		
A160	F	M	-0608	-06	
iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

Dimensions [mm]

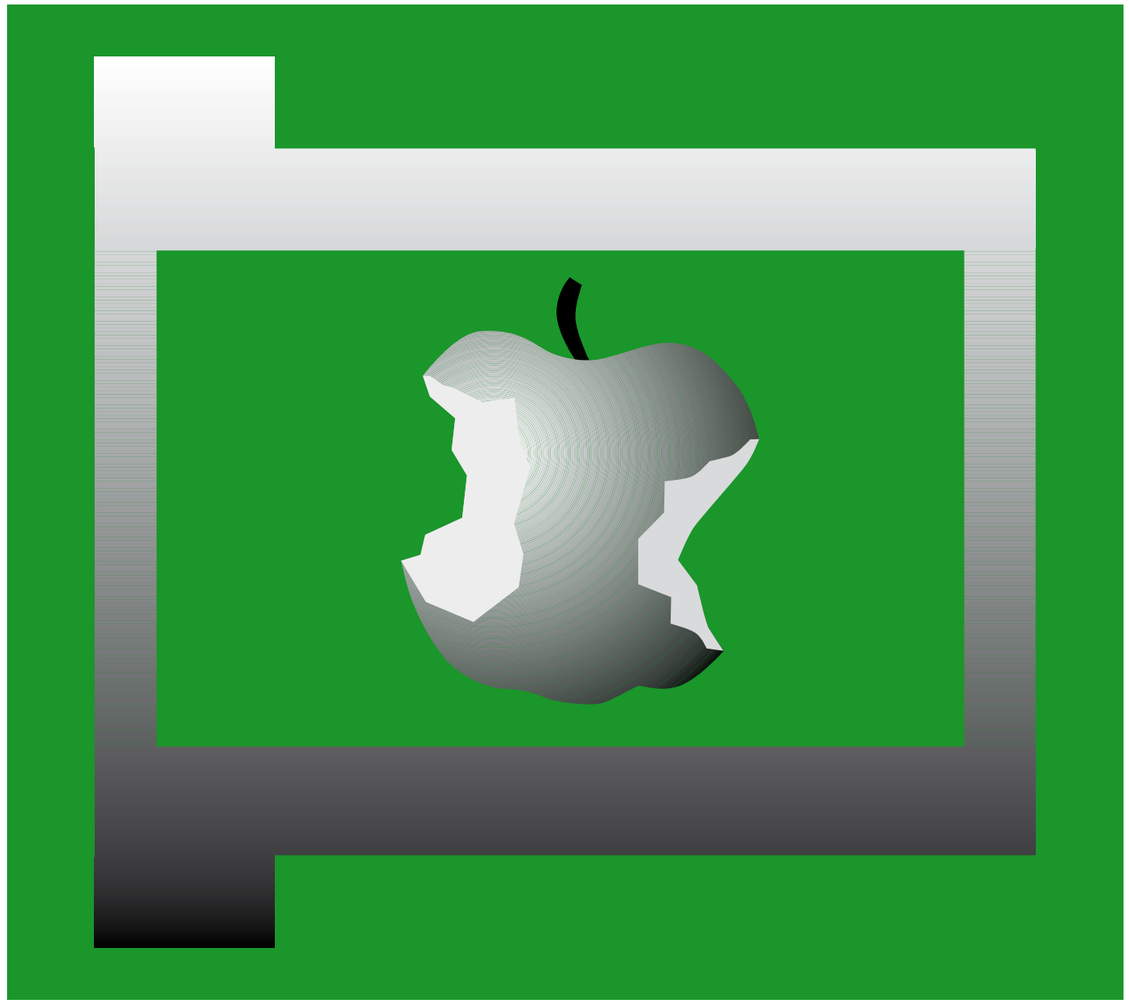
d1	d1-Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
6.0	+0.020 +0.068	8.0	12.0	6.0	1.0	**A160FM-0608-06**
8.0	+0.025 +0.083	10.0	15.0	10.0	1.0	**A160FM-0810-10**
10.0	+0.025 +0.083	12.0	18.0	10.0	1.0	**A160FM-1012-10**
12.0	+0.032 +0.102	14.0	20.0	12.0	1.0	**A160FM-1214-12**
16.0	+0.032 +0.102	18.0	24.0	17.0	1.0	**A160FM-1618-17**
20.0	+0.040 +0.124	23.0	30.0	21.5	1.5	**A160FM-2023-21**

[3] After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

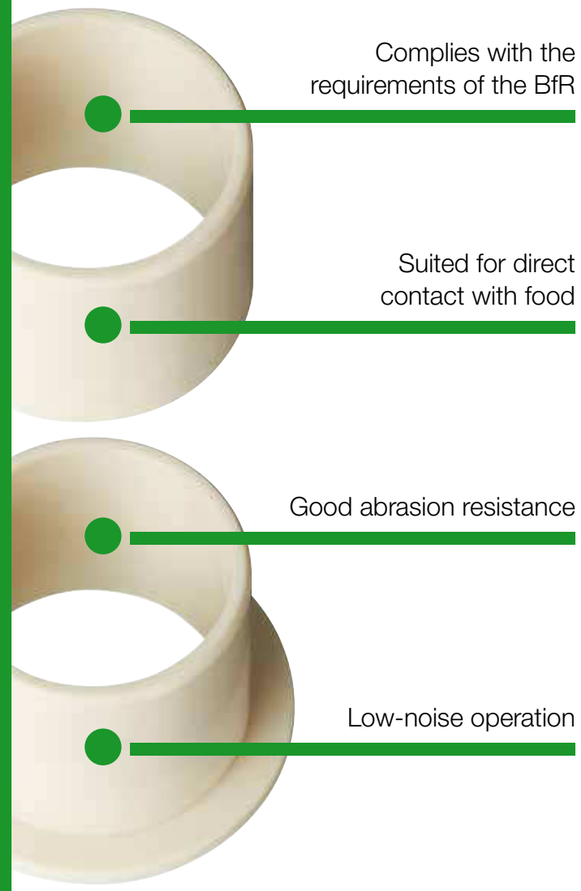
My sketches



Robust – iglidur® A290

- Complies with the requirements of the BfR
- For direct contact with food
- Good abrasion resistance
- If low noise level is required
- Lubrication and maintenance-free
- Standard range from stock

iglidur® A290 | Robust



The bearings comply with the requirements of the BfR for contact with food. For medium and high loads.

When to use it?
- Suitable for contact with food
- For low speeds
- If low noise level is required
- Physiologically safe
- Very good mechanical properties

When not to use it?
- When the material's FDA-compliance is necessary
  - ▶ iglidur® A180, page 349
  - ▶ iglidur® A200, page 357
  - ▶ iglidur® A500, page 341
- When highest wear resistance is required
  - ▶ iglidur® W300, page 153
- When temperatures are continuously greater than +140 °C
  - ▶ iglidur® A500, page 341
  - ▶ iglidur® H, page 299
  - ▶ iglidur® X, page 237
- When a cost-effective universal bearing is required
  - ▶ iglidur® G, page 79

Typical application areas
- Food industry

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +140 °C
min. –40 °C

Ø 3–50 mm
More dimensions on request

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

The material iglidur® A290 complies with the requirements of the BfR (German institute for food safety) for contact with food.

iglidur® A290 | Technical data

Material properties table

General properties	Unit	iglidur® A290	Testing method
Density	g/cm³	1.41	
Colour		white	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	1.7	DIN 53495
Max. water absorption	% weight	7.3	
Coefficient of sliding friction, dynamic against steel	µ	0.13–0.40	
pv value, max. (dry)	MPa · m/s	0.23	
Mechanical properties			
Flexural modulus	MPa	8,800	DIN 53457
Flexural strength at +20 °C	MPa	250	DIN 53452
Compressive strength	MPa	91	
Max. permissible surface pressure (+20 °C)	MPa	70	
Shore-D hardness		88	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+140	
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)	$K^{-1} \cdot 10^{-5}$	7	DIN 53752
Electrical properties			
Specific volume resistance	Ωcm	$> 10^{11}$	DIN IEC 93
Surface resistance	Ω	$> 10^{11}$	DIN 53482

Table 01: Material properties table

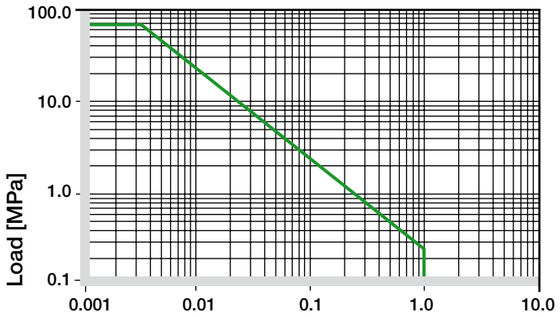


Diagram 01: Permissible pv values for iglidur® A290 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption
The moisture absorption of iglidur® A290 bearings is approximately 1.7 % weight in standard climatic conditions. The saturation limit in water is 7.3 % weight, a disadvantage which must be accounted for by all means in applications in humid and wet areas.

▶ Diagram, www.igus.eu/a290-moisture

Vacuum
In a vacuum environment iglidur® A290 plain bearings have limited use due to the high moisture absorption.

Radiation resistance
Plain bearings made from iglidur® A290 are resistant to radiation up to an intensity of 3 · 102 Gy.

UV resistance
iglidur® A290 is resistant to UV radiation but its tribological properties can be affected.

Medium	Resistance
Alcohols	+ to 0
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 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® A290 | Technical data

iglidur® A290 bearings are an advanced development for the use in food industry. Compared to the bearings made from iglidur® A200, the tribological properties could be significantly improved.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® A290 plain bearings decreases. The diagram 02 shows this inverse relationship. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

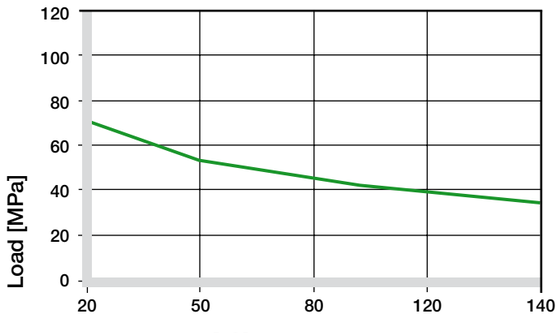


Diagram 02: Permissible maximum surface pressure as a function of temperature (70 MPa at +20 °C)

At this load, the deformation is only about 2.5 % at room temperature. A plastic deformation can be negligible up to this load. It is nonetheless depending on the duration of the applied force. Diagram 03 shows the deformation of iglidur® A290 as a function of radial pressure.

▶ Surface pressure, **page 41**

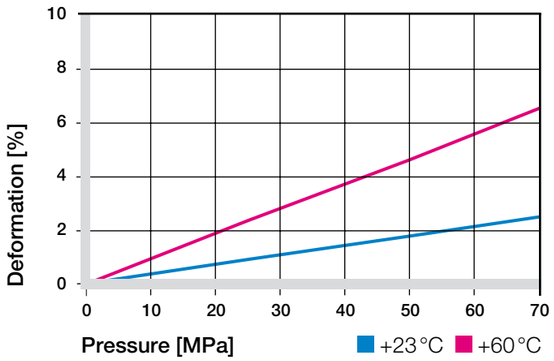


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

iglidur® A290 is suitable for low surface speeds. Due to the relatively high friction particularly in the low load range, the bearings made from iglidur® A290 heat more strongly than other bearings. With higher speeds, the friction also increases.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	1	0.7	3
Short-term	2	1.4	4

Table 03: Maximum surface speeds

Temperatures

With increasing temperatures, the compressive strength of iglidur® A290 plain bearings decreases. The diagram 02 shows this relationship. The ambient application temperature has a direct impact on bearing wear, an increase in temperature results in an increase in wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +120 °C. At temperatures over +110 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

The coefficient of friction alters like the wear resistance with increasing load and speed (diagrams 04 and 05).

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

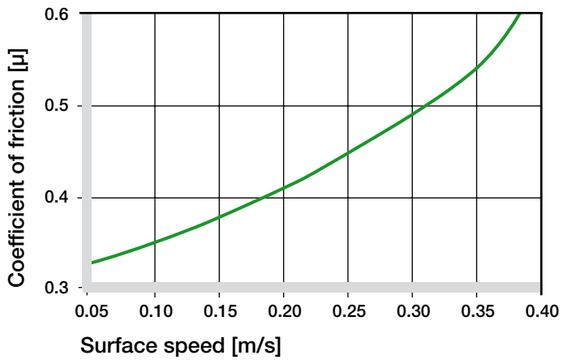


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

iglidur® A290 | Technical data

A290
+140 °C
70 MPa

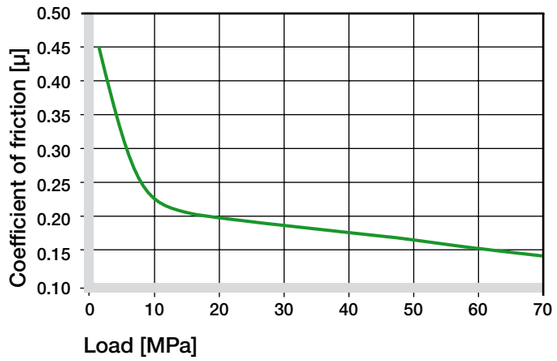


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

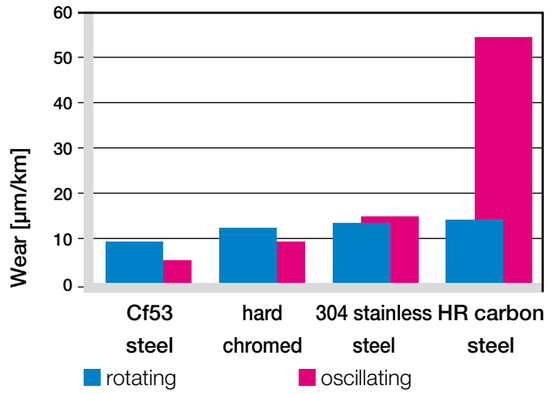


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2 MPa

Shaft materials

Diagrams 06 and 07 display a summary of the results of tests with different shaft materials conducted with bearings made from iglidur® A290. Compared to iglidur® A200, the improved tribological properties of iglidur® A290 are also reflected in the wear. At low loads, the differences in the wear resistance of the combinations of iglidur® A290 with different shaft materials are very distinct.

▶ Shaft materials, **page 52**

iglidur® A290	Dry	Greases	Oil	Water
C. o. f. µ	0.13–0.40	0.09	0.04	0.04

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

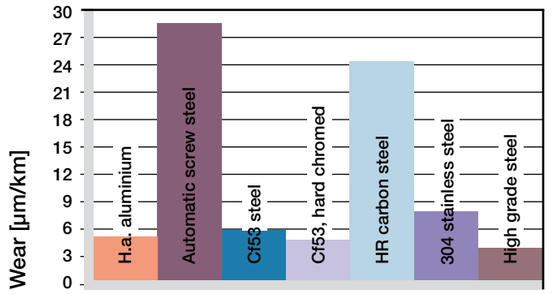


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1 MPa, v = 0.3 m/s

Installation tolerances

iglidur® A290 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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 D11 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

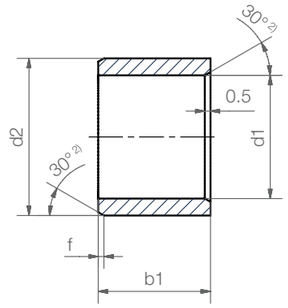
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® A290 D11 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.020 +0.080	0 +0.010
> 3 to 6	0–0.030	+0.030 +0.105	0 +0.012
> 6 to 10	0–0.036	+0.040 +0.130	0 +0.015
> 10 to 18	0–0.043	+0.050 +0.160	0 +0.018
> 18 to 30	0–0.052	+0.065 +0.195	0 +0.021
> 30 to 50	0–0.062	+0.080 +0.240	0 +0.025
> 50 to 80	0–0.074	+0.100 +0.290	0 +0.030

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

iglidur® A290 | Product range

Sleeve bearing (Form S)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]		
A290	S	M	-03	04	-03
iglidur® material	Form S	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

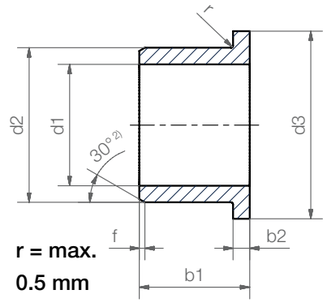
Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	Part No.
3.0	+0.020 +0.080	4.5	3.0	**A290SM-0304-03**
4.0	+0.030 +0.105	5.5	4.0	**A290SM-0405-04**
5.0	+0.030 +0.105	7.0	5.0	**A290SM-0507-05**
6.0	+0.030 +0.105	8.0	6.0	**A290SM-0608-06**
8.0	+0.040 +0.130	10.0	8.0	**A290SM-0810-08**
10.0	+0.040 +0.130	12.0	10.0	**A290SM-1012-10**
12.0	+0.050 +0.160	14.0	15.0	**A290SM-1214-15**
15.0	+0.050 +0.160	17.0	15.0	**A290SM-1517-15**
16.0	+0.050 +0.160	18.0	15.0	**A290SM-1618-15**
18.0	+0.050 +0.160	20.0	15.0	**A290SM-1820-15**
20.0	+0.065 +0.195	23.0	20.0	**A290SM-2023-20**
25.0	+0.065 +0.195	28.0	20.0	**A290SM-2528-20**
30.0	+0.065 +0.195	34.0	30.0	**A290SM-3034-30**
35.0	+0.080 +0.240	39.0	40.0	**A290SM-3539-40**
40.0	+0.080 +0.240	44.0	50.0	**A290SM-4044-50**
50.0	+0.080 +0.240	55.0	40.0	**A290SM-5055-40**

[3] After press-fit. Testing methods ▶ Page 57

iglidur® A290 | Product range

Flange bearing (Form F)



r = max. 0.5 mm

[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]		
A290	F	M	-04	05	-06
iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

Dimensions [mm]

d1	d1-Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
4.0	+0.030 +0.105	5.5	9.5	6	0.75	**A290FM-0405-06**
5.0	+0.030 +0.105	7.0	11.0	5	1.00	**A290FM-0507-05**
6.0	+0.030 +0.105	8.0	12.0	8	1.00	**A290FM-0608-08**
8.0	+0.040 +0.130	10.0	15.0	9	1.00	**A290FM-0810-09**
10.0	+0.040 +0.130	12.0	18.0	9	1.00	**A290FM-1012-09**
12.0	+0.050 +0.160	14.0	20.0	12	1.00	**A290FM-1214-12**
15.0	+0.050 +0.160	17.0	23.0	17	1.00	**A290FM-1517-17**
16.0	+0.050 +0.160	18.0	24.0	17	1.00	**A290FM-1618-17**
20.0	+0.065 +0.195	23.0	30.0	21	1.50	**A290FM-2023-21**
25.0	+0.065 +0.195	28.0	35.0	21	1.50	**A290FM-2528-21**
30.0	+0.065 +0.195	34.0	42.0	26	2.00	**A290FM-3034-26**
35.0	+0.080 +0.240	39.0	47.0	26	2.00	**A290FM-3539-26**
40.0	+0.080 +0.240	44.0	52.0	40	2.00	**A290FM-4044-40**
50.0	+0.080 +0.240	55.0	63.0	40	2.00	**A290FM-5055-40**

[3] After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

My sketches

For contact with drinking water – iglidur® UW160

- Extremely wear-resistant in liquid at long-term operation
- Suitable for contact with drinking water (KTW-compliant)
- Good media resistance
- Lubrication and maintenance-free
- Standard range from stock

iglidur® UW160 | For contact with drinking water

KTW-compliant

Extremely wear-resistant in liquid at long-term operation

Suitable for contact with drinking water (KTW-compliant)

Good media resistance

Lubrication and maintenance-free

iglidur® UW160 is tribologically optimised for continuous use in liquid media. Its superior media resistance not only permits uses with potable water contact.

When to use it?

- When a KTW-compliant material is required
- When a wear-resistant material is required for continuous use in liquid media

When not to use it?

- When a media resistant plain bearing for recurring media contact and in the meantime for dry operation is required
  ▶ iglidur® A160, page 368
- When a media- and temperature-resistant universal bearing is required
  ▶ iglidur® X, page 237
- When a standard bearing is required for use in a wet environment
  ▶ iglidur® P, page 113

Typical application areas

- Fluid technology
- Pumps
- Water meters

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +90 °C
min. –50 °C

Ø 3–10 mm
More dimensions on request

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

iglidur® UW160 | Technical data

Material properties table

General properties	Unit	iglidur® UW160	Testing method
Density	g/cm³	1.04	
Colour		grey	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.1	DIN 53495
Max. water absorption	% weight	0.1	
Coefficient of sliding 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	15	
Shore-D hardness		60	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+90	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{12}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

Table 01: Material properties table

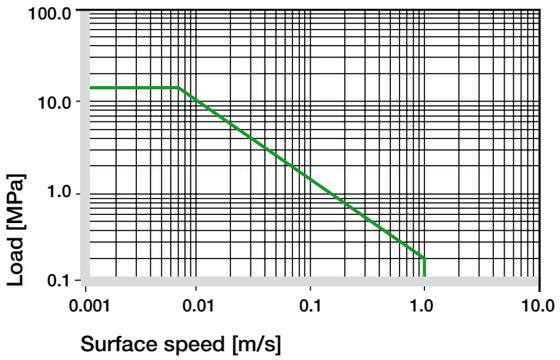


Diagram 01: Permissible pv values for iglidur® UW160 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® UW160 plain bearings is approximately 0.1 % weight in standard climatic conditions. The saturation limit submerged in water is 0.1 % weight.

▶ Diagram, www.igus.eu/uw160-moisture

Vacuum

When used in a vacuum environment, the iglidur® UW160 plain bearings release moisture as a vapour. Use in a vacuum environment is only possible with dehumidified bearings.

Radiation resistance

Plain bearings made from iglidur® UW160 are resistant to radiation up to an intensity of $3 \cdot 10^2$ Gy.

UV resistance

iglidur® UW160 bearings are only conditionally resistant to UV radiation.

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

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® UW160 | Technical data

iglidur® UW160 was developed quite specifically with regard to maximum wear resistance in media-based continuous operation. In such applications, low radial loads and moderate temperatures usually occur. The suitability for contact with drinking water and very good durability complete the profile of properties.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® UW160 plain bearings decreases. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

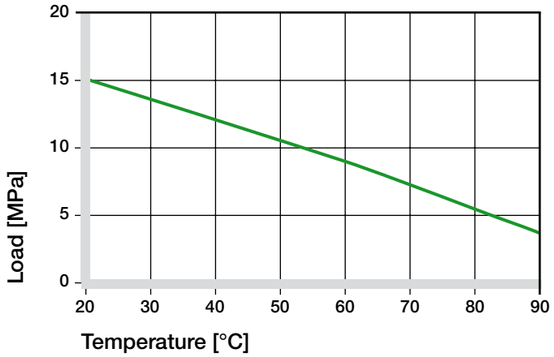


Diagram 02: Permissible maximum surface pressure as a function of temperature (15 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® UW160 during radial loading.

▶ Surface pressure, **page 41**

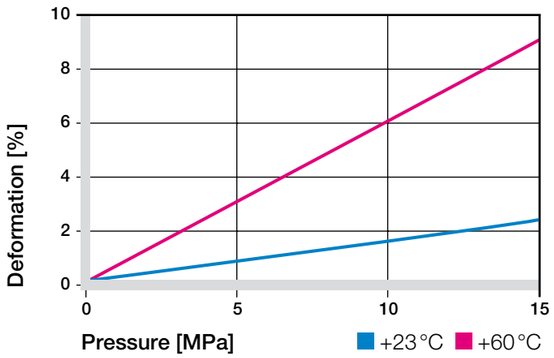


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

The maximum allowable sliding speed is based on the friction 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 44**

m/s	Rotating	Oscillating	Linear
Continuous	0.3	0.3	1
Short-term	0.5	0.4	2.5

Table 03: Maximum surface speeds

Temperatures

iglidur® UW160 was developed for use in liquid media in normal and medium temperature range.

As with all thermoplastics, the compression resistance of iglidur® UW160 decreases with increasing temperature. The temperatures prevailing in the bearing system also have an influence on the bearing wear. The wear rate rises with increasing temperatures. At temperatures over +70 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

Coefficient of friction and wear alter with the application parameters. 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 7.5 MPa.

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

iglidur® UW160 | Technical data

UW160
+90 °C
15 MPa

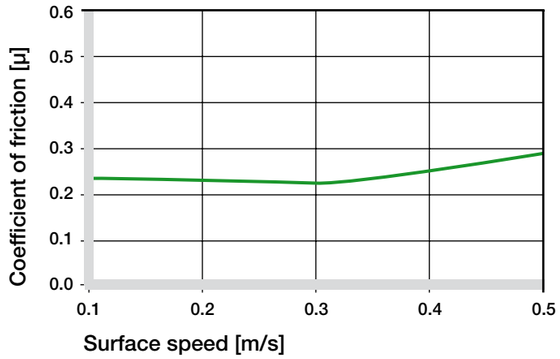


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1.0 MPa

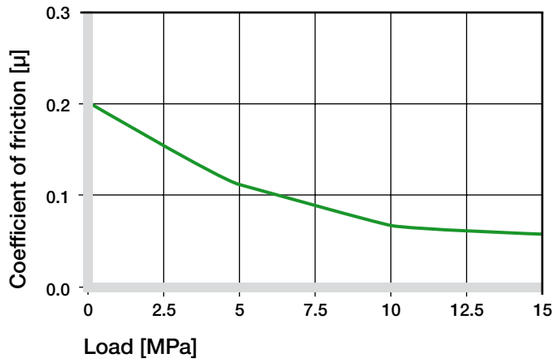


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® UW160 running dry. In the example of a rotational movement with radial loads of 1 MPa and a speed of 0.3 m/s, it becomes clear that iglidur® UW160 achieves good wear values with the most varied shafts up to the pairing with 304 SS shafts. It is also clear that there are better iglidur® materials for dry running. As with many other iglidur® materials in dry running, diagram 07 shows the significantly higher wear in rotation than in pivoting with otherwise identical parameters.

▶ Shaft materials, **page 52**

iglidur® UW160	Dry	Greases	Oil	Water
C. o. f. µ	0.17–0.31	0.08	0.03	0.03

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

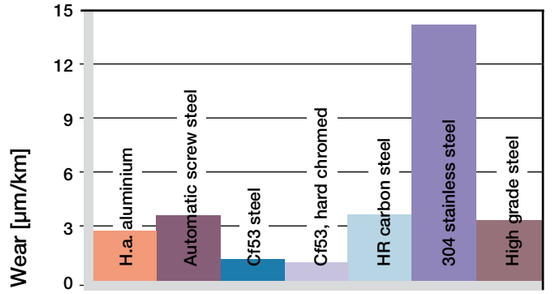


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

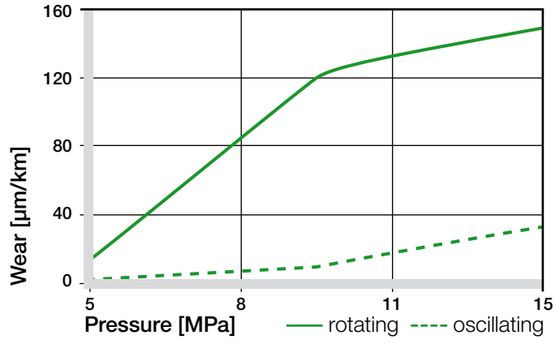


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Installation tolerances

iglidur® UW160 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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 E10 tolerances.

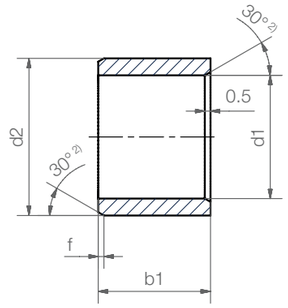
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® UW160 E10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.014 +0.054	0 +0.010
> 3 to 6	0–0.030	+0.020 +0.068	0 +0.012
> 6 to 10	0–0.036	+0.025 +0.083	0 +0.015
> 10 to 18	0–0.043	+0.032 +0.102	0 +0.018
> 18 to 30	0–0.052	+0.040 +0.124	0 +0.021
> 30 to 50	0–0.062	+0.050 +0.150	0 +0.025
> 50 to 80	0–0.074	+0.060 +0.180	0 +0.030
> 80 to 120	0–0.087	+0.072 +0.212	0 +0.035
>120 to 180	0–0.100	+0.085 +0.245	0 +0.040

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

iglidur® UW160 | Product range

Sleeve bearing (Form S)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
UW160	S	M	-03	04	-03	
	iglidur® material	Form S	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

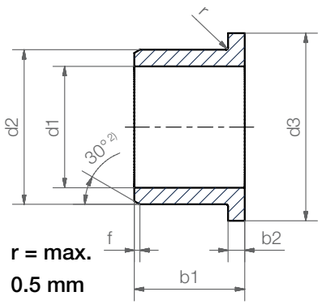
Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	Part No.
3.0	+0.014 +0.054	4.0	3.0	**UW160SM-0304-03**
4.0	+0.014 +0.054	5.0	4.0	**UW160SM-0405-04**
5.0	+0.020 +0.068	7.0	5.0	**UW160SM-0507-05**
6.0	+0.020 +0.068	8.0	6.0	**UW160SM-0608-06**
8.0	+0.025 +0.083	10.0	10.0	**UW160SM-0810-10**
10.0	+0.025 +0.083	12.0	10.0	**UW160SM-1012-10**

3) After press-fit. Testing methods ▶ Page 57

iglidur® UW160 | Product range

Flange bearing (Form F)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
UW160	F	M	-03	04	-05	
	iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

Dimensions [mm]

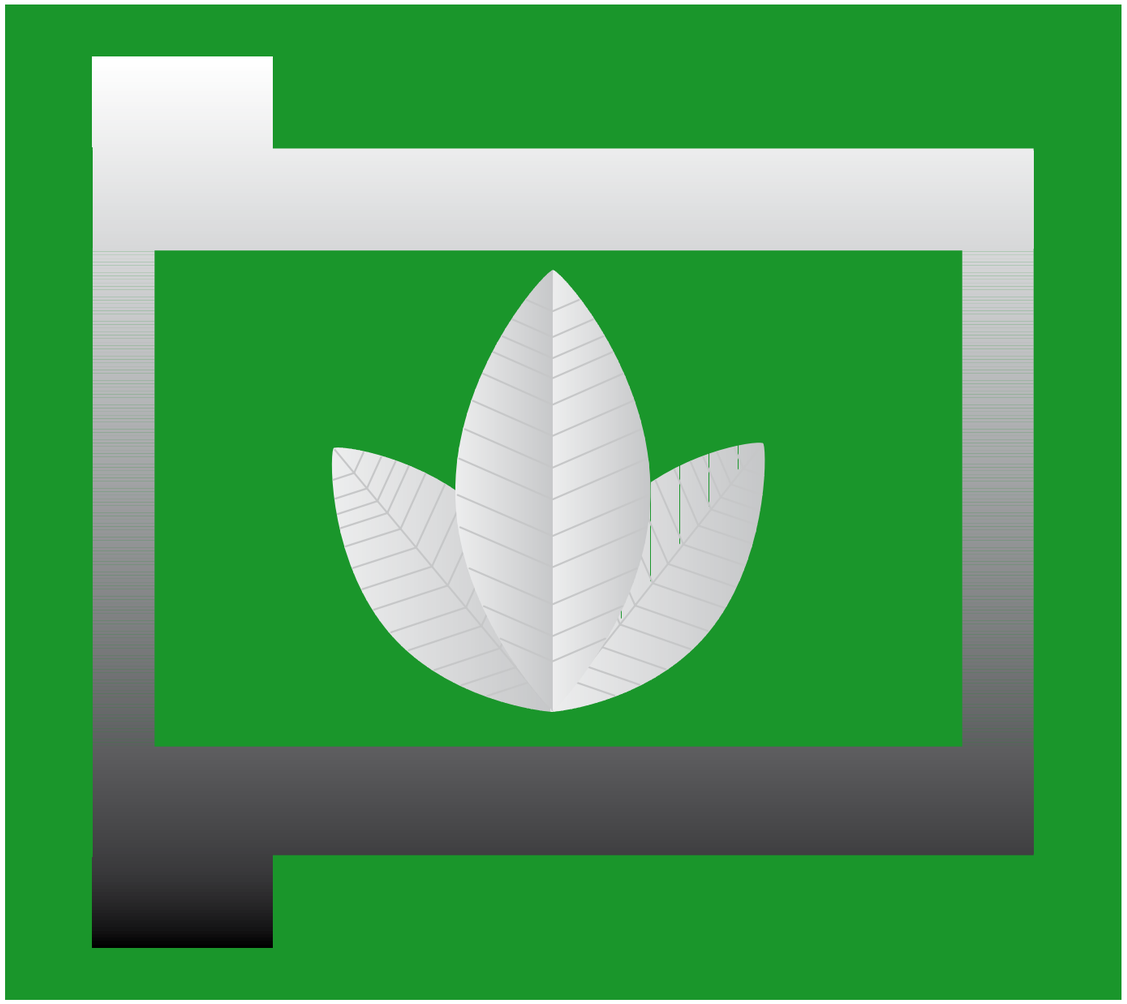
d1	d1-Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
3.0	+0.014 +0.054	4.5	7.5	5.0	0.75	**UW160FM-0304-05**
4.0	+0.014 +0.054	5.5	9.5	6.0	0.75	**UW160FM-0405-06**
5.0	+0.020 +0.068	7.0	11.0	7.0	1.0	**UW160FM-0507-07**
6.0	+0.020 +0.068	8.0	12.0	6.0	1.0	**UW160FM-0608-06**
8.0	+0.025 +0.083	10.0	14.0	10.0	1.0	**UW160FM-0810-10**
10.0	+0.025 +0.083	12.0	18.0	10.0	1.0	**UW160FM-1012-10**

3) After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

My sketches



For the tobacco industry – iglidur® T220

Free from banned ingredients as requested by main manufacturers of tobacco products

The iglidur® T220 material complies with food and drug administration (FDA) regulations

Lubrication and maintenance-free

iglidur® T220 | For the tobacco industry

FDA-compliant

Free from banned ingredients as requested by main manufacturers of tobacco products

Complies with FDA regulations

Bearings that constitute only materials "recommended" for the tobacco industry. They are free from carcinogenic additives like, for instance, PTFE.

When to use it?

- When my bearings need to be free of substances that are not permitted for applications in the tobacco industry
- When FDA-compliance is required

When not to use it?

- When high surface pressures occur
  ▶ iglidur® Z, page 247
- When a cost-effective universal bearing is required
  ▶ iglidur® G, page 79
  ▶ iglidur® M250, page 95
- If highest wear resistance and low pressure load is necessary
  ▶ iglidur® J, page 141
- If the bearing should be free merely from PTFE and silicon
  ▶ iglidur® C, page 505
  ▶ iglidur® R, page 213

Typical application areas

- Tobacco processing industry

Available on request
Detailed information about delivery time online.

Order-related

max. +100 °C
min. –40 °C

Order-related

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

iglidur® T220 material complies with the requirements of the FDA (Food and Drug Administration) specifications for repeated contact with food.

iglidur® T220 | Technical data

Material properties table

General properties	Unit	iglidur® T220	Testing method
Density	g/cm³	1.28	
Colour		white	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.3	DIN 53495
Max. water absorption	% weight	0.5	
Coefficient of sliding 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. long-term application temperature	°C	+100	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{10}$	DIN IEC 93
Surface resistance	Ω	$> 10^{10}$	DIN 53482

Table 01: Material properties table

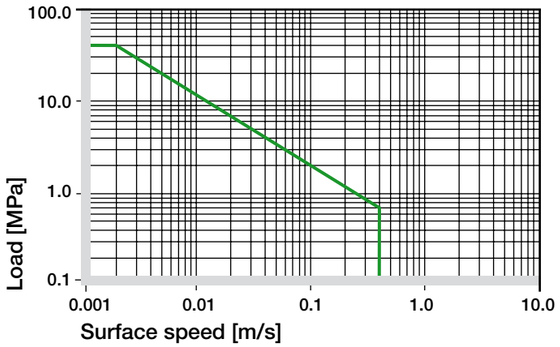


Diagram 01: Permissible pv values for iglidur® T220 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® T220 plain bearings is approximately 0.3 % weight in standard climatic conditions. The saturation limit in water is 0.5 % weight. These values are so low that consideration of expansion by moisture absorption is only required under extreme circumstances.

▶ Diagram, www.igus.eu/t220-moisture

Vacuum

Only dehumidified bearings of iglidur® T220 should be tested in vacuum.

Radiation resistance

Plain bearings of iglidur® T220 are radiation resistant up to a radiation intensity of $3 \cdot 10^2$ Gy.

UV resistance

iglidur® T220 plain bearings are not resistant to UV radiation.

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

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® T220 | Technical data

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.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® T220 plain bearings decreases. The diagram 02 shows this inverse relationship. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

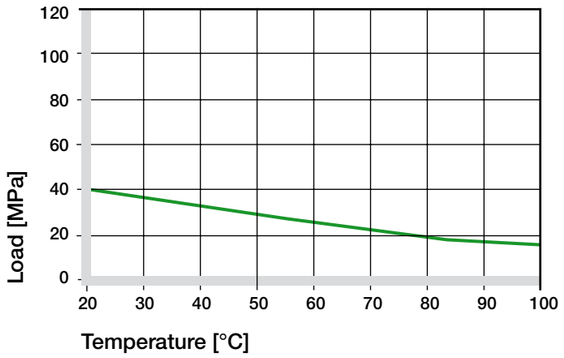


Diagram 02: Permissible maximum surface pressure as a function of temperature (40 MPa at +20 °C)

iglidur® T220 bearings can be stressed up to the permitted limit of 45 MPa, the elastic deformation is less than 2 % at room temperature. The permitted load is limited by higher temperatures (diagram 03).

▶ Surface pressure, **page 41**

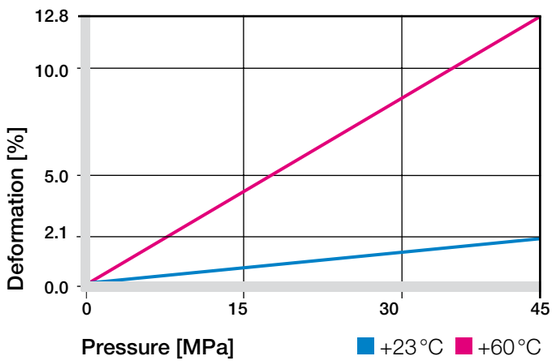


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

The maximum speeds of iglidur® T220 bearings amount to 0.4 m/s with continuous rotation. The friction and the entailing heating limit the permitted speeds. From this it follows that intermittent service or in linear movements, higher speeds can be attained.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	0.4	0.3	1
Short-term	1	0.7	2

Table 03: Maximum surface speeds

Temperatures

The elasticity of the bearings depends on the temperature. A clear increase in elasticity occurs already at +60 °C. At temperatures over +50 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

By the observance of the tobacco processing industry specifications, the coefficient of friction and the wear of iglidur® T220 remain behind those of the best iglidur® bearings. The coefficient of friction decreases with the load and increases only slightly with higher speeds.

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

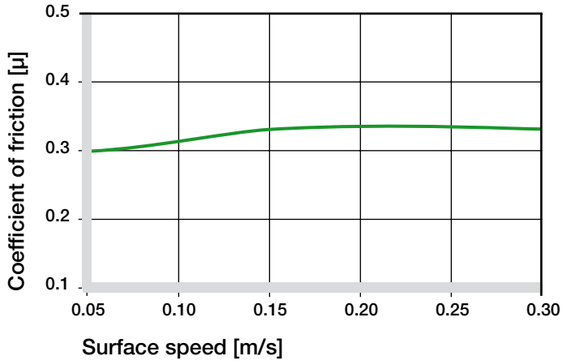


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

iglidur® T220 | Technical data

T220
+100 °C
40 MPa

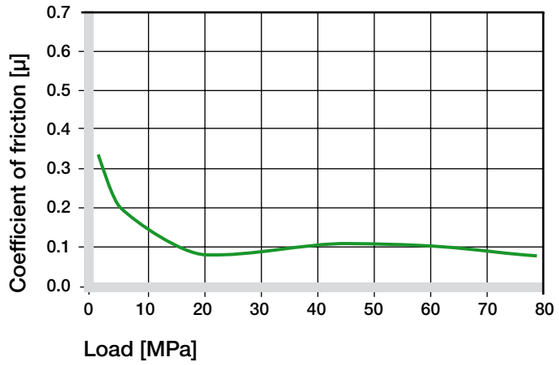


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

Diagram 06 shows the test results of iglidur® T220 bearings running against various shaft materials.
Diagram 07 shows that the bearings react with a heavy increase in wear when the load is increased. Therefore it should be observed that the load should be kept below 5 MPa by the correct dimensioning of the bearings.

▶ Shaft materials, **page 52**

iglidur® T220	Dry	Greases	Oil	Water
C. o. f. µ	0.2–0.32	0.09	0.04	0.04

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

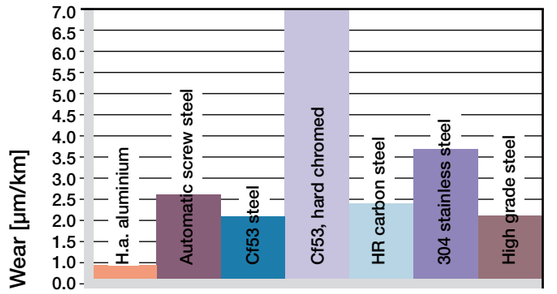


Diagram 06: Wear, rotating with different shaft materials, pressure, p = 1 MPa, v = 0.3 m/s

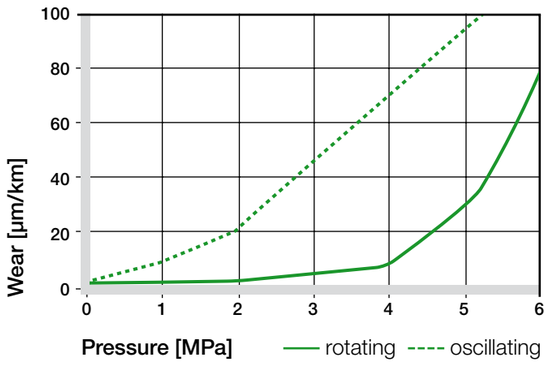


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Installation tolerances

iglidur® T220 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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 E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® T220 E10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.014 +0.054	0 +0.010
> 3 to 6	0–0.030	+0.020 +0.068	0 +0.012
> 6 to 10	0–0.036	+0.025 +0.083	0 +0.015
> 10 to 18	0–0.043	+0.032 +0.102	0 +0.018
> 18 to 30	0–0.052	+0.040 +0.124	0 +0.021
> 30 to 50	0–0.062	+0.050 +0.150	0 +0.025
> 50 to 80	0–0.074	+0.060 +0.180	0 +0.030
> 80 to 120	0–0.087	+0.072 +0.212	0 +0.035
>120 to 180	0–0.100	+0.085 +0.245	0 +0.040

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

Product range

iglidur® T220 plain bearings are manufactured to special order.

iglidur® plain bearing materials for high load applications

Applications with high loads

The iglidur® plain bearings for high loads combine high wear resistance and the ability to withstand high (static) loads, impacts and edge loads. Within these properties they all have their own special strengths. High load means radial surface pressure starting from 30 MPa up to more than 100 MPa (100 MPa means 1,000 kg on a bearing of 10 x 10 mm).

- Lubrication and maintenance-free
- Lightweight
- Good price / performance ratio
- Predictable service life

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

Ø 4–120 mm
More dimensions on request

Imperial dimensions available
▶ From page 1337

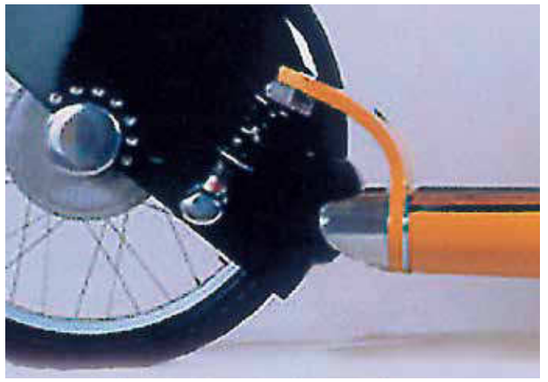
Online product finder
▶ www.igus.eu/iglidur-finder

	Temperature [°C] [123]	Surface pressure [MPa] [124]	Coefficient of friction [µ] [129]	Wear [µm/km] [125]	Price index
iglidur® Q2 – The durable heavy-duty bearing Combined wear resistance and compressive strength at high loads ▶ Page 401	130	120	0.17	1.50	
iglidur® Q – The peak of stability Long service life at medium to high loads ▶ Page 409	135	100	0.19	1.90	
New iglidur® Q290 – Heavy-duty on soft shafts For moderate to high loads, especially on soft shafts ▶ Page 417	140	55	0.12	0.48	
iglidur® TX1 – The high load bearing up to 200 MPa static and 140 MPa dynamic For slow oscillating applications under extreme loads ▶ Page 423					

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

Dust and humidity mean a high degree of wear in the contact zone of the swivelling wheels of this planting machine. iglidur® Z thrust washers resolve the problems.

The conventional roller ball bearings were replaced by iglidur® plain bearings. The plastic bearings are corrosion and dirt resistant.

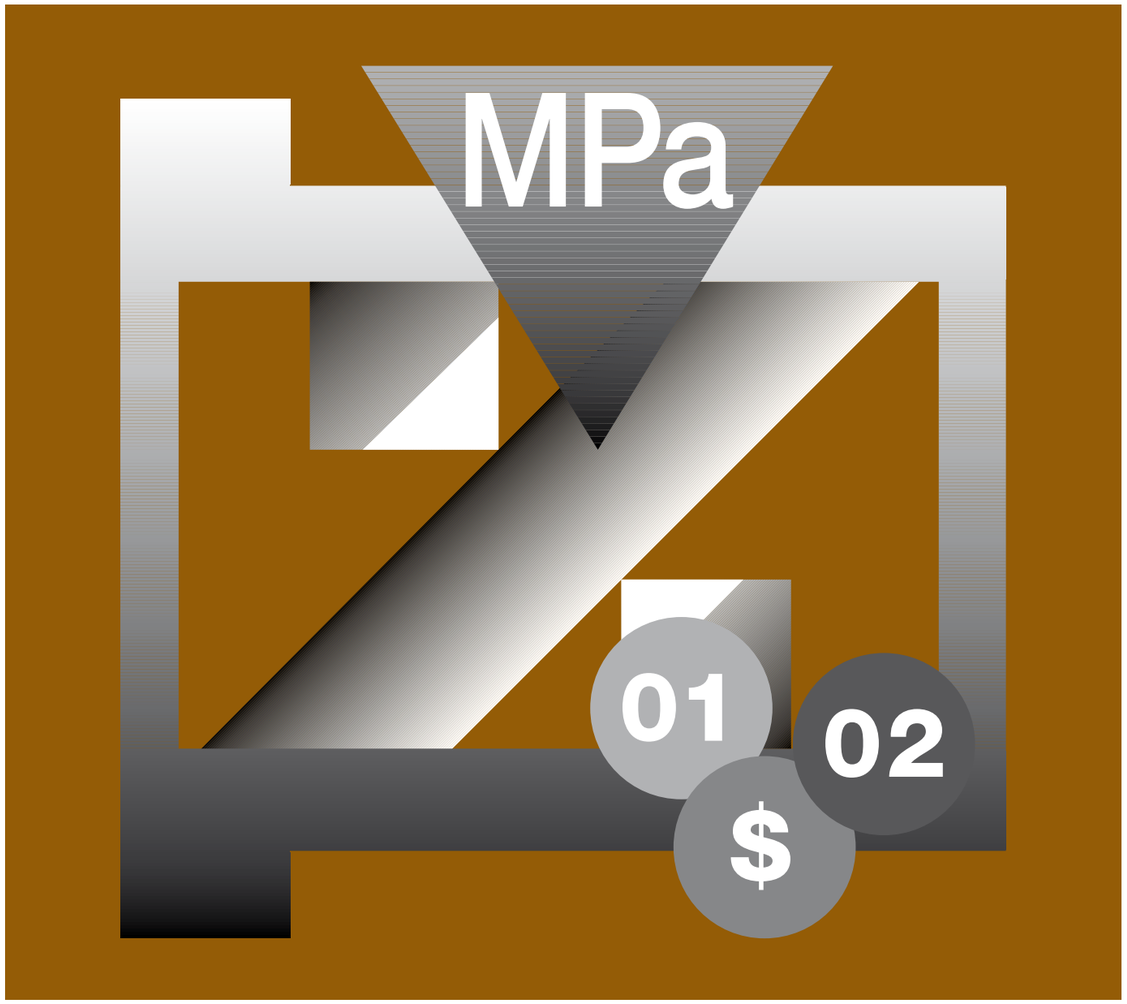


iglidur® Q bearings cope with high loads just as well with various pivoting angles and are ideally suitable for the application in the "Zoob" electric scooter.

Rugged heavy-duty polymer plain bearings are used in the pendular trapezoidal axles that are produced in series. The lubrication-free machine components have been proving their worth for many years.

iglidur® plain bearings were used for mounting the wheels and the join arm of the wheel set, unlike metal bearings, they are resistant to dirt and humidity.

The spades are pushed slowly into the soil. The polymer plain bearings are able to deal with dirt, moisture, etc.



The durable heavy-duty bearing – iglidur® Q2

Wear resistant and dimensionally stable at high loads

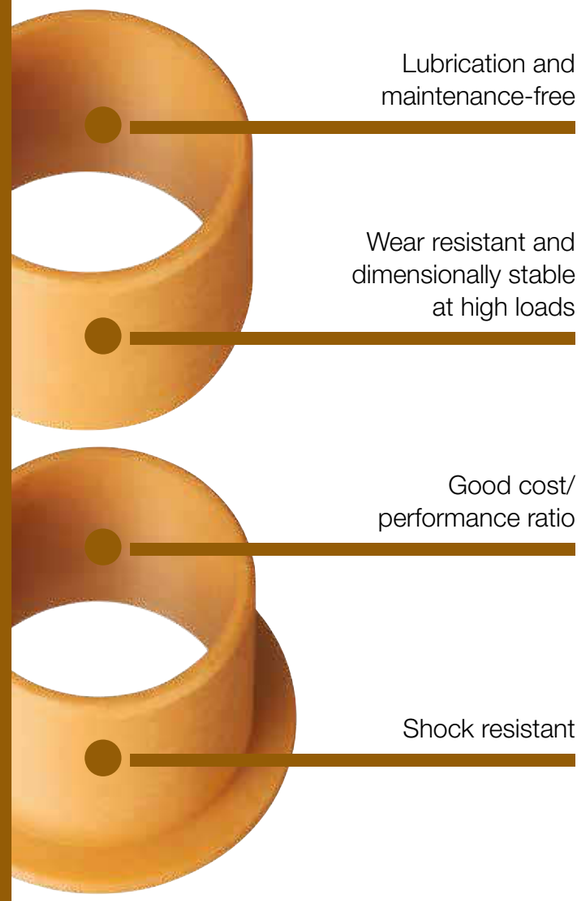
Good price/performance ratio

Lubrication and maintenance-free

Standard range from stock

iglidur® Q2 | The durable heavy-duty bearing

Combined wear resistance and compressive strength at high loads



Where previous iglidur® bearing solutions within the scope of extreme loads and strong impact forces, the iglidur® Q2 starts. Made for heavy-duty pivoting applications under extreme conditions.

When to use it?

- When high dynamic loads occur
- When impacts, shocks and contamination occur in addition to high loads
- For highly load pivoting motions

When not to use it?

- When only static loads occur
  ▶ iglidur® X, page 237
  ▶ iglidur® H2, page 315
- When high pv values occur in conjunction with high speeds
  ▶ iglidur® Z, page 247
- When you need a low-cost all-round bearing
  ▶ iglidur® G, page 79
- When soft shafts are in use
  ▶ iglidur® W300, page 153

Typical application areas

- Agricultural machines
- Utility and construction vehicles
- Machine building

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +130 °C
min. –40 °C

Ø 4–120 mm
More dimensions on request

Imperial dimensions available
▶ **From page 1337**

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

iglidur® Q2 | Technical data

Material properties table

General properties	Unit	iglidur® Q2	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. water absorption	% weight	4.6	
Coefficient of sliding friction, dynamic against steel	µ	0.22–0.42	
pv value, max. (dry)	MPa · m/s	0.7	
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. long-term application temperature	°C	+130	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{13}$	DIN IEC 93
Surface resistance	Ω	$> 10^{11}$	DIN 53482

Table 01: Material properties table

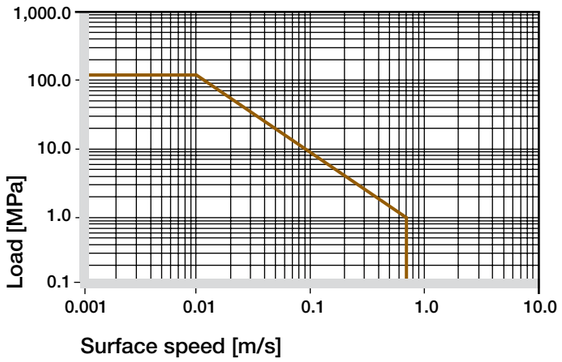


Diagram 01: Permissible pv values for iglidur® Q2 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® Q2 bearings amounts to about 1.1 % weight in standard climatic conditions. The saturation limit in water is 4.6 % weight. This must be taken into account for these types of applications.

▶ **Diagram, www.igus.eu/q2-moisture**

Vacuum

In a vacuum, any moisture content will outgas. Applications under vacuum conditions are possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® Q2 are resistant to radiation up to an intensity of applications $3 \cdot 10^2$ Gy.

UV resistance

iglidur® Q2 are permanently resistant to UV radiation.

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

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

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 highly loaded pivot applications.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® Q2 plain bearings decreases. The diagram 02 shows this inverse relationship. With the long-term permitted application temperature of +130 °C, the permitted surface pressure still amounts to 20 MPa. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

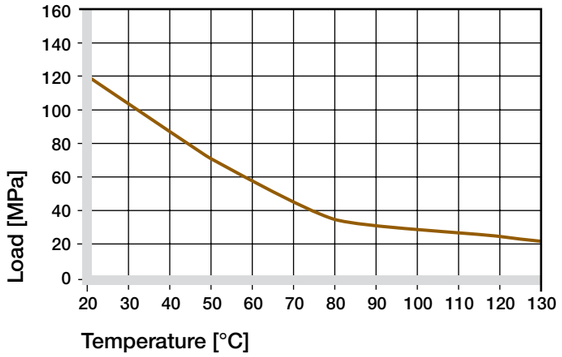


Diagram 02: Permissible maximum surface pressure as a function of temperature (120 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® Q2 at radial loads.

▶ Surface pressure, **page 41**

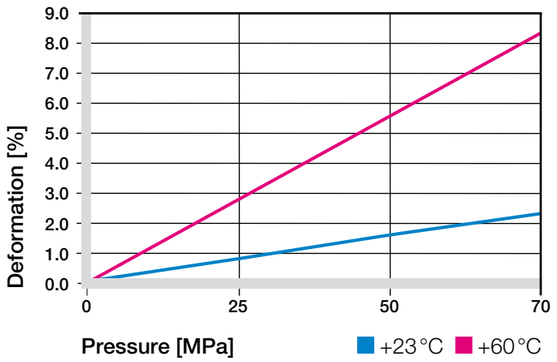


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

The typical applications for iglidur® Q2 plain bearings are highly loaded pivoting motions at comparatively low speeds. However, relatively high speeds are still attainable. The speeds shown in table 03 are threshold values for minimal bearing loads. As loads increase, the permissible speed is reduced with higher loads due to the limitations of the pv value.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	1	0.7	4
Short-term	2	1.4	5

Table 03: Maximum surface speeds

Temperatures

iglidur® Q2 is a very 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. However, the pressure resistance of iglidur® Q2 plain bearings declines as temperatures increase. At 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 49**
▶ Additional securing, **page 49**

Friction and wear

iglidur® Q2 has a low coefficient of friction. Please note that a sliding surface with a rough surface finish will increase the friction. The highest coefficients of friction occur at Ra = 1 µm. We recommend shaft surface finishes (Ra) of 0.1 to a maximum of 0.4 µm. Furthermore, the coefficient of friction of iglidur® Q2 plain bearings largely depends on the speed and load. The coefficient of friction also quickly increases as speeds increase. However, as the load is reduced, the coefficient of friction initially drops significantly, then moderately.

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

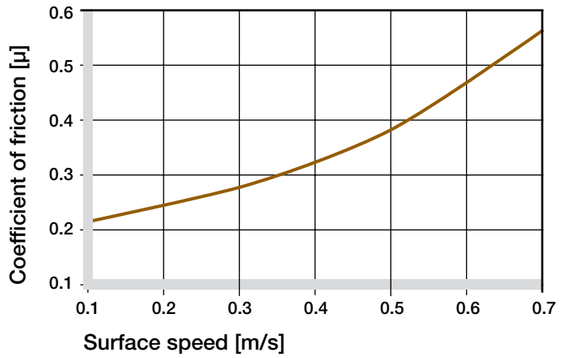


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

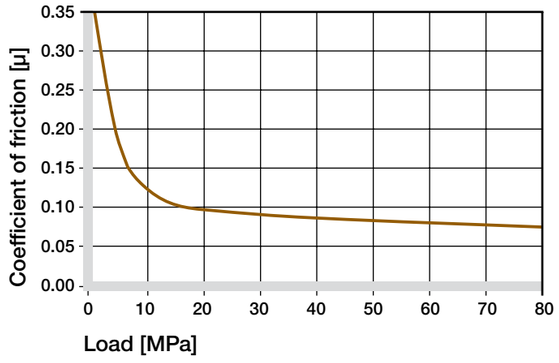


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

Generally speaking, we recommend the use of hardened shafts for highly loaded applications. Furthermore, even at low to medium loads, iglidur® Q2 will give 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 rotations. If the shaft material you plan on using is not shown in these test results, please contact us.

▶ Shaft materials, **page 52**

iglidur® Q2	Dry	Grease	Oil	Water
C. o. f. µ	0.22–0.42	0.09	0.04	0.04

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

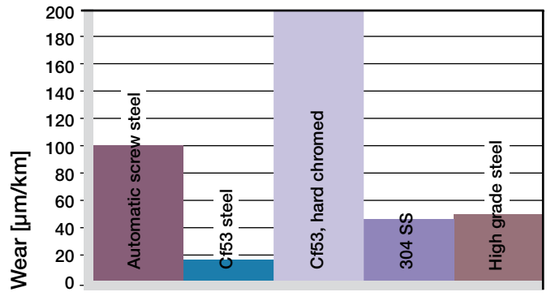


Diagram 06: Wear, pivoting with different shaft materials, pressure p = 45 MPa, v = 0.01 m/s

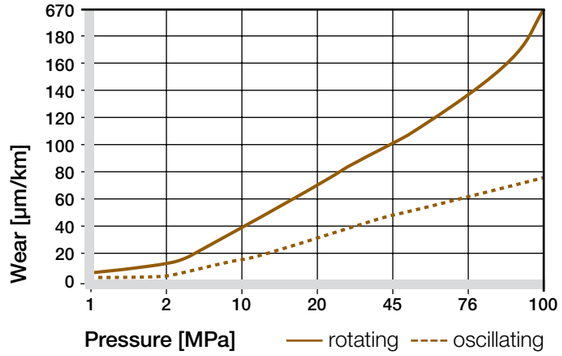


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Installation tolerances

iglidur® Q2 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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 E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

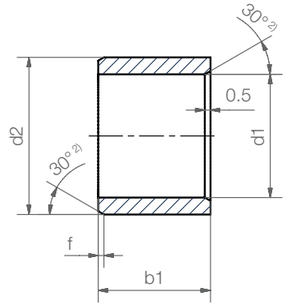
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® Q2 E10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.014 +0.054	0 +0.010
> 3 to 6	0–0.030	+0.020 +0.068	0 +0.012
> 6 to 10	0–0.036	+0.025 +0.083	0 +0.015
> 10 to 18	0–0.043	+0.032 +0.102	0 +0.018
> 18 to 30	0–0.052	+0.040 +0.124	0 +0.021
> 30 to 50	0–0.062	+0.050 +0.150	0 +0.025
> 50 to 80	0–0.074	+0.060 +0.180	0 +0.030
> 80 to 120	0–0.087	+0.072 +0.212	0 +0.035
>120 to 180	0–0.100	+0.085 +0.245	0 +0.040

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

iglidur® Q2 | Product range

Sleeve bearing (Form S)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
Q2	S	M	-04	05	-04
		iglidur® material	Inner-Ø d1	Outer-Ø d2	Length b1
	Form S				
		Metric			

Dimensions according to ISO 3547-1 and special dimensions

Imperial dimensions available
▶ From page 1363

Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	Part No.
4.0		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	+0.020 +0.068	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		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	+0.025 +0.083	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		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	+0.032 +0.102	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	+0.032 +0.102	18.0	20.0	**Q2SM-1618-20**
16.0		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		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	+0.040 +0.124	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	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**

3) After press-fit. Testing methods ▶ Page 57

iglidur® Q2 | Product range

Sleeve bearing (Form S)

Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	Part No.
30.0	+0.040 +0.124	34.0	40.0	**Q2SM-3034-40**
30.0		35.0	40.0	**Q2SM-3035-40**
32.0		36.0	20.0	**Q2SM-3236-20**
32.0		36.0	30.0	**Q2SM-3236-30**
32.0		36.0	40.0	**Q2SM-3236-40**
32.0		40.0	40.0	**Q2SM-3240-40**
35.0		39.0	20.0	**Q2SM-3539-20**
35.0		39.0	30.0	**Q2SM-3539-30**
35.0	+0.050 +0.150	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**
45.0		50.0	40.0	**Q2SM-4550-40**
45.0		50.0	50.0	**Q2SM-4550-50**
50.0	+0.050 +0.150	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		65.0	60.0	**Q2SM-6065-60**
65.0	+0.060 +0.180	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 57

Couldn't find your size?

Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

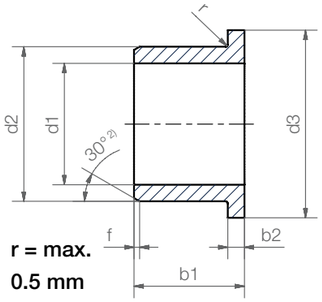
Even more dimensions from stock

More than 300 dimensions are now available. Search online for your required bearing.

▶ **www.igus.eu/iglidur-specialbearings**

iglidur® Q2 | Product range

Flange bearing (Form F)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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

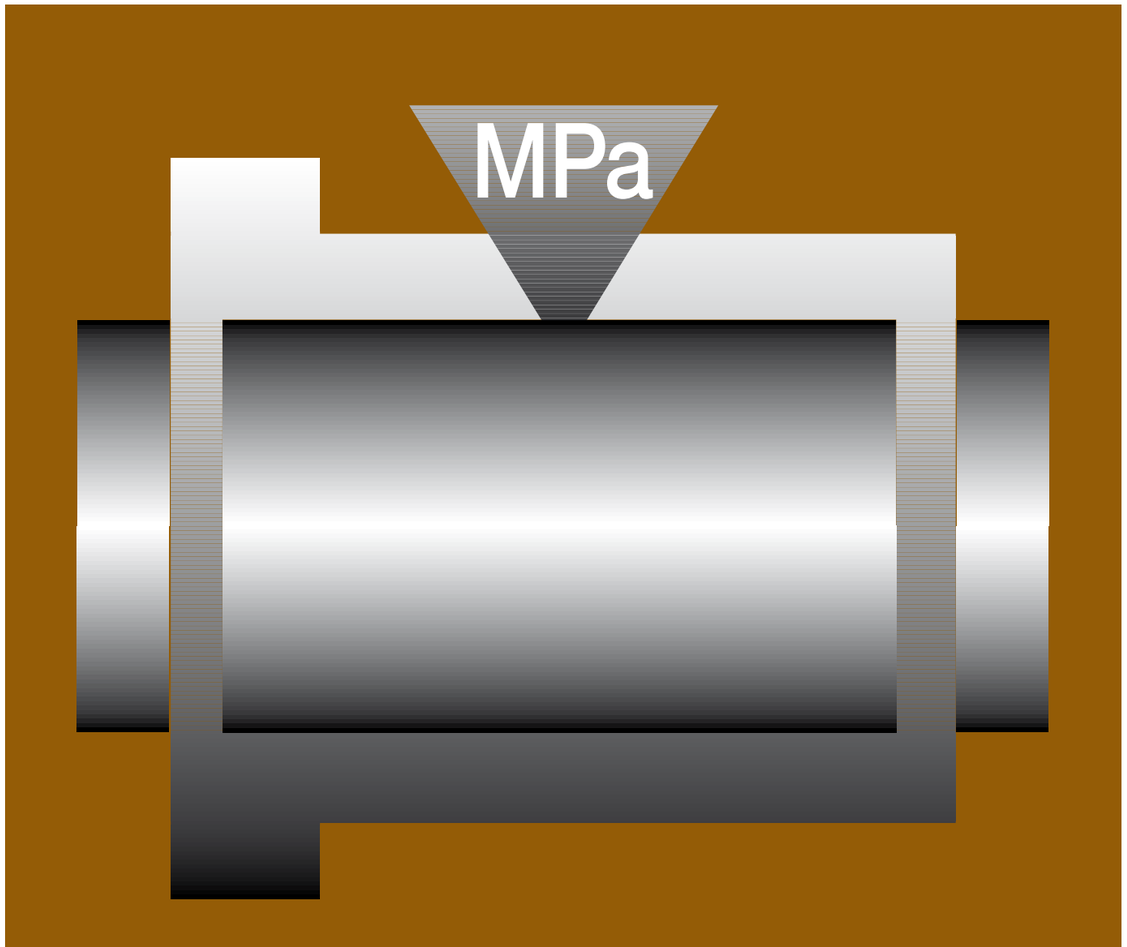
Type	Dimensions [mm]					
Q2	F	M	-06	08	-04	
		iglidur® material	Inner-Ø d1	Outer-Ø d2	Length b1	
	Form F					
		Metric				

Dimensions according to ISO 3547-1 and special dimensions

Dimensions [mm]

d1	d1- Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
5.0		7.0	11.0	5.0	1.0	**Q2FM-0507-05**
6.0	+0.020	8.0	12.0	4.0	1.0	**Q2FM-0608-04**
6.0	+0.068	8.0	12.0	6.0	1.0	**Q2FM-0608-06**
6.0		8.0	12.0	8.0	1.0	**Q2FM-0608-08**
8.0		10.0	15.0	3.0	1.0	**Q2FM-0810-03**
8.0		10.0	15.0	5.5	1.0	**Q2FM-0810-05**
8.0		10.0	15.0	7.5	1.0	**Q2FM-0810-07**
8.0		10.0	15.0	9.5	1.0	**Q2FM-0810-09**
8.0	+0.025	10.0	15.0	10.0	1.0	**Q2FM-0810-10**
10.0	+0.083	12.0	18.0	7.0	1.0	**Q2FM-1012-07**
10.0		12.0	18.0	9.0	1.0	**Q2FM-1012-09**
10.0		12.0	18.0	10.0	1.0	**Q2FM-1012-10**
10.0		12.0	18.0	12.0	1.0	**Q2FM-1012-12**
10.0		12.0	18.0	17.0	1.0	**Q2FM-1012-17**
12.0		14.0	20.0	7.0	1.0	**Q2FM-1214-07**
12.0		14.0	20.0	9.0	1.0	**Q2FM-1214-09**
12.0		14.0	20.0	12.0	1.0	**Q2FM-1214-12**
12.0		14.0	20.0	17.0	1.0	**Q2FM-1214-17**
14.0		16.0	22.0	5.0	1.0	**Q2FM-1416-05**
14.0	+0.032	16.0	22.0	12.0	1.0	**Q2FM-1416-12**
14.0	+0.102	16.0	22.0	17.0	1.0	**Q2FM-1416-17**
15.0		17.0	23.0	9.0	1.0	**Q2FM-1517-09**
15.0		17.0	23.0	12.0	1.0	**Q2FM-1517-12**
15.0		17.0	23.0	17.0	1.0	**Q2FM-1517-17**
16.0		18.0	24.0	12.0	1.0	**Q2FM-1618-12**
16.0		18.0	24.0	17.0	1.0	**Q2FM-1618-17**
18.0		20.0	26.0	12.0	1.0	**Q2FM-1820-12**
18.0	+0.032 +0.102	20.0	26.0	17.0	1.0	**Q2FM-1820-17**
18.0		20.0	26.0	22.0	1.0	**Q2FM-1820-22**
20.0		23.0	30.0	12.0	1.5	**Q2FM-2023-12**
20.0		23.0	30.0	11.5	1.5	**Q2FM-2023-11**
20.0		23.0	30.0	16.5	1.5	**Q2FM-2023-16**
20.0		23.0	30.0	21.5	1.5	**Q2FM-2023-21**
25.0	+0.040 +0.124	28.0	35.0	11.5	1.5	**Q2FM-2528-11**
25.0		28.0	35.0	16.5	1.5	**Q2FM-2528-16**
25.0		28.0	35.0	21.5	1.5	**Q2FM-2528-21**
30.0		34.0	42.0	16.0	2.0	**Q2FM-3034-16**
30.0		34.0	42.0	26.0	2.0	**Q2FM-3034-26**
30.0		34.0	42.0	37.0	2.0	**Q2FM-3034-37**
30.0		34.0	42.0	40.0	2.0	**Q2FM-3034-40**
35.0		39.0	47.0	16.0	2.0	**Q2FM-3539-16**
35.0		39.0	47.0	26.0	2.0	**Q2FM-3539-26**
35.0		39.0	47.0	40.0	2.0	**Q2FM-3539-40**
40.0	+0.050 +0.150	44.0	52.0	3<0.0	2.0	**Q2FM-4044-30**
40.0		44.0	52.0	40.0	2.0	**Q2FM-4044-40**
45.0		50.0	58.0	50.0	2.0	**Q2FM-4550-50**
50.0		55.0	63.0	10.0	2.0	**Q2FM-5055-10**
50.0		55.0	63.0	50.0	2.0	**Q2FM-5055-50**
60.0	+0.060 +0.180	65.0	73.0	60.0	2.0	**Q2FM-6065-60**
80.0		85.0	93.0	100.0	2.5	**Q2FM-8085-100**
100.0	+0.072 +0.212	105.0	125.0	90.0	2.5	**Q2FM-100105125-90**
120.0	+0.085 +0.245	125.0	145.0	90.0	2.5	**Q2FM-120125145-90**

[3] After press-fit. Testing methods ▶ Page 57

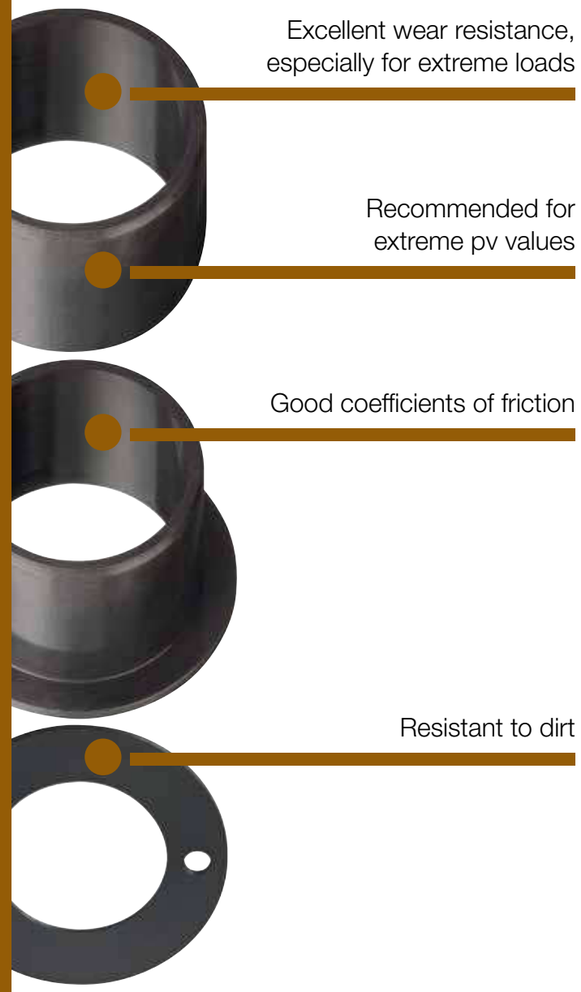


The peak of stability – iglidur® Q

- Excellent wear resistance, especially for extreme loads
- For extreme pv values
- Good coefficients of friction
- Resistant to dirt
- Lubrication and maintenance-free
- Standard range from stock

iglidur® Q | The peak of stability

Long service life at moderate to high loads



Excellent wear resistance, especially for extreme loads

Recommended for extreme pv values

Good coefficients of friction

Resistant to dirt

iglidur® Q is the low priced solution for high duty cycles with extreme loads. Bearings made from this material can be used in all types of motion, but is best suited to oscillating applications.

When to use it?

- For oscillating applications
- Excellent wear resistance, especially for extreme loads
- For extreme pv values
- If the bearing should be insensitive to dirt

When not to use it?

- For underwater applications
  ▶ iglidur® H370, page 291
- When temperatures are constantly greater than +135 °C
  ▶ iglidur® H, page 299
  ▶ iglidur® X, page 237
  ▶ iglidur® Z, page 247
- In situations involving high edge loads or strong impact loads
  ▶ iglidur® Q2, page 401

Typical application areas

- Construction machinery industry
- Sheet metal industry
- Agricultural machines
- Railway technology
- Doors and gates

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +135 °C
min. –40 °C

Ø 6–90 mm
More dimensions on request

Imperial dimensions available
▶ From page 1337

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

iglidur® Q | Technical data

Material properties table

General properties	Unit	iglidur® Q	Testing method
Density	g/cm³	1.40	
Colour		black	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.9	DIN 53495
Max. water absorption	% weight	4.9	
Coefficient of sliding 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. long-term application temperature	°C	+135	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{15}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

Table 01: Material properties table

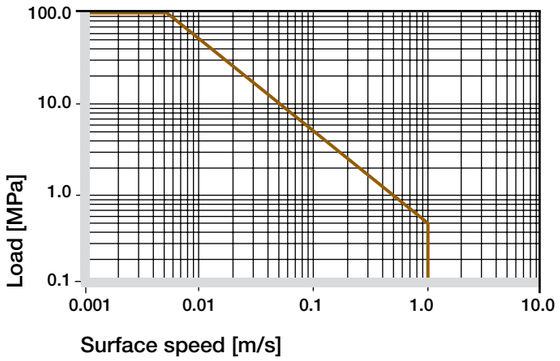


Diagram 01: Permissible pv values for iglidur® Q bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® Q plain bearings is approximately 0.9 % weight in standard climatic conditions. The saturation limit in water is 4.9 % weight. This must be taken into account for these types of applications.

▶ Diagram, www.igus.eu/q-moisture

Vacuum

iglidur® Q plain bearings outgas in a vacuum. Therefore, only dehumidified bearings are suitable in vacuum.

Radiation resistance

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

UV resistance

The tribological properties of iglidur® Q plain bearings stay constant for the most part under weathering effects.

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

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® Q 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 pressure of 25 MPa, it outclasses even bearings made from the extremely abrasion resistant iglidur® W300. Specific solid lubricants, precisely integrated into the material, ensure that the maintenance-free dry operation is guaranteed under any load.

Mechanical properties

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

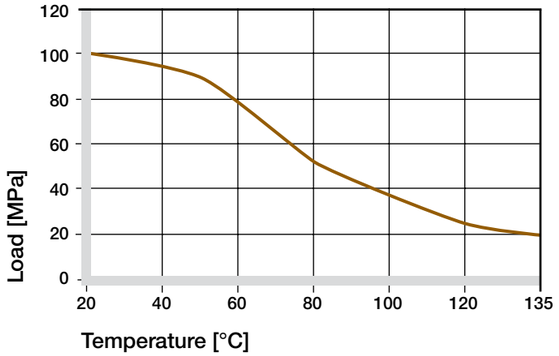


Diagram 02: Permissible maximum surface pressure as a function of temperature (100 MPa at +20 °C)

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 permissible maximum surface pressure of 100 MPa the deformation is less than 3 %.

▶ Surface pressure, **page 41**

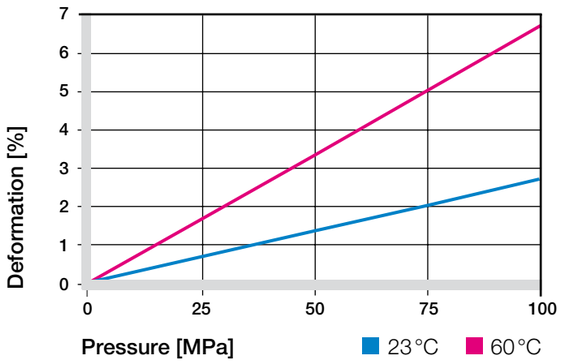


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

Under extreme radial loads, the iglidur® Q bearings can reach the maximum pv values, which are possible in the dry operation with plain bearings. Though the iglidur® Q bearings have the greatest advantages with high loads and low speeds, high surface speeds are also attainable due to the excellent coefficients of friction. The values stated in table 03 show the speed at which the temperature rises to the maximum permitted value as a result of friction.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	1	0.7	5
Short-term	2	1.4	6

Table 03: Maximum surface speeds

Temperatures

Plain bearings made from iglidur® Q have excellent wear resistance even at high temperatures. At temperatures over +50 °C an additional securing is required. Also, notice that the coefficient of friction increases rapidly as temperature increases from around +100 °C.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

Although most dry running plastic bearings feature decreasing coefficients of friction with increasing pressure, iglidur® Q goes further than most, under high pressures the material gives excellent low values (diagrams 04 and 05).

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

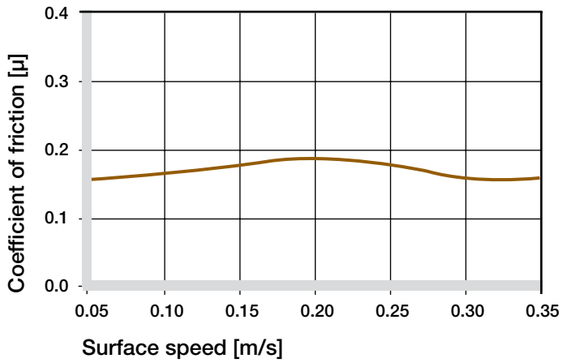


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

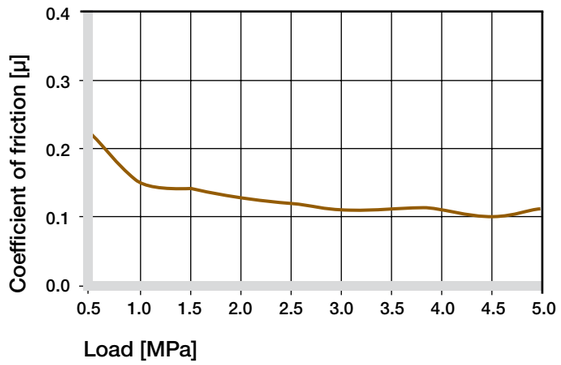


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

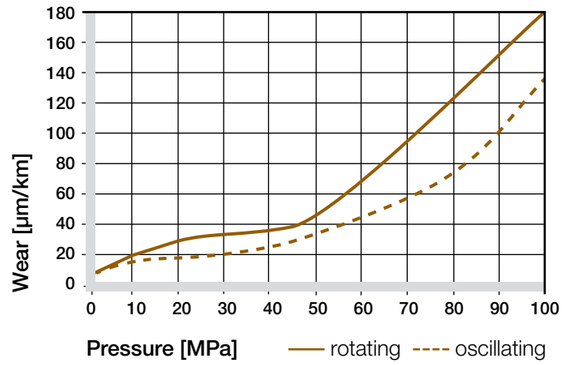


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Shaft materials

Diagram 06 displays a summary of the results of tests with different shaft materials conducted with bearings made from iglidur® Q.

The strengths offered by iglidur® heavy-duty materials become clear from 30 MPa. 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 52**

iglidur® Q	Dry	Grease	Oil	Water
C. o. f. µ	0.05–0.15	0.09	0.04	0.04

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

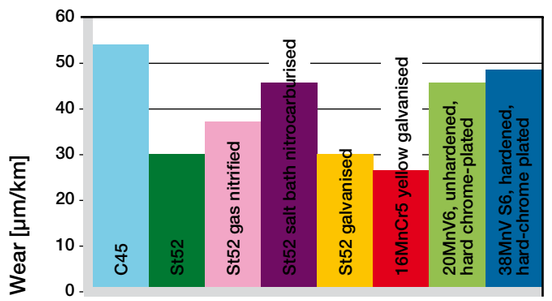


Diagram 06: Wear, pivoting with different shaft materials, pressure p = 30 MPa, v = 0.01 m/s

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, in standard cases the inner diameter automatically adjusts to the E10 tolerances. For specific dimensions the tolerance differs depending on the wall thickness (please see the product range table).

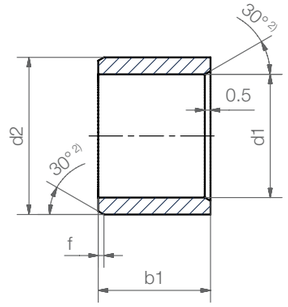
▶ Testing methods, **page 57**

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

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

iglidur® Q | Product range

Sleeve bearing (Form S)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
Q	S	M	-0608	08	-10	
iglidur® material	Form S	Metric	Inner-Ø d1	Outer-Ø d2	Length b1	

Dimensions according to ISO 3547-1 and special dimensions

Inch Imperial dimensions available
▶ From page 1363

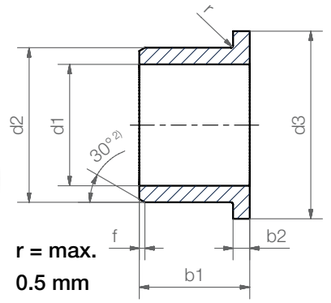
Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	Part No.
6.0	+0.020 +0.068	8.0	10.0	QSM-0608-10
8.0	+0.025	10.0	8.0	QSM-0810-08
10.0	+0.083	12.0	10.0	QSM-1012-10
12.0		14.0	10.0	QSM-1214-10
12.0		14.0	20.0	QSM-1214-20
16.0	+0.032	18.0	8.0	QSM-1618-08
16.0	+0.102	18.0	12.5	QSM-1618-12
16.0		18.0	20.0	QSM-1618-20
18.0		20.0	20.0	QSM-1820-20
20.0		22.0	15.0	QSM-2022-15
20.0		23.0	15.0	QSM-2023-15
20.0		23.0	20.0	QSM-2023-20
20.0		23.0	25.0	QSM-2023-25
20.0	+0.040	23.0	30.0	QSM-2023-30
25.0	+0.124	28.0	25.0	QSM-2528-25
25.0		28.0	48.0	QSM-2528-48
30.0		34.0	20.0	QSM-3034-20
30.0		34.0	35.0	QSM-3034-35
30.0		34.0	40.0	QSM-3034-40
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	+0.050 +0.150	44.0	47.0	QSM-4044-47
45.0		50.0	25.2	QSM-4550-252
45.0		50.0	50.0	QSM-4550-50
50.0		55.0	50.0	QSM-5055-50
50.0		55.0	60.0	QSM-5055-60
50.0		55.0	80.0	QSM-5055-80
55.0		60.0	50.0	QSM-5560-50
60.0		65.0	50.0	QSM-6065-50
65.0	+0.060	70.0	34.0	QSM-6570-34
70.0	+0.180	75.0	50.0	QSM-7075-50
75.0		80.0	40.0	QSM-7580-40
80.0		85.0	60.0	QSM-8085-60
90.0	+0.072 +0.212	95.0	50.0	QSM-9095-50

[3] After press-fit. Testing methods ▶ Page 57

iglidur® Q | Product range

Flange bearing (Form F)



r = max. 0.5 mm

2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
Q	F	M	-0608	08	-03	
iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1	

Dimensions according to ISO 3547-1 and special dimensions

Inch Imperial dimensions available
▶ From page 1385

Dimensions [mm]

d1	d1-Tolerance[3]	d2	d3 d13	b1 h13	b2 -0.14	Part No.
6.0	+0.020	8.0	12.0	3.0	1.0	QFM-0608-03
6.0	+0.068	8.0	12.0	4.0	1.0	QFM-0608-04
8.0		10.0	15.0	5.5	1.0	QFM-0810-05
8.0		10.0	15.0	6.0	1.0	QFM-0810-06
10.0	+0.025	12.0	18.0	6.0	1.0	QFM-1012-06
10.0	+0.083	12.0	18.0	10.0	1.0	QFM-1012-10
10.0		12.0	15.0	3.5	1.0	QFM-101215-035
10.0		12.0	15.0	8.0	1.0	QFM-101215-08
12.0		14.0	20.0	8.0	1.0	QFM-1214-08
12.0		14.0	20.0	12.0	1.0	QFM-1214-12
12.0		14.0	20.0	20.0	1.0	QFM-1214-20
14.0	+0.032 +0.102	16.0	22.0	12.0	1.0	QFM-1416-12
16.0		18.0	24.0	17.0	1.0	QFM-1618-17
18.0		20.0	26.0	12.0	1.0	QFM-1820-12
18.0		20.0	26.0	5.0	1.0	QFM-182026-051

d1	d1-Tolerance[3]	d2	d3 d13	b1 h13	b2 -0.14	Part No.
20.0	+0.040 +0.124	23.0	30.0	21.5	1.5	QFM-2023-21
25.0		28.0	35.0	21.5	1.5	QFM-2528-21
26.0		29.0	35.0	5.0	1.5	QFM-2629-05
27.0		30.0	38.0	20.0	1.5	QFM-2730-20
30.0		34.0	42.0	37.0	2.0	QFM-3034-37
35.0		39.0	47.0	26.0	2.0	QFM-3539-26
35.0		39.0	50.0	35.0	2.0	QFM-353950-35
40.0	+0.050 +0.150	44.0	52.0	14.0	2.0	QFM-4044-14
40.0		44.0	52.0	40.0	2.0	QFM-4044-40
50.0		55.0	63.0	10.0	2.0	QFM-5055-10
50.0		55.0	63.0	50.0	2.0	QFM-5055-50
60.0	+0.060 +0.180	65.0	78.0	50.0	2.0	QFM-6065-50
70.0	+0.180	75.0	83.0	50.0	2.0	QFM-7075-50

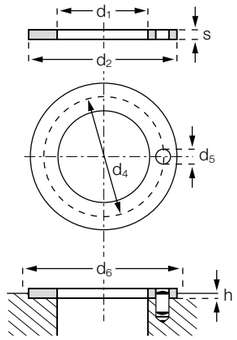
[3] After press-fit. Testing methods ▶ Page 57

Couldn't find your size?
Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

Even more dimensions from stock
More than 300 dimensions are now available. Search online for your required bearing.
▶ **www.igus.eu/iglidur-specialbearings**

iglidur® Q | Product range

Thrust Washer (Form T)



Order key

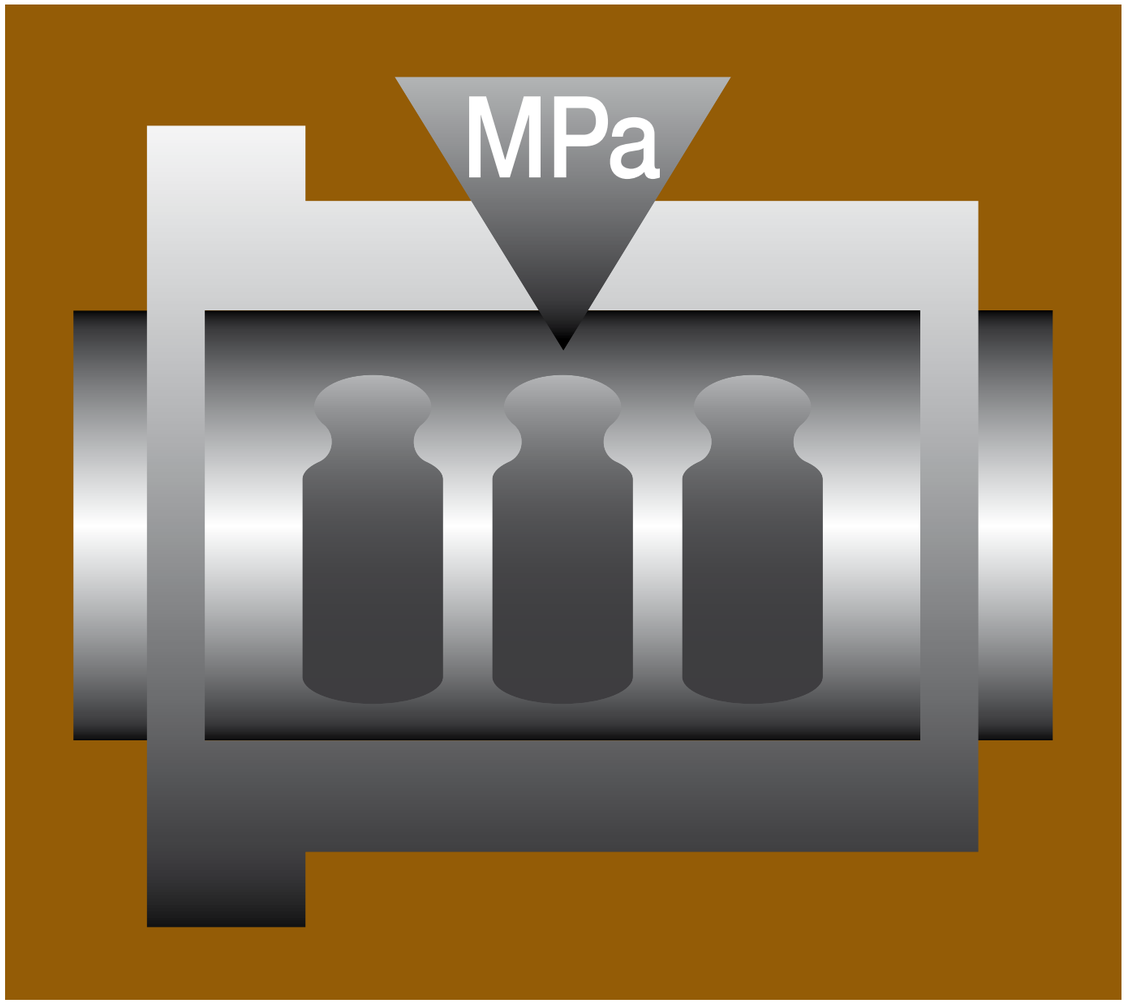
Type	Dimensions [mm]				
Q	T	M	-28	42	-015
iglidur® material	Form T	Metric	Inner-Ø d1 [mm]	Outer-Ø d2 [mm]	Thickness s [mm]

Dimensions according to ISO 3547-1 and special dimensions

Inch Imperial dimensions available
▶ From page 1363

Dimensions [mm]

d1 +0.3	d2 –0.3	s –0.06	d4 –0.12/+0.12	d5 –0.375/+0.125	h +0.2/–0.2	d6 +0.12	Part No.
28.0	42.0	1.5	35.0	4.0	1.0	42.0	**QTM-2842-015**
32.0	54.0	1.5	43.0	4.0	1.0	54.0	**QTM-3254-015**

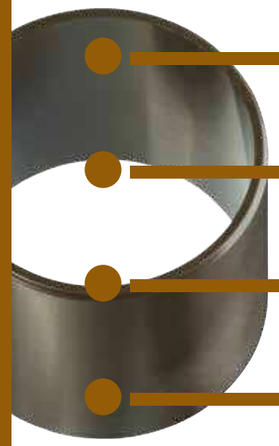


Heavy-duty on soft shafts – iglidur® Q290

- Long life especially on soft shafts
- Resistant to edge loads
- Continuous use up to +140 °C
- Good price/performance ratio
- Lubrication and maintenance-free
- Standard range from stock

iglidur® Q290 | Heavy-duty on soft shafts

For moderate to high loads, especially on soft shafts



Long life especially on soft shafts

Continuous use up to +140 °C

Resistant to edge loads

Lubrication and maintenance-free

iglidur® Q 290 shows outstanding service life in robust pivoting applications, as they are frequently found in some agricultural machinery, especially on "soft" coated shafts (e.g. galvanised). The wear on the shafts is minimal.

When to use it?

- If a long-lasting bearing is needed for rugged operating conditions (agricultural equipment, construction machinery, etc.) with moderate to high dynamic loads on "soft" shafts

When not to use it?

- If permanent static loads of more than 55 MPa occur
  - ▶ iglidur® G, page 79
  - ▶ iglidur® Q, page 409
  - ▶ iglidur® Q2, page 401
- If an extremely wear-resistant bearing is needed on "soft" shafts for minor loads
  - ▶ iglidur® J, page 141
  - ▶ iglidur® J3, page 165
- If constant temperatures of greater than +140 °C occur
  - ▶ iglidur® J350, page 173
  - ▶ iglidur® Z, page 247

Typical application areas

- Agricultural machines
- Utility and construction vehicles

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +140 °C
min. –40 °C

Ø 20–80 mm
More dimensions on request

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

iglidur® Q290 | Technical data

Material properties table

General properties	Unit	iglidur® Q290	Testing method
Density	g/cm³	1.27	
Colour		black	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	3.0	DIN 53495
Max. water absorption	% weight	9.3	
Coefficient of sliding 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. long-term application temperature	°C	+140	
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)	$K^{-1} \cdot 10^{-5}$	7	DIN 53752
Electrical properties			
Specific volume resistance	Ωcm	$>10^{12}$	DIN IEC 93
Surface resistance	Ω	$>10^{12}$	DIN 53482

Table 01: Material properties table

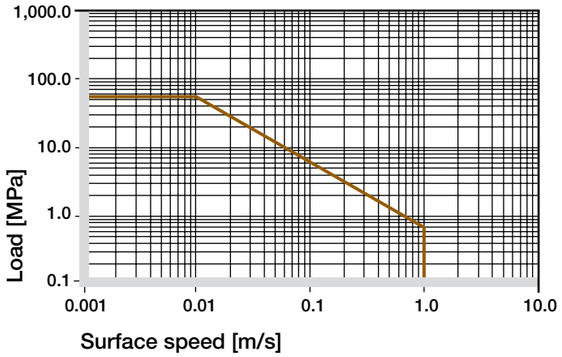


Diagram 01: Permissible pv values for iglidur® Q290 bearings running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® Q290 plain bearings is 3.0 % weight. The saturation limit in water is 9.3 % weight.

Vacuum

In a vacuum, any moisture content will outgas. Use in vacuum is only possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® Q290 are resistant to radiation up to an intensity of applications $3 \cdot 10^2$ Gy.

UV resistance

iglidur® Q290 bearings have good resistance to UV rays and other weathering effects.

Medium	Resistance
Alcohols	+ to 0
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 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® Q290 | Technical data

iglidur® Q290 bearings do not have the highest static load capacity within the iglidur® product range, instead the material shows its strengths at moderate to high dynamic loads: outstanding service life is achieved for rugged pivoting applications, e.g. in agricultural or construction machinery, and especially on "soft" shafts, for both the shafts and bearings!

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® Q290 plain bearings decreases. The diagram 02 shows this inverse relationship. With the short-term permitted application temperature of +180 °C, the permitted surface pressure is still more than 10 MPa. The permissible maximum surface pressure is a mechanical material requirement. No conclusions regarding the tribological properties can be drawn from this.

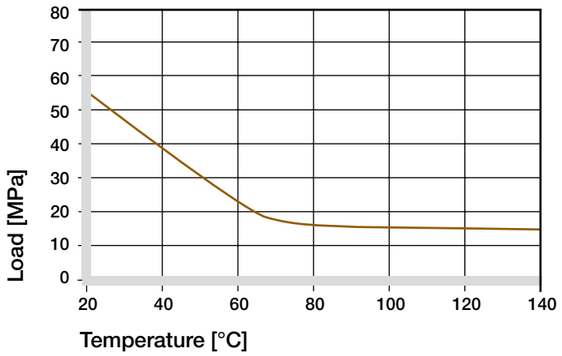


Diagram 02: Permissible maximum surface pressure as a function of temperature (55 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® Q290 at radial loads. These high elastic deformation values, even for loads of more than 50 MPa, contribute significantly to the long service life under rugged environmental conditions such as edge loads, collisions and impacts.

▶ Surface pressure, **page 41**

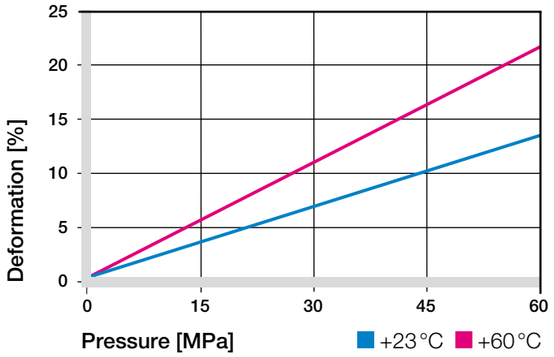


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

Typical applications for iglidur® Q290 bearings include mid to high-load pivoting movements at comparatively slow 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 44**

m/s	Rotating	Oscillating	Linear
Continuous	0.8	0.6	1.0
Short-term	2.0	1.4	2.0

Table 03: Maximum surface speeds

Temperatures

The maximum long-term application temperature of +140 °C enables the use of iglidur® Q290 in, for example, typical applications in the agricultural, commercial vehicle or construction sectors. Starting at an operating temperature of +80 °C, an additional axial safeguard is necessary for the bearing, as a press fit alone is no longer sufficient.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

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.

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

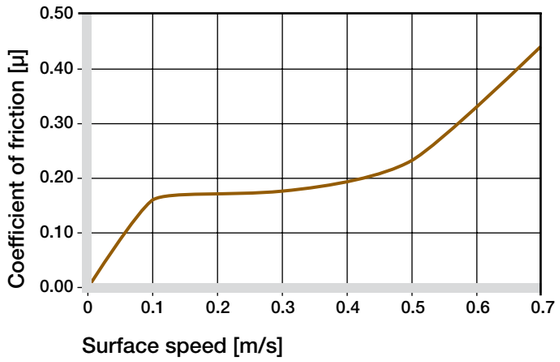


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1 MPa

iglidur® Q290 | Technical data

Q290
+140 °C
55 MPa

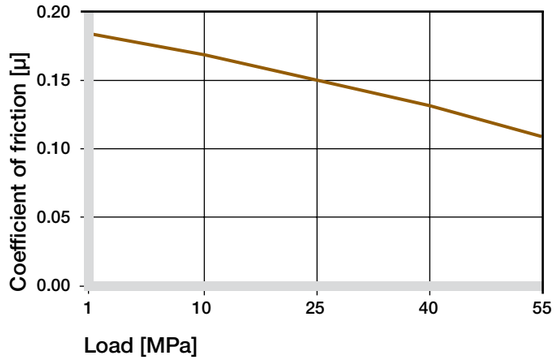


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s against Cf53

Shaft materials

Generally, the use of hardened shafts is recommended for higher loads starting at approximately 10 MPa. 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 52**

iglidur® Q290	Dry	Grease	Oil	Water
C. o. f. µ	0.15–0.23	0.09	0.04	0.04

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

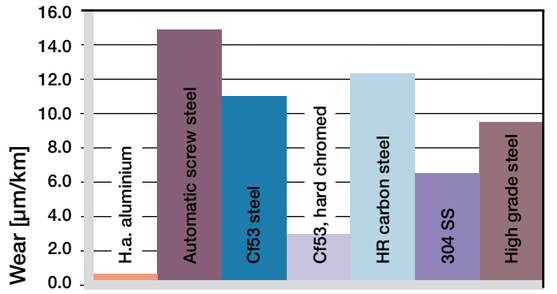


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

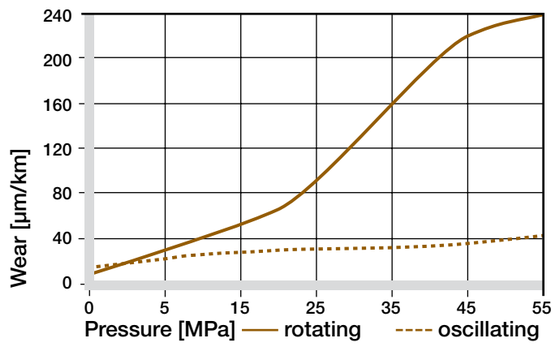


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

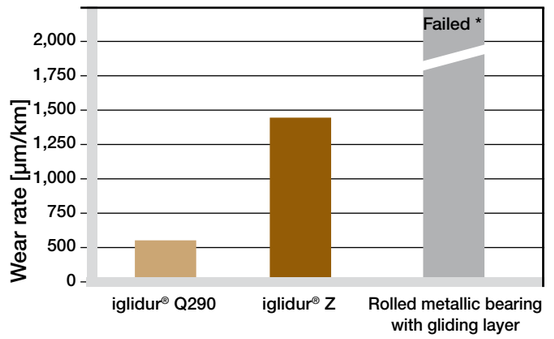


Diagram 08: Wear, pivoting applications on galvanised shafts, p >50 MPa, v = 0.01 m/s

*** Shaft St52 galvanised. Cycle frequency 60,000. Tested with bearing diameter 20 mm and 20 mm length. The force in the test was 30,400 N**

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, in standard cases the inner diameter automatically adjusts to the E10 tolerances. For specific dimensions the tolerance differs depending on the wall thickness (please see the product range table).

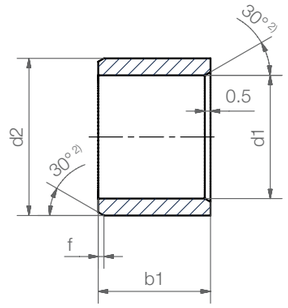
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® Q290 E10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.014 +0.054	0 +0.010
> 3 to 6	0–0.030	+0.020 +0.068	0 +0.012
> 6 to 10	0–0.036	+0.025 +0.083	0 +0.015
> 10 to 18	0–0.043	+0.032 +0.102	0 +0.018
> 18 to 30	0–0.052	+0.040 +0.124	0 +0.021
> 30 to 50	0–0.062	+0.050 +0.150	0 +0.025

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after pressfit without possible expansion of the housing bore

iglidur® Q290 | Product range

Sleeve bearing (Form S)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the d1

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

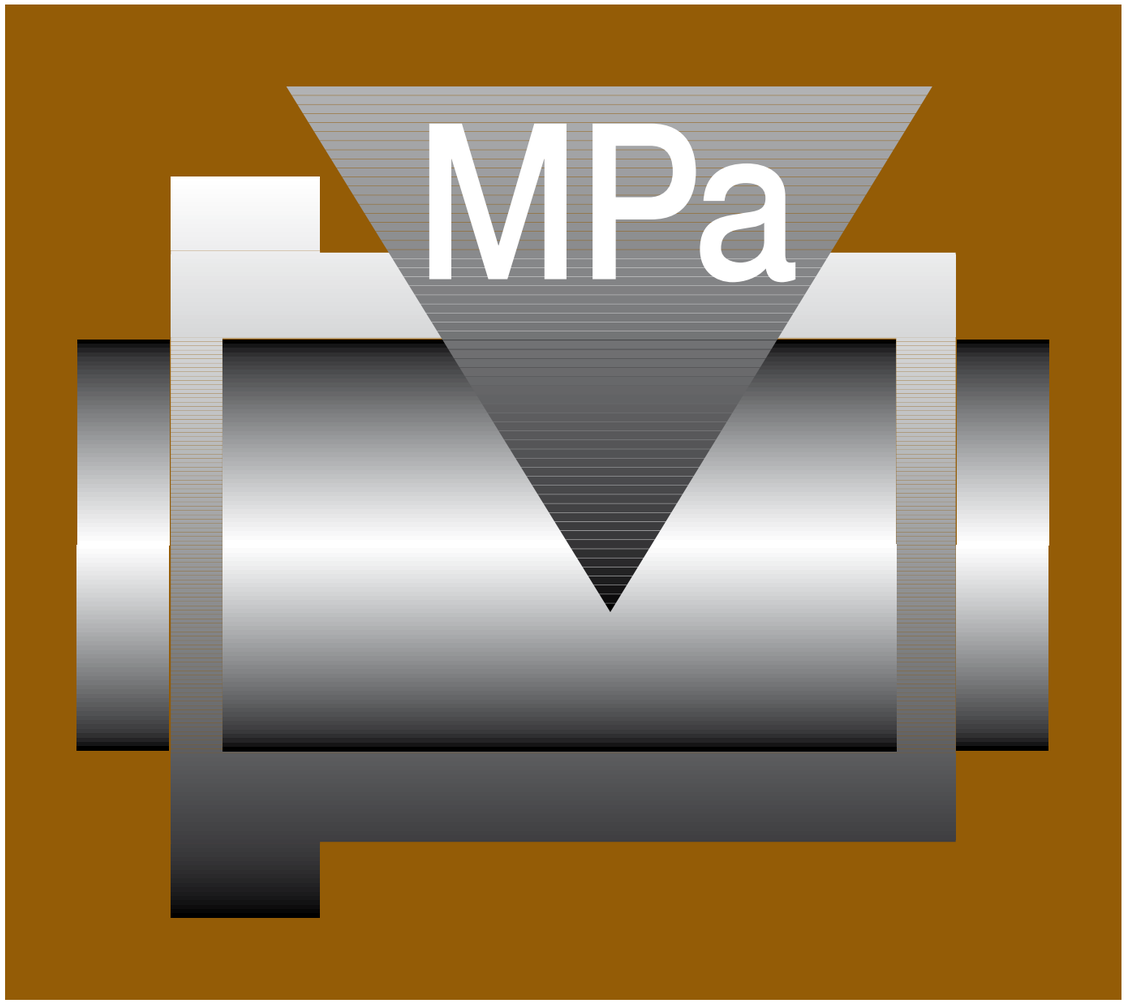
Order key

Type			Dimensions [mm]		
Q290	S	M	-20	23	-20
iglidur® material	Form S	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 ±0.25	Part No.
20.0	+0.040 +0.124	23.0	20.0	**Q290SM-2023-20**
25.0	+0.040 +0.124	28.0	30.0	**Q290SM-2528-30**
30.0	+0.040 +0.124	34.0	30.0	**Q290SM-3034-30**
30.0	+0.040 +0.124	34.0	40.0	**Q290SM-3034-40**
35.0	+0.050 +0.150	39.0	30.0	**Q290SM-3539-30**
35.0	+0.050 +0.150	39.0	40.0	**Q290SM-3539-40**
35.0	+0.050 +0.150	39.0	50.0	**Q290SM-3539-50**
40.0	+0.050 +0.150	44.0	40.0	**Q290SM-4044-40**
50.0	+0.050 +0.150	55.0	50.0	**Q290SM-5055-50**
60.0	+0.060 +0.180	65.0	60.0	**Q290SM-6065-60**
65.0	+0.060 +0.180	70.0	60.0	**Q290SM-6570-60**
70.0	+0.060 +0.180	75.0	60.0	**Q290SM-7075-60**
80.0	+0.060 +0.180	85.0	100.0	**Q290SM-8085-100**

3) After press-fit. Testing methods ▶ Page 57



The high load bearing up to 200 MPa static and 140 MPa dynamic – iglidur® TX1

- Up to 200 MPa static and 140 MPa dynamic
- Wear-resistant and dimensionally stable
- Good media resistance
- Lubrication and maintenance-free
- Standard range from stock

iglidur® TX1 | The high load bearing up to 200 MPa static and 140 MPa dynamic

For slow oscillating applications under extreme loads

Lubrication and maintenance-free

Up to 200 MPa static and 140 MPa dynamic

Wear-resistant and dimensionally stable

Good media resistance

Outstanding rigidity and durability especially under high radial loads during pivoting operations characterise the bearings in the new iglidur® TX1 series. Thanks to the closed-loop wound structure, excellent dimensional stability is achieved in cases of major jolts and impacts.

When to use it?

- When permanently high static loads occur
- For highly load pivoting motions
- 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 100 MPa occur
  - ▶ iglidur® G, page 79
  - ▶ iglidur® Q2, page 401
  - ▶ iglidur® Q, page 409
- For rotational movements during continuous operation
  - ▶ iglidur® W300, page 153
  - ▶ iglidur® Z, page 247
  - ▶ iglidur® G, page 79
- For high-temperature applications with average load levels
  - ▶ iglidur® X, page 237
  - ▶ iglidur® J350, page 173
  - ▶ iglidur® H, page 299

Typical application areas

- Agricultural machines
- Construction machinery and commercial vehicles
- Heavy equipments

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +120 °C
min. –60 °C

Ø 20–80 mm
More dimensions on request

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

iglidur® TX1 | Technical data

Material properties table

General properties	Unit	iglidur® TX1	Testing method
Density	g/cm³	2.1	
Colour		grey-green	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.2	DIN 53495
Max. water absorption	% weight	0.5	
Coefficient of sliding friction, dynamic against steel	µ	0.09–0.37	
pv value, max. (dry)	MPa · m/s	0.89	
Mechanical properties			
Flexural modulus	MPa	12,000	DIN 53457
Flexural strength at +20 °C	MPa	55	DIN 53452
Compressive strength	MPa	220	
Max. permissible surface pressure (+20 °C)	MPa	200	
Shore D Hardness		94	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	°C	+120	
Max. short-term application temperature	°C	+170	
Lower usage temperature	°C	–60	
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 volume resistance	Ωcm	> 1 x 10¹¹	DIN IEC 93
Surface resistance	Ω	> 1 x 10¹³	DIN 53482

Table 01: Material properties table

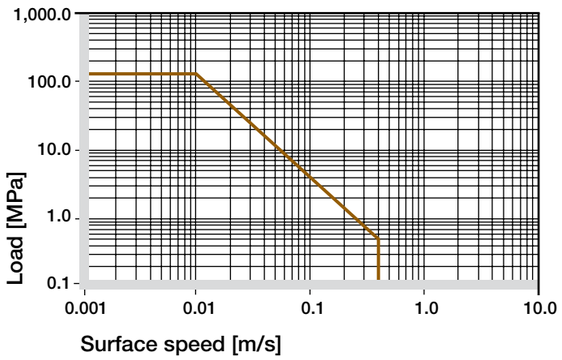


Diagram 01: Permissible pv values for iglidur® TX1 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

Under standard climatic conditions, the moisture absorption of iglidur® TX1 plain bearings is 0.2 % weight. The saturation limit in water is 0.5 % weight.

Vacuum

In a vacuum, any moisture content will outgas. Applications under vacuum conditions are possible to a limited extent.

Radiation resistance

Plain bearings made from iglidur® TX1 are resistant to radiation up to an intensity of applications $2 \cdot 10^2$ Gy.

UV resistance

iglidur® TX1 plain bearings are permanently resistant to UV radiation.

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

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® TX1 | Technical data

iglidur® TX1 bearings represent excellent load bearing capacity under high radial loads coupled with 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. High dirt and media resistance round off the list of properties.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® TX1 plain bearings decreases. The diagram 02 shows this inverse relationship. At the short-term permitted application temperature of +170 °C, the permitted surface pressure is still 100 MPa. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

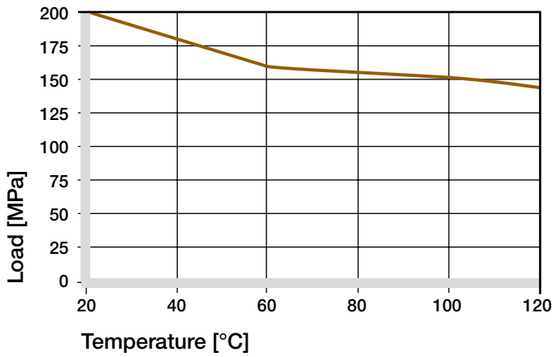


Diagram 02: Permissible maximum surface pressure as a function of temperature (200 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® TX1 at radial load.

▶ Surface pressure, **page 41**

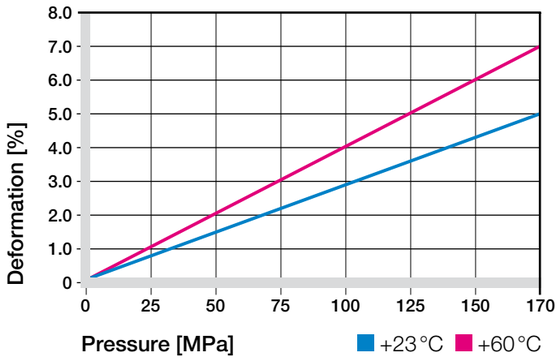


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

The typical applications for iglidur® TX1 plain bearings are high load pivoting motions 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 44**

m/s	Rotating	Oscillating	Linear
Continuous	0.4	0.2	1.0
Short-term	0.9	0.5	2.0

Table 03: Maximum surface speeds

Temperatures

iglidur® TX1 is a very 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 iglidur® TX1 bearings are extremely high over the entire temperature range. As a result, additional axial securing is generally unnecessary. Although the levels still remain very high, a certain decline can, however, be observed at temperatures above +100 °C. In some cases, axial securing is therefore recommended from this temperature. When considering temperatures, the additional frictional heat in the bearing system must be taken into account.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

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. We recommend shaft surface finishes (Ra) of 0.4 to a maximum of 0.7 µm. Furthermore, the coefficient of friction of iglidur® TX1 plain bearings largely depends on the speed and load. As the speed increases, the coefficient of friction will quickly increase as well. With increasing load, the coefficient of friction however sinks continuously.

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

iglidur® TX1 | Technical data

TX1
+120 °C
200 MPa

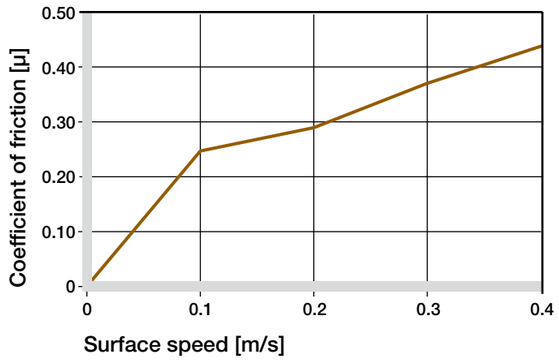


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1 MPa

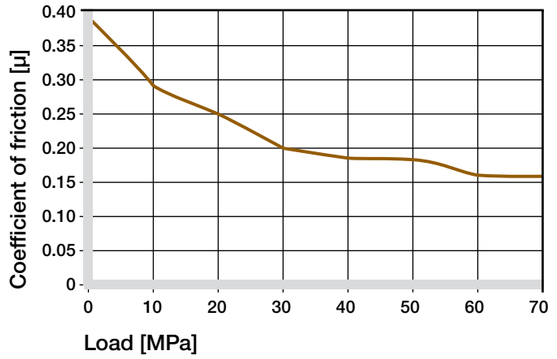


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

In high load applications, we generally recommend the use of hardened shafts. This particularly applies when using iglidur® TX1. However, acceptable wear rates are also achieved on soft shafts with heavy-duty pivoting of less than 100 MPa. The comparison of the wear rate during rotation and pivoting shown in Figure 07 highlights that the strength of iglidur® TX1 lies in heavy-duty pivoting.

▶ Shaft materials, **page 52**

iglidur® TX1	Dry	Grease	Oil	Water
C. o. f. µ	0.09–0.37	0.09	0.04	0.04

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

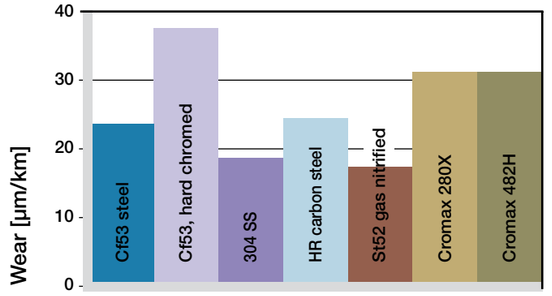


Diagram 06: Wear, rotating with different shaft materials, p = 76 MPa, v = 0.01 m/s

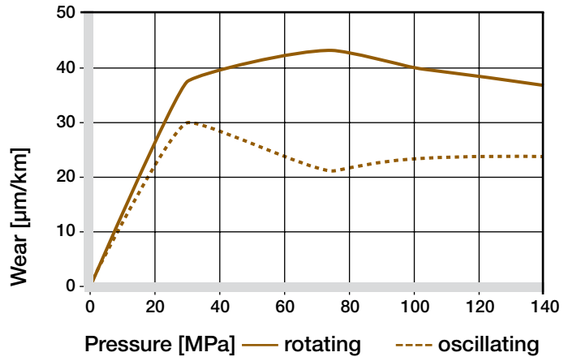


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Installation tolerances

iglidur® TX1 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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 tolerances as stated.

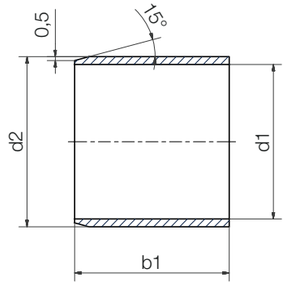
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® TX1 [mm]	Housing H7 [mm]
> 20 to 40	0–0.052	+0.020 +0.150	0 +0.021
> 40 to 70	0–0.062	+0.025 +0.175	0 +0.025
> 70 to 80	0–0.074	+0.050 +0.200	0 +0.030

Table 05: Important tolerances for plain bearings according to ISO 3547-1 after press-fit without possible expansion of the housing bore

iglidur® TX1 | Product range

Sleeve bearing (Form S)



Order key

Type	Dimensions [mm]				
TX1	S	M	-20	25	-20
iglidur® material	Form S	metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions [mm]

d1	d1-Tolerance[38]	d2	b1 ±0.25	Part No.
20.0	+0.020 +0.150	25.0	20.0	**TX1SM-2025-20**
20.0	+0.020 +0.150	25.0	30.0	**TX1SM-2025-30**
20.0	+0.020 +0.150	25.0	40.0	**TX1SM-2025-40**
20.0	+0.020 +0.150	30.0	30.0	**TX1SM-2030-30**
25.0	+0.020 +0.150	30.0	20.0	**TX1SM-2530-20**
25.0	+0.020 +0.150	30.0	30.0	**TX1SM-2530-30**
25.0	+0.020 +0.150	30.0	40.0	**TX1SM-2530-40**
30.0	+0.020 +0.150	35.0	30.0	**TX1SM-3035-30**
30.0	+0.020 +0.150	35.0	40.0	**TX1SM-3035-40**
30.0	+0.020 +0.150	40.0	40.0	**TX1SM-3040-40**
40.0	+0.020 +0.150	45.0	40.0	**TX1SM-4045-40**
40.0	+0.025 +0.175	50.0	50.0	**TX1SM-4050-50**
50.0	+0.025 +0.175	55.0	50.0	**TX1SM-5055-50**
50.0	+0.025 +0.175	60.0	60.0	**TX1SM-5060-60**
60.0	+0.025 +0.175	65.0	60.0	**TX1SM-6065-60**
60.0	+0.025 +0.175	70.0	80.0	**TX1SM-6070-80**
70.0	+0.025 +0.175	75.0	60.0	**TX1SM-7075-60**
70.0	+0.050 +0.200	80.0	100.0	**TX1SM-7080-100**
80.0	+0.050 +0.200	85.0	100.0	**TX1SM-8085-100**
80.0	+0.050 +0.200	90.0	100.0	**TX1SM-8090-100**

[38] After pressfit of the bearing in a housing with nominal dimension

My sketches

iglidur® plain bearing materials for special application areas

Special applications

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.

- Lubrication and maintenance-free
- Lightweight
- Good price / performance ratio
- Predictable service life

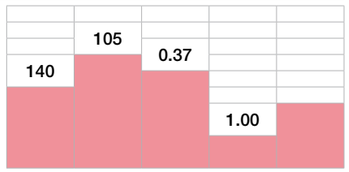
Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

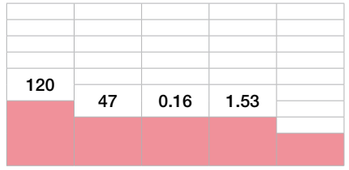
Ø 2–70 mm
More dimensions on request

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

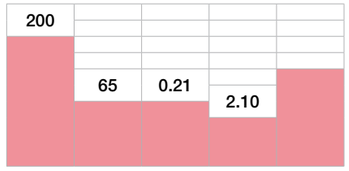
iglidur® F – Electrically conductive
Pressure resistant
▶ **Page 435**



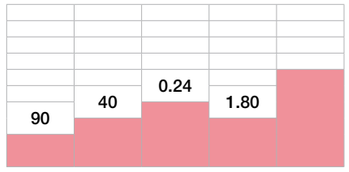
iglidur® F2 – ESD-compatible all-rounder
Electrically conductive
▶ **Page 443**



iglidur® H4 – The automotive standard
Up to +200 °C, high media resistance
▶ **Page 451**



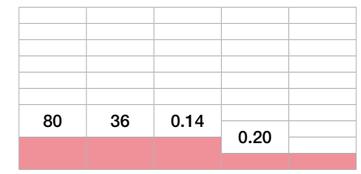
iglidur® UW – For fast rotations under water
Extremely wear resistant in liquid at long-term operation
▶ **Page 459**



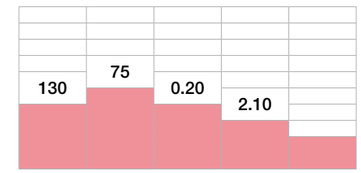
123) Max. long-term application temperature; 124) Max. permissible surface pressure at +20 °C;
125) Best combination for p = 1 MPa, v = 0.3 m/s, rotating

iglidur® plain bearings | Advantages

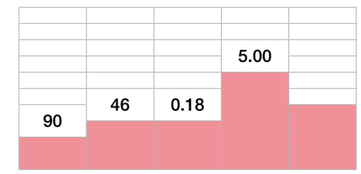
iglidur® N54 – The biopolymer
Based on renewable resources
▶ **Page 467**



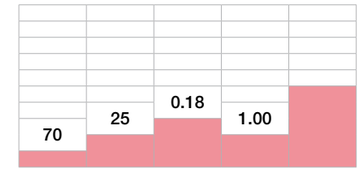
iglidur® G V0 – Low-cost all-rounder for fire protection
UL94 V0 rating
▶ **Page 475**



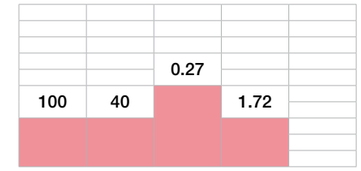
iglidur® J2 – Versatile and cost-effective
For applications with sporadic movements or continuous lubrication
▶ **Page 483**



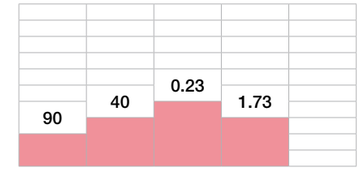
New iglidur® AB – The first antibacterial iglidur® bearing
According to ISO 22 196:2011
▶ **Page 491**



iglidur® B – The flexible
For simple bearing applications
▶ **Page 499**



iglidur® C – Free from PTFE and silicone
For simple applications
▶ **Page 505**



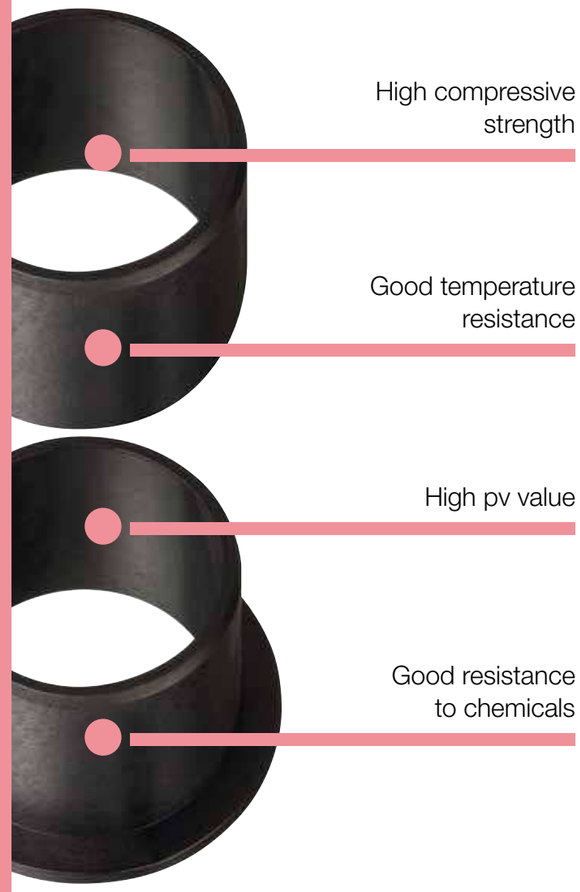
123) Max. long-term application temperature; 124) Max. permissible surface pressure at +20 °C;
125) Best combination for p = 1 MPa, v = 0.3 m/s, rotating

Electrically conductive – iglidur® F

- Electrically conductive
- High compressive strength
- Good temperature resistance
- High pv value
- Good chemical resistance
- Lubrication and maintenance-free
- Standard range from stock

iglidur® F | Electrically conductive

Pressure resistant



Outstanding rigidity and hardness as well as high conductivity: iglidur® F bearings can only be used in dry operations to a limited extent, but offer their fully mechanical benefits when lubricated with oil and grease.

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 wall surface is necessary
  ▶ iglidur® M250, page 95
- When highest wear resistance is required
  ▶ iglidur® W300, page 153
- When very low coefficients of friction when running dry are needed
  ▶ iglidur® J, page 141
- For underwater applications
  ▶ iglidur® H370, page 291
- When you need an universal bearing
  ▶ iglidur® G, page 79

Typical application areas

- Textile industry
- Automotive industry

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +140 °C
min. –40 °C

Ø 2–70 mm
More dimensions on request

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

iglidur® F | Technical data

Material properties table

General properties	Unit	iglidur® F	Testing method
Density	g/cm³	1.25	
Colour		black	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	1.8	DIN 53495
Max. water absorption	% weight	8.4	
Coefficient of sliding friction, dynamic against steel	µ	0.1–0.39	
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. long-term application temperature	°C	+140	
Max. short-term application temperature	°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 volume resistance	Ωcm	$< 10^3$	DIN IEC 93
Surface resistance	Ω	$< 10^2$	DIN 53482

[5] The good conductivity of this plastic material under certain circumstances can favour the generation of corrosion on the metallic contact components.

Table 01: Material properties table

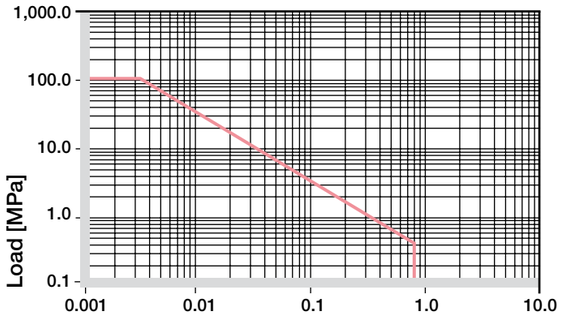


Diagram 01: Permissible pv values for iglidur® F bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The humidity absorption of iglidur® F bearings amounts to about 1.8% weight in standard climatic conditions. The saturation limit in water is 8.4% weight. This must be taken into account along with other environmental influences.

▶ Diagram, www.igus.eu/f-moisture

Vacuum

iglidur® F plain bearings outgas in a vacuum. Use in vacuum is only possible with dehumidified bearings.

Radiation resistance

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

UV resistance

iglidur® F plain bearings are permanently resistant to UV radiation.

Medium	Resistance
Alcohols	+ to 0
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 02: Chemical resistance

▶ Chemical table, **page 1424**

When bearings need to be electrically conductive, especially in applications that should keep out static, the iglidur® F is the right choice. Moreover, the iglidur® F bearings are extremely pressure resistant. At room temperature, they could be statically loaded up to 105 MPa.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® F plain bearings decreases. The diagram 02 shows this inverse relationship. However, at the long-term maximum temperature of +140 °C the permissible surface pressure is almost 50 MPa. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

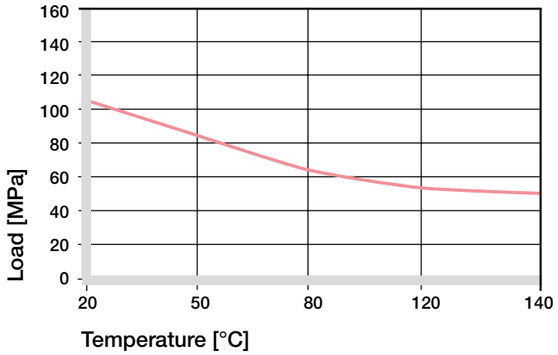


Diagram 02: Permissible maximum surface pressure as a function of temperature (105 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® F at radial loads. At the permissible maximum surface pressure of 105 MPa the deformation at room temperature is less than 3.0 %.
A plastic deformation can be negligible up to this pressure load. However, it is also dependent on the service time.

▶ Surface pressure, **page 41**

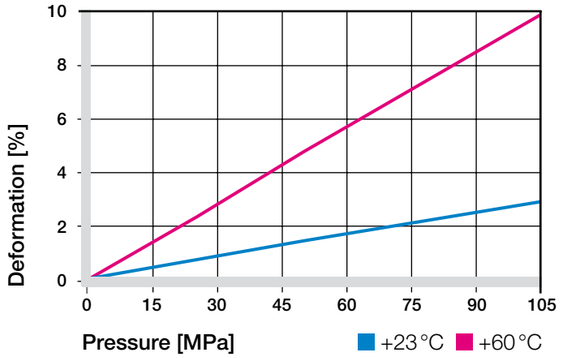


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

The maximum permitted surface speeds are based on the operation period and the type of motion. A bearing is the most stressed in long-term rotating motions. Here the maximum speed for the iglidur® F bearing is 0.8 m/s. The maximum values specified in table 03 are attained only at minimum pressure loads. In practice these limit values are not often attained due to interactions.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	0.8	0.6	3
Short-term	1.5	1.1	6

Table 03: Maximum surface speeds

Temperatures

The ambient temperatures strongly influence the features of bearings. With increasing temperatures, the compressive strength of iglidur® F plain bearings decreases. The wear also increases. At temperatures over +105 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

In dry operation, the coefficients of friction of iglidur® F bearings are not as favorable as those of many other iglidur® materials. However iglidur® bearings can be lubricated without any problems, and iglidur® F bearings attain excellent results among the lubricated iglidur® bearings.

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

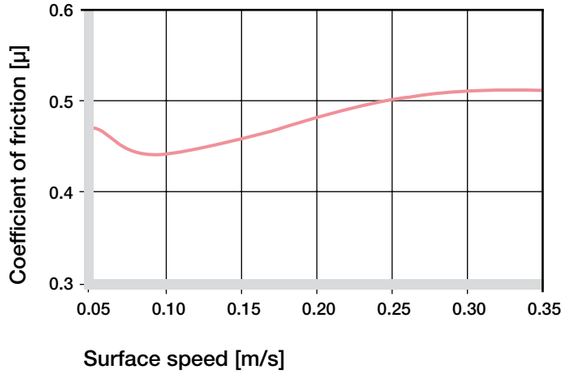


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

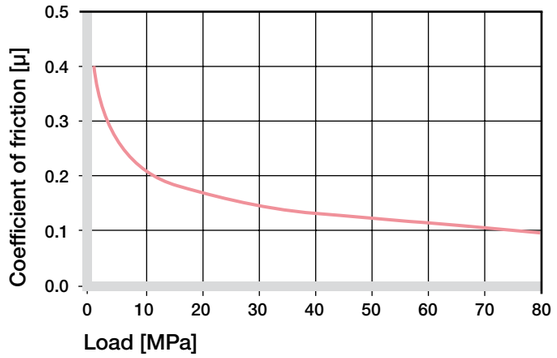


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

Diagrams 06 and 07 display a summary of the results of tests with different shaft materials conducted with bearings made from iglidur® F. In the lowest load range, the hard-chromed shafts prove to be the most suitable in rotating applications with iglidur® F bearings.

▶ Shaft materials, **page 52**

iglidur® F	Dry	Greases	Oil	Water
C. o. f. µ	0.1–0.39	0.09	0.04	0.04

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

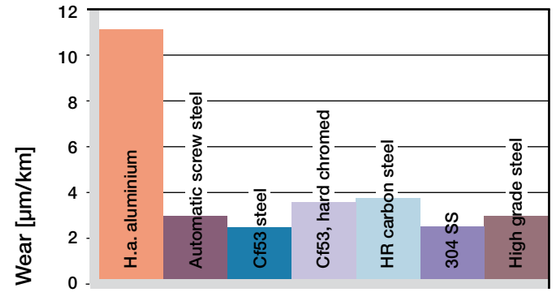


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

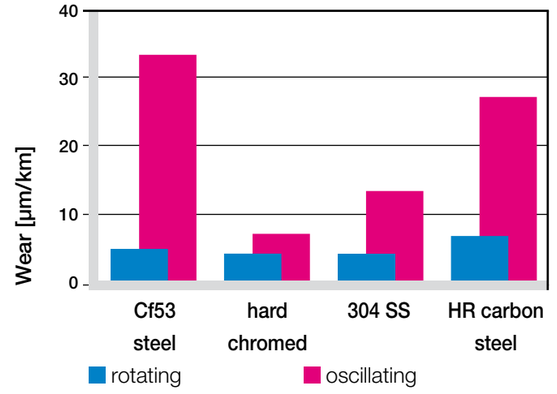


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2 MPa

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, in standard cases 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).

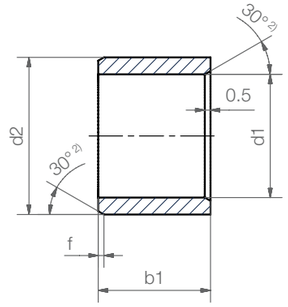
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® F D11 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.020 +0.080	0 +0.010
> 3 to 6	0–0.030	+0.030 +0.105	0 +0.012
> 6 to 10	0–0.036	+0.040 +0.130	0 +0.015
> 10 to 18	0–0.043	+0.050 +0.160	0 +0.018
> 18 to 30	0–0.052	+0.065 +0.195	0 +0.021
> 30 to 50	0–0.062	+0.080 +0.240	0 +0.025
> 50 to 80	0–0.074	+0.100 +0.290	0 +0.030

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

iglidur® F | Product range

Sleeve bearing (Form S)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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 S M	- 02	03	- 03		
iglidur® material	Form S	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

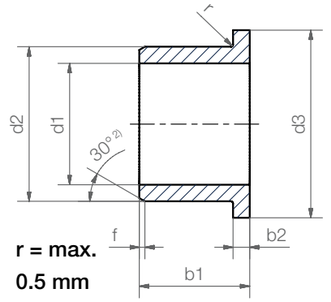
Dimensions [mm]

d1	d1- Tolerance 3)	d2	b1 h13	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		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	+0.030 +0.105	8.0	6.0	FSM-0608-06
6.0		8.0	8.0	FSM-0608-08
6.0		8.0	10.0	FSM-0608-10
6.0		8.0	13.8	FSM-0608-13
7.0		9.0	10.0	FSM-0709-10
7.0		9.0	12.0	FSM-0709-12
8.0		10.0	8.0	FSM-0810-08
8.0	+0.040 +0.130	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		14.0	10.0	FSM-1214-10
12.0		14.0	15.0	FSM-1214-15
13.0	+0.050 +0.160	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
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		22.0	14.5	FSM-2022-14
20.0		22.0	20.0	FSM-2022-20
20.0		23.0	15.0	FSM-2023-15
20.0		23.0	20.0	FSM-2023-20
22.0		25.0	15.0	FSM-2225-15
25.0	+0.065 +0.195	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		36.0	30.0	FSM-3236-30
35.0		39.0	30.0	FSM-3539-30
35.0		39.0	40.0	FSM-3539-40
40.0	+0.080 +0.240	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 57

iglidur® F | Product range

Flange bearing (Form F)



r = max. 0.5 mm

2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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 F M	- 04	05	- 04		
iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

Dimensions [mm]

d1	d1- Tolerance 3)	d2	d3 d13	b1 h13	b2 –0.14	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	1.0	FFM-0507-05
6.0		8.0	12.0	6.0	1.0	FFM-0608-06
6.0		8.0	12.0	8.0	1.0	FFM-0608-08
8.0	+0.040 +0.130	10.0	15.0	6.0	1.0	FFM-0810-06
8.0		10.0	15.0	9.0	1.0	FFM-0810-09
10.0		12.0	18.0	6.0	1.0	FFM-1012-06
10.0		12.0	18.0	8.0	1.0	FFM-1012-08
10.0		12.0	18.0	9.0	1.0	FFM-1012-09
10.0		12.0	18.0	15.0	1.0	FFM-1012-15
10.0		12.0	18.0	18.0	1.0	FFM-1012-18
12.0		14.0	20.0	9.0	1.0	FFM-1214-09
12.0		14.0	20.0	12.0	1.0	FFM-1214-12
14.0	+0.050 +0.160	16.0	22.0	12.0	1.0	FFM-1416-12
14.0		16.0	22.0	17.0	1.0	FFM-1416-17
15.0		17.0	23.0	12.0	1.0	FFM-1517-12
15.0		17.0	23.0	17.0	1.0	FFM-1517-17
16.0	+0.050 +0.160	18.0	24.0	17.0	1.0	FFM-1618-17
18.0		20.0	26.0	12.0	1.0	FFM-1820-12
18.0		20.0	26.0	17.0	1.0	FFM-1820-17
20.0	+0.065 +0.195	23.0	30.0	21.0	1.5	FFM-2023-21
25.0		28.0	35.0	21.0	1.5	FFM-2528-21
30.0		34.0	42.0	26.0	2.0	FFM-3034-26
32.0		36.0	45.0	26.0	2.0	FFM-3236-26
35.0		39.0	47.0	6.0	2.0	FFM-3539-06
35.0		39.0	47.0	16.0	2.0	FFM-3539-16
35.0		39.0	47.0	26.0	2.0	FFM-3539-26
40.0	+0.080 +0.240	44.0	52.0	30.0	2.0	FFM-4044-30
40.0		44.0	52.0	40.0	2.0	FFM-4044-40
45.0		50.0	58.0	50.0	2.0	FFM-4550-50
50.0		55.0	63.0	10.0	2.0	FFM-5055-10
50.0		55.0	63.0	40.0	2.0	FFM-5055-40
60.0	+0.100	65.0	73.0	40.0	2.0	FFM-6065-40
70.0	+0.290	75.0	83.0	40.0	2.0	FFM-7075-40

3) After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

Even more dimensions from stock

More than 300 dimensions are now available. Search online for your required bearing.

▶ **www.igus.eu/iglidur-specialbearings**

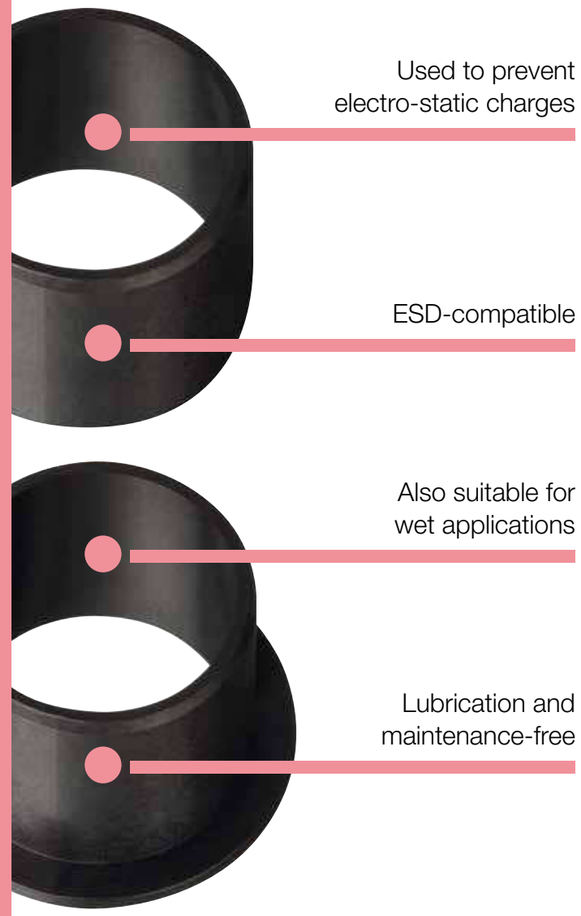
My sketches

ESD-compatible all-rounder – iglidur® F2

- Used to prevent electro-static charges
- Also suitable for wet applications
- Lubrication and maintenance-free
- Standard range from stock

iglidur® F2 | ESD-compatible all-rounder

Electrically conductive



iglidur® F2 helps to prevent electrostatic charging. Good resistance to media and temperature, suitable even in wet conditions due to low moisture absorption and good universal wear values pave the way for a wide range of applications.

When to use it?

- When the bearing should be electrically discharging
- When a universal bearing is required for a broad application range

When not to use it?

- When a universal bearing without static discharge capacity is required
  ▶ iglidur® G, page 79
  ▶ iglidur® P, page 113
- For underwater application
  ▶ iglidur® H370, page 291
- When extremely high wear resistance is required
  ▶ iglidur® J, page 141
  ▶ iglidur® W300, page 153

Typical application areas

- Machine building
- Jig construction
- Industrial handling

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +120 °C
min. –40 °C

Ø 5–20 mm
More dimensions on request

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

iglidur® F2 | Technical data

Material properties table

General properties	Unit	iglidur® F2	Testing method
Density	g/cm³	1.52	
Colour		black	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.2	DIN 53495
Max. water absorption	% weight	0.4	
Coefficient of sliding 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. long-term application temperature	°C	+120	
Max. short-term application temperature	°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 volume resistance	Ωcm	$< 10^9$	DIN IEC 93
Surface resistance	Ω	$< 10^9$	DIN 53482

Table 01: Material properties table

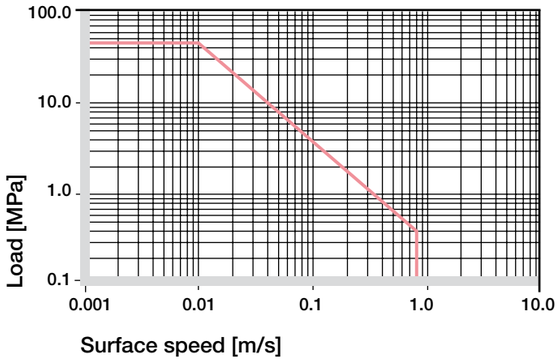


Diagram 01: Permissible pv values for iglidur® F2 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® F2 plain bearings is approximately 0.2% weight in standard climatic conditions. The saturation limit in water is 0.4% weight.

▶ Diagram, www.igus.eu/f2-moisture

Vacuum

iglidur® F2 plain bearings outgas in a vacuum. Use in vacuum is only possible with dehumidified bearings.

Radiation resistance

Plain bearings made from iglidur® F2 are resistant to radiation up to an intensity of applications $3 \cdot 10^2$ Gy.

UV resistance

iglidur® F2 plain bearings are partially resistant to UV radiation.

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

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® F2 | Technical data

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-compatible” applications.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® F2 bearings decreases. The diagram 02 shows this inverse relationship. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

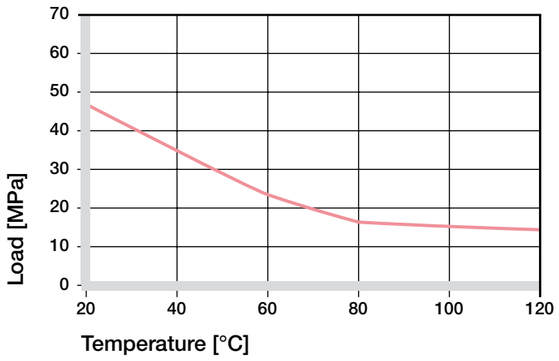


Diagram 02: Permissible maximum surface pressure as a function of temperature (47 MPa at +20 °C)

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 41**

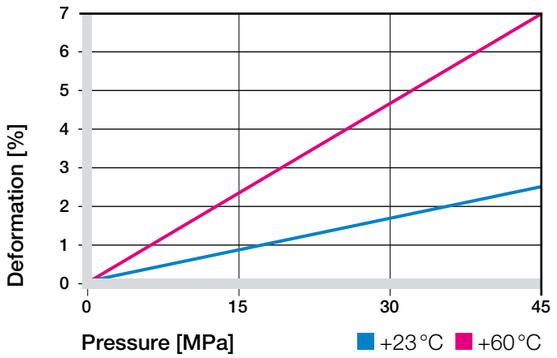


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

The maximum permitted surface speeds are based on the operation period and the type of motion. A bearing is the most stressed in long-term rotating motions. Here the maximum speed for the iglidur® F2 bearing is 0.8 m/s. The maximum values specified in table 03 are not often attained in practice.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	0.8	0.7	3
Short-term	1.4	1.1	5

Table 03: Maximum surface speeds

Temperatures

The ambient temperatures strongly influence the features of bearings. With increasing temperatures, the compressive strength of iglidur® F2 bearings decreases. The diagram 02 shows this inverse relationship. At temperatures over +70 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

Coefficient of friction and wear resistance alter with the application parameters (diagrams 04 and 05).

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

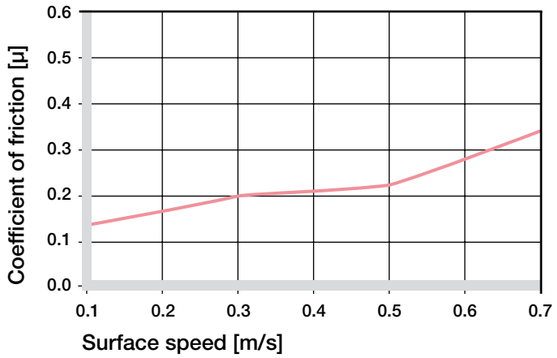


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1.0 MPa

iglidur® F2 | Technical data

F2
+120 °C
47 MPa

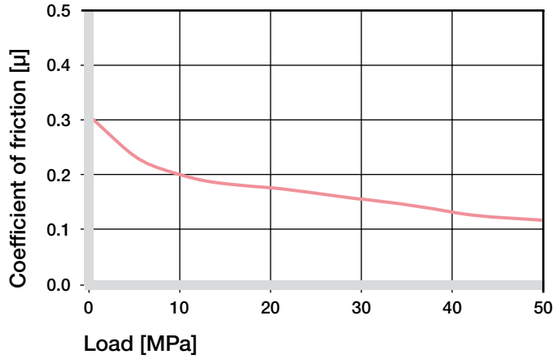


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

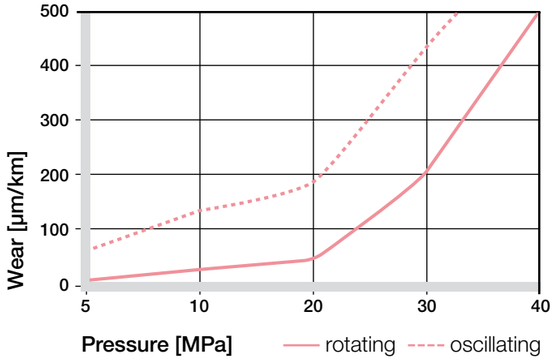


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Shaft materials

Diagram 06 shows results of testing different shaft materials with plain bearings made from iglidur® F2.
In the lower region of the load, 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 a significantly less wear in rotation compared to pivoting movements over the entire load range.

▶ Shaft materials, **page 52**

iglidur® F2	Dry	Greases	Oil	Water
C. o. f. µ	0.16–0.22	0.1	0.05	0.03

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

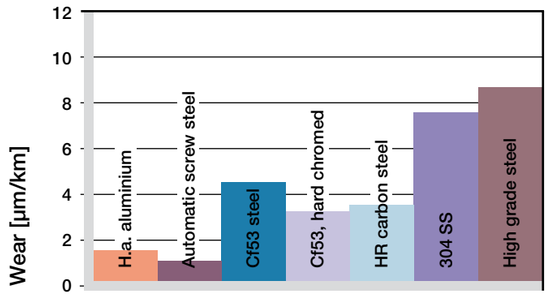


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

Installation tolerances

iglidur® H2 bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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.

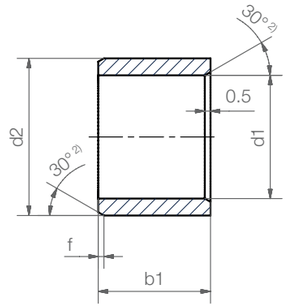
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® F2 E10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.014 +0.054	0 +0.010
> 3 to 6	0–0.030	+0.020 +0.068	0 +0.012
> 6 to 10	0–0.036	+0.025 +0.083	0 +0.015
> 10 to 18	0–0.043	+0.032 +0.102	0 +0.018
> 18 to 30	0–0.052	+0.040 +0.124	0 +0.021
> 30 to 50	0–0.062	+0.050 +0.150	0 +0.025
> 50 to 80	0–0.074	+0.060 +0.180	0 +0.030
> 80 to 120	0–0.087	+0.072 +0.212	0 +0.035
>120 to 180	0–0.100	+0.085 +0.245	0 +0.040

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

iglidur® F2 | Product range

Sleeve bearing (Form S)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
F2	S	M	-06	08	-06	
iglidur® material	Form S	Metric	Inner-Ø d1	Outer-Ø d2	Length b1	

Dimensions according to ISO 3547-1 and special dimensions

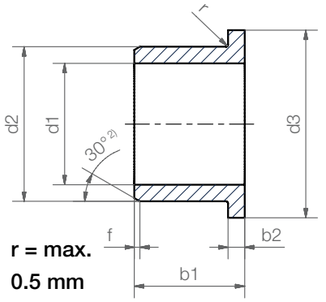
Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	Part No.
5.0	+0.020 +0.068	7.0	10.0	**F2SM-0507-10**
6.0	+0.020 +0.068	8.0	6.0	**F2SM-0608-06**
7.0	+0.025 +0.083	9.0	10.0	**F2SM-0709-10**
8.0	+0.025 +0.083	10.0	10.0	**F2SM-0810-10**
10.0	+0.025 +0.083	12.0	10.0	**F2SM-1012-10**
10.0	+0.025 +0.083	12.0	15.0	**F2SM-1012-15**
12.0	+0.032 +0.102	14.0	12.0	**F2SM-1214-12**
16.0	+0.032 +0.102	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 57

iglidur® F2 | Product range

Flange bearing (Form F)



r = max. 0.5 mm

[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
F2	F	M	-06	08	-06	
iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1	

Dimensions according to ISO 3547-1 and special dimensions

Dimensions [mm]

d1	d1-Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
6.0	+0.020 +0.068	8.0	12.0	6.0	1.0	**F2FM-0608-06**
8.0	+0.025 +0.083	10.0	15.0	10.0	1.0	**F2FM-0810-10**
10.0	+0.025 +0.083	12.0	18.0	10.0	1.0	**F2FM-1012-10**
12.0	+0.032 +0.102	14.0	20.0	12.0	1.0	**F2FM-1214-12**
16.0	+0.032 +0.102	18.0	24.0	17.0	1.0	**F2FM-1618-17**
20.0	+0.040 +0.124	23.0	30.0	21.5	1.5	**F2FM-2023-21**

[3] After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

Even more dimensions from stock

More than 300 dimensions are now available. Search online for your required bearing.

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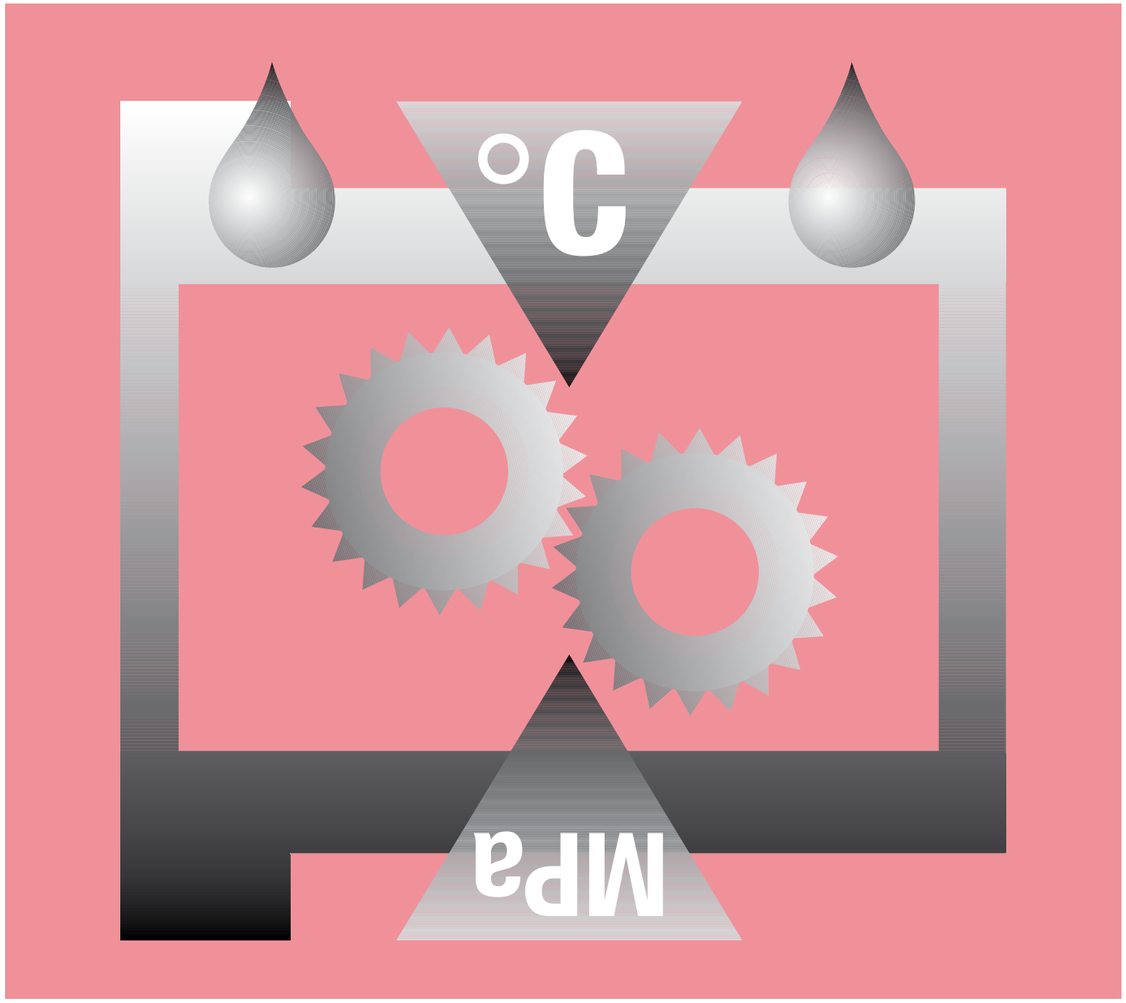
My sketches

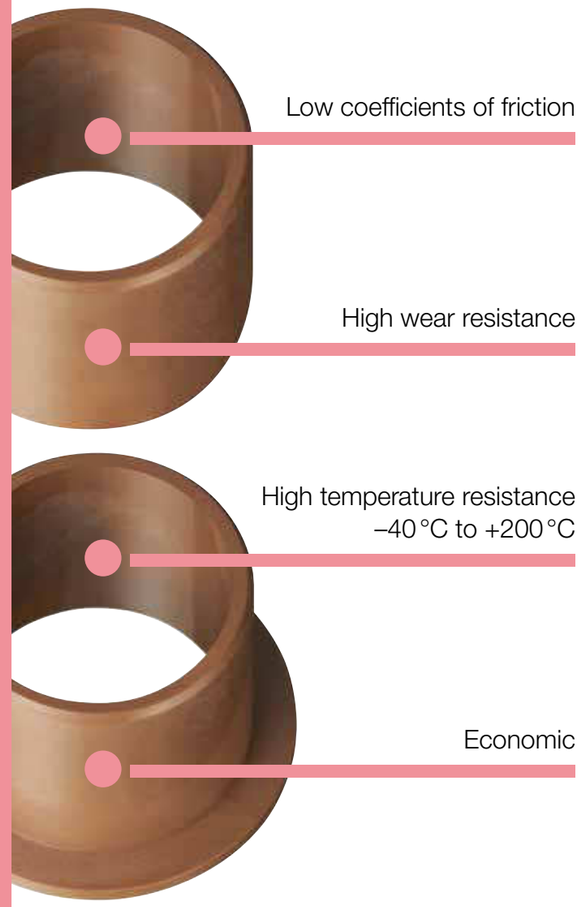


The automotive standard – iglidur® H4

- Low coefficients of friction
- High wear resistance
- High temperature resistance –40 °C to +200 °C
- High chemical resistance
- Lubrication and maintenance-free
- Standard range from stock

iglidur® H4 | The automotive standard

Up to +200 °C, high media resistance



Very cost-effective high-temperature material with good dry-operation properties and “engine compartment resistance”.

When to use it?

- Application with fuels, oils etc.
- When high wear resistance is required
- For low coefficients 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, page 291
- When a cost-effective universal bearing is required
  ▶ iglidur® G, page 79
- When you need a temperature- and media-resistant bearing for static applications
  ▶ iglidur® H2, page 315

Typical application areas

- Automotive
- Automation
- Packaging

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +200 °C
min. –40 °C

Ø 4–40 mm
More dimensions on request

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

iglidur® H4 | Technical data

Material properties table

General properties	Unit	iglidur® H4	Testing method
Density	g/cm³	1.79	
Colour		brown	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.1	DIN 53495
Max. water absorption	% weight	0.2	
Coefficient of sliding friction, dynamic against steel	µ	0.08–0.25	
pv value, max. (dry)	MPa · m/s	0.7	
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. long-term application temperature	°C	+200	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{13}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

Table 01: Material properties table

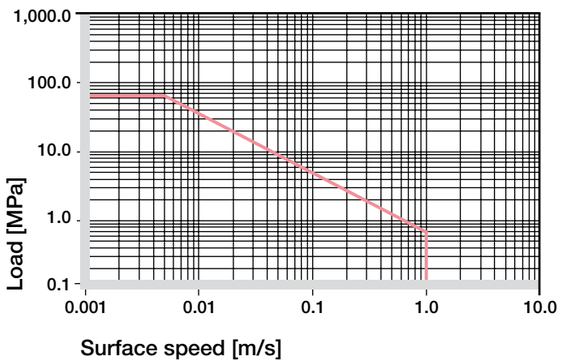


Diagram 01: Permissible pv values for iglidur® H4 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® H4 plain bearings is below 0.1% weight in standard climatic conditions. The saturation limit in water is 0.2% weight. iglidur® H4 is therefore an ideal material for wet environments.

▶ Diagram, www.igus.eu/h4-moisture

Vacuum

In a vacuum, any moisture content will outgas. Use in a vacuum is usually possible.

Radiation resistance

Plain bearings of iglidur® H4 are radiation resistant up to a radiation intensity of 2 ·102 Gy.

UV resistance

iglidur® H4 plain bearings change under the influence of UV radiation and other climatic influences.

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

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® H4 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 65 MPa, and excellent chemical resistance are only some of the essential attributes. Solid lubricants lower the coefficient of friction and support the wear resistance, which was considerably improved compared to the likewise cost-efficient iglidur® H2 bearings. iglidur® H4 bearings are self-lubricating and suitable for all motions.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® H4 plain bearings decreases. The diagram 02 shows this inverse relationship. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

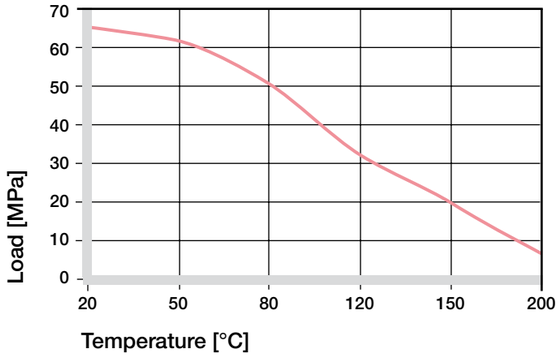


Diagram 02: Permissible maximum surface pressure as a function of temperature (65 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® H4 at radial loads.

▶ Surface pressure, **page 41**

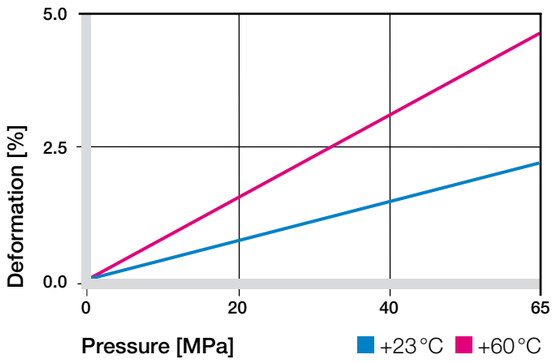


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

In contrast to the similarly cost-efficient iglidur® H2 bearings, the iglidur® H4 has an essentially favorable 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 44**

m/s	Rotating	Oscillating	Linear
Continuous	1	0.7	1
Short-term	1.5	1.1	2

Table 03: Maximum surface speeds

Temperatures

iglidur® H4 is a temperature resistant material and therefore iglidur® H4 plain bearings can be used in applications where the bearings for instance undergo a drying process without further loading. The compressive strength of iglidur® H4, however, decreases with increasing temperatures. The additional friction heat in the bearing system should be considered. At temperatures over +110 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

The coefficient of friction of the iglidur® H4 bearing is very low (diagrams 04 and 05). However, it must be noted that an extremely coarse sliding surface can increase the friction.

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

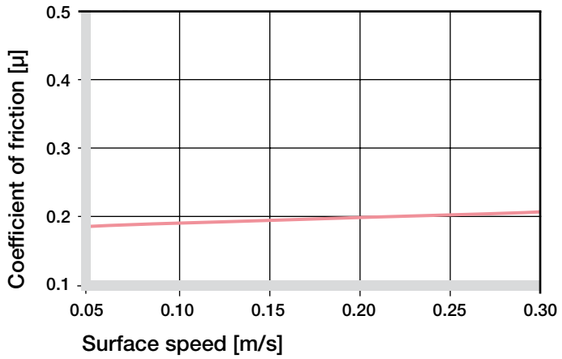


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

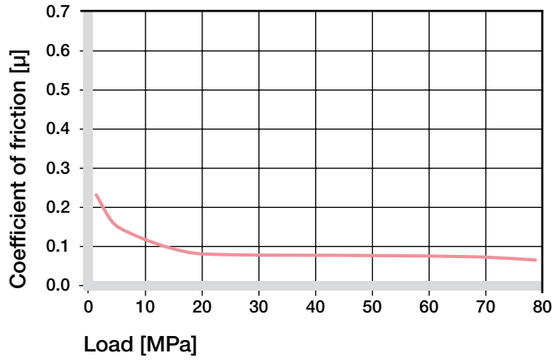


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

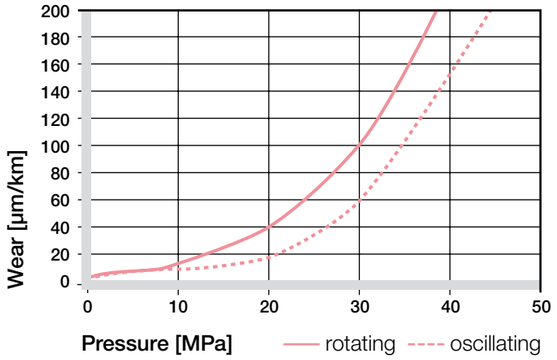


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Shaft materials

With many of the suitable shaft materials, the 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 10 MPa.

▶ Shaft materials, **page 52**

iglidur® H4	Dry	Greases	Oil	Water
C. o. f. µ	0.08–0.25	0.09	0.04	0.04

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

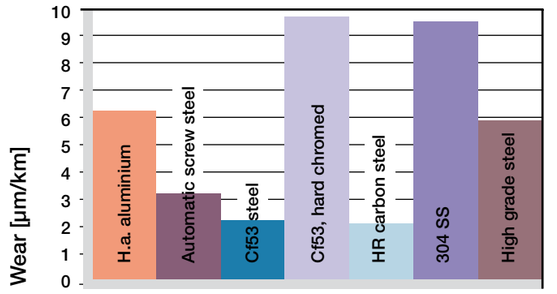


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

Installation tolerances

iglidur® H4 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).

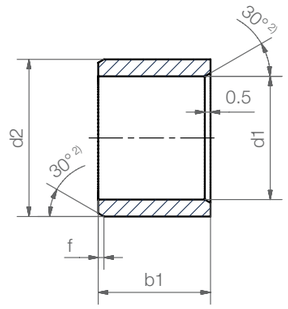
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® H4 F10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.006 +0.046	0 +0.010
> 3 to 6	0–0.030	+0.010 +0.058	0 +0.012
> 6 to 10	0–0.036	+0.013 +0.071	0 +0.015
> 10 to 18	0–0.043	+0.016 +0.086	0 +0.018
> 18 to 30	0–0.052	+0.020 +0.104	0 +0.021
> 30 to 50	0–0.062	+0.025 +0.125	0 +0.025
> 50 to 80	0–0.074	+0.030 +0.150	0 +0.030

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

iglidur® H4 | Product range

Sleeve bearing (Form S)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]		
H4	S	M	-04	05	-04
iglidur® material	Form S	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

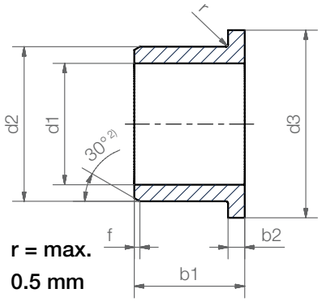
Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	Part No.
4.0	+0.010 +0.058	5.5	4.0	**H4SM-0405-04**
6.0	+0.010 +0.058	8.0	8.0	**H4SM-0608-08**
8.0	+0.013 +0.071	10.0	10.0	**H4SM-0810-10**
8.0	+0.013 +0.071	10.0	20.0	**H4SM-0810-20**
16.0	+0.016 +0.086	18.0	20.0	**H4SM-1618-20**
18.0	+0.016 +0.086	20.0	15.0	**H4SM-1820-15**
20.0	+0.020 +0.104	22.0	15.0	**H4SM-2022-15**
39.0	+0.025 +0.125	43.0	40.0	**H4SM-3943-40**

[3] After press-fit. Testing methods ▶ Page 57

iglidur® H4 | Product range

Flange bearing (Form F)



r = max. 0.5 mm

[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]		
H4	F	M	-04	05	-04
iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

Dimensions [mm]

d1	d1-Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
4.0	+0.010 +0.058	5.5	9.5	4.0	0.75	**H4FM-0405-04**
6.0	+0.010 +0.058	8.0	12.0	8.0	1.0	**H4FM-0608-08**
6.0	+0.010 +0.058	8.0	10.0	20.0	1.0	**H4FM-060810-20**
8.0	+0.013 +0.071	10.0	15.0	10.0	1.0	**H4FM-0810-10**
10.0	+0.013 +0.071	12.0	18.0	5.0	1.0	**H4FM-1012-05**
10.0	+0.013 +0.071	12.0	18.0	12.0	1.0	**H4FM-1012-12**
10.0	+0.013 +0.071	12.0	18.0	25.0	1.0	**H4FM-101218-25**
12.0	+0.016 +0.086	14.0	20.0	12.0	1.0	**H4FM-1214-12**
15.0	+0.016 +0.086	17.0	23.0	12.0	1.0	**H4FM-1517-12**
16.0	+0.016 +0.086	18.0	24.0	17.0	1.0	**H4FM-1618-17**
18.0	+0.016 +0.086	20.0	26.0	17.0	1.0	**H4FM-1820-17**
20.0	+0.020 +0.104	23.0	30.0	21.5	1.5	**H4FM-2023-21**
25.0	+0.020 +0.104	28.0	35.0	21.5	1.5	**H4FM-2528-21**
30.0	+0.020 +0.104	34.0	40.0	30.0	2.0	**H4FM-3034-30**
40.0	+0.030 +0.150	44.0	52.0	40.0	2.0	**H4FM-4044-40**

[3] After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

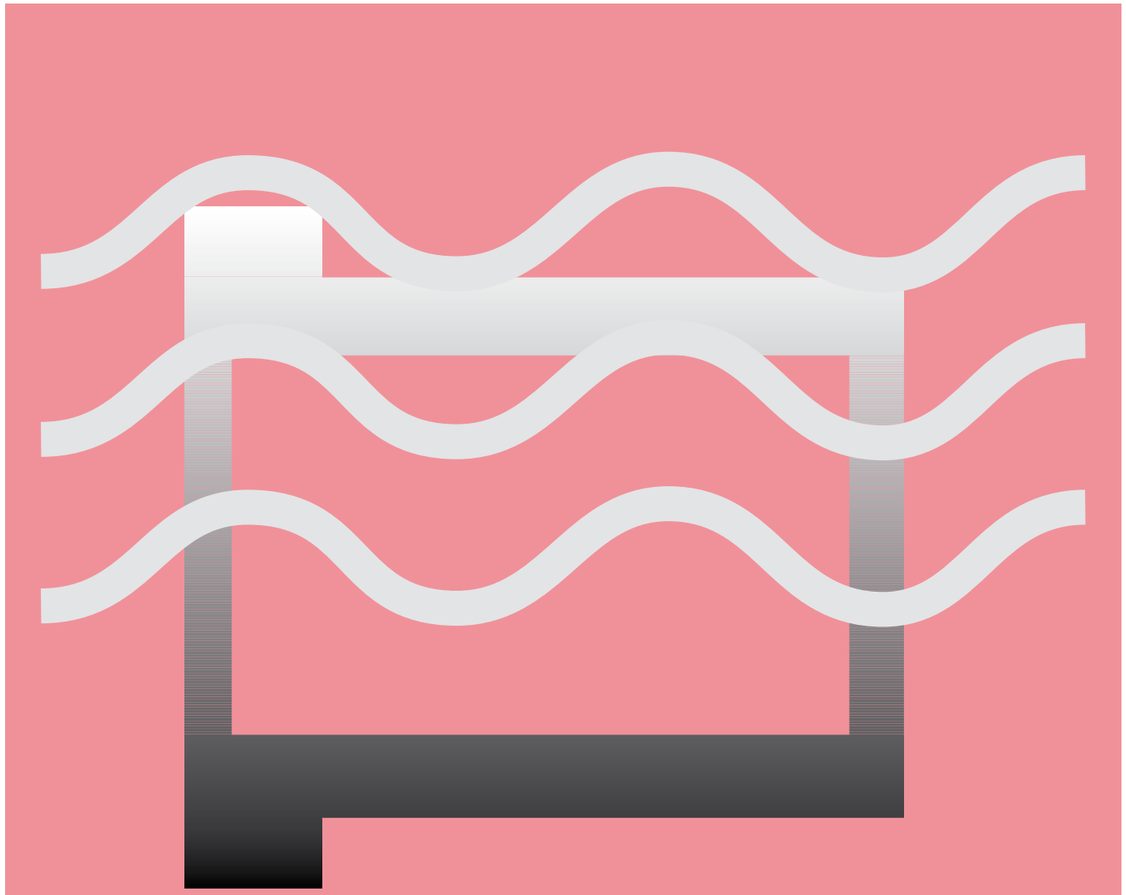
Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

Even more dimensions from stock

More than 300 dimensions are now available. Search online for your required bearing.

▶ **www.igus.eu/iglidur-specialbearings**

My sketches



For fast rotation under water – iglidur® UW

- For underwater applications
- For fast and constant motion
- Long service life
- Lubrication and maintenance-free
- Standard range from stock

iglidur® UW | For fast rotation under water

Extremely wear resistant in liquid at long-term operation

For underwater applications

For fast and constant rotation

Long service life

The best iglidur® bearings for underwater applications. Extremely wear resistant under water, tested and free from maintenance. The first choice for pumping applications.

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 temperatures are continuously higher than +90 °C
  ▶ iglidur® UW500, page 273
- When high loads are required
  ▶ iglidur® H370, page 291
  ▶ iglidur® UW500, page 273
  ▶ iglidur® X, page 237
- When only dry operation is feasible
  ▶ iglidur® J, page 141

Typical application areas

- Fluid technology
- Pumps

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +90 °C
min. –50 °C

Ø 3–20 mm
More dimensions on request

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

iglidur® UW | Technical data

Material properties table

General properties	Unit	iglidur® UW	Testing method
Density	g/cm³	1.52	
Colour		black	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.2	DIN 53495
Max. water absorption[6]	% weight	0.8	
Coefficient of sliding 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. long-term application temperature	°C	+90	
Max. short-term application temperature	°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 volume resistance	Ωcm	< 10^5	DIN IEC 93
Surface resistance	Ω	< 10^5	DIN 53482

[5] The good conductivity of this plastic material under certain circumstances can favour the generation of corrosion on the metallic contact components.
[6] With respect to the use of the material in direct contact with water, it has to be pointed out that all results have been attained under laboratory conditions DW (fully demineralised water). We therefore recommend custom-designed tests under real application conditions.

Table 01: Material properties table

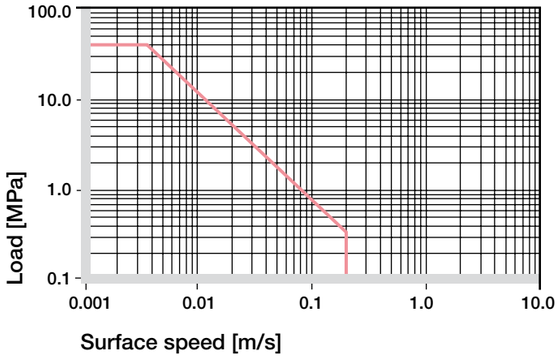


Diagram 01: Permissible pv values for iglidur® UW bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The humidity absorption of iglidur® UW bearings amounts to about 0.2 % weight in standard climatic conditions. The saturation limit in water is 0.8% weight. These values are so low that a moisture expansion need to be considered only in extreme cases.

▶ Diagram, www.igus.eu/uw-moisture

Vacuum

Applications in vacuum are only possible to a limited extent. Only dehumidified bearings should be tested in a vacuum.

Medium	Resistance
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 02: Chemical resistance

▶ Chemical table, **page 1424**

Radiation resistance

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

UV resistance

iglidur® UW plain bearings are resistant to UV radiation.

iglidur® UW was developed for underwater applications in which the maximum temperatures clearly lie below +100 °C. For application temperatures above this limit, the bearings made from iglidur® UW500 (▶ **page 273**) 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.

Mechanical properties

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

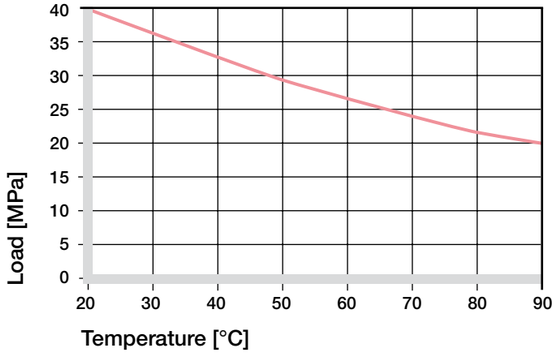


Diagram 02: Permissible maximum surface pressure as a function of temperature (40 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® UW as a function of radial pressure. At the permissible maximum surface pressure of 40 MPa the deformation is less than 1 %.

▶ Surface pressure, **page 41**

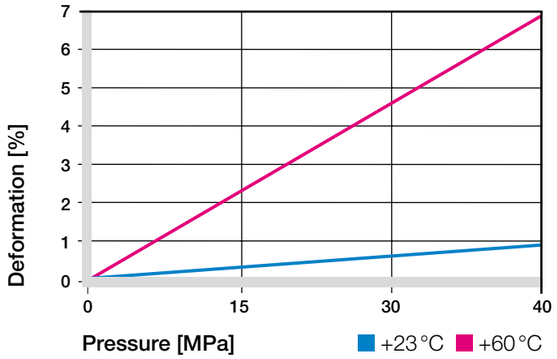


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

iglidur® UW is excellent in both dry and wet operations. Through a hydrodynamic lubrication, attained under water with high speeds, surface speeds far above 2 m/s can be achieved. In dry operation the iglidur® UW bearings can be used anyhow up to 1.5 m/s on the short-term.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	0.5	0.4	2
Short-term	1.5	1.1	3

Table 03: Maximum surface speeds

Temperatures

As stated earlier, iglidur® UW plain bearings are required for the low temperature range. In underwater applications, the fluid helps support the heat dissipation, so the temperature of the fluid itself is more important. At temperatures over +80 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

The surface 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.

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

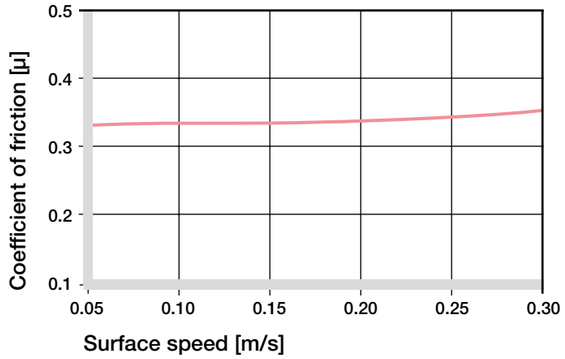


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

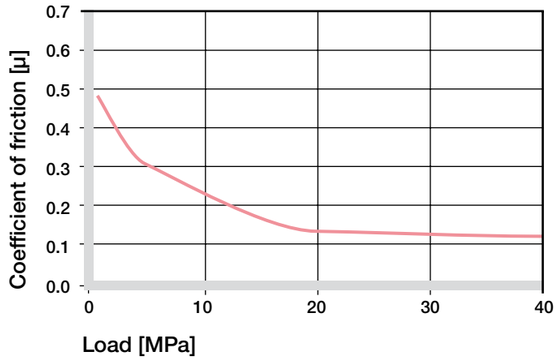


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

Diagrams 06 and 07 display a summary of the results of tests with different shaft materials conducted with bearings made from iglidur® UW. For low loads with rotation, the combinations achieve the best wear values 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 > 5 MPa.

▶ Shaft materials, **page 52**

iglidur® UW	Dry	Greases	Oil	Water
C. o. f. µ	0.15–0.35	0.09	0.04	0.04

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

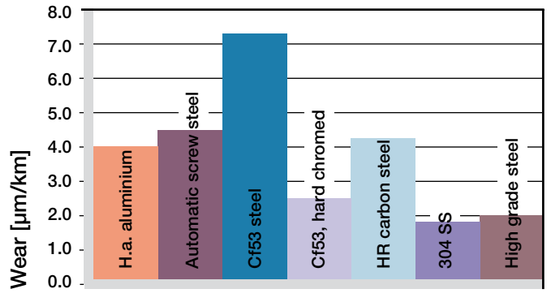


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

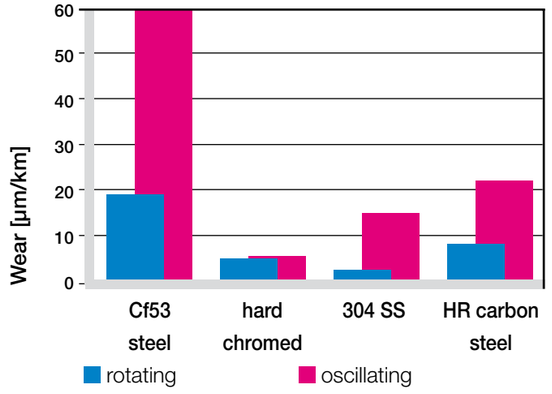


Diagram 07: Wear for rotating and oscillating applications with different shaft materials, p = 2 MPa

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, in standard cases 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).

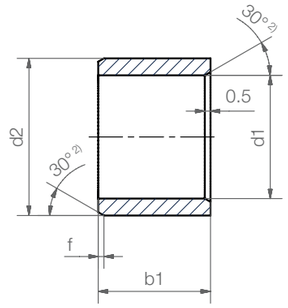
▶ Testing methods, **page 57**

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

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

iglidur® UW | Product range

Sleeve bearing (Form S)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
UW	S	M	-03	04	-05	
iglidur® material	Form S	Metric	Inner-Ø d1	Outer-Ø d2	Length b1	

Dimensions according to ISO 3547-1 and special dimensions

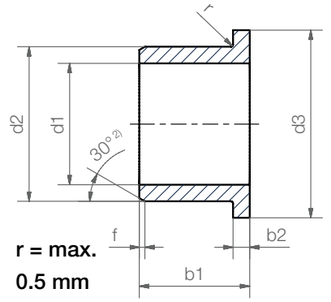
Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	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	+0.020 +0.068	7.0	8.0	**UWSM-0507-08**
6.0	+0.020 +0.068	8.0	8.0	**UWSM-0608-08**
8.0	+0.025 +0.083	10.0	10.0	**UWSM-0810-10**
10.0	+0.025 +0.083	12.0	10.0	**UWSM-1012-10**
12.0	+0.032 +0.102	14.0	12.0	**UWSM-1214-12**
16.0	+0.032 +0.102	18.0	12.0	**UWSM-1618-12**
18.0	+0.032 +0.102	20.0	15.0	**UWSM-1820-15**

[3] After press-fit. Testing methods ▶ Page 57

iglidur® UW | Product range

Flange bearing (Form F)



r = max. 0.5 mm

[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
UW	F	M	-03	04	-05	
iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1	

Dimensions according to ISO 3547-1 and special dimensions

Dimensions [mm]

d1	d1-Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	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	+0.020 +0.068	7.0	11.0	5.0	1.0	**UWFM-0507-05**
6.0	+0.020 +0.068	8.0	12.0	6.0	1.0	**UWFM-0608-06**
8.0	+0.025 +0.083	10.0	15.0	10.0	1.0	**UWFM-0810-10**
10.0	+0.025 +0.083	12.0	18.0	10.0	1.0	**UWFM-1012-10**
12.0	+0.032 +0.102	14.0	20.0	12.0	1.0	**UWFM-1214-12**
16.0	+0.032 +0.102	18.0	24.0	17.0	1.0	**UWFM-1618-17**
20.0	+0.040 +0.124	23.0	30.0	21.5	1.5	**UWFM-2023-21**

[3] After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

Even more dimensions from stock

More than 300 dimensions are now available. Search online for your required bearing.

▶ **www.igus.eu/iglidur-specialbearings**

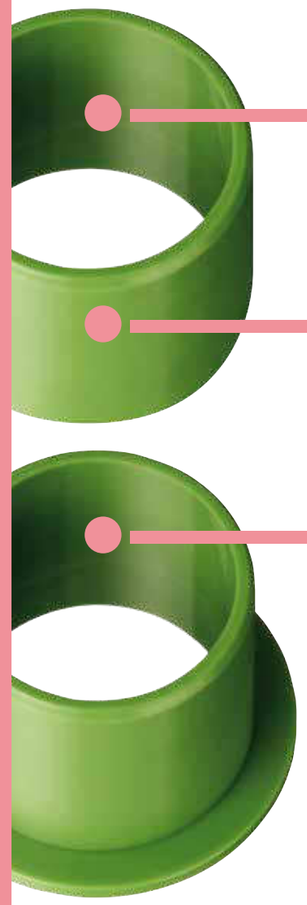
My sketches

The biopolymer – iglidur® N54

- Based on renewable resources
- Universally applicable
- Lubrication and maintenance-free
- Standard range from stock

iglidur® N54 | The biopolymer

Based on renewable resources



Based on 54 % renewable resources, technically this material also meets high requirements.

When to use it?

- For applications with sporadic movements at low to medium loads
- At quasi static loads
- If the environmental impact of a product needs to be optimised

When not to use it?

- When looking for a universal standard bearing
  ▶ iglidur® G, page 79
- When dealing with high motion frequencies and continuous operation
  ▶ iglidur® J, page 141
- When dealing with high temperatures
  ▶ iglidur® J350, page 173

Typical application areas

- Consumer products
- General mechanical engineering
- Furniture industry
- Industrial design

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +80 °C
min. –40 °C

Ø 6–20 mm
More dimensions on request

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

iglidur® N54 | Technical data

Material properties table

General properties	Unit	iglidur® N54	Testing method
Density	g/cm³	1.13	
Colour		green	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	1.6	DIN 53495
Max. water absorption	% weight	3.6	
Coefficient of sliding friction, dynamic against steel	µ	0.15–0.23	
pv value, max. (dry)	MPa · m/s	0.5	
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. long-term application temperature	°C	+80	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{13}$	DIN IEC 93
Surface resistance	Ω	$> 10^{11}$	DIN 53482

Table 01: Material properties table

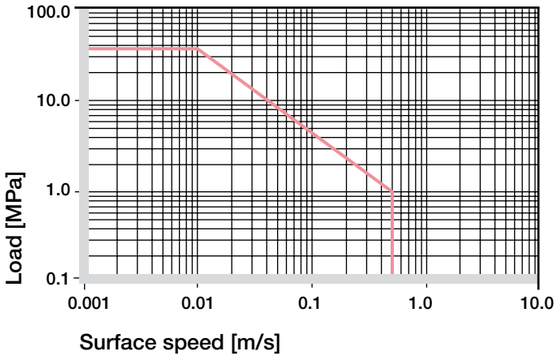


Diagram 01: Permissible pv values for iglidur® N54 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® N54 plain bearings is below 1.6% weight in standard climatic conditions. The saturation limit in water is 3.6% weight.

▶ Diagram, www.igus.eu/n54-moisture

Vacuum

In a vacuum, any moisture content will outgas. Applications under vacuum conditions are possible to a limited extent.

Radiation resistance

Bearings made from iglidur® N54 are conditionally usable under radioactive radiation. They are resistant up to a radiation intensity of 1 x 10^4 Gy.

UV resistance

iglidur® N54 bearings are resistant to UV radiation.

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

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® N54 | Technical data

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 good coefficients of friction in conjunction with long life ensure that this material has a permanent place in the iglidur® product range.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® N54 bearings decreases. The diagram 02 shows this inverse relationship. With the long-term permitted application temperature of +120 °C the permitted surface pressure is less than 10 MPa. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

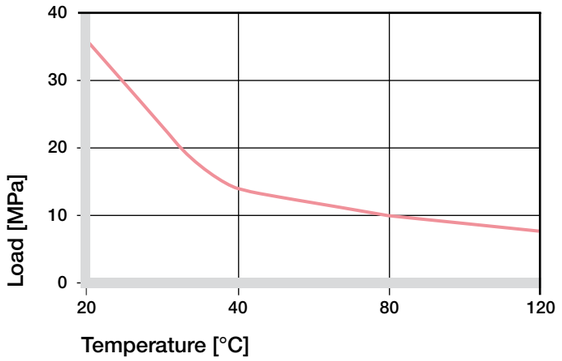


Diagram 02: Permissible maximum surface pressure as a function of temperature (36 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® N54 with radial loads.

▶ Surface pressure, **page 41**

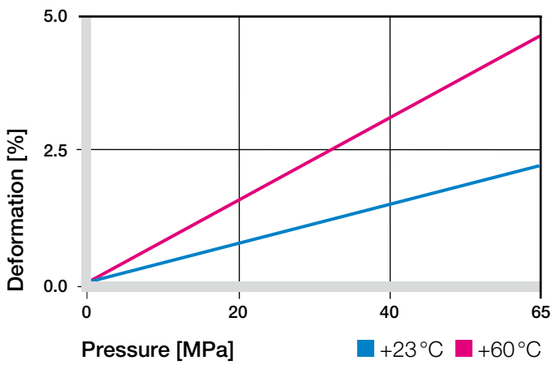


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

Even if the typical applications for iglidur® N54 plain bearings are generally for intermittent service, depending on the type of motion, the maximum attainable speeds can be quite high. 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 44**

m/s	Rotating	Oscillating	Linear
Continuous	0.8	0.6	1
Short-term	1.5	1.1	2

Table 03: Maximum surface speeds

Temperatures

The short-term permissible temperature limit is +140 °C, thus permitting the use of iglidur® N54 plain bearings in all applications with elevated ambient temperatures. However, the compressive strength of iglidur® N54 bearings decreases as temperatures increase. The additional frictional heat in the bearing system should be taken into account when considering the temperature limits. At temperatures over +60 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

iglidur® N54 has a low coefficient of friction. However, it must be noted that an extremely coarse sliding surface can increase the friction. We recommend shaft surface finishes (Ra) of 0.1 to a maximum of 0.4 µm. The coefficient of friction of iglidur® N54 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.

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

iglidur® N54 | Technical data

N54
+80 °C
36 MPa

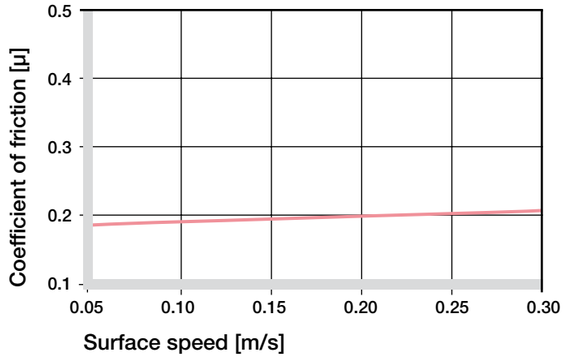


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1 MPa

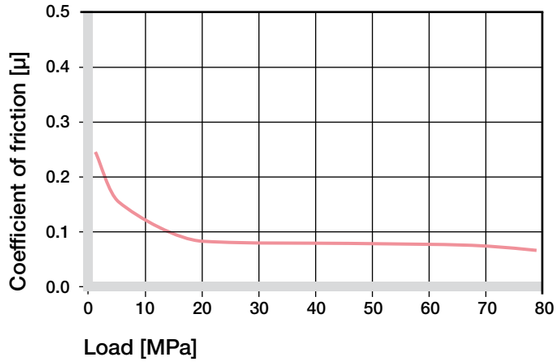


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

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 1 MPa, wear increases measurably and continuously. If the shaft material you plan to use is not contained in this list, please contact us.

▶ Shaft materials, **page 52**

iglidur® N54	Dry	Greases	Oil	Water
C. o. f. µ	0.15–0.23	0.09	0.04	0.04

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

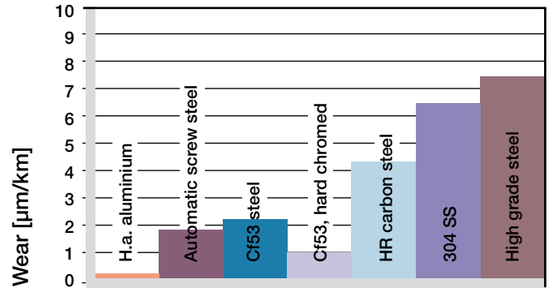


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

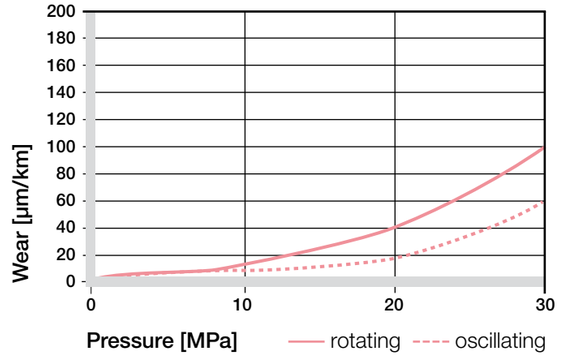


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Installation tolerances

iglidur® N54 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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 E10 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

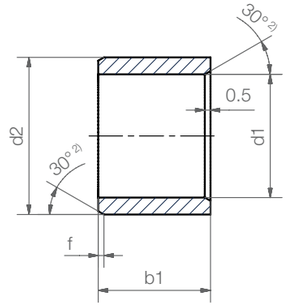
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® N54 E10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.014 +0.054	0 +0.010
> 3 to 6	0–0.030	+0.020 +0.068	0 +0.012
> 6 to 10	0–0.036	+0.025 +0.083	0 +0.015
> 10 to 18	0–0.043	+0.032 +0.102	0 +0.018
> 18 to 30	0–0.052	+0.040 +0.124	0 +0.021
> 30 to 50	0–0.062	+0.050 +0.150	0 +0.025
> 50 to 80	0–0.074	+0.060 +0.180	0 +0.030

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

iglidur® N54 | Product range

Sleeve bearing (Form S)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
N54	S	M	-06	08	-06	
		iglidur® material	Form S	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

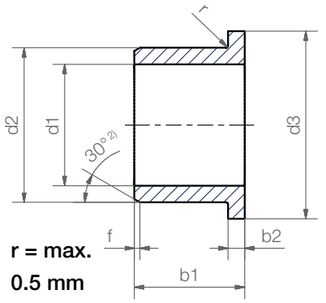
Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	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	+0.025 +0.083	12.0	10.0	**N54SM-1012-10**
12.0	+0.032 +0.102	14.0	12.0	**N54SM-1214-12**
16.0	+0.032 +0.102	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 57

iglidur® N54 | Product range

Flange bearing (Form F)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
N54	F	M	-06	08	-06	
		iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

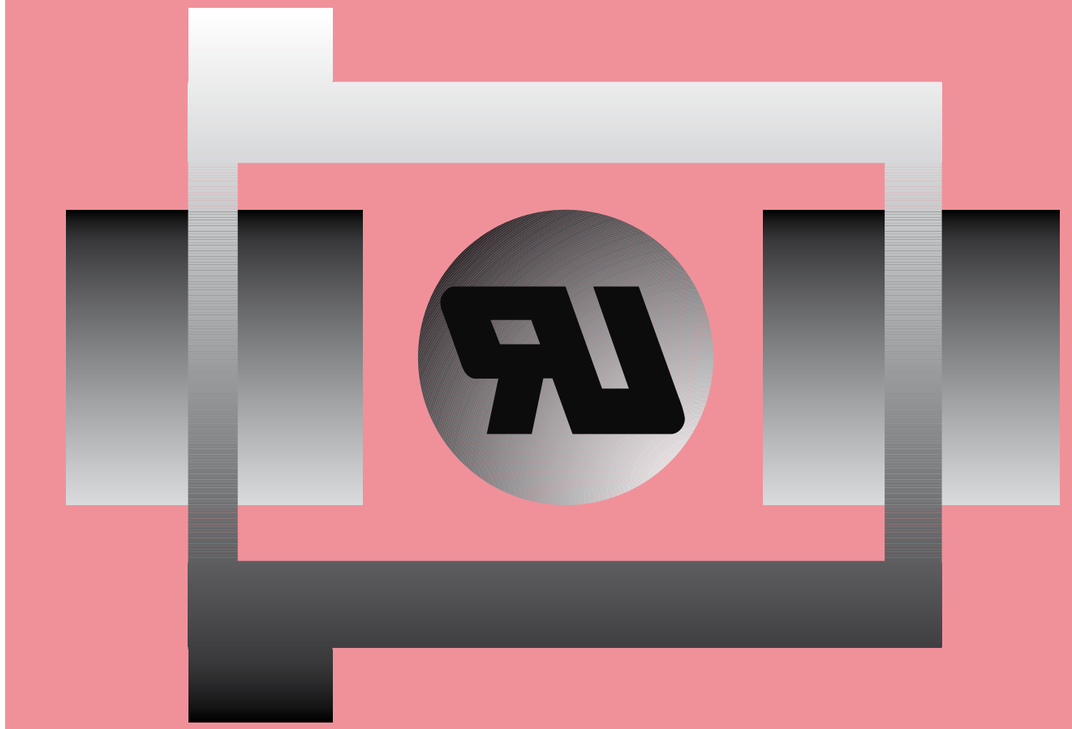
Dimensions [mm]

d1	d1-Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
6.0	+0.020 +0.068	8.0	12.0	6.0	1.0	**N54FM-0608-06**
8.0	+0.025 +0.083	10.0	15.0	10.0	1.0	**N54FM-0810-10**
10.0	+0.025 +0.083	12.0	18.0	10.0	1.0	**N54FM-1012-10**
12.0	+0.032 +0.102	14.0	20.0	12.0	1.0	**N54FM-1214-12**
16.0	+0.032 +0.102	18.0	24.0	17.0	1.0	**N54FM-1618-17**
20.0	+0.040 +0.124	23.0	30.0	21.5	1.5	**N54FM-2023-21**

3) After press-fit. Testing methods ▶ Page 57

Couldn't find your size?
Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

My sketches

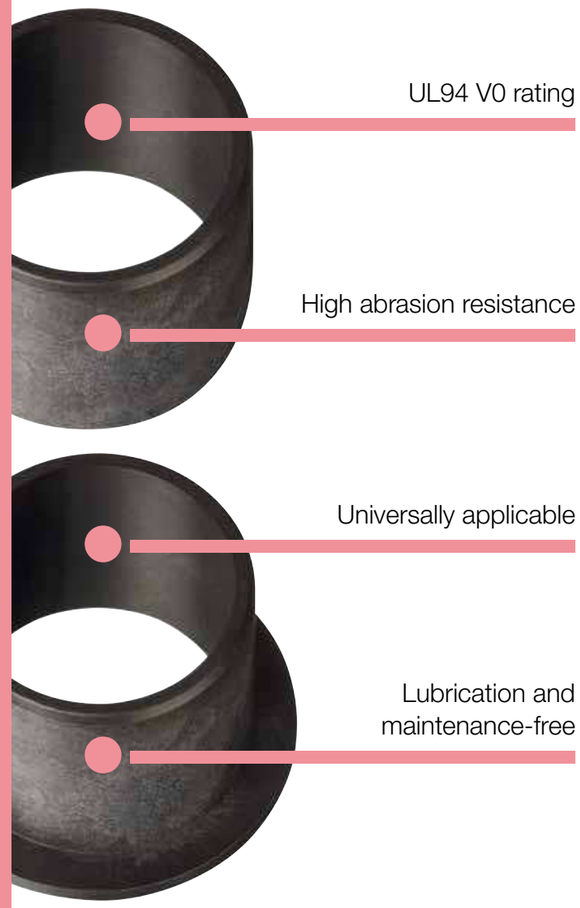


Low-cost all-rounder for fire protection – iglidur® G V0

- UL94 V0 rating
- High abrasion resistance
- Universally applicable
- Lubrication and maintenance-free
- Standard range from stock

iglidur® G V0 | Low-cost all-rounder for fire protection

UL94 V0 rating



The material achieves the UL94 V0 rating and is therefore ideally suited for applications with stringent fire protection regulations (vehicle and aircraft interiors, building interior systems, etc.). Other properties are similar to the general purpose iglidur® G material.

When to use it?

- When you need a UL94 V0 classified bearing for normal environmental conditions
- When you need an economic UL94 V0 classified bearing

When not to use it?

- When you need a UL94 V0 classified bearing for high-temperature applications
  ▶ iglidur® X, page 237
- When you need a standard bearing without having to meet special fire codes
  ▶ iglidur® G, page 79

Typical application areas

- Passenger seats
- Elevators
- Escalators
- Switch cabinets
- Hinges

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +130 °C
min. –40 °C

Ø 6–40 mm
More dimensions on request

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

iglidur® G V0 | Technical data

Material properties table

General properties	Unit	iglidur® G V0	Testing method
Density	g/cm³	1.53	
Colour		black	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.7	DIN 53495
Max. water absorption	% weight	4.0	
Coefficient of sliding friction, dynamic against steel	µ	0.07–0.20	
pv value, max. (dry)	MPa · m/s	0.5	
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. long-term application temperature	°C	+130	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{12}$	DIN IEC 93
Surface resistance	Ω	$> 10^{11}$	DIN 53482

Table 01: Material properties table

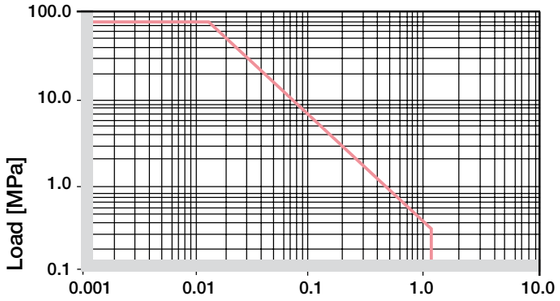


Diagram 01: Permissible pv values for iglidur® G V0 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® G V0 plain bearings is approximately 0.7% weight in standard climatic conditions. The saturation limit submerged in water is 4% weight. This must be taken into account along with other environmental influences.

▶ Diagram, www.igus.eu/gv0-moisture

Vacuum

iglidur® G V0 plain bearings outgas in a vacuum. Use in vacuum is only possible with dehumidified bearings.

Radiation resistance

Plain bearings made from iglidur® G V0 are resistant to radiation up to an intensity of $3 \cdot 10^2$ Gy.

UV resistance

iglidur® G V0 plain bearings are permanently resistant to UV radiation.

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

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® G V0 | Technical data

iglidur® G V0 is the first iglidur® material with a V0 rating in accordance with UL94 for universal applications at normal temperature ranges. All other iglidur® materials with V0 rating are part of the high-temperature segment. The general mechanical and thermal specifications are largely comparable to the all-rounder, iglidur® G.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® G V0 plain bearings decreases. The diagram 02 shows this inverse relationship. However, at the long-term maximum temperature of +130 °C the permissible surface pressure is still around 35 MPa. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

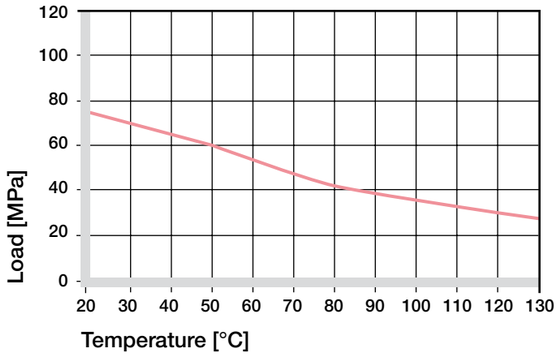


Diagram 02: Permissible maximum surface pressure as a function of temperature (75 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® G V0 during radial loading. The plastic deformation is minimal up to a pressure of approximately 100 MPa. However, it is also dependent on the service time.

▶ Surface pressure, **page 41**

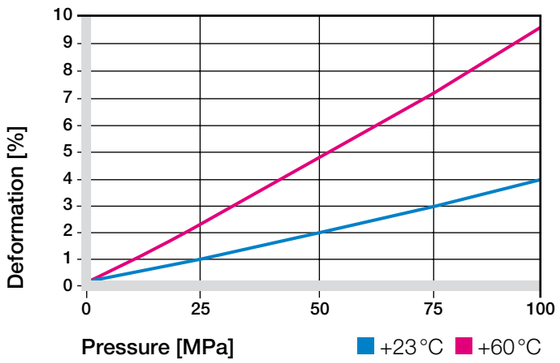


Diagram 03: Deformation under pressure and temperature

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 temperature level is rarely reached due to varying application conditions.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	1	0.7	4
Short-term	2	1.4	5

Table 03: Maximum surface speeds

Temperatures

The ambient temperatures greatly influence the wear performance of plastic bearings. The short-term maximum temperature is +210 °C, this allows the use of iglidur® G V0 plain bearings in heat treating applications in which the bearings are not subjected to additional loading. The ambient application temperature has a direct impact on bearing wear, an increase in temperature results in an increase in wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +120 °C. At temperatures over +100 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

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 pressures, 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).

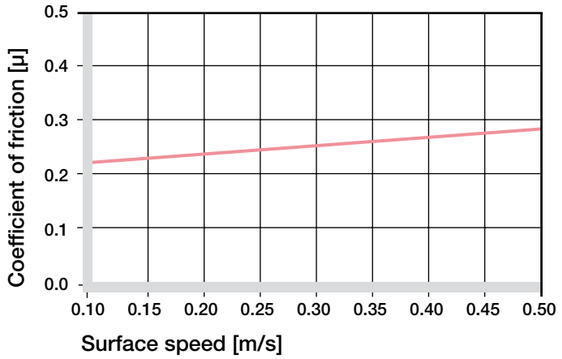


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1 MPa

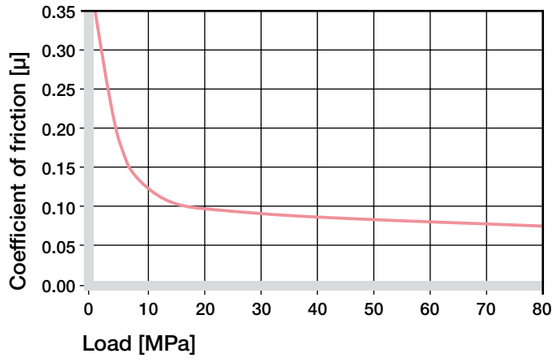


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

Shaft materials

The friction and wear are also dependent to a large degree on the shaft material. 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 roughness between 0.6 and 0.8 μm 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 more easily and thus affect the clearance of the overall system. If the loads exceed 2 MPa it is important to recognise that the wear rate (the gradient of the curves) clearly decreases with the hard shaft materials. The comparison of rotational movements to oscillating movements shows that iglidur® G V0 provides advantages in oscillating movements (diagram 07). If the shaft material you plan to use is not contained in this list, please contact us.

▶ Shaft materials, **page 52**

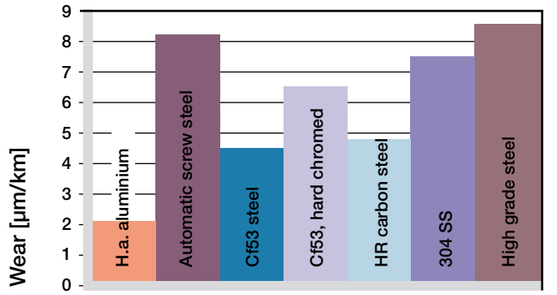


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

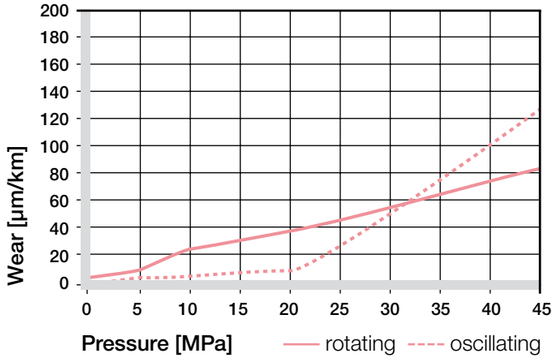


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

iglidur® G V0	Dry	Greases	Oil	Water
C. o. f. μ	0.07–0.20	0.09	0.04	0.04

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

Installation tolerances

iglidur® G V0 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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 E10 tolerances.

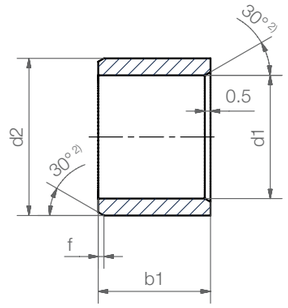
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® G V0 E10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.014 +0.054	0 +0.010
> 3 to 6	0–0.030	+0.020 +0.068	0 +0.012
> 6 to 10	0–0.036	+0.025 +0.083	0 +0.015
> 10 to 18	0–0.043	+0.032 +0.102	0 +0.018
> 18 to 30	0–0.052	+0.040 +0.124	0 +0.021
> 30 to 50	0–0.062	+0.050 +0.150	0 +0.025
> 50 to 80	0–0.074	+0.060 +0.180	0 +0.030
> 80 to 120	0–0.087	+0.072 +0.212	0 +0.035
>120 to 180	0–0.100	+0.085 +0.245	0 +0.040

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

iglidur® G V0 | Product range

Sleeve bearing (Form S)



2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]		
GV0	S	M	-06	08	-06
iglidur® material	Form S	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

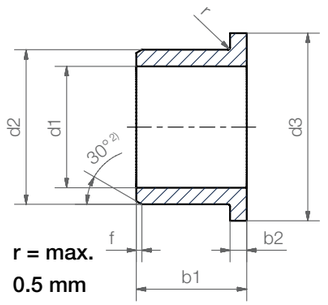
Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	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	+0.025 +0.083	12.0	8.0	**GV0SM-1012-08**
10.0	+0.025 +0.083	12.0	9.0	**GV0SM-1012-09**
10.0	+0.025 +0.083	12.0	10.0	**GV0SM-1012-10**
10.0	+0.025 +0.083	12.0	15.0	**GV0SM-1012-15**
10.0	+0.025 +0.083	12.0	17.0	**GV0SM-1012-17**
12.0	+0.032 +0.102	14.0	12.0	**GV0SM-1214-12**
16.0	+0.032 +0.102	18.0	15.0	**GV0SM-1618-15**
20.0	+0.040 +0.124	23.0	20.0	**GV0SM-2023-20**
25.0	+0.040 +0.124	28.0	20.0	**GV0SM-2528-20**
30.0	+0.040 +0.124	34.0	30.0	**GV0SM-3034-30**
35.0	+0.050 +0.150	39.0	40.0	**GV0SM-3539-40**
40.0	+0.050 +0.150	44.0	40.0	**GV0SM-4044-40**

3) After press-fit. Testing methods ▶ Page 57

iglidur® G V0 | Product range

Flange bearing (Form F)



r = max. 0.5 mm

2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]		
GV0	F	M	-06	08	-06
iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

Dimensions [mm]

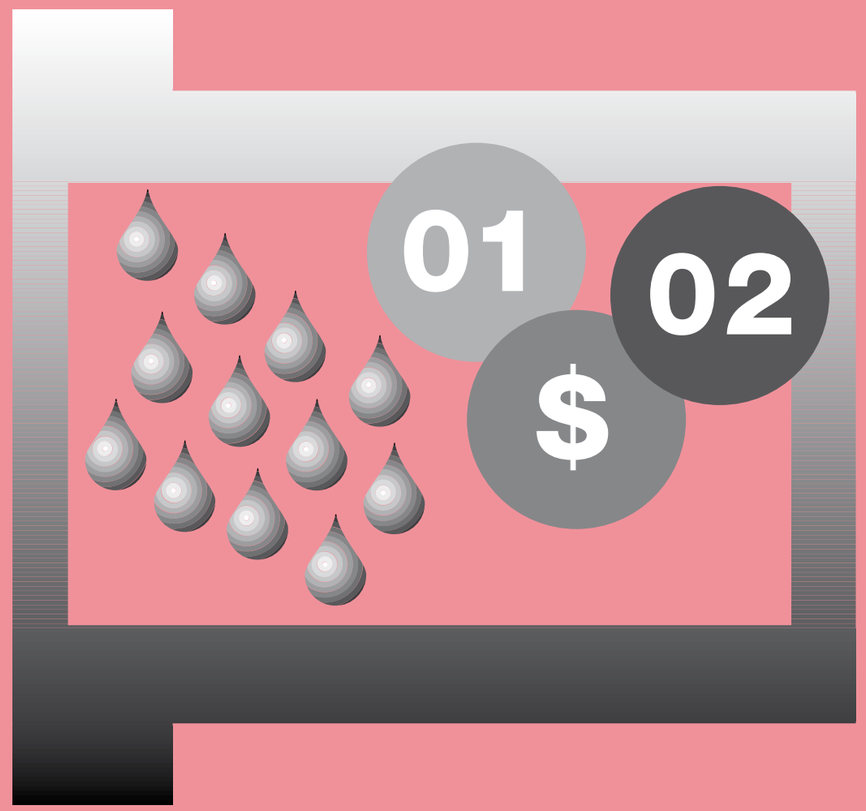
d1	d1-Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
6.0	+0.020 +0.068	8.0	12.0	6.0	1.0	**GV0FM-0608-06**
8.0	+0.025 +0.083	10.0	15.0	10.0	1.0	**GV0FM-0810-10**
10.0	+0.025 +0.083	12.0	18.0	10.0	1.0	**GV0FM-1012-10**
11.0	+0.032 +0.102	13.0	20.0	20.0	0.5	**GV0FM-111320-20**
12.0	+0.032 +0.102	14.0	20.0	12.0	1.0	**GV0FM-1214-12**
16.0	+0.032 +0.102	18.0	24.0	17.0	1.0	**GV0FM-1618-17**
20.0	+0.040 +0.124	23.0	30.0	21.5	1.5	**GV0FM-2023-21**
25.0	+0.040 +0.124	28.0	35.0	21.0	1.5	**GV0FM-2528-21**
30.0	+0.040 +0.124	34.0	42.0	37.0	2.0	**GV0FM-3034-37**
35.0	+0.050 +0.150	39.0	47.0	36.0	2.0	**GV0FM-3539-36**
40.0	+0.050 +0.150	44.0	52.0	40.0	2.0	**GV0FM-4044-40**

3) After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

My sketches

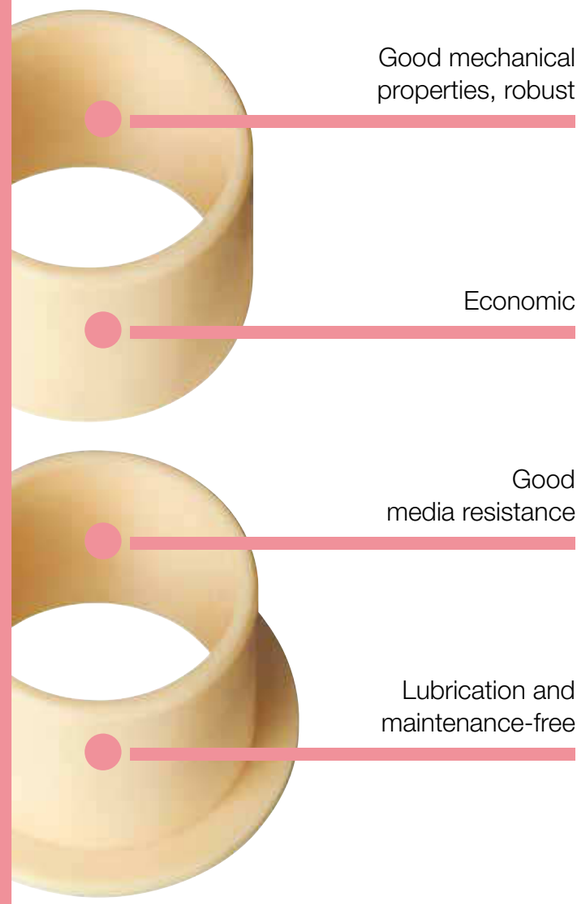


Versatile and cost-effective – iglidur® J2

- Good mechanical properties, robust
- Economic
- Good media resistance
- Lubrication and maintenance-free
- Standard range from stock

iglidur® J2 | Versatile and cost-effective

For applications with sporadic movements or continuous lubrication



iglidur® J2 has good universal media resistance, comparable to that of iglidur® J and similar materials. The mechanical specifications in sporadically moved applications are better although, in comparison, clear compromises have to be made with regard to friction and wear. Like all iglidur® materials, iglidur® J2 is PFOA-free.

When to use it?

- When low moisture absorption and good chemical resistance is required for primarily static load
- When a cost-effective bearing is required for use in a wet environment with low pv values
- When there is a basic lubrication of the bearing

When not to use it?

- When an extremely wear-resistant bearing is required for continuous operation in dry running
  ▶ iglidur® J3, page 165
- When low moisture absorption and media resistance play a minor role
  ▶ iglidur® M250, page 95
- When a resistance to high temperatures and chemicals is required
  ▶ iglidur® X, page 237

Typical application areas

- Jig construction
- Industrial handling

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +90 °C
min. –50 °C

Ø 6–25 mm
More dimensions on request

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

iglidur® J2 | Technical data

Material properties table

General properties	Unit	iglidur® J2	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. water absorption	% weight	1.3	
Coefficient of sliding 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		n.s.	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	
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 volume resistance	Ωcm	$> 10^{13}$	DIN IEC 93
Surface resistance	Ω	$> 10^{12}$	DIN 53482

Table 01: Material properties table

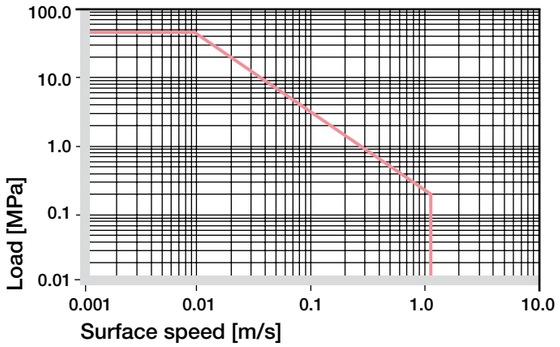


Diagram 01: Permissible pv values for iglidur® J2 bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® J2 plain bearings in standard climatic conditions is approximately 0.2 % weight. The saturation limit submerged in water is 1.3 % weight. Due to these low values considering expansion by moisture absorption is only required in extreme cases.

▶ Diagram, www.igus.eu/j2-moisture

Vacuum

In vacuum applications, any absorbed moisture content is outgassed. Use in vacuum is only possible with dehumidified bearings.

Radiation resistance

Plain bearings made from iglidur® J2 are resistant to radiation up to an intensity of applications $3 \cdot 10^2$ Gy.

UV resistance

iglidur® J2 plain bearings become discoloured under UV radiation. However, hardness, compressive strength and the wear resistance of the material do not change.

Medium	Resistance
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 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® J2 | Technical data

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 permissible surface pressure. However, wear resistance is reduced when running dry.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® J2 plain bearings decreases. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

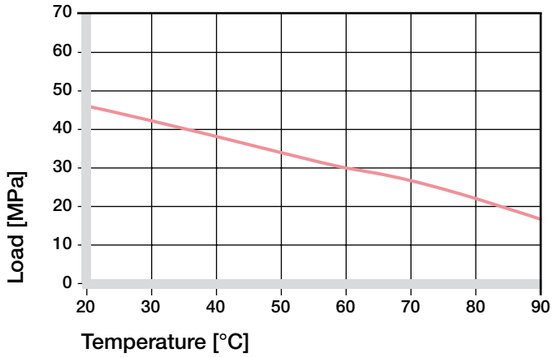


Diagram 02: Permissible maximum surface pressure as a function of temperature (46 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® J2 under different loads. A possible deformation could be, among others, dependant on the duty cycle of the load.

▶ Surface pressure, **page 41**

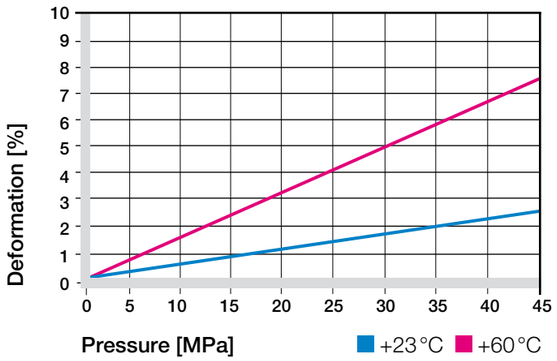


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

iglidur® J2 is mainly suitable for low speeds in dry running, but the specified 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 temperature level is rarely reached due to varying application conditions.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	0.8	0.7	3
Short-term	1.9	1.1	5

Table 03: Maximum surface speeds

Temperatures

The ambient application temperature has a direct impact on bearing wear, an increase in temperature results in an increase in wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +90 °C. At temperatures over +60 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

Coefficient of friction and wear resistance are dependent on the application parameters (diagrams 04 and 05).

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

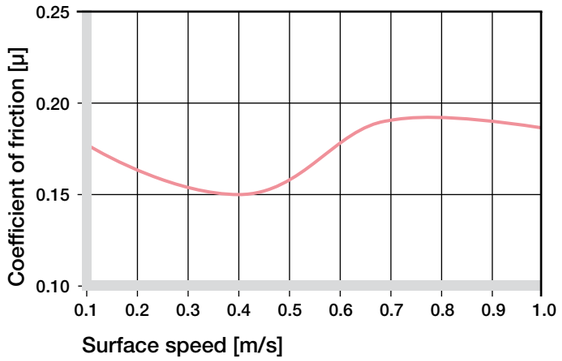


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1.0 MPa

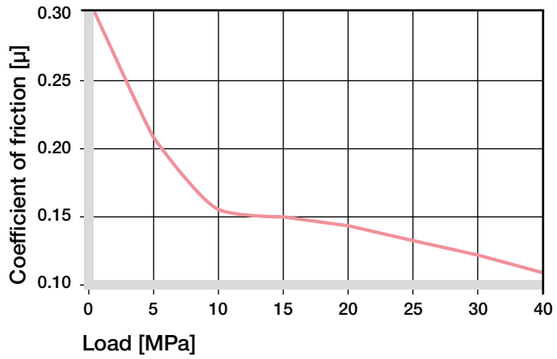


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

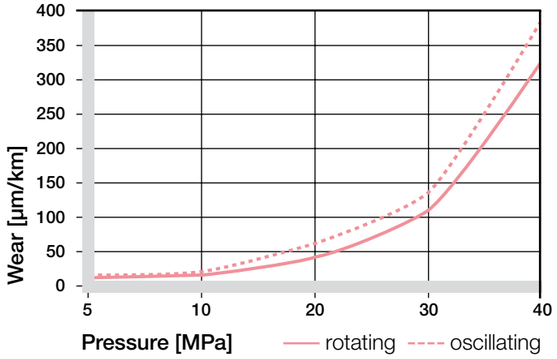


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Shaft materials

The friction and wear are also dependent to a large degree on the shaft material. Shafts that are too smooth, increase both the coefficient of friction and the wear of the bearing. Diagram 06 shows a summary of the results of tests with different shaft materials. Diagram 06 shows that iglidur® J2 delivers good wear values especially with cutting steel in rotation at 1 MPa. When running dry, the wear values are 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 52**

iglidur® J2	Dry	Greases	Oil	Water
C. o. f. µ	0.11–0.27	0.08	0.07	0.04

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

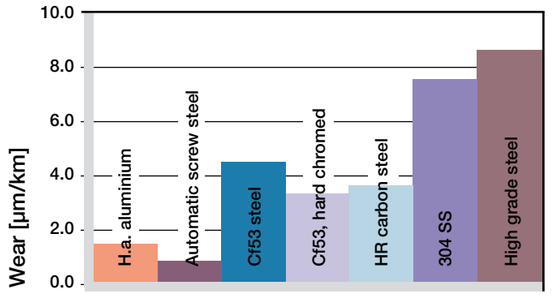


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

Installation tolerances

iglidur® J2 plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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 E10 tolerances. In relation to the installation tolerance, the inner diameter changes with the absorption of humidity.

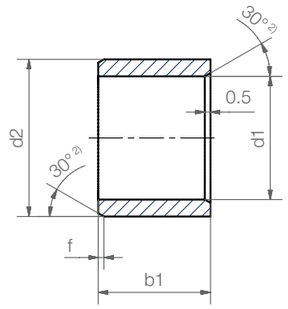
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® J2 E10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.014 +0.054	0 +0.010
> 3 to 6	0–0.030	+0.020 +0.068	0 +0.012
> 6 to 10	0–0.036	+0.025 +0.083	0 +0.015
> 10 to 18	0–0.043	+0.032 +0.102	0 +0.018
> 18 to 30	0–0.052	+0.040 +0.124	0 +0.021
> 30 to 50	0–0.062	+0.050 +0.150	0 +0.025
> 50 to 80	0–0.074	+0.060 +0.180	0 +0.030
> 80 to 120	0–0.087	+0.072 +0.212	0 +0.035
>120 to 180	0–0.100	+0.085 +0.245	0 +0.040

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

iglidur® J2 | Product range

Sleeve bearing (Form S)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
J2	S	M	-06	08	-06	
iglidur® material	Form S	Metric	Inner-Ø d1	Outer-Ø d2	Length b1	

Dimensions according to ISO 3547-1 and special dimensions

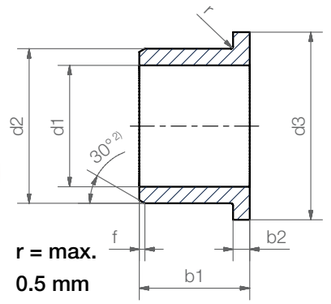
Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	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	+0.025 +0.083	12.0	10.0	**J2SM-1012-10**
12.0	+0.032 +0.102	14.0	12.0	**J2SM-1214-12**
16.0	+0.032 +0.102	18.0	15.0	**J2SM-1618-15**
20.0	+0.040 +0.124	23.0	20.0	**J2SM-2023-20**
25.0	+0.040 +0.124	28.0	20.0	**J2SM-2528-20**

[3] After press-fit. Testing methods ▶ Page 57

iglidur® J2 | Product range

Flange bearing (Form F)



r = max. 0.5 mm

[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]					
J2	F	M	-06	08	-06	
iglidur® material	Form F	Metric	Inner-Ø d1	Outer-Ø d2	Length b1	

Dimensions according to ISO 3547-1 and special dimensions

Dimensions [mm]

d1	d1-Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
6.0	+0.020 +0.068	8.0	12.0	6.0	1.0	**J2FM-0608-06**
8.0	+0.025 +0.083	10.0	15.0	10.0	1.0	**J2FM-0810-10**
10.0	+0.025 +0.083	12.0	18.0	10.0	1.0	**J2FM-1012-10**
12.0	+0.032 +0.102	14.0	20.0	12.0	1.0	**J2FM-1214-12**
16.0	+0.032 +0.102	18.0	24.0	17.0	1.0	**J2FM-1618-17**
20.0	+0.040 +0.124	23.0	30.0	21.5	1.5	**J2FM-2023-21**

[3] After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

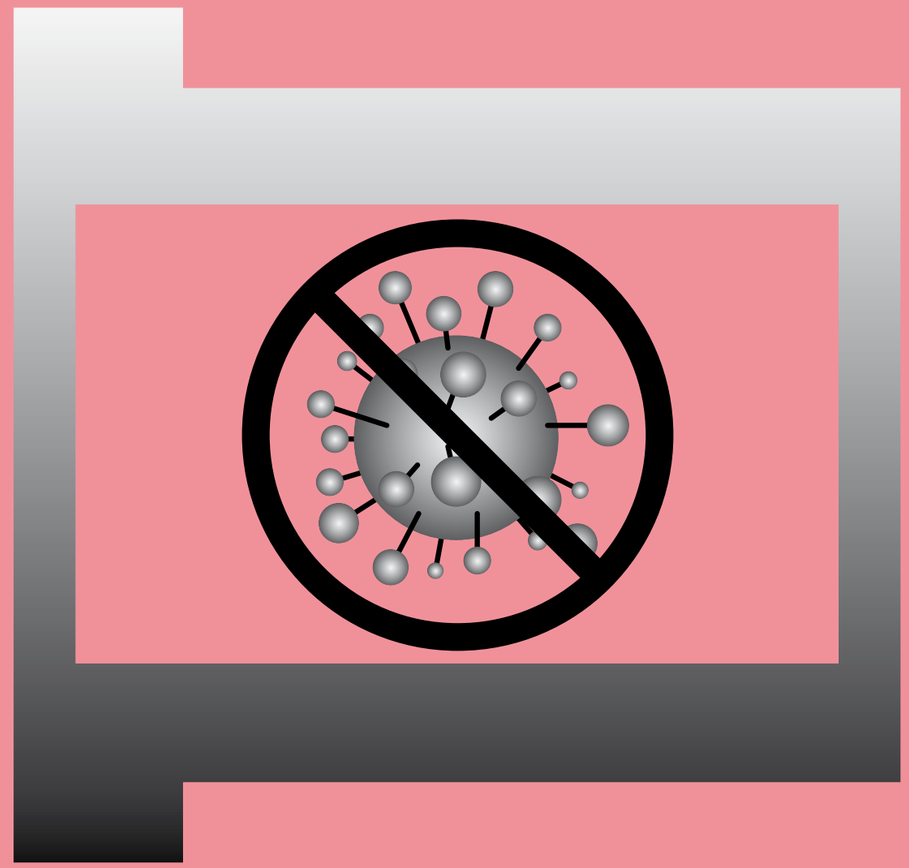
Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

Even more dimensions from stock

More than 300 dimensions are now available. Search online for your required bearing.

▶ **www.igus.eu/iglidur-specialbearings**

My sketches

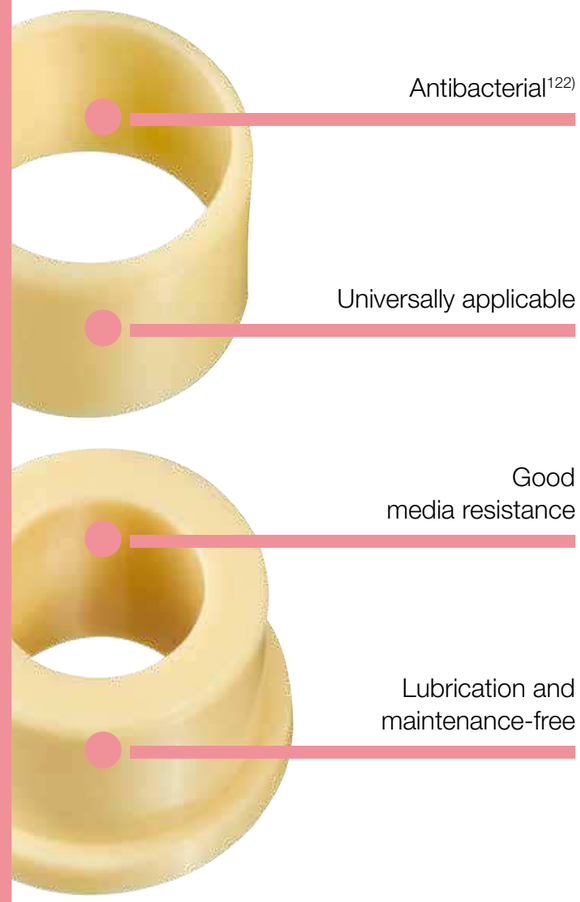


The first antibacterial iglidur® bearing – iglidur® AB

- Antibacterial
- Universally applicable
- Good media resistance
- Lubrication and maintenance-free
- Standard range from stock

iglidur® AB | The first antibacterial iglidur® 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.

When to use it?

- When bearing points must meet high hygienic standards
- When you are looking for a universal bearing for manually actuated applications
- When you are looking for a bearing for low and medium loads

When not to use it?

- When an extremely wear resistant bearing is required for continuous operation in dry running
  ▶ iglidur® J3, page 165
- When you are looking for a bearing that conforms to the EC 10/2011 EC Directive and/or the FDA requirements for repeated contact with foodstuffs
  ▶ iglidur® A181, page 325
  ▶ iglidur® A350, page 333
- When you are looking for a bearing with the highest possible universal media resistance
  ▶ iglidur® X, page 237

Typical application areas

- Medical technology
- Laboratory technology
- Ventilation systems
- Sanitary furniture and equipment
- Bearings of patient and care furniture

[122)] **According to test results for antimicrobial effectiveness in accordance with ISO 22196:2011**

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1

max. +70 °C
min. –40 °C

Ø 6–20 mm
More dimensions on request

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

iglidur® AB | Technical data

Material properties table

General properties	Unit	iglidur® AB	Testing method
Density	g/cm³	1.11	DIN EN ISO 1183-1
Colour		Yellow	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.8	ISO 175
Max. water absorption	% weight	1.6	ISO 62
Coefficient of sliding 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. long-term application temperature	°C	+70	
Max. short-term application temperature	°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 volume resistance	Ωcm	> 10^{12}	DIN IEC 93
Surface resistance	Ω	> 10^{12}	DIN 53482

Table 01: Material properties table

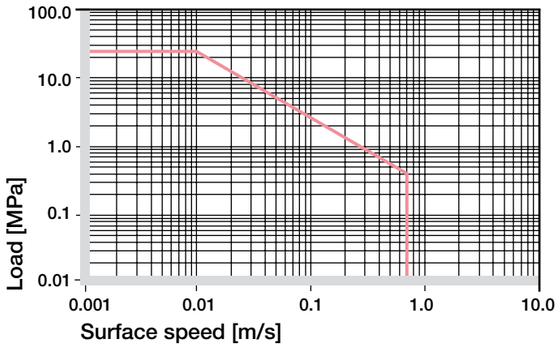


Diagram 01: Permissible pv values for iglidur® AB bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The humidity absorption of iglidur® AB bearings amounts to about 0.8 % weight in standard climatic conditions. The saturation limit submerged in water is 1.6 % weight.

▶ Diagram, www.igus.eu/ab-moisture

Vacuum

In vacuum applications, any absorbed moisture content is outgassed. Use in vacuum is only possible with dehumidified bearings.

Radiation resistance

Plain bearings made from iglidur® AB are resistant to radiation up to an intensity of 3 · 10^2 Gy.

UV resistance

iglidur® AB bearings change colour under the influence of UV rays. However, hardness, compressive strength and the wear resistance of the material do not change.

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

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

iglidur® AB | Technical data

iglidur® AB was specially developed for applications in areas with hygienic requirements. These types of applications often involve manually actuated pivoting units (doors, furniture in the medical sector, etc.). The material reduces the level of bacterial contamination but – like all "anti-bacterial" materials – is not a substitute for adequate hygienic measures.

Mechanical properties

With increasing temperatures, the compressive strength of iglidur® AB plain bearings decreases. The permissible maximum surface pressure is a mechanical material parameter. No conclusions regarding the tribological properties can be drawn from this.

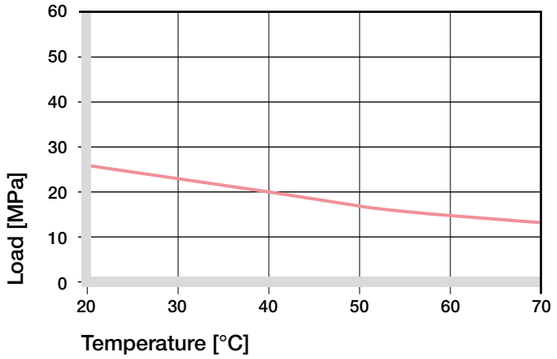


Diagram 02: Permissible maximum surface pressure as a function of temperature (25 MPa at +20 °C)

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 41**

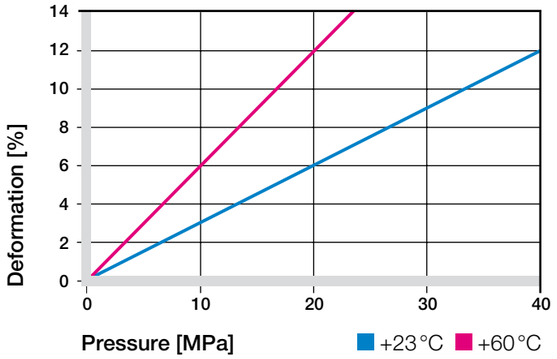


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

iglidur® AB is mainly suitable for low speeds in dry running, but the specified 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 temperature level is rarely reached due to varying application conditions.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	0.7	0.5	1.0
Short-term	1.0	0.7	1.8

Table 03: Maximum surface speeds

Temperatures

The temperatures prevailing in the bearing system also have an influence on the bearing wear. With increasing temperatures, the wear increases and this effect is significant when temperatures rise over +60 °C. At temperatures over +50 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

Coefficient of friction and wear resistance are dependent on the application parameters (diagrams 04 and 05).

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

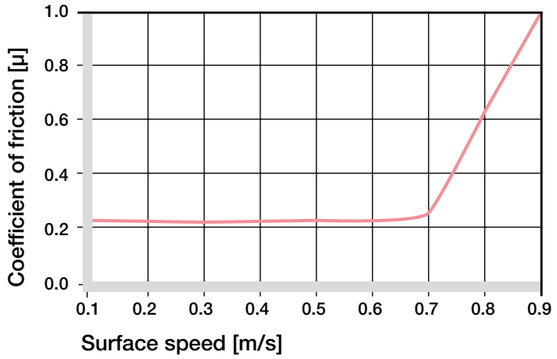


Diagram 04: Coefficient of friction as a function of the surface speed, p = 1 MPa

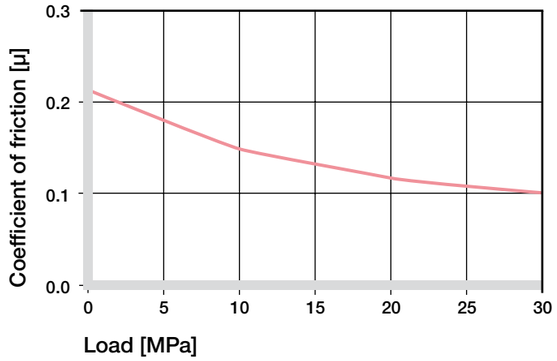


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

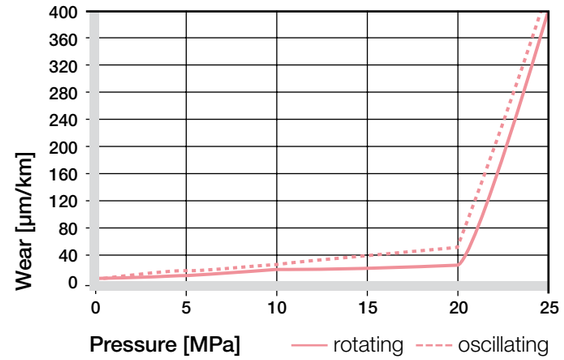


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Shaft materials

The friction and wear are also dependent, to a large degree, on the shaft material. Shafts that are too smooth, increase both the coefficient of friction and the wear of the bearing. Diagram 06 shows a summary of the results of tests with different shaft materials. When rotating at a load of 1 MPa, 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 rotating movements at loads in increasing levels is also quite similar if the remaining parameters are identical.

▶ Shaft materials, **page 52**

iglidur® AB	Dry	Greases	Oil	Water
C. o. f. µ	0.11–0.21	0.09	0.04	0.04

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

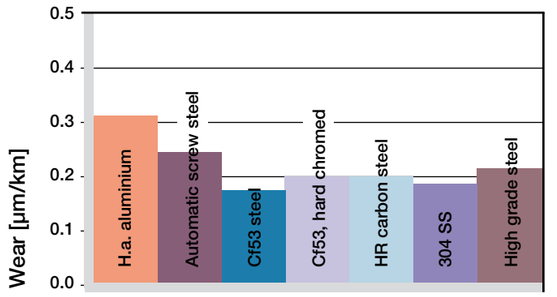


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

Installation tolerances

iglidur® AB plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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).

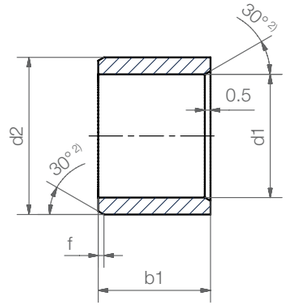
▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® AB E10 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.014 +0.054	0 +0.010
> 3 to 6	0–0.030	+0.020 +0.068	0 +0.012
> 6 to 10	0–0.036	+0.025 +0.083	0 +0.015
> 10 to 18	0–0.043	+0.032 +0.102	0 +0.018
> 18 to 30	0–0.052	+0.040 +0.124	0 +0.021
> 30 to 50	0–0.062	+0.050 +0.150	0 +0.025
> 50 to 80	0–0.074	+0.060 +0.180	0 +0.030

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

iglidur® AB | Product range

Sleeve bearing (Form S)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]
AB S M	-06 08-06

iglidur® material	Form S	metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

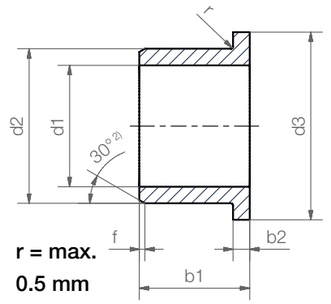
Dimensions [mm]

d1	d1-Tolerance[3]	d2	b1 h13	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	+0.025 +0.083	12.0	10.0	**ABSM-1012-10**
12.0	+0.032 +0.102	14.0	15.0	**ABSM-1214-15**
15.0	+0.032 +0.102	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 57

iglidur® AB | Product range

Flange bearing (Form F)



r = max. 0.5 mm

[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the 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]
AB F M	-06 08-08

iglidur® material	Form F	metric	Inner-Ø d1	Outer-Ø d2	Length b1

Dimensions according to ISO 3547-1 and special dimensions

Dimensions [mm]

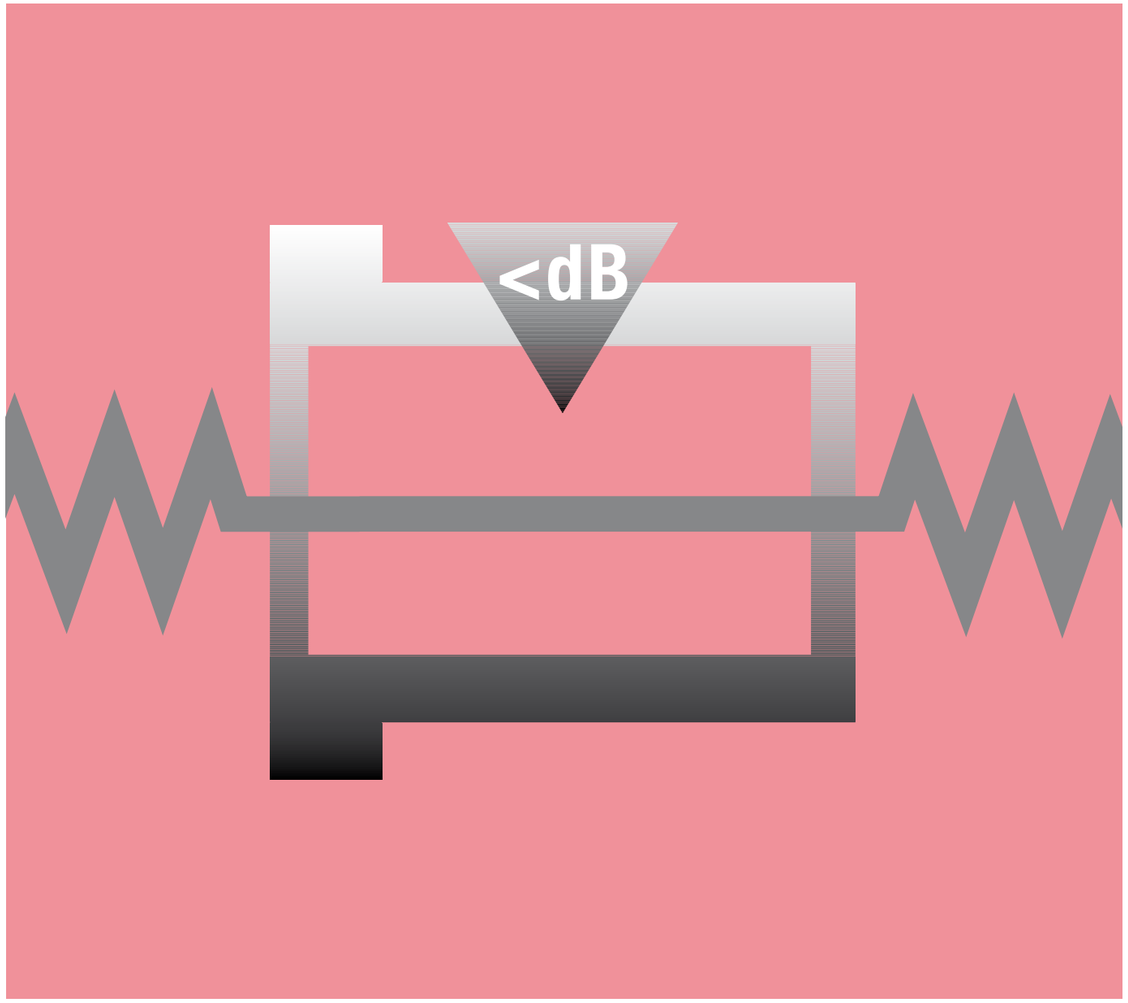
d1	d1-Tolerance[3]	d2	d3 d13	b1 h13	b2 –0.14	Part No.
6.0	+0.020 +0.068	8.0	12.0	8.0	1.0	**ABFM-0608-08**
8.0	+0.025 +0.083	10.0	15.0	9.5	1.0	**ABFM-0810-09**
10.0	+0.025 +0.083	12.0	18.0	12.0	1.0	**ABFM-1012-12**
12.0	+0.032 +0.102	14.0	20.0	12.0	1.0	**ABFM-1214-12**
15.0	+0.032 +0.102	17.0	23.0	12.0	1.0	**ABFM-1517-12**
20.0	+0.040 +0.124	23.0	30.0	21.5	1.5	**ABFM-2023-21**

[3] After press-fit. Testing methods ▶ Page 57

Couldn't find your size?

Do you need another length, other dimensions or tolerances? You need a particular design or alternative for your application? Please call us. igus® listens to your needs and provides you a solution very quickly.

My sketches

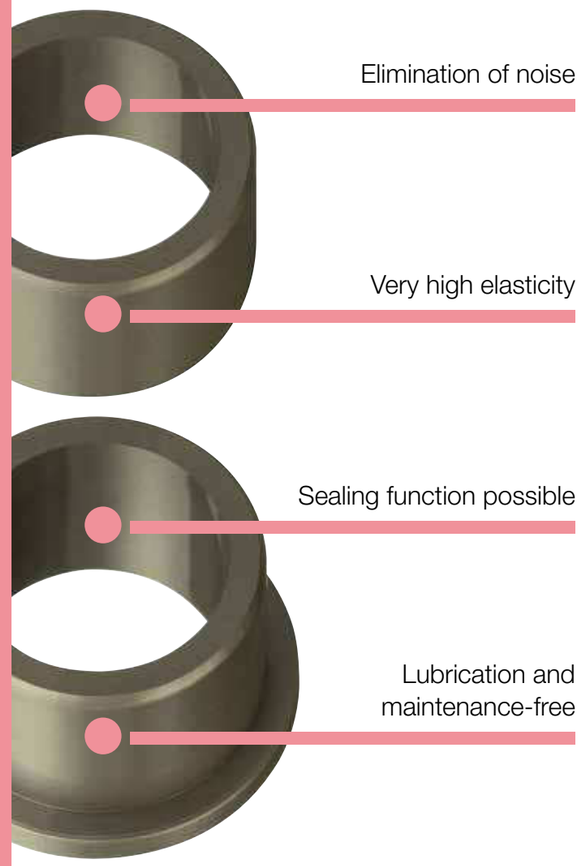


The flexible – iglidur® B

- Elimination of noise
- Very high elasticity
- Sealing function possible
- Lubrication and maintenance-free

iglidur® B | The flexible

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.

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, page 141
- When a cost-effective universal bearing is required
  ▶ iglidur® R, page 213
- When the highest wear resistance is required
  ▶ iglidur® J, page 141

Available on request
Detailed information about delivery time online.

Order-related

max. +100 °C
min. –40 °C

Order-related

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

iglidur® B | Technical data

Material properties table

General properties	Unit	iglidur® B	Testing method
Density	g/cm³	1.15	
Colour		grey	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	1.0	DIN 53495
Max. water absorption	% weight	6.3	
Coefficient of sliding 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. long-term application temperature	°C	+100	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{10}$	DIN IEC 93
Surface resistance	Ω	$> 10^{9}$	DIN 53482

Table 01: Material properties table

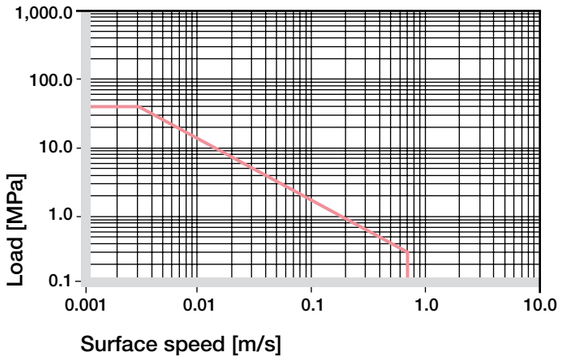


Diagram 01: Permissible pv values for iglidur® B bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® B plain bearings is approximately 1 % weight in standard climatic conditions. The saturation limit submerged in water is 6.3 % weight. This must be taken into account along with other environmental influences.

▶ Diagram, www.igus.eu/b-moisture

Vacuum

Use of iglidur® B plain bearings is limited in vacuum. Only dehumidified bearings should be tested.

Radiation resistance

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

UV resistance

iglidur® B plain bearings are not resistant to UV radiation.

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

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

The compressive strength of the iglidur® B 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.

Mechanical properties

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

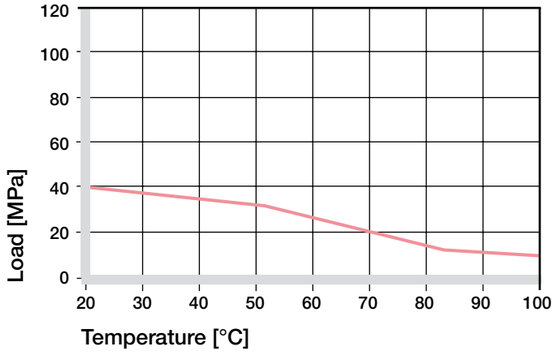


Diagram 02: Permissible maximum surface pressure as a function of temperature (40 MPa at +20 °C)

Diagram 03 shows the elastic deformation of iglidur® B at radial loads. The elastic deformation at 40 MPa at room temperature is 5.3 %.

▶ Surface pressure, **page 41**

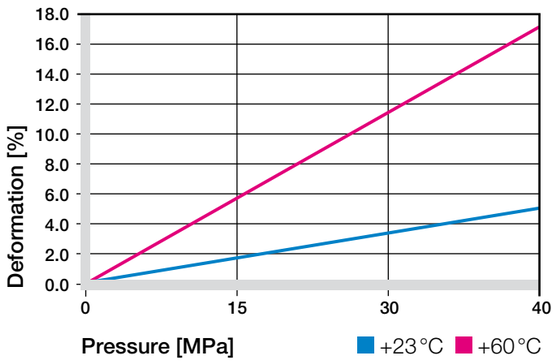


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

iglidur® B bearings can be continuously used up to 0.7 m/s in rotation. The frictional heat provides the speed limits. In practice, though, this temperature level is rarely reached due to varying application conditions.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	0.7	0.5	2
Short-term	1	0.7	3

Table 03: Maximum surface speeds

Temperatures

The operating temperature of the iglidur® B bearings is limited to +100 °C. At temperatures over +50 °C an additional securing is required. The wear resistance too declines disproportionately from +70 °C.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

The coefficients of friction increase slightly with the speed and decrease with the load. Surface finishes of the shaft between 0.4 and 0.6 Ra are ideal. As far as the bearing load is not too high, the attained wear values are pretty good. An increase in load results in a disproportionate increase in abrasion.

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

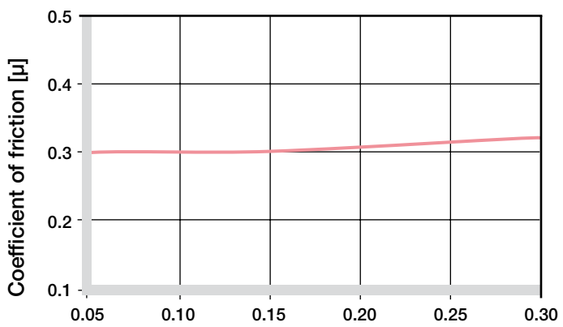


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

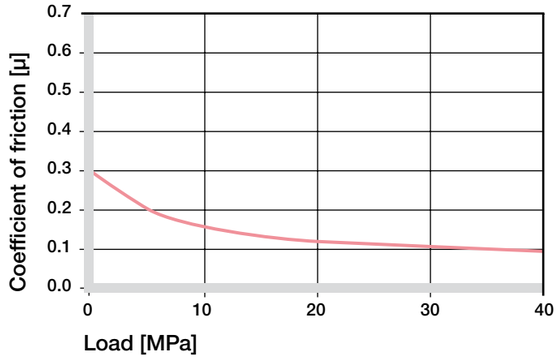


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

The influence of the shaft is not very large on the wear resistance.
Diagrams 06 and 07 clarify that very similar wear data are attained with different shaft materials. If high operational performances are expected, the bearing load should not be too high.

▶ Shaft materials, **page 52**

iglidur® B	Dry	Greases	Oil	Water
C. o. f. µ	0.18–0.28	0.09	0.04	0.04

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

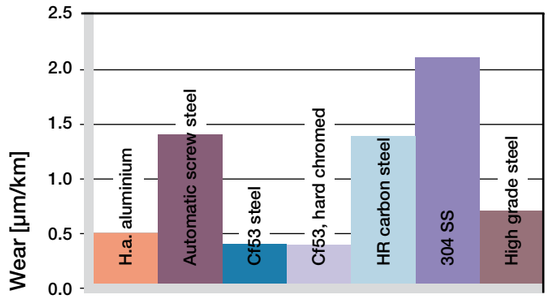


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

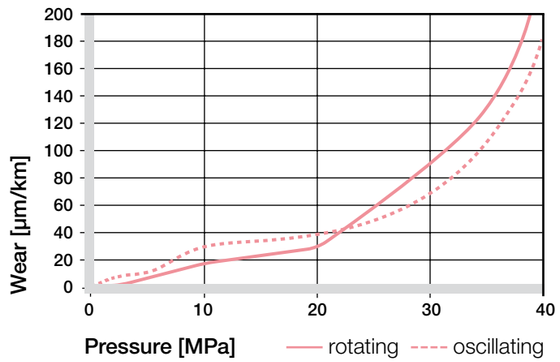


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Installation tolerances

iglidur® B plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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 D11 tolerances. For particular dimensions the tolerance differs depending on the wall thickness (please see product range table).

▶ Testing methods, **page 57**

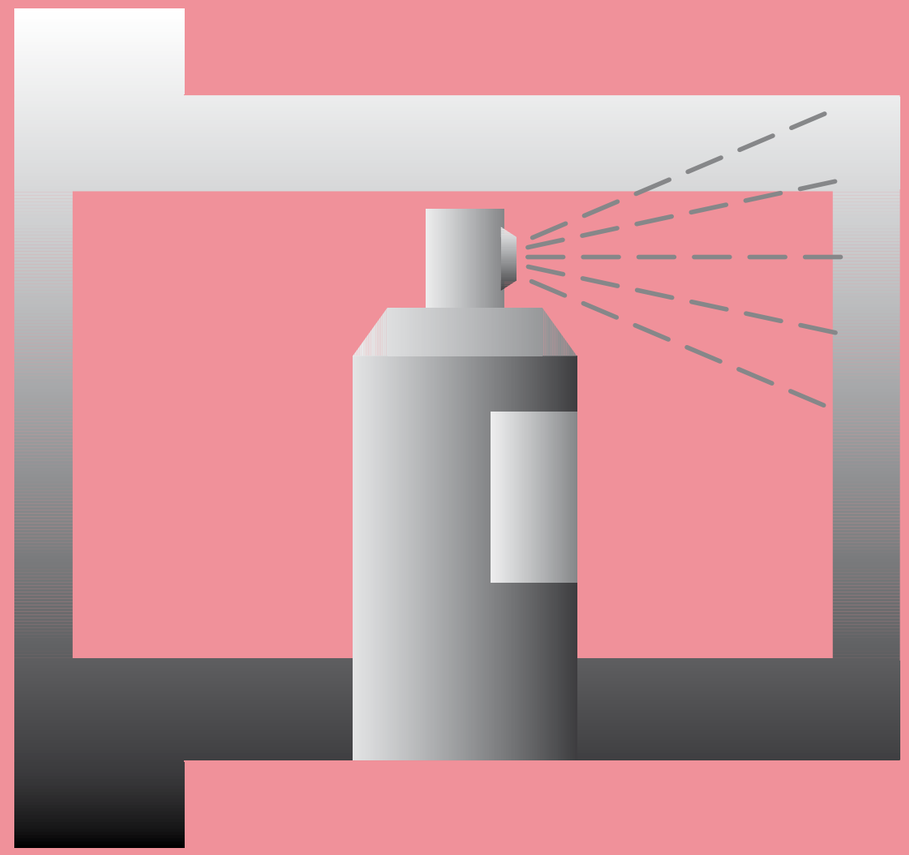
Diameter d1 [mm]	Shaft h9 [mm]	iglidur® B D11 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.020 +0.080	0 +0.010
> 3 to 6	0–0.030	+0.030 +0.105	0 +0.012
> 6 to 10	0–0.036	+0.040 +0.130	0 +0.015
> 10 to 18	0–0.043	+0.050 +0.160	0 +0.018
> 18 to 30	0–0.052	+0.065 +0.195	0 +0.021
> 30 to 50	0–0.062	+0.080 +0.240	0 +0.025
> 50 to 80	0–0.074	+0.100 +0.290	0 +0.030

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

Product range

iglidur® B plain bearings are manufactured to special order.

My sketches

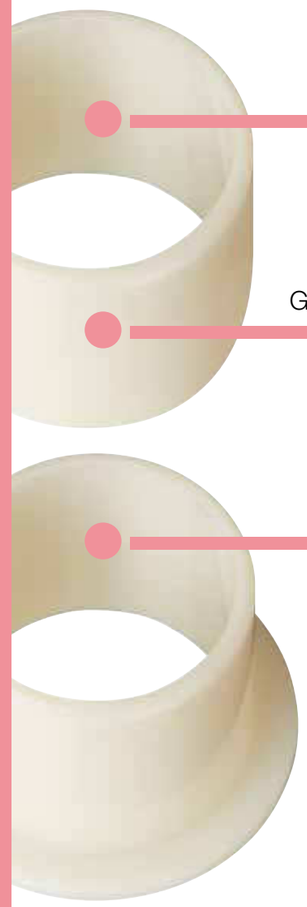


Free of PTFE and silicone – iglidur® C

- Dry running
- Good abrasion resistance
- Lubrication and maintenance-free

iglidur® C | 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.

When to use it?

- When PTFE and silicone are not allowed in your application
- For applications with low speed
- If you need dirt-resistant bearings
- If you need maintenance-free, self-lubricating bearings

When not to use it?

- When highest wear resistance is required
  ▶ iglidur® W300, page 153
- When low coefficients of friction are required
  ▶ iglidur® J, page 141
  ▶ iglidur® L250, page 197
- If a cost-effective option is requested
  ▶ iglidur® M250, page 95
- When low moisture absorption is required
  ▶ iglidur® R, page 213

Available on request
Detailed information about delivery time online.

Order-related

max. +90 °C
min. –40 °C

Order-related

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

iglidur® C | Technical data

Material properties table

General properties	Unit	iglidur® C	Testing method
Density	g/cm³	1.1	
Colour		off white	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	1.0	DIN 53495
Max. water absorption	% weight	6.9	
Coefficient of sliding 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. long-term application temperature	°C	+90	
Max. short-term application temperature	°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 volume resistance	Ωcm	$> 10^{10}$	DIN IEC 93
Surface resistance	Ω	$> 10^{9}$	DIN 53482

Table 01: Material properties table

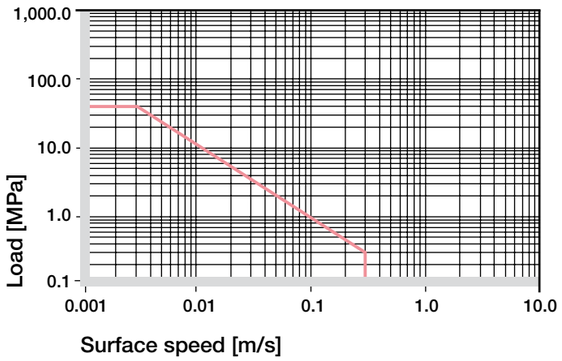


Diagram 01: Permissible pv values for iglidur® C bearings with a wall thickness of 1 mm dry running against a steel shaft, at +20 °C, mounted in a steel housing

Moisture absorption

The moisture absorption of iglidur® C plain bearings is approx. 6.9 % weight when saturated in water. This must be taken into account for these types of applications.

▶ Diagram, www.igus.eu/c-moisture

Vacuum

iglidur® C plain bearings outgas in a vacuum. Applications in vacuum are only possible to a limited extent.

Radiation resistance

Plain bearings of iglidur® C are radiation resistant up to a radiation intensity of $2 \cdot 10^4$ Gy.

UV resistance

iglidur® C plain bearings are not resistant to UV radiation.

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

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]
Table 02: Chemical resistance

▶ Chemical table, **page 1424**

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.

Mechanical properties

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

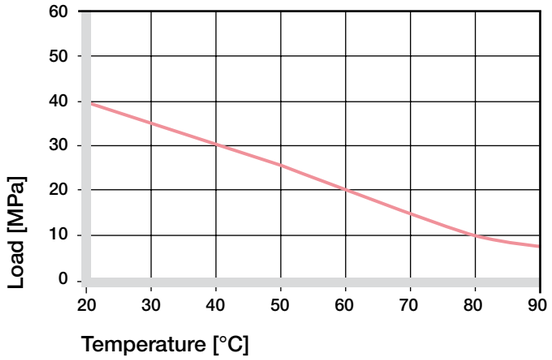


Diagram 02: Permissible maximum surface pressure as a function of temperature (40 MPa at +20 °C)

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 41**

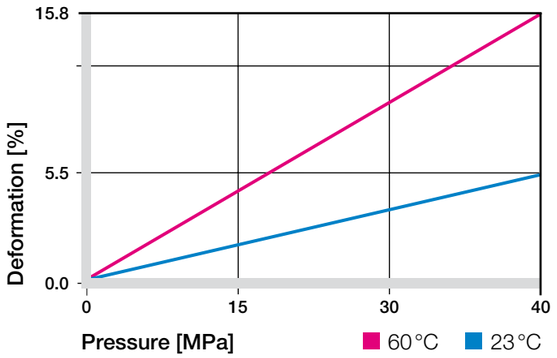


Diagram 03: Deformation under pressure and temperature

Permissible surface speeds

Although important solid lubricants have been deliberately avoided in the development of iglidur® C, the bearings are very wear resistant and therefore even suitable for continuous movements at medium surface speeds. Despite it being possible to temporarily attain rotating speeds of up to 1.5 m/s, the main applications should be undertaken with speeds of less than 0.5 m/s.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	1	0.7	2
Short-term	1.5	1.1	3

Table 03: Maximum surface speeds

Temperatures

The short-term maximum application temperature is +130 °C. However no real loads are possible at this temperature. Therefore it would be reasonable to limit the temperature to about +80 °C to +90 °C. At temperatures over +40 °C an additional securing is required.

▶ Application temperatures, **page 49**
▶ Additional securing, **page 49**

Friction and wear

The coefficient of friction of the iglidur® C bearing is dependent to a large degree on the coarseness of the shaft. The wear of the bearing is very good in applications with rotating or pivoting motions with low loads.

▶ Coefficients of friction and surfaces, **page 47**
▶ Wear resistance, **page 50**

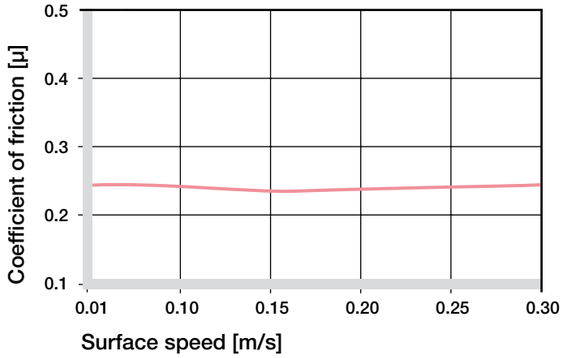


Diagram 04: Coefficient of friction as a function of the surface speed, p = 0.75 MPa

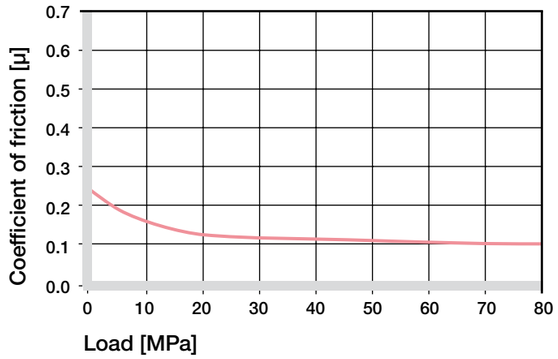


Diagram 05: Coefficient of friction as a function of the pressure, v = 0.01 m/s

Shaft materials

Diagram 06 clearly shows how important the "suitable" counter partner could be. Although all shown results of these rotation experiments can be understood as very good, the difference is sometimes significant. This difference rises still further with increasing pressures.

▶ Shaft materials, **page 52**

iglidur® C	Dry	Greases	Oil	Water
C. o. f. µ	0.17–0.25	0.09	0.04	0.04

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

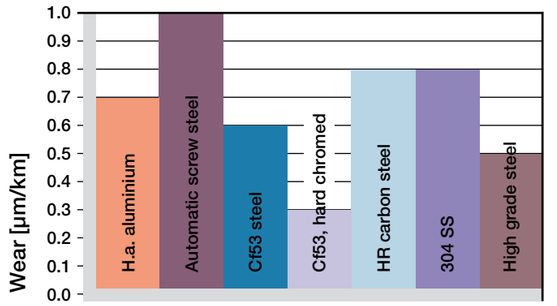


Diagram 06: Wear, rotating with different shaft materials, p = 1 MPa, v = 0.3 m/s

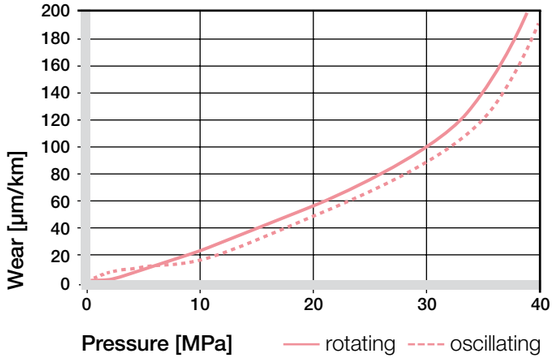


Diagram 07: Wear for oscillating and rotating applications with shaft material Cf53 hardened and ground steel, as a function of the pressure

Installation tolerances

iglidur® C plain bearings are standard bearings for shafts with h-tolerance (recommended minimum h9). The bearings are designed for pressfit 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 D11 tolerances.

▶ Testing methods, **page 57**

Diameter d1 [mm]	Shaft h9 [mm]	iglidur® C D11 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.020 +0.080	0 +0.010
> 3 to 6	0–0.030	+0.030 +0.105	0 +0.012
> 6 to 10	0–0.036	+0.040 +0.130	0 +0.015
> 10 to 18	0–0.043	+0.050 +0.160	0 +0.018
> 18 to 30	0–0.052	+0.065 +0.195	0 +0.021
> 30 to 50	0–0.062	+0.080 +0.240	0 +0.025
> 50 to 80	0–0.074	+0.100 +0.290	0 +0.030

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

Product range

iglidur® C plain bearings are produced to special order.

iglidur®

More products

...plastics

iglidur® piston rings and split bearings

An alternative to PTFE tape:
Piston rings
▶ Page 515

Easy to fit, security with the double flange design:
Clip bearings
Inch
▶ Page 524

Easy to install due to split design:
Split bearings
▶ Page 525

With anti-rotation feature
▶ Page 526

iglidur® piston rings and split bearings

Press in and fold down:
Flanged bearing
▶ Page 527

Press and plug:
Double flange bearing
▶ Page 528

Join and snap into place:
Special solution
snap on
▶ Page 529

iglidur® solutions for special applications

For precise conveying:
iglidur® knife edge rollers
▶ Page 531

Secured by screws:
iglidur® flange bearings
▶ Page 535

Zero clearance:
Preloaded bearings
Inch
▶ Page 539

Cushion and dampen:
polysorb – polymer disc springs
▶ Page 543

iglidur® solutions for special applications

For all shaft surfaces and materials:
iglidur® PEP
Inch
▶ Page 547

Bearings with lip seal:
Sealing lip bearings
▶ Page 551

igus® service

Quick and individual:
Customised special parts – speedimold
▶ Page 555

iglidur® piston rings

- Easy installation
- Cost-effective
- More wear-resistant than PTFE-strips
- High load capacity
- Standard range from stock

iglidur® piston rings | Advantages

Easy and economic: iglidur® piston rings

Easy installation

Cost-effective

More wear-resistant than PTFE-strip

High load capacity

Wear-resistant and maintenance-free

iglidur® piston rings

Why complicate things if you do not need to? Some things can actually be very easy: Replace complex stamped PTFE strips with a single clip-on guide ring, for example in cylinders, control valves and fittings. In addition to the standard iglidur® J range, it is also possible to configure your desired piston ring from the entire iglidur® bearing range.

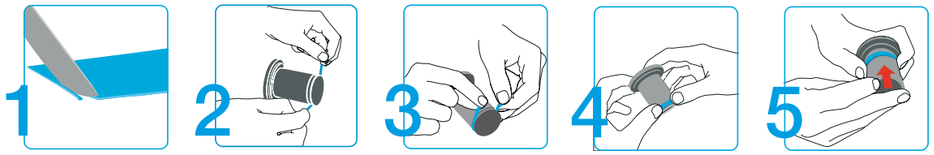
When to use it?

- When piston 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

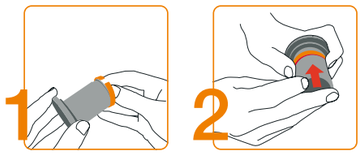
When not to use it?

- When the piston rings should also act as a seal
- When different diameters should be covered by one part

Traditional method:



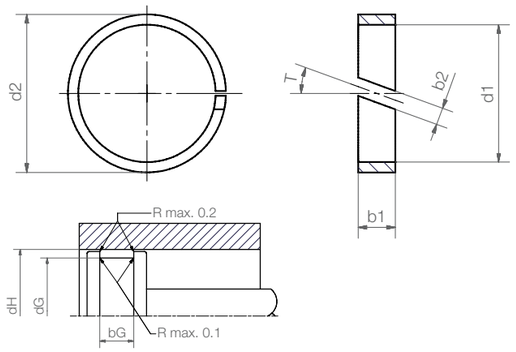
With iglidur®:



iglidur® piston rings | Product range

iglidur® J piston rings, from stock

iglidur® J is our all-round material when it comes to an outstanding running performance and low coefficients of friction on the broadest range of shafts. The flexibility of iglidur® J enables the typical assembly expected with piston rings using the push over/clip on method. Good media resistance rounds off the range of properties.

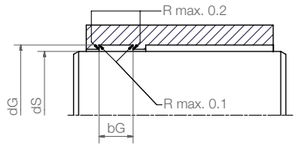


Installation recommendation for piston

Dimensions [mm]	dG (h-tolerate)	dH (h-tolerate)	bG
Nominal size	dG = d1	dH = d2	bG = b1 +0.2

Order key

Type				Dimensions [mm]		
J	PR	M	- 06	08	- 06	
iglidur® material	Piston ring	Metric	Inner Ø	Outer Ø	Length	



Installation recommendation for housing

Dimensions [mm]	dS (h-tolerate)	dG (h-tolerate)	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-0608-06**
8	10	10	1.0	0	**JPRM-0810-10**
10	12	5.4	2.5	20	**JPRM-1012-054**
12	14	5.4	2.5	20	**JPRM-1214-054**
14	16	5.4	2.5	20	**JPRM-1416-054**
14	16	10	1.0	20	**JPRM-1416-10**
16	18	5.4	2.5	20	**JPRM-1618-054**
17	22	5.4	2.5	25	**JPRM-1722-054**
20	23	5.4	2.5	20	**JPRM-2023-054**
25	28	5.4	2.5	20	**JPRM-2528-054**
28	32	10	1.0	20	**JPRM-2832-10**
28	32	20	1.0	20	**JPRM-2832-20**
28	33	5.4	2.5	25	**JPRM-2833-054**
30	34	5.4	2.5	20	**JPRM-3034-054**
35	39	5.4	2.5	20	**JPRM-3539-054**
35	40	5.4	2.5	25	**JPRM-3540-054**
40	44	5.4	2.5	20	**JPRM-4044-054**
45	50	5.4	2.5	20	**JPRM-4550-054**

d1	d2	b1 h13	b2 ±0.5	T [°]	Part No.
45	50	10	2.0	0	**JPRM-4550-10**
50	55	5.4	2.5	20	**JPRM-5055-054**
50	55	10	2.0	0	**JPRM-5055-10**
58	63	9.5 (–0.22)	2.5	25	**JPRM-5863-095**
60	65	5.4	2.5	20	**JPRM-6065-054**
70	75	5.4	2.5	20	**JPRM-7075-054**

More Information about iglidur® material and technical data
iglidur® J ▶ Page 141

max. +90 °C
min. –50 °C

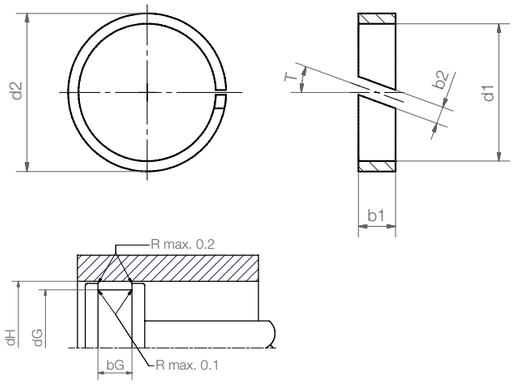
Ø 6–70 mm
More dimensions on request

Available from stock
Detailed information about delivery time online.

iglidur® piston rings | Product range

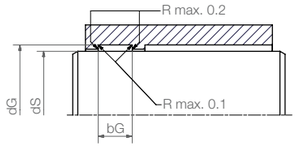
Custom-made piston rings

In addition to the stock range of iglidur® J piston rings, you can also select your desired piston ring on the basis of the entire iglidur® bearing range.
Use the entire iglidur® bearing range and choose the material best suited to your application. Your piston ring will be delivered within 10 days – to your requirements.



Order key

Type			Dimensions [mm]		
☐	PR	M	- ☐ ☐	-	☐
iglidur® required material	Piston ring	Metric	Required Inner Ø	Required Outer Ø	Required length



Installation recommendation for piston

Dimensions [mm]	dG (h-tolerate)	dH (h-tolerate)	bG
Nominal size	dG = d1	dH = d2	bG = b1 +0.2

Installation recommendation for housing

Dimensions [mm]	dS (h-tolerate)	dG (h-tolerate)	bG
Nominal size	dS = d1	dG = d2	bG = b1 +0.2

Our material recommendations for special requirements:

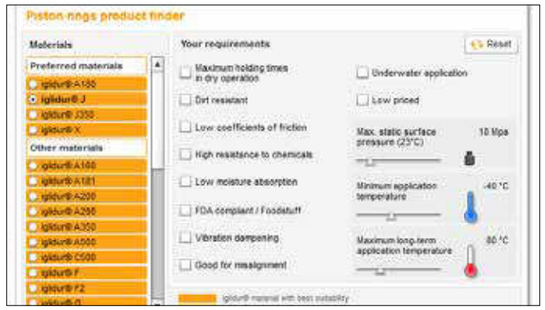
- **iglidur® A180: FDA-compliant ▶ Page 349**
- **iglidur® J350: > +90 °C ▶ Page 173**
- **iglidur® H1: Temperature up to +200 °C ▶ Page 283**

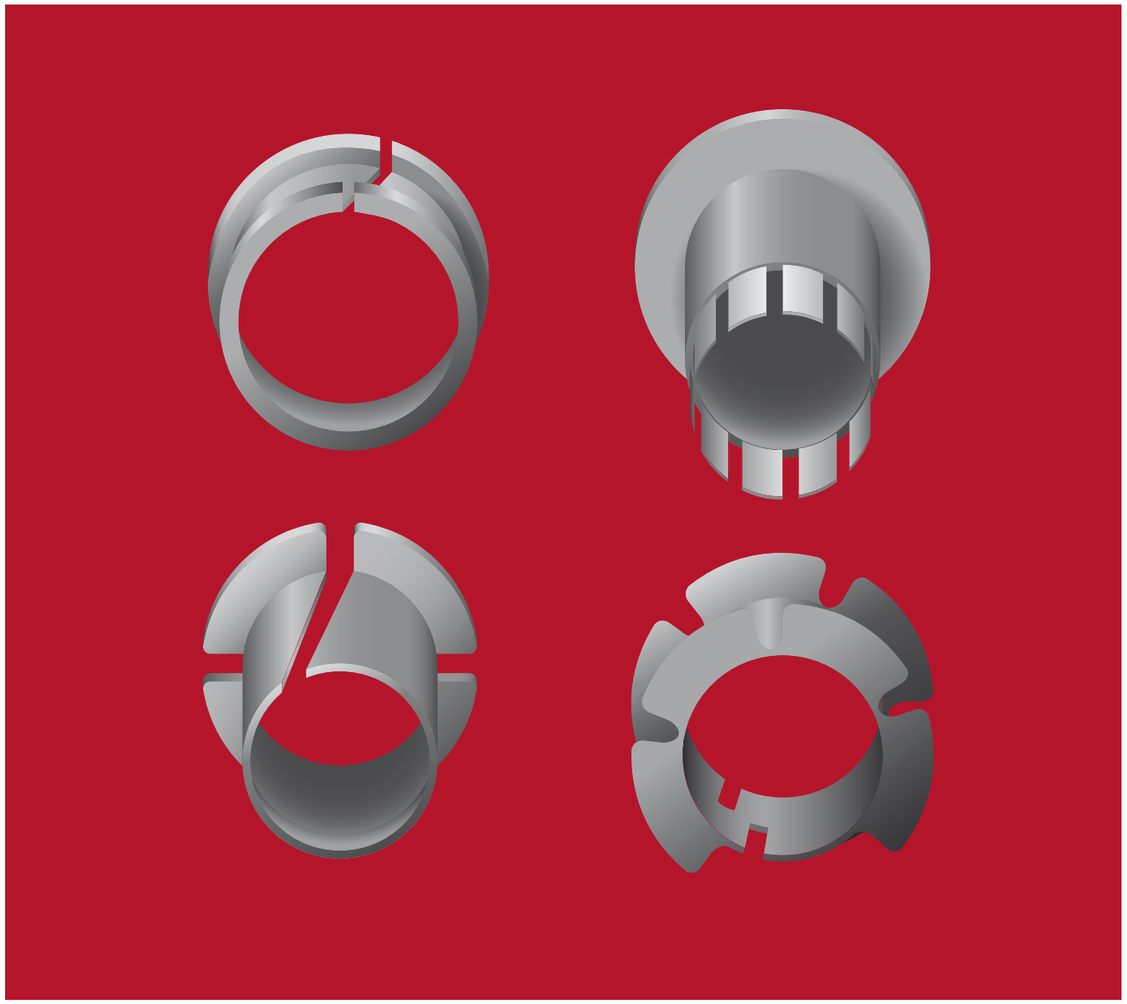
In addition to mechanical processing of existing iglidur® bearings to piston rings, we also develop custom-made piston ring solutions for your volume requirements. Please contact us. We will support you with your design and create an appropriate proposal.

iglidur® piston rings product finder

Material selection and individual dimensions made easy. With just a few clicks, the piston ring finder can find the optimum iglidur® material and select the appropriate dimensions from the standard catalogue range in order to define a piston ring in a customised width.

▶ www.igus.eu/pistonring-finder





iglidur® sheet metal solutions

Material: iglidur® M250

Easy installation

Good abrasion resistance

Predictable service life

Custom versions possible

Lubrication and maintenance-free

Standard range from stock

Solutions for stamped sheet metal

iglidur® clip bearing:
Captive with double flange
▶ **From page 524**

iglidur® split bearings:
Easy assembly due to lateral slot, also with anti-rotation feature
▶ **From page 525**

iglidur® flanged bearings:
Press in and fold down
▶ **From page 527**

iglidur® double flange bearing:
Press and plug
▶ **From page 528**

Custom solution
iglidur® snap on:
Join and snap into place
▶ **From page 529**

iglidur® clip bearings for fitting shafts through sheet metal

iglidur® clip bearings are designed specifically for fitting shafts through sheet metal. For this reason, the bearings have flanges located on both ends. The bearings are secured in the sheet metal plate on both sides after fitting.
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 of the housing.

- Lateral slot for easy installation
- Lubrication and maintenance-free
- Good adaptability to punched holes
- Good abrasion resistance
- Quiet
- For rotating and linear movements

Typical application areas

- Automotive
- Machine building
- Jig construction

Available from stock
Detailed information about delivery time online.

max. +80 °C
min. –40 °C

Material: iglidur® M250
6 types
Ø 3–25 mm
More dimensions on request

Imperial dimensions available
▶ **From page 1337**

iglidur® clip bearings
- Easy to fit due to clip-on feature
- Increased security with the double flange design
- Good abrasion resistance

▶ **From page 524**

iglidur® split bearings (Clips2)
- Easy to fit
- Tolerance compensation with angled slot
- Low bearing clearance, high precision

▶ **From page 525**

iglidur® flanged bearings
- Easy installation
- Pressfit
- Axial load on both sides
- Compensation of tolerances of the sheet metal

▶ **From page 527**

iglidur® double flange bearing
- Easy to fit due to clip-on feature
- Large flange surfaces
- Symmetrical flange
- Remains in place during E-Coat paint process

▶ **From page 528**

Custom solution iglidur® snap 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 529**

This cutting mechanism is used in the beverage industry. All used components meet the requirement of freedom from lubrication with low weight and low-cost.

Easy-to-clean and cost-effective iglidur® clip bearings and iglidur® flange bearings are used in a honeycomb.

By using wear-resistant iglidur® clip bearings, the lowering mechanism for radiator mascots on luxury cars could be improved.

The guide rod in this pharmacy printer has been attached using igus® clip bearings.

Rattle-free positioning of seat systems with iglidur® plain/clip bearings, e.g. inner/tilt and seat height adjustment.

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 of the housing. 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 bearings are self-lubricating and can be used dry. If required the bearings can also be lubricated. The material iglidur® M250 is resistant to all common lubricants.

Mechanical properties

The permissible static pressure of iglidur® M250 at room temperature is 20 MPa. Due to the possibility of high tolerances in the housing bore, 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 loads are especially important.

▶ iglidur® M250, **page 95**

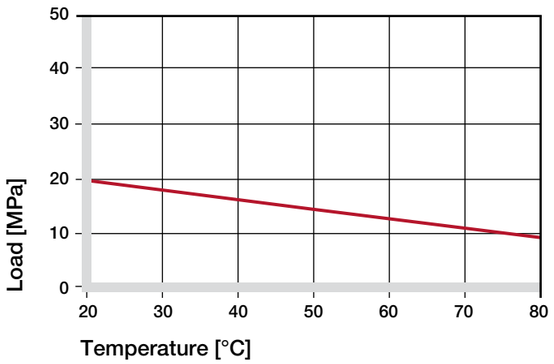


Diagram 01: Permissible maximum surface pressure of as a function of temperature (20 MPa at +20 °C)

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 speeds can be increased.

▶ Surface speed, **page 44**

m/s	Rotating	Oscillating	Linear
Continuous	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 resistant to wear.

▶ Application temperatures, **page 49**

iglidur® M250	Application Temperature
Minimum	–40 °C
Max. long-term	+80 °C
Max. short-term	+170 °C

Table 02: Temperature limits

Installation

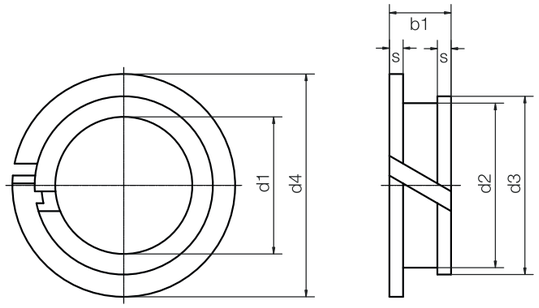
For installation, the plain bearings are pressed together on the side with the large flange. The angled slot makes the bearing spiral shaped so that it can be placed easily into the metal plate.
The slot also compensates for expansions of the circumference. In this way, a tight clearance is possible with the clip bearings. The bearing clearance is dimensioned in such a way that in a housing bore 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 bore. The clip bearing can also rotate within the housing bore.

Diameter d1 [mm]	Shaft h9 [mm]	Tolerances D11 [mm]	Housing H7 [mm]
up to 3	0–0.025	+0.020 +0.080	0 +0.010
> 3 to 6	0–0.030	+0.030 +0.105	0 +0.012
> 6 to 10	0–0.036	+0.040 +0.130	0 +0.015
> 10 to 18	0–0.043	+0.050 +0.160	0 +0.018
> 18 to 30	0–0.052	+0.065 +0.195	0 +0.021
> 30 to 50	0–0.062	+0.080 +0.240	0 +0.025
> 50 to 80	0–0.074	+0.100 +0.290	0 +0.030

Table 03: Important tolerances for plain bearings according to ISO 3547-1 after pressfit

iglidur® clip bearings | Product range

Clip bearings for sheet metals – captive with double flange



Order key

Type	Dimensions [mm]
M C M	-06-015

iglidur® material	Form	Metric	Inner-Ø d1	Length b1
	C	M	06	015

Material:
iglidur® M250 ▶ Page 95

Inch Imperial dimensions available
▶ From page 1393

Dimensions [mm]

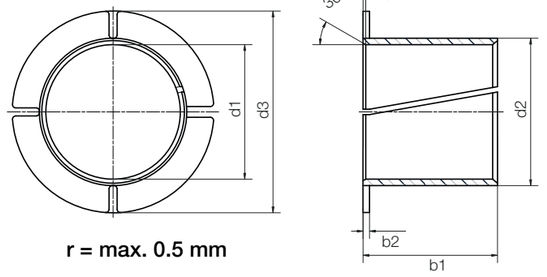
d1	d2	d3	d4	s	b1	Part No.
D11[7]				–0.10	+ 0.20	
3	4.2	4.8	6	0.6	3.2	**MCM-03-02**
3	4.2	4.8	6	0.6	4.2	**MCM-03-03**
4	5.2	5.9	7	0.6	3.2	**MCM-04-02**
4	5.2	5.9	7	0.6	4.2	**MCM-04-03**
5	6.2	6.8	8	0.6	3.2	**MCM-05-02**
5	6.2	6.8	8	0.6	4.2	**MCM-05-03**
6	7.2	7.8	11	0.6	2.7	**MCM-06-015**
6	7.2	7.8	11	0.6	3.2	**MCM-06-02**
6	7.2	7.8	11	0.6	4.2	**MCM-06-03**
6	7.2	7.8	11	0.6	5.2	**MCM-06-04**
7	9	9.8	13	0.8	4.6	**MCM-07-03**
8	9.6	10.4	13	0.8	3.6	**MCM-08-02**
8	9.6	10.4	13	0.8	4.6	**MCM-08-03**
8	9.6	13.0	10.4	0.8	5.6	**MCM-08-04**
9	10.6	11.4	14	0.8	3.6	**MCM-09-02**
10	11.6	12.4	15	0.8	3.6	**MCM-10-02**
10	11.6	12.4	15	0.8	4.1	**MCM-10-025**

d1	d2	d3	d4	s	b1	Part No.
D11[7]				–0.10	+ 0.20	
10	11.6	12.4	15	0.8	4.6	**MCM-10-03**
10	11.6	12.4	15	0.8	9.6	**MCM-10-08**
12	13.6	14.4	17	0.8	3.6	**MCM-12-02**
12	13.6	14.4	17	0.8	4.4	**MCM-12-025**
12	13.6	14.4	17	0.8	4.6	**MCM-12-03**
12	13.6	14.4	17	0.8	5.1	**MCM-12-035**
12	13.6	14.4	17	0.8	5.6	**MCM-12-04**
12	13.6	14.4	17	0.8	6.4	**MCM-12-045**
14	15.6	16.4	19	0.8	4.6	**MCM-14-03**
16	17.6	18.4	21	0.8	3.6	**MCM-16-02**
16	17.6	18.4	21	0.8	4.6	**MCM-16-03**
18	20	21	21	0.8	4	**MCM-18-02**
18	20	21	23	1	5	**MCM-18-03**
20	22	23	25	1	5	**MCM-20-03**
25	27	28	30	1	5	**MCM-25-03**
25	27	28	30	1	8	**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 523

iglidur® clip bearings | Product range

Split bearings (Clips2) – easy assembly



r = max. 0.5 mm

Order key

Type	Dimensions [mm]
M Y M	-04-04

iglidur® material	Form	Metric	Inner-Ø d1	Length b1
	Y	M	04	04

Material:
iglidur® M250 ▶ Page 95
with anti-rotation feature ▶ Page 526

Inch Imperial dimensions available
▶ From page 1394

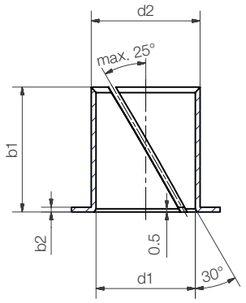
Dimensions [mm]

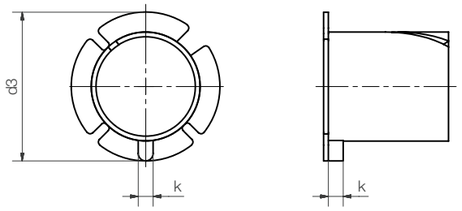
d1	d1-Tolerance[7]	d2[9]	d3	b1	b2	Part No.
			±0.40	–0.40	–0.13	
4	+0.025 +0.075	5.20	7.00	4.00	0.60	**MYM-04-04**
5	+0.025 +0.075	6.20	8.00	5.00	0.60	**MYM-05-05**
6	+0.025 +0.075	7.20	9.50	6.00	0.60	**MYM-06-06**
8	+0.025 +0.075	9.60	12.00	8.00	0.80	**MYM-08-08**
10	+0.025 +0.075	11.60	15.00	10.00	0.80	**MYM-10-10**
12	+0.025 +0.075	13.60	18.00	12.00	0.80	**MYM-12-12**
14	+0.025 +0.075	15.60	21.00	14.00	0.80	**MYM-14-14**
16	+0.025 +0.075	17.60	24.00	16.00	0.80	**MYM-16-16**
20	+0.025 +0.075	21.60	30.00	16.00	0.80	**MYM-20-16**
20	+0.025 +0.075	21.60	30.00	20.00	0.80	**MYM-20-20**
25	+0.025 +0.075	27.40	37.50	25.00	1.20	**MYM-25-25**

[7] d1 value is measured with a plug gauge after fitting into a reference housing d2 (+0.005)
[9] Recommended housing bore tolerance: H9

iglidur® clip bearings | Product range

Split bearing with anti-rotation feature





Order key

Type	Dimensions [mm]	Option
M Y M -	04 - 04 -	K

iglidur® material	Form	Metric	Inner-Ø d1	Length b1	Anti-rotation feature

Material:
iglidur® M250 ▶ Page 95

Inch Imperial dimensions available
▶ From page 1394

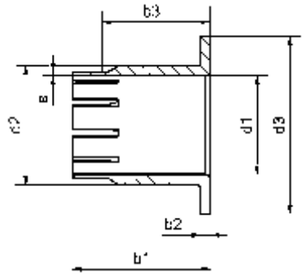
Dimensions [mm]

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 bore 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 d1	Outer-Ø d2	Metal sheet thickness

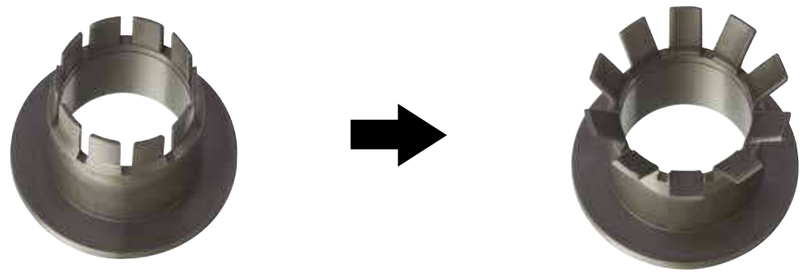
Material:
iglidur® M250 ▶ Page 95

Sample dimension [mm]

d1	d1-Tolerance[3]	d2	d3	b1	b2	b3	s	Part No.
	E10		d13	h13	–0.14	+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 57

Assembly:

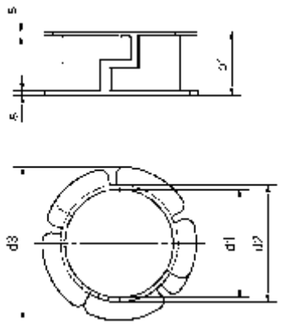


Press in, fold down, ready: axial load on both sides

Please contact us if you need a custom-made 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 bearing – press and plug



Order key

Type	Dimensions [mm]
M D M	-1213-06

iglidur® material	Form	Metric	Inner-Ø d1	Outer-Ø d2	Metal sheet thickness

Material:
iglidur® M250 ▶ Page 95

Sample dimension [mm]

d1	d1-Tolerance[8]	d2	d3	b1	s	Part No.
12	+0.050 +0.160	13	16.5	7	0.5	MDM-1213-06

[8] d1 value is measured with a plug gauge after fitting into a reference housing d2 (+0.005)

Assembly:

Please contact us if you need a custom-made 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® custom-made | Product range

iglidur® snap on: connect and snap into place

The solution for all applications in stamped sheet metal retainers

iglidur® snap 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.

Material:
iglidur® M250 ▶ Page 95
iglidur® RN89 ▶ Page 1402

- Compensation of axial clearance
- Pre-assembly possible
- Electrically conductive materials are available
- Pressure-resistant materials up to 80 MPa

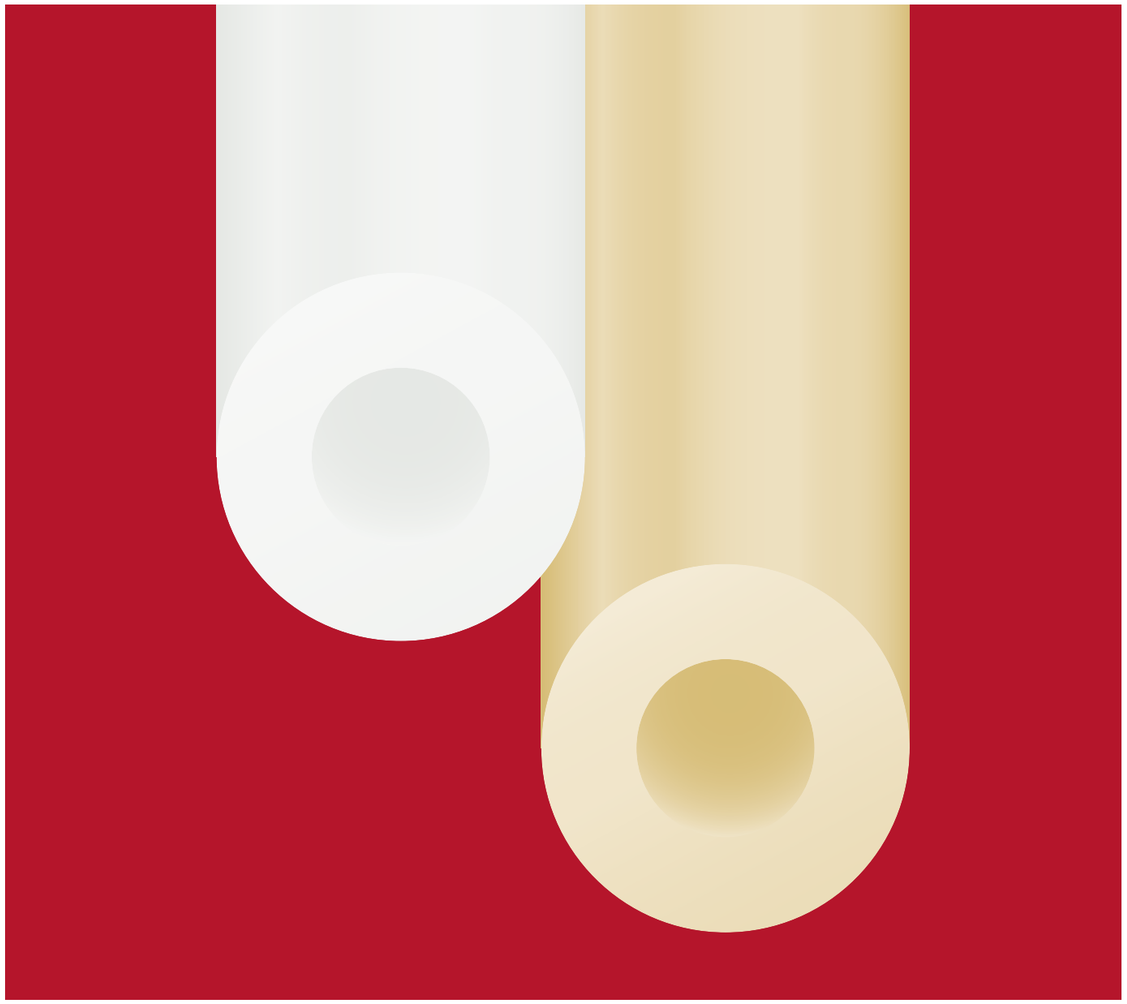
The snap on bearings can also be produced from electrically conducting iglidur® RN89, thus permitting e-coating.

Assembly:

The disc is snap on to the flange bushing with undercuts.

Please contact us if you need this custom-made 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.

My sketches

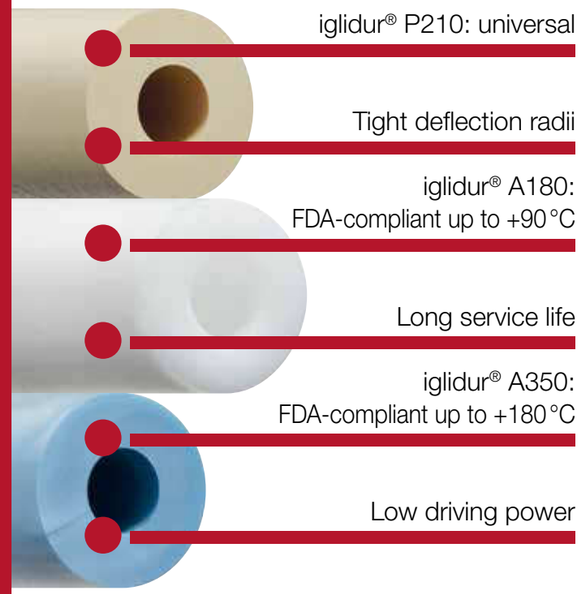


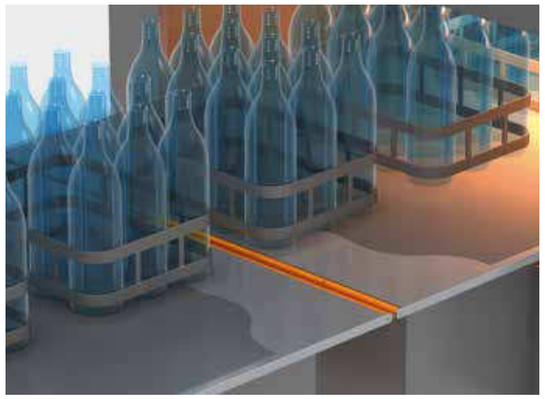
iglidur® knife edge rollers

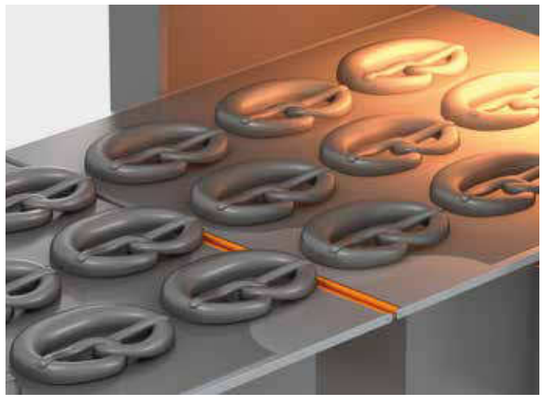
- 100 % lubrication-free
- Low driving power
- Tight deflection radii
- Long service life of the belt
- Cost-effective
- Standard range from stock

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 deflection radii and a low level of required drive power.

When to use it?

- When a maintenance-free conveyor belt is required
- When a precise guiding is required
- When a cost-effective and economical solution is required

When not to use it?

- When high speeds occur
- 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

3 Materials
Ø 9–20 mm

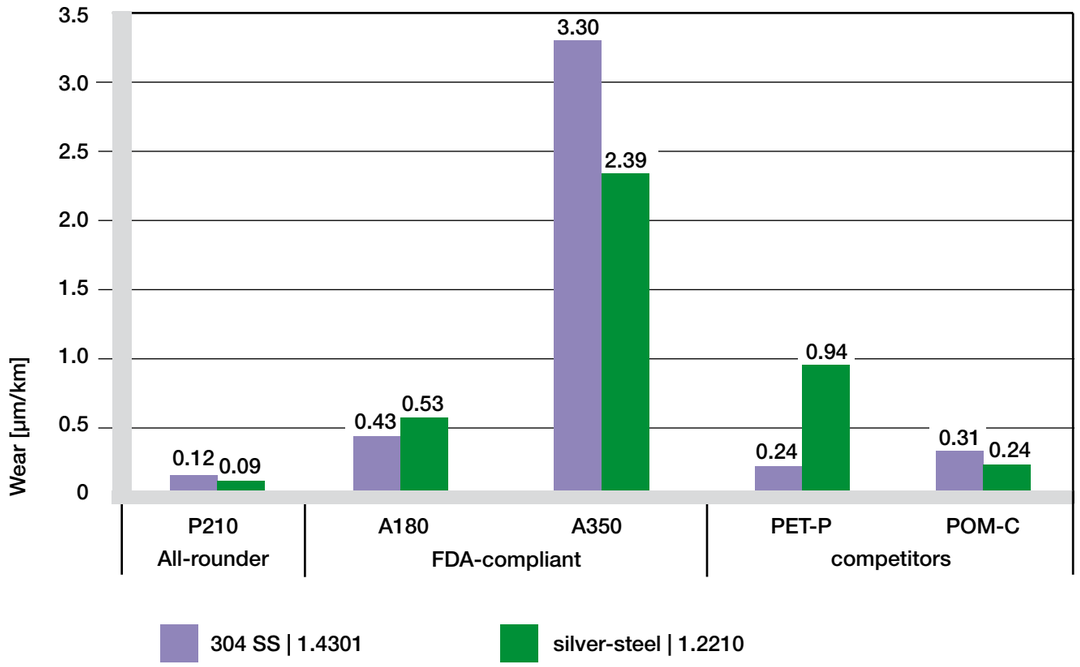
More dimensions on request

iglidur® knife edge rollers | Technical data

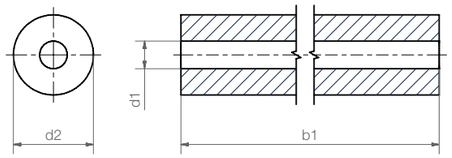
Material properties table

General properties	Unit	iglidur® P210	iglidur® A180	iglidur® A350	Testing method
Density	g/cm³	1.40	1.46	1.42	
Colour		yellow	white	blue	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.3	0.2	0.6	DIN 53495
Max. water absorption	% weight	0.5	1.3	1.9	
Coefficient of sliding friction, dynamic against steel	µ	0.07–0.19	0.05–0.23	0.1–0.2	
pv value, max. (dry)	MPa · m/s	0.4	0.31	0.4	
Mechanical properties					
Flexural modulus	MPa	2,500	2,300	2,000	DIN 53457
Flexural strength at +20 °C	MPa	70	88	110	DIN 53452
Compressive strength	MPa	50	78	78	
Max. permissible surface pressure (+20 °C)	MPa	50	28	60	
Shore-D hardness		75	76	76	DIN 53505
Physical and thermal properties					
Max. long-term application temperature	°C	+100	+90	+180	
Max. short-term application temperature	°C	+160	+110	+210	
Min. application temperature	°C	–40	–50	–100	
Thermal conductivity	W/m · K	0.25	0.25	0.24	ASTM C 177
Coefficient of thermal expansion (at +23 °C)	$K^{-1} \cdot 10^{-5}$	8	11	8	DIN 53752
Electrical properties					
Specific volume resistance	Ωcm	$> 10^{12}$	$> 10^{12}$	$> 10^{11}$	DIN IEC 93
Surface resistance	Ω	$> 10^{11}$	$> 10^{11}$	$> 10^{11}$	DIN 53482

Table 01: Material properties table



iglidur® knife edge rollers | Product range



Order key

Type	Dimensions [mm]					
P210	RL	M	-03	09	-	50
iglidur® material	Roller	Metric	Inner-Ø d1	Outer-Ø d2		Length b1

Options:
iglidur® material
P210: iglidur® P210
A180: iglidur® A180
A350: iglidur® A350

Knife edge rollers made from iglidur® P210 – Universal, up to +100 °C

d1 +0.1 [mm]	d2 ±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 ±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**

Knife edge rollers made from iglidur® A350 – FDA-compliant, up to +180 °C

d1 +0.1 [mm]	d2 ±0.1 [mm]	b1 –0.3 [mm]	Part No.
3.1	9.0	50.0	**A350RLM-0309-50**
6.1	14.0	70.0	**A350RLM-0614-70**
8.1	18.0	70.0	**A350RLM-0818-70**

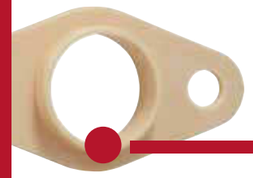
iglidur® maintenance-free flange bearings

- Very good wear resistance
- Maintenance-free dry running
- Lightweight
- Standard range from stock

iglidur® flange bearings | Advantages

Maintenance-free dry running

iglidur® G:
Standard material for many applications



iglidur® J:
Material for low wear

iglidur® X:
Material for high temperature applications

iglidur® A180:
Material for use in the food sector

iglidur® maintenance-free flange bearings

With this design it is possible to use iglidur® high performance plain bearings in locations where recommended housing bore 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

Installation

For low radial loads, it is sufficient to mount iglidur® flange bearings on one surface simply with two bolts. For higher radial loads, it advisable to support the iglidur® flange bearing in a hole. For this hole, large tolerances are permitted, since it serves only as additional support for the iglidur® flange bearing. In order to achieve higher radial loads in the bearings, the iglidur® flange bearing can be press-fit into a recommended housing bore 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

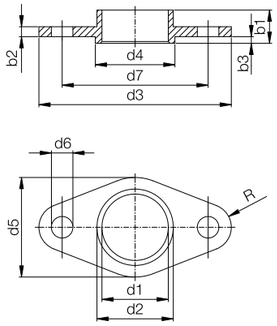
Material properties:

iglidur® G ▶ Page 79
iglidur® J ▶ Page 141
iglidur® X ▶ Page 237
iglidur® A180 ▶ Page 349

1 type, 4 materials
Ø 10–35 mm
More dimensions on request

iglidur® flange bearings | Technical data

Flange bearings



Order key

Type	Size [mm]
G FL -	10

iglidur® material | Flange bearings | Inner Ø

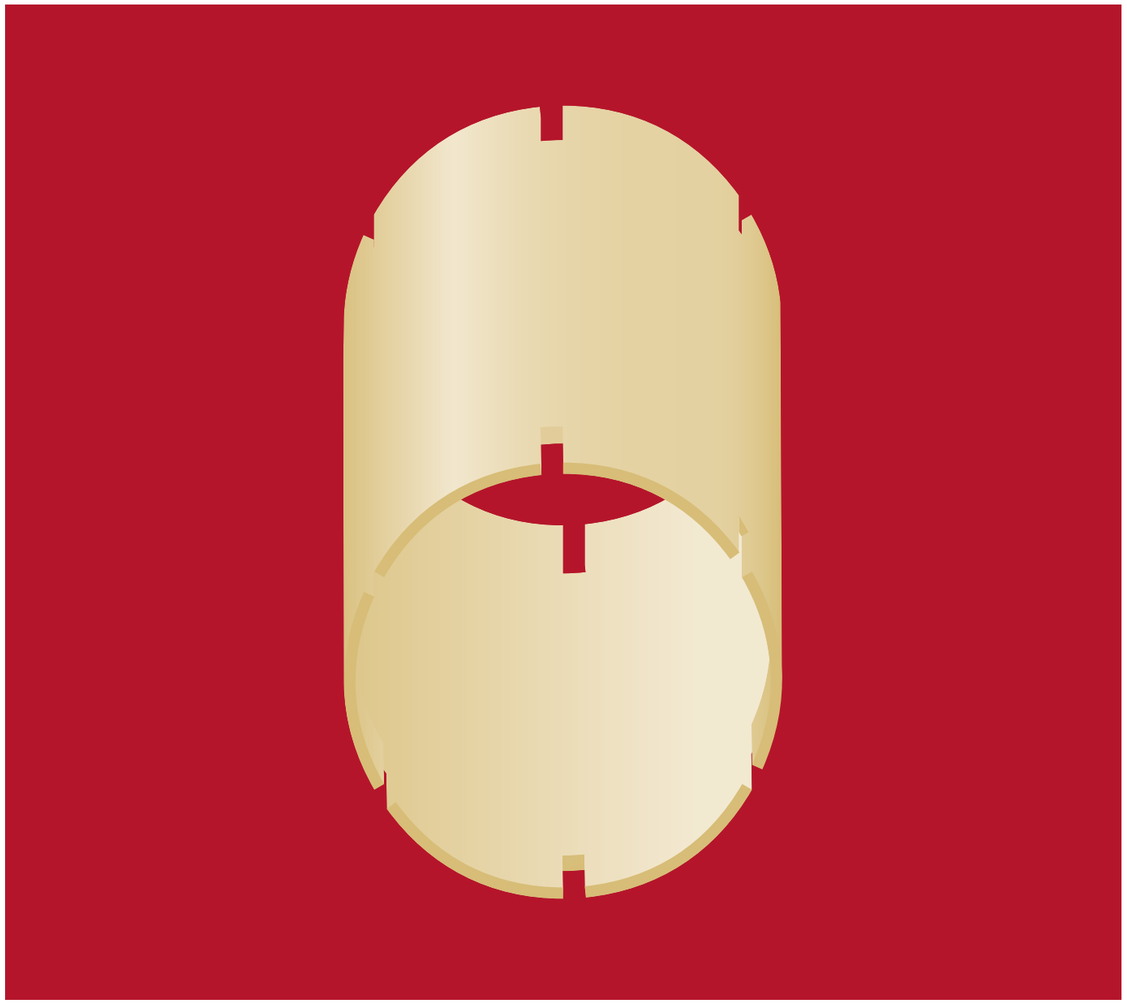
Options:
iglidur® material
G: iglidur® G
J: iglidur® J
X: iglidur® X
A180: iglidur® A180

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 bore

My sketches

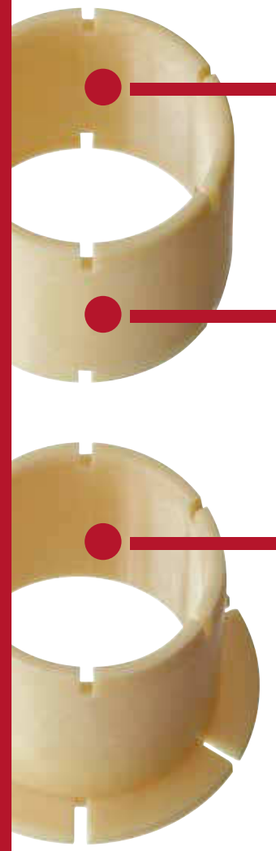


iglidur® JVSM/JVFM – zero clearance and preloaded bearings

- Radial and axial preload
- Zero clearance in unloaded condition
- Material: iglidur® J
- Maintenance-free and predictable service life
- Standard range from stock

iglidur® JVSM/JVFM | Advantages

Zero-clearance and rattle-free – preloaded iglidur® J bearings



Zero-clearance and preloaded bearings

Eliminated clearance in unloaded condition

Maintenance-free and predictable service life

iglidur® – zero-clearance and preloaded bearings

iglidur® JVSM and JVFM bearings are clearance-free in unloaded condition due to the axial and/or radial pre-load. The iglidur® J material possesses extremely low coefficients of friction in dry operation and a very low stick-slip effect. Ideal for "anti-vibration mounting" of pedal box bearings, etc.

When to use it?

- When a radial and/or axial preload of bearings is required
- When a rattle free bearing in the unloaded state is required
- When you need a zero clearance feel

When not to use it?

- When a bearing solution with reduced clearance is needed
  ▶ please contact us
- When the preload 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 141

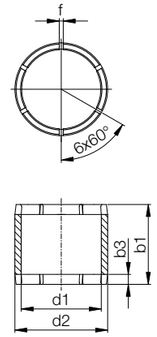
max. +90 °C
min. –50 °C

2 types
Ø 6–20 mm
More dimensions on request

Inch **Imperial dimensions available**
▶ From page 1337

iglidur® JVSM/JVFM | Product range

Preloaded sleeve bearings



Inch **Imperial dimensions available**
▶ From page 1395

Order key

Type				Dimensions						
J	V	S	M	-	06	08	-	06		
iglidur® material	pre-tensioned	Form S	Metric		Inner-Ø d1 [mm]			Outer-Ø d2 [mm]		Length b1 [mm]

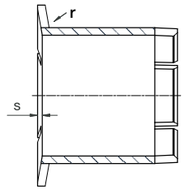
Options:
Form:
S: sleeve
F: with flange

Dimensions [mm]

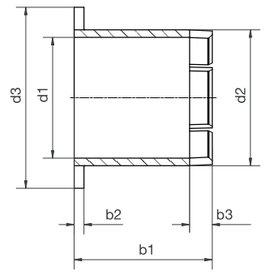
d1	d1-Tolerance[14] E10	d2	b1 h13	b3	Part No.
6.0	+0.020 +0.068	8.0	6.0	2.0	**JVSM-0608-06**
8.0	+0.025 +0.083	10.0	8.0	2.0	**JVSM-0810-08**
10.0	+0.025 +0.083	12.0	10.0	2.0	**JVSM-1012-10**
12.0	+0.032 +0.102	14.0	12.0	2.0	**JVSM-1214-12**
14.0	+0.032 +0.102	16.0	14.0	2.0	**JVSM-1416-14**
15.0	+0.032 +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 pressfit in housing bore. d2 H7 within the measurement plane**

Preloaded flange bearings



r = max. 0.5 mm

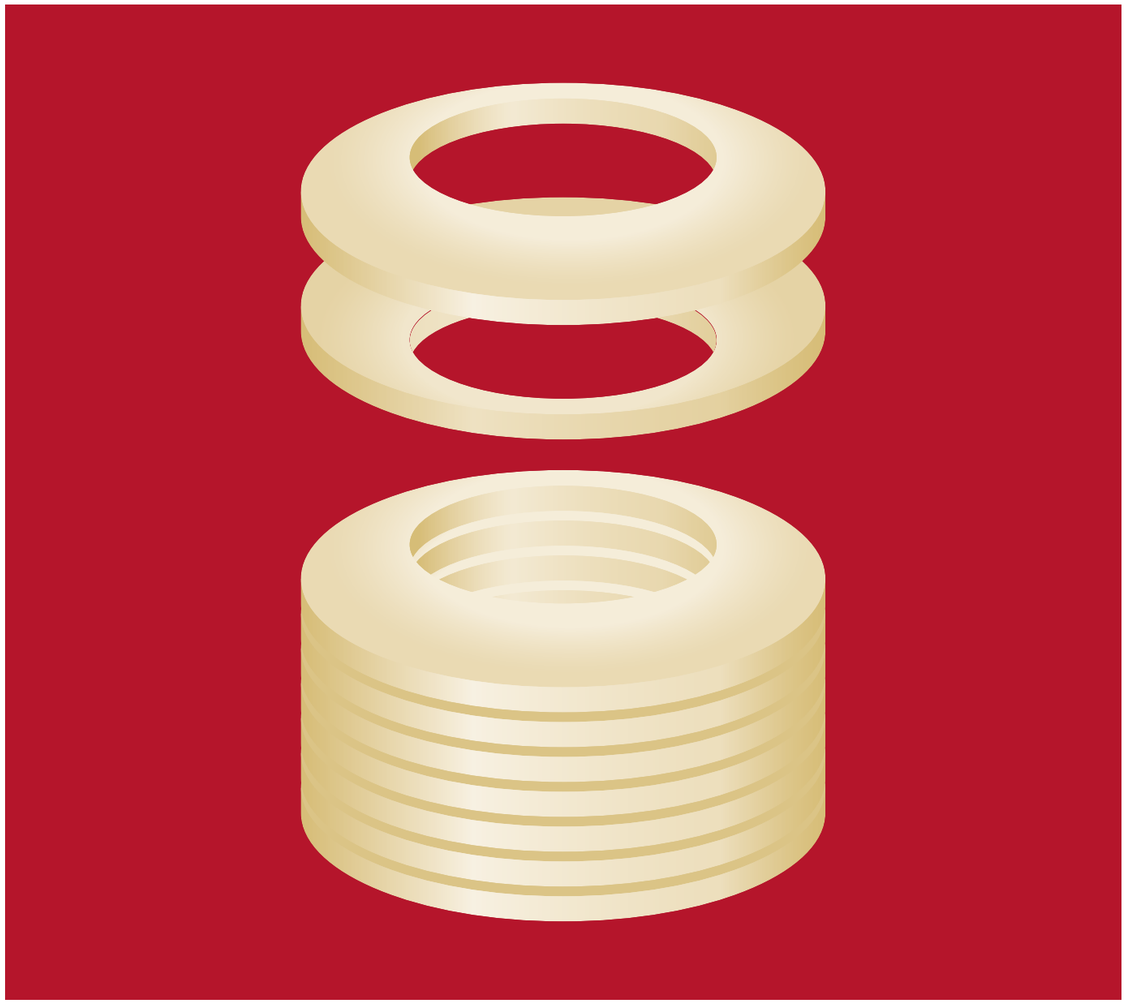


Dimensions [mm]

d1	d1-Tolerance[14] E10	d2	d3	b1 h13	b2	b3	s ±0.1	Part No.
8	+0.025 +0.083	10	15	10	1	2.0	0.44	**JVFM-0810-10**
10	+0.025 +0.083	12	18	10	1	2.0	0.53	**JVFM-1012-10**
12	+0.032 +0.102	14	20	12	1	2.0	0.53	**JVFM-1214-12**
14	+0.032 +0.102	16	22	12	1	2.0	0.53	**JVFM-1416-12**
15	+0.032 +0.102	17	23	15	1	2.5	0.53	**JVFM-1517-15**
18	+0.032 +0.102	20	26	11	1	2.5	0.53	**JVFM-1820-11**
18	+0.032 +0.102	20	26	18	1	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 pressfit in housing bore. d2 H7 within the measurement plane**

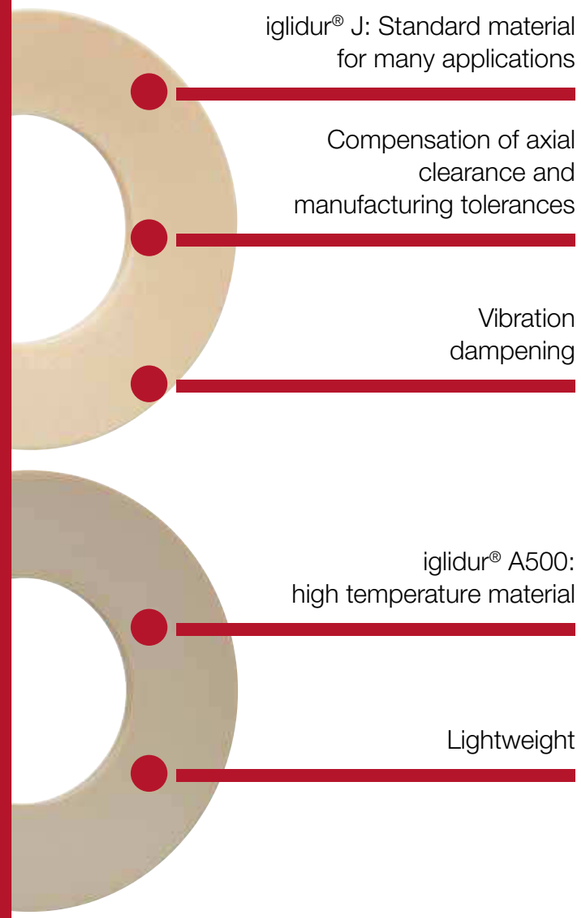
My sketches



polysorb – polymer disc springs

- Compensation for axial clearances and manufacturing tolerances
- Vibration dampening
- Noise dampening
- Corrosion resistant
- Lightweight
- Electrical and thermal insulation
- Standard range from stock

Cushion and dampen: polymer 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 – polymer disc springs

Spring washers are discs that can be axially loaded, which are concave in the axial direction. polysorb 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 on request
Detailed information about delivery time online.

Material properties:
iglidur® J ▶ Page 141
iglidur® A500 ▶ Page 341

Depending on material:
iglidur® J: –50 °C up to +90 °C
iglidur® A500: –100 °C up to +250 °C

1 type, 2 materials
Ø 5–20 mm
More dimensions on request

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 packet.

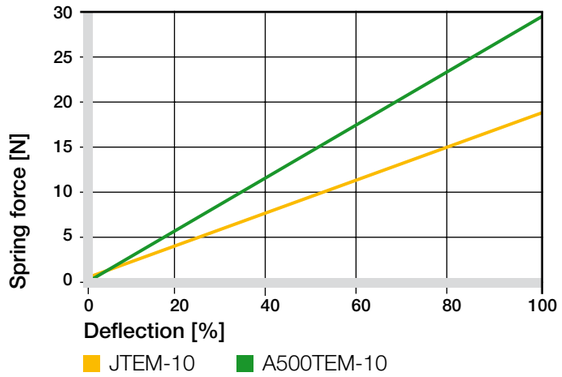


Diagram 01: Spring force as a function of percental deflection measured with size 10

The force-deformation curves of polysorb disc springs are approximately linear.

Additional properties

Chemical resistance

polysorb disc springs are resistant to a variety of chemicals. iglidur® A500 has a higher resistance than iglidur® J.

Medium	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

The low moisture absorption permits the use in wet or moist 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

Increased temperatures

Increased temperatures reduce the rigidity of polymers. polysorb disc springs made from iglidur® J (JTEM-10) still have a maximum spring force of 8 N at the maximum permissible temperature of +90 °C. The spring force against ambient temperature is shown in diagram 02.

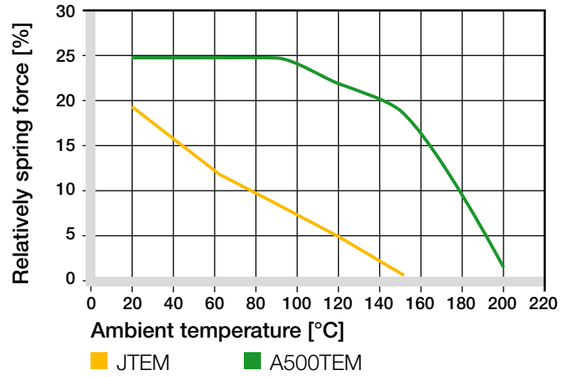


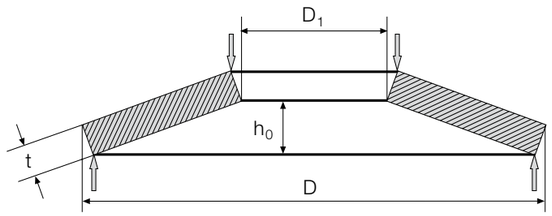
Diagram 02: Effect of ambient temperature on the spring force

polysorb | Product range

polysorb polymer 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 d1

Options:
iglidur® J for low wear
iglidur® A500 for FDA-compliant high temperature applications

Material:
iglidur® J ▶ Page 141
iglidur® A500 ▶ Page 341

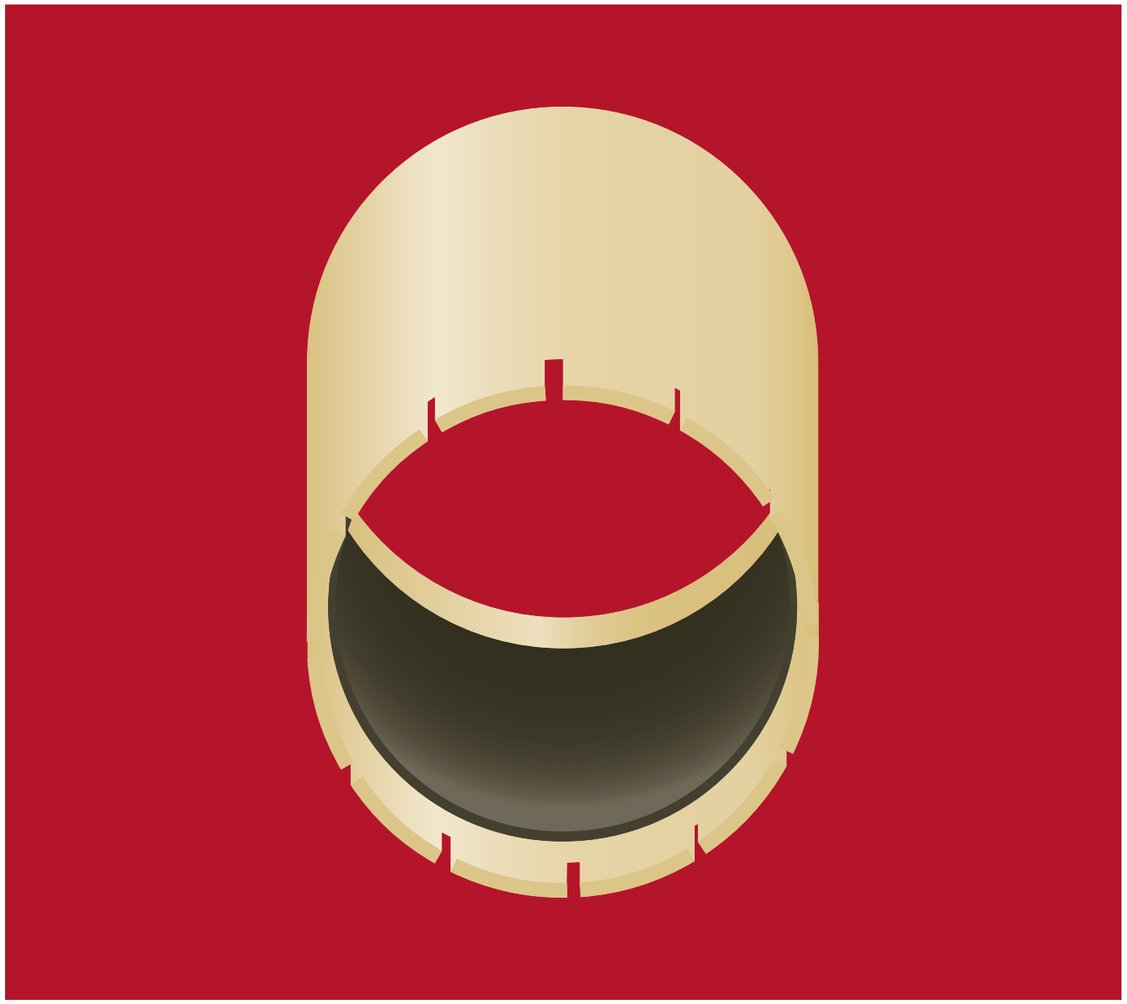
Dimensions [mm]

D	d1	t	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]
10.0	5.2	0.5	0.25	5	7	0.04	☐ TEM-05
12.5	6.2	0.7	0.30	10	14	0.11	☐ TEM-06
16.0	8.2	0.9	0.35	15	18	0.20	☐ TEM-08
20.0	10.2	1.1	0.45	18	24	0.33	☐ TEM-10
25.0	12.2	1.5	0.55	40	55	0.85	☐ TEM-12
31.5	16.3	1.75	0.70	70	80	1.44	☐ TEM-16
40.0	20.4	2.25	0.90	130	140	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]
D = outer diameter [mm]
d1 = inner diameter [mm]
t = plate thickness [mm]
h_0 = maximum spring displacement [mm]
$F_{1.0}$ = spring force 100 % displacement [N]

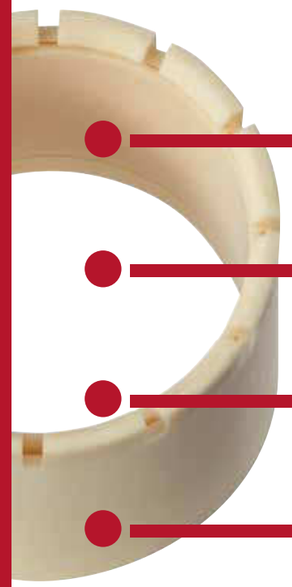


iglidur® PEP – for all shaft surfaces and materials

- Can be used with any shaft material
- Cost-effective
- Easy installation
- Low coefficients of friction
- Standard range from stock

iglidur® PEP | Advantages

For all shaft surfaces and materials



iglidur® PEP – plastic plain bearing system

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 low priced polymer plain bearing system is required
- When independence from the shaft material and shaft surface is required
- For the protection of expensive and sensitive shafts

When not to use it?

- For high surface speeds
  - ▶ iglidur® J, page 141
- At high loads
  - ▶ iglidur® G, page 79
  - ▶ iglidur® Q, page 409
- For high temperatures
  - ▶ iglidur® V400, page 265
  - ▶ iglidur® X, page 237
  - ▶ iglidur® Z, page 247
- When low clearance bearings are required
  - ▶ iglidur® P, page 113
  - ▶ iglidur® X, page 237

Available from stock
Detailed information about delivery time online.

Material:
iglidur® J ▶ Page 141

max. +90 °C
min. –50 °C

1 type
Ø 6–20 mm
More dimensions on request

Imperial dimensions available
▶ From page 1337

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 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 polymer 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 polymer 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 polymer bearing is totally corrosion free.

Wear resistance

For loads up to 5 N/mm² the wear test results are compelling. Here PEP polymer 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 coefficients of friction of the PEP bearings are no longer based on the shaft materials or surface properties. If necessary, the coefficients of friction can be reduced further with a small amount of lubricant.

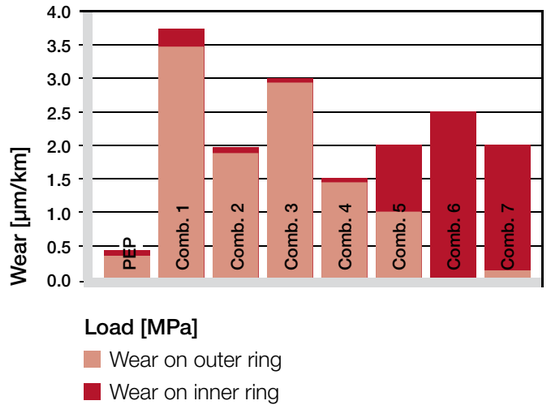


Diagram 01: Wear experiments of different material combinations, p = 0.75 MPa, v = 0.3 m/s

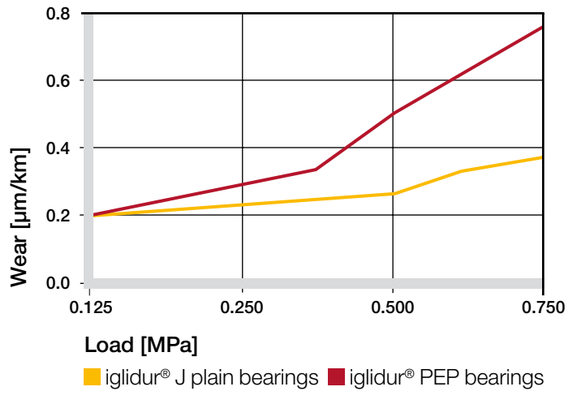


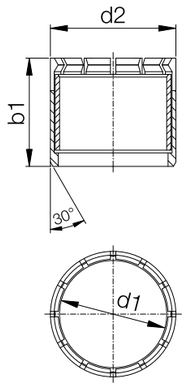
Diagram 02: Wear of iglidur® PEP bearings as a function of the pressure, v = 0.3 m/s

Installation

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 bore 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

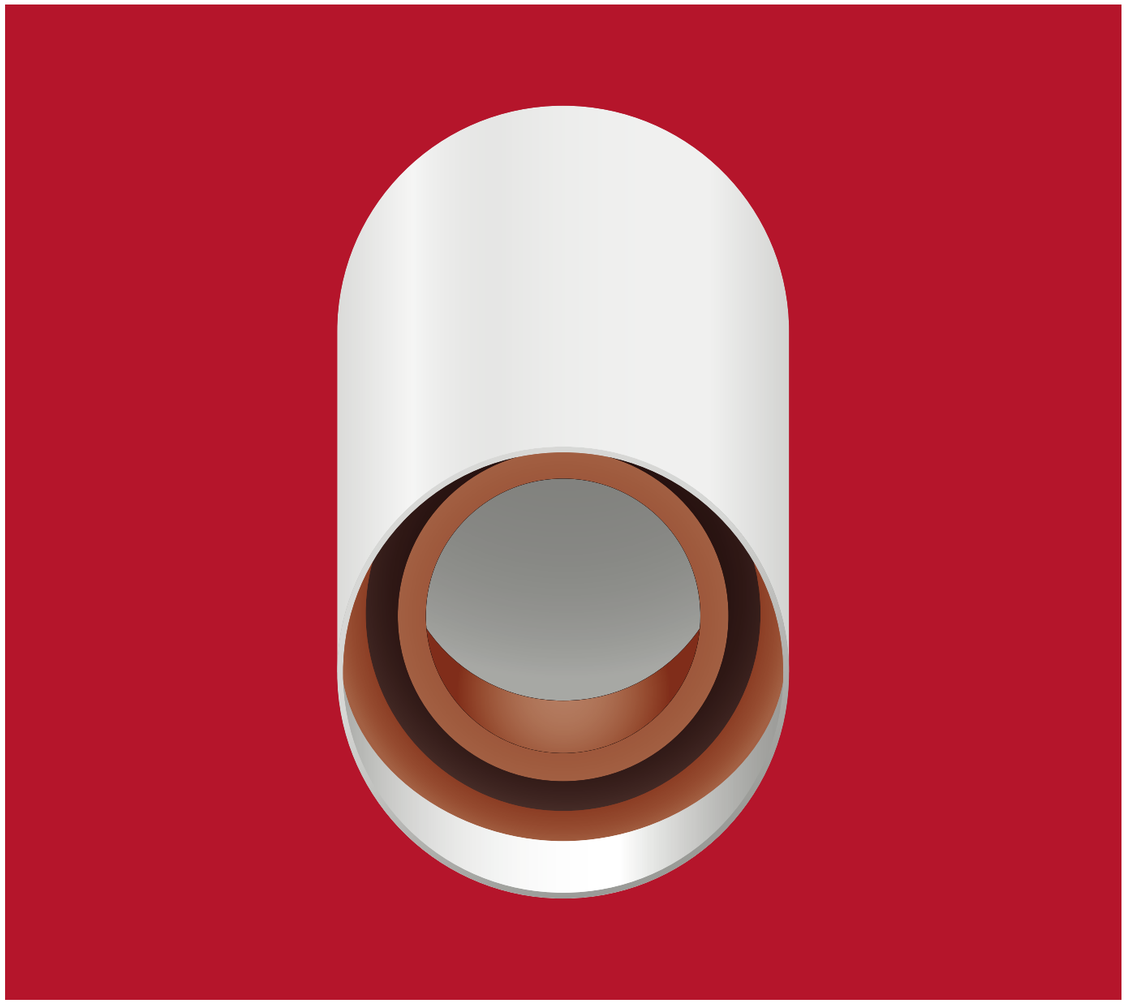
iglidur® type	Form S	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Material:
iglidur® J ▶ Page 141

Inch Imperial dimensions available
▶ From page 1395

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® polymer bearing with lip seal

- Polymer bearing with integrated radial shaft seal
- Seals against the shaft
- Reduced space requirement and easy, fast installation
- Can be manufactured with different types of seal
- High-temperature version VDSM available

iglidur® polymer bearing with lip seal | Advantages

Position and seal: polymer bearing with clip-on shaft seal

Seals against the rotating shaft

Reduced space requirement

Easy and fast installation

Can be manufactured with different types of seal

High-temperature version available (made from iglidur® V400)

iglidur®-bearing with lip seal

Easy and quick to fit polymer plain bearing made from 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 penetration 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 on request
Detailed information about delivery time online.

Material properties:
iglidur® J ▶ Page 141
iglidur® V400 ▶ Page 265

Depending on material:
iglidur® J: –50 °C up to +90 °C
iglidur® V400: –50 °C up to +200 °C

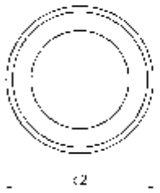
1 type, 2 materials
Ø 10 mm
More dimensions on request

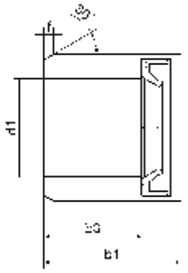
iglidur® polymer bearing with lip seal | Product range

Polymer bearing with lip seal, sleeve bearing (Form S)

JDSM

VDSM





Order key

Type	Dimensions [mm]					
☐ D	S	M	-1015	-14		
iglidur® material	Seal	Form S	Metric	Inner-Ø d1	Outer-Ø d2	Length b1

Material:
iglidur® J ▶ Page 141
iglidur® V400 ▶ Page 265

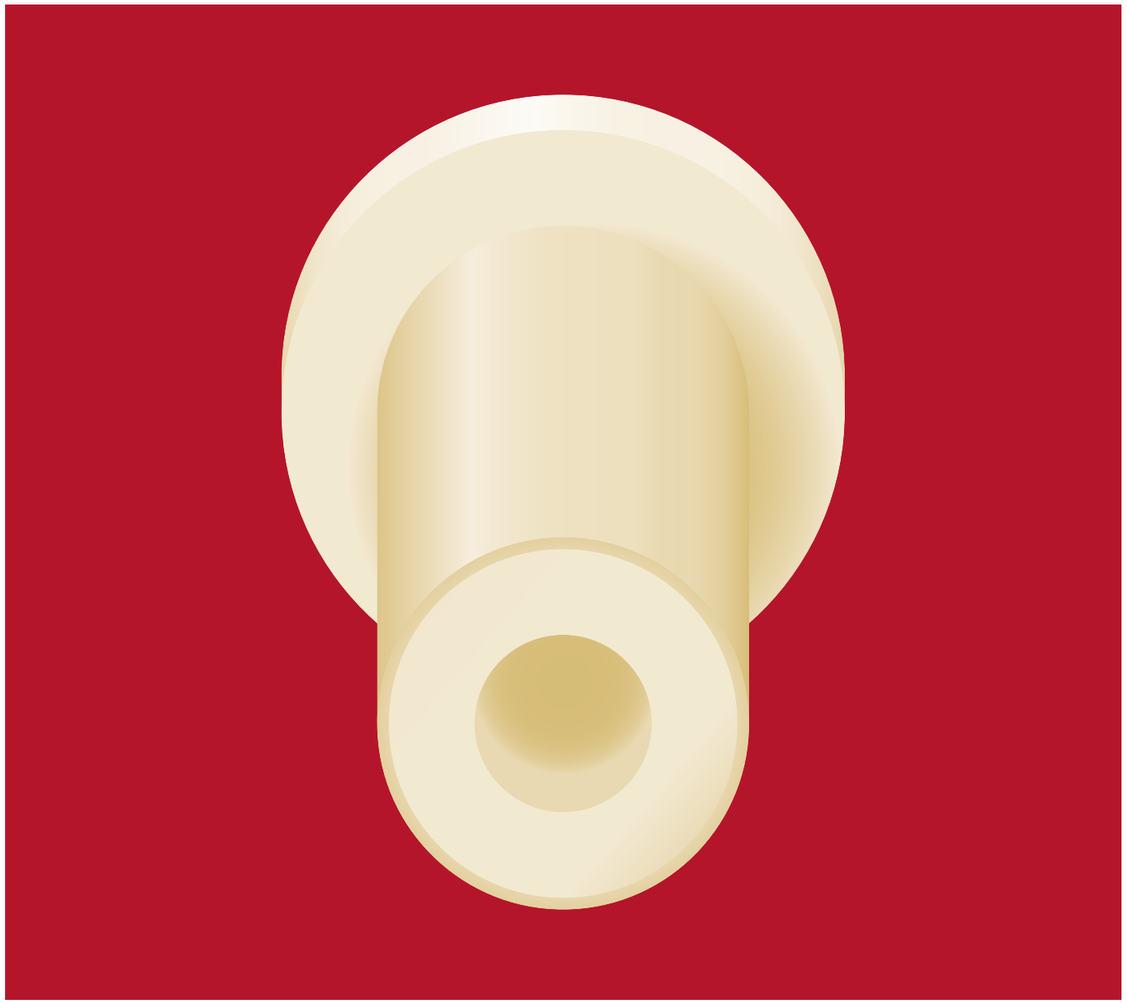
Dimensions [mm]

d1 E11	d1-Tolerance[3]	d2 Ø	b1 h13	b3	f	Part No.
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 57**

Please contact us if you want to combine your seal with an iglidur® bearing.
We will support you with the design, will check the integration and create an appropriate solution.

My sketches



speedimold – custom-made parts manufactured by injection moulding

- Low-cost injection-moulded prototypes and series parts
- Original iglidur® tribo-materials
- Tailored to your application
- Fast and cost-effective

speedimold | Customised injection-moulded parts

At igus®, we have the aim of helping our customers reduce costs while bringing technical benefits to their products and machines. We call this ”plastics for longer life®”. Sometimes our customers require custom parts or services, and for many years this has been an important part of the igus® support. Now, with speedimold, we combine custom parts with speed, Using the benefits of igus® Tribo-plastics.

What is speedimold?

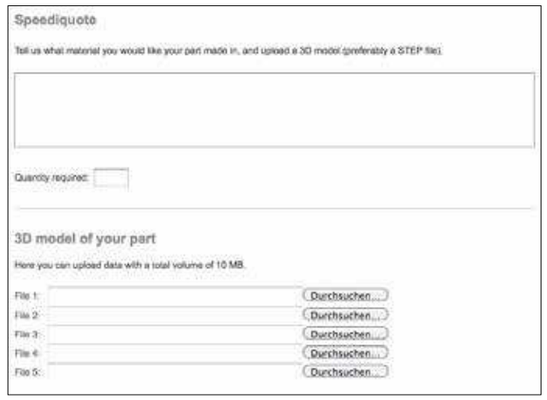
speedimold is simple! Select from 8 iglidur® triboplastics materials (iglidur® G, J, W300, X, M250, P, A180, H2 and igumid G). Get moulded parts in 1 to 10 days, depending on complexity of the part.

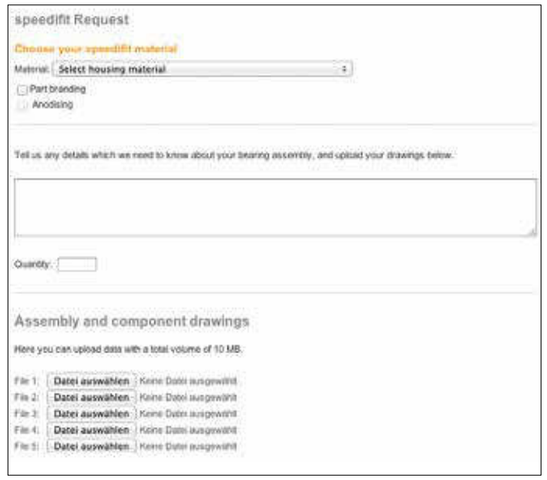
Unable to find the material you desire? Then simply ask us. In addition to the materials that are specially processed for you using the speedimold procedure, it is naturally also possible to choose from the entire range of iglidur® materials in order for us to produce your customised bearing. We work with you to design the bearing, create the initial prototype and take responsibility for serial production.

speedimold | Customised special parts

How does speedimold work?

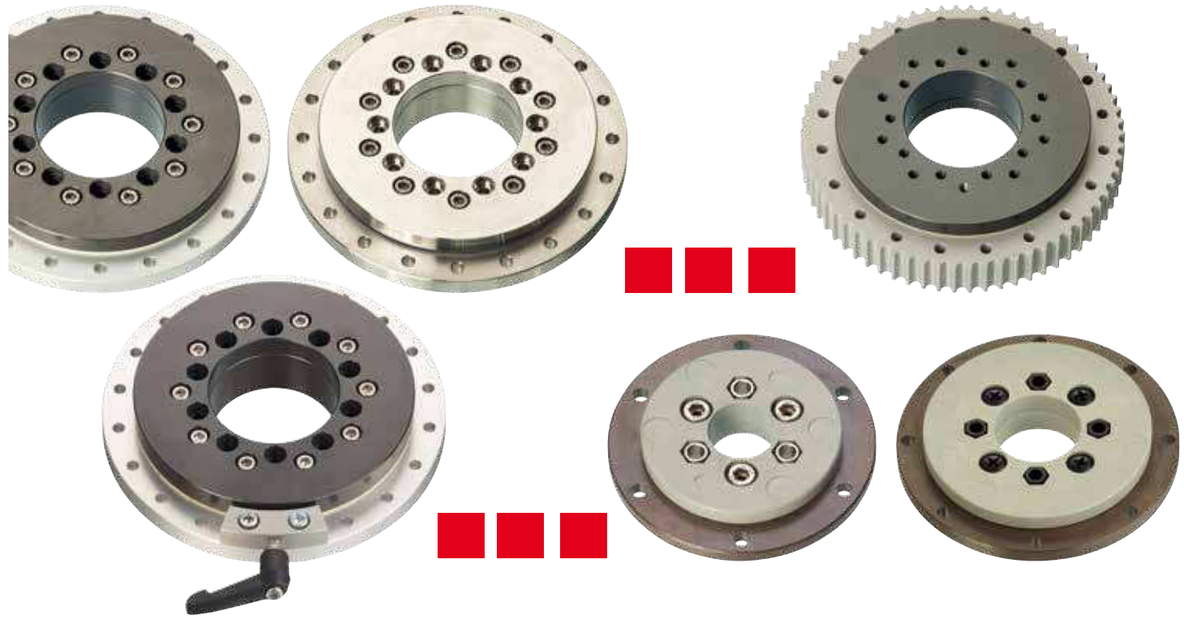
- You tell us about your required special design: what kind of material, special requirements, etc., and send us your 3D model via email
- You get a quote; pay attention to your lead time and send us your order
- The tool for your individual speedimold part is produced
- The required parts are injection moulded from your chosen iglidur® material
- Now you can install and use your parts





iglidur®

Slewing ring bearings



...plastics

iglidur® PRT | Product overview

iglidur® PRT – polymer slewing ring bearings

High strength:

Type 01

▶ Page 568

With outer drive ring:

Type 01

▶ Page 569

Light weight:

Type 02

▶ Page 570

Low-cost:

Type 03

▶ Page 571

iglidur® PRT – polymer slewing ring bearings

Special geometries and accessories:

▶ Page 572

Universal sliding pads:

▶ Page 576

iglidur® PRT – robolink® D

robolink® D robot joint:
Symmetric

▶ Page 578

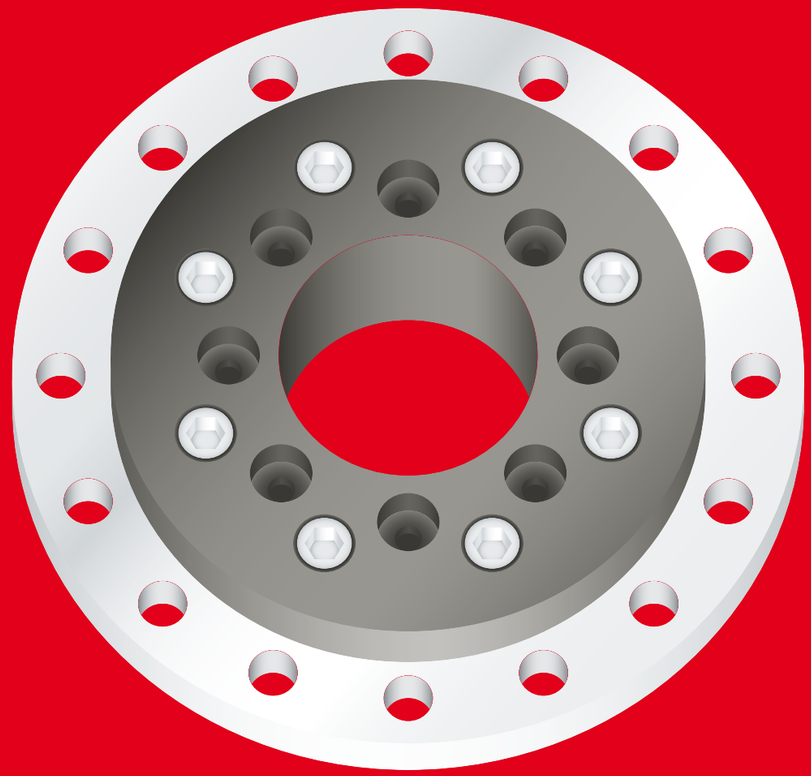
robolink® D robot joint:
Asymmetric

▶ Page 579

New

robolink® D robot joint:
with direct drive

▶ Page 580



iglidur® PRT – polymer slewing ring bearings

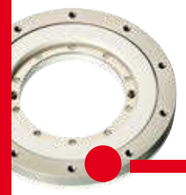
- Completely maintenance-free
- Easy to install and replaceable sliding pads
- High wear resistance
- For very high loads and high stiffness
- Stainless steel versions available
- Extensive accessories
- Standard range from stock

Maintenance-free slewing ring bearing

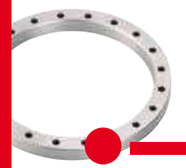
Type 01:
High rigidity
▶ **From page 568**

Type 01 with gear teeth:
With outer drive ring
▶ **From page 569**

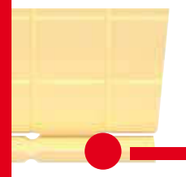
Type 02:
Very lightweight
▶ **From page 570**



Type 03:
Low-cost
▶ **From page 571**



Special geometries and accessories
▶ **From page 572**



Universal sliding pads:
Customise your own slewing ring systems
▶ **From page 576**

robolink® D robot joints
▶ **From page 577**

Polymer slewing ring bearing

iglidur® PRT are slewing ring bearings with the proven advantages of the igus® polymer bearings. The sliding pads made from iglidur® high-performance polymers are completely free from maintenance and lubrication. All the housing components are made from anodised aluminium or stainless steel, the surfaces which mate with the iglidur® sliding pads are all hard anodised. All the fixing screws are made from stainless steel.

- Completely maintenance-free
- Easy to install and replaceable sliding pads
- High wear resistance
- For very 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 on request
Detailed information about delivery time online.

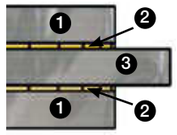
Block pricing online
No minimum order value. From batch size 1

max. +180 °C
min. –50 °C

3 types
Ø 20–300 mm

Service life calculation
▶ **www.igus.eu/prt-expert**

Slewing ring bearings structure



❶ **Type 01: H**ard anodised aluminium,
or stainless steel V4A
Type 02: iglidur® J4 or A180
❷ **Type 01:** iglidur® J or H1
❸ **Type 01 and 02:** Aluminium, anodised,
or stainless steel V4A

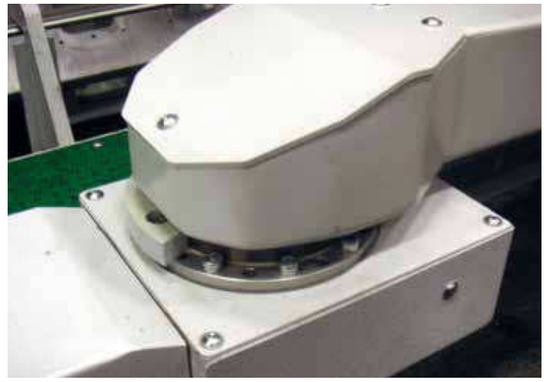
iglidur® PRT-01-60 is used here in a handling/transport system for semiconductor carriers. Through a cylinder control, the PRT polymer slewing ring bearing provides a deflection at the end of the system's track.

A light and lubrication-free iglidur® PRT slewing ring bearing is used in a self-rotating light, as found in discos for example.

In this machine tool control panel, an iglidur® polymer slewing ring bearing is used due to its freedom from lubrication and maintenance.

The iglidur® PRT-01-100 slewing ring bearing is used in an automatic welding plant in this application. It enables pivoting in the horizontal plane of the clamping device.

The lubrication-free iglidur® PRT slewing ring bearing masters this job brilliantly, is lighter and in terms of purchasing is more affordable than a comparable metal rotary connector.



Lubrication and maintenance-free polymer slewing ring bearings for moving the control panel. The low coefficients of friction ensure low actuating force during pivoting.

Slewing ring bearings 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
Rotat. speed dry running	rpm	300	250	200	200	150	100	80	50
Max. perm. tilting moment	Nm	100	200	600	800	1,500	2,000	3,800	5,000

Type 02

Properties	Unit	-20-AL	-20-LC	-20-P	-30-AL	-30-LC	-30-P	-50-AL	-50-LC	-50-P	-60-AL
Weight	g	105	87	72	200	165	140	440	380	320	700
Axial load, static	N	13,000	13,000	13,000	25,000	25,000	25,000	35,000	35,000	35,000	45,000
Axial load, dynamic	N	4,000	4,000	4,000	7,000	7,000	7,000	9,000	9,000	9,000	12,000
Radial load, static	N	2,000	2,000	2,000	2,500	2,500	2,500	5,000	5,000	5,000	10,000
Radial load, dynamic	N	500	500	500	700	700	700	1,200	1,200	1,200	2,800
Max. rotating speed dry running	rpm	250	250	250	200	180	180	120	120	120	120
Max. perm. tilting moment	Nm	60	40	40	100	50	50	120	100	100	200

Type 03

Properties	Unit	-80
Weight	kg	0.45
Axial load, static (compressive force direction)	N	45,000
Axial load, static (tensile force direction)	N	5,000
Axial load, dynamic (compressive force direction)	N	12,000
Axial load, dynamic (tensile force direction)	N	2,000
Radial load, static	N	4,000
Radial load, dynamic	N	1,000
Rotat. speed dry running	rpm	120
Max. perm. tilting moment	Nm	120

Slewing ring bearing configurator

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

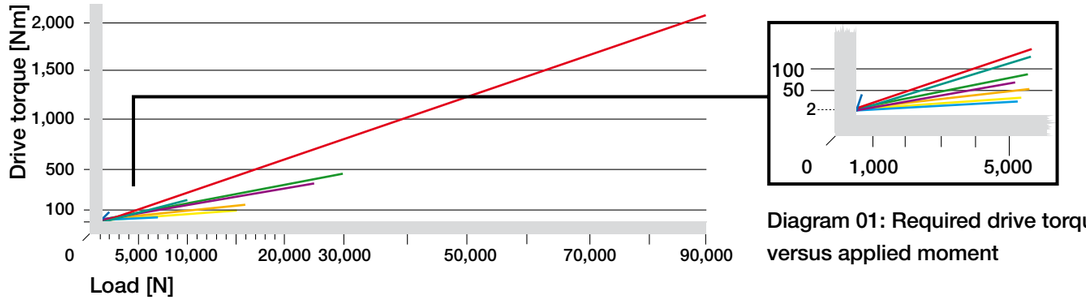


Diagram 01: Required drive torque versus applied moment

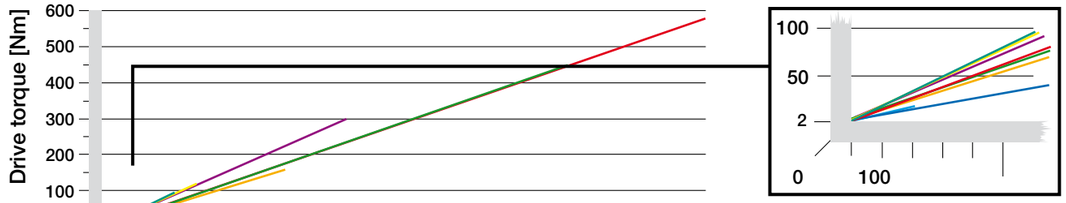


Diagram 02: Required drive torque versus applied moment

Diagram 03: Deflection versus applied moment

PRT-01-20 M4, min. 6 screws
PRT-01-30 M4, min. 8 screws
PRT-01-50 M6, min. 12 screws
PRT-01-60 M5, min. 10 screws
PRT-01-100 M5, min. 12 screws
PRT-01-150 M5, min. 12 screws
PRT-01-200 M6, min. 12 screws
PRT-01-300 M8, min. 12 screws

All load values assume the PRT is assembled with socket head screws (strength class 8.8) on the outside pitch circle diameter. For the assembly (using strength class 8.8 screws) of the PRT, the screws have to be inserted to a minimum thread depth of 2 x d in every hole location in the outer ring. All data can be used for both lateral and horizontal assembly (including overhead installation).

iglidur® PRT | Product range

Slewing ring bearing, high rigidity – Type 01

Standard

High temperature up to +180 °C

Stainless steel version

ESD compliant

- Aluminium or stainless steel body (on request)
- Replaceable maintenance-free sliding pads made of iglidur® J (Standard) ▶ **Page 141**, iglidur® H1 (for temperatures up to +180 °C) ▶ **Page 283**, or iglidur® F2 (ESD-compliant) ▶ **Page 443**

Order key

Type	Size [mm]	Options
PRT - 01 -	30	- ES - H1

Slewing Ring | Type | Inner Ø | Body material | Sliding pads

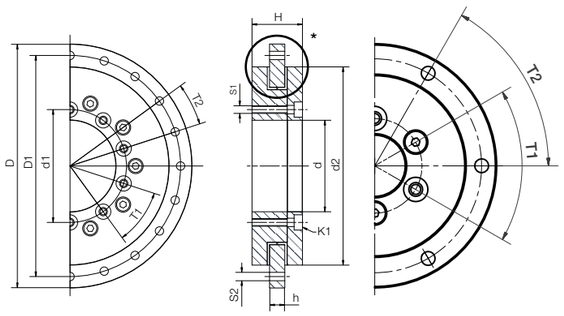
Options:

Body material

Blank: Aluminium
ES: V4A stainless steel

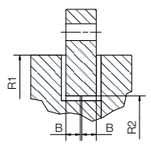
Sliding pads

Blank: iglidur® J
H1: iglidur® H1, High temperature
F2: iglidur® F2, ESD-compliant (only in conjunction with stainless steel)



Accessories
▶ From page 574

Detail*



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 on request

iglidur® PRT | Product range

Slewing ring bearing with gear teeth

Standard

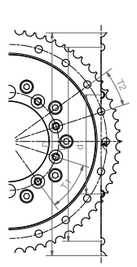
Stainless steel version

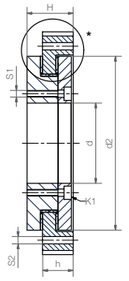
- 4 standards for outer drive rings are available
  - A classic spur gear according to DIN3967
  - Commercially available belt profiles: T10, AT10, HTD8M
- The inner ring is fixed and the outer ring driven
- The outer ring carries the item to be moved
- Outer ring available in stainless steel as an option (suffix "-ES")

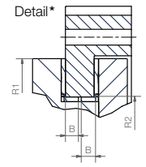
Order key

Type	Size [mm]	Options
PRT - 01 -	30	- TO - ... - ES

Slewing Ring | Type | Inner Ø | Outer drive ring | Tooth profile type | Stainless steel version



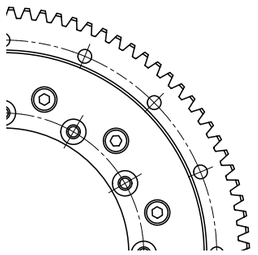




Dimensions [mm]

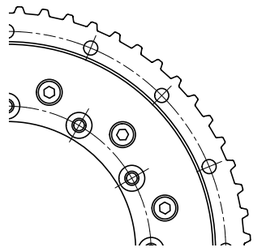
D1	d1	d	d2	h	T1	T2	S1	S2	K1 for screw	R1	R2	B	H	Part No.
70	31.0	20	60	18	6x60°	6x60°	M4	4.5	DIN 7984 M4	30	20.0	3.5	(26.0)	**PRT-01-20-TO-...**
91	42.5	30	82	21	8x45°	8x45°	M4	4.5	DIN 7984 M4	41	29.0	4.5	(30.5)	**PRT-01-30-TO-...**
145	74.0	60	130	23	10x36°	20x18°	M5	5.5	ISO 4762 M5	65	51.5	4.5	(34.5)	**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 DIN3967



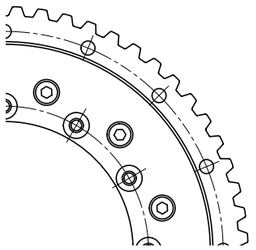
D	m	z	Part No. add-on
(88)	–	42	**...-ST**
(112)	2	54	**...-ST**
(184)	2	90	**...-ST**
(196)	2	96	**...-ST**
(256)	2	126	**...-ST**
(308)	2	152	**...-ST**
(462)	3	152	**...-ST**

Toothed belt profile AT10



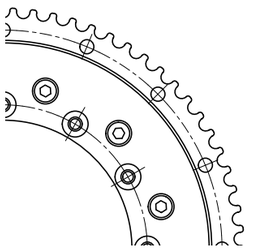
D	z	Part No. add-on
(87.25)	28	**...-AT10**
(106.4)	34	**...-AT10**
(163.8)	52	**...-AT10**
(189.2)	60	**...-AT10**
(252.9)	80	**...-AT10**
(303.9)	96	**...-AT10**
(456.7)	144	**...-AT10**

Toothed belt profile T10



D	z	Part No. add-on
(87.25)	28	**...-T10**
(106.4)	34	**...-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	Part No. add-on
(81.25)	52	**...-HTD5M**
(110.7)	44	**...-HTD8M**
(166.7)	66	**...-HTD8M**
(187.1)	74	**...-HTD8M**
(253.3)	100	**...-HTD8M**
(304.3)	120	**...-HTD8M**
(457.1)	180	**...-HTD8M**

iglidur® PRT | Product range

Slewing ring bearing, lightweight – Type 02

Standard

Stainless steel version

Low-cost version

Solid plastic version

FDA-compliant

- Slewing ring with extremely low weight
- Outer ring made from anodised aluminium, stainless steel V4A (on request) or iguton G
- Head rings made from iglidur® J4 or FDA-compliant iglidur® A180
- 30 % lighter with plastic screws

Order key

Type	Size [mm]	Options
PRT-02-	20	-AL-A180

Slewing Ring | Type | Inner Ø | Body material | Head rings

Options:

Body material
AL: Aluminium
ES: V4A stainless steel
LC: Low-cost
P: Solid plastic

Head rings
Blank: iglidur® J4
A180: iglidur® A180, FDA-compliant

Dimensions [mm]

D	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]

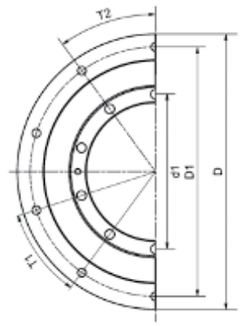
[116] **Only available with body made from aluminium and stainless steel**

Please add suffix "-A180" for FDA-compliant version

All stainless steel versions on request

iglidur® PRT | Product range

Slewing ring bearing, low-cost – Type 03



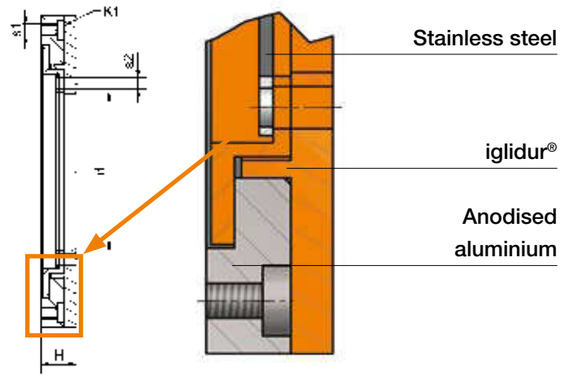
Order key

Type	Size [mm]
PRT-03-	80

Slewing Ring | Type | Inner Ø

iglidur® PRT slewing ring bearing in a low-cost design. Through consistent downsizing, a completely new design has been created that relies even more on plastic.

- Maintenance-free, self-lubricating
- Cost-effective and lightweight
- Low installation space
- Ready to fit



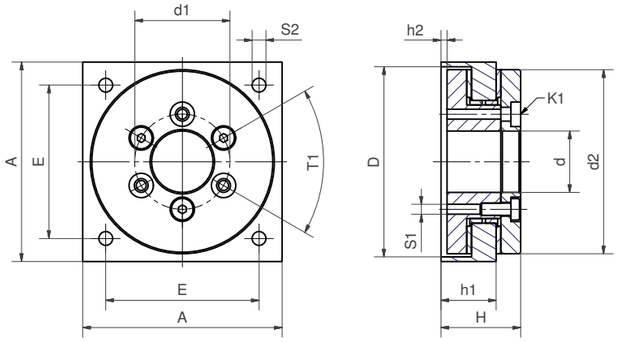
Dimensions [mm]

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**

iglidur® PRT | Product range | Special geometries

Type 01

Slewing ring bearing with square flange for direct mounting on flat surfaces

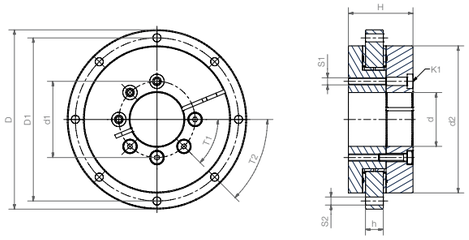


- No through-hole necessary
- No separate distance ring
- Fix with only 4 screws

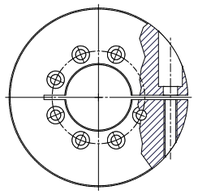
Dimensions [mm]

d	d1	d2	D	A	E	H	h1	h2	T1	S1	S2	K1 for screw	Part No.
20	31	60	62	65	50	26	18	2	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**

Slewing ring with collar clamp



Slewing ring with collar clamp PRT-01-30-C



Head ring for PRT-01-30-C

The slewing ring PRT-01-30 a collar ring including clamp function for 30h7 tolerance shafts.

- For simple handling designs
- Quick and easy assembly
- Max. torque moment: 5 Nm

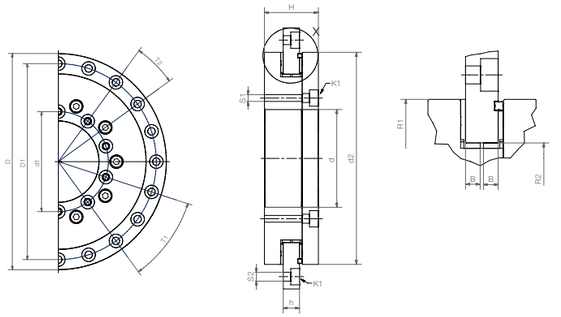
Dimensions [mm]

D	D1	d1	d	d2	H	h	T1	T2	S1	S2	K1 for screw	Part No.
100	91	42.5	30	82	36	10	6 x 45°	8 x 45°	M4	4.5	DIN 7984 M4	**PRT-01-30-C**

iglidur® PRT | Product range | Special geometries

Type 01

Slewing ring bearing with dust seal (-D: one-sided, -DD: both-sided)

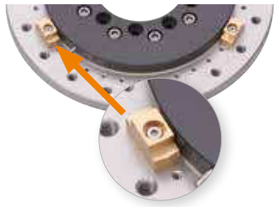


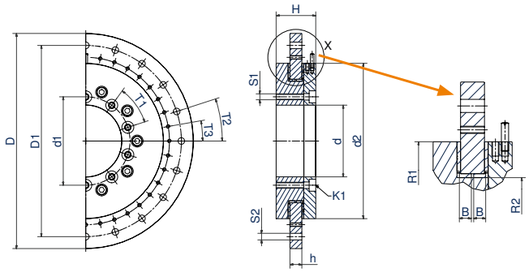
Dimensions [mm]

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 ring bearing with angle limit function – set the angle limit by yourself



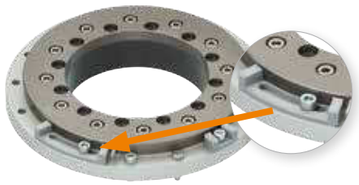


- Angle range in 2° steps
- Set your own angle limits
- Load ratings identical to standard type 01

Dimensions [mm]

D	D1	d1	d	d2	H	h	T1	T2	T3	S1	S2	K1	R1	R2	B	Part No.
180	160	74	60	130	33	10	10 x 36°	20 x 18°	36 x 10°	M5	5.5	ISO 4762 M5	65	51.5	4.5	**PRT-01-60-TS**

New Angle stops



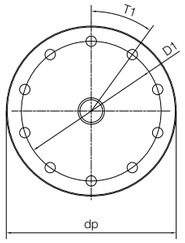
- Easily define the angle of rotation
- For type 01, size 100

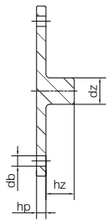
Part No.
PRT-01-100-AA

iglidur® PRT | Product range | Accessories

for Type 01

Drive pins



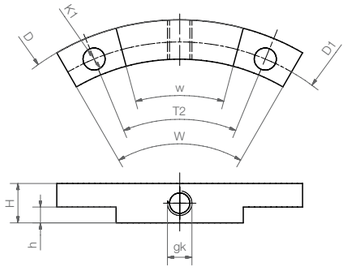


PRT with assembled drive pin

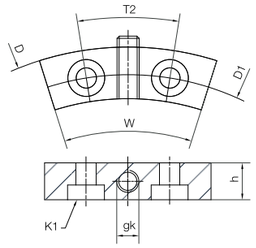
Dimensions [mm]

dp	hp	dz	hz	D1	T1	db	Part No.
55	5	10	15	42.5	8x45°	4.5	**PRT-AZ-30**
90	5	14	15	74	10x36°	5.5	**PRT-AZ-60**

Manual clamp



PRT-HK-30



PRT-HK-60/100/200

PRT with fitted manual clamp

- With 1 Nm screw torque, a holding torque up to 10 Nm is possible
- Easy to screw onto outer ring

Dimensions [mm]

D	D1	T2	K1 for screw	H	h	gk	W	Part No.
100	91	45°	Ø 4.5	8	3.2	M5	60°	**PRT-HK-30**
160	145	18°	DIN 7984 M5	–	10	M6	35°	**PRT-HK-60**
205	185	22.5°	DIN 7984 M5	–	10	M6	40°	**PRT-HK-100**[12)]
320	300	22.5°	DIN 7984 M6	–	10	M6	40°	**PRT-HK-200**[12)]

[12)] To be connected only with enlarged outer ring

Manual clamp

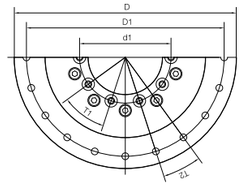
- For type 01, size 60

Part No.
PRT-HK-60-K

iglidur® PRT | Product range | Accessories

for Type 01

Slewing ring bearing with enlarged outer ring



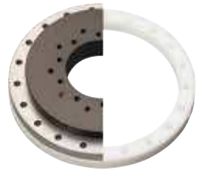
Dimensions [mm] – other dimensions similar to standard type PRT-01 ▶ Page 568

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**

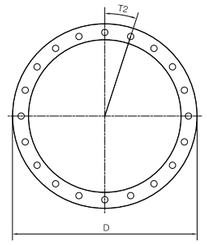
[11)] Ending: -G standard, -GG thread- or -GS counterbore

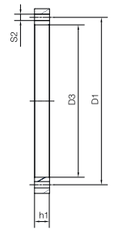
Spacing rings made from anodised aluminium or polymer (POM)

Aluminium



Plastics





PRT with mounted spacing ring

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**
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**

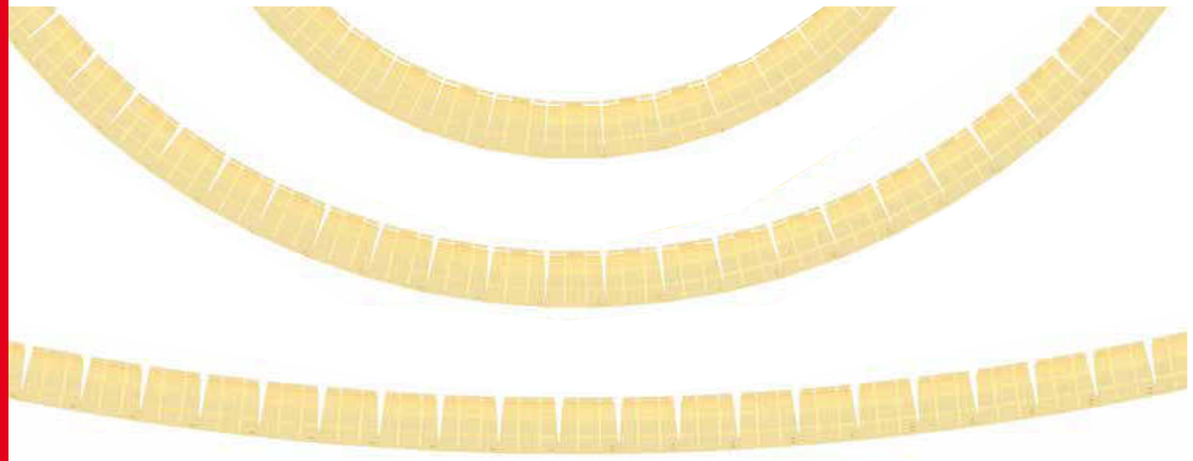
[39)] Please add suffix "-POM" for plastic version (not available for sizes 150 and 300)

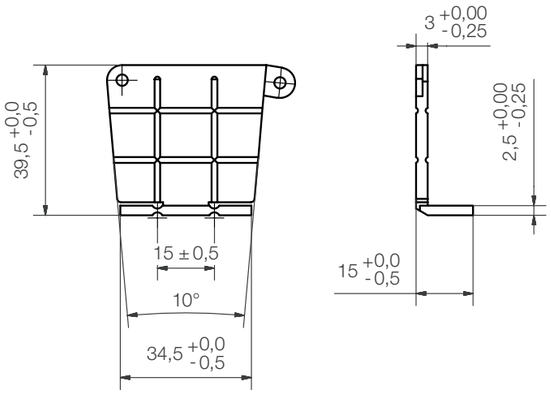
iglidur® PRT | Product range | Accessories

Universal sliding pads

Customise your own slewing ring systems

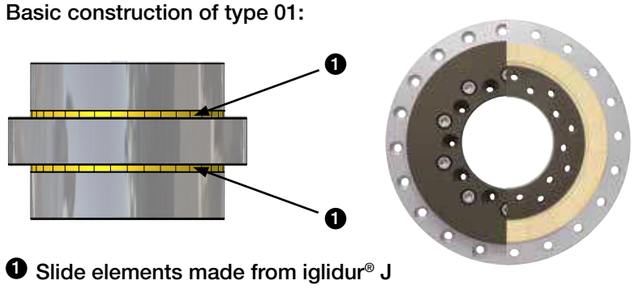
Using the versatile iglidur® PRT universal slide elements, large slewing ring systems can be tailored to the Type 01. Depending on the number of elements, slewing ring systems are possible with interior diameters from 0.5 to 5 m. – We will happily support you with the design and detailed layout.





- Made from the proven iglidur® J ▶ page 141
- Slewing ring bearings possible from 0.5 up to 5 metres
- Low wear
- Sturdy, resistant to dirt
- Corrosion-free and resistant to liquids
- Lubrication and maintenance-free

Basic construction of type 01:

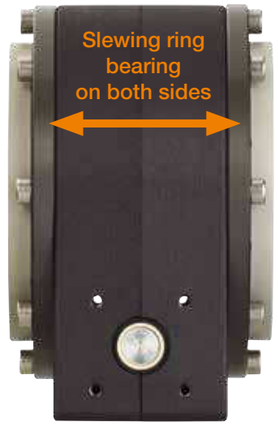


1 Slide elements made from iglidur® J

Part No.
JRS-500S/45S

robolink® D | Robot joints | Product range

Building blocks for robolink® D – 2 options in 3 installation sizes



robolink® D plastic housing with two PRT slewing ring bearings

- The drive component is a worm gear
- Self-locking drive
- Light, compact and lubrication-free
- Building blocks: Plastic housing + worm wheel made from iglidur® J + worm shaft with ball bearings + PRT slewing ring bearings + VA screws
- The centre hole remains free for feeding cables through
- Adaptable to various motors, standard option: NEMA17 / 23 / 23XL stepper motor
- INI kit for zero position optionally adaptable

Technical data

	Size 20 RL-D-20-101-38-01000	Size 30 RL-D-30-101-50-01000	Size 50 RL-D-50-101-48-01000
Weight [g]	410	730	1,900
Transmission	1:38/1:70	1:5/1:30/1:50/1:70	1:48/1:70
Axis distance [mm]	31	40	63
Efficiency	> 0.25	> 0.25	> 0.25
Breakaway torque [cNm]	< 5	< 7	< 10

robolink® D plastic housing with one PRT slewing ring bearing and cover plate

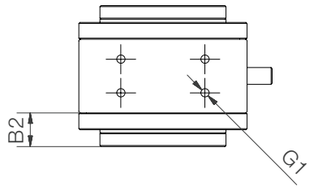
- Self-locking drive
- The drive component is a worm gear
- Light, compact and lubrication-free
- Building blocks: Plastic housing + worm wheel made from iglidur® J + worm shaft + PRT slewing ring bearings + axial roller bearings + radial bearings + VA screws
- The centre hole remains free for feeding cables through
- Adaptable to various motors, standard option: NEMA17 / 23 / 23XL stepper motor
- Application e.g. horizontal on base plate

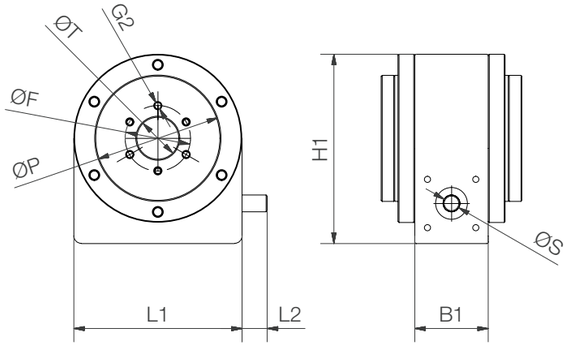
Technical data

	Size 20 RL-D-20-102-38-01004	Size 30 RL-D-30-102-50-01004	Size 50 RL-D-50-102-48-01004
Weight [g]	320	570	1,550
Transmission	1:38/1:70	1:5/1:30/1:50/1:70	1:48/1:70
Axis distance [mm]	31	40	63
Efficiency	> 0.25	> 0.25	> 0.25
Breakaway torque [cNm]	< 5	< 7	< 10

robolink® D | Robot joints | Product range

Symmetrical - with two PRT slewing ring bearings





3 versions

- Standard: 2 pcs aluminium PRT (PRT-02-xx-AL), aluminium worm shaft (AL hard-anodised). Application e.g. in our low-cost robot arms as front joints (RL-D 20 and RL-D 30).
- Low-cost: 2 pcs low-cost PRT (PRT-02-xx-LC), worm shaft made from plastic RN33. Application e.g. for manual adjustments.
- High end: 2 pcs PRT design 01 (PRT-01-xx), aluminium worm shaft (AL hard-anodised), high rigidity.

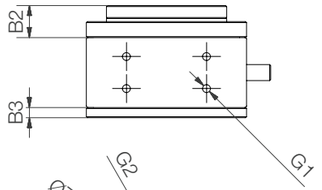
Application e.g. as the first pivoting axis in robolink® articulated arms.

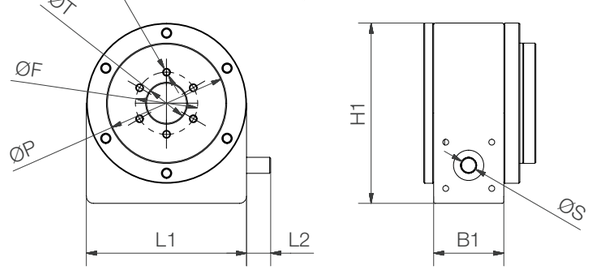
Dimensions [mm]

ØT	ØS	ØP	ØF	L1	L2	B1	B2	H1	G1	G2	Part No.
											Standard
20	8	60	31	80	12	35	10.5	90	M4	3 x M5	**RL-D-20-101-38-01000**
30	10	80	42.5	100	12	45	12.5	110	M4	4 x M5	**RL-D-30-101-50-01000**
50	15	120	65	150	13	60	13	170	M6	8 x M6	**RL-D-50-101-48-01000**
											Low-cost
20	8	60	31	80	12	35	10.5	90	M4	3 x M5	**RL-D-20-101-38-03011**
30	10	80	42.5	100	12	45	12.5	110	M4	4 x M5	**RL-D-30-101-50-03011**
50	15	120	65	150	13	60	13	170	M6	8 x M6	**RL-D-50-101-48-03011**
											High end
20	8	60	31	80	12	35	16	90	M4	6 x M4	**RL-D-20-101-38-01033**
30	10	80	42.5	100	12	45	19.5	110	M4	8 x M4	**RL-D-30-101-50-01033**
50	15	120	65	150	13	60	21.5	170	M6	8 x M6	**RL-D-50-101-48-01033**

robolink® D | Robot joints | Product range

Asymmetrical – with one PRT slewing ring bearing and cover plate





3 versions

- Standard: 1 pc aluminium PRT (PRT-02-xx-AL), aluminium worm shaft (AL hard-anodised) Application e.g. in our low-cost robot arms as front joints (RL-D 20 and RL-D 30).
- Low-cost: 1 pc low-cost PRT (PRT-02-xx-LC), worm shaft made from plastic RN33. Application e.g. for manual adjustments.
- High end: 1 pc PRT design 01 (PRT-01-xx), aluminium worm shaft (AL hard-anodised), high rigidity.

Application e.g. as the first rotating axis in robolink® articulated arms.

Dimensions [mm]

ØT	ØS	ØP	ØF	L1	L2	B1	B2	B3	H1	G1	G2	Part No.
												Standard
20	8	60	31	80	12	35	10.5	5	90	M4	3 x M5	**RL-D-20-102-38-01004**
30	10	80	42.5	100	12	45	12.5	6	110	M4	4 x M5	**RL-D-30-102-50-01004**
50	15	120	60	150	13	60	13	6	170	M6	4 x M6	**RL-D-50-102-48-01004**
												Low-cost
20	8	60	31	80	12	35	10.5	5	90	M4	3 x M5	**RL-D-20-102-38-03014**
30	10	80	42.5	100	12	45	12.5	6	110	M4	4 x M5	**RL-D-30-102-50-03014**
50	15	120	60	150	13	60	13	6	170	M6	4 x M6	**RL-D-50-102-48-03014**
												High end
20	8	60	31	80	12	35	16	5	90	M4	6 x M4	**RL-D-20-102-38-01035**
30	10	80	42.5	100	12	45	19.5	6	110	M4	8 x M4	**RL-D-30-102-50-01035**
50	15	120	65	150	13	60	21.5	6	170	M6	8 x M6	**RL-D-50-102-48-01035**

robolink® D | Robot joints | Product range

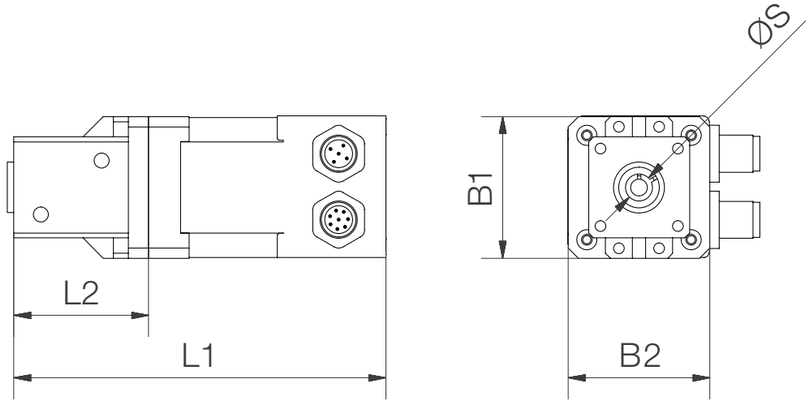
robolink® D robot joint with direct drive

- Adaptable to various motors, standard option: NEMA17 / 23 / 23XL stepper motor
- INI kit for zero position optionally adaptable

INI kit

Fitting:	M8x1
Switching output:	PNP
Switching function:	NO (Closer)
Operating voltage:	10…30 V DC
Rated operational current:	100 mA

Part No.
NI-AB-I-025-A-AA



Motor kit

Motor type:	igus® stepper motor NEMA17, NEMA23, NEMA23XL
Flange dimension [mm]:	42, 56, 60
Versions:	-00: with strand wires
	-01: with stepper motor without encoder
	-02: with motor encoder

Technical data

Joint		Size 20	Size 30		Size 50	
		RL-D-20-101-38-xxxxx	RL-D-30-101-50-xxxxx		RL-D-50-101-48-xxxxx	
Motor		+ NEMA17	+ NEMA17	+ NEMA23	+ NEMA23	+ NEMA23XL
Motor type				Stepper motor		
Weight (with standard joint)	[g]	890	1.1140	1,860	2,540	2,970
Max. radial torque strength (short-term)	[Nm]	5	6	12	21	38
Max. radial torque strength (long-term)	[Nm]	4	5	8	18	33
Max. speed (at max. load)	[rpm]	5	4	4	4	4
Max. axial dynamic load (horizontal installation)	[N]	> 500	> 700	> 700	> 1,200	> 1,200

Dimensions [mm]

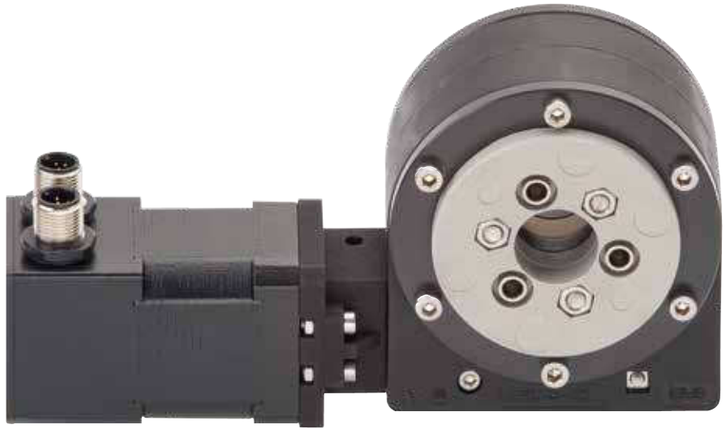
ØS	L1	L2	B1	B2	Part No.
					NEMA17
8	99.4	40	42	42	RL-D-20-MK-C-N17-00
8	110.4	40	42	42	RL-D-20-MK-C-N17-01
8	110.4	40	42	42	RL-D-20-MK-C-N17-02
10	99.4	40	42	42	RL-D-30-MK-C-N17-00
10	110.4	40	42	42	RL-D-30-MK-C-N17-01
10	110.4	40	42	42	RL-D-30-MK-C-N17-02
					NEMA23
10	118	42	56.4	56.4	RL-D-30-MK-C-N23-00
10	140	42	56.4	56.4	RL-D-30-MK-C-N23-01
10	140	42	56.4	56.4	RL-D-30-MK-C-N23-02
15	124	48	60	60	RL-D-50-MK-C-N23-00
15	146	48	60	60	RL-D-50-MK-C-N23-01
15	146	48	60	60	RL-D-50-MK-C-N23-02
					NEMA23XL
15	136.5	48	60	60	RL-D-50-MK-C-N23XL-00
15	158.5	48	60	60	RL-D-50-MK-C-N23XL-01
15	158.5	48	60	60	RL-D-50-MK-C-N23XL-02

Delivery time
2-3 days

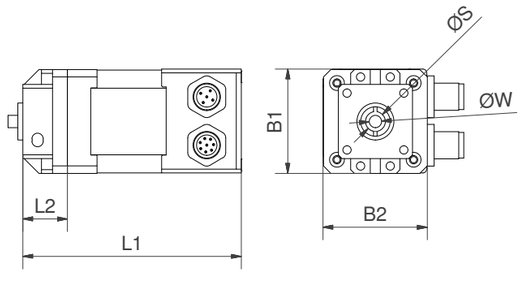
Delivery time
2-3 days

robolink® D | Robot joints | Product range

robolink® D robot joint with direct drive – compact design



- Adaptable to various motors, standard option: NEMA17 / 23 / 23XL stepper motor
- INI kit for zero position optionally adaptable



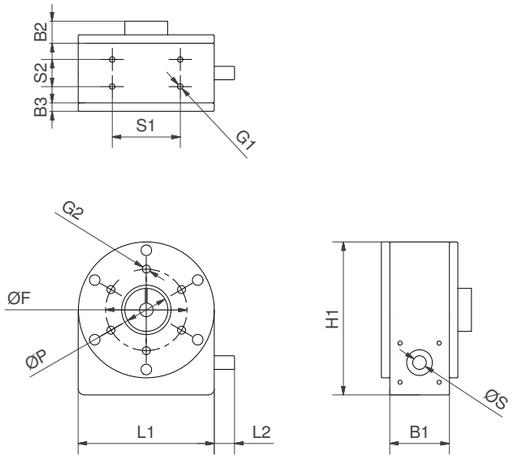
Dimensions [mm]

ØS	ØW	L1	L2	B1	B2	Part No.
8	5	88.4	18	42	42	**RL-D-20-MK-S-N17-02**
10	5	88.4	18	42	42	**RL-D-30-MK-S-N17-02**
10	6.35	118	20	56.4	56.4	**RL-D-30-MK-S-N23-02**
15	6.35	122	24	60	60	**RL-D-50-MK-S-N23-02**
15	8	134.5	24	60	60	**RL-D-50-MK-S-N23XL-02**

Delivery time
2-3 days

robolink® D | Robot joints | Product range

robolink® D robot joint as gear version



- Cost-effective alternative without slewing ring bearing
- Lightweight
- Replaceable coupling components for different shaft diameters

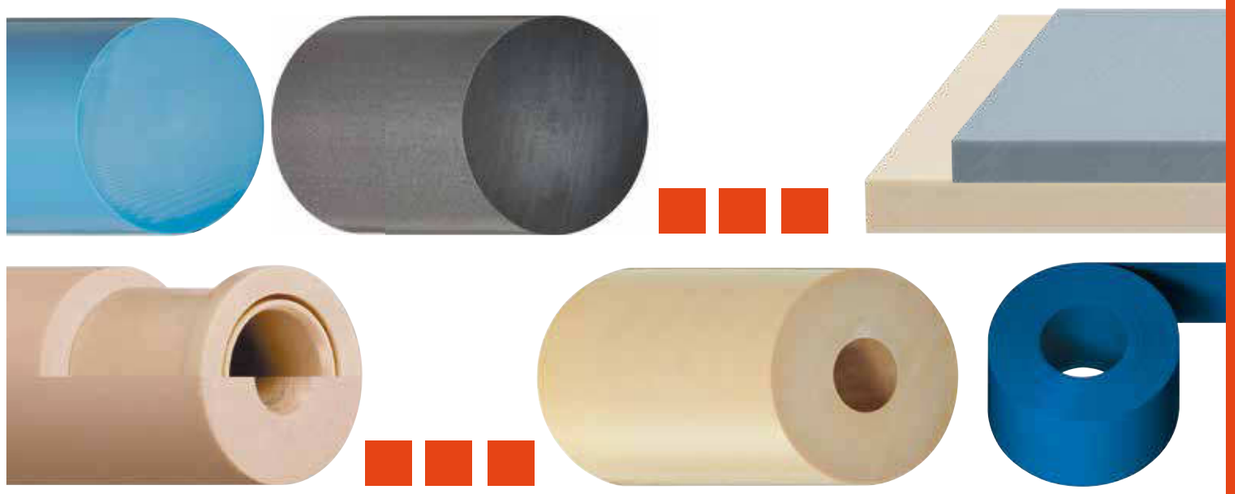
Dimensions [mm]

ØS	ØT	L1	L2	B1	H1	G1	S1	S2	Part No.
8	20	80	12	35	90	M4	40	16	**RL-D-20-103-...**
10	30	100	12	45	110	M4	55	20	**RL-D-30-103-...**
15	50	150	13	60	170	M6	80	30	**RL-D-50-103-...**

Delivery time
2-3 days

iglidur®

Stock materials, bar, plate and liners



...plastics

iglidur® bar stock | Product overview

iglidur® round bars – All-rounder

New

iglidur® M250:
Excellent vibration dampening
▶ Page 596

iglidur® P210: Good coefficients of friction and wear on almost every shaft
▶ Page 596

iglidur® J4:
Wear resistant and cost-effective
▶ Page 597

iglidur® round bars – Endurance runner

iglidur® J260:
Ideal for plastic shafts
▶ Page 599

iglidur® R:
Low-cost
▶ Page 600

iglidur® J200:
Specially for aluminium shafts
▶ Page 600

New

iglidur® JB:
Extreme wear resistant in black
▶ Page 601

iglidur® round material – For contact with food

iglidur® A181: The universal bearing for food contact, FDA and EC 10/2011 compliant
▶ Page 603

iglidur® A350: The FDA-compliant endurance runner at high temperatures
▶ Page 603

New

iglidur® A500:
The media and temperature specialist in the food sector
▶ Page 604

iglidur® A180:
The food all-rounder
▶ Page 604

iglidur® round material – For special applications

iglidur® F2:
Used to prevent electro-static charges
▶ Page 606

iglidur® J2:
Versatile and cost-effective
▶ Page 607

New

iglidur® HSD350:
All-rounder suitable for steam sterilisation
▶ Page 607

New

iglidur® RW370:
According to DIN EN 45545
▶ Page 608

iglidur® plates

iglidur® J:
The versatile endurance runner
▶ Page 609

New

iglidur® JB:
Extreme wear resistant in black
▶ Page 610

iglidur® A350: The endurance runner at higher temperatures, FDA-compliant
▶ Page 610

iglidur® round bars – Endurance runner

iglidur® J:
The versatile endurance runner
▶ Page 597

iglidur® W300:
The classic endurance runner up to 30 MPa
▶ Page 598

iglidur® J3:
Specialist for pulsating loads
▶ Page 598

iglidur® J350: Endurance runner with high dimensional stability at high temperature
▶ Page 599

iglidur® round material – For high temperatures

iglidur® X:
The chemical and temperature specialist
▶ Page 601

... – High media resistance

iglidur® H1 :
Endurance runner with high media resistance
▶ Page 602

New

iglidur® C500:
For extreme ambient conditions
▶ Page 602

iglidur® round material – For contact with food

iglidur® A160: "Food" bearing with high media resistance up to +90 °C
▶ Page 605

iglidur® UW160:
For contact with drinking water
▶ Page 605

iglidur® T220:
For the tobacco industry
▶ Page 606

iglidur® tubes

iglidur® J:
The versatile endurance runner
▶ Page 608

Mechanical processing

speedicut:
Special parts fast, machined to drawing
▶ Page 612

iglidur® Tribo-Tape

Material iglidur® A160:
FDA-compliant
▶ Page 616

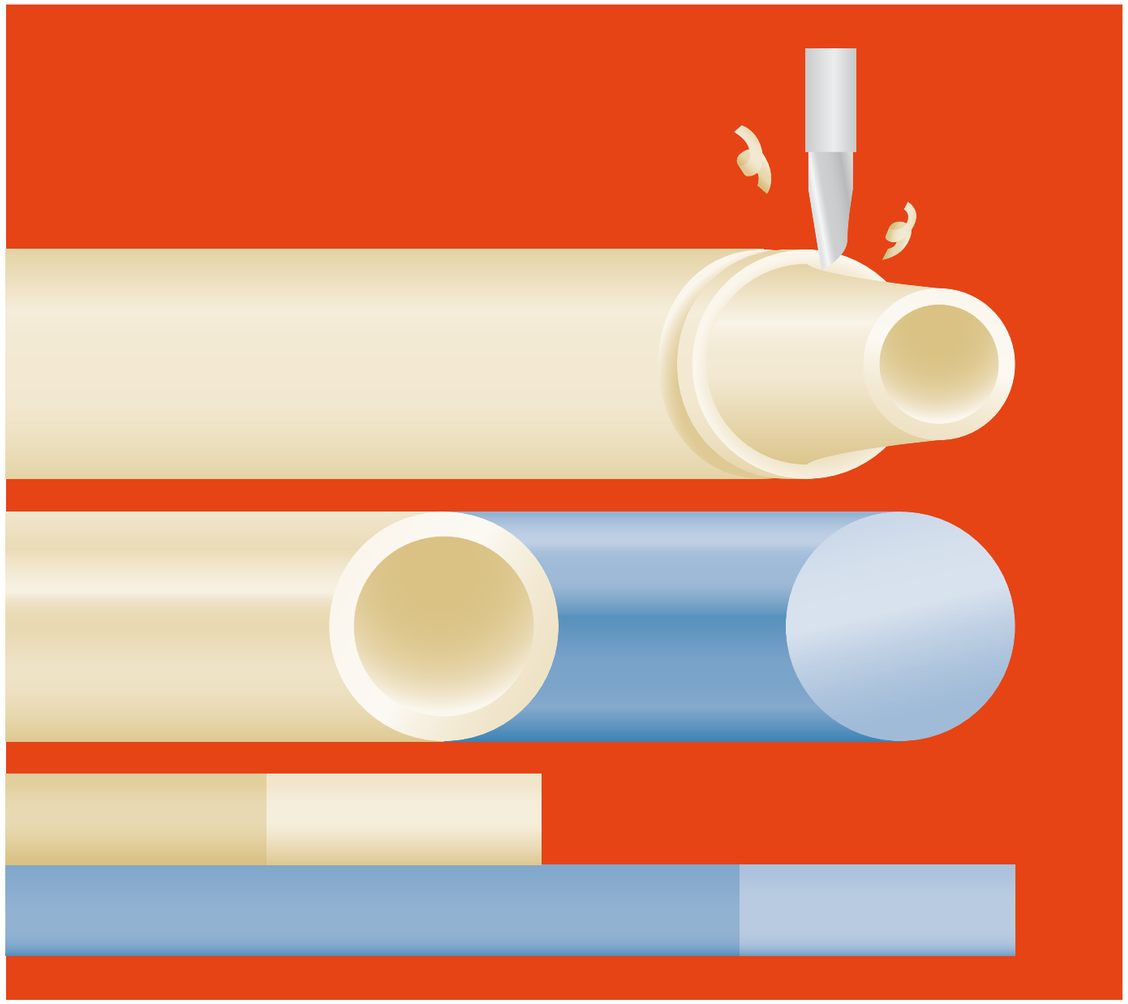
New

Material iglidur® B160:
For use in visible areas
▶ Page 617

New

Material iglidur® W160:
Lubrication-free in white – hardly any wear
▶ Page 618

Material iglidur® V400:
Extremely high wear resistance
▶ Page 619



iglidur® bar stock

iglidur® materials as round bars, tubes and plates

Fast and cost-effective

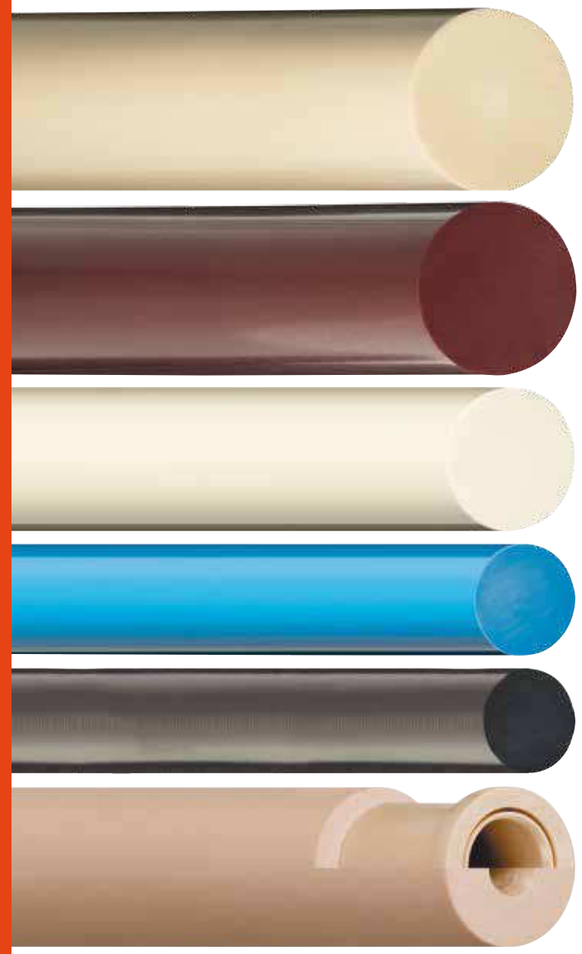
Cut to required size

Machined parts, no minimum order quantity

Maintenance-free and calculable

Standard range from stock

Round bar and plate for free design



Bar stock made from technical plastic: iglidur® in one piece

iglidur® for free design – as plastic bar stock to make your own or as machine finished special components – for prototypes, test components and small quantity needs.

- iglidur® materials as round material from stock or mechanically ready-machined special components and special sizes in 3 to 5 days
- Lubrication and maintenance-free
- Easy to machine – ask for tips
- Tribologically optimised plastics as bar stock, round bars, tubes and plates
- Service life can now also be calculated for machined bearings
- No minimum order value
- From batch size 1

Available from stock
Detailed information about delivery time online. Further materials and dimensions on request.

Operating temperatures:
–50 °C up to +90 °C (standard iglidur® J)
–100 °C up to +250 °C
(depending on material)

25 materials
Round bars: Ø 10–100 mm
Plate thickness: ↕ 2–40 mm
Tubes: up to 150 mm outer Ø

igus® constantly expands its range of available materials and dimensions. Check the current stock online ▶ **www.igus.eu/barstock**

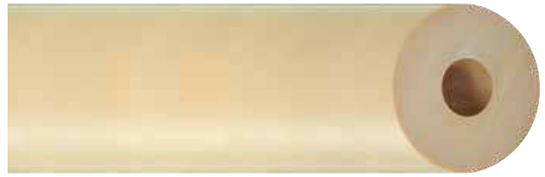
In addition to bar stocks, we will also gladly offer you mechanical processing in line with a drawing.

Service life calculation
▶ www.igus.eu/barstock-expert

Round bar and plate for free design

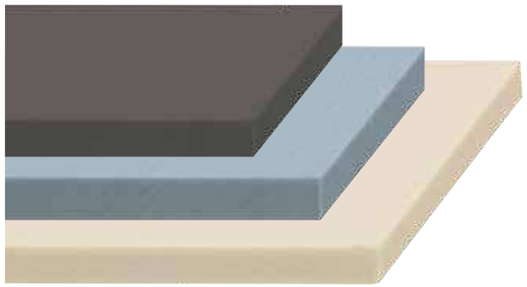
iglidur® round bars
- Currently 25 iglidur® materials to choose from
- Outer diameter 10–100 mm
- Excellent wear rates and coefficients of friction
- For special dimensions in small quantities

▶ **From page 596**



iglidur® tubes
- Large outer diameters 110–150 mm
- Low wear against different shaft materials

▶ **From page 608**



iglidur® plates
- Versatile application options
- Plate thickness 2–40 mm

▶ **From page 609**

speedicut: Machined parts, fast!
- Special parts according to customer request
- Prototypes available in a matter of days

▶ **From page 612**

iglidur® materials | Selection according to main criteria

iglidur®	M250	P210	J4	J	W300	J3	J350	J260	R	J200	JB	X
Descriptive technical specifications												
Wear resistance at +23 °C												
Wear resistance at +90 °C												
Wear resistance at +150 °C												
Low coefficients of friction												
Low moisture absorption												
Wear resistance under water												
High media resistance												
Resistant to edge loads												
Resistant to impacts/shock												
Resistant to dirt												
Price index[141)]												
For high loads (>60 MPa)							●					●
Corrosion-free	●	●	●	●	●	●	●	●	●	●	●	●
Electrically conductive												●
Approvals and standards												
RoHS-II 2011/65/EC	●	●	●	●	●	●	●	●	●	●	●	●
FDA- and/or EC10/2011 compliant												
Fire class in accordance with UL-94	V-2	HB	F	HB	HB	HB	V-0	V-2	HB	HB	HB	V-0
Availabilities / variants												
Bar stock, round bar	●	●	●	●	●	●	●	●	●	●	●	●
Bar stock, tube				●								
Stock plate				●							●	
Machined made from bar stocks	●	●	●	●	●	●	●	●	●	●	●	●
Tribo-Tape liner												

iglidur®	H1	C500	A181	A350	A500	A180	A160	UW160	T220	F2	J2	HSD350	RW370	W160	B160	V400
Descriptive technical specifications																
Wear resistance at +23 °C																
Wear resistance at +90 °C																
Wear resistance at +150 °C																
Low coefficients of friction																
Low moisture absorption																
Wear resistance under water																
High media resistance																
Resistant to edge loads																
Resistant to impacts/shock																
Resistant to dirt																
Price index[141)]																
For high loads (>60 MPa)	●	●		●	●					●			●			
Corrosion-free	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Electrically conductive										●						
Approvals and standards																
RoHS-II 2011/65/EC	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
FDA- and/or EC10/2011 compliant			●	●	●	●	●									
Fire class in accordance with UL-94	V-0	V-0	HB	V-0	V-1	HB	HB	HB	HB	HB	HB	V-0	V-0	HB	HB	V-0
Availabilities / variants																
Bar stock, round bar	●	●	●	●	●	●	●	●	●	●	●	●	●			
Bar stock, tube																
Stock plate				●												
Machined made from bar stocks	●	●	●	●		●	●	●	●	●	●	●	●			
Tribo-Tape liner							●							●	●	●

141) **Price index**

Low price category | **Medium price category** | **Highest price category**

iglidur® bar stocks | Material properties table

iglidur®	Unit	M250	P210	J4	J	W300	J3	J350	J260	R
General properties										
Density	[g/cm³]	1.14	1.40	1.48	1.49	1.24	1.42	1.44	1.35	1.39
Colour										
Max. moisture absorption at +23 °C/50 % r.h.	[% weight]	1.4	0.3	0.3	0.3	1.3	0.3	0.3	0.2	0.2
Max. water absorption	[% weight]	7.6	0.5	1.3	1.3	6.5	1.3	1.6	0.4	1.1
Coefficient of sliding friction, dynamic against steel	[µ]	0.18–0.40	0.07–0.19	0.06–0.20	0.06–0.18	0.08–0.23	0.06–0.20	0.10–0.20	0.06–0.20	0.09–0.25
pv value, max. (dry)	[MPa · m/s]	0.12	0.4	0.30	0.34	0.23	0.5	0.45	0.35	0.27
Mechanical properties										
Flexural modulus	[MPa]	2,700	2,500	2,350	2,400	3,500	2,700	2,000	2,200	1,950
Flexural strength at +20 °C	[MPa]	112	70	70	73	125	70	55	60	70
Compressive strength	[MPa]	52	50	55	60	61	60	60	50	68
Max. permissible surface pressure at +20 °C	[MPa]	20	50	35	35	60	45	60	40	23
Shore-D-Hardness		79	75	74	74	77	73	80	77	77
Physical and thermal properties										
Max. long-term application temperature	[°C]	+80	+100	+90	+90	+90	+90	+180	+120	+90
Max. short-term application temperature	[°C]	+170	+160	+120	+120	+180	+120	+220	+140	+110
Min. application temperature	[°C]	–40	–40	–50	–50	–40	–50	–100	–100	–50
Thermal conductivity	[W/m · K]	0.24	0.25	0.25	0.25	0.24	0.25	0.24	0.24	0.25
Coefficient of thermal expansion at +23 °C	[$K^{-1} \cdot 10^{-5}$]	10	8	10	10	9	13	7	13	11
Electrical properties										
Specific volume resistance	[Ωcm]	> 10^{13}	> 10^{12}	> 1013	> 10^{13}	> 10^{13}	> 10^{12}	> 10^{13}	> 10^{12}	> 10^{12}
Surface resistance	[Ω]	> 10^{11}	> 10^{11}	> 10^{13}	> 10^{12}	> 10^{12}	> 10^{12}	> 10^{10}	> 10^{10}	> 10^{12}
Page		**596**	**596**	**597**	**597**	**598**	**598**	**599**	**599**	**600**

J200	JB	X	H1	C500	A181	A350	A500	A180	A160	UW160	T220	F2	J2	HSD350	RW370
1.72	1.49	1.44	1.53	1.37	1.38	1.42	1.28	1.46	1.00	1.04	1.28	1.52	1.44	1.39	1.34
0.2	0.3	0.1	0.1	0.3	0.2	0.6	0.3	0.2	0.1	0.1	0.3	0.2	0.2	0.6	0.25
0.7	1.3	0.5	0.3	0.5	1.3	1.9	0.5	1.3	0.1	0.1	0.5	0.4	1.3	1.2	1.2
0.11–0.17	0.06–0.18	0.09–0.27	0.06–0.20	0.07–0.19	0.10–0.21	0.10–0.20	0.26–0.41	0.05–0.23	0.09–0.19	0.17–0.31	0.20–0.32	0.16–0.22	0.11–0.27	n.s.	n.s.
0.3	0.34	1.32	0.80	0.7	0.31	0.40	0.28	0.31	0.25	0.22	0.28	0.31	0.23	n.s.	n.s.
2,800	2,400	8,100	2,800	3,000	1,913	2,000	3,600	2,300	1,151	1,349	1,800	7,418	3,605	2,150	2,997
58	73	170	55	100	48	110	140	88	19	22	65	93	101	67	100
43	60	100	78	110	60	78	118	78	37	32	55	61	77	n.s.	n.s.
23	35	150	80	110	31	60	120	28	15	15	40	47	46	30	75
70	74	85	77	81	76	76	83	76	60	60	76	72	n.s.	77	80
+90	+90	+250	+200	+250	+90	+180	+250	+90	+90	+90	+100	+120	+90	+180	+170
+120	+120	+315	+240	+300	+110	+210	+300	+110	+100	+100	+160	+165	+110	+210	+190
–50	–50	–100	–40	–100	–50	–100	–100	–50	–50	–50	–40	–40	–50	–40	–50
0.24	0.25	0.60	0.24	0.24	0.25	0.24	0.24	0.25	0.30	0.50	0.24	0.61	0.25	n.s.	n.s.
8	10	5	6	9	11	8	9	11	11	18	11	5	7	n.s.	n.s.
> 10^{8}	> 10^{13}	< 10^{5}	> 10^{12}	> 10^{14}	> 10^{12}	> 10^{11}	> 10^{14}	> 10^{12}	> 10^{12}	> 10^{12}	> 10^{10}	< 10^{9}	> 10^{13}	> 10^{13}	> 10^{12}
> 10^{8}	> 10^{12}	< 10^{3}	> 10^{11}	> 10^{13}	> 10^{12}	> 10^{11}	> 10^{13}	> 10^{11}	> 10^{12}	> 10^{12}	> 10^{10}	< 10^{9}	> 10^{12}	> 10^{14}	> 10^{12}
600	**601**	**601**	**602**	**602**	**603**	**603**	**604**	**604**	**605**	**605**	**606**	**606**	**607**	**607**	**608**

iglidur® round bars | Product range

Excellent vibration dampening – iglidur® M250

Order key for round bars

Type			Dimensions [mm]		
SF	R	M250	- 30	00	- 500
Bar stock	Round	iglidur® material	Outer Ø	Inner Ø	Length[16]

[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Ø	Lengths[16]	Part No.
10	100–1,000	SFRM250-1000-□[16]
15	100–1,000	SFRM250-1500-□[16]
20	100–1,000	SFRM250-2000-□[16]
25	100–1,000	SFRM250-2500-□[16]
30	100–1,000	**SFRM250-3000-□[16]**
35	100–1,000	SFRM250-3500-□[16]
40	100–1,000	**SFRM250-4000-□[16]**
45	100–1,000	SFRM250-4500-□[16]
50	100–1,000	SFRM250-5000-□[16]
55	100–1,000	**SFRM250-5500-□[16]**
60	100–1,000	SFRM250-6000-□[16]
65	100–1,000	SFRM250-6500-□[16]
80	100–1,000	SFRM250-8000-□[16]
100	100–1,000	SFRM250-10000-□[16]

Good coefficients of friction and wear on almost every shaft – iglidur® P210

Order key for round bars

Type			Dimensions [mm]		
SF	R	P210	- 30	00	- 500
Bar stock	Round	iglidur® material	Outer Ø	Inner Ø	Length[16]

[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Ø	Lengths[16]	Part No.
10	100–1,000	SFRP210-1000-□[16]
15	100–1,000	SFRP210-1500-□[16]
20	100–1,000	**SFRP210-2000-□[16]**
25	100–1,000	**SFRP210-2500-□[16]**
30	100–1,000	**SFRP210-3000-□[16]**
35	100–1,000	**SFRP210-3500-□[16]**
40	100–1,000	**SFRP210-4000-□[16]**
45	100–1,000	**SFRP210-4500-□[16]**
50	100–1,000	**SFRP210-5000-□[16]**
55	100–1,000	**SFRP210-5500-□[16]**
60	100–1,000	**SFRP210-6000-□[16]**
65	100–1,000	SFRP210-6500-□[16]
80	100–1,000	**SFRP210-8000-□[16]**
100	100–1,000	SFRP210-10000-□[16]

Available from stock
Produced to special order

iglidur®
bar stock

iglidur® round bars | Product range

Wear resistant and cost-effective – iglidur® J4

Order key for round bars

Type			Dimensions [mm]		
SF	R	J4	- 30	00	- 500
Bar stock	Round	iglidur® material	Outer Ø	Inner Ø	Length[16]

[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Ø	Lengths[16]	Part No.
10	100–1,000	SFRJ4-1000-□[16]
15	100–1,000	**SFRJ4-1500-□[16]**
20	100–1,000	**SFRJ4-2000-□[16]**
25	100–1,000	**SFRJ4-2500-□[16]**
30	100–1,000	**SFRJ4-3000-□[16]**
35	100–1,000	**SFRJ4-3500-□[16]**
40	100–1,000	**SFRJ4-4000-□[16]**
45	100–1,000	**SFRJ4-4500-□[16]**
50	100–1,000	**SFRJ4-5000-□[16]**
55	100–1,000	**SFRJ4-5500-□[16]**
60	100–1,000	**SFRJ4-6000-□[16]**
65	100–1,000	**SFRJ4-6500-□[16]**
80	100–1,000	SFRJ4-8000-□[16]
100	100–1,000	SFRJ4-10000-□[16]

The versatile endurance runner – iglidur® J

Order key for round bars

Type			Dimensions [mm]		
SF	R	J	- 30	00	- 500
Bar stock	Round	iglidur® material	Outer Ø	Inner Ø	Length[16]

[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Ø	Lengths[16]	Part No.
10	100–1,000	**SFRJ-1000-□[16]**
15	100–1,000	**SFRJ-1500-□[16]**
20	100–1,000	**SFRJ-2000-□[16]**
25	100–1,000	**SFRJ-2500-□[16]**
30	100–1,000	**SFRJ-3000-□[16]**
35	100–1,000	**SFRJ-3500-□[16]**
40	100–1,000	**SFRJ-4000-□[16]**
45	100–1,000	**SFRJ-4500-□[16]**
50	100–1,000	**SFRJ-5000-□[16]**
55	100–1,000	**SFRJ-5500-□[16]**
60	100–1,000	**SFRJ-6000-□[16]**
65	100–1,000	**SFRJ-6500-□[16]**
80	100–1,000	**SFRJ-8000-□[16]**
100	100–1,000	**SFRJ-10000-□[16]**

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 classic endurance runner up to 30 MPa – iglidur® W300

Order key for round bars

Type			Dimensions [mm]		
SF	R	W300	- 30	00	- 500
Bar stock	Round	iglidur® material	Outer Ø	Inner Ø	Length[16]

[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Ø	Lengths[16]	Part No.
10	100–1,000	SFRW-1000-□ [16]
15	100–1,000	SFRW-1500-□ [16]
20	100–1,000	SFRW-2000-□ [16]
25	100–1,000	SFRW-2500-□ [16]
30	100–1,000	**SFRW-3000-□ [16]**
35	100–1,000	SFRW-3500-□ [16]
40	100–1,000	**SFRW-4000-□ [16]**
45	100–1,000	SFRW-4500-□ [16]
50	100–1,000	**SFRW-5000-□ [16]**
55	100–1,000	SFRW-5500-□ [16]
60	100–1,000	**SFRW-6000-□ [16]**
65	100–1,000	**SFRW-6500-□ [16]**
80	100–1,000	**SFRW-8000-□ [16]**
100	100–1,000	SFRW-10000-□ [16]

Specialist for pulsating loads – iglidur® J3

Order key for round bars

Type			Dimensions [mm]		
SF	R	J3	- 30	00	- 500
Bar stock	Round	iglidur® material	Outer Ø	Inner Ø	Length[16]

[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Ø	Lengths[16]	Part No.
10	100–1,000	SFRJ3-1000-□ [16]
15	100–1,000	**SFRJ3-1500-□ [16]**
20	100–1,000	**SFRJ3-2000-□ [16]**
25	100–1,000	SFRJ3-2500-□ [16]
30	100–1,000	**SFRJ3-3000-□ [16]**
35	100–1,000	SFRJ3-3500-□ [16]
40	100–1,000	**SFRJ3-4000-□ [16]**
45	100–1,000	SFRJ3-4500-□ [16]
50	100–1,000	**SFRJ3-5000-□ [16]**
55	100–1,000	SFRJ3-5500-□ [16]
60	100–1,000	**SFRJ3-6000-□ [16]**
65	100–1,000	SFRJ3-6500-□ [16]
80	100–1,000	SFRJ3-8000-□ [16]
100	100–1,000	SFRJ3-10000-□ [16]

Available from stock
Produced to special order

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	- 500
Bar stock	Round	iglidur® material	Outer Ø	Inner Ø	Length[16]

[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Ø	Lengths[16]	Part No.
10	100–1,000	SFRJ350-1000-□ [16]
15	100–1,000	SFRJ350-1500-□ [16]
20	100–1,000	**SFRJ350-2000-□ [16]**
25	100–1,000	**SFRJ350-2500-□ [16]**
30	100–1,000	**SFRJ350-3000-□ [16]**
35	100–1,000	**SFRJ350-3500-□ [16]**
40	100–1,000	**SFRJ350-4000-□ [16]**
45	100–1,000	**SFRJ350-4500-□ [16]**
50	100–1,000	**SFRJ350-5000-□ [16]**
55	100–1,000	**SFRJ350-5500-□ [16]**
60	100–1,000	**SFRJ350-6000-□ [16]**
65	100–1,000	**SFRJ350-6500-□ [16]**
80	100–1,000	SFRJ350-8000-□ [16]
100	100–1,000	SFRJ350-10000-□ [16]

Ideal for plastic shafts – iglidur® J260

Order key for round bars

Type			Dimensions [mm]		
SF	R	J260	- 30	00	- 500
Bar stock	Round	iglidur® material	Outer Ø	Inner Ø	Length[16]

[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Ø	Lengths[16]	Part No.
10	100–1,000	SFRJ260-1000-□ [16]
15	100–1,000	SFRJ260-1500-□ [16]
20	100–1,000	SFRJ260-2000-□ [16]
25	100–1,000	SFRJ260-2500-□ [16]
30	100–1,000	**SFRJ260-3000-□ [16]**
35	100–1,000	SFRJ260-3500-□ [16]
40	100–1,000	SFRJ260-4000-□ [16]
45	100–1,000	SFRJ260-4500-□ [16]
50	100–1,000	SFRJ260-5000-□ [16]
55	100–1,000	SFRJ260-5500-□ [16]
60	100–1,000	**SFRJ260-6000-□ [16]**
65	100–1,000	SFRJ260-6500-□ [16]
80	100–1,000	SFRJ260-8000-□ [16]
100	100–1,000	SFRJ260-10000-□ [16]

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iglidur® round bars | Product range

Low-cost – iglidur® R

Order key for round bars

Type			Dimensions [mm]		
SF	R	R	-30	00	-500
Bar stock	Round	iglidur® material	Outer Ø	Inner Ø	Length[16]

[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Ø	Lengths[16]	Part No.
10	100–1,000	SFRR-1000-□ [16]
15	100–1,000	SFRR-1500-□ [16]
20	100–1,000	SFRR-2000-□ [16]
25	100–1,000	SFRR-2500-□ [16]
30	100–1,000	**SFRR-3000-□ [16]**
35	100–1,000	SFRR-3500-□ [16]
40	100–1,000	**SFRR-4000-□ [16]**
45	100–1,000	SFRR-4500-□ [16]
50	100–1,000	**SFRR-5000-□ [16]**
55	100–1,000	SFRR-5500-□ [16]
60	100–1,000	**SFRR-6000-□ [16]**
65	100–1,000	**SFRR-6500-□ [16]**
80	100–1,000	SFRR-8000-□ [16]
100	100–1,000	SFRR-10000-□ [16]

Specially for aluminium shafts – iglidur® J200

Order key for round bars

Type			Dimensions [mm]		
SF	R	J200	-30	00	-500
Bar stock	Round	iglidur® material	Outer Ø	Inner Ø	Length[16]

[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Ø	Lengths[16]	Part No.
10	100–1,000	SFRJ200-1000-□ [16]
15	100–1,000	SFRJ200-1500-□ [16]
20	100–1,000	SFRJ200-2000-□ [16]
25	100–1,000	SFRJ200-2500-□ [16]
30	100–1,000	**SFRJ200-3000-□ [16]**
35	100–1,000	SFRJ200-3500-□ [16]
40	100–1,000	SFRJ200-4000-□ [16]
45	100–1,000	SFRJ200-4500-□ [16]
50	100–1,000	SFRJ200-5000-□ [16]
55	100–1,000	SFRJ200-5500-□ [16]
60	100–1,000	**SFRJ200-6000-□ [16]**
65	100–1,000	SFRJ200-6500-□ [16]
80	100–1,000	SFRJ200-8000-□ [16]
100	100–1,000	SFRJ200-10000-□ [16]

Available from stock
Produced to special order

iglidur®
bar stock

iglidur® round bars | Product range

Extreme wear resistant in black – iglidur® JB

Order key for round bars

Type			Dimensions [mm]		
SF	R	JB	-30	00	-500
Bar stock	Round	iglidur® material	Outer Ø	Inner Ø	Length[16]

[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Ø	Lengths[16]	Part No.
10	100–1,000	SFRJB-1000-□ [16]
15	100–1,000	SFRJB-1500-□ [16]
20	100–1,000	**SFRJB-2000-□ [16]**
25	100–1,000	SFRJB-2500-□ [16]
30	100–1,000	**SFRJB-3000-□ [16]**
35	100–1,000	SFRJB-3500-□ [16]
40	100–1,000	**SFRJB-4000-□ [16]**
45	100–1,000	SFRJB-4500-□ [16]
50	100–1,000	**SFRJB-5000-□ [16]**
55	100–1,000	SFRJB-5500-□ [16]
60	100–1,000	**SFRJB-6000-□ [16]**
65	100–1,000	SFRJB-6500-□ [16]
80	100–1,000	SFRJB-8000-□ [16]
100	100–1,000	SFRJB-10000-□ [16]

The chemical and temperature specialist – iglidur® X

Order key for round bars

Type			Dimensions [mm]		
SF	R	X	-30	00	-500
Bar stock	Round	iglidur® material	Outer Ø	Inner Ø	Length[16]

[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Ø	Lengths[16]	Part No.
10	100–1,000	SFRX-1000-□ [16]
15	100–1,000	**SFRX-1500-□ [16]**
20	100–1,000	**SFRX-2000-□ [16]**
25	100–1,000	**SFRX-2500-□ [16]**
30	100–1,000	**SFRX-3000-□ [16]**
35	100–1,000	**SFRX-3500-□ [16]**
40	100–1,000	**SFRX-4000-□ [16]**
45	100–1,000	**SFRX-4500-□ [16]**
50	100–1,000	**SFRX-5000-□ [16]**
55	100–1,000	**SFRX-5500-□ [16]**
60	100–1,000	**SFRX-6000-□ [16]**
65	100–1,000	**SFRX-6500-□ [16]**
80	100–1,000	SFRX-8000-□ [16]
100	100–1,000	SFRX-10000-□ [16]

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iglidur® round bars | Product range

Endurance runner with high media resistance – iglidur® H1

Order key for round bars

Type	Dimensions [mm]
SF R H1	- 30 00 - 500

Bar stock	Round	iglidur® material	Outer Ø	Inner Ø	Length[16]

[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Ø	Lengths[16]	Part No.
10	100–1,000	SFRH1-1000-□[16]
15	100–1,000	SFRH1-1500-□[16]
20	100–1,000	SFRH1-2000-□[16]
25	100–1,000	SFRH1-2500-□[16]
30	100–1,000	**SFRH1-3000-□[16]**
35	100–1,000	**SFRH1-3500-□[16]**
40	100–1,000	**SFRH1-4000-□[16]**
45	100–1,000	**SFRH1-4500-□[16]**
50	100–1,000	**SFRH1-5000-□[16]**
55	100–1,000	SFRH1-5500-□[16]
60	100–1,000	SFRH1-6000-□[16]
65	100–1,000	SFRH1-6500-□[16]
80	100–1,000	SFRH1-8000-□[16]
100	100–1,000	SFRH1-10000-□[16]

For extreme ambient conditions – iglidur® C500

Order key for round bars

Type	Dimensions [mm]
SF R C500	- 30 00 - 500

Bar stock	Round	iglidur® material	Outer Ø	Inner Ø	Length[16]

[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Ø	Lengths[16]	Part No.
10	100–1,000	SFRC500-1000-□[16]
15	100–1,000	**SFRC500-1500-□[16]**
20	100–1,000	**SFRC500-2000-□[16]**
25	100–1,000	SFRC500-2500-□[16]
30	100–1,000	**SFRC500-3000-□[16]**
35	100–1,000	SFRC500-3500-□[16]
40	100–1,000	SFRC500-4000-□[16]
45	100–1,000	SFRC500-4500-□[16]
50	100–1,000	**SFRC500-5000-□[16]**
55	100–1,000	SFRC500-5500-□[16]
60	100–1,000	**SFRC500-6000-□[16]**
65	100–1,000	SFRC500-6500-□[16]
80	100–1,000	SFRC500-8000-□[16]
100	100–1,000	SFRC500-10000-□[16]

Available from stock
Produced to special order

iglidur® round bars | Product range

The food all-rounder, FDA-compliant and compliant with EC directive 10/2011 – iglidur® A181

Order key for round bars

Type	Dimensions [mm]
SF R A181	- 30 00 - 500

Bar stock	Round	iglidur® material	Outer Ø	Inner Ø	Length[16]

[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Ø	Lengths[16]	Part No.
10	100–1,000	SFRA181-1000-□[16]
15	100–1,000	SFRA181-1500-□[16]
20	100–1,000	**SFRA181-2000-□[16]**
25	100–1,000	**SFRA181-2500-□[16]**
30	100–1,000	**SFRA181-3000-□[16]**
35	100–1,000	**SFRA181-3500-□[16]**
40	100–1,000	**SFRA181-4000-□[16]**
45	100–1,000	**SFRA181-4500-□[16]**
50	100–1,000	**SFRA181-5000-□[16]**
55	100–1,000	SFRA181-5500-□[16]
60	100–1,000	SFRA181-6000-□[16]
65	100–1,000	SFRA181-6500-□[16]
80	100–1,000	SFRA181-8000-□[16]
100	100–1,000	SFRA181-10000-□[16]

The FDA-compliant endurance runner at high temperatures – iglidur® A350

Order key for round bars

Type	Dimensions [mm]
SF R A350	- 30 00 - 500

Bar stock	Round	iglidur® material	Outer Ø	Inner Ø	Length[16]

[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Ø	Lengths[16]	Part No.
10	100–1,000	**SFRA350-1000-□[16]**
15	100–1,000	**SFRA350-1500-□[16]**
20	100–1,000	**SFRA350-2000-□[16]**
25	100–1,000	**SFRA350-2500-□[16]**
30	100–1,000	**SFRA350-3000-□[16]**
35	100–1,000	**SFRA350-3500-□[16]**
40	100–1,000	**SFRA350-4000-□[16]**
45	100–1,000	**SFRA350-4500-□[16]**
50	100–1,000	**SFRA350-5000-□[16]**
55	100–1,000	**SFRA350-5500-□[16]**
60	100–1,000	**SFRA350-6000-□[16]**
65	100–1,000	**SFRA350-6500-□[16]**
80	100–1,000	**SFRA350-8000-□[16]**
100	100–1,000	SFRA350-10000-□[16]

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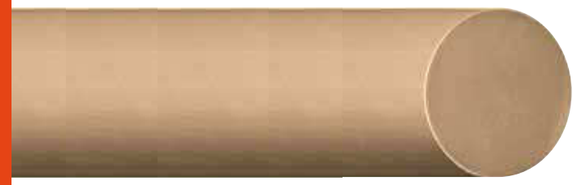
iglidur® round bars | Product range

The media and temperature specialist in the food sector – iglidur® A500



Order key for round bars

Type	Dimensions [mm]
SF R A500	- 30 00 - 500

Bar stock	Round	iglidur® material	Outer Ø	Inner Ø	Length[16]

[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Ø	Lengths[16]	Part No.
10	100–1,000	SFRA500-1000-□ [16]
15	100–1,000	SFRA500-1500-□ [16]
20	100–1,000	**SFRA500-2000-□ [16]**
25	100–1,000	SFRA500-2500-□ [16]
30	100–1,000	**SFRA500-3000-□ [16]**
35	100–1,000	SFRA500-3500-□ [16]
40	100–1,000	**SFRA500-4000-□ [16]**

Ø	Lengths[16]	Part No.
45	100–1,000	SFRA500-4500-□ [16]
50	100–1,000	**SFRA500-5000-□ [16]**
55	100–1,000	SFRA500-5500-□ [16]
60	100–1,000	SFRA500-6000-□ [16]
65	100–1,000	SFRA500-6500-□ [16]
80	100–1,000	SFRA500-8000-□ [16]
100	100–1,000	SFRA500-10000-□ [16]

The food all-rounder – iglidur® A180

Order key for round bars

Type	Dimensions [mm]
SF R A180	- 30 00 - 500

Bar stock	Round	iglidur® material	Outer Ø	Inner Ø	Length[16]

[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Ø	Lengths[16]	Part No.
10	100–1,000	**SFRA180-1000-□ [16]**
15	100–1,000	SFRA180-1500-□ [16]
20	100–1,000	**SFRA180-2000-□ [16]**
25	100–1,000	SFRA180-2500-□ [16]
30	100–1,000	**SFRA180-3000-□ [16]**
35	100–1,000	SFRA180-3500-□ [16]
40	100–1,000	**SFRA180-4000-□ [16]**

Ø	Lengths[16]	Part No.
45	100–1,000	SFRA180-4500-□ [16]
50	100–1,000	**SFRA180-5000-□ [16]**
55	100–1,000	SFRA180-5500-□ [16]
60	100–1,000	**SFRA180-6000-□ [16]**
65	100–1,000	SFRA180-6500-□ [16]
80	100–1,000	**SFRA180-8000-□ [16]**
100	100–1,000	**SFRA180-10000-□ [16]**

Available from stock
Produced to special order

iglidur® round bars | Product range

"Food" bearing with high media resistance up to +90 °C – iglidur® A160

Order key for round bars

Type	Dimensions [mm]
SF R A160	- 30 00 - 500

Bar stock	Round	iglidur® material	Outer Ø	Inner Ø	Length[16]

[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Ø	Lengths[16]	Part No.
10	100–1,000	SFRA160-1000-□ [16]
15	100–1,000	**SFRA160-1500-□ [16]**
20	100–1,000	**SFRA160-2000-□ [16]**
25	100–1,000	**SFRA160-2500-□ [16]**
30	100–1,000	**SFRA160-3000-□ [16]**
35	100–1,000	**SFRA160-3500-□ [16]**
40	100–1,000	**SFRA160-4000-□ [16]**

Ø	Lengths[16]	Part No.
45	100–1,000	**SFRA160-4500-□ [16]**
50	100–1,000	**SFRA160-5000-□ [16]**
55	100–1,000	SFRA160-5500-□ [16]
60	100–1,000	SFRA160-6000-□ [16]
65	100–1,000	SFRA160-6500-□ [16]
80	100–1,000	SFRA160-8000-□ [16]
100	100–1,000	SFRA160-10000-□ [16]

For contact with drinking water – iglidur® UW160

Order key for round bars

Type	Dimensions [mm]
SF R UW160-30	00 - 500

Bar stock	Round	iglidur® material	Outer Ø	Inner Ø	Length[16]

[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Ø	Lengths[16]	Part No.
10	100–1,000	SFRUW160-1000-□ [16]
15	100–1,000	SFRUW160-1500-□ [16]
20	100–1,000	SFRUW160-2000-□ [16]
25	100–1,000	SFRUW160-2500-□ [16]
30	100–1,000	**SFRUW160-3000-□ [16]**
35	100–1,000	SFRUW160-3500-□ [16]
40	100–1,000	SFRUW160-4000-□ [16]

Ø	Lengths[16]	Part No.
45	100–1,000	SFRUW160-4500-□ [16]
50	100–1,000	SFRUW160-5000-□ [16]
55	100–1,000	SFRUW160-5500-□ [16]
60	100–1,000	SFRUW160-6000-□ [16]
65	100–1,000	SFRUW160-6500-□ [16]
80	100–1,000	SFRUW160-8000-□ [16]
100	100–1,000	SFRUW160-10000-□ [16]

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iglidur® round bars | Product range

For the tobacco industry – iglidur® T220

Order key for round bars

Type			Dimensions [mm]		
SF	R	T220	30	00	500
Bar stock	Round	iglidur® material	Outer Ø	Inner Ø	Length[16]

[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Ø	Lengths[16]	Part No.
10	100–1,000	SFRT220-1000-□[16]
15	100–1,000	SFRT220-1500-□[16]
20	100–1,000	SFRT220-2000-□[16]
25	100–1,000	SFRT220-2500-□[16]
30	100–1,000	**SFRT220-3000-□[16]**
35	100–1,000	SFRT220-3500-□[16]
40	100–1,000	**SFRT220-4000-□[16]**

Ø	Lengths[16]	Part No.
45	100–1,000	SFRT220-4500-□[16]
50	100–1,000	**SFRT220-5000-□[16]**
55	100–1,000	SFRT220-5500-□[16]
60	100–1,000	**SFRT220-6000-□[16]**
65	100–1,000	SFRT220-6500-□[16]
80	100–1,000	SFRT220-8000-□[16]
100	100–1,000	SFRT220-10000-□[16]

Used to prevent electro-static charges – iglidur® F2

Order key for round bars

Type			Dimensions [mm]		
SF	R	F2	30	00	500
Bar stock	Round	iglidur® material	Outer Ø	Inner Ø	Length[16]

[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Ø	Lengths[16]	Part No.
10	100–1,000	SFRF2-1000-□[16]
15	100–1,000	SFRF2-1500-□[16]
20	100–1,000	SFRF2-2000-□[16]
25	100–1,000	SFRF2-2500-□[16]
30	100–1,000	**SFRF2-3000-□[16]**
35	100–1,000	SFRF2-3500-□[16]
40	100–1,000	SFRF2-4000-□[16]

Ø	Lengths[16]	Part No.
45	100–1,000	SFRF2-4500-□[16]
50	100–1,000	SFRF2-5000-□[16]
55	100–1,000	SFRF2-5500-□[16]
60	100–1,000	SFRF2-6000-□[16]
65	100–1,000	SFRF2-6500-□[16]
80	100–1,000	SFRF2-8000-□[16]
100	100–1,000	SFRF2-10000-□[16]

Available from stock
Produced to special order

iglidur® round bars | Product range

Versatile and cost-effective – iglidur® J2

Order key for round bars

Type			Dimensions [mm]		
SF	R	J2	30	00	500
Bar stock	Round	iglidur® material	Outer Ø	Inner Ø	Length[16]

[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Ø	Lengths[16]	Part No.
10	100–1,000	SFRJ2-1000-□[16]
15	100–1,000	SFRJ2-1500-□[16]
20	100–1,000	SFRJ2-2000-□[16]
25	100–1,000	SFRJ2-2500-□[16]
30	100–1,000	**SFRJ2-3000-□[16]**
35	100–1,000	SFRJ2-3500-□[16]
40	100–1,000	SFRJ2-4000-□[16]

Ø	Lengths[16]	Part No.
45	100–1,000	SFRJ2-4500-□[16]
50	100–1,000	SFRJ2-5000-□[16]
55	100–1,000	SFRJ2-5500-□[16]
60	100–1,000	SFRJ2-6000-□[16]
65	100–1,000	SFRJ2-6500-□[16]
80	100–1,000	SFRJ2-8000-□[16]
100	100–1,000	SFRJ2-10000-□[16]

All-rounder suitable for steam sterilisation – iglidur® HSD350

Order key for round bars

Type			Dimensions [mm]		
SF	R	HSD350	30	00	500
Bar stock	Round	iglidur® material	Outer Ø	Inner Ø	Length[16]

[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Ø	Lengths[16]	Part No.
10	100–1,000	SFRHSD350-1000-□[16]
15	100–1,000	SFRHSD350-1500-□[16]
20	100–1,000	SFRHSD350-2000-□[16]
25	100–1,000	SFRHSD350-2500-□[16]
30	100–1,000	**SFRHSD350-3000-□[16]**
35	100–1,000	SFRHSD350-3500-□[16]
40	100–1,000	SFRHSD350-4000-□[16]

Ø	Lengths[16]	Part No.
45	100–1,000	SFRHSD350-4500-□[16]
50	100–1,000	SFRHSD350-5000-□[16]
55	100–1,000	SFRHSD350-5500-□[16]
60	100–1,000	SFRHSD350-6000-□[16]
65	100–1,000	SFRHSD350-6500-□[16]
80	100–1,000	SFRHSD350-8000-□[16]
100	100–1,000	SFRHSD350-10000-□[16]

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

Flame-retardant, according to DIN EN 45545 – iglidur® RW370

Order key for round bars

Type			Dimensions [mm]		
SF	R	RW370-	30	00	-500
Bar stock	Round	iglidur® material	Outer Ø	Inner Ø	Length[16]

[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Ø	Lengths[16]	Part No.
10	100–1,000	SFRRW370-1000-□[16]
15	100–1,000	SFRRW370-1500-□[16]
20	100–1,000	SFRRW370-2000-□[16]
25	100–1,000	SFRRW370-2500-□[16]
30	100–1,000	**SFRRW370-3000-□[16]**
35	100–1,000	SFRRW370-3500-□[16]
40	100–1,000	SFRRW370-4000-□[16]

Ø	Lengths[16]	Part No.
45	100–1,000	SFRRW370-4500-□[16]
50	100–1,000	SFRRW370-5000-□[16]
55	100–1,000	SFRRW370-5500-□[16]
60	100–1,000	SFRRW370-6000-□[16]
65	100–1,000	SFRRW370-6500-□[16]
80	100–1,000	SFRRW370-8000-□[16]
100	100–1,000	SFRRW370-10000-□[16]

The versatile endurance runner – iglidur® J

Order key for tubes

Type			Dimensions [mm]		
SF	T	J-	30	00	-500
Bar stock	Tube	iglidur® material	Outer Ø	Inner Ø	Length[16]

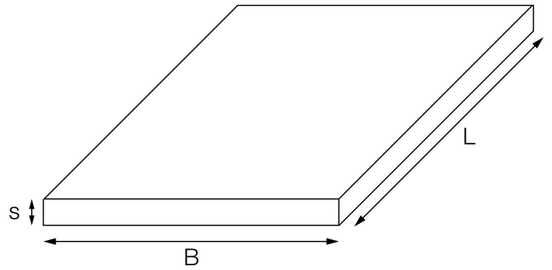
[16] Length in mm from 100 to 1,000, graduated in 100 mm steps

Dimensions [mm]

Inner Ø	Inner diameter tolerance	Outer Ø	Outer diameter tolerance	Length[16]	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 / –2.0	100–1,000	**SFTJ-12570**
100	–2.0 / –6.5	150	+1.5 / +4.5	100–1,000	**SFTJ-150100**

Available from stock
Produced to special order

iglidur® plates | Product range



Order key for plates

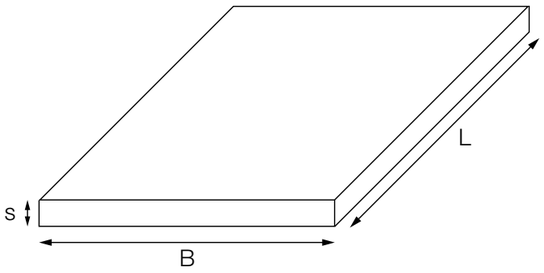
Type			Dimensions [mm]		
SF	P	J	-02	-500	-240
Bar stock	Plate	iglidur® material	Material thickness	Length	Width

The versatile endurance runner – iglidur® J

Dimensions (L x W)	Material thickness s	Part No.
500x240	2 / 4 / 6	**SFPJ-□-500-240**
500x300	10 / 15 / 20 / 25 / 30 / 40	**SFPJ-□-500-300**
500x500	2 / 4 / 6	**SFPJ-□-500-500**
500x610	10 / 15 / 20 / 25 / 30 / 40	**SFPJ-□-500-610**
1,000x500	2 / 4 / 6	**SFPJ-□-1000-500**
1,000x610	10 / 15 / 20 / 25 / 30 / 40	**SFPJ-□-1000-610**
1,000x1,000	2 / 4 / 6	**SFPJ-□-1000-1000**

Tolerances	
Material thickness	Tolerance
2	+0.000 +0.200
4	+0.000 +0.250
6	+0.000 +0.300
10	+0.200 +0.900
15–40	+0.300 +1,500

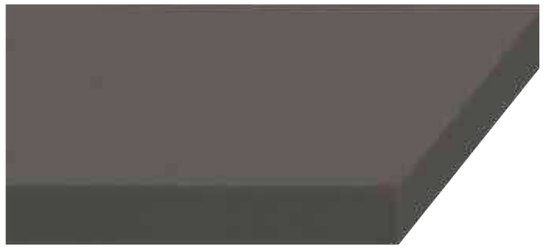
iglidur® plates | Product range



Order key for plates

Type			Dimensions [mm]		
SF	P	J	-02	-500	-240
Bar stock	Plate	iglidur® material	Material thickness	Length	Width

Extreme 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
2	+0.000 +0.200
4	+0.000 +0.250
6	+0.000 +0.300
10	+0.200 +0.900
15–40	+0.300 +1.500

The FDA-compliant endurance runner at higher temperatures– iglidur® A350

Dimensions (L x W)	Material thickness s	Part No.
500x300	15 / 20 / 25	**SFPA350-☐-500-300**
500x610	15 / 20 / 25	**SFPA350-☐-500-610**
1,000x610	15 / 20 / 25	**SFPA350-☐-1000-610**

Tolerances	
Material thickness	Tolerance
2	+0.000 +0.200
4	+0.000 +0.250
6	+0.000 +0.300
10	+0.200 +0.900
15–40	+0.300 +1.500

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 material	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.	100–500 m/min.	80–500 m/min.	20–200 m/min.
Feed rate	–	0.05–0.5 mm/rpm	0.02–0.3 mm/rpm	

Table: General processing information

Tempering

Interim tempering reduces inner tensions caused by the machining process and thus creates narrower tolerances. In the end, the optimum values depend on the volume of material machined, the machining parameters and the geometric design of the end product, and have to be determined by tests.

As the plastic has low thermal conductivity, the plastic bar stock has to be heated slowly.

Where possible, the entire bar stock should be evenly heated. It is therefore important to achieve the tempering temperatures indicated below over a period of 3 – 4 hours by slowly heating the part from room temperature. Depending on the thickness of the part, this tempering temperature should be maintained for 1 hour per cm of wall thickness.

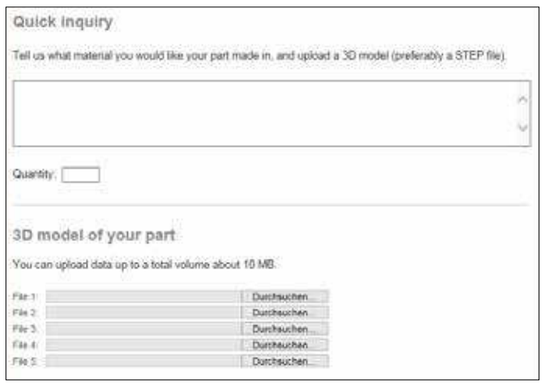
If the machined part cools too quickly, tension can once again be induced in it. This is avoided by using a slow cooling process with a maximum reduction of +20 °C per hour until room temperature is reached.

Tempering temperature	iglidur® materials
+120 °C	A180, A181, J, J200, J2, J3, J4, R, UW160
+130 °C	J260
+130 °C	M250
+180 °C	F2, P210, T220, W300
+200 °C	A350, H1, J350
+220 °C	X[111)]

[111)] In the case of iglidur® X, the +220 °C per cm of wall thickness must be maintained for 2 hours.

iglidur® bar stock | Online tools & speedicut

Special parts fast, machined to drawing



Find & compare semi-finished products

This material finder helps you find the right iglidur® material for your project with a few clicks!

▶ **www.igus.eu/barstock-finder**

Calculate lifetime of bar stock components

Quick calculation of the service life of your iglidur® bar stock component.

▶ **www.igus.eu/barstock-expert**

speedicut – special parts fast, machined to drawing

speedicut is the machining process of iglidur® bar stocks produced to your 3D model and specifications.

Before submitting an online request for the production of your desired geometric design, you can use the material finder or the service life calculation program to filter materials and find the right one for your application. If you would like our assistance in choosing the right material with the optimum friction and wear values, please do not hesitate to contact us.

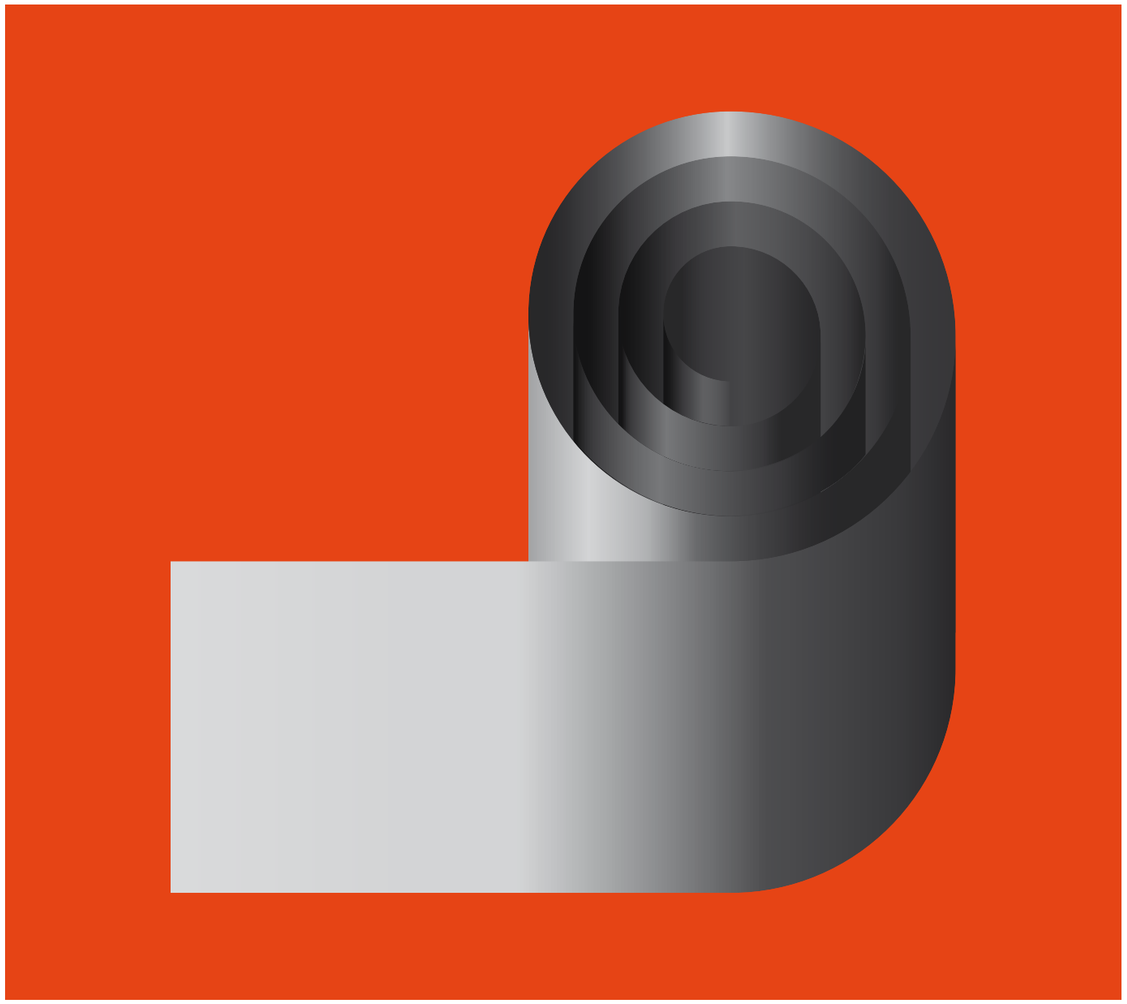
We divide machining into two categories:

- Production of all custom geometric designs in the form of plain bearings, sliding elements and pads in line with your drawing and with the standard tolerances for plastics.
- Production of iglidur® plain bearings and thrust washers in custom dimensions in line with igus® standard tolerances. You do not need to create a drawing for this type of processing.

Speed: if required, we are able to produce small quantities within a matter of days. If you need prototypes for your urgent projects extremely quickly, please contact us.

Depending on their complexity and precision, our rapid delivery service can supply parts with a delivery time of as little as 3 days.

▶ **www.igus.eu/speedicut**



iglidur® Tribo-Tape

Choice of 4 materials

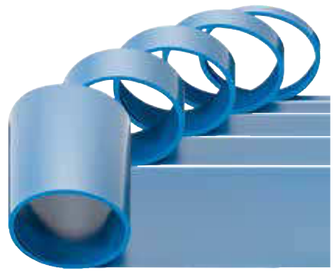
Lubrication and maintenance-free

Wear resistant

Easy to cut

Self-adhesive

Standard width from stock



Versatile: iglidur® Tribo-Tape

Material: iglidur® A160

- Low coefficients of friction
- Wear resistance: ++
- Up to +90 °C

▶ **Page 616**

Material: iglidur® B160

- For use in visible areas
- Wear resistance: ++++
- Up to +90 °C

▶ **Page 617**

Material: iglidur® W160

- Antibacterial
- Wear resistance: +++
- Up to +90 °C

▶ **Page 618**

Material: iglidur® V400

- High media resistance
- Wear resistance: +++++
- Up to +200 °C

▶ **Page 619**

iglidur® off the reel: 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 0.5 mm thick (0.62 mm 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 width from stock
- Individual desired widths in continuous range from 20–500 mm

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 desired product in desired width from our iglidur® Tribo-Tape. Talk to us!
▶ **www.igus.eu/custom-tape**

Material properties table

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	white	
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.1	0.1	0.1	0.1	DIN 53495
Max. water 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 volume 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 01: Material properties table

Chemical resistance (at +20 °C)

Chemical resistance	iglidur® A160	iglidur® B160	iglidur® W160	iglidur® V400
Alcohol	+	+	+	+
Hydrocarbons	+	+	+	+
Greases, oils without additives	+	+	+	+
Fuels	+ to 0	+ to 0	+ to 0	+
Diluted acids	+	+	+	+
Strong acids	+	+	+	+
Diluted alkalines	+	+	+	+
Strong alkalines	+	+	+	–
Radiation Resistance [Gy] up to	1 · 10^5	1 · 10^5	1 · 10^5	2 · 10^4

+ resistant 0 conditionally resistant – not resistant
All data given at room temperature [+20 °C]

iglidur® Tribo-Tape | Product range

FDA-compliant – iglidur® A160

Order key

Type	Dimensions [mm]	Options
A160 - T - 005 - 0050 - G		

iglidur® material | Tape | Thickness | Width | Adhesive back

G = with adhesive back

The low-cost iglidur® A160 tape has very high wear resistance compared to similar, thin plastic films.

Tribo-Tape made from iglidur® A160 with adhesive back
Temperature –40 °C up to +90 °C

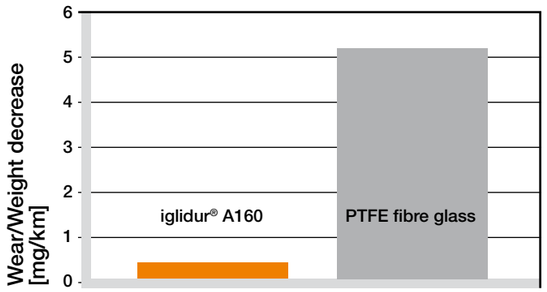
Dimensions [mm]

Thickness	Thickness tolerance	Width	Width tolerance	Part No.	Part No. with adhesive back[112)]
0.5	±0.1	20	±0.5	**A160-T-005-0020**	**A160-T-005-0020-G**
0.5	±0.1	50	±0.5	**A160-T-005-0050**	**A160-T-005-0050-G**
0.5	±0.1	100	±0.5	**A160-T-005-0100**	**A160-T-005-0100-G**
0.5	±0.1	500	±1.0	**A160-T-005-0500**	**A160-T-005-0500-G**
1.0	±0.1	500	±1.0	**A160-T-010-0500**	**A160-T-010-0500-G**

[112)] **Adhesive thickness tolerance: ±0.015 mm**

Individual widths upon request
Continuously from 20–500 mm

Cutting service
Design Tribo-Tape flexibly
▶ www.igus.eu/custom-tape



Linear wear against stainless steel pin (1.4305)
F = 10 N, v = 9,600 mm/min

iglidur® A160 material complies with EC Directive 10/2011 EC 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 = with adhesive back

Especially where the iglidur® Tribo-Tape is a visible part, the new black option now offers even more creative freedom. Furthermore the wear resistance compared to variants made of iglidur® A160 has been improved once again.

Tribo-Tape made from iglidur® B160 with adhesive back
Temperature –40 °C up to +90 °C

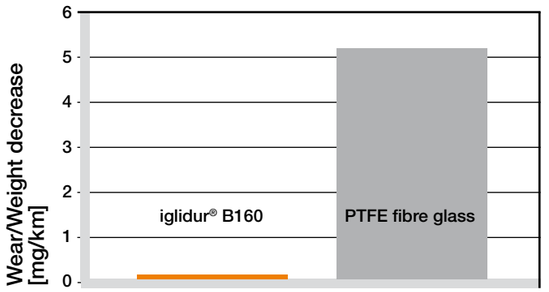
Dimensions [mm]

Thickness	Thickness tolerance	Width	Width tolerance	Part No.	Part No. with adhesive back[112)]
0.5	±0.1	20	±0.5	**B160-T-005-0020**	**B160-T-005-0020-G**
0.5	±0.1	50	±0.5	**B160-T-005-0050**	**B160-T-005-0050-G**
0.5	±0.1	100	±0.5	**B160-T-005-0100**	**B160-T-005-0100-G**
0.5	±0.1	500	±1.0	**B160-T-005-0500**	**B160-T-005-0500-G**

[112)] **Adhesive thickness tolerance: ±0.015 mm**

Individual widths upon request
Continuously from 20–500 mm

Cutting service
Design Tribo-Tape flexibly
▶ www.igus.eu/custom-tape



Linear wear against stainless steel pin (1.4305)
F = 10 N, v = 9,600 mm/min

iglidur® Tribo-Tape | Product range

Antibacterial – iglidur® W160

Order key

Type	Dimensions [mm]	Options
W160 - T - 005 - 0020 - G		

iglidur® material | Tape | Thickness | Width | Adhesive back

G = with adhesive back

With its white colour and UV-stabilised additives, the new iglidur® W160 Tribo-Tape offers even more design freedom as a visual part. The antibacterial feature also offers advantages in areas like medical technology, where hygiene is critical.

Tribo-Tape made from iglidur® W160 with adhesive back
Temperature –40 °C up to +90 °C

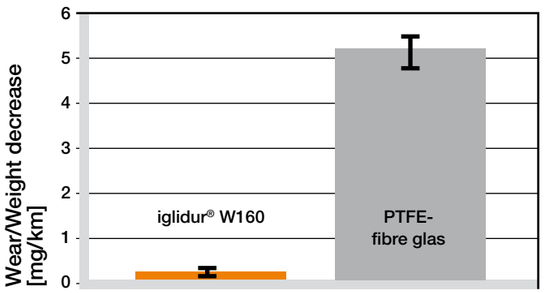
Dimensions [mm]

Thickness	Thickness tolerance	Width	Width tolerance	Part No.	Part No. with adhesive back[112)]
0.5	±0.1	20	±0.5	**W160-T-005-0020**	**W160-T-005-0020-G**
0.5	±0.1	50	±0.5	**W160-T-005-0050**	**W160-T-005-0050-G**
0.5	±0.1	100	±0.5	**W160-T-005-0100**	**W160-T-005-0100-G**
0.5	±0.1	500	±1.0	**W160-T-005-0500**	**W160-T-005-0500-G**

[112)] **Adhesive thickness tolerance: ±0.015 mm**

Individual widths upon request
Continuously from 20–500 mm

Cutting service
Design Tribo-Tape flexibly
▶ **www.igus.eu/custom-tape**



Linear wear against stainless steel pin (1.4305)
F = 10 N, v= 9600 mm/min

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 = with adhesive back

iglidur® V400 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 made from iglidur® V400 with adhesive back
Temperature –40 °C up to +200 °C

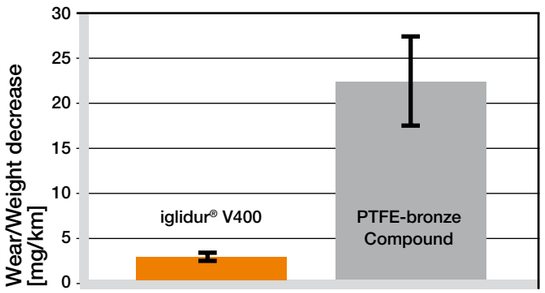
Dimensions [mm]

Thickness	Thickness tolerance	Width	Width tolerance	Part No.	Part No. with adhesive back[112)]
0.5	±0.1	120	±1.0	**V400-T-005-0120**	**V400-T-005-0120-G**

[112)] **Adhesive thickness tolerance: ±0.015 mm**

Individual widths upon request
Continuously up to 120 mm

Cutting service
Design Tribo-Tape flexibly
▶ **www.igus.eu/custom-tape**



Linear wear against stainless steel pin (1.4305)
F = 35 N, v = 0.5 m/min

iglidur®

Tribo 3D printing

...plastics

iglidur® tribo 3D printing | Advantages

Print your own real iglidur® products

Material: iglidur® I150

- Can be processed without heated print bed
- Abrasion resistance: +++

▶ **Page 624**

Material: iglidur® I180

- Nozzle temperature +260 °C, white
- Abrasion resistance: ++++

▶ **Page 625**

Material: iglidur® I180-BL

- Nozzle temperature +250 °C, black
- Abrasion resistance: ++++

▶ **Page 625**

Material: iglidur® J260

- Nozzle temperature +260 °C up to 270 °C
- Abrasion resistance: +++++

▶ **Page 626**

Material: iglidur® I170

- Nozzle temperature +240 °C up to 260 °C
- Abrasion resistance: ++++

▶ **Page 627**

Material: iglidur® I3

- Powder for laser sintering
- Abrasion resistance: ++++

▶ **Page 628**

Tribo-Filaments and Tribo-SLS plastics

The materials that have been specially developed for 3D printing are up to 50 times more abrasion resistant than conventional 3D print materials. This provides a new degree of freedom when designing sliding components subject to wear: custom parts and prototypes from a 3D printer with a tested service life.

- Wear resistant
- Can be processed by commercially available 3D printers

Typical application areas

- Prototype constructions
- Small batches
- Construction tests

Available from stock
Detailed information about delivery time online.

Depending on material:

iglidur® I150:	–30 °C up to	+65 °C
iglidur® I180:	–40 °C up to	+80 °C
iglidur® I180-BL:	–40 °C up to	+80 °C
iglidur® J260:	–100 °C up to	+120 °C
iglidur® I170:	–40 °C up to	+75 °C
iglidur® I3:	–40 °C up to	+80 °C

5 Tribo-Filaments
1.75 mm and 3 mm

More information about 3D printing
▶ www.igus.eu/tribo-printing

Detailed information about 3D printing processing instructions
▶ www.igus.eu/tribofilament

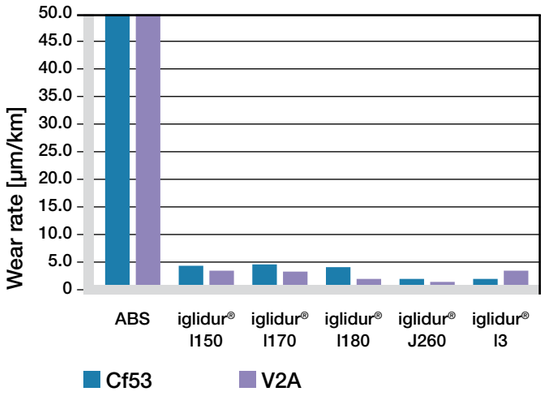
iglidur® tribo 3D printing | Technical data

Material properties table

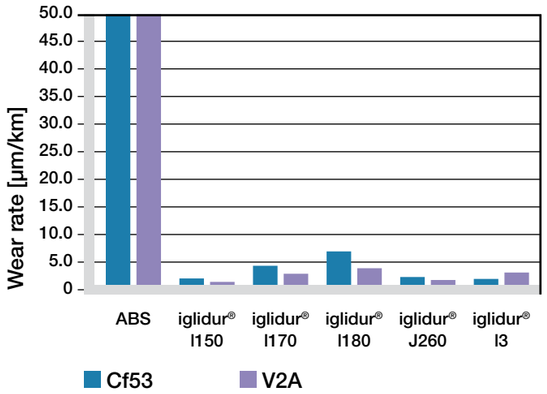
General properties	Unit	iglidur® I150	iglidur® I180	iglidur® I180-BL	iglidur® J260	iglidur® I170	iglidur® I3
Density	g/cm³	1.30	1.21	1.21	1.35	1.21	1.05
Colour		white	white	black	Yellow	Yellow	Yellow
Max. moisture absorption at +23 °C/50 % r.h.	% weight	0.3	0.3	0.3	0.2	0.5	0.8
Max. water absorption	% weight	0.7	0.9	0.9	0.4	1.6	1.9
Mechanical properties							
Flexural modulus	MPa	1,700	1,000	1,000	1,000	1,000	1,400
Flexural strength at +20 °C	MPa	54/41[130)]	46/33[130)]	46/33[130)]	41/13[130)]	33/17[130)]	68/61[130)]
Shore D Hardness		62	66	66	66	64	70
Physical and thermal properties							
Max. long-term application temperature	°C	+65	+80	+80	+120	+75	+80
Max. short-term application temperature	°C	+75	+90	+90	+140	+85	+140
Min. application temperature	°C	–30	–40	–40	–100	–40	–40
Electrical properties							
Specific volume resistance	Ωcm	> 10^{13}	> 10^{12}	> 10^{12}	> 10^{12}	> 10^{12}	> 10^{12}
Surface resistance	Ω	> 10^{12}	> 10^{11}	> 10^{11}	> 10^{10}	> 10^{11}	> 10^{11}

Table 01: Material properties table

[130)] Printed flat/upright



Wear, pivoting: p = 1 MPa; v = 0.01 m/s



Wear, short stroke p = 1 MPa; v = 0.1 m/s

Wear

The iglidur® Tribo-Filaments are up to 50 times more wear resistant than conventional materials (PLA/ABS) for 3D printing. The highest level of Tribo-Filament wear resistance is achieved with iglidur® J260 and iglidur® I170 and is very similar to that of injection-moulded bearings under low to medium loads. Even the wear rate of iglidur® I180 components is far superior to that of conventional 3D printing materials. They are also easier to process than iglidur® J260 and iglidur® I170.

Filament thickness

The iglidur® Tribo-Filaments are available with 1.75 mm and 3 mm thickness. The 3 mm filaments can be used without problems in 3D printers that need a 2.85 mm filament.

iglidur® Tribo-Filament | Product range

iglidur® I150

Order key

Tribo-filament	Diameter	Weight
I150-PF-	0175	-0250

iglidur® material	Tribo-filament	Ø [mm · 100]	Spool weight [g]

iglidur® I150 – Makes printing even easier

- Very good resistance to wear with a pv value of up to 0.2 Nm/s
- Good mechanical properties
- Can be processed even without a heated printing plate
- Recommended printing surface: igus® adhesive film or "BuildTak"

Dimensions [mm]

Filament diameter	Outer Ø spool	Inner Ø spool	Spool width	Weight [g]	Part No.
1.75	–	–	–	25	**I150-PF-0175-0025**[114)]
1.75	205	55	55	250	**I150-PF-0175-0250**
3.00	–	–	–	25	**I150-PF-0300-0025**[114)]
3.00	205	55	55	250	**I150-PF-0300-0250**

[114)] This product is a test kit, it is not wound onto a spool

Part No. adhesive film for print bed
PF-01-0203-0203 (203 x 203 mm)
PF-01-0254-0228 (254 x 228 mm)

Thanks to the film available from igus® for the print bed, there is very good adhesion between the iglidur® Tribo-Filament and the print bed.

Complete processing instructions online ▶ www.igus.eu/tribofilament

More information about 3D printing ▶ www.igus.eu/tribo-printing

iglidur® Tribo-Filament | Product range

iglidur® tribo 3D printing

iglidur® I180

iglidur® I180-BL

Order key

Tribo-filament	Diameter	Weight
I180-PF-	0175	-0250

iglidur® material	Tribo-filament	Ø [mm · 100]	Spool weight [g]

For tight material feed radii

iglidur® I180 – Flexible

- Nozzle temperature: +250 °C up to +260 °C
- Print bed temperature: +90 °C up to +110 °C
- Excellent wear behaviour
- Good mechanical properties

iglidur® I180-BL – For visible parts

- Nozzle temperature: +250 °C up to +260 °C
- Print bed temperature: +90 °C up to +110 °C
- Excellent wear behaviour
- Good mechanical properties

Dimensions [mm]

Filament diameter	Outer Ø spool	Inner Ø spool	Spool width	Weight [g]	Part No.
1.75	–	–	–	25	**I180-PF-0175-0025**[114)]
1.75	205	55	55	250	**I180-PF-0175-0250**
1.75	205	55	67	750	**I180-PF-0175-0750**
3.00	–	–	–	25	**I180-PF-0300-0025**[114)]
3.00	205	55	55	250	**I180-PF-0300-0250**
3.00	205	55	67	750	**I180-PF-0300-0750**
1.75	–	–	–	25	**I180-BL-PF-0175-0025**[114)]
1.75	205	55	55	250	**I180-BL-PF-0175-0250**
3.00	–	–	–	25	**I180-BL-PF-0300-0025**[114)]
3.00	205	55	55	250	**I180-BL-PF-0300-0250**

[114)] This product is a test kit, it is not wound onto a spool

Processing instructions

iglidur® Tribo-Filaments 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® Tribo-Filament and the print bed. iglidur® I150 is the only Tribo-Filament that can be processed on 3D printers, that are not equipped with a heated print bed.

- Good ventilation should be provided during processing
- When heated above +300 °C, hazardous fumes are produced

Spool

iglidur® Tribo-Filaments weighing 250 g are wound onto a spool with an outer diameter of 105 mm, a width of 55 mm. It has an inner diameter of 55 mm. Test kits with 25 g filament are also available; this is not wound onto a spool.

3x more material

With the bigger spool size, each spool contains 750 g filament (300 m filament in 1.75 mm diameter or 90 m filament in 3 mm diameter).

iglidur® Tribo-Filament | Product range

iglidur® J260

Order key

Tribo-filament	Diameter	Weight
J260 - PF -	0175	- 0250
iglidur® material	Ø [mm · 100]	Spool weight [g]
Tribo-filament		

iglidur® J260 – Ideal for plastic shafts

- Nozzle temperature: +260 °C up to +270 °C
- Print bed temperature: +100 °C up to +130 °C
- Higher application temperature: +120 °C
- Higher processing demands
- Optimised wear resistance

Dimensions [mm]

Filament diameter	Outer Ø spool	Inner Ø spool	Spool width	Weight [g]	Part No.
1.75	–	–	–	25	**J260-PF-0175-0025**[114]
1.75	205	55	55	250	**J260-PF-0175-0250**
3.00	–	–	–	25	**J260-PF-0300-0025**[114]
3.00	205	55	55	250	**J260-PF-0300-0250**

[114] This product is a test kit, it is not wound onto a spool

Part No. adhesive film for print bed
PF-01-0203-0203 (203 x 203 mm)
PF-01-0254-0228 (254 x 228 mm)

Thanks to the film available from igus® for the print bed, there is very good adhesion between the iglidur® Tribo-Filament and the print bed.

Complete processing instructions online ▶ www.igus.eu/tribofilament

More information about 3D printing ▶ www.igus.eu/tribo-printing

iglidur® tribo 3D printing

iglidur® Tribo-Filament | Product range

iglidur® I170

Order key

Tribo-filament	Diameter	Weight
I170 - PF -	0175	- 0250
iglidur® material	Ø [mm · 100]	Spool weight [g]
Tribo-filament		

Large material feed radii

iglidur® I170 – Highest wear resistance

- Nozzle temperature: +240 °C up to +260 °C
- Print bed temperature: +90 °C up to +110 °C
- Higher processing demands
- Optimised wear resistance

Dimensions [mm]

Filament diameter	Outer Ø spool	Inner Ø spool	Spool width	Weight [g]	Part No.
1.75	–	–	–	25	**I170-PF-0175-0025**[114]
1.75	205	55	55	250	**I170-PF-0175-0250**
1.75	205	55	67	750	**I170-PF-0175-0750**
3.00	–	–	–	25	**I170-PF-0300-0025**[114]
3.00	205	55	55	250	**I170-PF-0300-0250**
3.00	205	55	67	750	**I170-PF-0300-0750**

[114] This product is a test kit, it is not wound onto a spool

Processing instructions

iglidur® Tribo-Filaments 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® Tribo-Filament and the print bed. Further recommended printing surfaces are "Buildtak" or "Blue-Tape" with glue applied "Pritt Power" stick.

- Good ventilation should be provided during processing
- When heated above +300 °C, hazardous fumes are produced

Spool

iglidur® Tribo-Filaments weighing 250 g are wound onto a spool with an outer diameter of 105 mm, a width of 55 mm. It has an inner diameter of 55 mm. Test kits with 25 g filament are also available; this is not wound onto a spool.

3x more material

With the bigger spool size, each spool contains 750 g filament (300 m filament in 1.75 mm diameter or 90 m filament in 3 mm diameter).

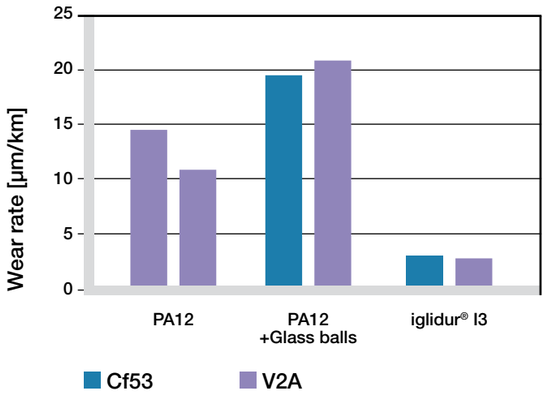
iglidur® SLS | Laser sintering

iglidur® for 3D printing by laser sintering

At least 3-times more wear-resistant: iglidur® I3 for 3D printing by SLS

The material iglidur® I3-PL, specially developed for laser sintering, proved to have an abrasion resistance at least 3 times higher than conventional materials for laser sintering during tribological tests in the igus® test laboratory. This means the degree of design freedom for wear resistant parts has been further increased.

- Lubrication and maintenance-free
- Wear resistant
- Good mechanical properties
- Detail accuracy with exact surfaces
- Processing similar to commercially available SLS materials



Rotating wear: p=1 MPa; v=0.3 m/s

Part No. raw material (10 kg)
I3-PL-10000

Delivery time
5 days

Do you have any current projects that you would like to investigate using our SLS printing service/ products? Then please contact us.

iglidur® tribo 3D printing | 3D printing service

3D printing service: order online, install and use

iglidur®
tribo
3D printing

Wear resistant parts with the 3D printing service

We print your individual component, using lubrication-free, abrasion-resistant iglidur® plastics. Easy to order and quick to install: everything you need from prototypes to complex special parts.

1. Load your STL file onto the igus® configurator using "drag & drop".

2. Check your component in the 360° view and specify the units of measurement.

3. Choose the Tribo-Filament and the required quantity.

The precision of the printed parts in the case of the iglidur® Tribo-Filaments is ±0.2 mm (up to an edge length of 50 mm, above this ±0.4 %). In the case of parts made using the laser sintering process (iglidur® I3), the precision is ±0.1 mm (up to an edge length of 50 mm, above this ±0.2 %).

The space used for processing the iglidur® Tribo-Filaments measures 135x145x200 mm. In the case of laser sintering of iglidur® I3, the space used measures 200x200x300 mm. The following applies to both processes: larger parts may have to be made of several sections.
▶ www.igus.eu/3dprintservice

igubal®

Polymer spherical bearings

...plastics

Application examples: igubal®

Improve technology ... Reduce cost.

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 practise show the proven employment from igubal® bearings in a wide variety of applications.

LIMELIGHT BV
(Stadium panelling)
igubal® spherical bearings of dimensional series K are used in the main bearing assembly of every individual slat due to their freedom from maintenance, Corrosion resistant and atmospheric resistance.

Since these slats can be swivelled, this allows the air flow inside the stadium to be regulated.
Product: igubal® spherical bearings KGLM-08

RESEARCH INSTITUTE
Mirror adjustment of the telescope is performed virtually free of backlash with igubal® rod ends. Magnetic influences can be avoided.
(Max-Planck institute for physics and astrophysics)

SPECIAL-PURPOSE VEHICLE
Resistant to dirt and maintenance-free: the rugged clevises and spherical bearings never give in on the special-purpose municipal vehicles.
(Multicar Spezialfahrzeuge GmbH)

PACKAGING MACHINE
Long service life and, at the same time, food-safe design have been implemented in this application with igubal® rod ends.
(Leeb GmbH)

CARAVAN STEP
Rugged, resistant to dirt and vibration-dampening igubal® rod ends withstand the loads even in worst case conditions.
(Hymer AG)

TEXTILE INDUSTRY
Concentricity errors and jolts are compensated by means of spherical clevises in the support of the thread guide unit more efficiently than the alternative metal product.
(Sahm GmbH & Co. KG)

CHOCOLATE DECORATION SYSTEM
Decorations without lubricants by using the maintenance-free igubal® rod ends make any sweet most relishable.
(Wolf Spezialmaschinen GmbH)

igubal® selection | Product overview

igubal® rod end bearings with female thread

Classic Design:

KBRM/KBLM

Inch

▶ Page 646

Integrated lock nut for easy assembly:

KBRM-CL/KBLM-CL

▶ Page 648

Selectable ball material:

KCRM/KCLM

▶ Page 650

For small space requirement, selectable ball material:

EBRM/EBLM

Inch

▶ Page 656

igubal® rod end bearings with female thread

For temperatures up to +200 °C:

EBRM-HT/EBLM-HT

▶ Page 660

igubal® rod end bearings with male thread

Classic design:

KARM/KALM

Inch

▶ Page 652

For higher forces:

KARM-CL/KALM-CL

▶ Page 654

igubal® rod end bearings with male thread

For small space requirement, selectable ball material:

EARM/EALM

▶ Page 658

For temperatures up to +200 °C:

EARM-HT/EALM-HT

▶ Page 661

igubal® angled and in-line joints

Angled ball and socket joint:

WGRM/WGLM

▶ Page 662

Angled ball and socket joint, low-cost:

WGRM-LC/WGLM-LC

▶ Page 663

igubal® angled and in-line joints

Easy assembly and disassembly:

WGRM-DE/WGLM-DE

▶ Page 664

In-line ball and socket joint:

AGRM/AGLM

▶ Page 665

In-line ball and socket joint, low-cost:

AGRM-LC/AGLM-LC

▶ Page 666

igubal® clevis joint combinations

Clevis joints with clevis pin and circlip:

GERMK/GELMK

▶ Page 674

Clevis joints with spring-loaded fixing clip:

GERMF/GELMF

▶ Page 675

igubal® clevis joint combinations ...

Clevis joint-combination:

GERMKE/GELMKE

▶ Page 676

Clevis joint with spring-loaded pin:

GERMFE/GELMFE

▶ Page 677

... and single components

Clevis joint, high rigidity:

GERM/GELM

▶ Page 672

Spring-loaded fixing clip:

GEFM

▶ Page 678

Clevis pin and circlip:

GBM/GSR

▶ Page 679

igubal® pillow block bearings for high radial loads

Easy to disassemble, split housing and ball:

KSTM-GT

▶ Page 688

Easy installation:

ESTM

▶ Page 689

For quick assembly and low moisture absorption:

ESTM-GT-GT

▶ Page 690

Split housing with parallel bore:

ESTM-GT

▶ Page 691

For diameters up to 150 mm:

ESTM-GT150

▶ Page 692

Extremely light, compact design:

ESTM-SL

▶ Page 693

New

Split pillow block bearing for square profiles:

ESQM

▶ Page 694

igubal® pillow block bearings – standard design

Compensation of misalignments errors:

KSTM

Inch

▶ Page 686

igubal® flange bearings for supporting the centre or ends of shafts

Easy to fit:

EFOM

▶ Page 700

For higher radial load:

EFSM

▶ Page 702

Universal and quick assembly, female thread:

GFSM-IG

▶ Page 704

Universal and quick assembly, male thread:

GFSM-AG

▶ Page 705

igubal® selection | Product overview

igubal® flange bearings for supporting the centre or ends of shafts

High static load, split housing:
KFSM-GT
▶ Page 706

For temperatures up to +200 °C:
EFOM-HT
▶ Page 707

For temperatures up to +200 °C:
EFSM-HT
▶ Page 708

igubal® spherical bearings

Cost-effective, selectable ball material:
EGLM-LC
▶ Page 718

igubal® double joint bearings

Solid polymer:
EGZM
▶ Page 723

Selectable materials, individual dimensions:
WDGM
▶ Page 724

Removable, selectable materials:
WDGM-DE
▶ Page 725

Selectable materials, individual dimensions:
KDGM
▶ Page 726

igubal® spherical bearings

For temperatures up to +250 °C:
XKM/XEM
▶ Page 737

Low moisture absorption:
JKM/JEM
▶ Page 738

Cost-effective and low moisture absorption:
J4KM/J4EM
▶ Page 740

For underwater applications:
UWEM
▶ Page 741

igubal® accessories

Ball stud, female thread:
GZRM-IG
▶ Page 746

Ball stud, male thread:
GZRM-AG
▶ Page 747

Adapter bolt with circlip:
PKRM/PKLM
▶ Page 748

Adapter for dimensional series E:
AD-01-ESTM
▶ Page 749

igubal® spherical bearings

Standard, easy to fit:
KGLM
▶ Page 714

Easy to fit, cost-effective:
KGLM-LC
▶ Page 715

For extremely narrow installation space:
KGLM-SL
▶ Page 716

Space saving:
EGLM
▶ Page 717

igubal® self-aligning clip bearings

Simply snap into sheet metal:
ECLM
▶ Page 719

For high axial and radial loads:
ECLM-HD
▶ Page 720

Tolerance compensation, selectable ball material:
EGFM-T
▶ Page 721

Simply snap into sheet metal, can be assembled on both sides: ZCLM
▶ Page 722

igubal® spherical thrust bearings

To prevent edge loads:
SAM
▶ Page 730

igubal® spherical balls – ...

Standard, with low wear:
WKM/WEM
▶ Page 735

Cost effective, good wear resistance:
RKM/REM
▶ Page 736

igubal® spherical balls – different material options

Clearance-free:
J4VEM
▶ Page 742

Detectable:
RN248KM/RN248EM
▶ Page 743

For metallic bearing housings:
JEM/A180EM/A350EM
▶ Page 744

igubal® detectable

Rod ends
▶ Page 754

Clevis joints
▶ Page 756

Spherical balls
▶ Page 715

igubal® self-aligning maintenance-free spherical bearings made from high-performance polymers

igubal® puts a complete system of self-aligning bearings – spherical bearings, pillow block spherical bearings and rod ends – 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: vibration dampening, ability to operate in liquids or chemicals, and resistance to dirt and dust, which can impede the performance of greased metal components. The weight of the igubal® parts is approx. 80 % lighter than comparable steel parts. Additional savings are cost-savings at the time of purchasing and during operation and on installation space due to their small dimensions. igubal® bearings are also extremely cost competitive due to the elimination of maintenance and installation costs. igubal® self-aligning bearings are made of a polymer housing for high strengths and a spherical ball made of maintenance free self-lubricating high performance polymers.

The benefits of igubal®

- Exceptionally cost-effective
- Maintenance-free
- Lubrication-free
- Resistant to dust and dirt
- Corrosion-resistant
- Can be used in liquid media
- Vibration dampening
- Inner race set in housings with very low clearance
- Dirt can become embedded for shaft protection
- Lightweight
- Temperature resistance up to +200 °C, depending on the material

igubal® spherical balls

In standard spherical bearings, the spherical ball is made from iglidur® W300 material, which is known for its low coefficient of friction while running dry and extremely low tendency to stickslip. This is especially important for low loads and very slow movements.

▶ More information about iglidur® W300, **page 153**

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 iglidur® materials.

Further to the standard material iglidur® W300, spherical balls are now available in 7 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 under water applications
- iglidur® RN248 as detectable material
- iglidur® J4V with clearance free spherical balls

▶ Spherical balls, **page 769**

Do not hesitate to ask for technical support concerning the choice of the material.

igubal® housing

There are three housing materials available, each of them offering particular advantages:

- 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

▶ Material table, **page 1433**

application areas

igubal® bearing elements can be used without problems even in harsh environments. In moist or wet environments, the bearings are corrosion resistant, and resistant to weak acids and alkalines. The application temperatures range is from –30 °C to +200 °C. Resistance to dirt and dust is outstanding.
Seals are not necessary, even in extremely contaminated conditions. This is true for fine dust as well as coarse dirt.

Detectable

Made of the special materials RN248 for the spherical ball and RN246 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.

▶ igubal® detectable programme, **from page 751**
▶ Material table, **page 1435**

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.

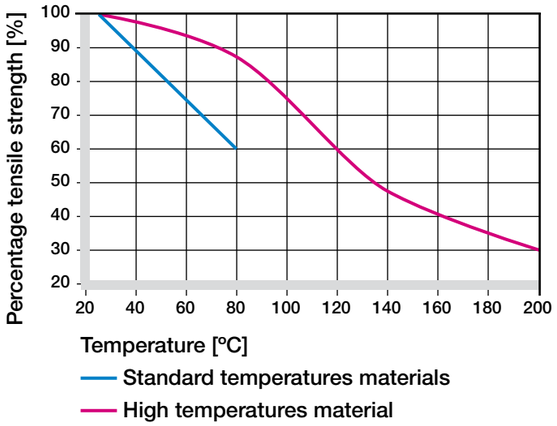


Diagram 01: Trends indicate the effect of temperature on the max. load capacity of igubal® bearings.

Coefficients of sliding friction and speed

One important advantage of igubal® spherical bearings is that the shaft rotates in the spherical ball, made of iglidur® W300.
In metallic rod ends, rotary motion takes place between the race and the spherical bearing. High speeds can be achieved with igubal® bearings.
igubal® bearings are used in such a way that the angular movements of the spherical bearings take place on the outer diameter. The advantage therefore lies in the polymer vs. steel relationship. Polymer produces lower friction and permits high speeds, even when running dry.

Application temperatures

igubal® standard bearing elements can be used in temperatures from –30 °C to +80 °C. The high temperatures (HT) versions can be used at continuous temperatures up to +200 °C. Diagram 01 trends indicate the effect of temperature on the load capacity of igubal® bearings with standard and high temperature materials.

igubal®	Application temperature	
	Standard	HT-Version
Minimum	–30 °C	–40 °C
Max. long-term	+80 °C	+200 °C
Max. short-term	+120 °C	+240 °C

Table 01: Application temperatures of igubal® bearings

Thread description	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® bearings

iglidur® W300 and the housing made from igumid G are resistant to weak alkalines, 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® is approximately 1.3 % weight in standard atmosphere. The saturation limit 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 1424**

igubal® | Technical data

Medium	Resistance	
	Standard	HT-Version
Alcohol	+ 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® bearings
+ 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 resistant of igubal® bearings gives them special value for outside applications
igubal® bearings are permanently resistant to UV radiation. A small change in colour (dark coloration) of the spherical ball due to UV radiation does not affect the mechanical, electrical or thermal properties.

Tolerances

igubal® spherical bearings can be used with different tolerances according to each application. They are designed with a large clearance in the standard product, which enables a secure operation even under high peripheral speeds. The bore of the inner race is produced to a standard tolerance range E10. Shafts should also meet recommended tolerances h6 and h9. The tolerances are provided in the table below. Please contact us in case you require lower or other bearing tolerances.

Basic size [mm]	Tolerance	
	Gauge falls	Gauge hangs
up to 3	x,01	x,05
> 3 to 6	x,02	x,07
> 6 to 10	x,02	x,08
> 10 to 18	x,03	x,10
> 18 to 30	x,04	x,12
> 30 to 50	x,05	x,15

Table 04: Tolerances of inner diameter (spherical balls)

Check the Inner Diameter

Inadequate test equipment; plug gauge too short

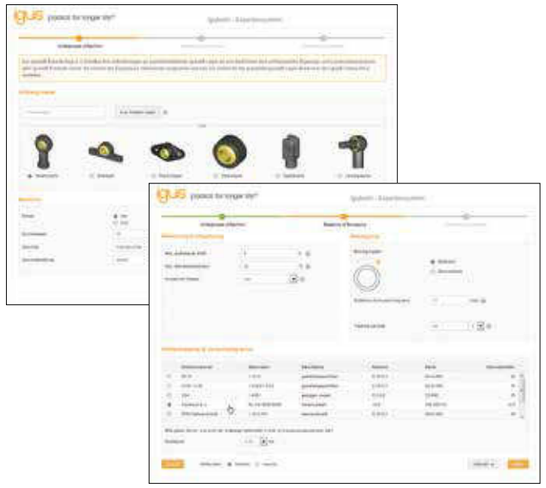
Wrong test equipment; caliper

Tolerance test with plug gauge

Service life calculation

The igubal® expert allows to check the suitability of igubal® bearings for every application. You can choose from different igubal® bearings and specific load (radial, axial or static, cyclic and dynamic).
The expert system will calculate from these input data:

- The bearing wear,
- The theoretical service life.



igubal® expert system
▶ www.igus.eu/igubal-expert
igubal® product finder
▶ www.igus.eu/igubal-finder

igubal® rod end bearings

Maintenance-free, dry operation

High rigidity

High strength

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 bases. Depending on the version (HT) the operation temperature is from –40 °C up to +200 °C. Rod ends are also resistant to dirt and dust, they are also available as detectable version.

Maintenance-free, dry-running

High rigidity

High strength

Compensation of misalignment errors

Compensation of edge loads

Lightweight

When to use it?

- 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 resistant is required
- In combination with pneumatic cylinders and gas struts
- If chemical resistance is required
- If high stiffness is required
- If they should be detectable

When not to use it?

- If temperatures are higher than +80 °C
  ▶ HT version, page 661
- If rotation speeds higher than 0.5 m/s are required
- If really high tensile and axial forces occur
- With a hydraulic cylinder
- If dimensions above 30 mm are required

max. +200 °C
min. –40 °C
(depending on material: Standard –30 °C up to +80 °C; HT –40 °C up to +200 °C)

18 types
Ø 2–30 mm

Available from stock
Detailed information about delivery time online.

Imperial dimensions available
▶ From page 1337

Block pricing online
No minimum order value. From batch size 1.

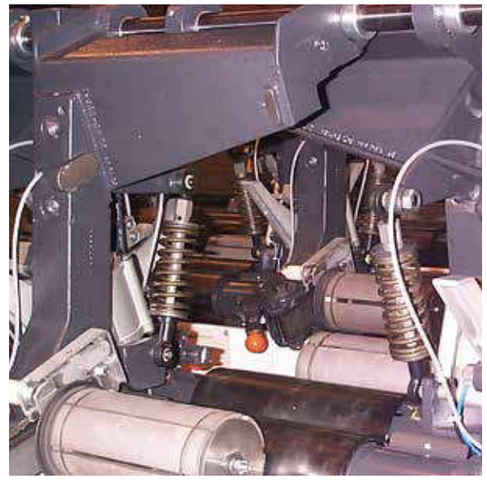
Online product finder
▶ www.igus.eu/igubal-finder

igubal® rod ends | Application examples

Typical sectors of industry and application areas
● Bicycle manufacturing ● Plant design
● Packaging ● Offshore etc.

Improve technology and reduce costs – 110 exciting examples online
▶ www.igus.eu/igubal-applications

▶ www.igus.eu/special-bikes



▶ www.igus.eu/textil

▶ www.igus-packaging.eu

▶ www.igus.eu/offshore

igubal® rod ends | Technical data

Advantages

- Maintenance-free, dry operation
- High rigidity
- Very high tensile strength for varying loads
- Compensation of misalignments
- Compensation of edge loads
- Resistant to dirt, dust and lint
- Corrosion and chemical resistant
- High vibration-dampening
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional series K and E, according to standard DIN ISO 12240
- Available with a stainless steel sleeve to take a higher torque

Product range

igubal® rod ends are available in the dimensional series K and E for shaft diameters of 2 to 30 mm according to standard DIN ISO 12240

- Form A – with male thread and
- Form B – with female thread

Stainless steel sleeve

The dimensional series K and partially E are available in imperial dimensions, as well as a special version containing a stainless steel sleeve in the inner race. This allows a significantly higher torque than for the standard polymer race. Please ask us for more dimensions.

Loads

igubal® rod ends handle high loads at normal room temperatures, have excellent dampening properties and weigh only a fifth of traditional metallic rod ends. 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**

Coefficients of sliding friction and speed

Rotary movements of a mounted shaft take place directly in the spherical portion, made from iglidur® W300. In metallic rod ends, rotary motion takes place between the race and the spherical bearing. Taking the radial loads into account, maximum surface speeds up to 0.5 m/s rotating can be attained.

The maintenance-free igubal® rod end bearings permit linear and oscillating movements of the shaft.

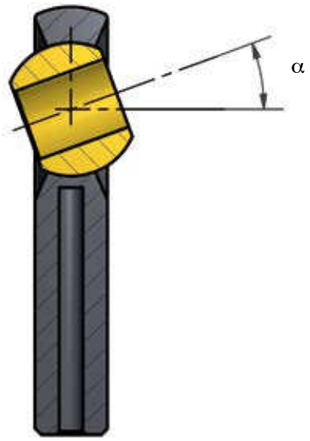
Temperatures

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 (Series E, types A and B).

Tolerances

igubal® rod ends can be used at different tolerances depending on the individual application. They are designed with a large clearance in the standard product, which enables a secure operation even under high peripheral speeds. The bore of the inner race is produced to a standard tolerance range E10. Shafts should also meet recommended tolerances h6 and h9. 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

Classic design

Dimensional series K

KBRM
KBLM

▶ **From page 646**

Easy assembly

Dimensional series K

KBRM CL
KBLM CL

▶ **Page 648**

Selectable ball material

Dimensional series K

KCRM
KCLM

▶ **Page 650**

Space saving

Dimensional series E

EBRM
EBLM

▶ **Page 656**

For temperatures up to +200 °C

Dimensional series E

EBRM HT
EBLM HT

▶ **Page 660**

Classic design, imperial dimensions

Dimensional series K

KBRI
KBLI

▶ **Page 1398**

For small space requirement, imperial dimensions

Dimensional series E

EBRI
EBLI

▶ **Page 1396**

igubal® rod end bearings with male thread

Classic design

Dimensional series K

KARM
KALM

▶ **From page 652**

For higher forces

Dimensional series K

KARM CL

▶ **Page 654**

Space saving

Dimensional series E

EARM
EALM

▶ **From page 658**

For temperatures up to +200 °C

Dimensional series E

EARM HT
EALM HT

▶ **Page 661**

Classic design, imperial dimensions

Dimensional series K

KARI
KALI

▶ **From page 1397**

igubal® angled and in-line joints

Angled ball and socket joint

WGRM
WGLM

▶ **Page 662**

Angled ball and socket joint, low-cost

WGRM-LC
WGLM-LC

▶ **Page 663**

Easy assembly and disassembly

WGRM-DE
WGLM-DE

▶ **Page 664**

In-line ball and socket joint

AGRM
AGLM

▶ **Page 665**

In-line ball and socket joint, low-cost

AGRM-LC
AGLM-LC

▶ **Page 666**

igubal® accessories for rod ends

Clevis joints with clevis pin and circlip

Dimensional series E

GERMK
GELMK

▶ **Page 674**

Clevis joints with spring-loaded fixing clip

Dimensional series E

GERMF
GELMF

▶ **Page 675**

Detectable clevis joints

▶ **From page 751**

igubal® rod ends | Product range

Rod ends with female thread: KBRM and KBLM

Standard design

Metal sleeve version (MH)

- Maintenance-free, dry operation
- High rigidity
- Very high tensile strength for varying loads
- Compensation of misalignments
- Compensation of edge loads
- Resistant to dirt, dust and lint
- Corrosion and chemical resistant
- High vibration-dampening
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional series K according to standard DIN ISO 12240
- Available with a stainless steel sleeve to take a higher torque
- Adapter bolt with circlip available
  ▶ Accessories, **page 748**

Inch **Imperial dimensions available**
▶ **Page 1398**

Technical data

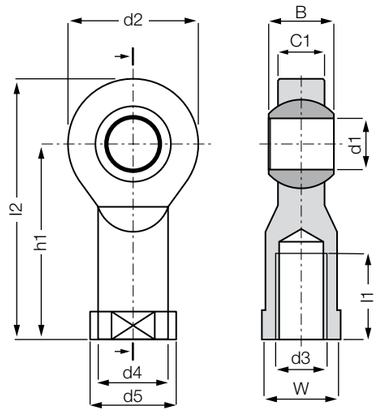
Part No.		Max. static tensile strength		Max. static radial load		Min. thread depth	Max. torque strength	Max. torque through ball		Weight
		Short-term	Long-term	Short-term	Long-term	Thread	Inner threading	without stainless steel sleeve	with stainless steel sleeve	
Right-hand thread	Left-hand thread	[N]	[N]	[N]	[N]	[mm]	[Nm]	[Nm]	[Nm]	[g]
KBRM-02	**KBLM-02**	200	100	50	25	4	0.30	1	–	0.4
KBRM-03	**KBLM-03**	800	400	100	50	5	0.50	2	4	2.7
KBRM-05 M4	**KBLM-05 M4**	1,000	500	250	125	7	0.75	5	12	3.5
KBRM-05	**KBLM-05**	1,000	500	250	125	7	1.00	5	12	3.4
KBRM-06	**KBLM-06**	1,400	700	400	200	8	1.50	10	15	4.7
KBRM-08	**KBLM-08**	2,100	1,050	700	350	11	5.00	12	40	8.6
KBRM-10	**KBLM-10**	3,100	1,550	800	400	13	15.00	20	50	14.6
KBRM-10 F	**KBLM-10 F**	3,100	1,550	800	400	13	6.00	20	50	14.6
KBRM-12[129)]	**KBLM-12**	3,600	1,800	900	450	15	20.00	30	70	22.0
KBRM-12 F	**KBLM-12 F**	3,600	1,800	900	450	15	15.00	30	70	22.0
KBRM-14	**KBLM-14**	4,000	2,000	1,000	500	17	25.00	35	75	30.9
KBRM-16	**KBLM-16**	4,200	2,100	1,300	650	19	30.00	40	110	39.6
KBRM-16 F	**KBLM-16 F**	4,200	2,100	1,300	650	19	27.50	40	110	39.6
KBRM-18	**KBLM-18**	4,600	2,300	1,600	800	21	45.00	45	150	55.0
KBRM-20	**KBLM-20**	5,400	2,700	2,100	1,050	22	60.00	55	200	73.5
KBRM-20 M20	**KBLM-20 M20**	5,400	2,700	2,100	1,050	22	60.00	55	200	73.5
KBRM-22	**KBLM-22**	7,000	3,500	2,200	1,100	25	75.00	60	–	94.8
KBRM-25	**KBLM-25**	8,500	4,250	2,300	1,150	28	120.00	60	–	119.8
KBRM-30	**KBLM-30**	10,500	5,250	2,500	1,250	34	135.00	60	–	177.0
KBRM-30 M27x2	**KBLM-30 M27x2**	10,500	5,250	2,500	1,250	34	135.00	60	–	189.6

[129)] **Hexagonal body. Drawing as for KCRM, page 651**

igubal® rod ends

igubal® rod ends | Product range

Rod ends with female thread: KBRM and KBLM



Order key

Type				Size [mm]	Options
K	B	...	M	- 02	

- Dimensional series K
- Housing (female thread)
- Thread
- Metric
- Inner Ø

Thread
L = left-hand thread
R = right-hand thread

Material:
Housing: **igumid G** ▶ **Page 1433**
Spherical ball: **iglidur® W300** ▶ **Page 153**

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					
Right-hand thread	Left-hand thread													
KBRM-02	**KBLM-02**	02	9	M02	4.0	4.6	3.0	4	–	12.5	6	17	SW04	30°
KBRM-03	**KBLM-03**	03	13	M03	6.5	8.0	4.5	6	6.2	18.5	8	25	SW06	30°
KBRM-05 M4	**KBLM-05 M4**	05	18	M04	9.0	12.0	6.0	8	8.2	27	10	36	SW09	30°
KBRM-05	**KBLM-05**	05	18	M05	9.0	12.0	6.0	8	8.2	27	10	36	SW09	30°
KBRM-06	**KBLM-06**	06	20	M06	10.0	13.0	7.0	9	9.2	30	12	40	SW11	29°
KBRM-08	**KBLM-08**	08	24	M08	13.0	16.0	9.0	12	12.2	36	16	48	SW14	25°
KBRM-10	**KBLM-10**	10	30	M10	15.0	19.0	10.5	14	14.2	43	20	58	SW17	25°
KBRM-10 F	**KBLM-10 F**	10	30	M10x1.25	15.0	19.0	10.5	14	14.2	43	20	58	SW17	25°
KBRM-12	**KBLM-12**	12	34	M12	–	–	12.0	16	16.2	50	25	67	SW17	25°
KBRM-12 F	**KBLM-12 F**	12	34	M12x1.25	18.0	22.0	12.0	16	16.2	50	22	67	SW19	25°
KBRM-14	**KBLM-14**	14	38	M14	20.0	25.0	13.5	19	19.2	57	25	76	SW22	25°
KBRM-16	**KBLM-16**	16	42	M16	22.0	27.0	15.0	21	21.2	64	28	85	SW22	23°
KBRM-16 F	**KBLM-16 F**	16	42	M16x1.5	22.0	27.0	15.0	21	21.2	64	28	85	SW22	23°
KBRM-18	**KBLM-18**	18	46	M18x1.5	25.0	31.0	16.5	23	23.2	71	32	94	SW27	23°
KBRM-20	**KBLM-20**	20	50	M20x1.5	28.0	34.0	18.0	25	25.2	77	33	102	SW30	23°
KBRM-20 M20	**KBLM-20 M20**	20	50	M20x2.5	28.0	34.0	18.0	25	25.2	77	33	102	SW30	23°
KBRM-22	**KBLM-22**	22	56	M22x1.5	30.0	37.0	20.0	28	–	84	37	112	SW32	22°
KBRM-25	**KBLM-25**	25	60	M24x2.0	32.0	41.0	22.0	31	–	94	42	124	SW36	22°
KBRM-30	**KBLM-30**	30	70	M30x2.0	37.0	50.0	25.0	37	–	110	50	145	SW41	22°
KBRM-30 M27x2	**KBLM-30 M27x2**	30	70	M27x2.0	37.0	50.0	25.0	37	–	110	50	145	SW41	22°

Rod ends can be ordered in metric dimensions with stainless steel insert with the addition of MH after the part numbers listed here. Example: KRBM-10 **MH (Inner-Ø: 10 mm)**.

igubal® rod ends | Product range

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

- Available with a stainless steel sleeve to take a higher torque
- Dimensional series K according to standard DIN ISO 12240
- Adapter bolt with circlip available

▶ Accessories, **page 748**

Simple assembly due to the hexagonal body and the integrated lock nut.

Technical data

Part No.		Max. static tensile strength		Max. static axial force		Min. thread depth	Max. torque strength	Max. torque through ball		Weight
		Short-term	Long-term	Short-term	Long-term	Thread	Inner threading	without stainless steel sleeve	with stainless steel sleeve	
Right-hand thread	Left-hand thread	[N]	[N]	[N]	[N]	[mm]	[Nm]	[Nm]	[Nm]	[g]
KBRM-06 CL	**KBLM-06 CL**	1,400	700	300	150	8	0.75	10	15	4.5
KBRM-08 CL	**KBLM-08 CL**	2,100	1,050	500	250	11	2.0	12	40	8.6
KBRM-10 CL	**KBLM-10 CL**	3,100	1,550	800	400	13	3.0	20	50	14.1

Spherical ball materials to choose ▶ Page 731

RKM:
low-cost

JKM:
low moisture absorption

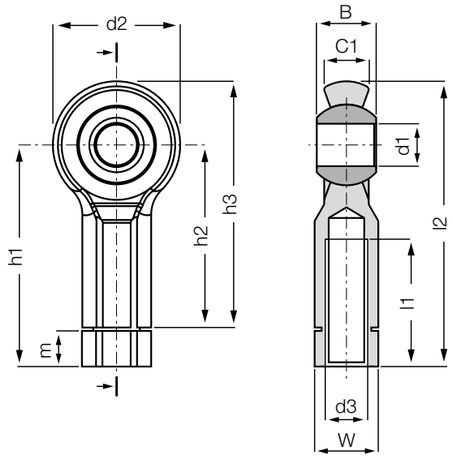
W300:
standard spherical ball with stainless steel sleeve

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



Order key

Type				Size [mm]	Version	Options
K	B	...	M -	06	CL	
Dimensional series K	Housing (female thread)	Thread	Metric	Inner Ø	2nd generation	Thread L = left-hand thread R = right-hand thread

Material:
Housing: **igumid G** ▶ **Page 1433**
Spherical ball: **iglidur® W300** ▶ **Page 153**
More spherical ball materials on request ▶ **Page 731**

Dimensions [mm]

Part No.		d1	d2	d3	W	B		C1	h3	h1	h2	l1	l2	m	Max. pivot angle
		E10				without stainless steel sleeve	with stainless steel sleeve								
Right-hand thread	Left-hand thread						+0.2								
KBRM-06 CL	**KBLM-06 CL**	06	20	M06	SW10	9	9.2	7	40	36.5	30	20	46.5	5.7	40°
KBRM-08 CL	**KBLM-08 CL**	08	24	M08	SW13	12	12.2	9	48	44.3	36	25	56.3	7.5	35°
KBRM-10 CL	**KBLM-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** insert with the addition of **MH** after the part numbers listed here. Example: KBRM-10 CL **MH (Inner-Ø: 10 mm**).
For another spherical bearing material than iglidur® W300, please add **J** or **R** to the part number. Example: KBRM-10 CL J.

Rod ends with female thread: KCRM and KCLM

- Smooth design has no dirt traps
- Spherical ball is clipped in
- Choice of iglidur® ball materials
- Compensation of misalignment
- Lightweight
- Corrosion resistant
- Available with a stainless steel sleeve to take a higher torque
- Dimensional series K according to standard DIN ISO 12240
- Adapter bolt with circlip available

▶ Accessories, **page 748**

Technical data

Part No.		Max. static tensile strength		Max. static axial force		Max. torque strength	Max. torque through balls		Weight
		Short-term	Long-term	Short-term	Long-term	Inner threading	without stainless steel sleeve	with stainless steel sleeve	
Right-hand thread	Left-hand thread	[N]	[N]	[N]	[N]	[Nm]	[Nm]	[Nm]	[g]
KCRM-05	**KCLM-05**	1,200	600	180	90	1.00	5	12	4.0
KCRM-06	**KCLM-06**	1,400	700	300	150	0.75	10	15	4.2
KCRM-08	**KCLM-08**	2,100	1,050	500	250	2.00	12	40	7.6
KCRM-10	**KCLM-10**	3,100	1,550	800	400	3.00	20	50	12.8
KCRM-10-F	**KCLM-10-F**	3,100	1,550	800	400	3.00	20	50	12.8
KCRM-12	**KCLM-12**	3,560	1,780	750	375	15.0	30	70	19.0
KCRM-12-F	**KCLM-12-F**	3,560	1,780	750	375	15.0	30	70	19.0
KCRM-16	**KCLM-16**	3,800	1,900	800	400	15.0	40	110	34.0
KCRM-16-F	**KCLM-16-F**	3,800	1,900	800	400	15.0	40	110	34.0
KCRM-20	**KCLM-20**	4,550	2,275	400	200	20.0	55	200	55.0
KCRM-20-M20	**KCLM-20-M20**	4,550	2,275	400	200	20.0	55	200	55.0

Spherical ball materials to choose ▶ Page 731

RKM:
low-cost

JKM:
low moisture absorption

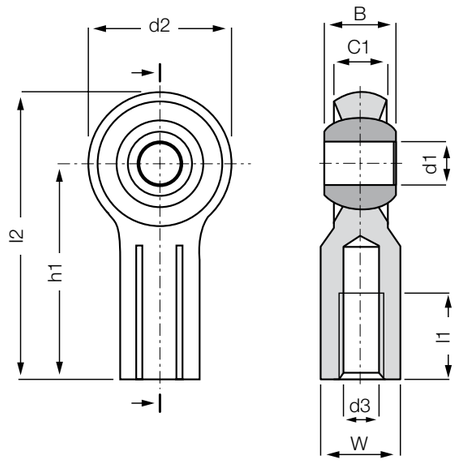
W300:
standard spherical ball with stainless steel sleeve

J4KM:
low-cost and low moisture absorption

igubal® rod ends

igubal® rod ends | Product range

Rod ends with female thread: KCRM and KCLM



Order key

Type				Size [mm]	Options
K	C	...	M-	06	
Dimensional series K	Housing (female thread)	Thread	Metric	Inner Ø	Thread L = left-hand thread R = right-hand thread

Material:
Housing: **igumid G** ▶ **Page 1433**
Spherical ball: **iglidur® W300** ▶ **Page 153**
More spherical ball materials on request
▶ **Page 731**

Dimensions [mm]

Part No.		d1	d2	d3	W	B		C1	h1	l1	l2	Max. pivot angle
						without stainless steel sleeve	with stainless steel sleeve +0.2					
Right-hand thread	Left-hand thread											
KCRM-05	**KCLM-05**	05	18	M5	SW9	8.0	8.2	6.0	27	12	36	43°
KCRM-06	**KCLM-06**	06	20	M06	SW10	9.0	9.2	7.0	30	13.5	40	40°
KCRM-08	**KCLM-08**	08	24	M08	SW13	12.0	12.2	9.0	36	17	48	35°
KCRM-10	**KCLM-10**	10	30	M10	SW15	14.0	14.2	10.5	43	22	58	35°
KCRM-10-F	**KCLM-10-F**	10	30	M10x1.25	SW15	14.0	14.2	10.5	43	22	58	35°
KCRM-12	**KCLM-12**	12	34	M12	SW17	16.0	16.2	12.0	50	25	67	35°
KCRM-12-F	**KCLM-12-F**	12	34	M12x1.25	SW17	16.0	16.2	12.0	50	25	67	35°
KCRM-16	**KCLM-16**	16	42	M16	SW20	21.0	21.2	15.0	64	30	85	35°
KCRM-16-F	**KCLM-16-F**	16	42	M16x1.5	SW20	21.0	21.2	15.0	64	30	85	35°
KCRM-20	**KCLM-20**	20	50	M20x1.5	SW24	25.0	25.2	18.0	77	35	102	35°
KCRM-20-M20	**KCLM-20-M20**	20	50	M20x2.5	SW24	25.0	25.2	18.0	77	35	102	35°

Rod ends can be ordered in metric dimensions **with stainless steel** insert with the addition of **MH** after the part numbers listed here. Example: KCRM-10 **MH (Inner-Ø: 10 mm)**.

igubal® rod ends | Product range

Rod ends with male thread: KARM and KALM

Standard design

Metal sleeve version (MH)

- Maintenance-free, dry operation
- High rigidity
- Very high tensile strength for varying loads
- Compensation of misalignments
- Compensation of edge loads
- Resistant to dirt, dust and lint
- Corrosion and chemical resistant
- High vibration-dampening
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional series K according to standard DIN ISO 12240
- Available with a stainless steel sleeve to take a higher torque
- Adapter bolt with circlip available

▶ Accessories, **page 748**

Inch **Imperial dimensions available**

▶ **Page 1397**

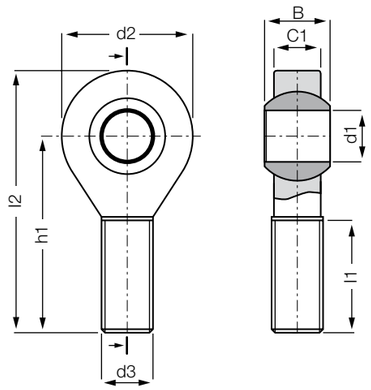
Technical data

Part No.		Max. static tensile strength		Max. static axial force		Min. thread depth	Max. torque strength	Max. torque through ball		Weight
		Short-term	Long-term	Short-term	Long-term			without stainless steel sleeve	with stainless steel sleeve	
Right-hand thread	Left-hand thread	[N]	[N]	[N]	[N]	Thread [mm]	Male thread [Nm]	[Nm]	[Nm]	[g]
KARM-05	**KALM-05**	800	400	80	40	13	0.4	5	12	2.7
KARM-06	**KALM-06**	1,000	500	100	50	15	0.5	10	15	3.9
KARM-08	**KALM-08**	1,700	850	200	100	18	2.0	12	40	7.1
KARM-10	**KALM-10**	2,500	1,250	300	150	20	5.0	20	50	12.5
KARM-10 F	**KALM-10 F**	2,500	1,250	300	150	20	3.0	20	50	12.5
KARM-12	**KALM-12**	2,700	1,350	400	200	22	6.0	30	70	18
KARM-12 F	**KALM-12 F**	2,700	1,350	400	200	22	6.0	30	70	18
KARM-14	**KALM-14**	3,400	1,700	700	350	25	12.0	35	75	25
KARM-16	**KALM-16**	3,900	1,950	800	400	26	17.0	40	110	34
KARM-16 F	**KALM-16 F**	3,900	1,950	800	400	26	17.0	40	110	34
KARM-18	**KALM-18**	4,200	2,100	1,000	500	29	20.0	45	150	45.9
KARM-20	**KALM-20**	6,000	3,000	1,300	650	32	25.0	55	200	58
KARM-20 M20	**KALM-20 M20**	6,000	3,000	1,300	650	32	25.0	55	200	58
KARM-22	**KALM-22**	7,200	3,600	1,500	750	34	25.0	60	–	86.2
KARM-25	**KALM-25**	7,500	3,750	1,900	950	39	45.0	65	–	99.1
KARM-30	**KALM-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 [mm]	Options
K	A	...	M-	05	
Dimensional series K	Housing (male thread)	Thread	Metric	Inner Ø	Thread L = left-hand thread R = right-hand thread

Material:
Housing: **igumid G** ▶ **Page 1433**
Spherical ball: **iglidur® W300** ▶ **Page 153**

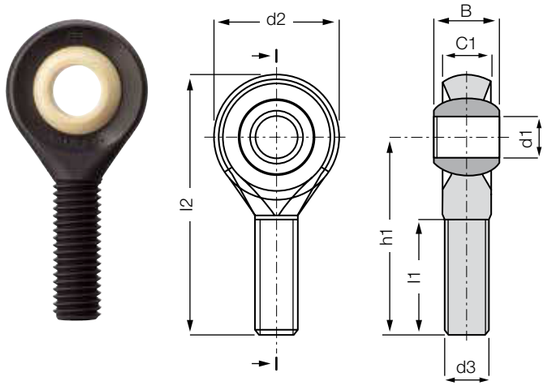
Dimensions [mm]

Part No.		d1	d2	d3	C1	B		h1	l1	l2	Max. pivot angle
		E10				without stainless steel sleeve	with stainless steel sleeve +0.2				
Right-hand thread	Left-hand thread										
KARM-05	**KALM-05**	05	18	M05	6.0	8	8.2	33	19	42	30°
KARM-06	**KALM-06**	06	20	M06	7.0	9	9.2	36	21	46	29°
KARM-08	**KALM-08**	08	24	M08	9.0	12	12.2	42	25	55	25°
KARM-10	**KALM-10**	10	30	M10	10.5	14	14.2	48	28	63	25°
KARM-10 F	**KALM-10 F**	10	30	M10x1.25	10.5	14	14.2	48	28	63	25°
KARM-12	**KALM-12**	12	34	M12	12.0	16	16.2	54	32	71	25°
KARM-12 F	**KALM-12 F**	12	34	M12x1.25	12.0	16	16.2	54	32	71	25°
KARM-14	**KALM-14**	14	38	M14	13.5	19	19.2	61	36	79	25°
KARM-16	**KALM-16**	16	42	M16	15.0	21	21.2	66	37	88	23°
KARM-16 F	**KALM-16 F**	16	42	M16x1.5	15.0	21	21.2	66	37	88	23°
KARM-18	**KALM-18**	18	46	M18x1.5	16.5	23	23.2	72	41	96	23°
KARM-20	**KALM-20**	20	50	M20x1.5	18.0	25	25.2	78	45	104	23°
KARM-20 M20	**KALM-20 M20**	20	50	M20x2.5	18.0	25	25.2	78	45	104	23°
KARM-22	**KALM-22**	22	56	M22x1.5	20.0	28	–	84	48	112	22°
KARM-25	**KALM-25**	25	61	M24x2.0	22.0	31	–	95	55	126	22°
KARM-30	**KALM-30**	30	71	M30x2.0	25.0	37	–	112	66	147	22°

Rod ends can be ordered in metric dimensions **with stainless steel** insert with the addition of **MH** after the part numbers listed here. Example: KARM-10 **MH (Inner-Ø: 10 mm**).

igubal® rod ends | Product range

Rod ends, male thread; 2nd generation: KARM CL



- Smooth design, no dirt traps
- Compensation of misalignment
- Lightweight
- Corrosion resistant
- Available with a stainless steel sleeve to take a higher torque
- Left-hand thread version KALM in preparation
- Dimensional series K according to standard DIN ISO 12240

Order key

Type				Size [mm]	Version
K	A	R	M-	06	CL
Dimensional series K	Housing (male thread)	Right-hand thread	Metric	Inner Ø	2nd generation

Material:
Housing: **igumid G** ▶ **Page 1433**
Spherical ball: **iglidur® W300** ▶ **Page 153**
More spherical ball materials on request
▶ **Page 731**

- Adapter bolt with circlip available
  ▶ Accessories, **page 748**

Technical data

Part No.	Max. static tensile strength		Max. static axial force		Min. thread depth	Max. torque strength	Max. 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]
KARM-06 CL	1,000	500	100	50	15	0.5	10	15	3.5
KARM-08 CL	1,700	850	200	100	18	2.0	12	40	6.2
KARM-10 CL	2,500	1,250	300	150	20	5.0	20	50	11.2
KARM-12 CL	2,700	1,350	400	200	22	6.0	30	70	15.6

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				
KARM-06 CL	06	20	M06	7.0	9.0	9.2	36	21	46	40°
KARM-08 CL	08	24	M08	9.0	12.0	12.2	42	25	55	35°
KARM-10 CL	10	30	M10	10.5	14.0	14.2	48	28	63	35°
KARM-12 CL	12	34	M12	12.0	16.0	16.2	54	32	71	35°

Rod ends can be ordered in metric dimensions **with stainless steel** insert with the addition of **MH** after the part numbers listed here. Example: KARM-10 CL **MH (Inner-Ø: 10 mm)**.
For another spherical bearing material than iglidur® W300, please add **J** or **R** to the part number. Example: KARM-10 CL J.

My sketches

igubal®
rod ends

igubal® rod ends | Product range

Rod ends with female thread: EBRM and EBLM

- Maintenance-free, dry operation
- High rigidity
- Very high tensile strength for varying loads
- Compensation of misalignments
- Compensation of edge loads
- Resistant to dirt, dust and lint
- Corrosion and chemical resistant
- High vibration-dampening
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional series E according to standard DIN ISO 12240
- For temperatures up to +200 °C we recommend EARM-HT and EALM-HT ▶ Page 660
- Detectable version ▶ Page 751

Inch **Imperial dimensions available** ▶ Page 1396

Technical data

Part No.		Max. static tensile strength		Max. static axial force		Min. thread depth	Max. torque strength	Max. 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]	[mm]	[Nm]	[Nm]	[g]
EBRM-04	**EBLM-04**	800	400	100	50	7	0.4	2.0	1.8
EBRM-05	**EBLM-05**	1,300	650	150	75	8	0.5	2.0	3.2
EBRM-06	**EBLM-06**	1,500	750	200	100	8	1.5	2.5	4.0
EBRM-08	**EBLM-08**	2,000	1,000	450	225	11	5.0	7.0	6.9
EBRM-10	**EBLM-10**	2,300	1,150	500	250	13	15.0	14.0	11.2
EBRM-10 F	**EBLM-10 F**	2,300	1,150	500	250	13	6.0	14.0	11.2
EBRM-12	**EBLM-12**	3,300	1,650	550	275	14	20.0	25.0	17.1
EBRM-12 F	**EBLM-12 F**	3,300	1,650	550	275	14	15.0	25.0	17.1
EBRM-15	**EBLM-15**	4,800	2,400	800	400	18	25.0	30.0	28.9
EBRM-16	**EBLM-16**	5,000	2,500	850	425	18	20.0	32.0	32.6
EBRM-16 F	**EBLM-16 F**	5,000	2,500	850	425	18	15.0	32.0	32.6
EBRM-17	**EBLM-17**	5,300	2,650	1,100	550	19	30.0	35.0	42.4
EBRM-17 F	**EBLM-17 F**	5,300	2,650	1,100	550	19	27.5	35.0	42.4
EBRM-20	**EBLM-20**	7,200	3,600	1,800	900	22	60.0	40.0	65.8
EBRM-20 M20	**EBLM-20 M20**	7,200	3,600	1,800	900	22	60.0	40.0	65.8
EBRM-25	**EBLM-25**	10,000	5,000	2,600	1,300	27	115.0	55.0	125.9
EBRM-30	**EBLM-30**	10,500	5,250	3,000	1,500	33	130.0	70.0	184.1

Spherical ball materials to choose ▶ Page 731

J4VEM:
clearance free, preloaded

JEM:
low moisture absorption

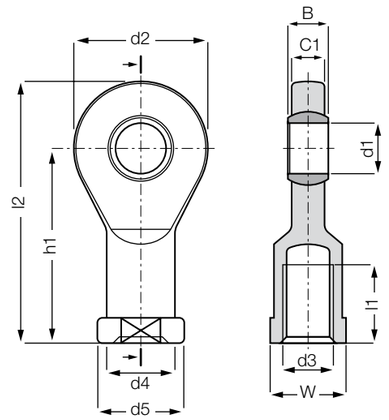
REM:
low-cost

J4EM:
low-cost and low moisture absorption

igubal®
rod ends

igubal® rod ends | Product range

Rod ends with female thread: EBRM and EBLM



Order key

Type				Size [mm]	Options
E	B	...	M-	04	

- Dimensional series E
- Housing (female thread)
- Thread
- Metric
- Inner Ø

Thread
L = left-hand thread
R = right-hand thread

Material:
Housing: **igumid G** ▶ Page 1433
Spherical ball: **iglidur® W300** ▶ Page 153
More spherical ball materials on request ▶ Page 731

Dimensions [mm]

Part No.		d1	d2	d3	d4	d5	C1	B	h1	l1	l2	W	Max. pivot angle
		E10											
Right-hand thread	Left-hand thread												
EBRM-04[17]	**EBLM-04**[17]	4	15	M04	–	–	3.5	5	22.5	9.5	30.0	SW08	33°
EBRM-05	**EBLM-05**	5	19	M05	9.0	11	4.4	6	30	12	39.5	SW09	33°
EBRM-06	**EBLM-06**	6	21	M06	11.0	13	4.4	6	30	12	40.5	SW11	27°
EBRM-08	**EBLM-08**	8	24	M08	13.0	16	6.0	8	36	14	48.0	SW14	24°
EBRM-10	**EBLM-10**	10	29	M10	15.0	19	7.0	9	43	18	57.5	SW17	24°
EBRM-10 F	**EBLM-10 F**	10	29	M10x1.25	15.0	19	7.0	9	43	18	57.5	SW17	24°
EBRM-12	**EBLM-12**	12	34	M12	18.0	22	8.0	10	50	20	67.0	SW19	21°
EBRM-12 F	**EBLM-12 F**	12	34	M12x1.25	18.0	22	8.0	10	50	20	67.0	SW19	21°
EBRM-15	**EBLM-15**	15	40	M14	21.0	26	10.0	12	61	26	81.0	SW22	21°
EBRM-16[17]	**EBLM-16**[17]	16	43	M16	–	–	10.5	13	64.5	26.5	86.0	SW22	21°
EBRM-16 F[17]	**EBLM-16 F**[17]	16	43	M16x1.5	–	–	10.5	13	64.5	26.5	86.0	SW22	21°
EBRM-17	**EBLM-17**	17	46	M16	24.0	30	11.0	14	67	27	90.0	SW27	18°
EBRM-17 F	**EBLM-17 F**	17	46	M16x1.5	24.0	30	11.0	14	67	27	90.0	SW27	18°
EBRM-20	**EBLM-20**	20	53	M20x1.5	27.0	34	13.0	16	77	31	103.5	SW30	16°
EBRM-20 M20	**EBLM-20 M20**	20	53	M20x2.5	27.0	34	13.0	16	77	31	103.5	SW30	16°
EBRM-25	**EBLM-25**	25	64	M24x2.0	34.0	41	17.0	20	94	38	126.5	SW36	16°
EBRM-30	**EBLM-30**	30	73	M30x2.0	41.0	48	19.0	22	110	47	146.5	SW41	13°

[17] **Special form with hexagonal foot**

igubal® rod ends | Product range

Rod ends with male thread: EARM and EALM

- Maintenance-free, dry operation
- High rigidity
- Very high tensile strength for varying loads
- Compensation of misalignments
- Compensation of edge loads
- Resistant to dirt, dust and lint
- Corrosion and chemical resistant
- High vibration-dampening
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional series E according to standard DIN ISO 12240
- For temperatures up to +200 °C we recommend EARM-HT and EALM-HT ▶ Page 661

Technical data

Part No.		Max. static tensile strength		Max. static axial force		Min. thread depth	Max. torque strength	Max. torque through ball	Weight
		Short-term	Long-term	Short-term	Long-term	Thread	Male thread		
Right-hand thread	Left-hand thread	[N]	[N]	[N]	[N]	[mm]	[Nm]	[Nm]	[g]
EARM-05	**EALM-05**	550	275	50	25	14	0.4	2.0	2.2
EARM-06	**EALM-06**	850	425	80	40	14	0.5	2.5	2.7
EARM-08	**EALM-08**	1,600	800	160	80	17	2.0	7.0	5.1
EARM-10	**EALM-10**	2,600	1,300	250	125	19	5.0	14.0	8.4
EARM-10 F	**EALM-10 F**	2,600	1,300	250	125	19	3.0	14.0	8.4
EARM-12	**EALM-12**	3,100	1,550	300	150	20	6.0	25.0	14.3
EARM-12 F	**EALM-12 F**	3,100	1,550	300	150	20	6.0	25.0	14.3
EARM-15	**EALM-15**	3,400	1,700	600	300	24	12.5	30.0	21.1
EARM-17	**EALM-17**	3,600	1,800	900	450	26	17.5	35.0	30.2
EARM-17 F	**EALM-17 F**	3,600	1,800	900	450	26	21.0	35.0	30.2
EARM-20	**EALM-20**	6,800	3,400	1,700	850	30	25.0	40.0	57.3
EARM-20 M20	**EALM-20 M20**	6,800	3,400	1,700	850	30	25.0	40.0	57.3
EARM-25	**EALM-25**	7,000	3,500	1,000	500	37	45.0	55.0	94.8
EARM-30	**EALM-30**	7,000	3,500	2,000	1,000	46	85.0	70.0	156.4

Spherical ball materials to choose ▶ Page 731

J4VEM: clearance free, preloaded

JEM: low moisture absorption

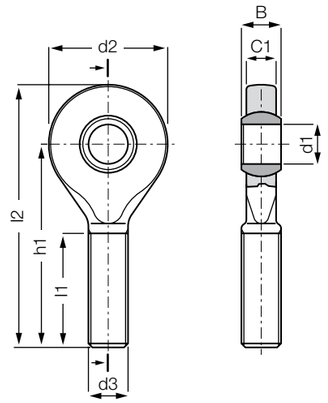
REM: low-cost

J4EM: low-cost and low moisture absorption

igubal® rod ends

igubal® rod ends | Product range

Rod ends with male thread: EARM and EALM



Order key

Type				Size [mm]	Options
E	A	...	M-	05	
Dimensional series E	Housing (male thread)	Thread	Metric	Inner Ø	Thread L = left-hand thread R = right-hand thread

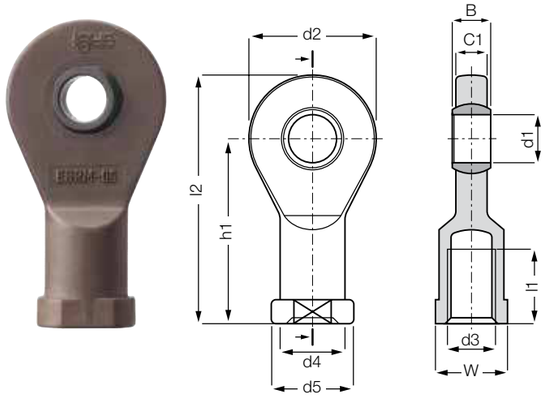
Material:
Housing: **igumid G** ▶ Page 1433
Spherical ball: **iglidur® W300** ▶ Page 153
More spherical ball materials on request ▶ Page 731

Dimensions [mm]

Part No.		d1	d2	d3	C1	B	h1	l1	l2	Max. pivot angle
		E10								
Right-hand thread	Left-hand thread									
EARM-05	**EALM-05**	5	19	M05	4.4	6	36	20	45.5	33°
EARM-06	**EALM-06**	6	21	M06	4.4	6	36	20	46.5	27°
EARM-08	**EALM-08**	8	24	M08	6.0	8	41	24	53.0	24°
EARM-10	**EALM-10**	10	29	M10	7.0	9	47.5	27	62.0	24°
EARM-10 F	**EALM-10 F**	10	29	M10x1.25	7.0	9	47.5	27	62.0	24°
EARM-12	**EALM-12**	12	34	M12	8.0	10	54	29	71.0	21°
EARM-12 F	**EALM-12 F**	12	34	M12x1.25	8.0	10	54	29	71.0	21°
EARM-15	**EALM-15**	15	40	M14	10.0	12	63	34	83.0	21°
EARM-17	**EALM-17**	17	46	M16	11.0	14	69	37	92.0	18°
EARM-17 F	**EALM-17 F**	17	46	M16x1.5	11.0	14	69	37	92.0	18°
EARM-20	**EALM-20**	20	53	M20 x 1.5	13.0	16	80	43	106.5	16°
EARM-20 M20	**EALM-20 M20**	20	53	M20x2.5	13.0	16	80	43	106.5	16°
EARM-25	**EALM-25**	25	64	M24x2.0	17.0	20	97	53	129.0	16°
EARM-30	**EALM-30**	30	73	M30x2.0	19.0	22	113	65	149.5	13°

igubal® rod ends | Product range

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



Order key

Type				Size [mm]	Version	Options
E	B	...	M-	05	HT	
Dimensional series E	Housing (female thread)	Thread	Metric	Inner Ø	high temperature	Thread L = left-hand thread R = right-hand thread

- Applicable up to +200 °C
- High rigidity
- Very high tensile strength for varying loads
- Compensation of misalignment and edge loads
- Corrosion and chemical resistant (chemical table ▶ **Page 1424**)
- For underwater applications
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional series E according to standard DIN ISO 12240

Material:
Housing: **igumid G** ▶ **Page 1433**
Spherical ball: **iglidur® X** ▶ **Page 237**

Technical data

Part No.		Max. static tensile strength		Max. static axial force		Min. thread depth	Max. torque strength	Max. 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]	[mm]	[Nm]	[Nm]	[g]
EBRM-05-HT	**EBLM-05-HT**	625	313	140	70	14	0.4	2.0	3.8
EBRM-06-HT	**EBLM-06-HT**	832	416	172	86	14	0.5	2.5	5.0
EBRM-08-HT	**EBLM-08-HT**	1,317	658	175	88	17	2.0	7.0	8.5
EBRM-10-HT	**EBLM-10-HT**	1,470	735	253	126	19	5.0	14.0	13.7
EBRM-12-HT	**EBLM-12 HT**	1,600	800	279	139	20	6.0	25.0	21.4

Dimensions [mm]

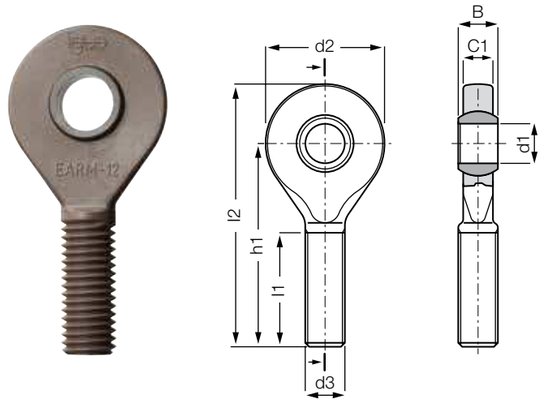
Part No.		d1	d2	d3	d4	d5	C1	B	h1	l1	l2	W	Max. pivot angle
		E10											
Right-hand thread	Left-hand thread												
EBRM-05-HT	**EBLM-05-HT**	5	19	M05	9.0	11	4.4	6	30	12	39.5	SW09	33°
EBRM-06-HT	**EBLM-06-HT**	6	21	M06	11.0	13	4.4	6	30	12	40.5	SW11	27°
EBRM-08-HT	**EBLM-08-HT**	8	24	M08	13.0	16	6.0	8	36	16	48.0	SW14	24°
EBRM-10-HT	**EBLM-10-HT**	10	29	M10	15.0	19	7.0	9	43	18	57.5	SW17	24°
EBRM-12-HT	**EBLM-12 HT**	12	34	M12	18.0	22	8.0	10	50	20	67.0	SW19	21°

Other dimensions available on request

igubal® rod ends

igubal® rod ends | Product range

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



Order key

Type				Size [mm]	Version	Options
E	A	...	M-	05	HT	
Dimensional series E	Housing (male thread)	Thread	Metric	Inner Ø	high temperature	Thread L = left-hand thread R = right-hand thread

- Applicable up to +200 °C
- High rigidity
- Very high tensile strength for varying loads
- Compensation of misalignment and edge loads
- Corrosion and chemical resistant (chemical table ▶ **Page 1424**)
- For underwater applications
- Suitable for rotating, oscillating and linear movements
- Lightweight
- Dimensional series E according to standard DIN ISO 12240

Material:
Housing: **igumid G** ▶ **Page 1433**
Spherical ball: **iglidur® X** ▶ **Page 237**

Technical data

Part No.		Max. static tensile strength		Max. static axial force		Min. thread depth	Max. torque strength	Max. torque through ball	Weight
		Short-term	Long-term	Short-term	Long-term	Thread	Male thread		
Right-hand thread	Left-hand thread	[N]	[N]	[N]	[N]	[mm]	[Nm]	[Nm]	[g]
EARM-05-HT	**EALM-05-HT**	380	190	20	10	14	0.4	2.0	2.8
EARM-06-HT	**EALM-06-HT**	600	300	30	15	14	0.5	2.5	3.4
EARM-08-HT	**EALM-08-HT**	931	465	48	24	17	2.0	7.0	6.1
EARM-10-HT	**EALM-10-HT**	1,125	563	57	28	19	5.0	14.0	10.2
EARM-12-HT	**EALM-12-HT**	1,200	600	65	33	20	6.0	25.0	15.7

Dimensions [mm]

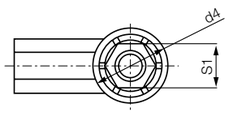
Part No.		d1	d2	d3	C1	B	h1	l1	l2	Max. pivot angle
		E10								
Right-hand thread	Left-hand thread									
EARM-05-HT	**EALM-05-HT**	5	19	M05	4.4	6	36.0	20	45.5	33°
EARM-06-HT	**EALM-06-HT**	6	21	M06	4.4	6	36.0	20	46.5	27°
EARM-08-HT	**EALM-08-HT**	8	24	M08	6.0	8	41.0	24	53.0	24°
EARM-10-HT	**EALM-10-HT**	10	29	M10	7.0	9	47.5	27	62.0	24°
EARM-12-HT	**EALM-12-HT**	12	34	M12	8.0	10	54.0	29	71.0	21°

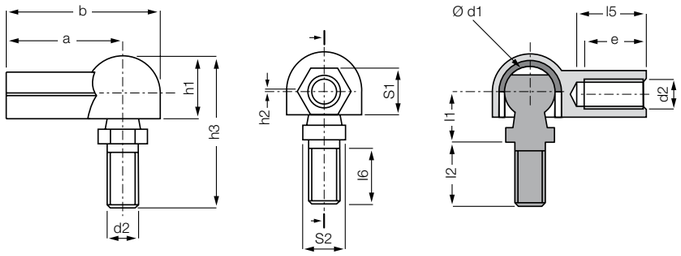
Other dimensions available on request

Angled ball and socket joint: WGRM and WGLM

- Connection for rotating and pivoting movements
- Lightweight
- Easy and quick assembly
- Vibration-dampening
- Resistant to dirt and dust
- Ball studs made from plastic, galvanised steel and stainless steel [19]

▶ Accessories, **page 745**





Order key

Type			Size [mm]	Options
WG ...	M	-	05	
Angled ball and socket joint	Thread	Metric	Inner Ø	Thread L = left-hand thread R = right-hand thread Ball stud Blank = plastic stud MS = ball studs made from galvanised steel[19] ES = ball stud made from Stainless steel[28]

Material:
Housing: **igumid G** ▶ **Page 1433**
Spherical cap: **iglidur® W300** ▶ **Page 153**

Technical data

Part No.		Max. axial tensile force (Ball stud axis[19])		Max. axial compressive force (Ball stud axis)		Max. axial tensile force (Housing axis)		Max. axial Tensile force steel stud (Housing axis)		Weight
Right-hand thread	Left-hand thread	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	[g]
WGRM-05	WGLM-05	30	15	200	100	100	50	600	300	2.6
WGRM-06	WGLM-06	35	17.5	300	150	140	70	800	400	3.8
WGRM-08	WGLM-08	250	125	500	250	200	100	1,500	750	8.0
WGRM-10	WGLM-10	250	125	900	450	400	200	1,900	950	13.7

Dimensions [mm]

Part No.		d1	d2	d4	l1	l2	l5	l6	h1	h2	h3	a	b	e	S1	S2	Max.
Right-hand thread	Left-hand thread	+0.1		+0.5	+0.2	+0.3			+0.4	+0.5	+0.5	+0.3	+0.5	+1.0			pivot
		–0.1		–0.5	–0.2	–0.3		Min.	–0.4	–0.5	–0.5	–0.3	–0.5	–1.0			angle
WGRM-05	WGLM-05	8.0	M5	12.8	9.0	10.2	14.0	8.2	10.8	0.65	25.6	22.0	28.4	11.0	SW 8	SW 7	25°
WGRM-06	WGLM-06	10.0	M6	14.8	11.0	12.5	16.0	10.5	12.3	0.70	30.9	25.0	32.4	13.0	SW 9	SW 8	25°
WGRM-08	WGLM-08	13.0	M8	19.3	13.0	16.5	18.0	13.5	16.2	1.15	38.8	30.0	39.7	16.0	SW12	SW11	25°
WGRM-10	WGLM-10	16.0	M10	24.0	16.0	20.0	20.0	16.0	20.0	1.15	47.0	35.0	47.0	18.0	SW14	SW13	25°

[19] Galvanised steel stud only available with right-hand thread. Order example: WGRM-05 MS

[28] Stainless steel ball stud on request

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

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

▶ Accessories, **page 745**

Order key

Type			Size [mm]	Version
WG ...	M	-	05	LC
Angled ball and socket joint	Thread	Metric	Inner Ø	Low-cost

Options:
Thread
L = left-hand thread
R = right-hand thread

Ball stud
blank = plastic stud
MS = ball studs made from galvanised steel[19]
ES = ball studs made from stainless steel[28]

Material:
Housing: **igumid G** ▶ **Page 1433**

Technical data

Part No.		Max. axial tensile force (Ball stud axis[19])		Max. axial compressive force (Ball stud axis)		Max. axial tensile force (Housing axis)		Max. axial tensile force steel stud (Housing axis)		Weight
Right-hand thread	Left-hand thread	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	[g]
WGRM-04 LC-MS[20]	WGLM-04 LC-MS[20]	100	50	150	75	–	–	500	250	2.4
WGRM-05 LC	WGLM-05 LC	30	15	200	100	100	50	600	300	2.6
WGRM-06 LC	WGLM-06 LC	35	17.5	300	150	140	70	800	400	4.0
WGRM-08 LC	WGLM-08 LC	250	125	500	250	200	100	1,500	750	8.2
WGRM-10 LC	WGLM-10 LC	250	125	900	450	400	200	1,900	950	13.8

Dimensions [mm] – technical drawing ▶ Page 662

Part No.		d1	d2	d4	l1	l2	l5	l6	h1	h2	h3	a	b	e	S1	S2	Max.
Right-hand thread	Left-hand thread	+0.1		+0.5	+0.2	+0.3			+0.4	+0.5	+0.5	+0.3	+0.5	+1.0			pivot
		–0.1		–0.5	–0.2	–0.3		Min.	–0.4	–0.5	–0.5	–0.3	–0.5	–1.0			angle
WGRM-04 LC-MS[20]	WGLM-04 LC-MS[20]	6.0	M4	10.6	8.5	8.0	12.5	6.8	9.0	0.2	21.8	18.0	23.3	10.5	SW 7	SW 7	20°
WGRM-05 LC	WGLM-05 LC	8.0	M5	12.8	9.0	10.2	14.0	8.2	10.8	0.65	25.6	22.0	28.4	11.0	SW 8	SW 7	25°
WGRM-06 LC	WGLM-06 LC	10.0	M6	14.8	11.0	12.5	16.0	10.5	12.3	0.70	30.9	25.0	32.4	13.0	SW 9	SW 8	25°
WGRM-08 LC	WGLM-08 LC	13.0	M8	19.3	13.0	16.5	18.0	13.5	16.2	1.15	38.8	30.0	39.7	16.0	SW 12	SW 11	25°
WGRM-10 LC	WGLM-10 LC	16.0	M10	24.0	16.0	20.0	20.0	16.0	20.0	1.15	47.0	35.0	47.0	18.0	SW 14	SW 13	25°

[19] Galvanised steel stud only available with right-hand thread. Order example: WGRM-05 LC MS

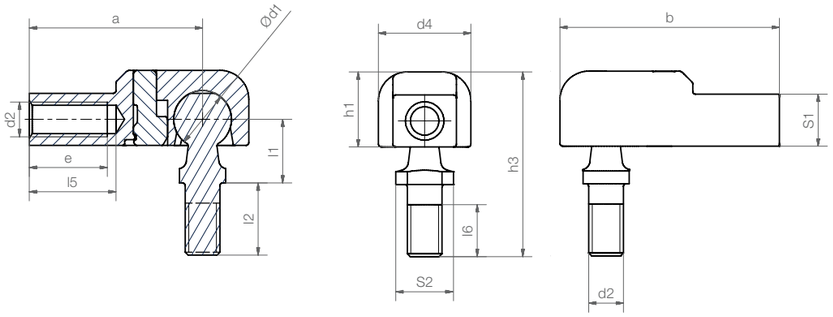
[20] Only available with galvanised steel stud

[28] Stainless steel ball stud on request

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

- Cost-effective ball joint
- Lightweight
- Corrosion resistant
- Easy assembly (75 N) and disassembly
- High holding forces when assembled (260 N)
- Ball studs made from plastic, galvanised steel and stainless steel[19] ▶ Accessories, **page 745**

Material:
Housing: **igumid G ▶ Page 1433**



Order key

Type	Size [mm]	Version
WG ... M -	05	DE
Angled ball and socket joint / Thread / Metric	Inner Ø	Disassembly

Options:

Thread
L = left-hand thread
R = right-hand thread

Ball stud
blank = plastic stud
MS = ball studs made from galvanised steel[19]
ES = ball studs made from stainless steel[28]

Technical data and dimensions [mm]

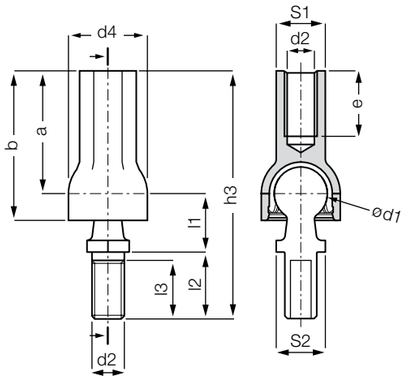
Part No.		Assembly force	Disassembly force	d1	d2	d4	l1	l2	l5	Weight
				+0.1		+0.5	+0.2	+0.5		
Right-hand thread	Left-hand thread	[N]	[N]	–0.1		–0.5	–0.2	–0.5	Min.	[g]
WGRM-05-DE	WGLM-05-DE	35	200	8.0	M5	12.8	9.0	10.2	13.0	3.4
WGRM-06-DE	WGLM-06-DE	50	275	10.0	M6	16.0	11.0	12.5	14.5	5.5

Dimensions [mm]

Part No.		l6	h1	h3	S1	S2	a	b	e	Pivot angle	
			+0.4	+0.5			+0.3	+0.5	+1.0		
Right-hand thread	Left-hand thread	Min.	–0.4	–0.5			–0.3	–0.5	–1.0	Recom.	Max.
WGRM-05-DE	WGLM-05-DE	8.2	10.8	25.6	SW9	SW7	25.0	31.4	11.0	18°	25°
WGRM-06-DE	WGLM-06-DE	10.5	13.0	32.0	SW11	SW8	30.0	38.0	12.0	18°	25°

[19] Galvanised steel stud only available with right-hand thread. Order example: WGRM-05-DE MS
[28] Stainless steel ball stud on request

In-line ball and socket joint: AGRM and AGLM



Order key

Type	Size [mm]	Options
AG ... M -	08	
In line ball and socket joint / Thread / Metric	Inner Ø	

Thread
L = left-hand thread
R = right-hand thread
Ball stud
Blank = plastic stud
MS = ball studs made from galvanised steel[19]
ES = ball stud made from Stainless steel[28]

Material:
Housing: **igumid G ▶ Page 1433**
Spherical cap: **iglidur® W300 ▶ Page 153**

- For all mechanical combinations
- Very easy to assemble
- Maintenance-free, predictable service life
- Corrosion and chemical resistant
- High vibration-dampening
- Ball studs made from plastic, galvanised steel and stainless steel[19] ▶ Accessories, **page 745**

Technical data

Part No.		Max. static axial tensile strength		Max. static axial compressive force		Max. assembling force	Weight
		Short-term	Long-term	Short-term	Long-term		
Right-hand thread	Left-hand thread	[N]	[N]	[N]	[N]	[N]	[g]
AGRM-08	AGLM-08	250	125	1,000	500	110	7.8

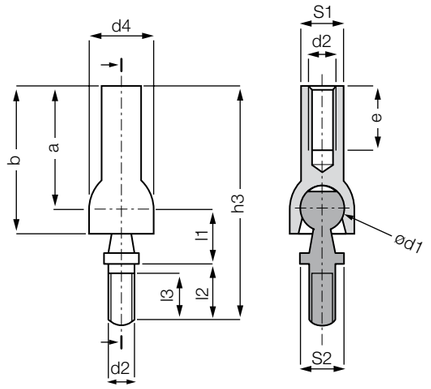
Dimensions [mm]

Part No.		d1	d2	d4	l1	l2	l3	h3	S1	S2	a	b	e	Pivot angle	
		+0.1		+0.5	+0.2	+0.3		+0.5			+0.3	+0.5			
Right-hand thread	Left-hand thread	–0.1		–0.5	–0.2	–0.3	Min.	–0.5			–0.3	–0.5	Min.	Recom.	Max.
AGRM-08	AGLM-08	13.0	M8	19.3	13.0	16.5	13.5	59.0	SW12	SW11	29.5	36.5	16.0	18°	25°

[19] Galvanised steel stud only available with right-hand thread. Order example: AGRM-08 MS
[28] Stainless steel ball stud on request

igubal® rod ends | Product range

In-line ball and socket joint (low-cost): AGRM LC and AGLM LC



Order key

Type	Size [mm]	Version
AG ... M -	06	LC
In line ball and socket joint	Inner Ø	Low-cost
Thread		
Metric		

Options:

Thread
L = left-hand thread
R = right-hand thread

Ball stud
blank = plastic stud
MS = ball studs made from galvanised steel[19)]
ES = ball studs made from stainless steel[28)]

Material:
Housing: **igumid G ▶ Page 1433**

- Housing with ball stud
- Lightweight
- Maintenance-free
- Ball studs made from plastic, galvanised steel and stainless steel[19)] ▶ Accessories, **page 745**

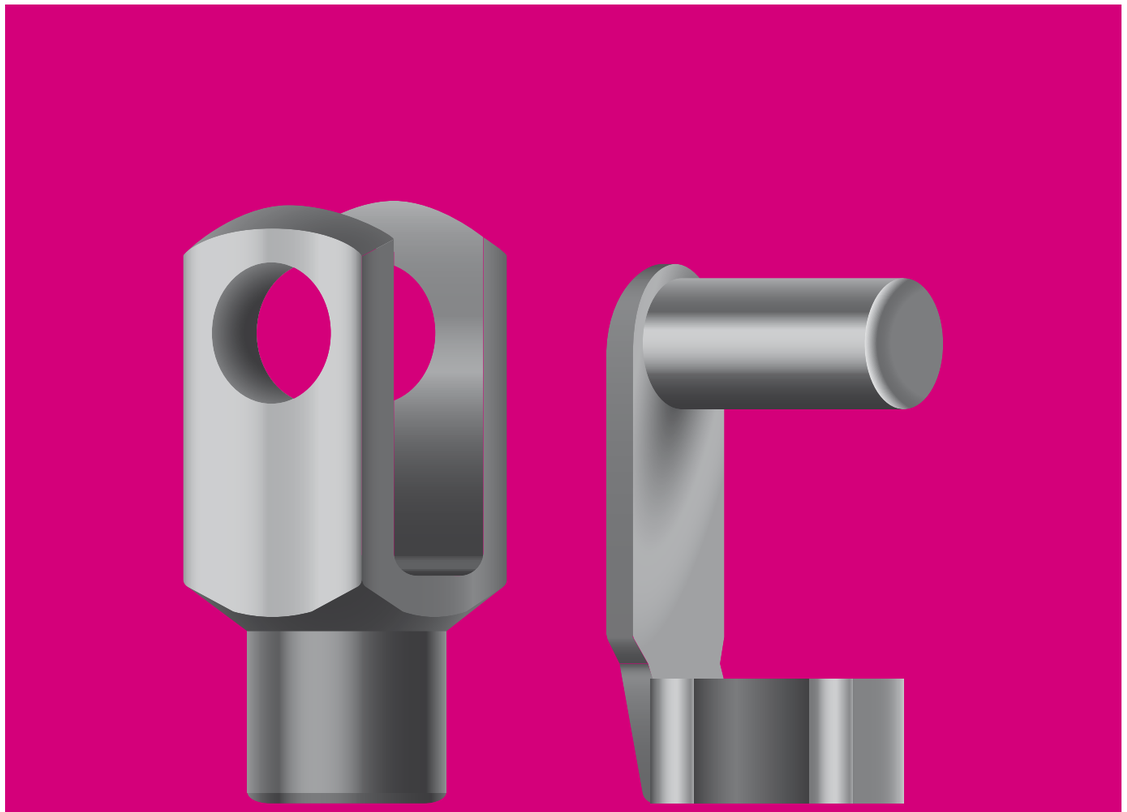
Technical data

Part No.		Max. static axial tensile strength		Max. static axial compressive force		Weight
		Short-term	Long-term	Short-term	Long-term	
Right-hand thread	Left-hand thread	[N]	[N]	[N]	[N]	[g]
AGRM-06 LC	AGLM-06 LC	100	50	2,000	1,000	10.8

Dimensions [mm]

Part No.		d1	d2	d4	l1	l2	l3	h3	S1	S2	a	b	e	Max. pivot angle	
		+0.1		+0.5	+0.2	+0.3		+0.5			+0.3	+0.5			
Right-hand thread	Left-hand thread	–0.1		–0.5	–0.2	–0.3	Min.	–0.5			–0.3	–0.5	Min.	Recom.	Max.
AGRM-06 LC	AGLM-06 LC	10.0	M6	14.8	11.0	11.25	7.25	47.25	SW9	10.0	25.0	29.9	13.0	18°	25°

[19)] Galvanised steel stud only available with right-hand thread. Order example: AGRM-06 LC MS
[28)] Stainless steel ball stud on request



igubal® clevis joints

High tensile strength

Vibration-dampening

Noise-dampening

Can be used in combination with series E rod ends

Lightweight

igubal® clevis joints

igubal® clevis joints are all made from igumid G to DIN 71752, which can be used in combination with series E rod ends. Available components are clevis joint, clevis pin and clip or as an alternative, spring-loaded pin. Detectable version available.

High tensile strength

Vibration-dampening

Noise-dampening

Can be used in combination with series E rod ends

Lightweight

When to use it?

- If high stiffness is required
- If Corrosion resistant is required
- If no lubrication is to be used
- If you want to save weight
- If maintenance-free, dry-running is required
- If simple assembly is required
- In combination with pneumatic cylinders and gas struts

When not to use it?

- If temperatures are higher than +200 °C
- If diameters above 20 mm are required

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

max. +80 °C
min. –30 °C

4 types
Ø 4–20 mm

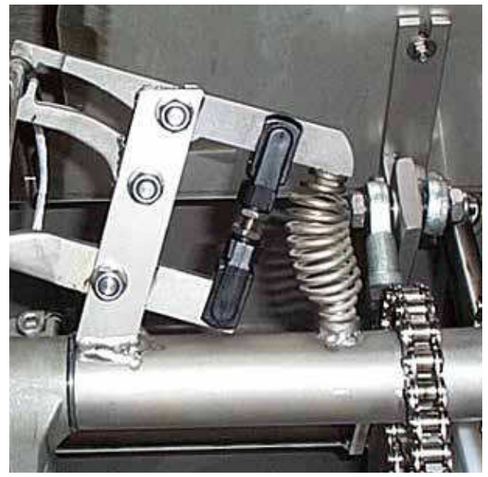
Online product finder
▶ www.igus.eu/igubal-finder

igubal® clevis joints | Application examples

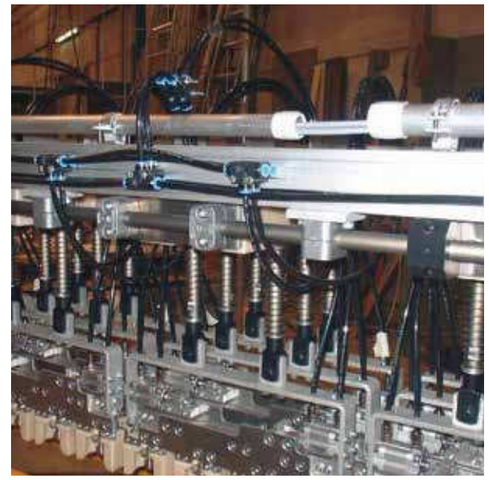
Typical sectors of industry and application areas

- Food industry ● Packaging
- Heavy Duty ● Automotive
- Renewable energy ● Automation etc.

Improve technology and reduce costs – 110 exciting examples online
▶ www.igus.eu/igubal-applications



▶ www.igus.eu/food



▶ www.igus-packaging.eu

▶ www.igus.eu/traffic

Pneumatic cylinder

igubal® clevis joints | Product overview

igubal® – Clevis joint combinations

Clevis joints with clevis pin and circlip
Dimensional series E
GERMK
GELMK
▶ Page 674

Clevis joints with spring-loaded fixing clip
Dimensional series E
GERMF
GELMF
▶ Page 675

Combination, easy to fit
Dimensional series E
GERMKE
GELMKE
▶ Page 676

Combination, easy to fit
Dimensional series E
GERMFE
GELMFE
▶ Page 677

igubal® component parts

Clevis joint, high rigidity:
Dimensional series E
GERM
GELM
▶ From page 672

Spring-loaded fixing clip
GEFM
▶ Page 678

Clevis pin and Circlip
GBM – Clevis pin
GSR – Circlip
▶ Page 679

Detectable clevis joints ▶ From page 751

My sketches

igubal® clevis joints | Product range

Clevis joint: GERM and GELM

- Lightweight
- High rigidity
- Corrosion resistant
- High tensile strength
- Can be used in combination with series E rod ends
- Vibration-dampening
- Noise-dampening
- Available in left- (GELM) and right-hand-thread (GERM)

Technical data

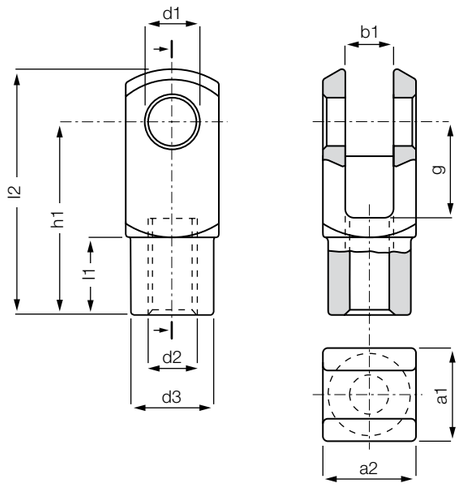
Part No.		Max. static axial tensile strength		Max. static axial force		Max. torque strength	Weight
		Short-term	Long-term	Short-term	Long-term		
Right-hand thread	Left-hand thread	[N]	[N]	[N]	[N]	[Nm]	[g]
GERM-04 M3.5	GELM-04 M3.5	650	325	250	125	0.4	0.9
GERM-04	GELM-04	650	325	250	125	0.4	0.9
GERM-05 DIN M4	GELM-05 DIN M4	1,000	500	250	125	0.4	1.5
GERM-05 DIN M5	GELM-05 DIN M5	1,000	500	250	125	0.5	1.5
GERM-05	GELM-05	1,200	600	250	125	0.5	2.7
GERM-05 DIN M5 LS[22)]	GELM-05 DIN M5 LS[22)]	1,000	500	130	65	0.5	2.3
GERM-06	GELM-06	1,400	700	300	150	1.5	2.5
GERM-06 LS[22)]	GELM-06 LS[22)]	1,400	700	130	65	1.5	3.6
GERM-08	GELM-08	2,700	1,350	650	325	5	6.3
GERM-10	GELM-10	4,700	2,350	800	400	15	13.2
GERM-10 F	GELM-10 F	4,700	2,350	800	400	6	13.2
GERM-12	GELM-12	5,700	2,850	900	450	20	20.2
GERM-12 F	GELM-12 F	5,700	2,850	900	450	15	20.2
GERM-14	GELM-14	6,600	3,300	1,000	500	25	29.9
GERM-14 F	GELM-14 F	6,600	3,300	1,000	500	20	29.9
GERM-15	GELM-15	3,200	1,600	1,000	500	25	30
GERM-16	GELM-16	7,500	3,750	1,200	600	30	49.9
GERM-16 F	GELM-16 F	7,500	3,750	1,200	600	27.5	49.9
GERM-17	GELM-17	3,600	1,800	1,200	600	30	50
GERM-17 F	GELM-17 F	3,600	1,800	1,200	600	27.5	50
GERM-20	GELM-20	9,500	4,750	3,000	1,500	60	105
GERM-20 M20	GELM-20 M20	9,500	4,750	3,000	1,500	80	105

[22)] LS = longer shank

igubal® clevis joints

igubal® clevis joints | Product range

Clevis joint: GERM and GELM



Order key

Type				Size [mm]	Options
G	E	...	M-	04	
Clevis joint	Dimensional series E	Thread	Metric	Inner Ø	

Thread
L = left-hand thread
R = right-hand thread

Material:
igumid G ▶ Page 1433

Dimensions [mm]

Part No.		d1	g	a1	a2	b1	d2	d3	l2	h1	l1
		+0.1	h11	+0.3	+0.3	B13	Thread tolerance 6H	+0.3	+0.5	+0.3	+0.2
Right-hand thread	Left-hand thread			–0.16	–0.16			–0.3	–0.5	–0.3	–0.2
GERM-04 M3.5	GELM-04 M3.5	4	8	8	8	4	M3.5	8.0	21.0	16.0	6.0
GERM-04	GELM-04	4	8	8	8	4	M04	8.0	21.0	16.0	6.0
GERM-05 DIN M4	GELM-05 DIN M4	5	10	10	10	5	M04	9.0	24.5	20.0	7.5
GERM-05 DIN M5	GELM-05 DIN M5	5	10	10	10	5	M05	9.0	24.5	20.0	7.5
GERM-05	GELM-05	5	12	12	12	6	M05	10.0	31.0	24.0	9.0
GERM-05 DIN M5 LS[22)]	GELM-05 DIN M5 LS[22)]	5	20	10	10	5	M05	9.0	36.0	30.0	7.5
GERM-06	GELM-06	6	12	12	12	6	M06	10.0	31.0	24.0	9.0
GERM-06 LS[22)]	GELM-06 LS[22)]	6	24	12	12	6	M06	10.0	43.0	36.0	9.0
GERM-08	GELM-08	8	16	16	16	8	M08	14.0	42.0	32.0	12.0
GERM-10	GELM-10	10	20	20	20	10	M10	18.0	52.0	40.0	15.0
GERM-10 F	GELM-10 F	10	20	20	20	10	M10x1.25	18.0	51.3	40.0	15.0
GERM-12	GELM-12	12	24	24	24	12	M12	20.0	61.3	48.0	18.0
GERM-12 F	GELM-12 F	12	24	24	24	12	M12x1.25	20.0	61.3	48.0	18.0
GERM-14	GELM-14	14	28	27	27	14	M14	24.0	71.3	56.0	22.5
GERM-14 F	GELM-14 F	14	28	27	27	14	M14x1.5	24.0	71.3	56.0	22.5
GERM-15	GELM-15	15	28	27	27	14	M14	24.0	71.3	56.0	22.5
GERM-16	GELM-16	16	32	32	32	16	M16	26.0	81.9	64.0	24.0
GERM-16 F	GELM-16 F	16	32	32	32	16	M16x1.5	26.0	81.9	64.0	24.0
GERM-17	GELM-17	17	32	32	32	16	M16	26.0	83.0	64.0	24.0
GERM-17 F	GELM-17 F	17	32	32	32	16	M16x1.5	26.0	83.0	64.0	24.0
GERM-20	GELM-20	20	40	40	40	20	M20x1.5	34.0	105.0	80.0	30.0
GERM-20 M20	GELM-20 M20	20	40	40	40	20	M20x2.5	34.0	105.0	80.0	30.0

[22)] LS = longer shank

igubal® clevis joints | Product range

Clevis joints with clevis pin and circlip: GERMK and GELMK

- Lightweight
- Corrosion resistant
- High tensile strength
- Can be used in combination with series E rod ends

Order key

Type					Size [mm]	Options
G	E	...	M	K -	04	
Clevis joint	Dimensional series E	Thread	Metric	Clevis pin and circlip	Inner Ø	Thread L = left-hand thread R = right-hand thread

Material:
igumid G ▶ Page 1433

Technical data

Part No.		Max. static axial tensile strength		Max. static axial force		Weight
		Short-term	Long-term	Short-term	Long-term	
Right-hand thread	Left-hand thread	[N]	[N]	[N]	[N]	[g]
GERMK-04 M3.5	GELMK-04 M3.5	500	250	250	125	1.3
GERMK-04	GELMK-04	500	250	250	125	1.3
GERMK-05 DIN M4	GELMK-05 DIN M4	800	400	250	125	2.1
GERMK-05 DIN M5	GELMK-05 DIN M5	800	400	250	125	2.1
GERMK-05	GELMK-05	900	450	250	125	3.3
GERMK-05 DIN M5 LS[22)]	GELMK-05 DIN M5 LS[22)]	800	400	130	65	2.9
GERMK-06	GELMK-06	1,300	650	300	150	3.3
GERMK-06 LS[22)]	GELMK-06 LS[22)]	1,300	650	130	65	4.4
GERMK-08	GELMK-08	2,100	1,050	650	325	7.9
GERMK-10	GELMK-10	3,000	1,500	800	400	16.4
GERMK-10 F	GELMK-10 F	3,000	1,500	800	400	16.4
GERMK-12	GELMK-12	3,500	1,750	900	450	25.3
GERMK-12 F	GELMK-12 F	3,500	1,750	900	450	25.3
GERMK-14	GELMK-14	6,100	3,050	1,000	500	31.2
GERMK-15	GELMK-15	2,800	1,400	1,000	500	38.9
GERMK-16	GELMK-16	7,000	3,500	1,200	600	60.8
GERMK-16 F	GELMK-16 F	7,000	3,500	1,200	600	60.8
GERMK-17	GELMK-17	3,600	1,800	1,200	600	62.3
GERMK-17 F	GELMK-17 F	3,600	1,800	1,200	600	62.3
GERMK-20	GELMK-20	9,000	4,500	3,000	1,500	125.2
GERMK-20 M20	GELMK-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 679

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 in hard to reach locations
- Can be used in combination with series E rod ends
- Corrosion resistant and lightweight

Order key

Type					Size [mm]	Options
G	E	...	M	F -	04	
Clevis joint	Dimensional series E	Thread	Metric	Spring-loaded fixing clip	Inner Ø	Thread L = left-hand thread R = right-hand thread

Material:
igumid G ▶ Page 1433

Technical data

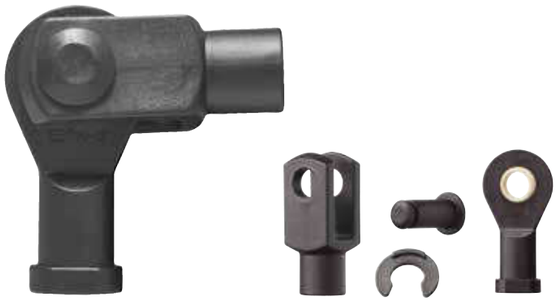
Part No.		Max. static axial tensile strength		Max. static axial force		Weight
		Short-term	Long-term	Short-term	Long-term	
Right-hand thread	Left-hand thread	[N]	[N]	[N]	[N]	[g]
GERMF-04 M3.5	GELMF-04 M3.5	500	250	250	125	1.3
GERMF-04	GELMF-04	500	250	250	125	1.3
GERMF-05 DIN M4	GELMF-05 DIN M4	800	400	250	125	2.3
GERMF-05 DIN M5	GELMF-05 DIN M5	800	400	250	125	2.3
GERMF-05 DIN M5 LS[22)]	GELMF-05 DIN M5 LS[22)]	800	400	250	125	2.3
GERMF-05	GELMF-05	900	450	250	125	3.8
GERMF-06	GELMF-06	1,300	650	300	150	3.9
GERMF-06 LS[22)]	GELMF-06 LS[22)]	1,300	650	130	65	3.9
GERMF-08	GELMF-08	2,100	1,050	650	325	9.1
GERMF-10	GELMF-10	3,000	1,500	800	400	18.2
GERMF-10 F	GELMF-10 F	3,000	1,500	800	400	18.2
GERMF-12	GELMF-12	3,500	1,750	900	450	28.6
GERMF-12 F	GELMF-12 F	3,500	1,750	900	450	28.6
GERMF-16	GELMF-16	7,000	3,500	1,200	600	61.8
GERMF-16 F	GELMF-16 F	7,000	3,500	1,200	600	61.8

[22)] LS = longer shank

Single components: spring-loaded fixing clip GEFM
▶ Page 678

igubal® clevis joints | Product range

Clevis joints combination: GERMKE and GELMKE



- Lightweight
- Corrosion resistant
- High tensile strength
- Can be used in combination with series E rod ends

Order key

Type					Size [mm]	Options
G	E	...	M	KE -	05	
Clevis joint	Dimensional series E	Thread	Metric	With clevis pin, circlip and rod end	Inner Ø	Thread L = left-hand thread R = right-hand thread

Material:
igumid G ▶ Page 1433

Technical data

Part No.		Max. static axial tensile strength		Max. static axial force		Weight
		Short-term	Long-term	Short-term	Long-term	
Right-hand thread	Left-hand thread	[N]	[N]	[N]	[N]	[g]
GERMKE-05	GELMKE-05	900	450	150	75	6.4
GERMKE-06	GELMKE-06	1,300	650	200	100	7.3
GERMKE-08	GELMKE-08	2,000	1,000	450	225	14.6
GERMKE-10	GELMKE-10	2,300	1,150	500	250	27.1
GERMKE-10 F	GELMKE-10 F	2,300	1,150	500	250	27.1
GERMKE-12	GELMKE-12	3,300	1,650	550	275	42.7
GERMKE-12 F	GELMKE-12 F	3,300	1,650	550	275	42.7
GERMKE-15	GELMKE-15	2,800	1,400	800	400	68.4
GERMKE-16	GELMKE-16	5,000	2,500	850	425	86.9
GERMKE-16 F	GELMKE-16 F	5,000	2,500	850	425	86.9
GERMKE-17	GELMKE-17	3,600	1,800	1,100	550	98.3
GERMKE-17 F	GELMKE-17 F	3,600	1,800	1,100	550	98.3
GERMKE-20	GELMKE-20	7,200	3,600	1,800	900	175.2
GERMKE-20 M20	GELMKE-20 M20	7,200	3,600	1,800	900	175.2

Clevis joints with spring-loaded fixing clip can be used in combination with series E rod ends
EBRM and EARM ▶ Page 656–659

igubal® clevis joints

igubal® clevis joints | Product range

Clevis joints combination: GERMFE and GELMFE

Order key

Type					Size [mm]	Options
G	E	...	M	FE -	05	
Clevis joint	Dimensional series E	Thread	Metric	With spring-loaded fixing clip and rod end	Inner Ø	Thread L = left-hand thread R = right-hand thread

Material:
igumid G ▶ Page 1433

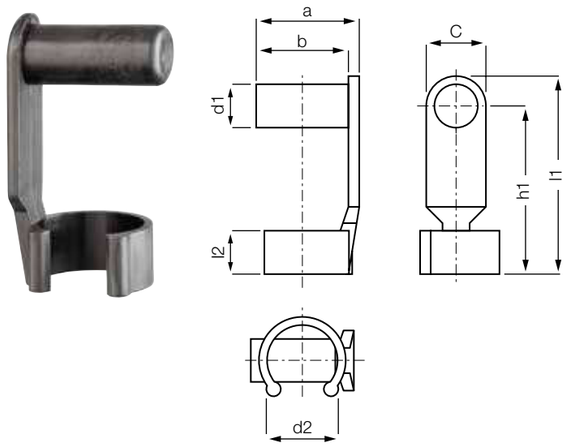
Technical data

Part No.		Max. static axial tensile strength		Max. static axial force		Weight
		Short-term	Long-term	Short-term	Long-term	
Right-hand thread	Left-hand thread	[N]	[N]	[N]	[N]	[g]
GERMFE-05	GELMFE-05	900	450	150	75	7.0
GERMFE-06	GELMFE-06	1,300	650	200	100	7.9
GERMFE-08	GELMFE-08	2,000	1,000	450	225	15.9
GERMFE-10	GELMFE-10	2,300	1,150	500	250	29.2
GERMFE-10 F	GELMFE-10 F	2,300	1,150	500	250	29.2
GERMFE-12	GELMFE-12	3,300	1,650	550	275	46.0
GERMFE-12 F	GELMFE-12 F	3,300	1,650	550	275	46.0
GERMFE-16	GELMFE-16	5,000	2,500	850	425	94.4
GERMFE-16 F	GELMFE-16 F	5,000	2,500	850	425	94.4

Clevis joints with spring-loaded fixing clip can be used in combination with series E rod ends
EBRM and EARM ▶ Page 656–659

igubal® clevis joints | Product range

Spring-loaded fixing clip: GEFM



Material:
igumid G ▶ Page 1433

Dimensions [mm]

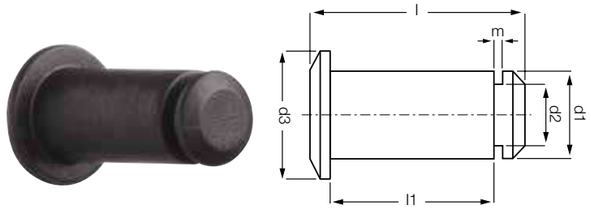
Part No.	d1 h11	d2	a	b	C	l1 ±0.5	h1	l2	Weight [g]
GEFM-04	4	8	9.5	10.5	8	19	15	4.5	0.5
GEFM-05 DIN	5	9	12	13.5	8	23	19	5.5	0.8
GEFM-05 DIN M5 LS[22)]	5	9	12	13.5	8	33	29	5.5	1.0
GEFM-05	5	10	14	15.5	8	27	23	6.5	1.1
GEFM-06 LS[22)]	6	10	14	15.5	8	39	35	6.5	1.0
GEFM-06	6	10	14	15.5	8	27	23	6.5	1.2
GEFM-08	8	14	19	21.0	11	35.5	30	8.0	2.8
GEFM-10	10	18	23	25.5	14	45	38	10.0	5.0
GEFM-12	12	20	28	31.0	16	53	45	12.0	8.3
GEFM-16	16	26	36	40.0	22	73	62	16.0	18.3

[22)] LS = longer shank

igubal® clevis joints

igubal® clevis joints | Product range

Clevis pin: GBM

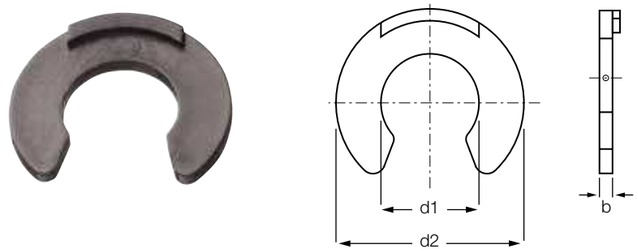


Material:
igumid G ▶ Page 1433

Dimensions [mm]

Part No.	d1 h11	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	8	16.5	12	1.15	GSR-06	0.5
GBM-05 DIN	5	4	8	14.5	10	1.15	GSR-06	0.5
GBM-06	6	4	9	16.5	12	1.15	GSR-06	0.7
GBM-08	8	5	12	21.5	16	1.15	GSR-08	1.5
GBM-10	10	7	15	27	20	1.35	GSR-10	3.0
GBM-12	12	9	18	31.5	24	1.5	GSR-12	4.8
GBM-14	14	12	22	36	27	1.7	GSR-16	5.7
GBM-15	15	12	23	36	27	1.7	GSR-16	8.3
GBM-16	16	12	24	42	32	1.7	GSR-16	10.4
GBM-17	17	12	25	42	32	1.7	GSR-16	12.3
GBM-20	20	15	30	51	40	2.0	GSR-20	19.2

Circlip: GSR

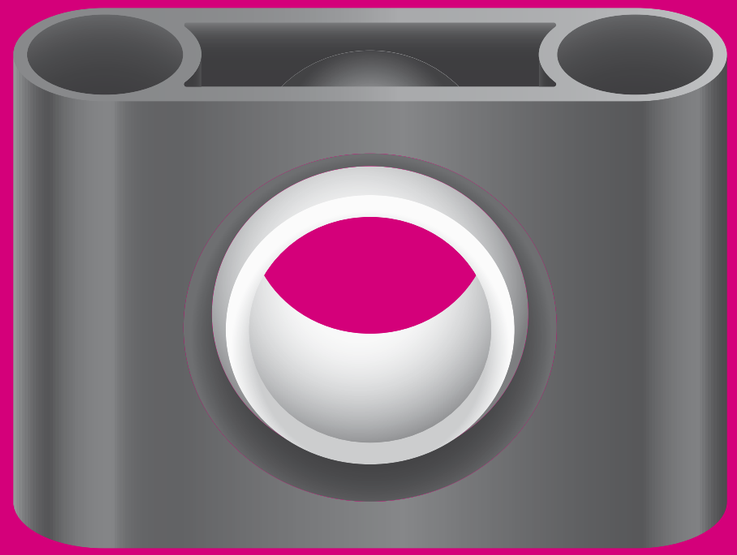


Material:
POM ▶ Page 1434

Dimensions [mm]

Part No.	d1	d2	b	Weight [g]
GSR-04	3.2	7	1.0	0.05
GSR-06	4	9	1.1	0.06
GSR-08	5	11	1.1	0.12
GSR-10	7	14	1.3	0.16
GSR-12	9	18.5	1.4	0.31
GSR-16	12	23	1.6	0.58
GSR-20	15	28	1.9	0.96

My sketches



igubal® pillow block bearings

- Maintenance-free, dry operation
- High rigidity
- High strength
- Maintenance and lubrication-free
- Media resistant
- High radial loads

igubal® pillow block bearings

igubal® pillow block bearings are bearing units especially easy to install and which are able to compensate alignment errors and prevent edge loads.

Maintenance-free, dry-running

High rigidity

High strength

Maintenance-free, self-lubricating

Media resistant

High radial loads

When to use it?

- If chemical resistance is required
- If a cost effective option is requested
- If you need dirt-resistant bearings
- To adjust misalignment
- If you need split components

When not to use it?

- If temperatures are higher than +80 °C
- If an integrated fixing collar is required
- If diameters above 50 mm are required
- If rotation speeds higher than 0.5 m/s are required

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

max. +80 °C
min. –30 °C

6 types
Ø 5–150 mm

Imperial dimensions available
▶ From page 1337

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

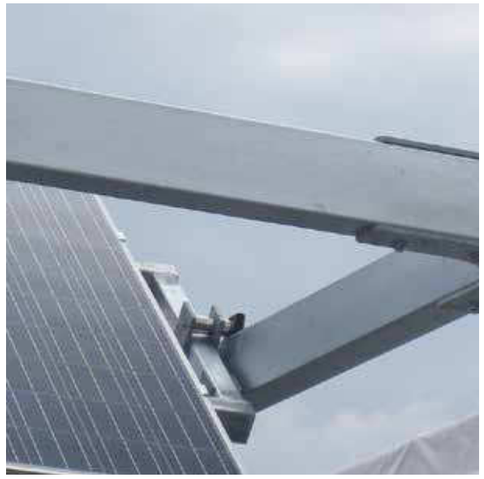
igubal® pillow block bearings | Application examples

Typical sectors of industry and application areas

- Plant design ● Machine building
- Packaging etc.

Improve technology and reduce costs – 110 exciting examples online
▶ www.igus.eu/igubal-applications

Stone processing



▶ www.igus.eu/solar

Paper industry

▶ www.igus-packaging.eu

igubal® pillow block bearings | Technical data

Advantages

- Maintenance-free, dry operation
- High rigidity
- High fatigue strength in varying loads
- Compensation of misalignment
- Compensation of edge loads
- Corrosion resistant
- Chemical resistance
- High vibration-dampening
- Suitable for rotating, oscillating and linear movements
- Lightweight
- High radial loads
- Media resistant
- Space-saving
- Easy to fit
- Predictable lifetime
- Maintenance and lubrication-free

Product range

igubal® pillow block bearings are available in the dimensional series K and E for shaft diameters from 5 to 150 mm. The dimensional series K is available in imperial dimensions. Please ask us for other dimensions.

application areas

The ability to pivot allows igubal® pillow block bearings to compensate for misalignment and possible shaft deflection. Applications in which these effects cannot be prevented are suitable for igubal® pillow block bearings.

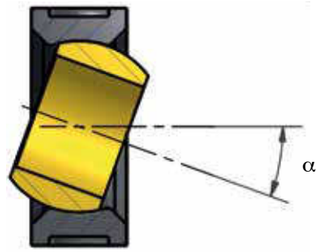
Tolerances

Maintenance-free igubal® pillow block bearings are designed with an inside diameter tolerance of E10. The shaft tolerance should be included between h6 and h9. These recommended tolerances allow for changes in the bearing due to temperature.

Fitting

igubal® pillow block bearings are designed for mounting with two bolts. An exact orientation of the bearing housing is not necessary, since the spherical bearing compensates for alignment errors. Special adjusting rings can be used to fix the shaft.

Pivot angle



igubal® pillow block bearing | Product overview

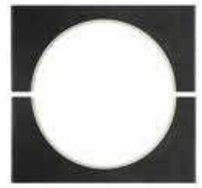
igubal® pillow block bearings – for small space envelope

Easy to disassemble, split housing and ball
Dimensional series K
KSTM-GT
▶ Page 688

Easy installation
Dimensional series E
ESTM
▶ Page 689

For quick assembly and low moisture absorption
Dimensional series E
ESTM-GT...-GT
▶ Page 690

Split housing with parallel bore
Dimensional series E
ESTM-GT
▶ Page 691



For diameters up to 150 mm
Dimensional series E
ESTM-GT150
▶ Page 692

Extremely light, compact design
Dimensional series E
ESTM-SL
▶ Page 693

Split pillow block bearing for square profiles
ESQM
▶ Page 694

igubal® pillow block bearings – standard design

Compensation of misalignment
Dimensional series K
KSTM
▶ Page 686

Compensation of misalignment, imperial dimensions
Dimensional series K
KSTI
▶ Page 686

igubal® combination with xiros® ball bearings

Low coefficient of friction, pivoting
Dimensional series E
▶ Page 820

Low coefficient of friction, fixed
Dimensional series E
▶ Page 821

igubal® pillow block bearing | Product range

Pillow block bearing KSTM

- Maintenance-free, dry operation
- High rigidity
- Very high tensile strength for varying loads
- Compensation of misalignment and edge loads
- Corrosion and chemical resistant
- High vibration-dampening
- Suitable for rotating, oscillating and linear movements
- Lightweight

Inch **Imperial dimensions available**
▶ **Page 1400**

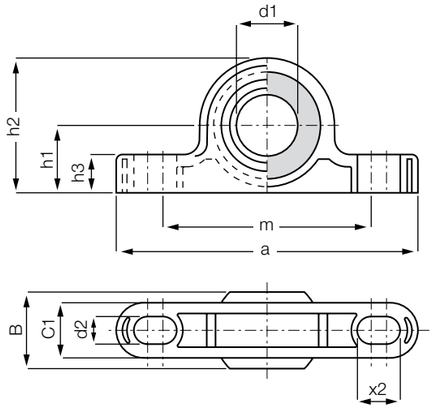
Technical data

Part No.	Max. static tensile strength		Max. axial static compressive strength	Max. torque for longitudinal holes	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

The maximum torques for longitudinal holes correspond to the permissible torque of the fixing screws (fixing category 5.8).

igubal® pillow block bearing | Product range

Pillow block bearing KSTM



Order key

Type	Size [mm]
K ST M	-05

Dimensional series K	Pillow block bearing	Metric	Inner Ø

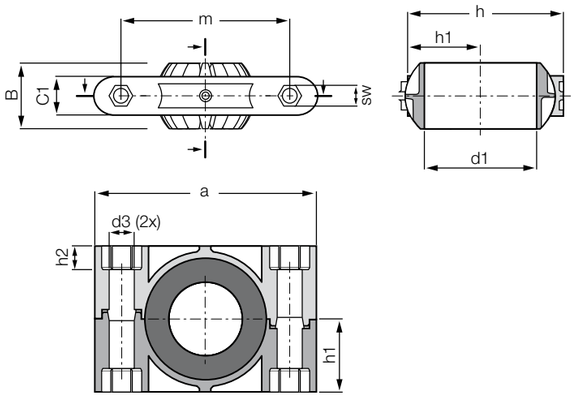
Material:
Housing: **igumid G** ▶ **Page 1433**
Spherical ball: **iglidur® W300** ▶ **Page 153**

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	3.3	4.6	30°
KSTM-06	6	9	7.0	10	18	33	43	5.5	4.5	6	29°
KSTM-08	8	12	9.0	10	20	33	47	6	4.5	7	25°
KSTM-10	10	14	10.5	14	26	46	62	7.5	5.5	8	25°
KSTM-12	12	16	12.0	14	28	46	65	8.5	5.5	9	25°
KSTM-14	14	19	13.5	18	34	60	82	9.5	6.6	11	23°
KSTM-16	16	21	15.0	18	36	60	86	10.5	6.6	12	23°
KSTM-18	18	23	16.5	22	42	68	93	11.5	9.0	13	23°
KSTM-20	20	25	18.0	22	44	68	98	13	9.0	14	23°
KSTM-22	22	28	20.0	24	48	74	108	14	9.0	16	22°
KSTM-25	25	31	22.0	27	54	86	124	16	9.0	17	22°
KSTM-30	30	37	25.0	32	64	96	139	17	11.0	20	22°

igubal® pillow block bearing | Product range

Pillow block bearing with split housing: KSTM-GT



Order key

Type	Size [mm]	Version
K ST M - GT	40	- GT

Dimensional series K	Pillow block bearing	Metric	Split housing	Inner Ø	Split ball

Material:
Housing: **RN33** ▶ **Page 1434**
Spherical ball: **iglidur® J** ▶ **Page 141**

- Fitting is easy and does not require shaft removal
- Maintenance-free, dry-running
- For high static loads
- Mounting: M12
- Low installation space and low weight
- High stiffness and fatigue strength
- Predictable lifetime
- Dimensional series K according to standard DIN ISO 12240

Technical data

Part No.	Max. radial tensile/ compressive strength		Max. axial tensile/ compressive strength		Maximum static 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

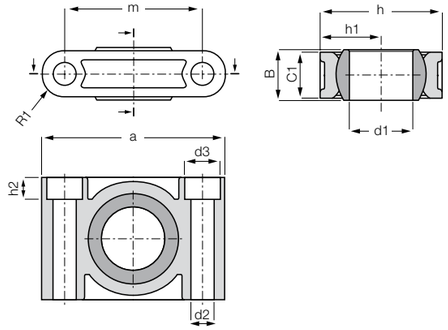
Dimensions [mm]

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 given by iglidur® J bore reducer; [24] Split pillow block with split ball

igubal® pillow block bearing | Product range

Pillow block bearing ESTM



Order key

Type	Size [mm]
E ST M -	08

Dimensional series E	Pillow block bearing	Metric	Inner Ø

Material:
Housing: **igumid G** ▶ **Page 1433**
Spherical ball: **iglidur® W300** ▶ **Page 153**
Combination with xiros® ball bearings ▶ **From page 820**

- High radial loads
- Media resistant
- Space-saving design, easy to fit
- Predictable lifetime
- Maintenance and lubrication-free
- Dimensional series E according to standard DIN ISO 12240
- Adapter available ▶ Accessories, **page 749**

Technical data

Part No.	Max. stat. radial tensile strength		Max. stat. radial compressive strength		Max. axial strength		Max. 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
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
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	8.0	4.5	–	19	9.5	–	31.0	22.0	9.0	8.0	4.5	22°
ESTM-10	10.0	5.5	–	22	11	–	36.0	26.0	10.0	9.0	5.0	22°
ESTM-12	12.0	5.5	–	26	13	–	38.0	28.0	10.0	10.0	5.0	22°
ESTM-16	16.0	6.6	10.6	34.0	17.0	6.4	50.0	37.0	13.0	13.0	6.5	22°
ESTM-20	20.0	9.0	14.0	40.0	20.0	8.6	62.0	46.0	16.0	16.0	8.0	22°
ESTM-25	25.0	9.0	14.0	48.0	24.0	8.6	72.0	54.0	18.0	20.0	9.0	20°
ESTM-30	30.0	11.0	17.0	56.0	28.0	10.6	86.0	64.0	22.0	22.0	11.0	20°

Spherical ball materials to choose ▶ Page 731

J4VEM: clearance free, preloaded

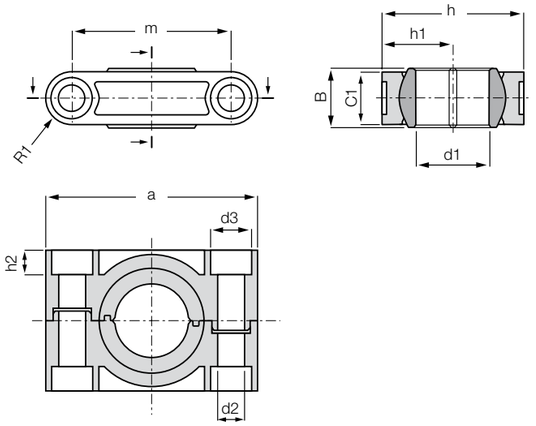
JEM: low moisture absorption

REM: low-cost

J4EM: low-cost and low moisture absorption

igubal® pillow block bearing | Product range

Pillow block bearing with split housing and split ball: ESTM-GT...-GT



Order key

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

Material:
Housing: **RN33** ▶ **Page 1434**
Spherical ball: **iglidur® J** ▶ **Page 141**

- Save time during assembly and disassembly of shafts
- Low installation space and low weight
- High stiffness and fatigue strength
- Spherical ball material iglidur® J for low moisture absorption
- Ideal for outdoor use
- Dimensional series E according to standard DIN ISO 12240
- Adapter available ▶ **Page 749**

Technical data

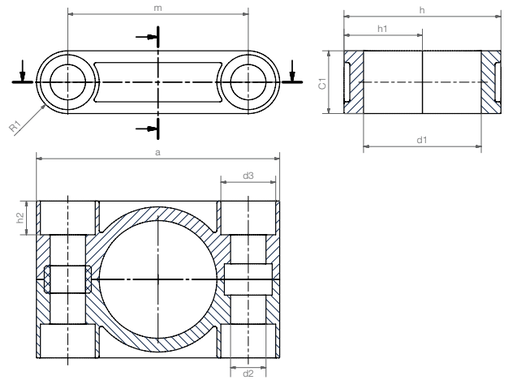
Part No.	max. static radial load		max. static radial compressive force		Weight
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
ESTM-GT16-GT	2,500	1,250	8,500	4,250	18.0
ESTM-GT20-GT	5,000	2,500	11,000	5,750	28.0
ESTM-GT25-GT	5,000	2,500	18,500	9,250	52.0
ESTM-GT30-GT	5,000	2,500	16,500	8,250	84.0

Dimensions [mm]

Part No.	d1	d2	d3	h	h1	h2	a	m	C1	B	R1	Max. pivot angle
	E10											
ESTM-GT16-GT	16.0	6.6	10.6	34.0	17.0	6.4	50.0	37.0	13.0	13.0	6.5	22°
ESTM-GT20-GT	20.0	9.0	14.0	40.0	20.0	8.6	62.0	46.0	16.0	16.0	8.0	22°
ESTM-GT25-GT	25.0	9.0	14.0	48.0	24.0	8.6	72.0	54.0	18.0	20.0	9.0	22°
ESTM-GT30-GT	30.0	11.0	17.0	56.0	28.0	10.6	86.0	64.0	22.0	22.0	11.0	22°

igubal® pillow block bearing | Product range

Pillow block bearing with parallel bore: ESTM-GT



Order key

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

Material:
igumid G ▶ **Page 1433**

- Easy to assemble and disassemble
- Ideal for outside applications
- High loads
- Dimensional series E according to standard DIN ISO 12240
- Adapter available ▶ Accessories, **page 749**

Technical data

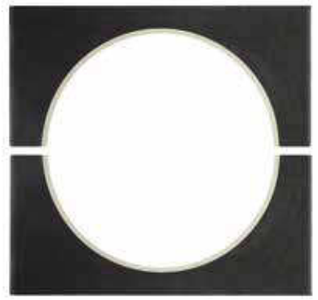
Part No.	max. static radial load		max. static radial compressive force		Weight
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
ESTM-GT16-25	3,600	1,800	7,000	3,500	12.6
ESTM-GT20-30	4,800	2,400	9,000	4,500	21.1
ESTM-GT25-35	8,500	4,250	15,000	7,500	39.9
ESTM-GT30-40	9,500	4,750	18,500	9,250	66.5

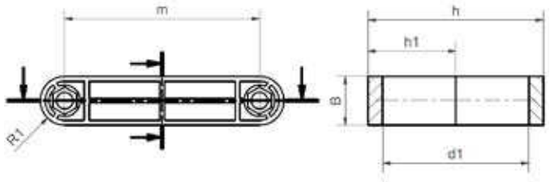
Dimensions [mm]

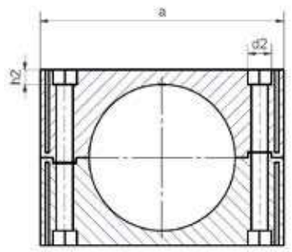
Part No.	d1	d2	d3	h	h1	h2	a	m	C1	R1	Weight
	E10										[g]
ESTM-GT16-25	25.0	6.6	10.6	34.0	14.0	6.4	50.0	37.0	13.0	6.5	12.6
ESTM-GT20-30	30.0	9.0	14.0	40.0	20.0	8.6	62.0	46.0	16.0	8.0	21.1
ESTM-GT25-35	35.0	9.0	14.0	48.0	24.0	8.6	72.0	54.0	18.0	9.0	39.9
ESTM-GT30-40	40.0	11.0	17.0	56.0	28.0	10.6	86.0	64.0	22.0	11.0	66.5

igubal® pillow block bearing | Product range

Split pillow block bearing for diameters up to 150 mm: ESTM-GT 150







Order key

Type	Size [mm]
E ST M - GT	150

Dimensional series E | Pillow block bearing | Metric | Split | Inner Ø

Material:
iglidur® GLW ▶ Page 131

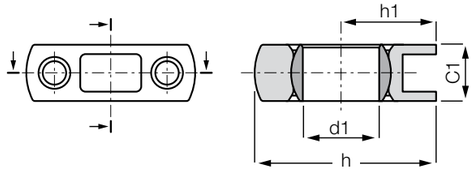
- Individual diameters in 6–8 weeks
- Static loads up to 4 tons
- Reduce assembly time up to 50 %
- Corrosion and chemical resistant
- Dimensional series E according to standard DIN ISO 12240

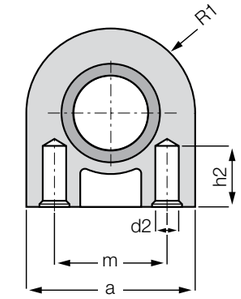
Dimensions [mm]

Part No.	d1 E10	d2	h	h1	h2	a	m	B	R1	Weight [g]
ESTM-GT 150	150	24	180	90	15	250	200	50	25	980

igubal® pillow block bearing | Product range

Pillow block bearing Slim line: ESTM SL





Order key

Type	Size [mm]	Version
E ST M -	05	SL

Dimensional series E | Pillow block bearing | Metric | Inner Ø | Slim line

Material:
Housing: **igumid G ▶ Page 1433**
Spherical ball: **iglidur® J ▶ Page 141**

- Extremely light
- Extremely space saving
- Cost-effective
- Predictable lifetime
- Maintenance and lubrication-free
- With M3 thread, e. g. ESTM-10-SL-M3
- For self tapping screw with outer diameter 3.5 mm
- Dimensional series E according to standard DIN ISO 12240

Technical data

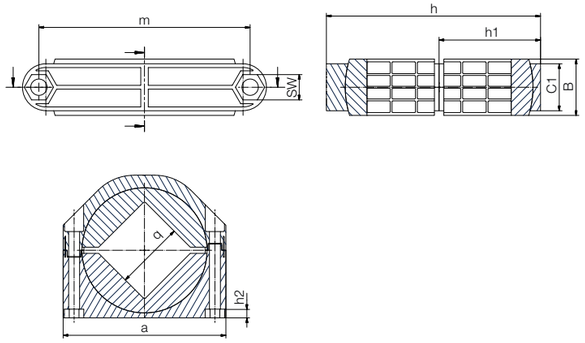
Part No.	Max. radial tensile strength		Max. radial compressive strength		Max. lateral strength		Max. axial strength		Weight
	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	[g]
ESTM-05 SL	1,500	750	1,400	700	900	450	150	75	1.6
ESTM-06 SL	1,500	750	1,400	700	900	450	150	75	1.7
ESTM-08 SL	1,600	800	1,400	700	950	475	100	50	1.7
ESTM-10 SL	1,600	800	1,400	700	1,000	500	100	50	1.9

Dimensions [mm]

Part No.	d1 E10	d2	h	h1	h2	a	m	C1	R1	Max. pivot angle
ESTM-05 SL	5.0	2.5	18.0	10.0	6.5	16.0	10.0	6.0	8.0	17°
ESTM-06 SL	6.0	2.5	18.0	10.0	6.5	16.0	10.0	6.0	8.0	17°
ESTM-08 SL	8.0	2.5	19.0	10.0	6.5	18.0	12.0	6.0	9.0	17°
ESTM-10 SL	10.0	2.5	20.0	10.0	6.5	20.0	14.0	6.0	10.0	17°

igubal® pillow block bearing | Product range

Split pillow block bearing for square profiles: ESQM



Order key

Type	Size [mm]
E SQ M	-GT 110

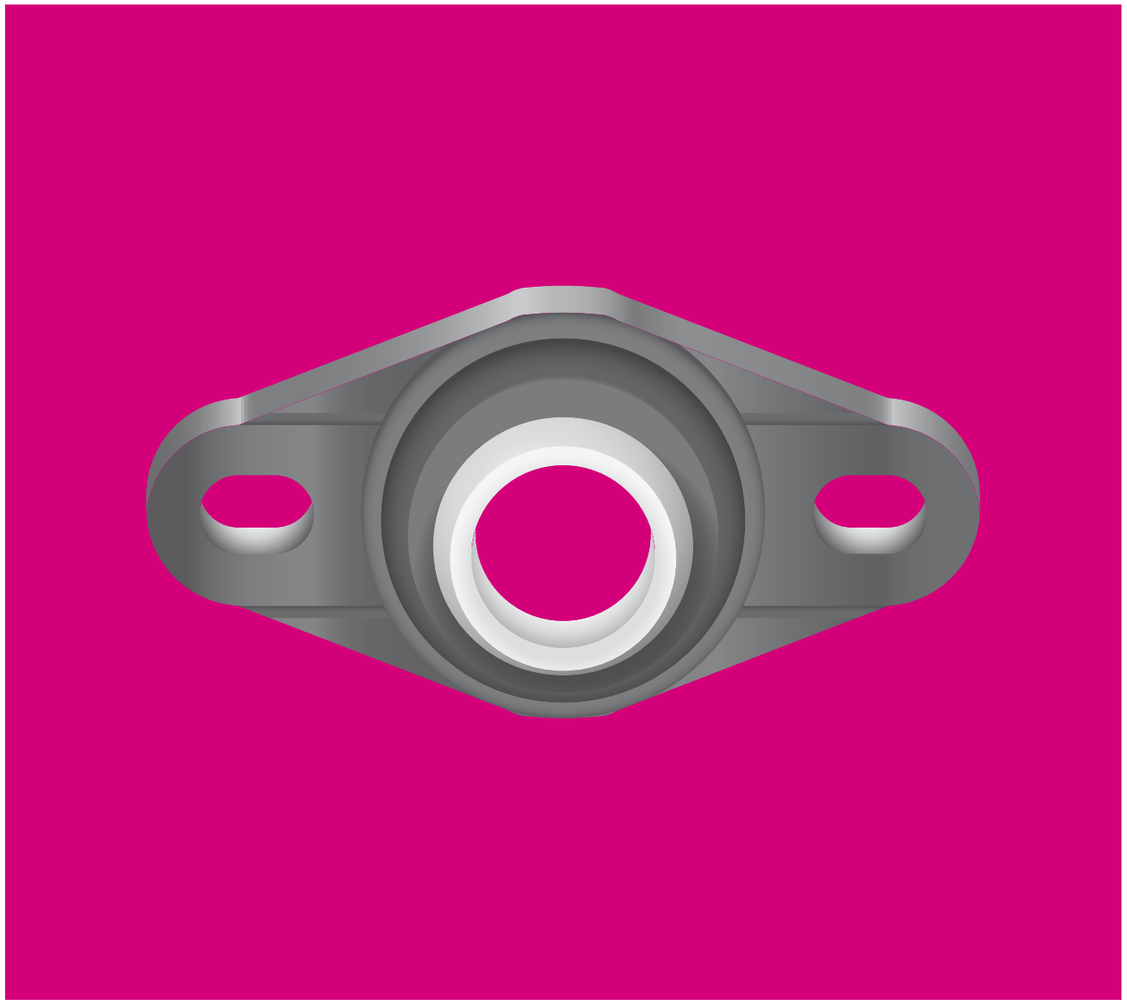
- E: Dimensional series E
- SQ: Split pillow block bearing for square profiles
- M: Metric
- -GT: Split
- 110: Edge length

Material:
Housing: **igumid G** ▶ **Page 1433**
Spherical ball: **iglidur® J4** ▶ **Page 1400**

- Profile 110 x 110 mm
- Split version of housing and spherical balls
- Easy assembly and disassembly
- High loads
- Lightweight
- Compensation of misalignment

Dimensions [mm]

Part No.	q +1	SW	h	h1	h2	a	m	B	C1	Weight [g]
ESQM-110	110.5	27	228	108	13.6	260	225	60	50	1,255

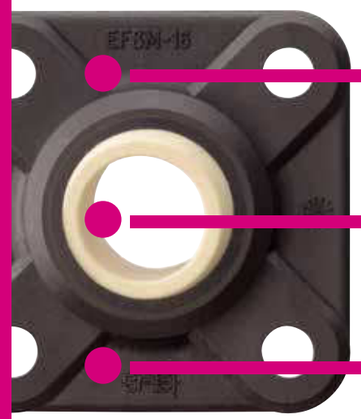


igubal® flange bearings

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

igubal® flange bearings

igubal® 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® flange bearings are made to the dimensional series E and are offered with two or four mounting holes.



Maintenance-free, dry-running

High rigidity

High strength

Lightweight

Low installation space

When to use it?

- If chemical resistance is required
- If a cost effective option is requested
- If you need dirt-resistant bearings
- To adjust misalignment
- If you need split components
- If temperatures higher than +200 °C are required

When not to use it?

- If temperatures are higher than +200 °C
  ▶ HT Version, page 707-708
- If an integrated fixing collar is required
- If dimensions above 50 mm are required
- If rotation speeds higher than 0.5 m/s are required

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

max. +200 °C
min. –40 °C
(depending on material: Standard –30 °C up to +80 °C; HT –40 °C up to +200 °C)

5 types
Ø 4–50 mm

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

igubal® flange bearings | Application examples

Typical sectors of industry and application areas

- Plant design ● Automation
- Agricultural machines
- Machine building ● Food industry etc.

Improve technology and reduce costs – 110 exciting examples online
▶ www.igus.eu/igubal-applications

Conveyor technique

▶ www.igus.eu/agrar

▶www.igus.eu/rotary-sorter

▶ www.igus.eu/food

igubal® flange bearings | Technical data

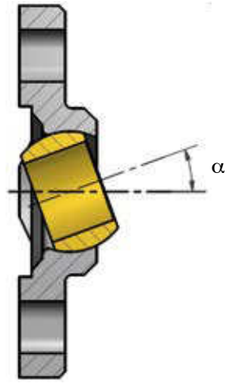
application areas

Since igubal® flange bearings are made for maintenance-free use, they are especially suitable for applications in which access to the bearing is limited, in moist or wet environments or clean room environments. igubal® flange bearings are also found in electric brushes, awnings, conveyor technology, and bakery machines. igubal® flange bearings are also found in electric brushes, awnings, conveyor technology, and bakery machines.

Fitting

igubal® 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 flange bearing compensates for alignment errors. Special adjusting rings can be used to fix the shaft.

Pivot angle



igubal® flange bearings | Product overview

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

Easy installation
Dimensional series E
EFOM
▶ From page 700

For higher radial load
Dimensional series E
EFSM
▶ From page 702

Universal and quick assembly
Female thread
GFSM-IG
▶ Page 704

Universal and quick assembly
Male thread
GFSM-AG
▶ Page 705

High static load, split housing
Dimensional series K
KFSM-GT
▶ Page 706

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

Easy installation
Dimensional series E
EFOM-HT
▶ Page 707

For higher radial load
Dimensional series E
EFSM-HT
▶ Page 708

igubal® combination with xiros® ball bearings

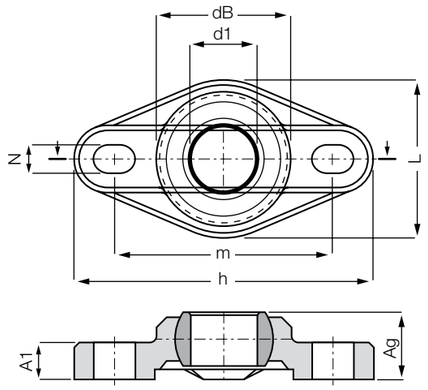
Low coefficient of friction, pivoting
Dimensional series E
▶ Page 822

Low coefficient of friction, pivoting
Dimensional series E
▶ Page 823

igubal® flange bearings | Product range

Flange bearing with 2 mounting holes: EFOM

- iglidur® W300 extremely wear resistant spherical ball
- Easy installation
- Compensation of misalignment
- Corrosion resistant
- Lightweight
- Maintenance-free, dry operation



Order key

Type	Size [mm]
E F O M	-04

Dimensional series E | Flange bearing | 2 holes | Metric | Inner Ø

Material:
Housing: **igumid G** ▶ **Page 1433**
Spherical ball: **iglidur® W300** ▶ **Page 153**
Combination with xiros® ball bearings ▶ **Page 823**

Technical data

Part No.	Maximum static axial load		Maximum static radial load		Maximum static torque	Max. pivot angle	Weight
	Short-term	Long-term	Short-term	Long-term	Holes		
	[N]	[N]	[N]	[N]	[Nm]		[g]
EFOM-04	400	200	750	375	0.6	28°	1.9
EFOM-05	400	200	750	375	0.6	29°	2.3
EFOM-06	500	250	800	400	0.6	25°	1.8
EFOM-08	700	350	1,100	550	1.3	25°	4.1
EFOM-10	850	425	2,000	1,000	2.5	25°	6.8
EFOM-12	1,100	550	2,200	1,100	2.5	21°	8.9
EFOM-15	1,300	650	2,400	1,200	4.5	20°	15.0
EFOM-16	1,400	700	2,800	1,400	4.5	27°	17.7
EFOM-17	1,800	900	3,200	1,600	4.5	21°	24.9
EFOM-20	1,800	900	5,500	2,750	10.5	19°	32.8
EFOM-25	3,000	1,500	6,000	3,000	10.5	15°	58.5
EFOM-30	3,500	1,750	6,500	3,250	21.5	14°	78.9

Spherical ball materials to choose ▶ Page 731

J4VEM: clearance free, preloaded

JEM: low moisture absorption

REM: low-cost

J4EM: low-cost and low moisture absorption

Dimensions [mm]

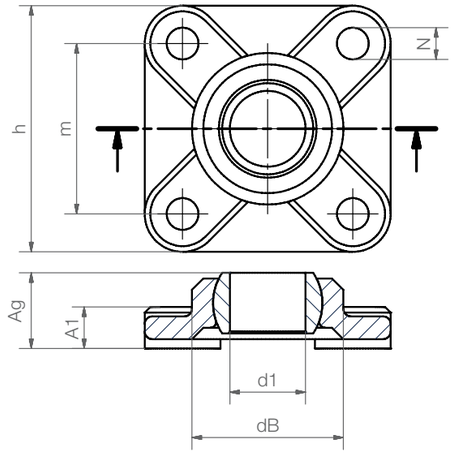
Part No.	d1	dB	h	L	m	A1	Ag	N	
	E10		Length	Width	Hole pitch ±0.1	Height of plate +1.0	Total height	Bore diameter d2	Bore diameter x2
EFOM-04	4	14.0	33.8	16.0	24.0	4.5	8.0	3.2	5.0
EFOM-05	5	14.0	33.8	16.0	24.0	4.5	8.5	3.2	5.0
EFOM-06	6	14.0	33.8	16.0	24.0	4.5	8.5	3.2	5.0
EFOM-08	8	18.0	44.2	22.0	31.0	5.5	10.5	4.3	6.5
EFOM-10	10	22.2	52.0	26.0	36.0	6.5	12.0	5.3	8.0
EFOM-12	12	25.0	56.7	31.0	41.0	7.0	13.0	5.3	8.0
EFOM-15	15	29.8	68.6	36.0	50.0	8.5	15.5	6.4	10.0
EFOM-16	16	32.0	72.6	38.0	53.0	10.0	17.5	6.4	10.1
EFOM-17	17	34.8	74.6	41.0	55.0	10.0	18.0	6.4	10.2
EFOM-20	20	40.0	89.0	47.0	65.0	11.0	20.0	8.4	12.5
EFOM-25	25	48.5	101.0	58.5	75.0	14.0	25.0	8.4	12.6
EFOM-30	30	55.0	118.0	65.0	87.5	15.0	26.0	10.5	16.0

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

igubal® flange bearings | Product range

Flange bearing with 4 mounting holes: EFSM

- iglidur® W300 extremely wear resistant spherical ball
- Easy installation
- Compensation of misalignment
- Corrosion resistant
- Lightweight
- Maintenance-free, dry operation



Order key

Type				Size [mm]
E	F	S	M	-04
Dimensional series E	Flange bearing	4 holes	Metric	Inner Ø

Material:
Housing: **igumid G ▶ Page 1433**
Spherical ball: **iglidur® W300 ▶ Page 153**
Combination with xiros® ball bearings ▶ **Page 822**

Technical data

Part No.	Maximum static axial load		Maximum static radial load		Maximum static torque	Max. pivot angle	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	28°	2.6
EFSM-05	300	150	1,000	500	0.6	29°	2.7
EFSM-06	300	150	1,000	500	0.6	25°	2.8
EFSM-08	450	225	1,400	700	1.3	25°	5.9
EFSM-10	700	350	2,000	1,000	2.5	25°	9.1
EFSM-12	850	425	2,500	1,250	2.5	21°	11.0
EFSM-15	1,100	550	3,000	1,500	4.5	20°	20.2
EFSM-16	1,350	675	3,200	1,600	4.5	27°	23.3
EFSM-17	1,600	800	3,400	1,700	4.5	21°	27.9
EFSM-20	2,000	1,000	4,000	2,000	10.5	19°	45.0
EFSM-25	2,400	1,200	5,600	2,800	10.5	15°	76.0
EFSM-30	2,800	1,400	6,000	3,000	21.5	14°	100.7

Spherical ball materials to choose ▶ Page 731

J4VEM:
clearance free, preloaded

JEM:
low moisture absorption

REM:
low-cost

J4EM:
low-cost and low moisture absorption

Dimensions [mm]

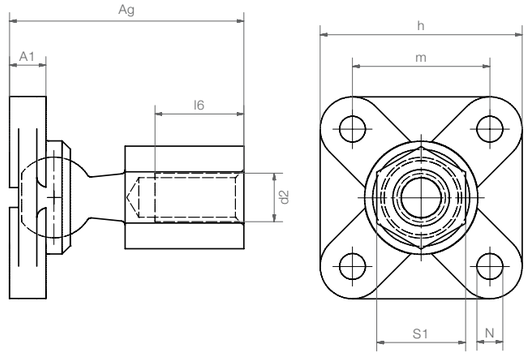
Part No.	d1	dB	h	m	A1	Ag	N
	E10		Width	Hole pitch	Height of plate	Total height	Bore d
				±0.1			
EFSM-04	4	14.0	25.0	17.0	4.5	8.5	3.2
EFSM-05	5	14.0	25.0	17.0	4.5	8.5	3.2
EFSM-06	6	14.0	25.0	17.0	4.5	8.5	3.2
EFSM-08	8	18.0	33.0	22.0	5.5	10.5	4.3
EFSM-10	10	21.9	38.0	26.0	6.5	12.0	5.3
EFSM-12	12	25.0	40.0	28.0	7.0	13.0	5.3
EFSM-15	15	30.0	49.0	34.0	8.5	15.5	6.4
EFSM-16	16	32.0	52.0	36.0	9.0	16.5	6.4
EFSM-17	17	35.0	54.0	38.0	10.0	18.0	6.4
EFSM-20	20	40.0	65.0	45.0	11.0	20.0	8.4
EFSM-25	25	48.5	74.0	52.0	14.0	25.0	8.4
EFSM-30	30	54.5	85.0	60.0	15.0	26.0	10.5

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

igubal® flange bearings | Product range

Complete housing with ball stud, female thread: GFSM-...-IG

- Maintenance-free and corrosion-resistant
- Easy connection – easy assembly
- Compensation of misalignment



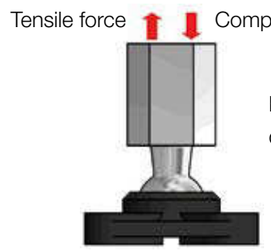
Order key

Type	Size [mm]	Version	Options
GF S M -	06	- IG	

Flange Mounted | **4 holes** | **Metric** | **Inner Ø** | **Female thread**

Ball stud
blank = ball stud made of galvanised steel
ES = ball stud made from stainless steel[28)]

Material:
Housing: **igumid G** ▶ **Page 1433**
Ball stud: galvanised and stainless steel[28)]
▶ Accessories, **page 746**



Technical data

Part No.	Max. static tensile force		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	17.0	25.0	29.0	4.5	11.0	3.2	SW11	32°
GFSM-08-IG	M8	22.0	33.0	36.0	5.5	12.0	4.3	SW14	40°
GFSM-10-IG	M10	26.0	38.0	43.5	6.5	16.0	5.3	SW17	34°

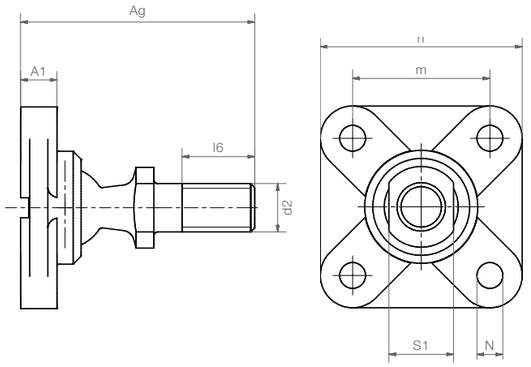
[28)] Stainless steel ball stud on request

igubal® flange bearings

igubal® flange bearings | Product range

Complete housing with ball stud, male thread: GFSM-...-AG

- Maintenance-free and corrosion-resistant
- Easy connection – easy assembly
- Compensation of misalignment



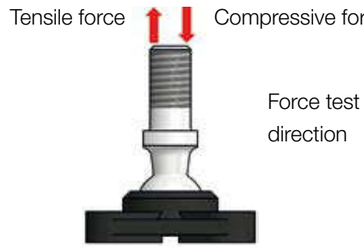
Order key

Type	Size [mm]	Version	Options
GF S M -	06	- AG	

Flange Mounted | **4 holes** | **Metric** | **Inner Ø** | **Male thread**

Ball stud
Blank = plastic stud
MS = ball stud made from galvanised steel[19)].
ES = ball stud made from stainless steel[28)]

Material:
Housing: **igumid G** ▶ **Page 1433**
Ball studs: plastic, galvanised steel and stainless steel[28)] ▶ Accessories, **page 747**



Technical data

Part No.	Max. static tensile force		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]

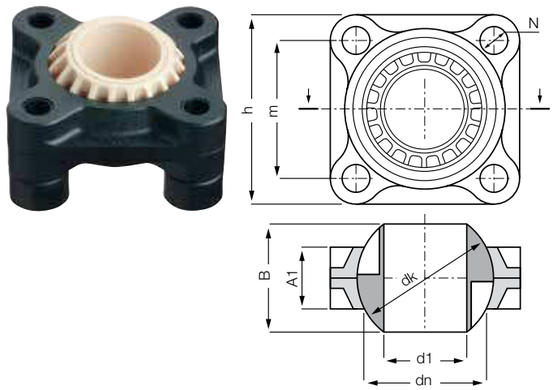
Part No.	d2	m	h	Ag	A1	l6	N	S1	Max. pivot angle
GFSM-06-AG	M6	17.0	25.0	29.0	4.5	10.5	3.2	SW8	32°
GFSM-08-AG	M8	22.0	33.0	36.0	5.5	13.5	4.3	SW11	34°
GFSM-10-AG	M10	26.0	38.0	43.5	6.5	16.0	5.3	SW13	40°

[19)] Galvanised steel stud only available with right-hand thread. Orde example: GFSM-06 AG MS

[28)] Stainless steel ball stud on request

igubal® flange bearings | Product range

Flange bearing with 4 mounting holes and split housing: KFSM GT

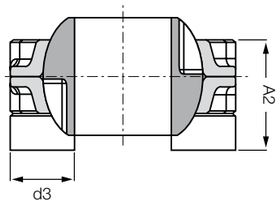


- Preassembled delivery
- Option with plug-in feet
- Dirt resistant
- Lightweight
- Low installation space
- For high static loads
- High stiffness and fatigue strength
- Predictable lifetime
- Maintenance-free, dry operation
- Mounting: with plug-in feet M10, without plug-in feet M12

Order key

Type					Size [mm]	Options
K	F	S	M	-GT-	35	- A
Dimensional series K	Flange bearing	4 holes	Metric	Split housing	Inner Ø	With plug-in feet

Material:
Housing: **RN33** ▶ **Page 1434**
Spherical ball: **iglidur® J** ▶ **Page 141**



Example: KFSM-GT-40-A

Technical data

Part No.	Maximum static radial load		Maximum static axial load		Weight
	Short-term	Long-term	Short-term	Long-term	
	[N]	[N]	[N]	[N]	[g]
KFSM-GT-35[23)]	5,000	2,500	4,500	2,250	183.5
KFSM-GT-40	5,000	2,500	4,500	2,250	161.6
KFSM-GT-45[23)]	6,000	3,000	5,000	2,500	294.6
KFSM-GT-50	6,000	3,000	5,000	2,500	260.1

Max. tightening torque for fixing: 30 Nm

Dimensions [mm]

Part No.	d1	dn	d3	dk	A1	A2	B	m	h	N	Max. pivot angle
	E10										
KFSM-GT-35[23)]	35.0	59.0	26.0	66.0	30.0	45.0	48.5	66.0	92.0	13.5	24°
KFSM-GT-40	40.0	59.0	26.0	66.0	30.0	45.0	48.5	66.0	92.0	13.5	24°
KFSM-GT-45[23)]	45.0	72.0	26.0	82.0	40.0	60.0	60.0	78.0	104.0	13.5	24°
KFSM-GT-50	50.0	72.0	26.0	82.0	40.0	60.0	60.0	78.0	104.0	13.5	24°

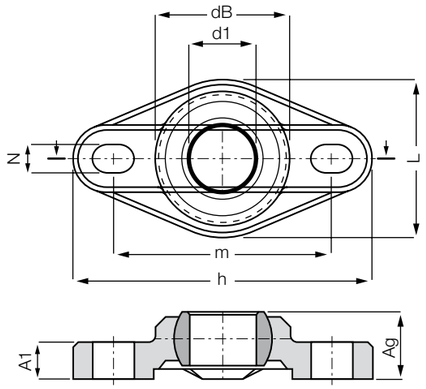
For KFSM with distance pieces, please add an "A" to the part no. Example: KFSM-GT-50-A

[23)] **Diameter given by iglidur® J bore reducer**

igubal® flange bearings

igubal® flange bearings | Product range

High-temperature flange bearing with 2 mounting holes: EFOM-HT



Order key

Type					Size [mm]	Version
E	F	O	M	-	06	- HT
Dimensional series E	Flange bearing	2 holes	Metric		Inner-Ø [mm]	high temperature

Material:
Housing: **iguton G** ▶ **Page 1433**
Spherical ball: **iglidur® X** ▶ **Page 237**

- Applicable up to +200 °C
- Easy installation
- Compensation of misalignment
- Corrosion resistant
- Lightweight
- Chemical resistant (chemical table ▶ **Page 1424**)
- For underwater applications

Technical data

Part No.	Maximum static axial load		Maximum static radial load		Maximum static 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

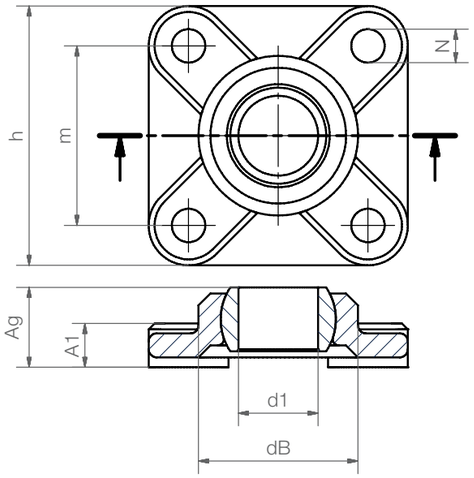
Dimensions [mm]

Part No.	d1	dB	h	L	m	A1	Ag	N		Max. pivot angle
	E10		Length	Width	Hole pitch ±0.1	Height of plate	Total height	Bore diameter d2	x2	
EFOM-05-HT	5	14.0	33.8	16.0	24.0	4.5	8.5	3.2	5.0	29°
EFOM-06-HT	6	14.0	33.8	16.0	24.0	4.5	8.5	3.2	5.5	27°
EFOM-08-HT	8	18.0	44.2	22.0	31.0	5.5	10.5	4.3	6.5	24°
EFOM-10-HT	10	22.0	52.0	26.0	36.0	6.5	12.0	5.3	8.0	24°
EFOM-12-HT	12	25.0	56.7	31.0	41.0	7.0	13.0	5.3	8.0	21°

Other dimensions available on request

igubal® flange bearings | Product range

High-temperature flange bearing with 4 mounting holes: EFSM-HT



Order key

Type	Size [mm]	Version
E F S M -	05	- HT
Dimensional series E	Inner Ø	High temperature
Flange bearing		
4 holes		
Metric		

Material:
Housing: **iguton G** ▶ **Page 1433**
Spherical ball: **iglidur® X** ▶ **Page 237**

- Applicable up to +200 °C
- Easy installation
- Compensation of misalignment
- Corrosion resistant
- Lightweight
- Chemical resistant (chemical table ▶ **Page 1424**)
- For underwater applications

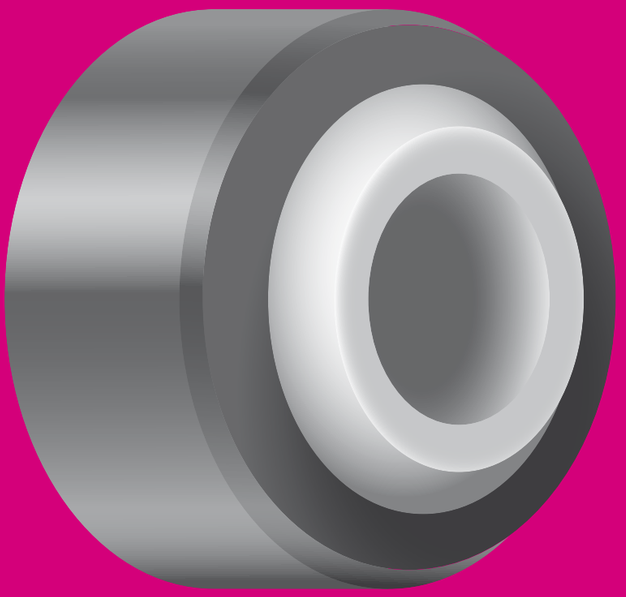
Technical data

Part No.	Maximum static axial load		Maximum static radial load		Maximum static torque	Weight
	Short-term	Long-term	Short-term	Long-term	Holes	
	[N]	[N]	[N]	[N]	[Nm]	[g]
EFSM-05-HT	275	138	440	220	0.6	3.5
EFSM-06-HT	339	170	523	262	0.6	3.3
EFSM-08-HT	412	206	713	356	1.3	7.1
EFSM-10-HT	864	432	1,202	601	2.5	11.2
EFSM-12-HT	1,024	512	1,347	674	2.5	13.3

Dimensions [mm]

Part No.	d1	dB	h	m	A_1	A_g	N	Max. pivot angle
	E10		Width	Hole pitch ±0.1	Height of plate	Total height	Bore diameter d	
EFSM-05-HT	5	14.0	25.0	17.0	4.5	8.5	3.2	29°
EFSM-06-HT	6	14.0	25.0	17.0	4.5	8.5	3.2	25°
EFSM-08-HT	8	18.0	33.0	22.0	5.5	10.5	4.3	25°
EFSM-10-HT	10	22.0	38.0	26.0	6.5	12.0	5.3	25°
EFSM-12-HT	12	25.0	40.0	28.0	7.0	13.0	5.3	21°

Other dimensions available on request



igubal® spherical bearings

Easy to fit

Extremely cost-effective

Chemical resistance

Lightweight

Very robust

igubal® spherical bearings

The use of pivoting bearings is usually associated with high weight 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® pressfit spherical bearings put an end to all of these disadvantages: they are easy to fit, cost-effective, lightweight and robust.

When to use it?
- For high axial and radial loads
- When an easy installation is required
- In case of reduced installation place
- If chemical resistance is required
- If a cost effective option is requested
- If you need dirt-resistant bearings
- To adjust misalignment

When not to use it?
- If temperatures are higher than +80 °C
- For dimensions above 30 mm
- If rotation speeds higher than 0.5 m/s are required

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

max. +80 °C
min. –30 °C

13 types
Ø 2–40 mm

Imperial dimensions available
▶ From page 1337

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

igubal® pressfit spherical bearings | Application examples

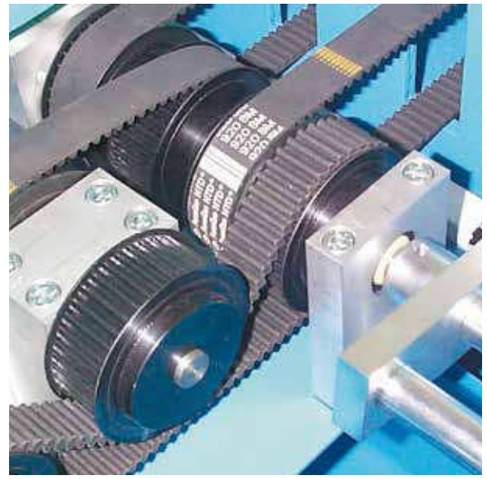
Typical sectors of industry and application areas
- Food industry
- Railway technology
- Automotive
- Plant design etc.

Improve technology and reduce costs – 110 exciting examples online
▶ **www.igus.eu/igubal-applications**

▶ **www.igus.eu/food**

▶ **www.igus.eu/traffic**

▶ **www.igus-automotive.com**



▶ **www.igus.eu/hose-skiving**

igubal® pressfit spherical bearings | Technical data

The use of pivoting bearings is usually associated with high weight 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. 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 fit
- Exceptionally cost-effective
- Lightweight
- Very robust

Area of application

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® pillow block bearings are designed with an inside diameter tolerance of E10. The shaft tolerance should be included between h6 and h9. These recommended tolerances allow for changes in the bearing due to temperature.

Fitting

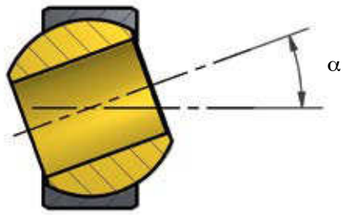
igubal® spherical bearings are pressfitted into a recommended H7 housing bore and axially secured. An exact orientation of the bearing housing is not necessary, since the spherical bearing compensates for alignment errors.

Dimensions

igubal® spherical bearings are manufactured according to DIN ISO 12240 dimensional series K and E. The product range provides standard dimensions from 2 to 40 mm. The dimensional series K is available in imperial dimensions. Please contact us if you need other dimensions.

Pivot angle

Pivot angle



igubal® pressfit spherical bearings | Product overview

igubal® spherical bearings

Easy to fit, cost effective, selectable ball material
Dimensional series K
KGLM-LC
▶ Page 715

Standard, easy to fit
Dimensional series K
KGLM
▶ Page 714

For extremely narrow installation space
Dimensional series K
KGLM-SL
▶ Page 716

Standard, easy to fit, imperial dimensions
Dimensional series K
KGLI
▶ Page 1400

Space saving
Dimensional series E
EGLM
▶ Page 717

Low-cost, selectable ball material
Dimensional series E
EGLM-LC
▶ Page 718

igubal® self-aligning clip bearing

Simply snap into sheet metal
Dimensional series E
ECLM
▶ Page 719

For high axial and radial loads, selectable ball material
Dimensional series E
ECLM-HD
▶ Page 720

For tolerance compensation, selectable ball material
Dimensional series E
EGFM-T
▶ Page 721

Simply snap into sheet metal, can be assembled on both sides
ZCLM
▶ Page 722

igubal® double joint bearings

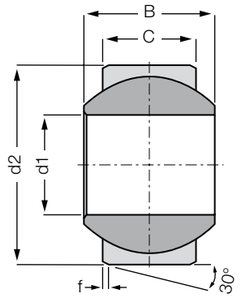
Solid polymer, selectable ball material
Dimensional series E
EGZM
▶ Page 723

Selectable ball stud and tube materials, individual dimensions and alignment
WDGM
▶ Page 724

Removable, selectable materials, individual dimensions and alignment
WDGM-DE
▶ Page 725

Selectable ball stud and tube materials, individual dimensions and alignment
KDGM
▶ Page 726

Pressfit spherical bearing:KGLM



- Compensation of misalignment and edge loads
- Corrosion resistant
- High vibration-dampening
- Excellent vibration dampening
- Suitable for rotating, oscillating and axial movements

Order key

Type	Size [mm]
K GL M	-02
Dimensional series K	Pressfit spherical bearings / Metric / Inner Ø

Material:
Housing: **igumid G ▶ Page 1433**
Spherical ball: **iglidur® W300 ▶ Page 153**

Imperial dimensions available
▶ From page 1400

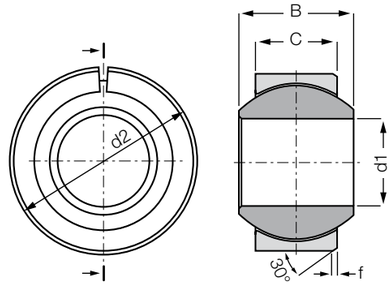
Technical data and dimensions [mm]

Part No.	Max. static compressive strength radial [N]	Max. static compressive strength axial[29] [N]	Max. torque through ball [Nm]	d1 E10	d2	B	C	f	Max. pivot angle	Weight [g]
KGLM-02	300	60	1	2	8	4	3.0	0.8	32°	0.1
KGLM-03	550	200	2	3	10	6	4.5	0.8	32°	0.5
KGLM-05	1,300	500	5	5	13	8	6.0	0.8	30°	1.0
KGLM-06	1,800	650	10	6	16	9	6.5	0.8	29°	1.6
KGLM-08	2,700	1,200	12	8	19	12	9.0	0.8	25°	2.9
KGLM-10	4,000	1,400	20	10	22	14	10.5	0.8	25°	4.4
KGLM-12	5,400	1,500	30	12	26	16	12.0	0.8	25°	7.0
KGLM-14	6,000	2,500	35	14	28	19	13.5	0.8	23°	9.1
KGLM-16	8,000	3,000	40	16	32	21	15.0	0.8	23°	12.8
KGLM-18	9,000	4,000	45	18	35	23	16.5	0.8	23°	16.6
KGLM-20	10,000	5,000	55	20	40	25	18.0	0.8	23°	24.4
KGLM-22	11,700	6,500	60	22	42	28	20.0	0.8	22°	28.5
KGLM-25	13,600	7,500	65	25	47	31	22.0	0.8	22°	39.3
KGLM-30	20,000	9,000	70	30	55	37	25.0	1.0	22°	62.6

[29] The maximum static axial load is determined in a remote location hole

Pressfit spherical bearing: KGLM Low-cost

- Variety of ball materials
- Easy installation
- Cost-effective
- Split housing



Order key

Type	Size [mm]	Version
K GL M -	05	- LC
Dimensional series K / Pressfit spherical bearings / Metric	Inner Ø	Low-cost

Material:
Housing: **igumid G ▶ Page 1433**
Spherical ball: **iglidur® W300 ▶ Page 153**
Other spherical balls on request **▶ Page 731**

Technical data

Part No.	Max. static compressive strength (short-term) radial [N]	Max. static compressive strength (short-term) axial[29] [N]	Max. torque through ball [Nm]	Max. pivot angle	Weight [g]
KGLM-05 LC	1,300	500	5	30°	1.0
KGLM-08 LC	1,800	650	12	29°	1.6
KGLM-10 LC	4,000	1,400	20	25°	4.3
KGLM-12 LC	5,400	1,500	30	25°	6.9
KGLM-16 LC	8,000	3,000	40	23°	12.7
KGLM-18 LC	9,000	4,000	45	23°	16.6
KGLM-20 LC	10,000	5,000	55	23°	23.6
KGLM-25 LC	13,600	7,500	65	22°	38.9
KGLM-30 LC	20,000	9,000	70	22°	61.0

[29] The maximum static axial load is determined in a remote location hole

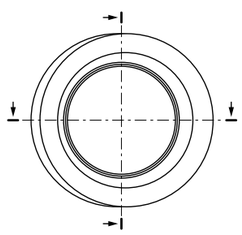
Dimensions [mm]

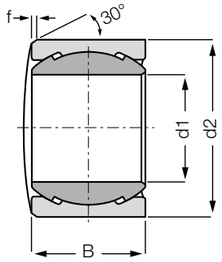
Part No.	d1 E10	d2[30]	B	C	f
KGLM-05 LC	5	13.0	8	6.0	0.8
KGLM-08 LC	8	16.0	9	6.5	0.8
KGLM-10 LC	10	22.0	14	10.5	0.8
KGLM-12 LC	12	26.0	16	12	0.8
KGLM-16 LC	16	32.0	21	15	0.8
KGLM-18 LC	18	35.0	23	16.5	0.8
KGLM-20 LC	20	40.0	25	18	0.8
KGLM-25 LC	25	47.0	31	22	0.8
KGLM-30 LC	30	55.0	37	25	1.0

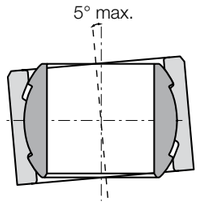
[30] Pressfitted

igubal® pressfit spherical bearings | Product range

Pressfit spherical bearing: KGLM Slim Line







Order key

Type			Size [mm]	Version
K	GL	M	- 08	SL
Dimensional series K	Pressfit spherical bearings	Metric	Inner Ø	Slim line

Material:
Housing: **igumid G ▶ Page1433**
Spherical balls: **iglidur® W300 ▶ Page 153**

- Very small installation space
- Wall thickness 50 % thinner than KGLM
- Angle compensation up to 5°
- Lightweight
- Dimensions according to DIN 1850

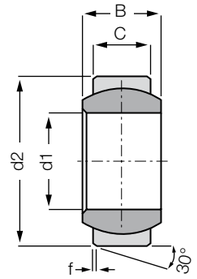
Technical data and dimensions [mm]

Part No.	Max. static tensile strength (short-term) radial [N]	Max. static tensile strength (short-term) axial [N]	Max. static tensile strength (long-term) radial [N]	Max. static tensile strength (long-term) axial [N]	d1 E10	d2	B	f	Max. pivot angle	Weight [g]
KGLM-08 SL	2,700	450	1,350	225	8	14	9.0	0.5	5°	1.1
KGLM-10 SL	4,000	750	2,000	375	10	16	10.5	0.5	5°	1.5
KGLM-12 SL	4,500	750	2,250	375	12	18	12.0	0.5	5°	2.0
KGLM-16 SL	6,500	500	3,250	250	16	22	15.0	0.5	5°	3.1

igubal® pressfit spherical bearings

igubal® pressfit spherical bearings | Product range

Pressfit spherical bearing: EGLM



- Compensation of misalignment and edge loads
- Corrosion resistant
- High vibration-dampening
- Excellent vibration dampening
- Suitable for rotating, oscillating and linear movements

Order key

Type			Size [mm]
E	GL	M	-04
Dimensional series E	Pressfit spherical bearings	Metric	Inner Ø

Material:
Housing: **igumid G ▶ Page 1433**
Spherical ball:
Spherical balls with 04–30 mm diameters made from **iglidur® W300 ▶ Page 153**
Spherical balls with 40 mm diameter made from **iglidur® J ▶ Page 141**

Technical data and dimensions [mm]

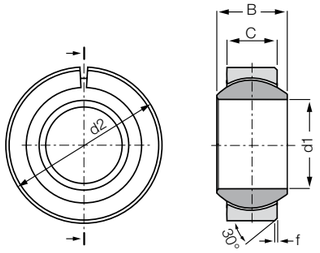
Part No.	Max. static compressive strength radial [N]	Max. static compressive strength axial[29] [N]	Max. torque through ball [Nm]	d1 E10	d2	B	C	f	Max. pivot angle	Weight [g]
EGLM-04	600	50	1	4	12	5	3.0	0.5	37°	0.4
EGLM-05	1,000	130	2	5	14	6	4.0	0.5	33°	0.8
EGLM-06	1,200	150	2.5	6	14	6	4.0	0.5	27°	0.9
EGLM-08	1,800	175	7	8	16	8	5.0	0.5	24°	1.2
EGLM-10	2,500	400	14	10	19	9	6.0	0.5	24°	1.9
EGLM-12	3,800	650	25	12	22	10	7.0	0.5	21°	2.8
EGLM-15	5,500	1,000	30	15	26	12	9.0	0.5	21°	6.9
EGLM-16	6,000	1,150	32	16	28	13	9.5	0.5	21°	9.0
EGLM-17	6,300	1,200	35	17	30	14	10.0	1.0	21°	10.6
EGLM-20	9,000	1,400	40	20	35	16	12.0	1.0	18°	16.3
EGLM-25	14,000	2,900	55	25	42	20	16.0	1.0	16°	29.0
EGLM-30	17,000	4,000	70	30	47	22	18.0	1.0	13°	37.4
EGLM-40	22,500	2,500	80	40	62	28	22.0	1.0	15°	57.0

[29] The maximum static axial load is determined in a remote location hole

igubal® pressfit spherical bearings | Product range

Pressfit spherical bearing: EGLM Low-cost

- Easy to fit
- Extremely cost-effective
- Chemical- and corrosion-resistant
- Very robust
- Compensation of misalignment



Order key

Type	Size [mm]	Version
E GL M -	15	- LC

Dimensional series E | Pressfit spherical bearings | Metric | Inner Ø | Low-cost

Material:
Housing: **igumid G** ▶ **Page 1433**
Spherical ball: **iglidur® W300** ▶ **Page 153**
Other spherical balls on request
▶ **Page 731**

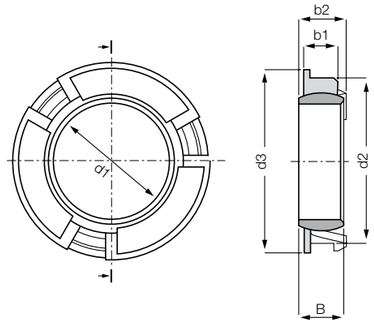
Technical data and dimensions [mm]

Part No.	Max. static compressive strength radial [N]	Max. static compressive strength axial[29)] [N]	Max. torque through ball [Nm]	d1 E10	d2	B	C	f	Max. pivot angle	Weight [g]
EGLM-15-LC	5,500	1,000	30	15	26	12	9.0	0.5	21°	4.5
EGLM-16-LC	6,000	1,150	32	16	28	13	9.5	0.5	21°	6
EGLM-20-LC	9,000	1,400	40	20	35	16	12	1.0	18°	11
EGLM-25-LC	14,000	2,900	55	25	42	20	16	1.0	16°	20
EGLM-30-LC	17,000	4,000	70	30	47	22	18	1.0	13°	26

[29)] The maximum static axial load is determined in a remote location hole

igubal® self-aligning clip bearings | Product range

Self-aligning clip bearing: ECLM



- Very easy installation by simply snap into sheet metal
- No additional axial fastening necessary
- Extremely small installation space: space-saving, thin-walled design

Order key

Type	Size [mm]
E CL M	-05-02

Dimensional series E | Self-aligning clip bearing | Metric | Inner Ø | Sheet thickness

Material:
Housing: **igumid G** ▶ **Page 1433**
Spherical ball: **iglidur® J** ▶ **Page 141**

Technical data

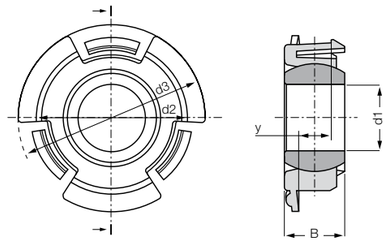
Part No.	Max. static compressive strength (short-term) radial [N]	Max. static compressive strength (short-term) axial [N]	Max. static compressive strength (long-term) radial [N]	Max. static compressive strength (long-term) axial [N]	Weight [g]
ECLM-05-02	700	25	350	12.5	0.5
ECLM-06-02	700	25	350	12.5	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	20	900	10.0	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	Sheet metal thickness y	b1 ±0.1	b2	Max. pivot angle
ECLM-05-02	5	6.0	12	13	2.0	3.9	6.0	25°
ECLM-06-02	6	6.0	12	13	2.0	3.9	6.0	18°
ECLM-08-02	8	6.0	14	15	2.0	3.9	6.0	16°
ECLM-10-03	10	6.0	16	17	3.0	4.5	6.7	12°
ECLM-12-03	12	6.0	18	19	3.0	4.5	6.7	12°
ECLM-16-03	16	6.0	22	24	3.0	4.5	6.7	12°

igubal® self-aligning clip bearings | Product range

Self-aligning clip bearing: ECLM-HD



- High axial and radial loads
- Adjustment of axial and radial clearance by preloading
- Very easy installation by simply snap into sheet metal
- No additional axial fastening necessary
- For plate thickness 4.0–8.0 mm

Order key

Type			Size [mm]		Version
E	CL	M -	08 -	04 -	HD
Dimensional series E	Self-aligning clip bearing	Metric	Inner-Ø d1	Sheet thickness	Heavy Duty

Material:
Housing: **igumid G** ▶ **Page 1433**
Spherical ball: **iglidur® W300** ▶ **Page 153**
Other spherical balls on request
▶ **Page 731**

Technical data

Part No.	Max. static compressive strength (short-term)		Max. static compressive strength (long-term)		Weight
	radial	axial	radial	axial	
	[N]	[N]	[N]	[N]	[g]
ECLM-08-04-HD	1,750	125	875	60	2.0
ECLM-10-05-HD	2,500	150	1,250	75	3.1
ECLM-12-06-HD	3,500	175	1,750	85	3.8
ECLM-16-08-HD	4,500	250	2,250	125	7.0
ECLM-20-08-HD	6,000	330	3,000	165	12.0

Dimensions [mm]

Part No.	d1	B	d2	d3	y	Max.
	E10		±0.15		±0.1	pivot angle
ECLM-08-04-HD	8.0	8.0	18.0	25	4.0	28°
ECLM-10-05-HD	10.0	9.0	22.0	28	5.0	24°
ECLM-12-06-HD	12.0	10.0	24.0	32	6.0	24°
ECLM-16-08-HD	16.0	13.0	30.0	38	8.0	22°
ECLM-20-08-HD	20.0	16.0	36.0	44	8.0	21°

Spherical ball materials to choose ▶ Page 731


REM: low-cost


JEM: low moisture absorption

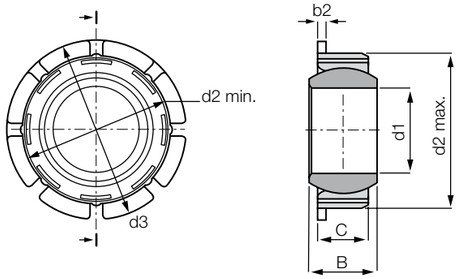

J4EM: low-cost and low moisture absorption


J4VEM: clearance free preloaded spherical ball

igubal® pressfit spherical bearings

igubal® self-aligning clip bearings | Product range

Self-aligning clip bearing: EGFM-T



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

Order key

Type			Size [mm]	Version
E	GF	M -	08	T
Dimensional series E	Self-aligning clip bearing	Metric	Inner-Ø d1	Tolerance compensation

Material:
Housing: **igumid G** ▶ **Page 1433**
Spherical ball: **iglidur® W300** ▶ **Page 153**
Other spherical balls on request
▶ **Page 731**

Technical data

Part No.	Max. stat. compressive force (short-term)		Max. stat. compressive force (long-term)		Weight
	radial	axial	radial	axial	
	[N]	[N]	[N]	[N]	[g]
EGFM-08 T SL[31]	1,100	150	550	75	0.9
EGFM-10 T	1,900	220	950	110	2.4
EGFM-12 T	2,500	270	1,250	135	3.0
EGFM-16 T	6,000	600	3,000	300	6.6
EGFM-20 T	9,000	800	4,500	400	11.1
EGFM-25 T	14,000	2,800	7,000	1,400	19.0
EGFM-30 T	17,000	3,000	8,500	1,500	24.0

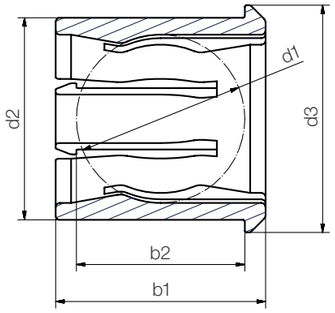
Dimensions [mm]

Part No.	d1	d2	d2	d3	C	B	b2	Housing		Max.
		min.	Max.					Min.	Max.	pivot angle
EGFM-08 T SL[31]	8 (H10)	15.8	16.5	18	5.0	6	1.1	15.8	16.2	11°
EGFM-10 T	10 (E10)	20.8	21.6	26	6.0	9	1.0	20.8	21.2	24°
EGFM-12 T	12 (E10)	22.8	23.6	28	7.0	10	1.0	22.8	23.2	21°
EGFM-16 T	16 (E10)	29.8	30.6	35	9.5	13	1.5	29.8	30.2	21°
EGFM-20 T	20 (E10)	34.8	35.6	42	12.0	16	2.0	34.8	35.2	18°
EGFM-25 T	25 (E10)	41.8	42.6	50	16.0	20	2.0	41.8	42.2	16°
EGFM-30 T	30 (E10)	46.8	47.6	55	18.0	22	2.0	46.8	47.2	13°

[31] **Spherical ball made from iglidur® J**

igubal® self-aligning clip bearings | Product range

Ball stud clip bearings: ZCLM



- Connection for rotating and pivoting movements
- Very easy assembly
- Corrosion resistant
- Lubrication and maintenance-free
- Lightweight
- Chemical resistance
- Ball studs made from galvanised steel and stainless steel[28] ▶ Accessories, **page 747**

Order key

Type					Size [mm]		Options
Z	CL	M	-	06	- 10	-	MS
Can be assembled on both sides	Clip bearings	Metric		Ball stud M6	Sheet thickness		Ball stud MS = ball stud made from galvanised steel[19] ES = ball stud made from stainless steel[28]

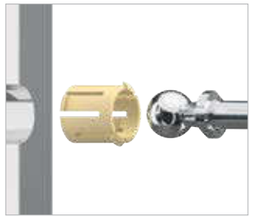
Material:
Clip bearing: **iglidur® J ▶ Page 141**

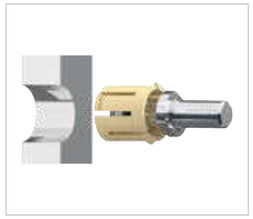
Dimensions [mm]

Part No.	d1	d2	d3	b1	b2	Weight [g]
ZCLM-06-10-MS	10.0	12.0	13.5	12.5	10.0	0.6

[19] Galvanised metal stud only available with right-hand thread
[28] Stainless steel ball stud on request
More dimensions on request

Fitting:





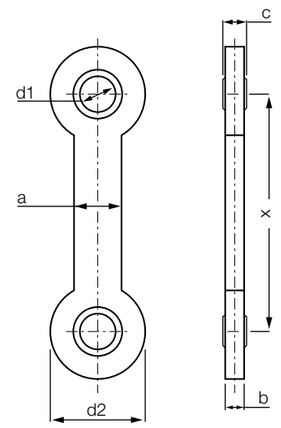
Assembly film
▶ www.igus.eu/zclm-film

Can be combined with accessories ▶ Page 746

GZRM-IG

igubal® double joint | Product range

Double joint: EGZM



- Maintenance-free, dry operation
- Mechanical joining link between two components
- Compensation of misalignment
- Corrosion-resistant
- Double joint turned 90° available on request

Order key

Type			Size [mm]	
E	GZ	M	- 04	- 25
Dimensional series E	Double joints	Metric	Inner-Ø d1	Pitch X

Material:
Housing: **igumid G ▶ Page 1433**
Spherical ball: **iglidur® W300 ▶ Page 153**
Other spherical balls on request
▶ Page 731

Technical data and dimensions [mm]

Part No.	Max. static tensile strength (short-term)		Max. static tensile strength (long-term)		d1	d2	X	b	a	c	Max. pivot angle	Weight
	Tensile force	Compressive force	Tensile force	Compressive force	E10							
	[N]	[N]	[N]	[N]								[g]
EGZM-04-25	1,100	1,300	550	650	04	20	25	4	10	5	32°	3.5
EGZM-04-50	1,100	750	550	375	04	20	50	4	10	5	32°	4.8
EGZM-04-75	1,100	500	550	250	04	20	75	4	10	5	32°	6.1
EGZM-05-25	1,100	1,300	550	650	05	20	25	4	10	6	37°	2.2
EGZM-05-50	1,100	750	550	375	05	20	50	4	10	6	37°	4.9
EGZM-05-75	1,100	500	550	250	05	20	75	4	10	6	37°	6.3
EGZM-06-25	1,100	1,300	550	650	06	20	25	4	10	6	30°	3.4
EGZM-06-50	1,100	750	550	375	06	20	50	4	10	6	30°	4.8
EGZM-06-75	1,100	500	550	250	06	20	75	4	10	6	30°	3.4
EGZM-08-60	3,000	3,500	1,500	1,750	08	30	60	7	15	8	20°	15.2
EGZM-08-100	3,000	1,900	1,500	950	08	30	100	7	15	8	20°	19.5
EGZM-10-60	2,500	3,500	1,250	1,750	10	30	60	7	15	9	25°	15.3
EGZM-10-85	2,500	2,300	1,250	1,150	10	30	85	7	15	9	25°	18.1
EGZM-10-100	2,500	1,900	1,250	950	10	30	100	7	15	9	25°	19.4
EGZM-12-60	2,000	3,500	1,000	1,750	12	30	60	7	15	10	25°	14.7
EGZM-12-100	2,500	1,900	1,000	950	12	30	100	7	15	10	25°	18.8

Spherical ball materials to choose ▶ Page 731

REM: low-cost

JEM: low moisture absorption

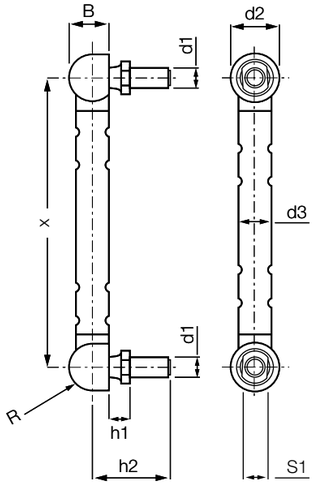
J4EM: low-cost and low moisture absorption

J4VEM: clearance free preloaded spherical ball

igubal® double joint | Product range

Variable double joint: WDGM

Version A Version B Version C Version D



Order key

Type				Size [mm]	Options		
W	DG	M	-	05	- A	-SR	-SZ
Angle	Double joints	Metric		Ball stud thread	Ball stud direction (A, B, C or D)	Tube material	Ball stud material

Options:

Tube material
- SR = galvanised steel
- ER = stainless steel (1.4305)

Ball stud material
- SZ = galvanised steel[19)]
- EZ = stainless steel[28)]
- PZ = igumid G

Material:
Housing: **igumid G** ▶ **Page 1433**
Ball stud: **plastic, galvanised or stainless steel[28)]**
Tube: **galvanised or stainless steel**

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

Dimensions [mm]

Part No.	d1	d2	d3	X Min.	B	h1	h2	S1 Width across flats	R	Max. pivot angle
WDGM-05-A-SR-SZ [ ][32)]	M5	12.8	8.0	74.0	10.8	4.6	19.2	SW8	6.4	23°
WDGM-06-A-SR-SZ [ ][32)]	M6	14.8	10.0	80.0	12.3	6.1	23.5	SW9	7.4	25°
WDGM-08-A-SR-SZ [ ][32)]	M8	19.3	12.0	80.0	16.2	5.9	29.5	SW12	9.7	24°
WDGM-10-A-SR-SZ [ ][32)]	M10[33)]	19.3	12.0	80.0	16.2	7.9	36.0	SW14	9.7	24°

[19)] Galvanised metal stud only available with right-hand thread
[28)] Stainless steel ball stud on request
[32)] Please add the required centre distance in mm
[33)] Housing's size 8 with a special M10 stud, available only in metal.
Order example, WDGM-05-A-SR-SZ, 100: Double joint with 05 ball stud thread, version A, tube material made from steel, ball stud made from steel, centre distance 100 mm

Accessories ▶ From page 746:

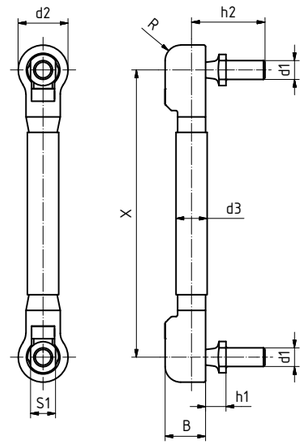

GZRM-IG


GZRM


GZRM-MS /GZRM-ES

Variable double joint, removable: WDGM-DE

Version A Version B Version C Version D



Order key

Type				Size [mm]	Options			
W	DG	M	-	06	- A	-SR	-SZ	-DE
Angle	Double joints	Metric		Ball stud thread	Ball stud direction (A, B, C or D)	Tube material	Ball stud material	Disassembly

Options:

Tube material
- SR = galvanised steel
- ER = stainless steel (1.4305)

Ball stud material
- SZ = galvanised steel[19)]
- EZ = stainless steel[28)]
- PZ = igumid G

Material:
Housing: **igumid G** ▶ **Page 1433**
Ball stud: **plastic, galvanised or stainless steel[28)]**
Tube: **galvanised or stainless steel**

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

Dimensions [mm]

Part No.	d1	d2	d3	X Min.	B	h1	h2	S1 Width across flats	R	Max. pivot angle
WDGM-06-A-SR-SZ-DE [ ][32)]	M6	16.0	10.0	100.0	13.0	6.5	23.5	SW 8	5.0	23°

[19)] Galvanised metal stud only available with right-hand thread
[28)] Stainless steel ball stud on request
[32)] Please add the required centre distance in mm
Order example, WDGM-06-A-SR-SZ-DE, 150 : Removable double joint with 06 ball stud thread, version A, tube material made from steel, ball stud made from steel, centre distance 150 mm

Fitting:

Accessories ▶ From page 746:


GZRM-IG


GZRM

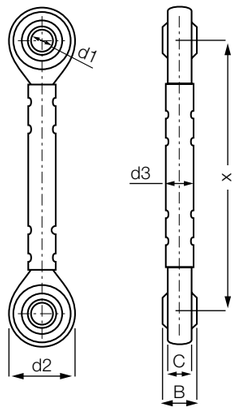

GZRM-MS /GZRM-ES

igubal® double joint | Product range

Variable double joint: KDGM

Version A

Version B



Order key

Type			Size [mm]	Options			
K	DG	M	- 06	- A	- SR	- J	
Dimensional series K	Double joints	Metric	Inner Ø	Ball stud direction (A or B)	Tube material	Spherical ball material	

Options:

Tube material
SR = galvanised steel
ER = stainless steel (1.4305)

Spherical ball material
Blank = iglidur® W300
J = iglidur® J
J4 = iglidur® J4
R = iglidur® R
EK = stainless steel (1.4305)

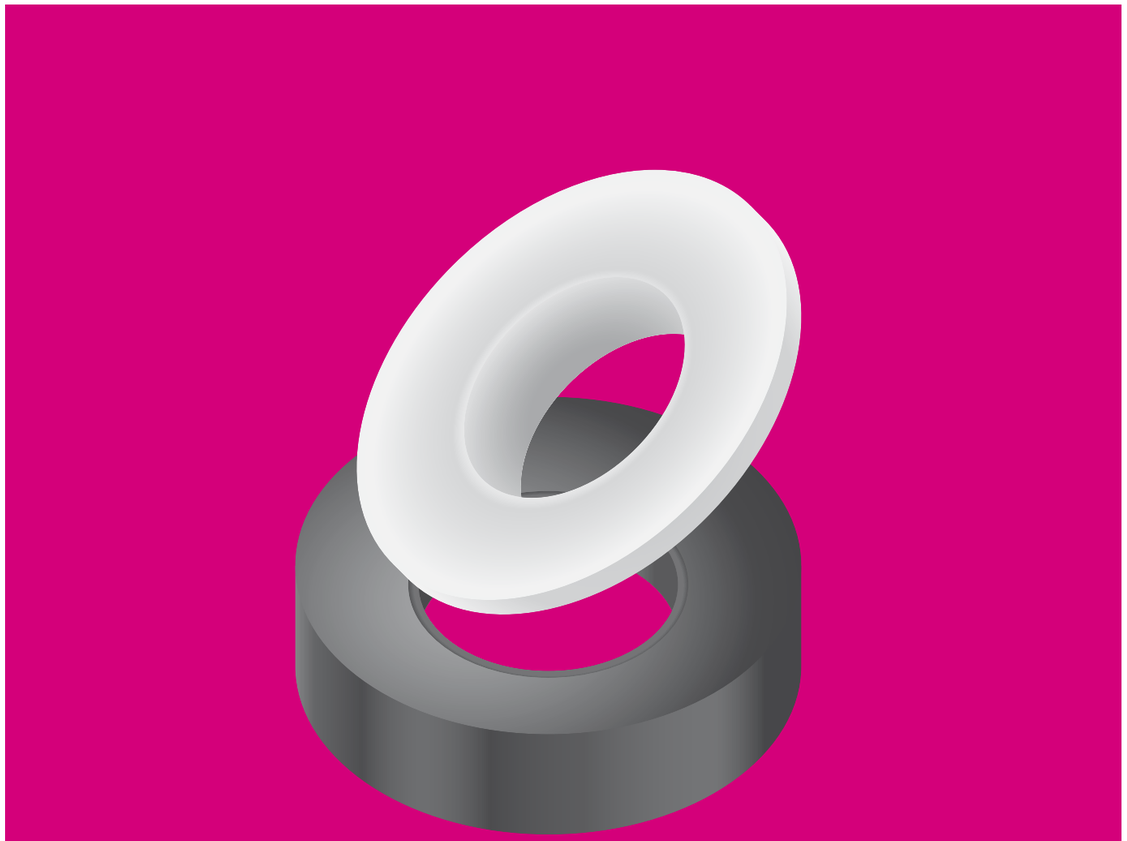
Material:
Housing: **igumid G ▶ Page 1433**
Ball: **variable ▶ Page 731**
Tube: **galvanised or stainless steel**

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

Dimensions [mm]

Part No.	d1	d2	d3	X	B	C	Max. pivot angle
	E10			Min.			
KDGM-06-A-SR-J [ ] 32)	6.0	20.0	6.0	72.0	9.0	7.0	40°
KDGM-08-A-SR-J [ ] 32)	8.0	24.0	8.0	84.0	12.0	9.0	35°
KDGM-10-A-SR-J [ ] 32)	10.0	30.0	10.0	96.0	14.0	10.5	35°
KDGM-12-A-SR-J [ ] 32)	12.0	34.0	12.0	108.0	16.0	12.0	35°

32) **Please add the required centre distance in mm**
Order example, KDGM-06-A-SR-J, 100 : Double joint with 06 mm inner diameter, version A, tube material made from steel, spherical ball made from iglidur® J, centre distance 100 mm



igubal® spherical thrust bearings

Easy installation

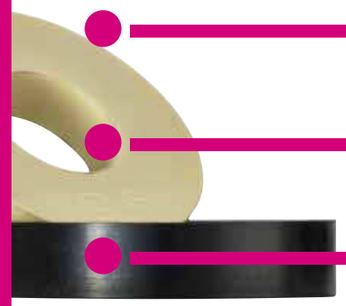
Compensation of misalignment

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 loads.



Easy installation

Compensation of misalignment errors

Compensation of edge loads

Very good friction and wear properties

When to use it?

- If you want to save weight
- If Corrosion resistant is requested
- If a bearing with a good coefficient of friction is sought

When not to use it?

- At very high loads
- If temperatures are higher than +80 °C
- If a high number of revolutions have to be achieved

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

max. +80 °C
min. –30 °C

Type 1
Ø 5–20 mm

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

igubal® spherical thrust bearing | 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 loads. The housing pad is made of the impact resistant, thermoplastic composite igumid G. The spherical washer is made of the iglidur® W300 plain bearing material. This combination provides exceptionally good friction and wear properties.

Loads

The load capacity of igubal® spherical thrust bearings is very high for standard ambient temperatures. For high continuous loads and high temperatures, the load capacity of the thrust bearings should be tested in an experiment that simulates the application.

Coefficients of sliding friction and speed

Taking into account the radial load, maximum surface speeds up to 0.5 m/s rotating are possible

Fitting

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.

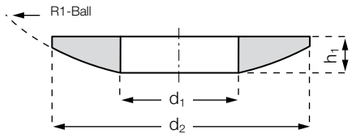
Product range

igubal® spherical thrust bearings are available in standard form to suit diameters from 5 to 20 mm. Please contact us if you require other dimensions

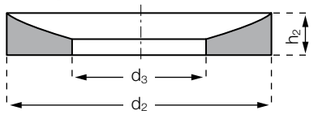
igubal® spherical thrust bearing | Product range

Spherical thrust bearing: SAM

Spherical washer



Housing pad



Order key

Type	Size [mm]
SA	M-05

Type | metric | Inner-Ø d1

Material:
Spherical washer: **iglidur® W300** ▶ **Page 153**
Housing pad: **igumid G** ▶ **Page 1433**

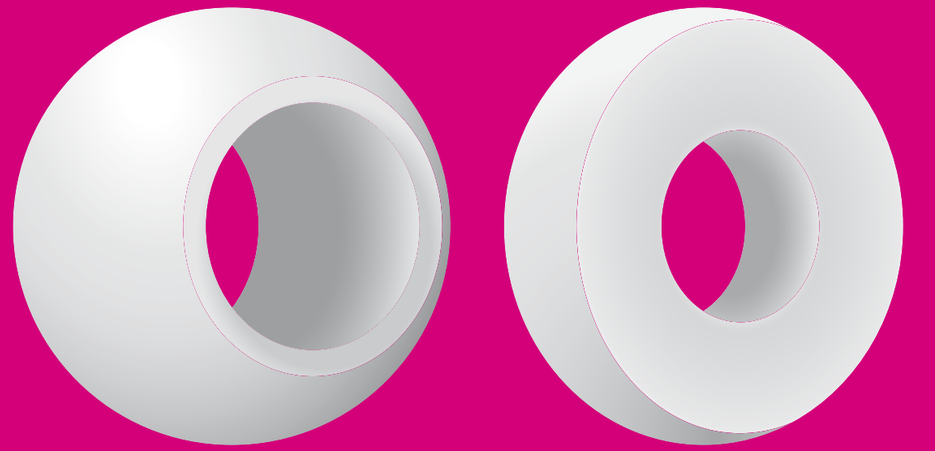
Technical data

Part No.	Maximum static axial tensile strength Short-term [N]	Maximum static axial tensile 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 7168	d3 Housing pad DIN 7168	d2	h1 Spherical washer	h2 Housing pad	H[34] Total height	R1 Radius	Compensation angle
SAM-05	5.2	7.0	15.0	3.0	3.5	4.7	15.0	3°
SAM-06	6.2	7.5	16.0	3.0	4.0	5.3	16.0	3°
SAM-08	8.2	10.0	20.0	4.0	5.0	6.8	20.0	2°
SAM-10	10.2	12.0	24.0	4.5	5.5	7.5	24.0	2°
SAM-12	12.5	14.5	30.0	5.0	6.2	8.0	32.0	2°
SAM-16	16.5	19.0	36.0	5.5	6.5	8.7	40.0	2°
SAM-20	20.2	23.0	44.0	6.0	7.0	8.6	45.0	2°

[34] In assembled condition



igubal® spherical balls

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

igubal® spherical balls

Every single iglidur® material has its own special properties, which determines the suitability for your special applications and requirements. Currently, we offer spherical bearings from iglidur® materials W300 (standard), J, J4, R, RN248, UW and X. The spherical ball for metallic bearing housings are available in three materials for housing numbers 203 to 210.

When to use it?
- 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 elasticity is required
- Replacing ball bearings in metallic housings

When not to use it?
- If temperatures are higher than +250 °C
- If diameters above 50 mm are required
- If rotation speeds higher than 0.5 m/s are required

Tolerances
The tolerance of the inner diameter is E10. The shaft tolerance should be included between h6 and h9. All values and tolerances according to DIN ISO 2768-m.

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

Depending on material

8 types
Ø 2–50 mm

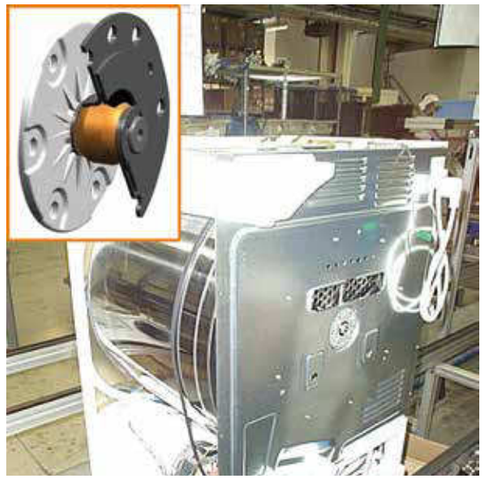
Imperial dimensions available
▶ From page 1337

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

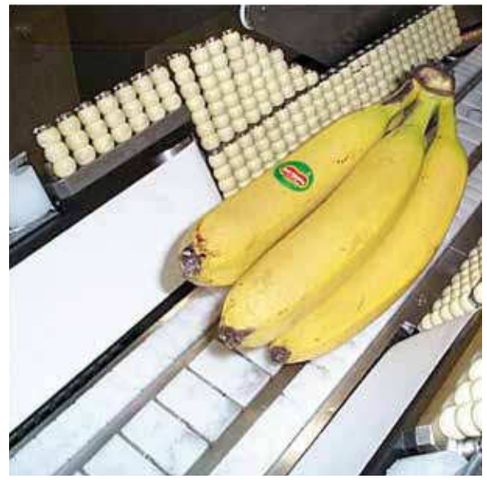
igubal® spherical balls | Application examples

Typical sectors of industry and application areas
- Plant design
- Model building
- Furniture/Industrial design etc.

Improve technology and reduce costs – 110 exciting examples online
▶ www.igus.eu/igubal-applications



Drum bearing in a tumble dryer



▶ www.igus.eu/food

Carriage in a crane system

▶ www.igus.eu/design

igubal® spherical balls | Product overview

Standard – igubal® spherical balls
iglidur® W300 ▶ Page 153

WKM
Dimensional series K
metric/imperial
▶ Page 735

WEM
Dimensional series E
metric/imperial
▶ Page 735

Low-cost – igubal® spherical balls
iglidur® R ▶ Page 213

RKM
Dimensional series K
metric
▶ Page 736

REM
Dimensional series E
metric
▶ Page 736

High temperatures – igubal® spherical balls
iglidur® X ▶ Page 237

XKM
Dimensional series K
metric
▶ Page 737

XEM
Dimensional series E
metric
▶ Page 737

Low moisture absorption – igubal® spherical balls
iglidur® J ▶ Page 141

JKM
Dimensional series K
metric
▶ Page 738-739

JEM
Dimensional series E
metric
▶ Page 738

Cost effective – igubal® spherical balls
iglidur® J4, ▶ Page 1432

J4KM
Dimensional series K
metric
▶ Page 740

J4EM
Dimensional series E
metric
▶ Page 740

Under water applications – igubal® spherical balls
iglidur® UW ▶ Page 459

UWEM
Dimensional series E
metric
▶ Page 741

Clearance free – igubal® spherical balls
iglidur® J4VEM ▶ Page 742

J4VEM
Dimensional series E
metric
▶ Page 742

Detectable – igubal® spherical balls
iglidur® RN248 ▶ Page 1435

RN248KM
Dimensional series K
metric
▶ Page 743

RN248EM
Dimensional series E
metric
▶ Page 743

For metallic bearing housings – igubal® spherical balls
iglidur® J ▶ Page 141 | iglidur® A180 ▶ Page 349 | iglidur® A350 ▶ Page 333

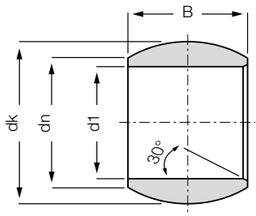
Standard
Dimensional series E
metric
▶ Page 744

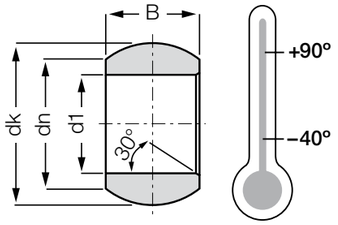
FDA-compliant
Dimensional series E
metric
▶ Page 744

FDA-compliant, high temp.
Dimensional series E
metric
▶ Page 744

igubal® spherical balls | Product range

Standard spherical balls: WKM and WEM





Order key

Type	Size [mm]	Options
W ... M	- 02 - 04	

- iglidur® W300 spherical balls
- Dimensional series
- Metric
- Inner-Ø d1
- Width

Series
K = series K
E = series E

Inch **Imperial dimensions available**
▶ Page 1400

Dimensions [mm]

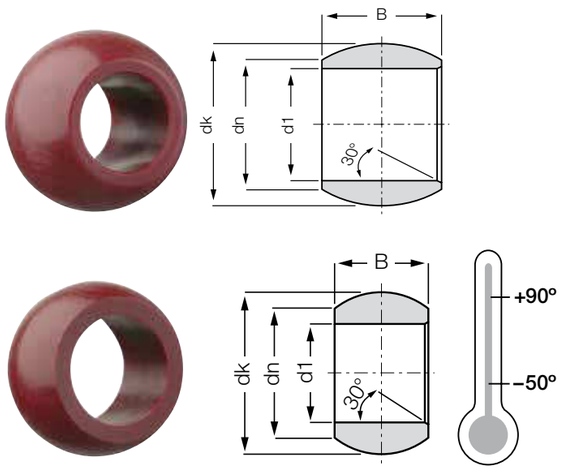
Part No.	d1	dn	dK	B	Weight
	E10				[g]
WKM-02-04	2.00	3.90	5.10	4.00	0.1
WKM-03-06	3.00	5.10	8.10	6.00	0.3
WKM-05-08	5.00	7.70	11.30	8.00	0.6
WKM-06-09	6.00	8.90	12.80	9.00	0.9
WKM-08-12	8.00	10.30	16.00	12.00	1.6
WKM-10-14	10.00	12.90	19.00	14.00	2.7
WKM-12-16	12.00	15.40	22.10	16.00	4.0
WKM-14-19	14.00	16.80	25.40	19.00	6.0
WKM-16-21	16.00	19.30	28.40	21.00	8.2
WKM-18-23	18.00	21.80	31.50	23.00	10.8
WKM-20-25	20.00	24.30	35.10	25.00	14.5
WKM-22-28	22.00	25.80	38.30	28.00	18.7
WKM-25-31	25.00	29.50	42.90	31.00	26.0
WKM-30-37	30.00	34.80	51.20	37.00	44.7

Dimensions [mm]

Part No.	d1	dn	dK	B	Weight
	E10				[g]
WEM-04-05	4.00	6.25	8.30	5.00	0.2
WEM-05-06	5.00	8.00	10.30	6.00	0.3
WEM-06-06	6.00	8.00	10.30	6.00	0.4
WEM-08-08	8.00	10.00	13.30	8.00	0.7
WEM-10-09	10.00	13.00	16.10	9.00	1.2
WEM-12-10	12.00	15.00	18.10	10.00	1.5
WEM-15-12	15.00	18.00	22.00	12.00	2.4
WEM-16-13	16.00	19.50	24.10	13.00	3.3
WEM-17-14	17.00	20.00	25.10	14.00	3.7
WEM-20-16	20.00	24.00	29.10	16.00	5.3
WEM-25-20	25.00	29.00	35.60	20.00	9.5
WEM-30-22	30.00	34.00	40.90	22.00	12.1

igubal® spherical balls | Product range

Low-cost spherical balls: RKM and REM



Order key

Type	Size [mm]	Options
R ... M - 10 - 14		

- R: iglidur® R spherical balls
- ...: Dimensional series
- M: Metric
- 10: Inner-Ø d1 [mm]
- 14: Width

Series
K = series K
E = series E

Dimensions [mm]

Part No.	d1 E10	dn	dK	B	Weight [g]
RKM-10-14	10.00	12.90	19.00	14.00	2.9

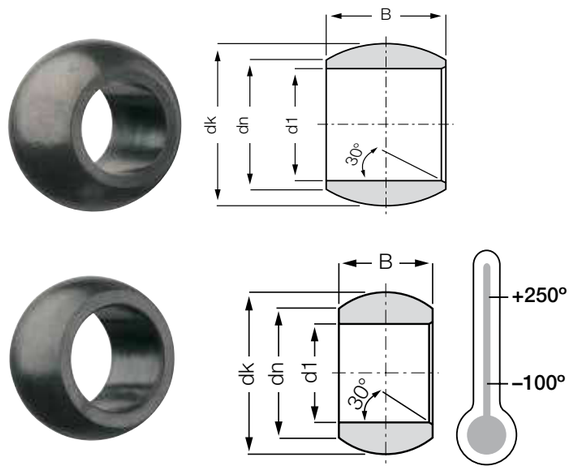
Dimensions [mm]

Part No.	d1 E10	dn	dK	B	Weight [g]
REM-05-06	5.00	8.00	10.20	6.00	0.4
REM-06-06	6.00	8.00	10.20	6.00	0.4
REM-08-08	8.00	10.00	13.20	8.00	0.8
REM-10-09	10.00	13.00	16.10	9.00	1.3
REM-12-10	12.00	15.00	18.10	10.00	1.6

igubal® spherical balls

igubal® spherical balls | Product range

High temperatures spherical balls: XKM and XEM



Order key

Type	Size [mm]	Options
X ... M - 10 - 14		

- X: iglidur® X spherical balls
- ...: Dimensional series
- M: Metric
- 10: Inner-Ø d1
- 14: Width

Series
K = series K
E = series E

Dimensions [mm]

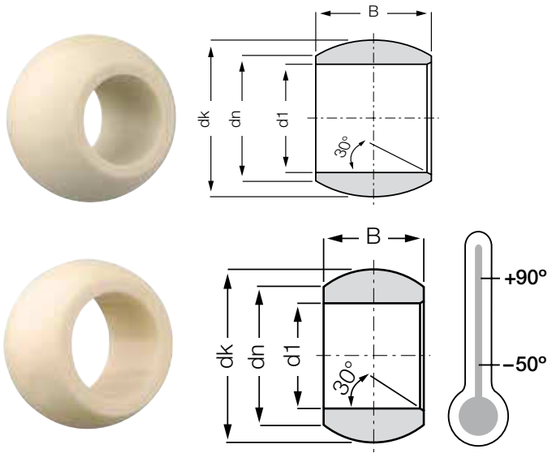
Part No.	d1 E10	dn	dK	B	Weight [g]
XKM-10-14	10.00	12.90	19.10	14.00	2.9

Dimensions [mm]

Part No.	d1 E10	dn	dK	B	Weight [g]
XEM-05-06	5.00	8.00	10.30	6.00	0.4
XEM-06-06	6.00	8.00	10.20	6.00	0.4
XEM-08-08	8.00	10.00	13.30	8.00	0.8
XEM-10-09	10.00	13.00	16.10	9.00	1.3
XEM-12-10	12.00	15.00	18.10	10.00	1.6

igubal® spherical balls | Product range

Low moisture absorption spherical balls: JKM and JEM



Order key

Type			Size [mm]		Options
J	...	M	- 03	- 06	
iglidur® J spherical balls	Dimensional series	Metric	Inner-Ø d1	Width	Series K = series K E = series E

Dimensions [mm]

Part No.	d1 E10	dn	dK	B	Weight [g]
JKM-03-06	3.00	5.10	8.10	6.00	0.3
JKM-05-08	5.00	7.70	11.30	8.00	0.7
JKM-06-09	6.00	8.90	12.80	9.00	1.0
JKM-08-12	8.00	10.30	15.90	12.00	1.9
JKM-10-14	10.00	12.90	19.00	14.00	3.1
JKM-12-16	12.00	15.40	22.10	16.00	4.7
JKM-16-21	16.00	19.30	28.40	21.00	9.4
JKM-20-25	20.00	24.30	35.10	25.00	17.6
JKM-25-31	25.00	29.50	42.80	31.00	31.6
JKM-30-37	30.00	34.80	51.20	37.00	53.0

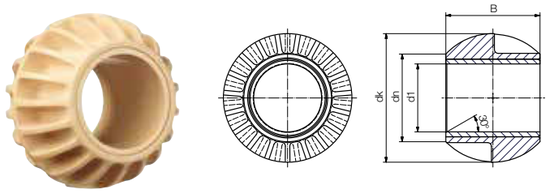
Dimensions [mm]

Part No.	d1 E10	dn	dK	B	Weight [g]
JEM-04-05	4.00	6.25	8.30	5.00	0.3
JEM-05-06	5.00	8.00	10.20	6.00	0.4
JEM-06-06	6.00	8.00	10.20	6.00	0.4
JEM-08-08	8.00	10.00	13.30	8.00	0.8
JEM-10-09	10.00	13.00	16.10	9.00	1.3
JEM-12-10	12.00	15.00	18.10	10.00	1.7
JEM-15-12	15.00	18.00	22.00	12.00	2.9
JEM-16-13	16.00	19.50	24.10	13.00	3.9
JEM-17-14	17.00	20.00	25.20	14.00	4.1
JEM-20-16	20.00	24.00	29.10	16.00	6.4
JEM-25-20	25.00	29.00	35.60	20.00	11.5
JEM-30-22	30.00	34.00	40.90	22.00	14.5

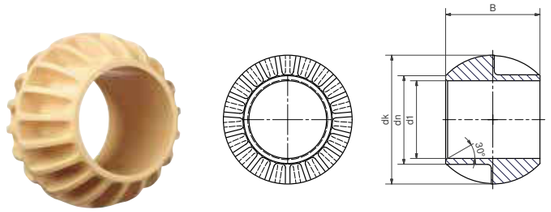
igubal® spherical balls

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

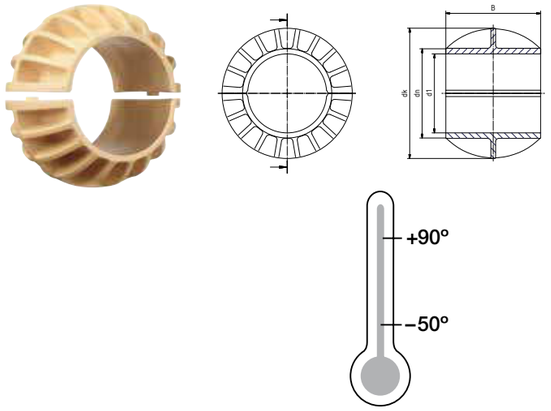
Type			Size [mm]	
J	K	M	- 35	- 49
iglidur® J spherical balls	Dimensional series K	Metric	Inner-Ø d1	Width

Dimensions [mm]

Part No.	d1 E10	dn	dK	B	Weight [g]
JKM-35-49[35)]	35.00	44.50	66.30	49.00	75.5
JKM-40-49	40.00	44.50	66.30	49.00	54.5
JKM-45-60[35)]	45.00	56.50	82.40	60.00	125.1
JKM-50-60	50.00	56.50	82.40	60.00	92.1

[35)] Diameter reduced by means of a plain bearing

Low moisture absorption split spherical balls: JKM-GT



Order key

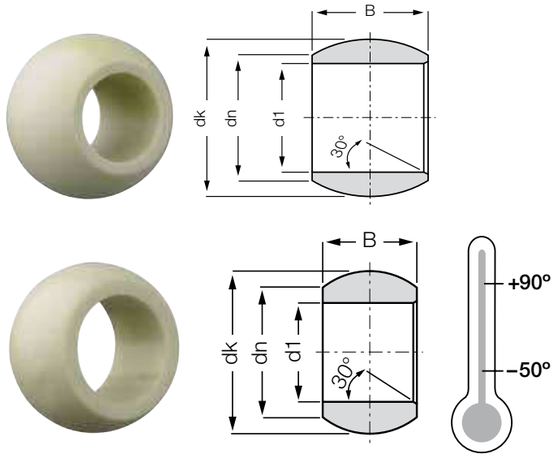
Type			Type	Size
J	K	M	- GT	- 40
iglidur® J spherical balls	Dimensional series K	Metric	Split ball	Inner-Ø d1 [mm]

Dimensions [mm]

Part No.	d1 E10	dn	dK	B	Weight [g]
JKM-GT-40	40.00	44.50	66.30	49.00	54.5
JKM-GT-50	50.00	56.50	82.40	60.00	92.1

igubal® spherical balls | Product range

Cost-effective spherical balls: J4KM and J4EM



Order key

Type	Size [mm]	Options
J4 ... M - 10 - 14		

- iglidur® J4 spherical balls
- Dimensional series
- Metric
- Inner-Ø d1
- Width

Series
K = series K
E = series E

Dimensions [mm]

Part No.	d1	dn	dK	B	Weight
	E10				[g]
J4KM-10-14	10.00	12.90	19.10	14.00	3.1

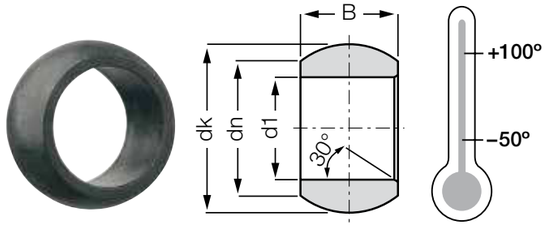
Dimensions [mm]

Part No.	d1	dn	dK	B	Weight
	E10				[g]
J4EM-04-05	4.00	6.25	8.25	5.00	0.3
J4EM-05-06	5.00	8.00	10.20	6.00	0.4
J4EM-06-06	6.00	8.00	10.20	6.00	0.4
J4EM-08-08	8.00	10.00	13.30	8.00	0.8
J4EM-10-09	10.00	13.00	16.00	9.00	1.3
J4EM-12-10	12.00	15.00	18.00	10.00	1.7
J4EM-15-12	15.00	18.00	22.00	12.00	2.9
J4EM-16-13	16.00	19.50	24.00	13.00	3.9
J4EM-17-14	17.00	20.00	25.10	14.00	4.1
J4EM-20-16	20.00	24.00	28.90	16.00	6.4
J4EM-25-20	25.00	29.00	35.50	20.00	11.5
J4EM-30-22	30.00	34.00	40.90	22.00	14.5

igubal® spherical balls

igubal® spherical balls | Product range

Spherical balls for under water applications: UWEM



Order key

Type	Size [mm]
UW E M - 16-13	

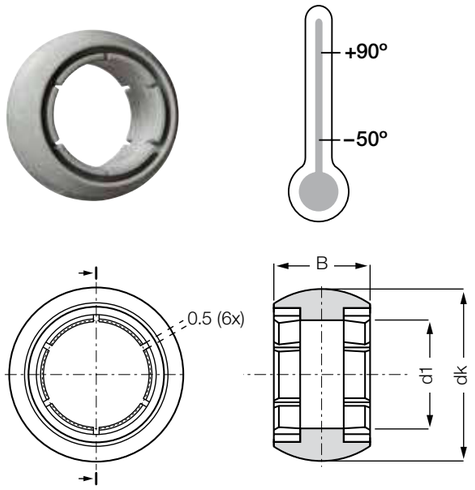
- iglidur® UW spherical balls
- Dimensional series E
- Metric
- Inner-Ø d1
- Width

Dimensions [mm]

Part No.	d1	dn	dK	B	Weight
	E10				[g]
UWEM-16-13	16.00	19.50	23.80	13.00	4.0
UWEM-20-16	20.00	24.00	28.80	16.00	6.5
UWEM-25-20	25.00	29.00	35.30	20.00	11.6
UWEM-30-22	30.00	34.00	40.50	22.00	15.2

igubal® spherical balls | Product range

Clearance free, single piece: J4VEM



Order key

Type					Size [mm]	
J4	V	E	M	-	08	- 08
iglidur® J4 spherical balls	Preloaded	Dimensional series E	Metric		Inner-Ø d1	Width

- Can be combined with all series E housings
- Sizes from 8 to 20 mm
- Clearance free, pre-loaded
- Totally clearance-free in unloaded state

Dimensions [mm]

Part No.	d1	dK	B	Weight
	E10			[g]
J4VEM-08-08	8	13.20	8.00	0.7
J4VEM-10-09	10	16.10	9.00	1.2
J4VEM-12-10	12	18.10	10.00	1.5
J4VEM-16-13	16	24.10	13.00	3.7
J4VEM-20-16	20	29.10	16.00	6.2

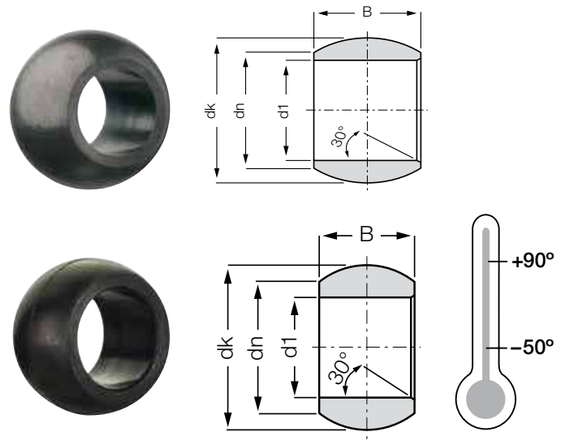
5 sizes available: Ø 8, 10, 12, 16, 20 mm combinable with:

igubal® rod ends	EA(L)RM	▶ **Page 658**	igubal® flange bearings	EFSM	▶ **Page 702**
igubal® rod ends	EB(L)RM	▶ **Page 656**	igubal®self-aligning clip bearings	EGFM-T	▶ **Page 721**
igubal® pillow block bearings	ESTM	▶ **Page 689**	igubal®self-aligning clip bearings	EGLM	▶ **Page 717**
igubal® flange bearings	EFOM	▶ **Page 700**	igubal® double joints	EGZM	▶ **Page 723**

igubal® spherical balls

igubal® spherical balls | Product range

Spherical balls – detectable: RN248KM and RN248EM



Order key

Type				Size [mm]		Options
RN248	...	M	- 06	- 09		
iglidur® RN248 spherical balls		Dimensional series	Metric	Inner-Ø d1	Width	Series K = series K E = series E

Dimensions [mm]

Part No.	d1	dn	dK	B	Weight
	E10				[g]
RN248KM-06-09	6.00	8.90	12.80	9.0	1.0

Dimensions [mm]

Part No.	d1	dn	dK	B	Weight
	E10				[g]
RN248EM-05-06	5.00	8.00	10.30	6.00	0.4
RN248EM-06-06	6.00	8.00	10.20	6.00	0.4
RN248EM-08-08	8.00	10.00	13.20	8.00	0.8
RN248EM-10-09	10.00	13.00	16.10	9.00	1.3
RN248EM-12-10	12.00	15.00	18.10	10.00	1.6

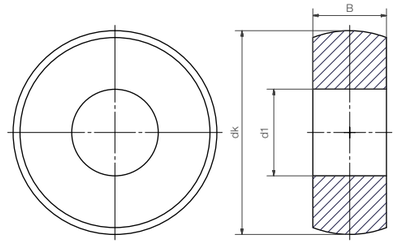
igubal® spherical balls | Product range

Slim spherical balls made from iglidur® materials for various metallic bearing housings

iglidur® J

iglidur® A180

iglidur® A350

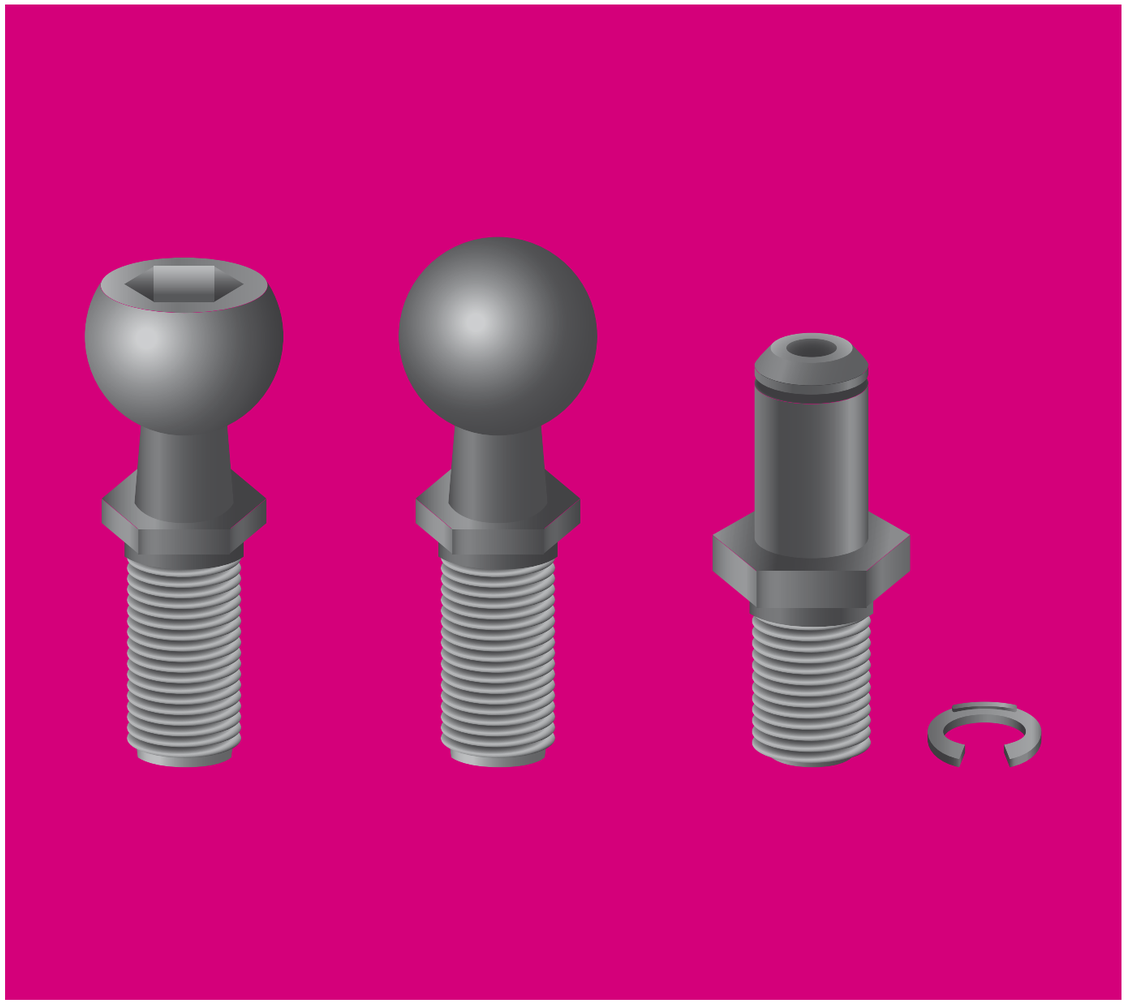


- 3 different spherical ball materials available: iglidur® J, A180 and A350
- Eight dimensions for housing numbers from 203 to 210
- Maintenance-free, dry-running
- High strength
- Corrosion-resistant
- Dirt resistant

Dimensions [mm]

Part No.	Housing no.	d1	dk	B	Max. static compressive strength	
		E10			radial [kN]	axial [kN]
made from iglidur® J, low friction (material information ▶ From page 141)						
JEM-17-17	UC203	17	47	17	10.0	7.5
JEM-20-17	UC204	20	47	17	11.5	7.5
JEM-25-17	UC205	25	52	17	14.5	7.5
JEM-30-19	UC206	30	62	19	19.5	9.5
JEM-35-20	UC207	35	72	20	24.0	10.5
JEM-40-21	UC208	40	80	21	29.0	12.0
JEM-45-22	UC209	45	85	22	34.0	13.0
JEM-50-24	UC210	50	90	24	41.5	15.5
made from iglidur® A180, FDA-compliant all-rounder (material information ▶ From page 349)						
A180EM-17-17	UC203	17	47	17	7.5	6.0
A180EM-20-17	UC204	20	47	17	9.0	6.0
A180EM-25-17	UC205	25	52	17	11.5	6.0
A180EM-30-19	UC206	30	62	19	15.5	7.5
A180EM-35-20	UC207	35	72	20	19.0	8.5
A180EM-40-21	UC208	40	80	21	23.0	9.0
A180EM-45-22	UC209	45	85	22	27.0	10.0
A180EM-50-24	UC210	50	90	24	33.0	12.0
made from iglidur® A350, FDA-compliant, wear resistant (material information ▶ From page 333)						
A350EM-17-17	UC203	17	47	17	17.0	13.0
A350EM-20-17	UC204	20	47	17	20.0	13.0
A350EM-25-17	UC205	25	52	17	25.0	13.0
A350EM-30-19	UC206	30	62	19	34.0	17.0
A350EM-35-20	UC207	35	72	20	41.5	18.5
A350EM-40-21	UC208	40	80	21	50.0	20.0

Image exemplary



igubal® accessories

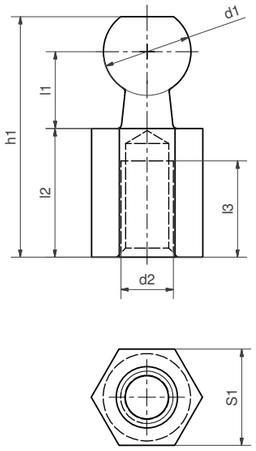
Ball studs made from plastic, galvanised steel and stainless steel

Adapter bolt made from plastic

Adapter for dimensional series E

igubal® accessories | Product range

Ball stud with flange



Order key

Type	Size [mm]	Version	Options
GZ R M -	05	- IG	

In line ball and socket joint | **Thread** | **Metric** | **Inner Ø** | **Female thread**

Thread
L = left-hand thread
R = right-hand thread

Material
Blank = galvanised steel
ES = stainless steel[28)]

Material:
galvanised and stainless steel (1.4305)

- Easy installation
- DIN connection size
- Corrosion resistant

Dimensions [mm]

Part No.	d1	d2	l1	l2	l3	h1	S1	Weight [g]
GZRM-05-IG	8.0	M5	7.0	12.2	9	22.7	SW10	10.0
GZRM-06-IG	10.0	M6	8.8	14.7	11	27.5	SW11	15.0
GZRM-08-IG	13.0	M8	10.8	18.7	12	35.2	SW14	30.0
GZRM-10-IG	16.0	M10	13.3	22.7	16	43	SW17	55.0

[28)] Stainless steel ball stud on request

Can be combined with:


WGR(L)M


WGR(L)M LC


WGR(L)M-DE


GFSM-IG


ZCLM-06-10

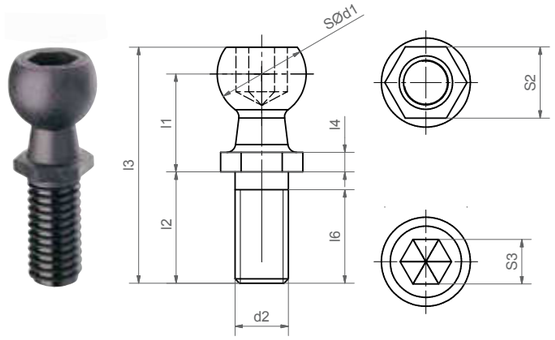

WDGM

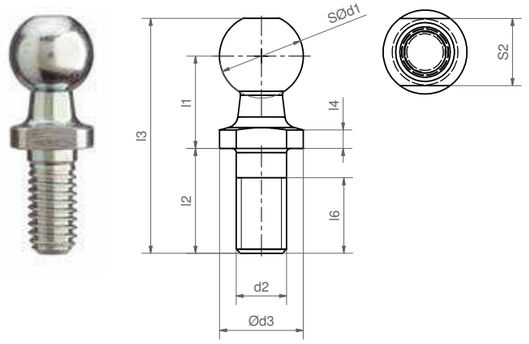

WDGM-DE

igubal® accessories

igubal® accessories | Product range

Ball stud with male thread





Order key

Type	Size [mm]	Options
GZ R M -	05	

In line ball and socket joint | **Thread** | **Metric** | **Inner Ø**

Thread
L = left-hand thread
R = right-hand thread

Material
Blank = plastic
MS = galvanised steel[19)]
ES = stainless steel[28)]

Material:
Material: **igumid G ▶ Page 1433**
Galvanised and stainless steel (1.4305)

- 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	S2	S3	Weight [g]
GZRM-05	8.0	M5	9.0	10.2	21.7	2.0	8.2	SW 7	4.0	1.0
GZRM-06	10.0	M6	11.0	12.5	26.5	2.2	10.5	SW 8	5.0	1.0
GZRM-08	13.0	M8	13.0	16.5	33.5	2.4	13.5	SW 11	6.0	3.0
GZRM-10	16.0	M10	16.0	20.0	40.5	2.7	16.0	SW 13	8.0	6.0

Dimensions [mm] – ball studs made from galvanised or stainless steel

Part No.	d1 h9	d2	d3 h14	l1 ±0.3	l2 ±0.3	l3 ±0.3	l4 ±0.4	l6 Max.	S2 h14	Weight [g]
GZRM-05-MS[115)]	8.0	M5	8.0	9.0	10.2	22.7	2.0	6.2	SW 7	4.55
GZRM-06-MS[115)]	10.0	M6	10.0	11.0	12.5	28.0	2.2	8.5	SW 8	8.5
GZRM-08-MS[115)]	13.0	M8	13.0	13.0	16.5	35.0	2.4	11.2	SW 11	17.7
GZRM-10-MS[115)]	16.0	M10	16.0	16.0	20.0	43.0	2.7	12.7	SW 13	35.1

[19)] Galvanised metal stud only available with right-hand thread
[28)] Stainless steel ball stud on request
[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

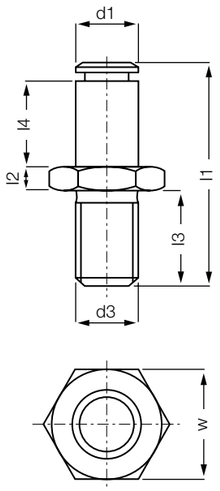

ZCLM-06-10


WDGM


WDGM-DE

igubal® accessories | Product range

Adapter bolt: PKRM and PKLM



Order key

Type				Size [mm]	Options
P	K	...	M-	05	
Adapter bolt	Dimensional series K	Thread	Metric	Inner Ø	

Thread
L = left-hand thread
R = right-hand thread

Material:
POM ▶ Page 1434

Solid polymer bolts with a hexagonal head and circlips are accessories to the series K rod ends. The igubal® adapter bolts consist of extremely shock-resistant, long fibre reinforced polymer POM. This component effectively transforms a standard K series rod end into a ball and socket joint.

- Lightweight
- Corrosion resistant
- Designed for use with K series rod ends
- Vibration-dampening
- Easy installation
- Left-hand thread on request

Technical data and dimensions [mm]

Part No.		Max. static tensile strength		Max. static radial load		d1	d3	l1	l4	l3	l2	W	Weight
		Short-term	Long term	Short-term	Long-term								
Right-hand thread	Left-hand thread [21]	[N]	[N]	[N]	[N]	h11	Thread	Total length	Length adjusting bolt	Thread length	Nut width	Width across flats	[g]
PKRM-05	PKLM-05	100	50	200	100	5	M05	25.0	8.5	11.3	2.7	8	0.7
PKRM-06	PKLM-06	150	75	250	125	6	M06	28.0	9.5	12.8	3.2	10	1.2
PKRM-08	PKLM-08	250	125	400	200	8	M08	32.0	12.5	12.5	4.0	13	2.6
PKRM-10	PKLM-10	500	250	600	300	10	M10	37.5	14.5	14.5	5.0	16	4.0
PKRM-12	PKLM-12	700	350	900	450	12	M12	42.0	16.5	15.5	6.0	18	7.5
PKRM-14	PKLM-14	800	400	1,100	550	14	M14	47.0	19.5	15.5	7.0	21	11.4
PKRM-16	PKLM-16	900	450	1,400	700	16	M16	52.0	22.0	16.5	8.0	24	16.9
PKRM-18	PKLM-18	800	400	1,700	850	18	M18x1.5	59.0	24.0	20.5	9.0	27	16.9
PKRM-20	PKLM-20	500	250	2,200	1,100	20	M20x1.5	67.0	26.0	25.0	10.0	30	34.4

[21] Delivery time: 4–6 weeks

Can be combined with:


KBR(L)M


KBR(L)M-LC

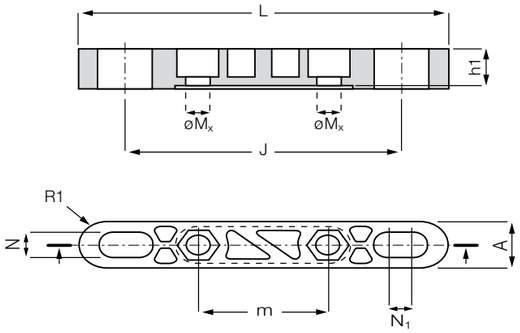

KAR(L)M


KAR(L)M-LC

igubal® accessories

igubal® accessories | Product range

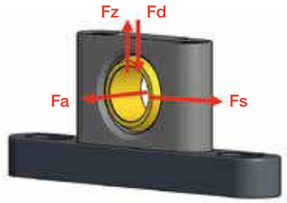
Adapter for dimensional series E



Order key

Type				Size [mm]
AD-01-	E	ST	M	-20
Adapter	Dimensional series E	Pillow block bearing	Metric	Inner Ø

- Same dimensions as metallic pillow block bearings
- Lightweight
- For pillow block bearings of series E (ESTM, ESTM-GT)
- Resistant to chemicals and corrosion
- Fits directly
- Space saving
- Same screws as traditional metallic versions



Technical data

Part No.	Max. radial tensile strength [Fz]		Max. radial compressive strength [Fd]		Lateral strength [Fs]		Max. axial strength [Fa] (tensile/compressive)		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]
AD-01-ESTM-20[26]	2,400	1,200	10,000	5,000	3,000	1,500	1,200	600	29.8
AD-01-ESTM-25[27]	2,400	1,200	10,000	5,000	3,000	1,500	1,200	600	74.0
AD-01-ESTM-30[27]	2,400	1,200	10,000	5,000	3,000	1,500	1,200	600	124.0

Dimensions [mm]

Part No.	for ESTM-...	d1	L	A	R1	J	h1	N	N1	m	Mx
AD-01-ESTM-20[26]	ESTM-20	20	130	20	10.0	97	14.0	11	8	46	M8
AD-01-ESTM-25[27]	ESTM-25	25	130	20	10.0	102	12.5	11	9	54	M8
AD-01-ESTM-30[27]	ESTM-30	30	158	25	12.5	118	14.9	14	10	64	M10

[26] Material: plastic
[27] Material: aluminium

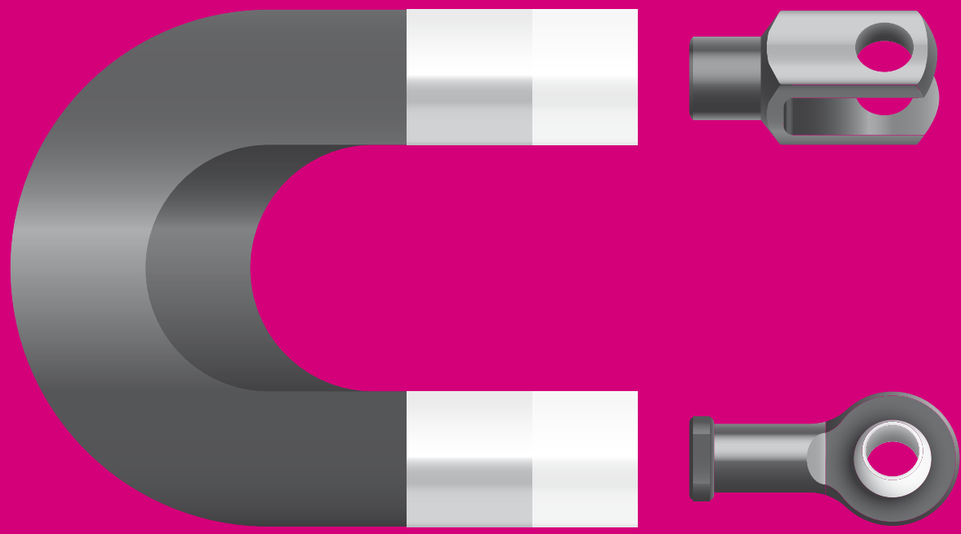
Can be combined with:


ESTM


ESTM-GT-GT


ESTM-GT

My sketches

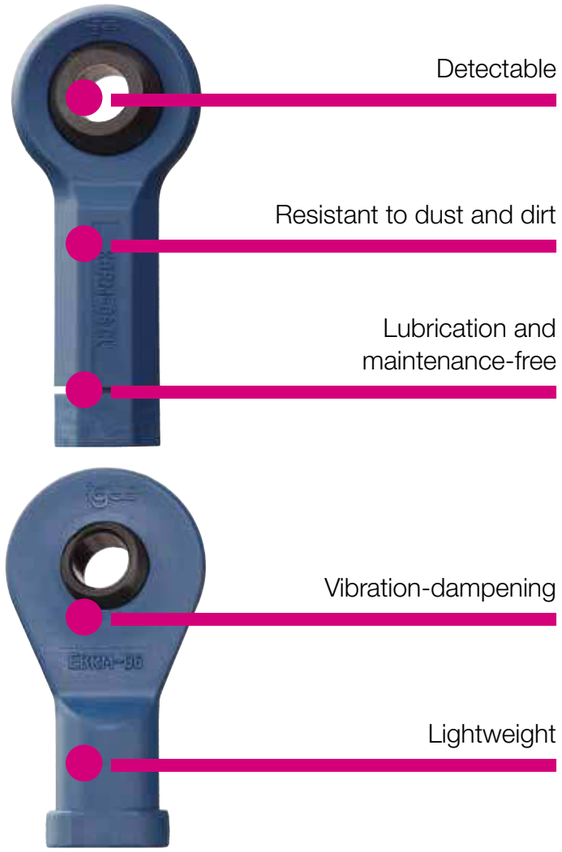


igubal® detectable

- Resistant to dust and dirt
- Lubrication and maintenance-free
- Vibration-dampening
- Lightweight
- Corrosion resistant

igubal® detectable

igubal® bearings can be found quickly in case of misuse or crash of the system through metal detectable material. Even the smallest fragment can be found by metal detectors.



When to use it?

- When particles should be detectable
- If you need maintenance-free material
- When dimensional series E and K components should be fitted
- If high compressive strength is required

When not to use it?

- If temperatures are higher than +80 °C
- If diameters above 16 mm are required
- If rotation speeds higher than 0.5 m/s are required

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

max. +80 °C
min. –30 °C

4 types
Ø 4–16 mm

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

Available from stock

Easy assembly

Dimensional series K
KBRM-…-CL-DT
KBLM-…-CL-DT

▶ Page 754

Space saving

Dimensional series E
EBRM-…-DT
EBLM-…-DT

▶ Page 755

Clevis joints, high strength under impact loads

Dimensional series E
GERM-…-DT
GELM-…-DT

▶ Page 756

Spring-loaded fixing clip

Dimensional series E
GEFM-DT

▶ Page 758

Clevis joints with spring-loaded fixing clip

Dimensional series E
GERMF-…-DT
GELMF-…-DT

▶ Page 759

Spherical balls

Series K and E
RN248KM
RN248EM

▶ Page 743

On request

Rod ends

For higher forces

KARM-CL-DT

▶ Page 654

Space saving

EARM-DT

▶ Page 658

Clipped-in spherical ball

KCRM-DT

▶ Page 650

Pillow block bearing

Easy installation

ESTM-DT

▶ Page 689

Extremely light, compact design

ESTM-SL-DT

▶ Page 693

Flange pillow block

Easy installation

EFOM-DT

▶ Page 700

For higher radial load

EFSM-DT

▶ Page 702

Pressfit spherical bearings

Easy to fit, low-cost

KGLM LC-DT

▶ Page 715

For extremely narrow installation space

KGLM SL-DT

▶ Page 716

Space saving

EGLM-DT

▶ Page 717

Simply snap into sheet metal

ECLM-DT

▶ Page 719

For tolerance compensation

EGFM-T-DT

▶ Page 721

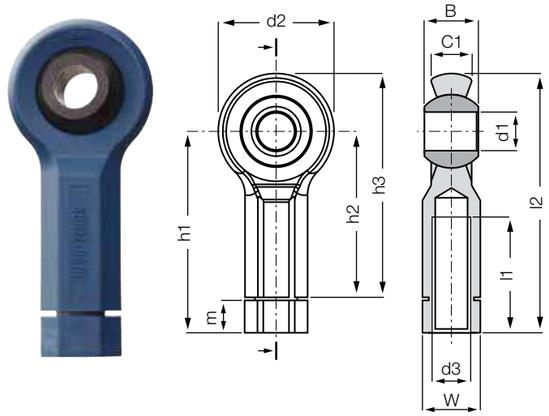
Solid polymer

EGZM-DT

▶ Page 723

igubal® detectable | Product range

Rod ends with female thread, detectable: KBRM-CL-DT and KBLM-CL-DT



- Smooth design, no dirt traps
- Compensation of misalignment
- Lightweight
- Corrosion resistant
- Dimensional series K according to standard DIN ISO 12240

Order key

Type				Size [mm]	Version		Options
K	B	...	M-	06	-CL-	DT	
Dimensional series K	Housing (female thread)	Thread	Metric	Inner Ø	2nd generation	Detectable	

Thread
L = left-hand thread
R = right-hand thread

Material:
Housing: **RN246** ▶ **Page 1403**
Spherical ball: **RN248KM** ▶ **Page 743**

Technical data

Part No.		Max. static tensile strength		Max. static radial load		Min. thread depth	Max. torque strength	Max. torque through ball	Weight
		Short-term	Long-term	Short-term	Long-term	Thread	Inner threading	Standard without stainless steel sleeve	
Right-hand thread	Left-hand thread	[N]	[N]	[N]	[N]	[mm]	[Nm]	[Nm]	[g]
KBRM-06-CL-DT	KBLM-06-CL-DT	980	490	210	105	8	0.8	10	4.5

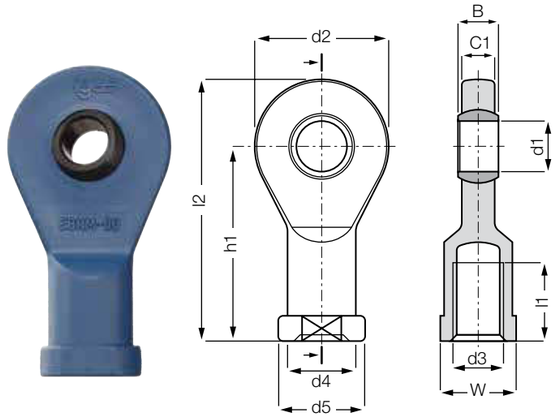
Dimensions [mm]

Part No.		d1 E10	d2	d3	W	B	C1	h3	h1	h2	l1	l2	m	Max. pivot angle
Right-hand thread	Left-hand thread													
KBRM-06-CL-DT	KBLM-06-CL-DT	6	20	M06	SW10	9	7	40	36.5	30	20	46.5	5.7	40°

igubal® detectable

igubal® detectable | Product range

Rod ends with female thread, detectable: EBRM-DT and EBLM-DT



- Smooth design, no dirt traps
- Spherical ball is clipped in
- Compensation of misalignment
- Lightweight
- Corrosion resistant

Order key

Type				Size [mm]	Version	Options
E	B	...	M-	04	- DT	
Dimensional series E	Housing (female thread)	Thread	Metric	Inner Ø	Detectable	

Thread
L = left-hand thread
R = right-hand thread

Material:
Housing: **RN246** ▶ **Page 1403**
Spherical ball: **RN248KM** ▶ **Page 743**

Technical data

Part No.		Max. static tensile strength		Max. static radial load		Min. thread depth	Max. torque strength	Max. 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]	[mm]	[Nm]	[Nm]	[g]
EBRM-04-DT	EBLM-04-DT	560	280	70	35	7	0.4	2.0	1.8
EBRM-05-DT	EBLM-05-DT	910	455	105	52	8	0.5	2.0	3.2
EBRM-06-DT	EBLM-06-DT	1,050	525	140	70	8	1.5	2.5	4.0
EBRM-08-DT	EBLM-08-DT	1,400	700	315	157	11	5.0	7.0	6.9
EBRM-10-DT	EBLM-10-DT	1,610	805	350	175	13	15.0	14.0	11.2
EBRM-12-DT	EBLM-12-DT	2,310	1,155	385	192	14	20.0	25.0	17.1

Dimensions [mm]

Part No.		d1 E10	d2	d3	d4	d5	C1	B	h1	l1	l2	W	Max. pivot angle
Right-hand thread	Left-hand thread												
EBRM-04-DT	EBLM-04-DT	4	15	M04	–	–	3.5	5	22.5	9.5	30.0	SW08	33°
EBRM-05-DT	EBLM-05-DT	5	19	M05	9.0	11	4.4	6	30	12	39.5	SW09	33°
EBRM-06-DT	EBLM-06-DT	6	21	M06	11.0	13	4.4	6	30	8	40.5	SW11	27°
EBRM-08-DT	EBLM-08-DT	8	24	M08	13.0	16	6.0	8	36	14	48.0	SW14	24°
EBRM-10-DT	EBLM-10-DT	10	29	M10	15.0	19	7.0	9	43	18	57.5	SW17	24°
EBRM-12-DT	EBLM-12-DT	12	34	M12	18.0	22	8.0	10	50	20	67.0	SW19	21°

Clevis joint, detectable: GERM-DT and GELM-DT

- Resistant to dust and dirt
- Maintenance-free and lubrication-free
- Vibration-dampening
- Lightweight

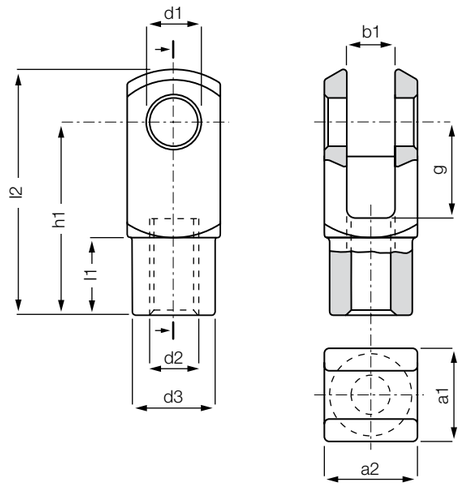
Technical data

Part No.		Max. static tensile strength		Max. static axial force		Weight
		Short-term	Long-term	Short-term	Long-term	
Right-hand thread	Left-hand thread	[N]	[N]	[N]	[N]	[g]
GERM-04-DT	GELM-04-DT	455	227.5	175	87.5	0.9
GERM-05-DT	GELM-05-DT	840	420	175	87.5	2.7
GERM-06-DT	GELM-06-DT	980	490	210	105	2.5
GERM-08-DT	GELM-08-DT	1,890	945	455	227.5	6.3
GERM-10-DT	GELM-10-DT	3,290	1,645	560	280	13.2
GERM-10-DT-F	GELM-10-DT-F	3,290	1,645	560	280	13.2
GERM-12-DT	GELM-12-DT	3,990	1,995	630	315	20.2
GERM-12-DT-F	GELM-12-DT-F	3,990	1,995	630	315	20.2

igubal® detectable

igubal® detectable | Product range

Clevis joint, detectable: GERM-DT and GELM-DT



Order key

Type				Size [mm]	Version	Options
G	E	...	M-	04	- DT	
Clevis joint	Dimensional series E	Thread	Metric	Inner Ø	Detectable	

Thread
L = left-hand thread
R = right-hand thread

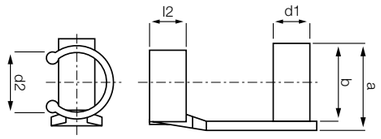
Material:
RN246 ▶ Page 1403

Dimensions [mm]

Part No.		d1	g	a1	a2	b1	d2	d3	l2	h1	l1
		H9	h11	+0.3 –0.16	+0.3 –0.16	B13	Thread tolerance 6H	+0.3 –0.3	+0.5 –0.5	+0.3 –0.3	+0.2 –0.2
Right-hand thread	Left-hand thread										
GERM-04-DT	GELM-04-DT	4	8	8	8	4	M04	8.0	21.0	16.0	6.0
GERM-05-DT	GELM-05-DT	5	12	12	12	6	M05	10.0	30.6	24.0	9.0
GERM-06-DT	GELM-06-DT	6	12	12	12	6	M06	10.0	30.6	24.0	9.0
GERM-08-DT	GELM-08-DT	8	16	16	16	8	M08	14.0	41.6	32.0	12.0
GERM-10-DT	GELM-10-DT	10	20	20	20	10	M10	18.0	51.3	40.0	15.0
GERM-10-DT-F	GELM-10-DT-F	10	20	20	20	10	M10x1.25	18.0	51.3	40.0	15.0
GERM-12-DT	GELM-12-DT	12	24	24	24	12	M12	20.0	61.3	48.0	18.0
GERM-12-DT-F	GELM-12-DT-F	12	24	24	24	12	M12x1.25	20.0	61.3	48.0	18.0

igubal® detectable | Product range

Spring-loaded fixing clip, detectable: GEFM-DT



Order key

Type				Size [mm]	Version
G	E	F	M	- 04	- DT
clevis joint	Dimensional series E	Spring-loaded fixing clip	Metric	Inner Ø	Detectable

Material:
RN246 ▶ Page 1403

- Resistant to dust and dirt
- Maintenance-free and lubrication-free
- Vibration-dampening
- Lightweight

Dimensions [mm]

Part No.	d1	d2	a	b	c	l1	h1	l2	Weight
	h11					±0.5			[g]
GEFM-04-DT	4	8	9.5	10.5	8	19	15	4.5	0.5
GEFM-05-DT	5	10	14	15.5	8	27	23	6.5	1.1
GEFM-06-DT	6	10	14	15.5	8	27	23	6.5	1.2
GEFM-08-DT	8	14	19	21.0	11	35.5	30	8.0	2.8
GEFM-10-DT	10	18	23	25.5	14	45	38	10.0	5.0
GEFM-12-DT	12	20	28	31.0	16	53	45	12.0	8.3

igubal® detectable

igubal® detectable | Product range

Clevis joints with spring-loaded fixing clips, detectable: GERMF-DT and GELMF-DT

Order key

Type					Size [mm]	Version	Options
G	E	...	M	F -	04	- DT	
clevis joint	Dimensional series E	Thread	Metric	Spring-loaded fixing clip	Inner Ø	Detectable	Thread L = left-hand thread R = right-hand thread

Material:
RN246 ▶ Page 1403

- Resistant to dust and dirt
- Maintenance-free and lubrication-free
- Vibration-dampening
- Lightweight

Technical Data

Part No.		Max. static tensile strength		Max. static axial force		Weight
		Short-term	Long-term	Short-term	Long-term	
Right-hand thread	Left-hand thread	[N]	[N]	[N]	[N]	[g]
GERMF-04-DT	GELMF-04-DT	350	175	175	87.5	1.3
GERMF-05-DT	GELMF-05-DT	630	315	175	87.5	3.8
GERMF-06-DT	GELMF-06-DT	910	455	210	105	3.9
GERMF-08-DT	GELMF-08-DT	1,470	735	455	227.5	9.1
GERMF-10-DT	GELMF-10-DT	2,100	1,050	560	280	18.2
GERMF-10-DT-F	GELMF-10-DT-F	2,100	1,050	560	280	18.2
GERMF-12-DT	GELMF-12-DT	2,450	1,225	630	315	28.6
GERMF-12-DT-F	GELMF-12-DT-F	2,450	1,225	630	315	28.6

Individual components: Clevis joint GERM-DT and spring-loaded fixing clip GEFM-DT
▶ Page 756 and 758

xiros®...

Polymer ball bearings

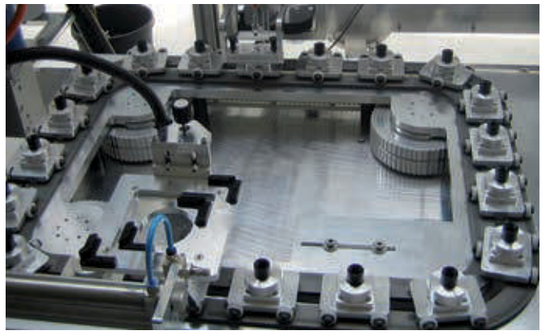
...plastics

xiros® polymer ball bearings | Application examples

Other exciting applications ► **www.igus.eu/xiros-applications**

LABELLING MACHINE
Depending on the size of the system, between twelve and 36 guide rolls are used in the Sleevematic of the film storage. Two xiros® ball bearings from igus® are used per guide roller. (Krones AG)

THERMOFORMING MACHINE
In this Thermoforming machine for coffee-cream portion packs, xiros® A500 plastic ball bearings are used for their high chemical resistance.
(frischli Milchwerke GmbH)



INDEXING TABLE
This indexing table is used to test metal balls for cracks and dimensional accuracy. xiros® polymer ball bearings are used here as wheels for the trolleys.

WET FILM THICKNESS GAUGE
This precision tester for accurate and rapid measurement of all liquid paint, coatings, oil coatings and adhesives is equipped with a durable and solvent resistant xiros® B180 ball bearing.

FILM GUIDE ROLLERS
There is no contamination of the films through lubricants, due to the use of maintenance-free xiros® flange ball bearingss.

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. (Erwin Koppe – Keramische Heizgeräte GmbH)

THREE-SIDED TRIMER
The xirodur® B180 radial grooved ball bearing is used in a three sided trimmer. xiros® polymer ball bearings are used to transport books, brochures, magazines, or newspapers to subsequently cut these into the proper format.
(Perfecta Schneidemaschinenwerk GmbH)

xiros® polymer ball bearings | Product Overview

xiros® radial deep groove ball bearings – standard product range

Standard:

PA cage

▶ Page 774

Cost-effective and FDA-compliant:
B180 cage

▶ Page 774

FDA-compliant:

PE cage

▶ Page 774

With shield or labyrinth seal:

▶ Page 780

Low wear:
xirodur® S180,
PA cage

▶ Page 782

High resistance to chemicals:
xirodur® C160, PP cage

▶ Page 788

For high temperatures up to +150 °C:
xirodur® A500, PA cage

▶ Page 792

For heat and chemicals:
xirodur® A500,
PEEK cage

▶ Page 792

xiros® radial deep groove ball bearings – standard product range

Lightweight and non-metallic: xirodur® A500,
PAI balls

▶ Page 792

Conductive:
xirodur® F180,
PA cage

▶ Page 796

ESD protection & FDA-compliant:
xirodur® F180, PE cage

▶ Page 796

High speeds:
xirodur® D180,
PA cage

▶ Page 798

xiros® radial deep-groove ball bearings – further materials

Detectable:
xirodur® M180,
xirodur® M180 cage

▶ Page 799

For the tobacco industry:
xirodur® T220,
PP cage

▶ Page 800

For temperatures up to +120 °C:
xirodur® G220, PP cage

▶ Page 801

xiros® flange ball bearingss and combinations

Single flange:
xirodur® B180,
PA cage

▶ Page 802

With double flange:
xirodur® B180,
PA cage

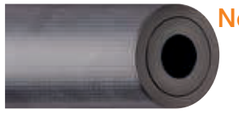
▶ Page 802

ESD protection:
xirodur® F180,
PA cage

▶ Page 802

Guide roller:
Aluminium tube with flange ball bearing

▶ Page 804



Guide roller:
Carbon tube with flange ball bearing

▶ Page 805

Profiled/ torque resistant:
xirodur® B180

▶ Page 806

End caps:
xirodur® B180,
PA cage

▶ Page 808

xiros® – other designs

Spherical outer diameter:
xirodur® B180

▶ Page 808

Spherical outer diameter and detectable:
xirodur® M180

▶ Page 809

Double row for higher loads:
xirodur® B180

▶ Page 810

Multi axis:
xirodur® B180,
PP cage

▶ Page 811

Skate wheel:
xirodur® B180,
PA cage

▶ Page 812

With flange:
xirodur® B180,
Stainless steel balls

▶ Page 813

Polymer ball transfer units:
xirodur® B180,
POM balls

▶ Page 814

Axial polymer ball transfer units:
with spherical ball

▶ Page 815

xiros® axial bearings and slewing ring bearings

Single row:
xirodur® B180
glass/stainless steel balls

▶ Page 816

Double row:
xirodur® B180
glass/stainless steel balls

▶ Page 816

Thrust washer:
xirodur® B180
glass/stainless steel balls

▶ Page 817

Slewing ring bearing:
xirodur® B180,
glass/stainless steel balls

▶ Page 818

xiros® combination with igubal®

Slewing ring bearing, with gear teeth or with cage: Stainless steel balls

▶ Page 818

Pillow block, fixed or pivoting

▶ Page 820

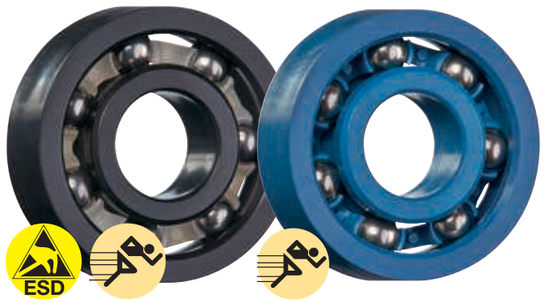
4 holes flange ball bearings, pivoting

▶ Page 822

2 holes flange ball bearings, pivoting

▶ Page 823

Lubrication and maintenance-free



Lubrication-free polymer ball bearings

xiros® polymer ball bearings revolutionise the ball bearing market. Where conventional metallic ball bearings are suitable, many applications can be successfully implemented by their maintenance-free dry operation and the use of xirodur® high-performance polymers.

- 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 (depends on material)
- High chemical resistance, suitable for wash-down
- Lightweight
- Electrically insulating (or conductive)
- 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.

Block pricing online
No minimum order value. From batch size 1.

max. +150 °C
min. -100 °C

9 xirodur® materials
Ø 3-60 mm

Imperial dimensions available
▶ Page 1401

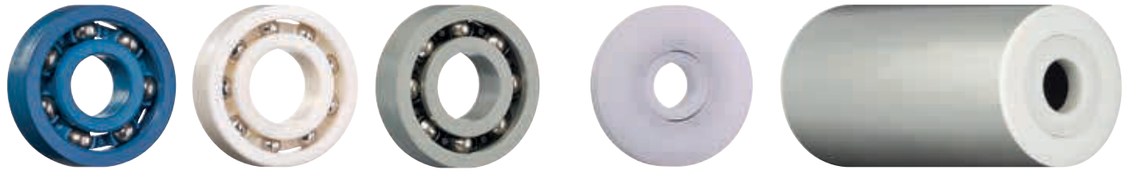
Service life calculation
▶ www.igus.eu/xiros-expert

Overview types

xiros® radial deep-groove ball bearings – standard product range for 6 materials:

- xirodur® B180 – cost-effective standard
- xirodur® S180 – low wear
- xirodur® C160 – chemical resistant
- xirodur® A500 – for heat and chemicals
- xirodur® F180 – ESD protection
- xirodur® D180 – high speeds
- Standard DIN dimensions

▶ From page 774



xiros® radial deep-groove ball bearings – Materials for special applications

- xirodur® M180 – detectable
- xirodur® T220 – for the tobacco industry
- xirodur® G220 – for temperatures up to +120 °C

▶ From page 799

xiros® flange ball bearings

- With flange on one or both sides
- Made from xirodur® B180 or F180
- xiros® System Solution: Aluminium tube with 2 flange ball bearingss

▶ From page 802

xiros® radial deep-groove ball bearings – further designs

- With spherical outer diameter
- Double row for higher loads
- Multi-bearing for radial and linear movements

▶ From page 809

xiros® axial bearings

- For absorbing axial loads
- xirodur® B180 with glass or stainless steel balls

▶ From page 816

xiros® slewing ring bearings

- With glass or stainless steel balls
- Outer toothed profile
- With cage

▶ From page 818

xiros® combination with igubal®

- Fixed or pivoting versions
- For maintenance-free use in conveyor belts and cam rollers

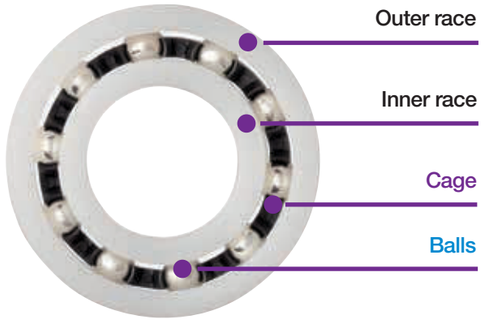
▶ From page 820

Radial deep groove ball bearings design

The xiros® polymer ball bearings are single-row grooved 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® tribopolymers to maximise service life and minimise friction. Choice of 5 materials. They allow different values of application temperature, chemical resistance and price. The table with material data (▶ **Page 770**) gives exact information.



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 smoothness, weight and chemical resistance. Steel balls (stainless steel) are cost-effective, chemical resistant, but with the highest weight. Glass balls are used to give a non-metallic solution. They are also very resistant to chemicals and have an average weight. The igus® polymer ball bearings made from PAI have significant advantages in weight, size and quiet running characteristics. They can have excellent chemical resistance.

Other designs

xiros® radial deep groove ball bearings

The other designs include:

- Convex rollers which can run directly on a profile
- Castors
- Multi-bearings for linear and radial movements
- Flange ball bearings designed e.g. for installation in tube ends
- Double row bearings for absorbing higher forces

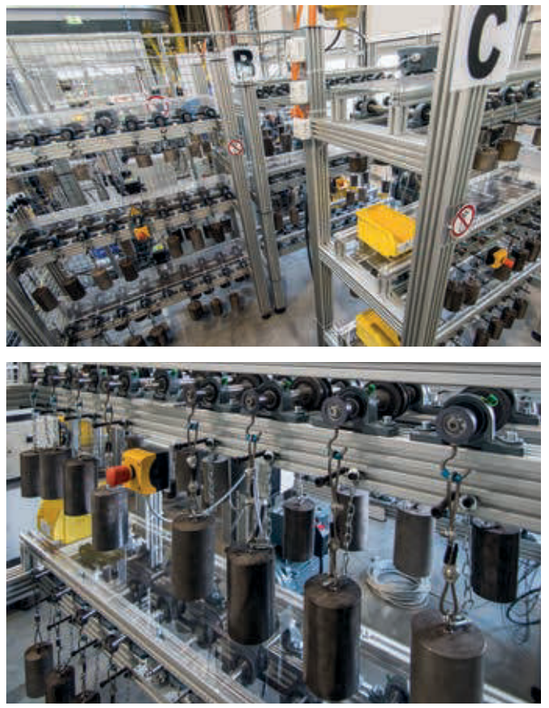
Pillow block and flange ball bearingss

This range is made up by combining xiros® polymer ball bearing with the igubal® pillow block and flanged housings, resulting in a higher flexibility in terms of installation of the bearings. The pre-finished bearing housing make it easy for the user to use these maintenance-free components. Both flanged and pillow block 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.

xiros® polymer ball bearings | Technical data

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 and development with tribological polymer materials. Challenge us, talk to us about your applications, tell us what you need from a plastic ball bearing. In the igus® test laboratory the 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.



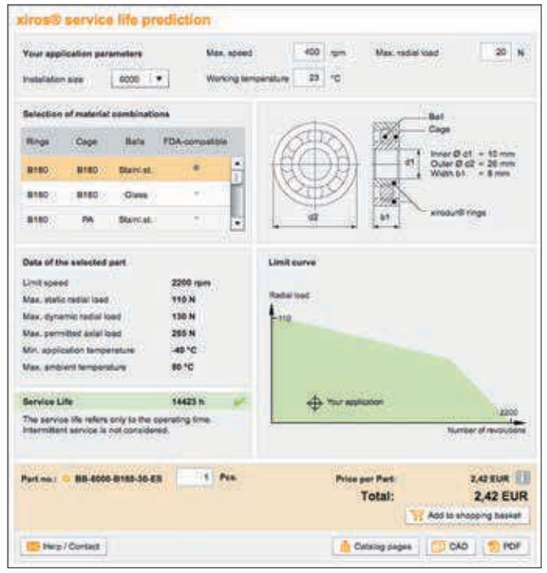
igus® extends the xiros® test stand in the industry's largest test laboratory for plastics in motion

Predictability

As part of the development of xiros® polymer ball bearing tests are carried out continuously. The high number of test results make it very difficult to present this information in tabular form. It is for this reason that igus® has developed the online life calculator, which uses real test results to give an accurate calculation.

The predictability of xiros® polymer ball bearing is one of the most important advantages. Based on the results of many wear tests, the user can calculate the service life of the xiros® polymer ball bearing reliably and interpret the application.

▶ www.igus.eu/xiros-expert



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xiros® polymer ball bearings | Technical data

Material properties and chemical resistance

		xirodur®				xirodur®					igumid
General properties	**Unit**	**B180**	**S180**	**C160**	**A500**	**F180**	**D180**	**M180**	**T220**	**G220**	**G**
Density	**g/cm³**	1.42	1.40	1.11	1.23	1.36	1.22	1.63	1.28	1.14	1.37
Colour		white	black	opaque	brown	black	blue	blue	beige	grey	black
Max. moisture absorption at +23 °C/50 % r.h.	**% weight**	0.2	0.2	0.1	0.1	0.2	0.5	0.2	0.3	2.1	1.4
Max. water absorption	**% weight**	0.7	0.7	0.2	0.4	1.3	1.4	0.6	0.5	8.9	5.6
Mechanical properties											
Flexural modulus	**MPa**	2,500	2,700	1,900	4,300	1,600	135	2,500	1,800	3,000	7,800
Flexural strength at +20 °C	**MPa**	68	65	35	130	70	n. v.	68	65	n. v.	240
Shore-D Hardness		77	78	67	85	79	48	77	76	n. v.	79
Electrical properties											
Specific volume resistance[1]	**Ωcm**	> 10^{14}	> 10^{13}	> 10^{14}	> 10^{14}	< 10^{11} [2]	> 10^{14}	> 10^{9}	> 10^{10}	> 10^{13}	> 10^{11}
Surface resistance[1]	**Ω**	> 10^{14}	> 10^{13}	> 10^{14}	> 10^{14}	< 10^{11} [2]	> 10^{14}	> 10^{9}	> 10^{10}	> 10^{12}	> 10^{11}
Thermal properties of xiros® polymer ball bearings											
Max. long-term application temperature	**°C**	+80	+80	+60	+150	+80	+80	+80	+100	+100	+120
Min. application temperatures (in combination with cage material)	**°C**	–40	-45	0	–100 (PEEK) –40 (PA)	–40	–50	–40	–40	–40	–40

[1] Only valid for xirodur® F180: The good conductivity of this material favours, under certain conditions, the corrosion generation on metallic parts.
[2] Depending on the geometry

Table 01: Material data

	xirodur®				xirodur®					igumid
Medium	**B180**	**S180**	**C160**	**A500**	**F180**	**D180**	**M180**	**T220**	**G220**	**G**
Alcohols	+	+	+	+	+	+ to 0	+	+	+	+
Greases, oils without additives	+	+	+	+	+	+	+	+	+	+
Hydrocarbons	+	+	+ to 0	+	+	+	+	+	+	+
Fuels	+	+	+ to 0	+	+	+	+	+	+	+
Strong base	+ to 0	+ to 0	+	+	+ to 0	+ to 0	+ to 0	+ to 0	+ to 0	–
Strong acid	–	-	+ to 0	+	–	0	–	–	–	+ to 0
Diluted base	+	+	+	+	+	+ to 0	+	+	+	0 to –
Diluted acid	0 to –	0 to –	+	+	0 to –	+ to 0	0 to –	0 to –	0 to –	+

+ resistant 0 conditionally resistant – not resistant

Table 02: Chemical resistance of xiros® materials

Detailed chemicals resistance table for xiros® products ▶Page 1424

Recommendation of tolerance for hole and shaft

Fitting	Housing bore	Shaft
Standard: transition fit	H7	h6

For further questions about the dimensioning of the bore and the shaft please contact us.

Ball material

Description	Specification
ES: Stainless steel	1.4401
GL: Glass	Sodium silicate glass or borosilicate glass
PAI: Plastics	Polyamide-imide
PP: Plastics	Polypropylene

xiros® polymer ball bearings | Selection guide

According to material properties

xirodur®	B180					S180	C160	
Cage material	PA		B180		PE	PA	PP	
Ball material	ES	GL	ES	GL	ES	ES	ES	GL
Descriptive technical specifications								
Lowest wear						●		
Smooth running	●	●	●	●	●	●	●	●
Low moisture absorption	●	●	●	●	●	●	●	●
Chemical resistant			●	●	●		●	●
Seawater resistant			●	●			●	●
Dirt resistant	●	●	●	●	●	●	●	●
Higher temperatures								
Higher speeds								
Cost-effective			●	●		●		
Approvals and standards								
Contact with food			●		●			
ESD protection								
Non-metallic		●		●				●
Detectable								
Availabilities / variants								
Radial deep groove ball bearings	●	●	●	●	●	●	●	●
Flange pillow block	●	●	●	●				
End cap	●	●						
Spherical outer diameter	●	●						
Double row	●	●						
Slewing ring bearing			●					
Axial-thrust bearings			●	●				

A500					F180		D180	M180	T220	G220
PA		PEEK			PA	PE	PA	M180	PP	PA
ES	GL	ES	GL	PAI	ES	ES	ES	ES	ES	ES
●	●	●	●	●	●	●		●	●	
●	●	●	●	●	●	●		●	●	
		●	●	●						
		●	●							
●	●	●	●	●	●	●		●	●	
●	●	●	●	●						●
							●			
	●		●	●						
					●	●				
								●		
●	●	●	●	●	●	●	●	●	●	●
					●					
								●		

xiros® radial deep groove ball bearings | Product range

Races made from xirodur® B180 – cost-effective standard

xirodur® B180 cage,
stainless steel balls

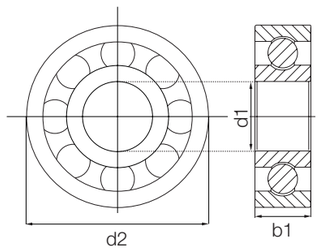
xirodur® B180 cage,
glass balls

PA cage,
stainless steel balls

PA cage,
glass balls

PE cage,
stainless steel balls

Special designs made from xirodur® B180
▶ From page 809



Order key

Type	Material

BB-623-B180-10-ES

Ball bearing	Dimensions acc. to DIN 625-1	Race material	Cage material	Ball material
BB	623	B180	10	ES

Options:
Cage material
10: PA
30: xirodur® B180
50: PE
Ball material
ES: Stainless steel
GL: Glass

Inch — Imperial dimensions available
▶ Page 1401

Technical data

Size	Radial load capacity stat.	Radial load capacity dyn.	Max. speed	Weight B180/ES	Weight B180/GL	Weight PA/ES	Weight PA/GL	Weight PE/ES
	[N]	[N]	[rpm]	[g]	[g]	[g]	[g]	[g]
623	10	25	4,500	0.4	0.4	0.4	0.3	–
633	33	45	4,000	–	–	–	–	–
684	10	11	4,600	–	–	–	–	–
694	12	14	4,000	–	–	–	–	–
604	30	32	3,600	–	–	–	–	–
624	33	45	4,000	–	–	1.0	0.9	–
634	40	40	3,700	–	–	–	–	–
685	12	14	4,000	–	–	–	–	–
695	29	30	3,500	–	–	–	–	–
605	32	33	3,500	–	–	–	–	–
625	40	40	3,700	–	–	1.6	1.0	–
635	41	43	3,200	–	–	–	–	–
686	29	30	3,500	–	–	–	–	–
696	29	30	3,500	–	–	–	–	–
606	50	53	3,300	–	–	–	–	–
626	60	62	3,200	2.3	1.8	2.2	1.7	
636	80	94	2,200	–	–	–	–	–
687	32	34	3,200	–	–	–	–	–
697	39	41	3,000	–	–	–	–	–
607	41	43	3,200	–	–	–	–	–
627	80	94	2,400	–	–	–	–	–
688	39	41	3,000	–	–	3.1	2.1	–
698	60	62	3,200	–	–	–	–	–
608	80	94	2,400	4.0	2.7	3.9	2.6	–

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	Outer Ø	Width	Cage/ball material combination					Part No.
d1	d2	b1	B180/ES	B180/GL	PA/ES	PA/GL	PE/ES	
3	10	4	●	●	●	●	●	BB-623-B180-□-□
3	13	5	●	●	–	–	–	BB-633-B180-□-□
4	9	4	●	●	●	●	●	BB-684-B180-□-□
4	11	4	●	●	–	–	–	BB-694-B180-□-□
4	12	4	●	●	●	●	●	BB-604-B180-□-□
4	13	5	●	●	●	●	●	BB-624-B180-□-□
4	16	5	●	●	–	–	–	BB-634-B180-□-□
5	11	5	●	●	–	–	–	BB-685-B180-□-□
5	13	5	●	●	–	–	–	BB-695-B180-□-□
5	14	5	●	●	–	–	–	BB-605-B180-□-□
5	16	5	●	●	●	●	●	BB-625-B180-□-□
5	19	6	●	●	–	–	–	BB-635-B180-□-□
6	13	5	●	●	●	●	●	BB-686-B180-□-□
6	15	5	●	●	–	–	–	BB-696-B180-□-□
6	17	6	●	●	–	–	–	BB-606-B180-□-□
6	19	6	●	●	●	●	●	BB-626-B180-□-□
6	22	7	●	●	–	–	–	BB-636-B180-□-□
7	14	5	●	●	–	–	–	BB-687-B180-□-□
7	17	5	●	●	–	–	–	BB-697-B180-□-□
7	19	6	●	●	●	●	●	BB-607-B180-□-□
7	22	7	●	●	●	●	●	BB-627-B180-□-□
8	16	5	–	–	●	●	–	BB-688-B180-□-□
8	19	6	●	●	–	–	–	BB-698-B180-□-□
8	22	7	●	●	●	●	●	BB-608-B180-□-□

Available from stock
On request

xiros® radial deep groove ball bearings | Product range

Races made from xirodur® B180 – cost-effective standard

Technical data

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 PE/ES [g]
628	100	110	2,300	–	–	–	–	–
638	110	130	2,200	–	–	–	–	–
689	40	42	2,500	–	–	–	–	–
699	43	45	2,250	–	–	–	–	–
609	100	110	2,300	–	–	–	–	–
629	110	128	2,200	–	–	–	–	–
6800	43	45	2,250	–	–	–	–	–
6900	60	64	2,000	–	–	–	–	–
6000	110	130	2,200	6.3	4.1	6.1	4.0	–
6200	130	147	2,000	–	–	7.8	5.2	–
6300	140	150	1,800	–	–	–	–	–
6701	16	18	2,200	–	–	–	–	–
6801	60	64	2,000	–	–	–	–	–
6901	80	83	1,800	–	–	–	–	–
6001	130	147	2,000	7.1	–	6.9	4.5	–
6201	140	150	1,800	–	–	8.8	5.9	–
6301	160	220	1,600	–	–	–	–	–
6702	19	21	1,800	–	–	–	–	–
6802	80	83	1,800	–	–	–	–	–
6902	90	94	1,700	–	–	–	–	–
6002	140	150	1,800	–	–	–	–	–
6202	160	220	1,600	12.8	8.9	11.6	8.2	–
6302	250	320	1,400	–	–	–	–	–
6703	23	25	1,600	–	–	–	–	–
6803	90	94	1,700	–	–	–	–	–
6903	90	94	1,700	–	–	–	–	–
6003	160	220	1,600	11.5	8.4	11.1	7.9	–
6203	250	320	1,400	–	–	14.4	10.2	–
6303	280	360	1,200	–	–	–	–	–
6704	30	36	1,400	–	–	–	–	–
6804	100	120	1,500	–	–	–	–	–
6904	140	144	1,150	–	–	–	–	–
6004	250	320	1,400	20.8	14.2	20.2	13.6	–
6204	280	360	1,200	–	–	26.2	17.7	–
6304	380	400	1,000	–	–	–	–	–
6705	32	38	1,200	–	–	–	–	–
6805	140	144	1,150	–	–	–	–	–
6905	160	162	900	–	–	–	–	–
6005	280	360	1,200	24.7	17.5	23.9	16.7	–
6205	380	400	1,000	–	–	35.2	24.6	–
6305	480	520	850	–	–	–	–	–

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	PE/ES	Part No.
8	24	8	●	●	–	–	–	BB-628-B180-□-□
8	28	9	●	●	–	–	–	BB-638-B180-□-□
9	17	5	●	●	–	–	–	BB-689-B180-□-□
9	20	6	●	●	–	–	–	BB-699-B180-□-□
9	24	7	●	●	–	–	–	BB-609-B180-□-□
9	26	8	–	–	●	–	–	BB-629-B180-10-ES
10	19	5	●	●	●	●	●	BB-6800-B180-□-□
10	22	6	●	●	●	●	●	BB-6900-B180-□-□
10	26	8	●	●	●	●	●	BB-6000-B180-□-□
10	30	9	–	–	●	●		BB-6200-B180-□-□
10	35	11	●	●	●	●	●	BB-6300-B180-□-□
12	18	4	●	●	–	–	–	BB-6701-B180-□-□
12	21	5	●	●	●	●	●	BB-6801-B180-□-□
12	24	6	●	●				BB-6901-B180-□-□
12	28	8	●	●	●	●	●	BB-6001-B180-□-□
12	32	10	–	–	●	●		BB-6201-B180-□-□
12	37	12	●	●	–	–	–	BB-6301-B180-□-□
15	21	4	●	●	–	–	–	BB-6702-B180-□-□
15	24	5	●	●	●	●	●	BB-6802-B180-□-□
15	28	7	●	●				BB-6902-B180-□-□
15	32	9	●	●	●	●	●	BB-6002-B180-□-□
15	35	11	–	–	●	●		BB-6202-B180-□-□
15	42	13	●	●	●	●	●	BB-6302-B180-□-□
17	23	4	●	●	–	–	–	BB-6703-B180-□-□
17	26	5	●	●	●	●	●	BB-6803-B180-□-□
17	30	7	●	●	–	–	–	BB-6903-B180-□-□
17	35	10	●	●	●	●	●	BB-6003-B180-□-□
17	40	12	–	–	●	●		BB-6203-B180-□-□
17	47	14	●	●	–	–	–	BB-6303-B180-□-□
20	27	4	●	●	●	●	●	BB-6704-B180-□-□
20	32	7	●	●	●	●	●	BB-6804-B180-□-□
20	37	9	●	●	–	–	–	BB-6904-B180-□-□
20	42	12	●	●	●	●	●	BB-6004-B180-□-□
20	47	14	–	–	●	●	–	BB-6204-B180-□-□
20	52	15	●	●	–	–	–	BB-6304-B180-□-□
25	32	4	●	●	●	●	●	BB-6705-B180-□-□
25	37	7	●	●	–	–	–	BB-6805-B180-□-□
25	42	9	●	●	–	–	–	BB-6905-B180-□-□
25	47	12	●	●	●	●	●	BB-6005-B180-□-□
25	52	15	–	–	●	●	–	BB-6205-B180-□-□
25	62	17	●	●	–	–	–	BB-6305-B180-□-□

Available from stock

On request

xiros®

xiros® radial deep groove ball bearings | Product range

Races made from xirodur® B180 – cost-effective standard

Technical data

Size	Radial load capacity stat.	Radial load capacity dyn.	Max. speed	Weight B180/ES	Weight B180/GL	Weight PA/ES	Weight PA/GL	Weight PE/ES
	[N]	[N]	[rpm]	[g]	[g]	[g]	[g]	[g]
6706	34	41	1,000	–	–	–	–	–
6806	160	162	900	–	–	–	–	–
6906	190	193	850	–	–	–	–	–
16006	380	420	900	–	–	18.1	12.5	–
6006	380	400	1,000	–	–	35.0	24.2	–
6206	480	520	850	–	–	–	–	–
6306	520	660	750	–	–	–	–	–
6007	480	520	850	–	–	47.0	31.3	–
6008	520	660	750	–	–	56.3	39.1	–
6009	660	690	650	–	–	71.5	48.6	–
6010	740	780	600	–	–	83.1	56.4	–
6011	930	950	550	–	–	125.2	84.4	–
6012	990	1,050	500	–	–	129.6	85.6	–

Order example:
BB-6706-B180-30-ES: Thin ring bearing with race material xirodur® B180, xirodur® B180 cage and stainless steel balls

Dimensions [mm]

Inner Ø	Outer Ø	Width	Cage/ball material combination					Part No.
d1	d2	b1	B180/ES	B180/GL	PA/ES	PA/GL	PE/ES	
25	62	17	●	●	–	–	–	BB-6706-B180-□-□
30	42	7	●	●	–	–	–	BB-6806-B180-□-□
30	47	9	●	●	–	–	–	BB-6906-B180-□-□
30	55	9	–	–	●	●	–	BB-16006-B180-10-□
30	55	13	–	–	●	●	–	BB-6006-B180-□-□
30	62	16	●	●	●	●	●	BB-6206-B180-□-□
30	72	19	●	●	–	–	–	BB-6306-B180-□-□
35	62	14	–	–	●	●	–	BB-6007-B180-□-□
40	68	15	–	–	●	●	–	BB-6008-B180-□-□
45	75	16	–	–	●	●	–	BB-6009-B180-□-□
50	80	16	–	–	●	●	–	BB-6010-B180-□-□
55	90	18	–	–	●	●	–	BB-6011-B180-□-□
60	95	18	–	–	●	●	–	BB-6012-B180-□-□

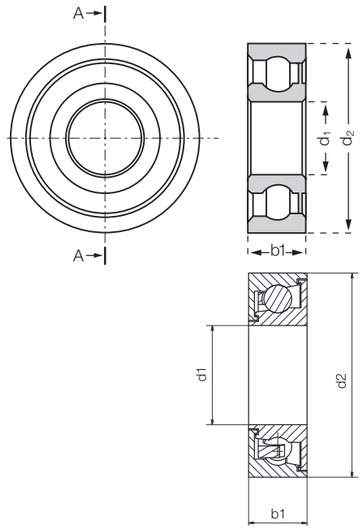
Available from stock
On request

xiros® radial deep groove ball bearings | Product range

Races made from xirodur® B180

PA cage, with shield on one side stainless steel or glass balls

B180 cage, with labyrinth seal, stainless steel or glass balls



Order key

Type	Material					
BB-	623-	B180-	10-	ES-	C	
Ball bearing	Dimensions acc. to DIN 625-1	Race material	Cage material	Ball material	With shield	

Cage material
10: PA
Options:
Ball material
ES: Stainless steel
GL: Glass
Shield or labyrinth seal
C: With shield
LCC: Labyrinth seal

Technical data

Size	Radial load capacity		Max. speed	Weight			
				With shield		With labyrinth seal	
	stat.	dyn.		stainless steel	GL	stainless steel	GL
	[N]	[N]	[rpm]	[g]	[g]	[g]	[g]
623	10	25	4,500	0.4	0.4	–	–
626	41	43	3,200	2.5	1.8	–	–
608	80	94	2,200	4.0	2.7	–	–
6000	110	130	2,200	6.3	4.1	–	–
6001	138	147	2,000	7.1	–	–	–
6202	142	155	1,700	12.8	8.9	–	–
6003	160	220	1,600	11.5	8.4	–	–
6004	250	320	1,400	20.8	14.2	–	–
6005	280	360	1,200	23.9	16.7	24.7	17.5

Order example:
BB-623-B180-10-ES: Radial deep groove ball bearing with race material xirodur® B180, PA cage, stainless steel balls and shield

Dimensions [mm]

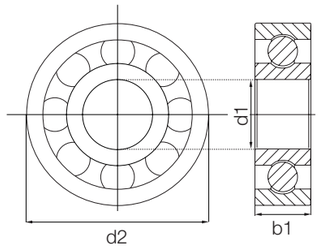
Inner Ø	Outer Ø	Width	Cage/ball material combination		Part No.
			Shield	Labyrinth seal	
d1	d2	b1	PA/ES/GL	B180/ES/GL	
3	10	4	●	○	BB-623-B180-10-□-□
6	19	6	●	○	BB-626-B180-10-□-□
8	22	7	●	○	BB-608-B180-10-□-□
10	26	8	●	○	BB-6000-B180-10-□-□
12	28	8	●	○	BB-6001-B180-10-□-□
15	35	11	●	○	BB-6202-B180-10-□-□
17	35	10	●	●	BB-6003-B180-10-□-□
20	42	12	●	○	BB-6004-B180-10-□-□
25	47	12	●	○	BB-6005-B180-10-□-□

Available from stock
On request

xiros® radial deep groove ball bearings | Product range

Races made from xirodur® S180 – low wear

PA cage,
stainless steel balls



Order key

Type	Material

BB-608-S180-10-ES

- Ball bearing
- Dimensions acc. to DIN 625-1
- Race material
- Cage material
- Ball material

Options cage material
10: PA
Ball material
ES: Stainless steel
GL: Glass

Technical data

Size	Radial load capacity stat.	Radial load capacity dyn.	Max. speed	Weight PA/ES	Weight PA/GL	Weight PE/ES
	[N]	[N]	[rpm]	[g]	[g]	[g]
623	25	34	4,500	0.4	0.3	0.4
633	33	45	4,000	–	–	–
684	10	11	4,600	–	–	–
694	12	14	4,000	–	–	–
604	30	32	3,600	–	–	–
624	33	45	4,000	1.0	0.9	–
634	40	40	3,700	–	–	–
685	12	14	4,000	–	–	–
695	29	30	3,500	–	–	–
605	32	33	3,500	–	–	–
625	40	40	3,700	1.6	1.0	–
635	41	43	3,200	–	–	–
686	29	30	3,500	–	–	–
696	29	30	3,500	–	–	–
606	50	53	3,300	–	–	–
626	60	62	3,200	2.2	1.7	2.5
636	80	94	2,200	–	–	–
687	32	34	3,200	–	–	–
697	39	41	3,000	–	–	–
607	41	43	3,200	–	–	–
627	80	94	2,400	–	–	–
688	39	41	3,000	3.1	2.1	–
698	60	62	3,200	–	–	–
608	80	94	2,400	3.9	2.6	4.0

Order example:
BB-623-S180-10-ES: Radial deep groove ball bearing with race material xirodur® S180, PA cage and stainless steel balls

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-S180-10-
3	13	5	●	●	BB-633-S180-10-
4	9	4	●	●	BB-684-S180-10-
4	11	4	●	●	BB-694-S180-10-
4	12	4	●	●	BB-604-S180-10-
4	13	5	●	●	BB-624-S180-10-
4	16	5	●	●	BB-634-S180-10-
5	11	5	●	●	BB-685-S180-10-
5	13	5	●	●	BB-695-S180-10-
5	14	5	●	●	BB-605-S180-10-
5	16	5	●	●	BB-625-S180-10-
5	19	6	●	●	BB-635-S180-10-
6	13	5	●	●	BB-686-S180-10-
6	15	5	●	●	BB-696-S180-10-
6	17	6	●	●	BB-606-S180-10-
6	19	6	●	●	BB-626-S180-10-
6	22	7	●	●	BB-636-S180-10-
7	14	5	●	●	BB-687-S180-10-
7	17	5	●	●	BB-697-S180-10-
7	19	6	●	●	BB-607-S180-10-
7	22	7	●	●	BB-627-S180-10-
8	16	5	●	●	BB-688-S180-10-
8	19	6	●	●	BB-698-S180-10-
8	22	7	●	●	BB-608-S180-10-

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xiros® radial deep groove ball bearings | Product range

Races made from xirodur® S180 – low wear

Technical data

Size	Radial load capacity stat. [N]	Radial load capacity dyn. [N]	Max. speed [rpm]	Weight PA/ES [g]	Weight PA/GL [g]	Weight PE/ES [g]
628	100	110	2,300	–	–	–
638	110	130	2,200	–	–	–
689	40	42	2,500	–	–	–
699	43	45	2250	–	–	–
609	100	110	2,300	–	–	–
629	110	128	2,200	6.1	–	–
6800	43	45	2,250	–	–	–
6900	60	64	2,000	–	–	–
6000	110	130	2,200	6.1	4.0	6.3
6200	130	147	2,000	7.8	5.2	–
6300	140	150	1,800	–	–	–
6701	16	18	2,200	–	–	–
6801	60	64	2,000	–	–	–
6901	80	83	1,800	–	–	–
6001	130	147	2,000	6.9	4.5	7.1
6201	140	150	1,800	8.8	5.9	–
6301	160	220	1,600	–	–	–
6702	19	21	1,800	–	–	–
6802	80	83	1,800	–	–	–
6902	90	94	1,700	–	–	–
6002	140	150	1,800	8.9	6.2	–
6202	160	220	1,600	11.6	8.2	12.8
6302	250	320	1,400	–	–	–
6703	23	25	1,600	–	–	–
6803	90	94	1,700	–	–	–
6903	90	94	1,700	–	–	–
6003	160	220	1,600	11.1	7.9	11.5
6203	250	320	1,400	14.4	10.2	–
6303	280	360	1,200	–	–	–
6704	30	36	1,400	–	–	–
6804	100	120	1,500	–	–	–
6904	140	144	1,150	–	–	–
6004	250	320	1,400	20.2	13.6	20.8
6204	280	360	1,200	26.2	17.7	–
6304	380	400	1,000	–	–	–
6705	32	38	1,200	–	–	–
6805	140	144	1,150	–	–	–
6905	160	162	900	–	–	–
6005	280	360	1,200	23.9	16.7	24.7
6205	380	400	1,000	35.2	24.6	–
6305	480	520	850	–	–	–

Order example:

BB-628-S180-10-ES: Radial deep groove ball bearing with race material xirodur® S180, PA cage and stainless steel balls

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination PA/ES	Cage/ball material combination PA/GL	Part No.
8	24	8	●	●	BB-628-S180-10-□
8	28	9	●	●	BB-638-S180-10-□
9	17	5	●	●	BB-689-S180-10-□
9	20	6	●	●	BB-699-S180-10-□
9	24	7	●	●	BB-609-S180-10-□
9	26	8	●	●	BB-629-S180-10-ES
10	19	5	●	●	BB-6800-S180-10-□
10	22	6	●	●	BB-6900-S180-10-□
10	26	8	●	●	BB-6000-S180-10-□
10	30	9	●	●	BB-6200-S180-10-□
10	35	11	●	●	BB-6300-S180-10-□
12	18	4	●	●	BB-6701-S180-10-□
12	21	5	●	●	BB-6801-S180-10-□
12	24	6	●	●	BB-6901-S180-10-□
12	28	8	●	●	BB-6001-S180-10-□
12	32	10	●	●	BB-6201-S180-10-□
12	37	12	●	●	BB-6301-S180-10-□
15	21	4	●	●	BB-6702-S180-10-□
15	24	5	●	●	BB-6802-S180-10-□
15	28	7	●	●	BB-6902-S180-10-□
15	32	9	●	●	BB-6002-S180-10-□
15	35	11	●	●	BB-6202-S180-10-□
15	42	13	●	●	BB-6302-S180-10-□
17	23	4	●	●	BB-6703-S180-10-□
17	26	5	●	●	BB-6803-S180-10-□
17	30	7	●	●	BB-6903-S180-10-□
17	35	10	●	●	BB-6003-S180-10-□
17	40	12	●	●	BB-6203-S180-10-□
17	47	14	●	●	BB-6303-S180-10-□
20	27	4	●	●	BB-6704-S180-10-□
20	32	7	●	●	BB-6804-S180-10-□
20	37	9	●	●	BB-6904-S180-10-□
20	42	12	●	●	BB-6004-S180-10-□
20	47	14	●	●	BB-6204-S180-10-□
20	52	15	●	●	BB-6304-S180-10-□
25	32	4	●	●	BB-6705-S180-10-□
25	37	7	●	●	BB-6805-S180-10-□
25	42	9	●	●	BB-6905-S180-10-□
25	47	12	●	●	BB-6005-S180-10-□
25	52	15	●	●	BB-6205-S180-10-□
25	62	17	●	●	BB-6305-S180-10-□

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On request

xiros® radial deep groove ball bearings | Product range

Races made from xirodur® S180 – low wear

Technical data

Size	Radial load capacity stat.	Radial load capacity dyn.	Max. speed	Weight PA/ES	Weight PA/GL	Weight PE/ES
	[N]	[N]	[rpm]	[g]	[g]	[g]
6706	34	41	1,000	–	–	–
6806	160	162	900	–	–	–
6906	190	193	850	–	–	–
6006	380	400	1,000	35.0	24.2	–
6206	480	520	850	–	–	–
6306	520	660	750	–	–	–
6007	480	520	850	47.0	31.3	–
6008	520	660	750	56.3	39.1	–
6009	660	690	650	71.5	48.6	–
6010	740	780	600	83.1	56.4	–
6011	930	950	550	125.2	84.4	–
6012	990	1,050	500	129.6	85.6	–

Order example:
BB-6706-S180-10-ES: Radial deep groove ball bearing with race material xirodur® S180, PA cage and stainless steel balls

Dimensions [mm]

Inner Ø	Outer Ø	Width	Cage/ball material combination		Part No.
d1	d2	b1	PA/ES	PA/GL	
25	62	17	●	●	BB-6706-S180-10-□
30	42	7	●	●	BB-6806-S180-10-□
30	47	9	●	●	BB-6906-S180-10-□
30	55	13	●	●	BB-6006-S180-10-□
30	62	16	●	●	BB-6206-S180-10-□
30	72	19	●	●	BB-6306-S180-10-□
35	62	14	●	●	BB-6007-S180-10-□
40	68	15	●	●	BB-6008-S180-10-□
45	75	16	●	●	BB-6009-S180-10-□
50	80	16	●	●	BB-6010-S180-10-□
55	90	18	●	●	BB-6011-S180-10-□
60	95	18	●	●	BB-6012-S180-10-□

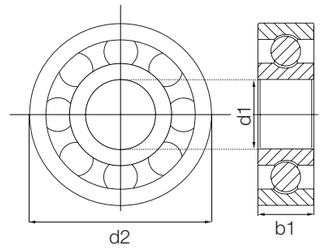
Available from stock
On request

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



Order key

Type	Material

BB-623-C160-20-ES

- Ball bearing
- Dimensions acc. to DIN 625-1
- Race material
- Cage material
- Ball material

Cage material
20: PP
Options:
Ball material
ES: Stainless steel
GL: Glass

Technical data

Size	Radial load capacity stat.		Max. speed	Weight PP/ES	Weight PP/GL
	[N]		[rpm]	[g]	[g]
623	10	11	4,000	0.4	0.3
624	12	13	3,650	–	–
625	20	22	3,100	–	–
635	30	31	2,900	–	–
626	30	34	2,600	2.1	1.4
636	40	42	2,050	–	–
627	40	43	2,000	–	–
688	20	21	2,750	–	–
608	40	46	2,200	3.4	2.2
628	57	61	1,800	–	–
638	60	62	1,670	–	–
629	60	63	1,680	–	–
6800	20	24	2,100	–	–
6000	60	65	1,700	5.6	3.5
6200	78	81	1,540	–	–
6801	30	32	1,920	–	–
6001	70	74	1,580	–	–
6201	80	83	1,260	–	–
6802	40	43	1,700	–	–
6002	80	85	1,500	8.1	4.2
6202	80	85	1,130	–	–
6803	50	51	1,650	–	–
6003	90	96	1,300	9.3	5.1
6203	140	142	1,010	–	–
6804	50	54	1,480	–	–

Order example:
BB-623-C160-20-ES: Radial deep groove ball bearing with race material xirodur® C160, PP cage and stainless steel balls

Dimensions [mm]

Inner Ø	Outer Ø	Width	Cage/ball material combination		Part No.
d1	d2	b1	PP/ES	PP/GL	
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-□

Available from stock
On request

xiros® radial deep groove ball bearings | Product range

Races made from xirodur® C160 – resistant to chemicals

Technical data

Size	Radial load capacity stat.		Max. speed	Weight PP/ES	Weight PP/GL
	[N]		[rpm]	[g]	[g]
6004	140	142	1,000	–	–
6204	140	145	950	–	–
6805	80	82	1,075	–	–
6005	140	151	960	–	–
6205	200	203	810	–	–

Order example:
BB-6004-C160-20-ES: Radial deep groove ball bearing with race material xirodur® C160, PP cage and stainless steel balls

Dimensions [mm]

Inner Ø	Outer Ø	Width	Cage/ball material combination		Part No.
d1	d2	b1	PP/ES	PP/GL	
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-☐

Available from stock
On request

xiros® radial deep groove ball bearings | Product range

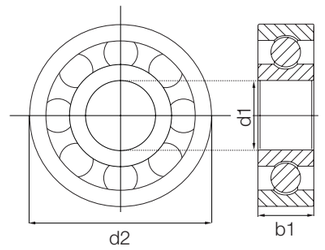
Races made from xirodur® A500 – chemical and temperature stable up to +150 °C

PA cage,
stainless steel balls

PEEK cage,
stainless steel balls

PEEK cage,
glass balls

PEEK cage,
PAI balls



Order key

Type | Material

BB-623-A500-10-ES

- Ball bearing
- Dimensions acc. 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

Size	Radial load capacity stat.	Radial load capacity dyn.	Radial load capacity stat. PEEK/PAI	Radial load capacity dyn. PEEK/PAI	Max. speed	Weight PA/ stainless steel	Weight PEEK/ stainless steel	Weight PEEK/ GL	Weight PEEK/ PAI
	[N]	[N]	[N]	[N]	[rpm]	[g]	[g]	[g]	[g]
623	27	30	–	–	5,000	0.4	0.4	0.3	–
624	30	40	–	–	4,550	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	1,850	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	–	–	–	–

Order example:
BB-623-A500-10-ES: Radial deep groove ball bearing with race material xirodur® A500, PA cage and stainless steel balls

Dimensions [mm]

Inner Ø	Outer Ø	Width	Cage/ball material combination				Part No.
d1	d2	b1	PA/ES	PEEK/ES	PEEK/GL	PEEK/PAI	
3	10	4	●	●	●	–	BB-623-A500-□-□
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-□-□

Available from stock
On request

xiros® radial deep groove ball bearings | Product range

Races made from xirodur® A500 – chemical and temperature stable up to +150 °C

Technical data

Size	Radial load capacity				Max. speed	Weight			
	stat.	dyn.	stat. PEEK/PAI	dyn. PEEK/PAI		PA/ stainless steel	PEEK/ stainless steel	PEEK/ GL	PEEK/ PAI
	[N]	[N]	[N]	[N]	[rpm]	[g]	[g]	[g]	[g]
6804	90	93	–	–	1,560	–	–	–	–
6004	234	250	62	88	1,700	19.7	19.7	13.2	11.7
6204	234	238	–	–	1,270	–	–	–	–
6805	132	135	–	–	980	–	–	–	–
6005	405	420	–	–	1,500	–	–	–	–
6205	348	356	–	–	1,100	–	–	–	–

Order example:

BB-623-A500-10-ES: Radial deep groove ball bearing with race material xirodur® A500, PA cage and stainless steel balls

Dimensions [mm]

Inner Ø	Outer Ø	Width	Cage/ball material combination				Part No.
d1	d2	b1	PA/ES	PEEK/ES	PEEK/GL	PEEK/PAI	
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-□-□

Available from stock

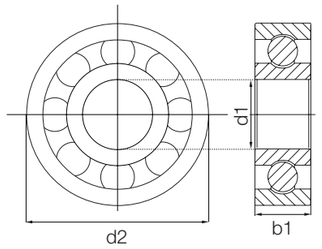
On request

xiros® radial deep groove ball bearings | Product range

Races made from xirodur® F180 – ESD protection

PA cage,
stainless steel balls

PE cage,
stainless steel balls



Special designs
made from xirodur® F180
▶ Page 802

Order key

Type	Material

BB-623-F180-10-ES

Ball bearing	Dimensions acc. to DIN 625-1	Race material	Cage material	Ball material
BB	623	F180	10	ES

Options
Cage material
10: PA
50: PE
Ball material
ES: Stainless steel

Technical data

Size	Radial load capacity stat. [N]	Radial load capacity dyn. [N]	Max. speed [rpm]	Weight PA/ES [g]	Weight PE/ES [g]
623	10	25	4,500	0.4	0.4
624	20	33	4,000	1.0	1.0
625	40	40	3,700	1.6	1.6
626	41	43	3,200	2.1	2.1
608	80	94	2,200	3.8	3.8
6000	110	130	2,200	5.9	5.9
6001	138	147	2,000	6.9	6.9
6002	140	150	1,800	8.9	8.9
6003	160	220	1,600	10.7	10.7
6004	250	320	1,400	13.4	13.4
6005	280	360	1,200	–	–

Order example:
BB-623-F180-10-ES: Radial deep groove ball bearing with race material xirodur® F180, PA cage and stainless steel balls

Dimensions [mm]

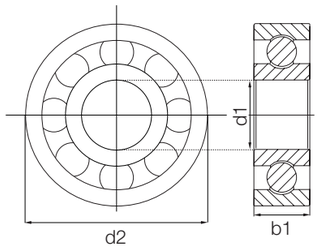
Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination PA/ES	Cage/ball material combination PE/ES	Part No.
3	10	4	●	●	BB-623-F180-□-ES
4	13	5	●	●	BB-624-F180-□-ES
5	16	5	●	●	BB-625-F180-□-ES
6	19	6	●	●	BB-626-F180-□-ES
8	22	7	●	●	BB-608-F180-□-ES
10	26	8	●	●	BB-6000-F180-□-ES
12	28	8	●	●	BB-6001-F180-□-ES
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

Available from stock

xiros® radial deep groove ball bearings | Product range

Races made of xirodur® D180 – for high speeds

PA cage,
stainless steel balls



Order key

Type	Material

BB-623-D180-10-ES

Ball bearing	Dimensions acc. to DIN 625-1	Race material	Cage material	Ball material

Cage material
10: PA
Ball material
ES: Stainless steel

Technical data

Size	Radial load capacity stat. [N]	Radial load capacity dyn. [N]	Max. speed [rpm]	Weight PA/ES [g]
623	7	12	5,500	1.2
625	11	13	4,700	1.8
626	13	18	4,500	2.0
608	20	32	4,300	3.7
6000	28	36	4,200	5.7
6001	32	49	4,000	6.6
6002	44	50	3,870	8.5

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination PA/ES	Part No.
3	10	4	●	**BB-623-D180-10-ES**
5	16	5	●	**BB-625-D180-10-ES**
6	19	6	●	**BB-626-D180-10-ES**
8	22	7	●	**BB-608-D180-10-ES**
10	26	8	●	**BB-6000-D180-10-ES**
12	28	8	●	**BB-6001-D180-10-ES**
15	32	9	●	**BB-6002-D180-10-ES**

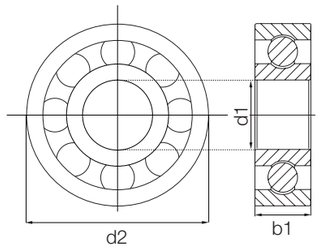
Order example:
BB-623-D180-10-ES: Radial deep groove ball bearing with race material xirodur® D180, PA cage and stainless steel balls

Available from stock

xiros® radial deep groove ball bearings | Product range

Races made from xirodur® M180 – detectable

xirodur® M180 cage,
stainless steel balls



Order key

Type	Material

BB-6000-M180-40-ES

Ball bearing	Dimensions acc. to DIN 625-1	Race material	Cage material	Ball material

Cage material
40: xirodur® M180
Ball material
ES: Stainless steel

Special designs made from xirodur® M180
▶ Page 809

Technical data

Size	Radial load capacity stat. [N]	Radial load capacity dyn. [N]	Max. speed [rpm]	Weight M180/ES [g]
6000	85	119	1,900	6.1
6003	180	250	1,400	11.1

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Part No.
10	26	8	**BB-6000-M180-40-ES**
17	35	10	**BB-6003-M180-40-ES**

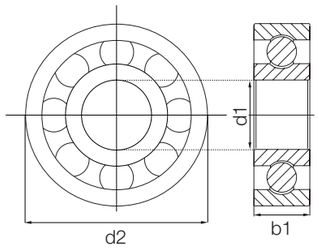
Order example:
BB-6000-M180-40-ES: Radial deep groove ball bearing with race material xirodur® M180, M180 cage and stainless steel balls

Available from stock

xiros® radial deep groove ball bearings | Product range

Races made from xirodur® T220 – for the tobacco industry

PP cage,
stainless steel balls



Order key

Type	Material

BB-6002-T220-20-ES

Ball bearing	Dimensions acc. to DIN 625-1	Race material	Cage material	Ball material

Cage material
20: PP
Ball material
ES: Stainless steel

Technical data

Size	Radial load capacity		Max. speed	Weight
	stat.	dyn.		PP/ES
	[N]	[N]	[rpm]	[g]
6002	130	160	1,200	8.9

Dimensions [mm]

Inner Ø	Outer Ø	Width	Part No.
d1	d2	b1	
15	32	9	**BB-6002-T220-20-ES**

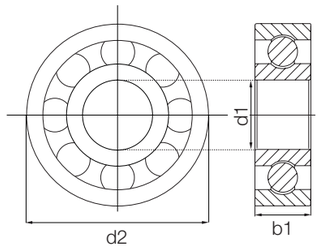
Order example:
BB-6002-T220-20-ES: Radial deep groove ball bearing with race material xirodur® T220, PP cage and stainless steel balls

Available from stock

xiros® radial deep groove ball bearings | Product range

Races made from xirodur® G220 – for temperatures up to +120 °C

PA cage,
stainless steel balls



Order key

Type	Material

BB-6000-G220-10-ES

Ball bearing	Dimensions acc. to DIN 625-1	Race material	Cage material	Ball material

Cage material
10: PA
Ball material
ES: Stainless steel

Technical data

Size	Radial load capacity		Max. speed	Weight
	stat.	dyn.		PA/ES
	[N]	[N]	[rpm]	[g]
6000	95	110	2,000	6.1

Dimensions [mm]

Inner Ø	Outer Ø	Width	Part No.
d1	d2	b1	
10	26	8	**BB-6000-G220-10-ES**

Order example:
BB-6000-G220-10-ES: Radial deep groove ball bearing with race material xirodur® G220, PA cage and stainless steel balls

Available from stock

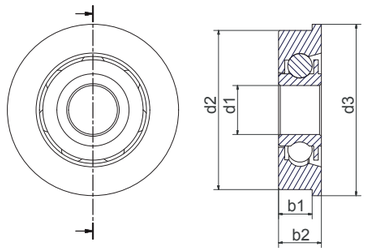
xiros® flange ball bearings | Product range

Races made from xirodur® B180 or xirodur® F180

Single flange with shield

xirodur® B180 races
PA cage, stainless
steel or glass balls

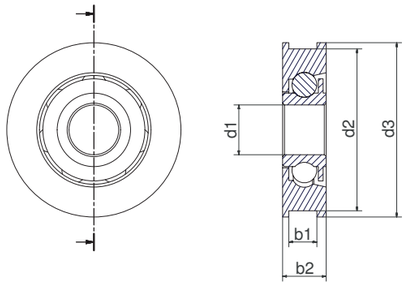
xirodur® F180 races
PA cage,
stainless steel balls



Flange on both sides with shield

xirodur® B180 races
PA cage, stainless steel
or glass balls

xirodur® F180 races
PA cage,
stainless steel balls



Order key
With single flange

Type	Material

BB-6000 F 2830 B180-10-ES

Ball bearing	Dimensions acc. to DIN 625-1	Single flange	Outer Ø [mm]	Race material	Cage material	Ball material

Also available as complete system-solution
▶ Page 804

Order key
With double flange

Type	Material	Design

BB-608 FF B180-10-ES-CC

Ball bearing	Dimensions acc. to DIN 625-1	Flange on both sides	Race material	Cage material	Ball material	Double shield

Flange
F: Flange on one side
FF: Flange on both sides
Race material
F180: xirodur® F180
B180: xirodur® B180

Cage material
10: PA
Ball material
ES: Stainless steel
GL: Glass
Shield
CC: Double shield

Technical data

Size	Flange on both sides	Radial load capacity stat. [N]	Radial load capacity dyn. [N]	Max. speed [rpm]	Weight B180 PA/ES [g]	Weight B180 PA/GL [g]	Weight F180 PA/ES [g]
Flange ball bearings with flange on one or both sides and shields							
608	–	80	94	2,200	5.9	4.6	5.9
608	●	80	94	2,200	6.1	4.8	6.1
Flange ball bearings with single flange for guide rollers							
608	–	80	94	2,200	9.3	–	–
6000	–	110	130	1,900	9.2	–	–
6000	–	110	130	1,900	9.8	–	–
6001	–	130	147	1,750	9.1	–	–
6001	–	130	147	1,750	9.6	–	–
6002	–	140	150	1,600	9.4	–	–
6003	–	160	220	1,550	9.0	–	–

Order example:
BB-6000F2830-B180-10-ES: Radial deep groove ball bearing with single flange for system-solution BBT (guide roller), race material xirodur® B180 with PA cage and stainless steel balls

Dimensions [mm]

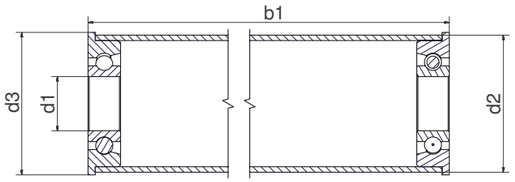
Inner Ø d1	Outer Ø d2	Width d3	b1	b2	Cage/ball material combination B180 PA/ES	B180 PA/GL	F180 PA/ES	Part No.
8	26	28	5.5	7	●	●	●	BB-608F-□-10-□-CC
8	26	28	4.0	7	●	●	●	BB-608FF-□-10-□-CC
8	28	30	5.5	7	●	–	–	BB-608F2830-B180-10-ES
10	28	30	7.0	9	●	–	–	BB-6000F2830-B180-10-ES
10	35	38	7.0	9	●	–	–	BB-6000F3538-B180-10-ES
12	28	30	7.0	9	●	–	–	BB-6001F2830-B180-10-ES
12	35	38	7.0	9	●	–	–	BB-6001F3538-B180-10-ES
15	35	38	7.0	9	●	–	–	BB-6002F3538-B180-10-ES
17	35	38	8.0	10	●	–	–	BB-6003F3538-B180-10-ES

Available from stock

xiros® guide roller | Product range

xiros® system solution – aluminium tube with flange ball bearings

xirodur® B180 flange ball bearing with aluminium tube



Order key

Type	Material

BBT-AC 38-6000-B180-10-ES

Ball bearing-guide roller	Aluminium tube	Outer Ø	Dimensions acc. to DIN 625-1	Race material	Cage material	Ball material

Flange ball bearing also available separately
▶ Page 802

Cage material
10: PA
30: xirodur® B180
Ball material
ES: Stainless steel

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Flange Ø d3	Length b1	Part No.
8	30	29.9	25 – 1,500	BBT-AC30-608-B180-10-ES
10	30	29.9	25 – 1,500	BBT-AC30-6000-B180-10-ES
12	30	29.9	25 – 1,500	BBT-AC30-6001-B180-10-ES
10	38	37.9	25 – 1,500	BBT-AC38-6000-B180-10-ES
12	38	37.9	25 – 1,500	BBT-AC38-6001-B180-10-ES
15	38	37.9	25 – 1,500	BBT-AC38-6002-B180-10-ES
17	38	37.9	25 – 1,500	BBT-AC38-6003-B180-10-ES
20	50	49.9	25 – 1,500	BBT-AC50-6004-B180-30-ES
20	60	59.9	25 – 1,500	BBT-AC60-6004-B180-30-ES

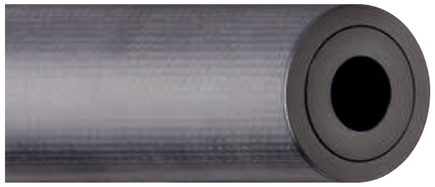
Order example:
BBT-AC38-6000-B180-10-ES, L=500 mm: Aluminium tube with 2 flange ball bearings with race material xirodur® B180, PA cage and stainless steel balls, total length 500 mm

Available from stock

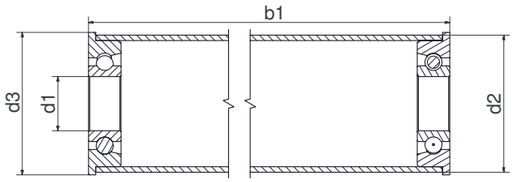
Online configurator for xiros® system-solutions
▶ www.igus.eu/xirosAlu

xiros® guide roller | Product range

xiros® system solution – carbon tube with flange ball bearings



Carbon tube with xirodur® S180 flange ball bearings as ESD version optional



Order key

Type	Material

BBT-CF 50-6004-S180-30-ES

Ball bearing-guide roller	Carbon tube	Outer Ø	Dimensions acc. to DIN 625-1	Race material	Cage material	Ball material

Cage material
30: xirodur® B180
Ball material
ES: Stainless steel

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Flange Ø d3	Length b1	Part No.
20	50	49.9	25 – 1,500	BBT-CF50-6004-S180-10-ES

Order example:
BBT-CF50-6004-S180-30-ES, L=200 mm: Carbon tube with 2 flange ball bearings with race material xirodur® S180, xirodur® B180 cage and stainless steel balls, total length 200 mm

Available upon request
With xirodur® F180 as ESD version available upon request

xiros® guide roller | Product range

Races made from xirodur® B180

xirodur® B180 cage,
stainless steel balls

- One-piece design
- Replaces several components

Order key

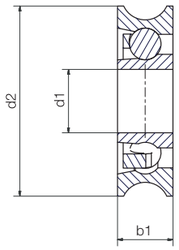
Type	Material	Design

BB-608 P6-B180-30-ES-C

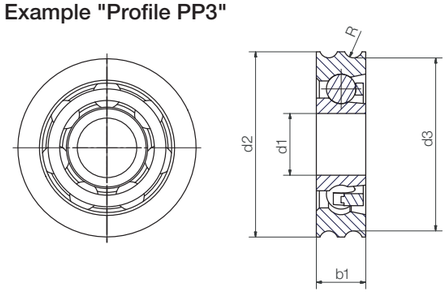
Ball bearing	Dimensions acc. to DIN 625-1	Profile P6	Race material	Cage material	Ball material	With shield

Cage material
30: xirodur® B180
Ball material
ES: Stainless steel
Shielded
C: 1 shield

Example "profile P8"



Example "Profile PP3"



Technical data

Size	Radial load capacity stat. [N]	Max. speed [rpm]	Weight B180/ES [g]
608P6	80	80	4.0
608P8	140	140	23
6000P8	110	110	7.0
6000PP3	110	110	8.0
6201P9	160	160	26

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Part No.
8	24	7	BB-608P6-B180-30-ES-C
8	48	14	BB-608P8-B180-30-ES
10	30	8	BB-6000P8-B180-30-ES-C
10	30	8	BB-6000PP3-B180-30-ES-C
12	60	12	BB-6201P9-B180-30-ES

Order example:
BB-608P6-B180-30-ES: Radial deep groove ball bearing, profile P8 with race material xirodur® B180, xirodur® B180 cage and stainless steel balls

Available
from stock

xiros® guide roller | Product range

Races made from xirodur® B180

xirodur® B180 cage,
stainless steel balls

- For profiled shafts
- With anti-rotation feature

Order key

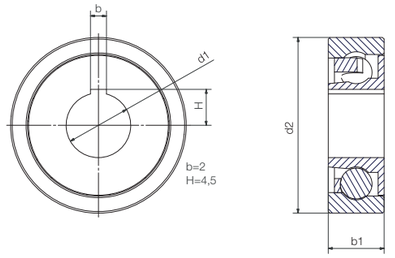
Type	Material	Design

BB-608 KA-B180-30-ES-C

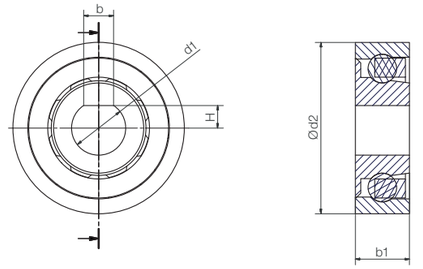
Ball bearing	Dimensions acc. to DIN 625-1	Profile KA	Race material	Cage material	Ball material	With shield

Cage material
30: xirodur® B180
Ball material
ES: Stainless steel
Shielded
C: 1 shield

Example "Profile KA (Key Area)"



Example "profile DS (D-shape)"



Technical data

Size	Radial load capacity stat. [N]	Max. speed [rpm]	Weight B180/ES [g]
626DS	41	3,200	2.2
626KA	41	3,200	2.2
608KA	80	2,200	4.0

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Part No.
6	19	6	BB-626DS-B180-30-□-C
6	19	6	BB-626KA-B180-30-□-C
8	22	7	BB-608KA-B180-30-□-C

Order example:
BB-626DS-B180-30-ES-C: Radial deep groove ball bearing, profile DS with race material xirodur® B180, xirodur® B180 cage and stainless steel balls

Available
from stock

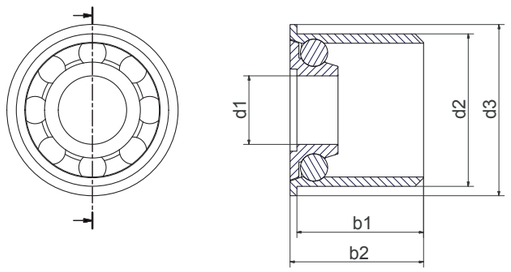
xiros® End caps | Product range

Races made from xirodur® B180

PA cage,
stainless steel or
glass balls

PA cage,
stainless steel balls
hex socket contour

- Fast and easy retrofits in many standard tubes
- Good axial stability



Order key

Type	Material

BB-6204EC44.5-B180-10-ES

Ball bearing type	End cap	Outer-Ø (d2)	Race material	Cage material	Ball material

Cage material
10: PA
Options:
Ball material
ES: Stainless steel
GL: Glass

Technical data

Size	Radial load capacity stat. [N]	Radial load capacity dyn. [N]	Max. speed [rpm]	Weight PA/ES [g]	Weight PA/GL [g]
6204	245	294	1,800	32.5	25.9
6204	245	294	1,800	33.0	–

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Outer Ø d3	Width b1	Width b2	Cage/ball material combination PA/ES	Cage/ball material combination PA/GL	Part No.
20	44.5	50	35.81	38.50	●	●	BB-6204EC44.5-B180-10-□
M8	44.5	50	35.81	38.50	●		BB-6204ECM8-B180-10-ES

Order example:
BB-6204EC44.5-B180-10-ES: End cap with race material xirodur® B180, with PA cage and stainless steel balls

Available from stock

xiros® spherical outer diameter | Product range

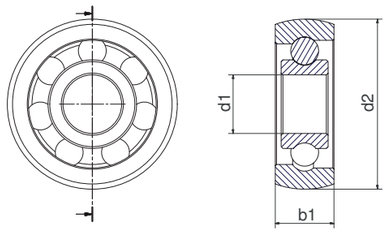
Races made from xirodur® B180 or xirodur® M180

xirodur® B180 races
PA cage,
stainless steel balls

xirodur® B180 races
PA cage,
glass balls

xirodur® M180 races
xirodur® M180 cage,
stainless steel balls

- Use in skewed/curved/twisted profiles
- Prevents edge stress



Order key

Type	Material

BB-608SO-B180-10-ES

Ball bearing	Dimensions acc. to DIN 625-1	Spherical outer Ø	Race material	Cage material	Ball material

Options
Race material
B180: xirodur® B180
M180: xirodur® M180
Cage material
10: PA
40: xirodur® M180
Ball material
ES: Stainless steel
GL: Glass

Technical data

Size	Radial load capacity stat. [N]	Radial load capacity dyn. [N]	Max. speed [rpm]	Weight PA/ES [g]	Weight PA/GL [g]	Weight M180/ES [g]
608	80	94	2,200	4.8	3.5	–
6000	110	130	1,900	7.9	5.8	6.1
6001	138	147	1,750	13.5	11.1	–

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width b1	Cage/ball material combination PA/ES	Cage/ball material combination PA/GL	Cage/ball material combination M180/ES	Part No.
8	24.00	8	●	●		BB-608SO-□-□-□
10	28.96	10	●	●	●	BB-6000SO-□-□-□
12	35.56	12	●	●		BB-6001SO-□-□-□

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

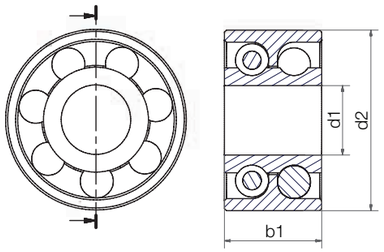
- Higher loads
- Less expensive than two comparable bearings

Order key

Type	Material	Design
BB-6000-B180-10-ES-D		

Ball bearing | Dimensions acc. 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

Size	Radial load capacity		Max. speed	Weight	
	stat.	dyn.		PA/ES	PA/GL
	[N]	[N]	[rpm]	[g]	[g]
6000	200	240	1,000	11.0	7.0
6004	420	470	650	36.0	29.0

Dimensions [mm]

Inner Ø	Outer Ø	Width	Cage/ball material combination		Part No.
d1	d2	b1	PA/ES	PA/GL	
10	26	14	●	●	BB-6000-B180-10-☐-D
20	42	20	●	●	BB-6004-B180-10-☐-D

Order example:
BB-6000-B180-10-ES-D: Double row ball bearing with race material xirodur® B180, PA cage and stainless steel balls

Available from stock

xiros® multi-axis plastic bearing | Product range

Races made from xirodur® B180

PP balls

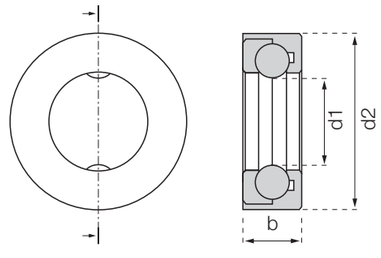
- For rotary and linear motions

Order key

Type	Material
BB-MB-1633-11-B180-PP	

Ball bearing | Multi axis | Inner-Ø (d1) | Outer-Ø (d2) | Width (b) | Housing material | Ball material

Housing material
B180: xirodur® B180
Ball material
PP: Polypropylene



Technical data

Type	Radial load capacity		Max. speed	Weight
	stat.	dyn.		B180/PP
	[N]	[N]	[rpm]	[g]
BB-MB	55	70	500	6,9

Dimensions [mm]

Inner Ø	Outer Ø	Width	Part No.
d1	d2	b1	
16.3	33	11	BB-MB-1633-11-B180-PP

Order example:
BB-MB-1633-11-B180-PP: Multi-axis ball bearing with race material xirodur® B180, B180 cage and PP balls

Available from stock

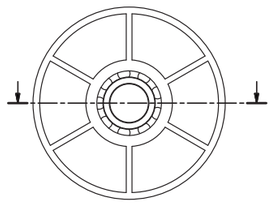
xiros® Skate wheel | Product range

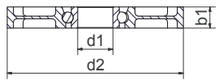
Races made from xirodur® B180

PA cage,
stainless steel balls

PA cage,
glass balls

- Larger outer diameter for smaller shafts
- Also used as roller in profiles





Order key

Type	Material

BB-6004SW100-B180-10-ES

Ball bearing	Dimensions acc. to DIN 625-1	Skate wheel	Outer Ø	Race material	Cage material	Ball material

Cage material
10: PA
Options:
Ball material
ES: Stainless steel
GL: Glass

Technical data

Size	Radial load capacity stat. [N]	Radial load capacity dyn. [N]	Max. speed [rpm]	Weight PA/ES [g]	Weight PA/GL [g]
6004	245	294	1,400	60.5	55.7

Dimensions [mm]

Inner Ø	Outer Ø	Width	Part No.
20	100	12	BB-6004SW100-B180-10-

Order example:
BB-6004SW100-B180-10-ES: xiros® skate wheel with race material xirodur® B180. 100 mm outer diameter, PA cage and stainless steel balls

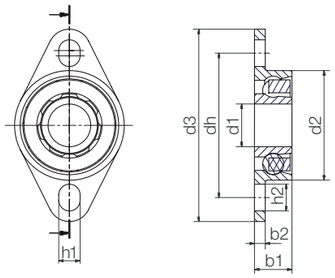
Available
from stock

xiros® Flange bearings | Product range

Housing made from xirodur® B180

Stainless steel balls

- For loosely toleranced holding fixtures



Order key

Type	Material

BB-FL-608-B180-30-ES

Ball bearing	Flange pillow block	Dimensions acc. to DIN 625-1	Housing material	Cage material	Ball material

Cage material
30: xirodur® B180
Ball material
ES: Stainless steel

Technical data

Size	Radial load capacity stat. [N]	Radial load capacity dyn. [N]	Max. speed [rpm]	Weight B180/ES [g]
608	80	92	2,200	3.6

Dimensions [mm]

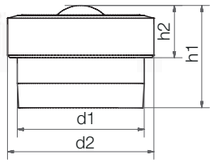
Inner Ø	Outer Ø	Width	Part No.
8	22	7	BB-FL-608-B180-30-ES

Order example:
BB-FL-608-B180-30-ES: Flange bearing with xirodur® B180 housing, xirodur® B180 cage and stainless steel balls

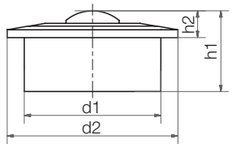
Available
from stock

xiros® polymer ball transfer units | Product range

Polymer ball transfer unit made from xirodur® B180



BB-505-B180-POM



BB-515-B180-POM
BB-522-B180-POM

Order key

Type	Material

BB-522-B180-POM

Ball bearing	Type	Housing material	Ball transfer unit

Polymer ball transfer unit
POM: POM (ball transfer unit)

Technical data and dimensions [mm]

Size	Max. stat. bearing load axial [N]	Inner Ø d1	d2	Height h1	h2	Weight [g]	Part No.
505	35	10.4	12.0	8.4	4.3	0.9	BB-505-B180-POM
515	80	24.0	31.0	21.0	9.8	8.7	BB-515-B180-POM
522	110	36.0	45.0	30.0	9.8	28.8	BB-522-B180-POM

Order example:
BB-505-B180-POM: Polymer ball transfer unit with housing material xirodur® B180 and POM ball transfer unit

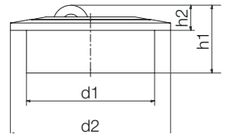
Available from stock

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)



BB-515A-B180-HH /-HS
BB-522A-B180-HH/-HS

Order key

Type	Material

BB-522A-B180-HS

Ball bearing	Type	Axial ball transfer unit	Housing material	Ball transfer unit

Options
Ball transfer unit
HH (Hard roller): xirodur® B180
HS (Soft roller): xirodur® D180

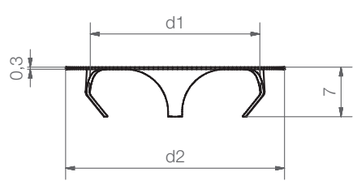
Technical data and dimensions [mm]

Size	Max. stat. bearing load axial [N]	Inner Ø d1	d2	Height h1	h2	Weight [g]	Part No.
515A	150	24.0	31.0	14.3	5.3	15.6	BB-515A-B180-☐
522A	300	36.0	45.0	21.25	7.05	21.7	BB-522A-B180-☐

Order example:
BB-515A-B180-HS: Axial polymer ball transfer unit with housing material xirodur® B180 and soft roller made from xirodur® D180

Available from stock

Accessories: Clamp rings for xiros® polymer ball transfer units



xiros® clamp rings made from stainless steel offer the possibility to install xiros® ball transfer units in another orientation than the standard horizontal position. Easy assembly and disassembly.

Dimensions [mm]

For ball transfer unit	d1	d2	Housing bore	Part No.
BB-515-B180-POM/BB-515A-B180-☐	24	31	25.0 –0.2	BB-515-CR
BB-522-B180-POM/BB-522A-B180-☐	36	41	37.3 –0.3	BB-522-CR

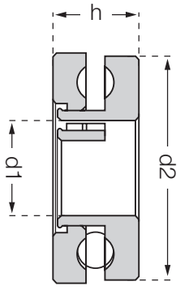
Available from stock

xiros® Axial ball bearings | Product range

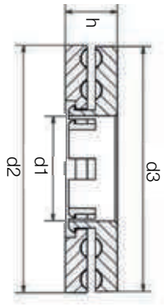
Races made from xirodur® B180

Single row, stainless steel or glass balls

Double row, stainless steel balls- or glass balls



Single row bearing



Double row bearing

Order key

Type	Material

BB-51100-B180-ES-D

Ball bearing	Dimensions acc. to DIN 711	Race/cage material	Ball material	Double row
BB-	51100-	B180-	ES-	D

Options

Ball material

ES: Stainless steel

GL: Glass

Suffix:

Without: Single row

D: Double row

Technical data

Size	Single row	Double row	Bearing load stat. [N]	Bearing load dyn. [N]	Max. speed [rpm]	Weight B180/ES [g]	Weight B180/GL [g]
51100	●	–	200	250	600	6.9	4.4
51104	●	–	650	810	460	14.0	8.0
51104	–	●	975	1,215	460	28.0	17.0

Dimensions [mm]

Inner Ø d1	Outer Ø d2	Width d3	Height h	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: Axial ball bearing with race material xirodur® B180, B180 cage and stainless steel balls

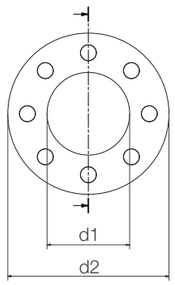
Available from stock

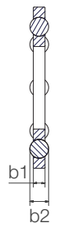
xiros® Thrust washer | Product range

Races made from xirodur® B180

Stainless steel balls

Glass balls





Order key

Type	Material

BB-6004TW-B180-ES-SL

Ball bearing	Dimensions acc. to DIN 625-1	Thrust washer	Race material	Ball material	Slim line
BB-	6004	TW-	B180-	ES-	SL

Options

Ball material

ES: Stainless steel

GL: Glass

Suffix:

blank: Standard

SL: Slim line

Technical data (related to metallic shafts)

Size	Slim line	Recommended load capacity stat. [N]	Recommended load capacity dyn. [N]	Max. speed [rpm]	Weight B180/ES [g]	Weight B180/GL [g]
626	–	341	425	2,000	1.2	0.9
608	–	482	600	1,700	1.3	1.0
6000	–	610	782	1,500	2.4	1.5
6000	●	405	500	1,500	2.2	1.3
6004	–	975	1,215	700	7.7	4.9
6006	–	925	1,540	600	7.5	4.7
6006	●	520	680	600	7.2	4.4

Dimensions [mm]

Inner Ø d1	Outer Ø 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 bearings | Product range

Races made from xirodur® B180 – low coefficients of friction

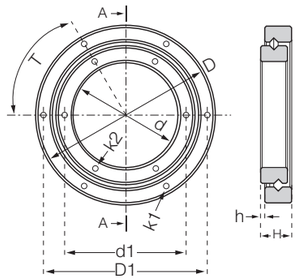
Stainless steel balls

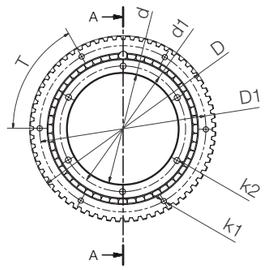
Glass balls

Stainless steel balls,
with cage made from xirodur® B180

Stainless steel balls,
with outer drive ring (HDT5)

● For absorbing higher axial loads





Order key

Type	Type	Material

BB-RT-01-60-ES

Ball bearing	Slewing ring bearing	Type 01	Inner Ø	Ball material

Options
Ball material
ES: Stainless steel
GL: Glass

Technical data

Type	Bearing load axial [N]	Bearing load radial [N]	Max. speed [rpm]	Weight stainless steel [g]	Weight GL [g]
Standard with stainless steel or glass balls					
RT-01-60	800	720	350	111.9	98.3
RT-01-100	1,250	1,600	250	250.8	231.1
Slewing ring bearing with xirodur® B180 cage					
RT-01-60-B180-30-ES	600	300	800	–	–
Slewing ring bearing with toothed outer ring					
RT-01-60HDT5-B180	800	720	320	110.0	–

Order example:
BB-RT-01-60-ES: Standard slewing ring bearing with race material xirodur® B180 and stainless steel balls
BB-RT-01-60-B180-ES: Slewing ring bearing with race material xirodur® B180, cage and stainless steel balls
BB-RT-01-60-HDT5-ES: Slewing ring bearing with cage material xirodur® B180, race material xirodur® B180 outer drive ring and stainless steel balls

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 bearing with xirodur® B180 cage									
–	60	100	–	–	17.5	–	–	–	**BB-RT-01-60-B180-30-ES**
Slewing ring bearing with toothed outer ring									
60	68	100	90	2.5	17.5	60	3.3	3.3	**BB-RT-01-60HDT5-B180-ES**

Available from stock

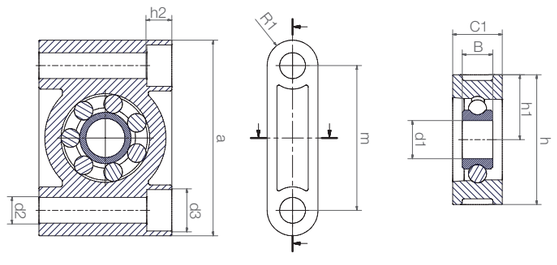
xiros® Pillow block bearings | Product range

Fixed version – races made from xirodur® B180

igumid G housing, PA cage, stainless steel balls

igumid G housing, PA cage, glass balls

- Assembly-friendly



Order key

Type	Material

ESTM-BB1-F06-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]	Max. 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	Holes 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

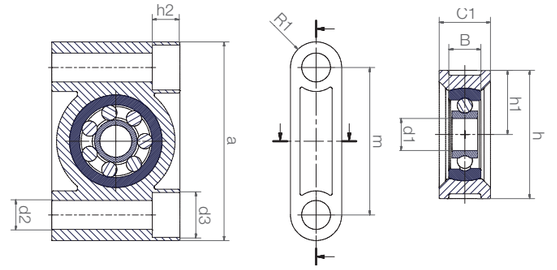
xiros® Pillow block bearings | Product range

Pivoting version – races made from xirodur® B180

igumid G housing, PA cage, stainless steel balls

igumid G housing, PA cage, Glass balls

- Compensation of misalignment errors



Order key

Type	Material

ESTM-BB1-P 08-B180-ES

Pillow block bearing	Ball bearing, single row	Pivoting version	Inner Ø	Race material	Ball material

Race material
B180: xirodur® B180
Options:
Ball material
ES: Stainless steel
GL: Glass

Technical data

Type	Radial load capacity stat. [N]	Radial load capacity dyn. [N]	Max. 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	Holes 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

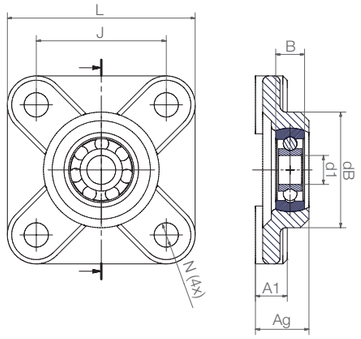
Available from stock

xiros® 4-hole flange ball bearings | Product range

Pivoting version – races made from xirodur® B180

igumid G housing,
PA cage,
stainless steel balls or
glass balls

- Compensation of misalignment errors



Order key

Type	Material

EFSM-BB1-P 08-B180-ES

4-hole flange ball bearings	Ball bearing, single row	Pivoting version	Inner Ø	Race material	Ball material

Race material
B180: xirodur® B180
Options:
Ball material
ES: Stainless steel
GL: Glass

Technical data

Type	Radial load capacity stat. [N]	Radial load capacity dyn. [N]	Max. 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	8	6.4	±5°	EFSM-BB1-P08-B180-☐
10	40.0	65	45	11	18.8	10	8.4	±5°	EFSM-BB1-P10-B180-☐
12	48.0	74	52	14	23.5	12	8.4	±5°	EFSM-BB1-P12-B180-☐

Order example:
EFSM-BB1-P08-B180-ES: 4-hole flange ball bearings with race material xirodur® B180 and stainless steel balls

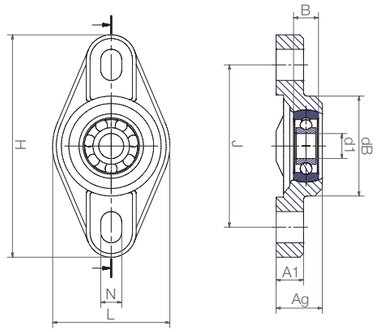
Available from stock

xiros® 2-hole flange ball bearings | Product range

Pivoting version – races made from xirodur® B180

igumid G housing,
PA cage,
stainless steel balls or
glass balls

- Trouble-free readjustment thanks to extended holes
- Precise alignment of the bearings not necessary



Order key

Type	Material

EFOM-BB1-P 08-B180-ES

2-hole flange ball bearings	Ball bearing, single row	Pivoting version	Inner Ø	Race material	Ball material

Race material
B180: xirodur® B180
Options:
Ball material
ES: Stainless steel
GL: Glass

Technical data

Type	Radial load capacity stat. [N]	Radial load capacity dyn. [N]	Max. 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]

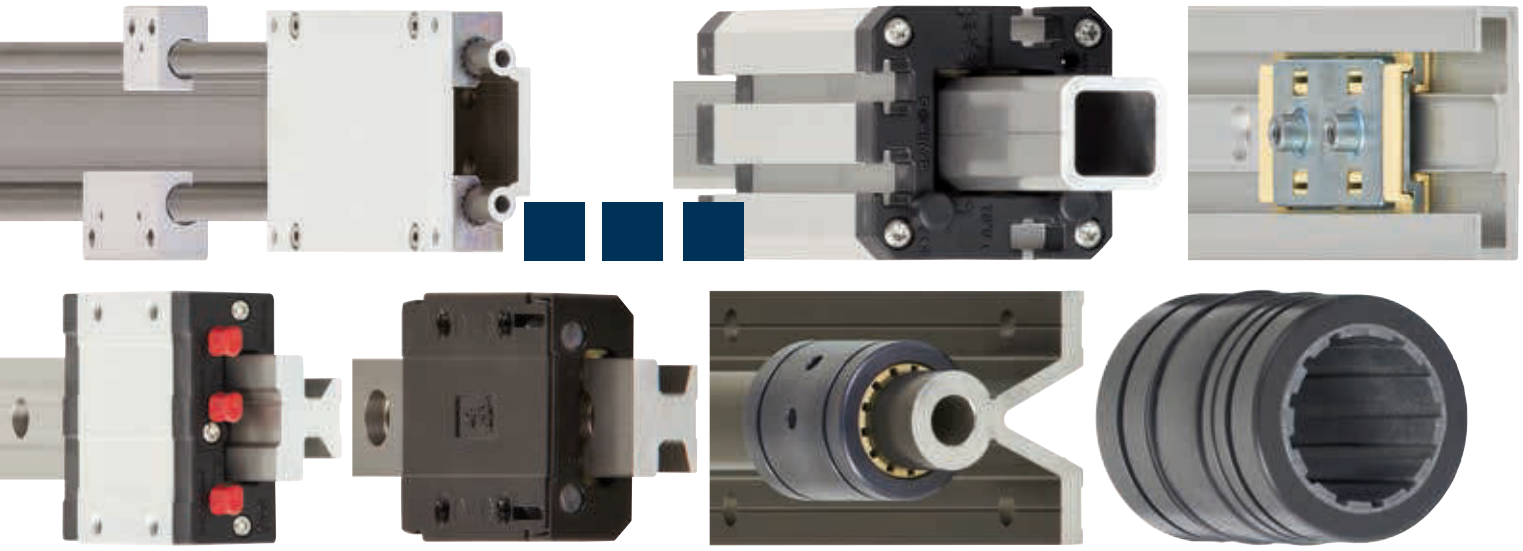
Inner Ø d1	dB d2	H	L	J	A1	Ag	B	N	Max. pivot angle	Part No.
8	32.5	72.6	38	53	10	15.5	8	6.4 x 10.1	±5°	EFOM-BB1-P08-B180-☐
10	40.0	89.0	47	65	11	18.8	10	8.4 x 12.5	±5°	EFOM-BB1-P10-B180-☐
12	48.5	101.0	58.5	75	14	23.5	12	8.4 x 12.5	±5°	EFOM-BB1-P12-B180-☐

Order example:
EFOM-BB1-P08-B180-ES: 2-hole flange ball bearings with race material xirodur® B180 with stainless steel balls

Available from stock

drylin®...

Linear technology



...plastics

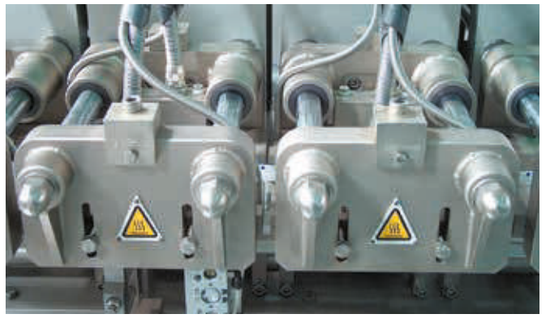
Application examples: drylin®

Improve technology ... Reduce cost.

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 practise show the proven employment from drylin® linear guide systems in a wide variety of applications.

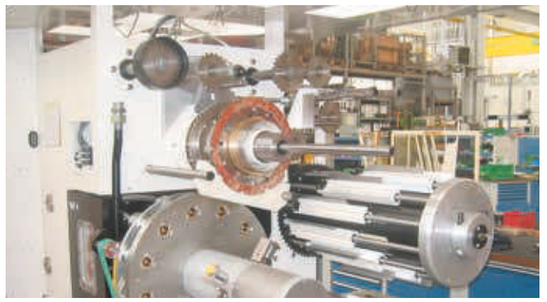
LABEL FEEDING SYSTEM (Packaging technology) Quick and flexible format adjustment with absolute freedom from lubrication at lower costs – implemented with the drylin® T linear guide system. Further advantage: Guide carriage with manual clamping.
(Geset Etikettier-Systeme GmbH)

CHAMPAGNE-BOTTLE SEALING MACHINE
Due to freedom from lubricants and chemical resistance, drylin® guides score highly in facilities in the food sector. (Sick International Kellereimaschinen GmbH)

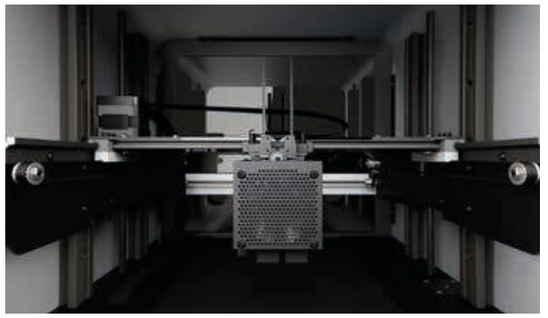


FORMING, FILLING AND SEALING MACHINE
Lubrication-free drylin® high temperature bearings (up to +120 °C) are used in the tool guide system of this forming, filling and sealing machine.
(Unifill SpA, Italy)

DOOR ADJUSTMENT
The smooth, low noise operation and the enormous cost advantages are obtained by the use of the drylin® R linear plain bearings on the hard-anodised guide shafts to guide the doors of machine tools.
(Alzmetall GmbH + Co. KG)



SYSTEMS FOR THE PRODUCTION OF ALUMINIUM CARTRIDGES
The absolute freedom from lubricants and the resistance to prevailing paint mist led to the application of drylin® R linear plain bearings.(Mall + Herlan GmbH)



3D-PRINTER
Linear guides of the drylin® T and N series, and the drylin® SD lead screw units travel completely lubrication-free. This eliminates the risk of contaminating the housing, the filament, and the print result. (Cobot)

MOBILE AND STATIONARY SAW MILLS
drylin® W modular linear guide system and iglidur® J liner for adjusting the saw blade guide.(Serra Maschinenbau GmbH)

drylin® linear technology: drylin® W profile guides

Liners made from dry-tech® polymers

▶ Page 854

Single rails and housing bearings: Square/Round

▶ Page 856/858

Reduced weight: Housing bearing made from aluminium

▶ Page 859

Fast assembly: Tandem housing bearing

▶ Page 860

drylin® W profile guides

Complete carriages: Square/round

▶ Page 866/870

Simple assembly without alignment: Mono-slide-carriage

▶ Page 867

New

Carriage for curved rail

▶ Page 871

Reduced weight: Double rail with machine recesses

▶ Page 872

drylin® W hybrid bearings

Hybrid bearing, with one plastic roller: WJRM-01

▶ Page 884

Hybrid double roller bearing,with two angled plastic rollers: WJRM-21

▶ Page 885

New

Hybrid single and double roller bearing made from stainless steel : WJRM-...-ES(-FG)

▶ Page 886

Hybrid carriage for lateral installation: WWR-...

▶ Page 887

drylin® N low-profile guide systems

Smallest dimensions for high loads: Size 17

▶ Page 898

The largest variety of carriages (options): Size 27

▶ Page 900

Suitable for aluminium construction profiles: Size 40

▶ Page 902

High loads with reduced space: Size 80

▶ Page 904

drylin® T rail guide systems

Manual adjustable clearance: drylin® TK-01

▶ Page 919

With manual clamp: drylin® TK-01-HKA

▶ Page 920

Automatic clearance adjustment: drylin® TKA-01

▶ Page 921

Heavy Duty-Version: drylin® TK-02

▶ Page 922

...

Manual clearance adjustment: "Turn-To-Fit" housing bearing

▶ Page 861

Corrosion resistant: Stainless steel guides, single/double

▶ Page 862

Double rails: Square/round

▶ Page 864/868

High strength: High profile rails

▶ Page 865/869

drylin® W profile guides – Accessories

Wear-resistant: Slider rails

▶ Page 873

New

For simple positioning: Manual clamp WHKA(Q)

▶ Page 874/875

Aluminium manual clamp: WHKA-AL

▶ Page 874

For higher forces: Manual clamp WHKD

▶ Page 875

...

Hybrid carriage with four double roller bearings

▶ Page 888

Carriage with four double roller bearings

▶ Page 889

Manual clamp for hybrid bearings

▶ Page 889

Hybrid carriage for horizontal installation: WWH

▶ Page 887

...

Telescopic rails

▶ Page 906

Telescopic rails with locking mechanism

▶ Page 907

Accessories: Manual clamp

▶ Page 908

Accessories: End caps

▶ Page 909

drylin® T rail guide systems

Heavy-Duty with clearance adjustment: drylin® TK-12

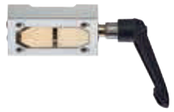
▶ Page 923

Compact design: drylin® TK-03

▶ Page 924

Compact manual clamp: drylin® TWBM-11

▶ Page 925



Solid manual clamp: TWBM-01

▶ Page 925

drylin® T rail guide systems

Miniature guide:
drylin® TK-04
▶ Page 926

Adjustable miniature guide:
drylin® TKE-04
▶ Page 927

End caps for holes
▶ Page 928

Replacement liners
▶ Page 928

drylin® R liners

Closed, long design for round shafts – made from iglidur® J: JUM-01
▶ Page 946

Open, long design, for supported shafts – iglidur® J: JUMO-01
▶ Page 947

Closed, long design, precise – iglidur® J:
JUM-11
▶ Page 948

Open, long design, precise – iglidur® J:
JUMO-11
▶ Page 949

drylin® R liners

Closed, short design for round shafts – iglidur® J:
JUM-02
▶ Page 950

Closed, long design for round shafts – iglidur® E7:
E7UM-01
▶ Page 591

Open, long design, for supported shafts – iglidur® E7: E7UMO-01
▶ Page 952

Closed, short design for round shafts – iglidur® E7:
E7UM-02
▶ Page 953

...

Closed, long design, high temperature – iglidur® X:
XUM-01
▶ Page 954

Open, long design, high temperature – iglidur® X:
XUMO-01
▶ Page 955

Closed, short design, high temperature – iglidur® X:
XUM-02
▶ Page 956

Slide disks for large force displacement:
RSDJ
▶ Page 958

drylin® R liners

Clip-in liners:
JUCM
▶ Page 959

Press-fit bearings – iglidur® L100:
WLM/WLFM
▶ Page 960

drylin® R solid polymer bearings

Standard design – iglidur® J:
RJM
▶ Page 962

Standard design, precise – iglidur® J:
RJMP
▶ Page 963

...

Japanese dimensions – iglidur® J4:
RJ4JP
▶ Page 964

Low-cost – iglidur® J260:
RJ260UM
▶ Page 965

drylin® R linear plain bearings

Closed aluminium adapter:
RJUM-01
▶ Page 966

Closed aluminium adapter, precise:
RJUM-11
▶ Page 967

drylin® R linear plain bearings

Closed stainless steel adapter made of 1.4305:
RJUM-01-ES
▶ Page 968

Closed aluminium adapter, short design:
RJUM-02
▶ Page 969

Closed aluminium adapter, floating bearings:
RJUM-03
▶ Page 970

Split aluminium adapter:
TJUM-01
▶ Page 971

...

Split aluminium adapter, floating bearings:
TJUM-03
▶ Page 972

Open aluminium adapter – for supported shafts:
OJUM-01
▶ Page 973

Open aluminium adapter, floating bearings:
OJUM-03
▶ Page 974

drylin® R-...

Closed aluminium housing bearing, short design:
RJUM-05
▶ Page 976

drylin® R pillow blocks

Adjustable aluminium housing bearing, short design: RJUME-05
▶ Page 977

Split aluminium housing bearing, screwed, short design: TJUM-05
▶ Page 978

Closed aluminium housing bearing, tandem design:
RJUMT-05
▶ Page 979

Closed aluminium housing bearing, long design:
RJUM-06
▶ Page 980

...

Closed aluminium housing bearing with manual clamp: RJUM-06-HK
▶ Page 981

Floating housing bearing, closed design:
RJUM-06 LL
▶ Page 982

Floating housing bearing, open design:
OJUM-06-LL
▶ Page 983

Open aluminium housing bearing, long design:
OJUM-06
▶ Page 984

drylin® R pillow blocks

Open aluminium housing bearing with manual clamp: OJUM-06-HK
▶ Page 985

Adjustable open aluminium housing bearing, long design: OJUME-06
▶ Page 986

drylin® R flange bearings ...

Closed aluminium adapter, round flange: FJUM-01
▶ Page 988

Closed aluminium adapter, square flange: FJUM-02
▶ Page 989

Closed aluminium adapter, round flange, tandem design: FJUMT-01
▶ Page 990

Closed aluminium adapter, square flange, tandem design: FJUMT-02
▶ Page 991

drylin® R quad blocks

Quad block, closed design: RQA-01/-03/-04
▶ Page 992

Quad block, open design: OQA-01/-03
▶ Page 993

drylin® R pillow blocks

Closed, tandem design: RTA-01/-03/-04
▶ Page 994

Open, tandem design: OTA-01/-03
▶ Page 995

Long, closed design: RGA-01/-03/-04
Page 996

Long, open design: OGA-01/-03
▶ Page 997

drylin® R shafts ...

Short, closed design: RGAS-01/-03/-04
▶ Page 998

Short, open design: OGAS-01/-03
▶ Page 999

drylin® R shafts

Precision aluminium shafts: AWM
▶ Page 1006

Supported aluminium shafts: AWMU
▶ Page 1007

drylin® R shafts

Standard steel shafts: SWM
▶ Page 1008

Supported steel shaft: SWUM
▶ Page 1009

Stainless steel shafts: EWM
▶ Page 1010

Supported stainless steel shafts: EWUM
▶ Page 1012

drylin® R shafts ...

Low level supported stainless steel shafts: EWUMN
▶ Page 1013

Partially supported stainless steel shafts: EWUMS
▶ Page 1015

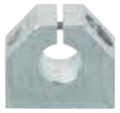
Carbon fibre shafts: CWM
▶ Page 1016

Shaft end supports, floating: TA
▶ Page 1017

drylin® R shafts

Shaft end supports, fixed: TAF
▶ Page 1018

Shaft end block, standard version: WA
▶ Page 1019



Shaft end block, compact version: WAC
▶ Page 1020

Shaft end block, narrow version: WAS
▶ Page 1021

drylin® R shafts

Flanged shaft end block: WAF
▶ Page 1022

drylin® Q square linear guides

Square section rail: AWMQ
▶ Page 1028

Adjustable linear carriage: QWE
▶ Page 1029

Adjustable linear carriage with manual clamp: QWE-...-HKA
▶ Page 1030

drylin® Q - square linear guides

Housing bearing:

QJRMT
▶ Page 1031

Flange bearing:

QJFM(T)
▶ Page 1032

Solid plastic linear bearings: QJRMP
▶ Page 1033

Extensive accessories
▶ Page 1034

drylin® digital measuring systems

Integrated measuring system: QKM
▶ Page 1040

Ready-to-install measuring system: SLWM
▶ Page 1041

Digital measuring system: WKM
▶ Page 1042

Measuring system with freely positionable readout display: WMY
▶ Page1043

drylin® linear technology | Product overview

...

Measuring system for external data output: WKMEX
▶ Page 1044

drylin® carbon

New

Extremely lightweight linear guide: WKPC
▶ Page 1048

New

Non-metallic toothed belt axis: ZLW-P
▶ Page 1049

New

Linear module with high profile carbon fibre: SAW-P
▶ Page 1050

...

New

Linear module with carbon fibre hollow shafts: SHTP-CWM
▶ Page 1051

New

Carbon fibre hollow shaft: CWM
▶ Page 1052

drylin® stainless steel

Closed stainless steel adapter made of 1.4305: RJUM-01-ES
▶ Page 1055

Corrosion resistant: stainless steel version, Single/double rails
▶ Page 1056

drylin® stainless steel

New

Hybrid single and double roller bearing made from stainless steel: WJRM-...-ES(-FG)
▶ Page 1059

Stainless steel shafts: EWM
▶ Page 1060

Supported stainless steel shafts: EWUM
▶ Page 1062

Low level supported stainless steel shafts: EWUMN
▶ Page 1063

...

Partially supported stainless steel shafts: EWUMS
▶ Page 1065

Linear module, stainless steel version: SLW-ES
▶ Page 1067

Linear module hygienic design: SHTC-HYD
▶ Page 1066

XY-table - Stainless steel version: SLW-XY-ES
▶ Page 1068

Lubrication-free drylin® linear guide systems

drylin® is a product range of lubrication free linear plain bearings based on the principle of sliding instead of rolling. Tribologically optimised iglidur® high performance polymers are used as sliding surfaces. The drylin® linear systems run dry and are maintenance-free. Linear guide systems with rails or round shafts are available.
The main benefits in addition to zero maintenance and lubrication are strength and resistance to external influences such as dirt, moisture, chemicals, heat and impact.

- Lubrication-free and resistant to dust and dirt
- High static load capacity
- Light, quiet and clean
- Robust and cost-effective

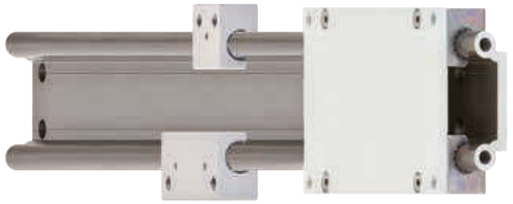
Typical application areas

- Mechanical engineering
- Wood working industry
- Medical and rehabilitation technologies
- Interior design (furniture/aircraft)
- Automation

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

Service life calculation
▶ **www.igus.eu/drylin-expert**



drylin® rail guide systems

drylin® W profile guides

- Complex systems with 14 different profiles and more than 50 carriage options
- Versatile
- Easy installation

▶ **From page 847**

drylin® N low-profile guide systems

- Low profile installation heights from 6 to 12 mm
- Very lightweight
- Many carriage options – also with preload

▶ **From page 891**

drylin® T rail guide systems

- Same dimensions as ball guide systems
- Adjustable bearing clearance
- Automatic clearance adjustment
- High static load capacity

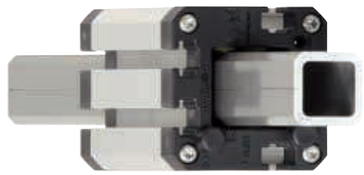
▶ **From page 911**

drylin® shaft guides

drylin® R round shaft guides

- Same dimensions as standard ball bearings
- For all shaft materials
- Lightweight
- Interchangeable liners

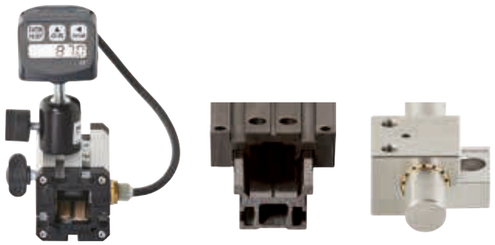
▶ **From page 937**



drylin® Q square linear guides

- Maintenance-free, torque resistant square linear guides
- Lightweight profiles made from hard-anodised aluminium
- Manual adjustable carriages with/without manual clamp
- Numerous fastening options

▶ **From page 1025**



Other drylin® linear bearing systems

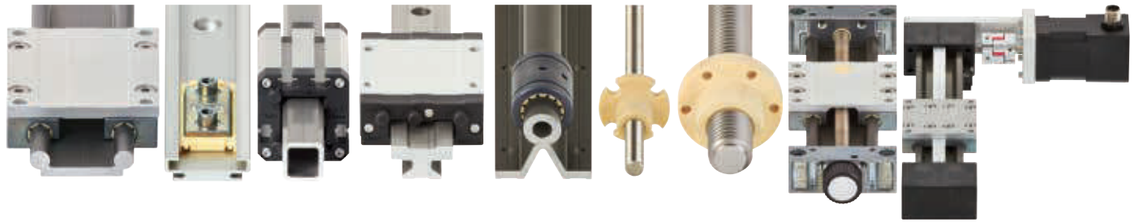
- Measuring systems

▶ **From page 1035**

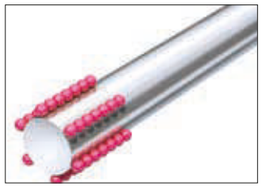
Special solutions with carbon fibre and stainless steel

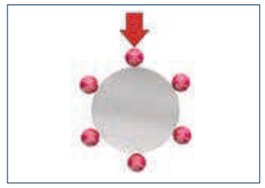
▶ **From page 1045**

drylin® is a range of maintenance and lubrication free linear bearings. This range includes linear modules with lead screw, gear rack and belt drives. The main benefits in addition to zero maintenance and lubrication are strength and resistance to external influences such as dirt, moisture, chemicals, heat and impact.



- Maintenance-free
- Wear-resistant
- Resistant to impacts and vibration
- Corrosion resistant
- Resistant to dirt, dust and humidity
- Low coefficients of friction
- Weight reduction
- Dry-running
- Suited for short-stroke applications
- High static load capacity
- High speeds and accelerations possible
- Self-lubricating
- Very quiet operation
- Low magnetism





Roller bearings – Point contact

Plain bearings – Surface contact

Resistant to dirt, dust and moisture - By lubrication free insert and dirt channels.

Optimum load distribution

drylin® linear bearings operate on sliding pads unlike the traditional recirculating ball bearing systems. This gives a larger contact surface resulting in lower surface pressure. This leads to advantages which include:

- The use of non-hardened shafts
- The use of non metallic shafts
- Scratching and shaft damage is completely excluded

Shafts and rail materials

The large surface area of drylin® linear plain bearings, when compared to traditional ball bearings, means that under a given load the bearing pressure is greatly reduced. This allows soft shaft materials to be used, including hard anodised aluminium, which in turn gives additional benefits in friction and wear rate values. Also VA stainless steel shafts can be used when chemical resistance is required. Of course, standard linear hardened shafts can also be used with drylin® linear bearings.

Dry running, without lubrication

drylin® linear bearing systems are designed for running dry. As there is no grease or oil present, the application tends to naturally self clean, any particles are wiped away from the sliding surface by the ribbed design of the drylin® polymer bearing. This works well even in coarse dirt or even sand. Particles are repelled from the contact surface by the movement itself. Here the front side of the gliders works like a wiper. The contact surface remains clean.

drylin® linear technology | Slides instead of rolling!

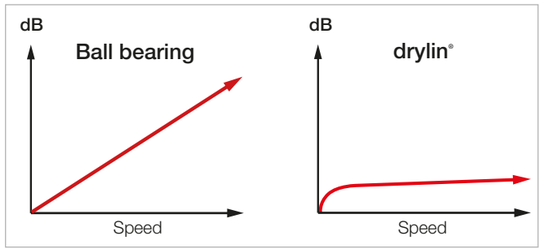
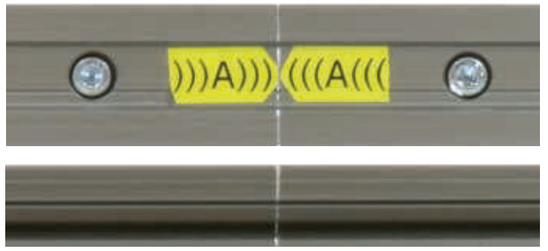


Figure 01: Comparison of noise development

Low noise

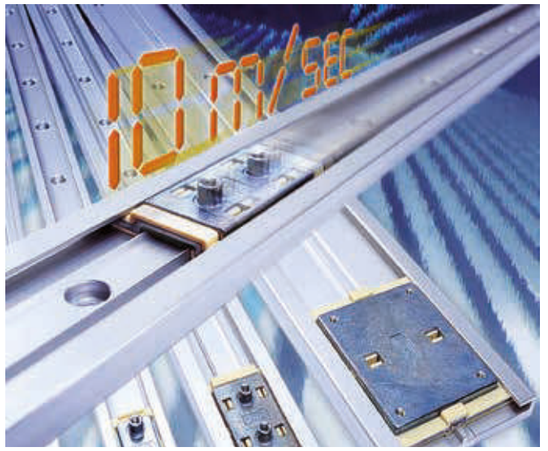
The quiet operation is also a benefit of sliding rather than rolling. There are no loud collisions between a hard steel ball and the shaft or rail. The sliding motion is extremely quiet and only a light friction noise is audible.



Rail joint

Maximum stroke lengths

The line up of guide rails (joining) poses no challenge for drylin® linear guides. The guide rails are slightly chamfered, aligned and simply placed behind each other. The groove resulting from the joint can be passed over by the sliding element without problems. With the drylin® linear plain bearings, a ball or roller cannot get stuck. In this way stroke lengths of more than 20 meters can be implemented. Assembly is simplified by the distinctive joint marking provided at the factory.



Thermal conductivity	[W / m · K]
Aluminium	235
Unalloyed steel	48 - 54
High-alloyed steel	15

Table 01: Thermal conductivity

Average surface speed

= Travel distance per cycle [m] / total cycle time [sec].

Permitted speeds/accelerations

drylin® linear plain bearings do without rollers and balls. This makes the bearing independent of the mass inertia of this body and can be used with high speeds up to 10 m/s and accelerations up to 100 G.

drylin® linear bearings are therefore especially suitable for applications with light loads, where the speeds should be increased. The use of hard-anodised aluminium as a friction partner lowers the operating temperature in the bearing due to the high thermal conductivity of aluminium. Thus the operation can be carried out with a high frequency even at very short stroke lengths.

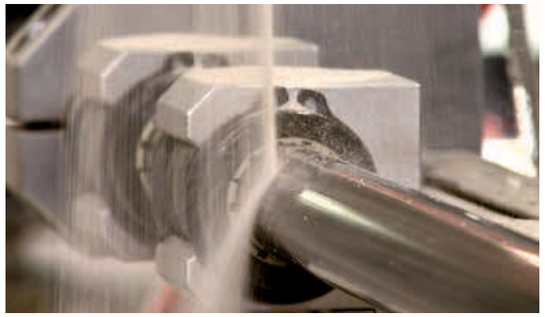
The maximum average surface speed results from the load on the bearings. With decreasing surface load, higher speeds can be achieved. More important than the maximum speed reached is the average speed over a period of time, because this has the most influence on the heating of the bearing system. In cases with breaks between the individual cycles, the maximum average surface speed is critical, which is achieved during a period of 10 to 30 minutes.

drylin® linear technology | Slides instead of rolling!

Extreme application conditions in the offshore industry

Filling machine, Krones AG, Rosenheim

The iglidur® X material in heavy-duty use under high temperatures in foundries



Lubrication-free and resistant to dust and dirt

Corrosion behaviour

The low humidity absorption of iglidur® J, J200 and X permits even underwater applications. The application of stainless steel or anodised aluminium shafts provide for a corrosion-resistant guide system. Anodised aluminium is resistant to chemically neutral substances in the range pH 2 to 7. For special applications separate tests are recommended for coated aluminium sample parts for that specific application.

Chemical resistance

iglidur® J is resistant to weak acids, diluted alkalis as well as to fuels and all kinds of lubricants. The intensive cleaning of machines with standard commercial cleaning agents, even in the food sector, is therefore not a problem for the guides. For applications in environments with aggressive chemicals, the use of the drylin® R bearings equipped with iglidur® X liners is recommended. The resistance of linear bearing systems is equally dependent on the shaft or rail material. As an option most resistant to chemicals, a high-alloyed stainless steel is offered, for instance X105 CrMo 17 (1.4125), or alternatively the use of soft VA steels (e.g. 1.4571).

Operating temperatures

Sliding elements made from iglidur® J and J200 can be used in the temperature range between 40 and +90°C. In applications with aluminium shafts and/or rails, distinctly higher loads and speeds can be attained due to the excellent thermal conductivity. Sliding elements made from iglidur® X can be used in the range of 100°C to +250°C.

Use in dirt

Even the application under coarse dirt and sand is possible. Particles are repelled from the contact surface by the movement itself. Seals can be deliberately dispensed with due to the dry operation. Dust and dirt cannot stick to grease or oil.

Hard anodised surfaces

Hard anodised surfaces are characterised by good wear properties, high chemical resistance and a high degree of hardness. It is a technical and not a decorative surface. Colour alteration and slight cracking may occur, but do not influence the resistance, the corrosion behaviour or the bearing properties. Cutting surfaces and machined surfaces are uncoated.

drylin® linear technology | Materials

	 The all-rounder – iglidur® J	 The specialist – iglidur® J200	 The extreme – iglidur® X	 The marathon runner – iglidur® E7	 FDA compliant – iglidur® A180
Application temperature	-50 to +90 °C	-50 to +90 °C	-100 to +250 °C	-50 to +70 °C	-50 to +90 °C
Best coefficient of friction with	Steel shaft	Aluminium, hard anodised	Steel hard chrome-plated	Steel/Stainless steel shaft	Stainless steel shaft
Volume resistance	> 10^{13} Ωcm	> 10^{8} Ωcm	< 10^{5} Ωcm	> 10^{9} Ωcm	> 10^{12} Ωcm
Moisture absorption	1.3 % weight	0.7 % weight	0.5 % weight	< 0.1 % weight	0.2 % weight
Maximum life time	Aluminium, hard anodised	Aluminium, hard anodised	Hardened stainless steel	Steel/Stainless steel shaft	Stainless steel shaft
Potential shaft material	all shaft materials	Aluminium, hard anodised	Hardened stainless steel	Steel/Stainless steel shaft	all shaft materials
Permissible stat. surface pressure	35 MPa	23 MPa	150 MPa	18 MPa	28 MPa
Part No.	JUM-...	J200UM-...	XUM-...	E7UM-...	A180UM-...

igus® provides various materials for sliding elements and counter partners for linear systems. Extensive lab tests and years of field experience have shown that iglidur® J, J 200 and X are the ideal materials for most linear applications due to their favorable wear and friction properties.

Ideal material combinations

iglidur® J:

- Maintenance-free, dry running
- Low coefficients of friction with all materials
- Excellent wear resistance
- Very low humidity absorption

▶ More about iglidur® J ▶ **From page 141**

iglidur® J200:

- Completely maintenance-free
- Extremely high service life on hard-anodised aluminium
- Low coefficients of friction with hard-anodised aluminium
- Excellent wear resistance with anodised aluminium

▶ More about iglidur® J200 ▶ **From page 227**

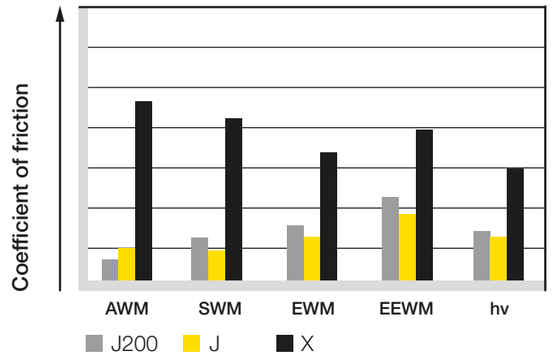
iglidur® X:

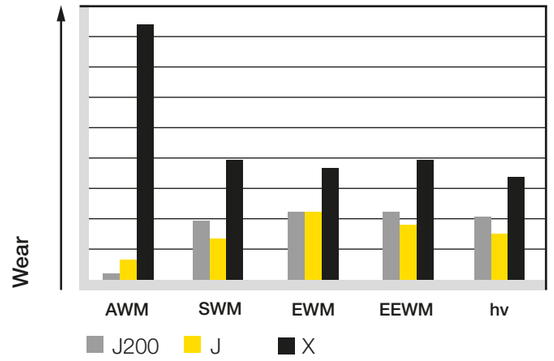
- Completely maintenance-free
- Temperature resistance from -100°C to +250°C in continuous operation
- Universal resistance to chemicals
- Very low humidity absorption

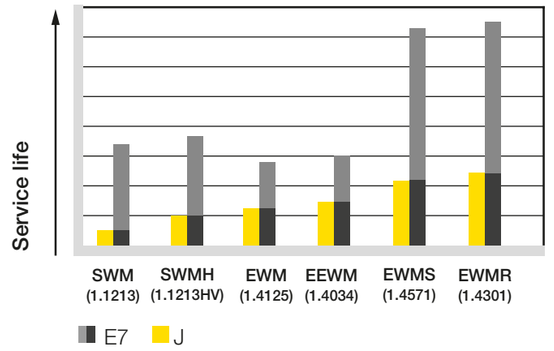
▶ More about iglidur® X ▶ **From page 237**

Other possible materials:
iglidur® A180, FDA-compliant
▶ More about iglidur® A180 ▶ **From page 349**

iglidur® E7, the endurance runner all-rounder
▶ More information about iglidur® E7 ▶ **From page 1432**







Properties

	Size	Lubrication-free and quiet operation	Same dimensions as ball bearings	Profile rails	Round shafts	Square profiles	Single housing bearing	Complete carriage	Hybrid linear bearing
drylin® W	5	●		●			●	●	●
drylin® N	4	●		●				●	
drylin® Q	3	●				●	●	●	
drylin® T	4	●	●	●				●	
drylin® T mini	4	●	●	●				●	
drylin® R	12	●	●		●		●		

Special criteria

	Loads > 100 kg	For robust requirements	Resistant to dirt	Compact, space saving	Particularly light weight	Torque resistant	Torsionally stable	Unsupported installation
drylin® W	+	+	++	+	+	+	++	+
drylin® N			+	++	++	+		
drylin® Q			+	+	+	++	+	++
drylin® T	+	+	+			+	+	
drylin® T mini			+	++	++	+		
drylin® R	++	++	++					+

Technical options

	Manual adjustable bearing clearance	Automatic adjustable bearing clearance	Automatic preload	Floating bearing function	Manual clamp	With measuring system	With lead screw drive	With toothed belt drive
drylin® W	+			+	+	+	+	+
drylin® N			++	+	+		+	
drylin® Q	+				+	+		
drylin® T	+	+		+	+			
drylin® T mini	+			+			+	
drylin® R				+			+	

Application areas

	Stainless steel components	Temperatures above +90°C	Chemical resistant	FDA compliant	Cleanroom and ESD	Door/control panel adjustments	Camera slider	3D-print components
drylin® W	++	++	++	++	+	++	++	++
drylin® N		+			+	+	+	++
drylin® Q					+			
drylin® T		+			++			
drylin® T mini					+	+		++
drylin® R	++	++	++	++	+			++

+ suitable ++ particularly suitable

Expert for linear guides: System selection & service life calculation with CAD

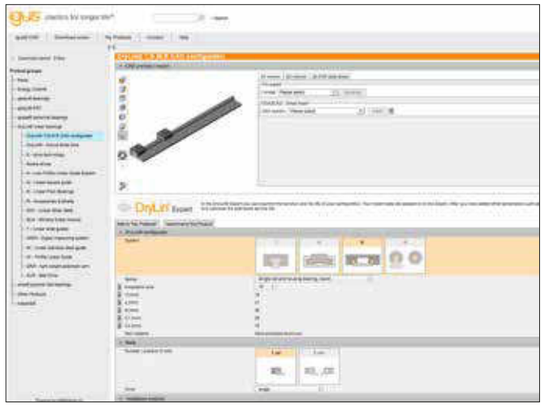
Configure and calculate linear bearings – constantly expanded by new sizes and products

Easily calculate and configure the service life of your required linear guide with only a few clicks. Select a drylin® system and add the relevant environmental parameters. Then select the bearing size, carriage, number and position. Enter the distance between the rails and the mounting. Define more relevant parameter of the guidance and select a rail length. The results are displayed.

▶ **www.igus.eu/drylin-expert**

Download app now

Download on the App Store



drylin® CAD configurator: Generate complete 3D models for drylin® linear technology according to your specifications

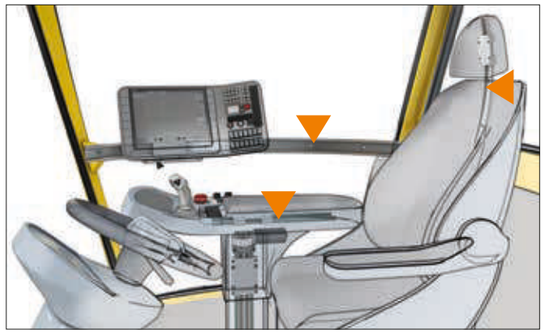
The igus® CAD online configurator gives you the ability to design and save your linear guide as a system, individual components directly as a 3D model in all commonly used formats, or to have these sent by e-mail – free of charge and without registration.

▶ **www.igus.eu/drylin-CAD**

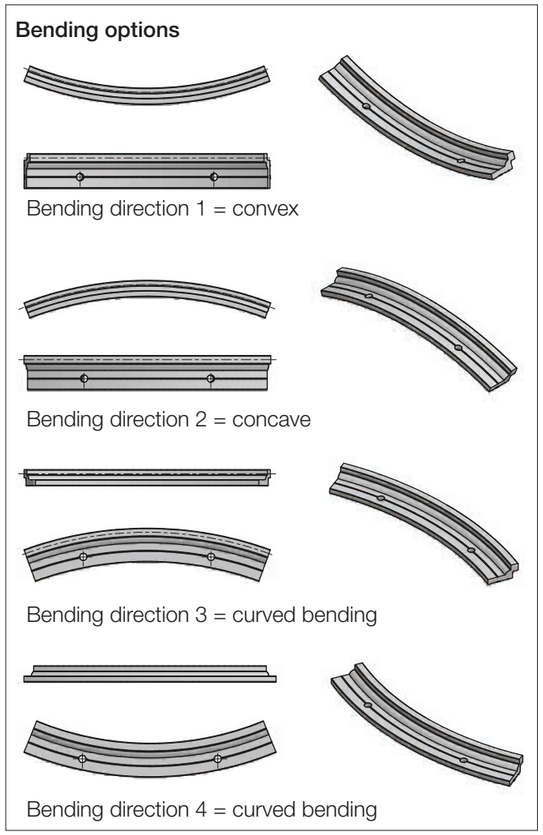
drylin® curved linear guide profiles

igus® provides customised curved rails for the drylin® W product range. This is especially For the requirements in operating ergonomics, e.g. guiding monitors and control systems in a radius to ensure safe and easy accessibility. New standards can be set in design and construction with a drylin® curved guide system.

- Lubrication-free drylin® W carriages for curved rails ▶ **Page 873**
- Variable profile directions
- Twist-proof alternative to curved tube profiles
- Bending option depending on the radius, rail length, bearing/carriage and mounting
- Customised project service



Curved drylin® linear technology - for ergonomic operation and optimal field of view



Different radii and bending directions available on request

More Information
and checklist online
▶ www.igus.eu/curved-rails

Floating bearings for linear slide guides

In the case of a system with two rails, one side needs to be fitted with floating bearings. A suitable solution comprising fixed and floating bearings is available for every installation position, whether horizontal, vertical or lateral. This type of assembly prevents jamming and blockage on the guides resulting from discrepancies in parallelism. Floating bearings are created through a controlled extension of play in the direction of the expected parallelism error. This creates an additional degree of freedom on one side.

During installation, take care that the floating bearing has approximately the same clearance on both sides. You can see the version of the fixed/floating bearing system recommended by us in the designs shown in the individual sections about the systems. The mounting surfaces of the rails and carriages should possess a good evenness (e.g. machined surface) to prevent twisting in the system. Smaller areas of mounting surface unevenness can be compensated to a certain extent by the floating bearing.

Eccentric forces

To ensure successful use of maintenance-free drylin® linear bearings, it is necessary to follow certain recommendations: If the distance between the driving force point and the fixed bearings is more than twice the bearing spacing (2:1 rule), a static friction value of 0.25 can theoretically result in jamming on the guides.

This principle applies regardless of the value of the load or drive force. The friction product is always related to the fixed bearings. The greater the distance between the drive and guide bearings, the higher the degree of wear and required drive force.

Failure to observe the 2:1 rule during a use of linear slide bearings can result in uneven motion or even system blockage. Such situations can often be remedied with relatively simple modifications.

If you have any questions on design and/or assembly, please make use of our technical support.

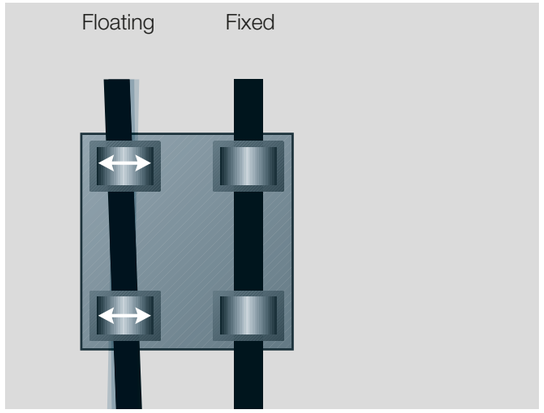


Figure 02: Automatic compensation of parallelism errors

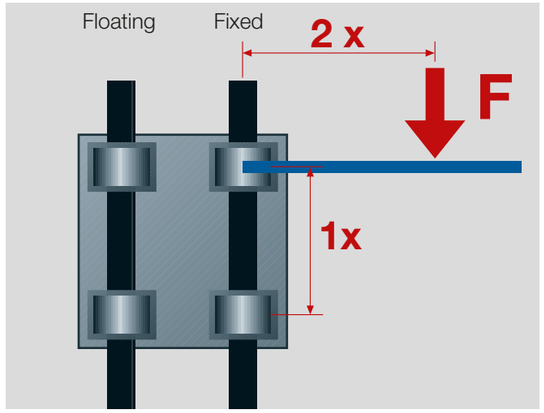


Figure 03: The 2:1 rule

Tightening torque for drylin® connections between metal parts

Metric thread (Da)	Torque [Nm]	Recommended torque [Nm]
M3	0.5 - 1.1	0.7
M4	1.0 - 2.8	1.5
M5	2.0 - 5.5	3.0
M6	4.0 - 10.0	6.0
M8	8.0 - 23.0	15.0
M10	22.0 - 46.0	30.0

Note the minimal screw in depth for aluminium and zinc parts: 1.5 x Da

Clean room suitability and ESD compatibility of drylin®

drylin® linear guides from igus®

All drylin® guide systems are clearly qualified for clean room applications. The differentiation between the various clean room classes is only dependent on load and speed of the application. The combination of iglidur® J and hard anodised aluminium is classified as level 1 in the ESD compatibility according to SEMI E78-0998 (Highest rank).

The following drylin® guides from igus® were tested: N40, W10, T25 and T30. See below for detailed results.

Linear guide system drylin® TK-10-30-01

"For the linear guide system drylin® TK-10-30-01 by igus® GmbH, it is possible, on the calculations of the likelihood of violation of threshold values of the detection sizes 0.2 µm, 0.3 µm, 0.5 µm, and 5 µm with motion speed of v = 0.1 m/s, to clearly derive suitability for clean rooms classified as ISO Class 3 according to DIN EN ISO 14644-1."

Linear guide system drylin® NK-02-40-02

"For the linear guide system drylin® NK-02-40-02 by igus® GmbH, it is possible, on the calculations of the likelihood of violation of threshold values of the detection sizes 0.2 µm, 0.3 µm, 0.5 µm, and 5 µm with motion speed of v =1 m/s, to clearly derive suitability for clean rooms classified as ISO Class 6 according to DIN EN ISO 14644-1."
The measurement results of the ESD compatibility according to SEMI E78-0998 show that the linear guide system drylin® NK-02- 40-02 can be classified as "level 1" (Highest rank).

See Fraunhofer IPA Report No.: IG 0308-295 73

IPA Fraunhofer TESTED® DEVICE
igus Energieführungsketten/ Lineargleitführung
Report No. IG 0308-295

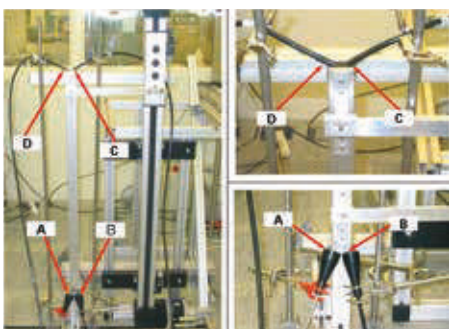
Linear guide system drylin® TK-01-25-02

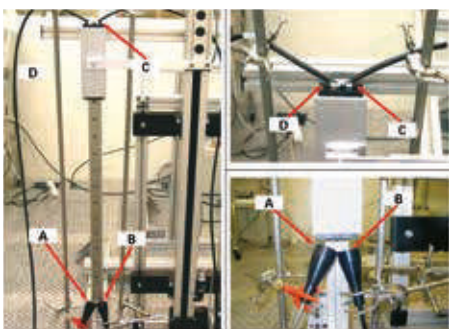
"For the linear guide system drylin® TK-01-25-02 by igus® GmbH, it is possible, on the calculations of the likelihood of violation of threshold values of the detection sizes 0.2 µm, 0.3 µm, 0.5 µm, and 5 µm with motion speed of v =1 m/s, to clearly derive suitability for clean rooms classified as ISO Class 5 according to DIN EN ISO 14644-1."
The measurement results of the ESD compatibility according to SEMI E78-0998 show that the linear guide system drylin® TK-01-25-02 can be classified as "level 1" (Highest rank).

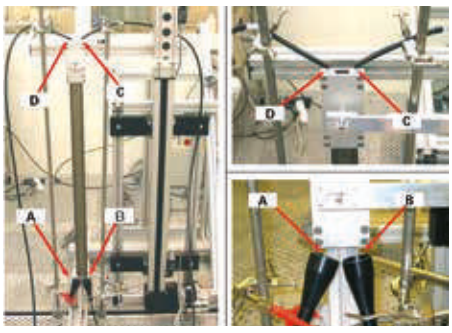
Linear guide system drylin® WK-10-40-15-01

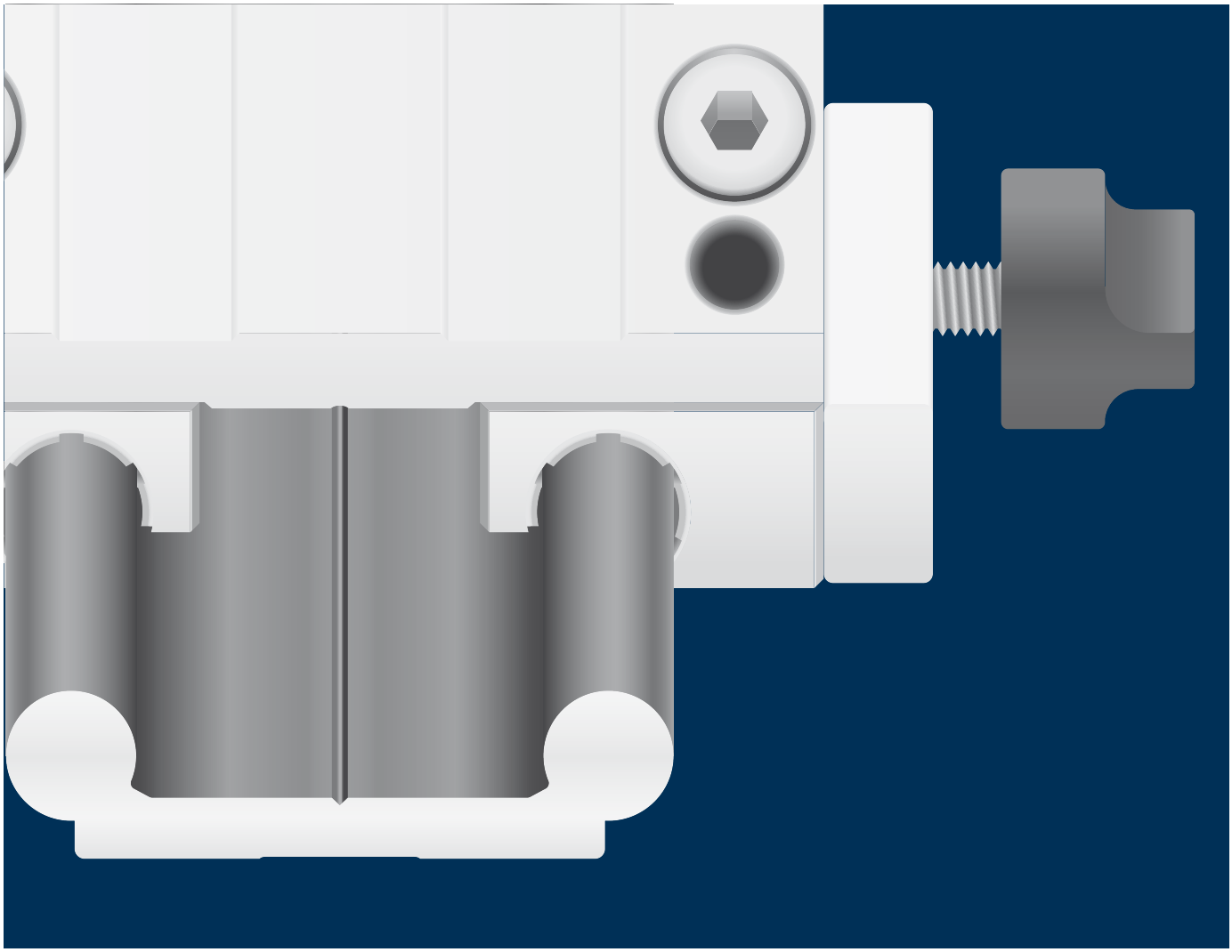
"For the linear guide system drylin® WK-10-40-15-01 by igus® GmbH, it is possible, on the calculations of the likelihood of violation of threshold values of the detection sizes 0.2 µm, 0.3 µm, 0.5 µm, and 5 µm with motion speed of v =1 m/s, to clearly derive suitability for clean rooms classified as ISO Class 6 according to DIN EN ISO 14644-1."
The measurement results of the ESD compatibility according to SEMI E78-0998 show that the linear guide system drylin® WK-10-40-15-01 can be classified as "level 1" (Highest rank).

See Fraunhofer IPA Report No.: IG 0308-295 74









drylin® linear technology – drylin® W profile guides

Modular linear guides

Interchangeable lubrication-free drylin® liners

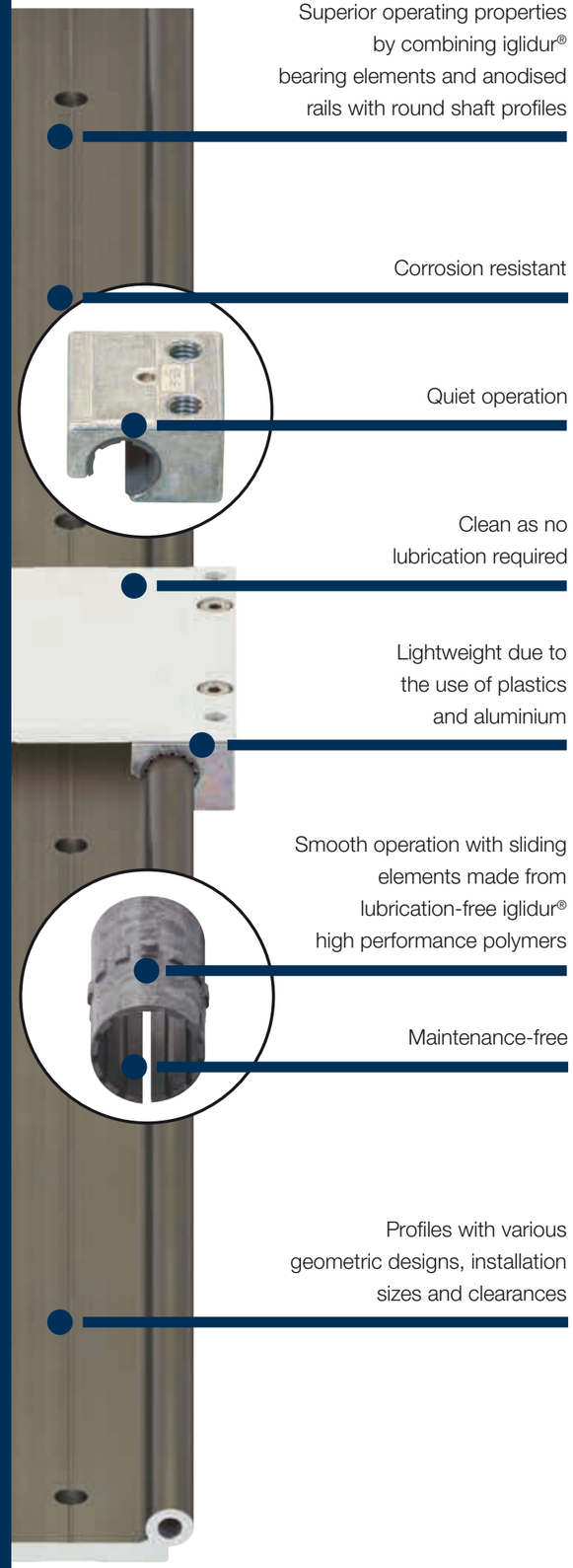
Robust linear housing

Ready-to-install linear carriages

Single and double rails

drylin® W profile guides | Advantages

Lubrication-free, light, quiet, long service life, cost-effective



Lubrication-free linear system – drylin® W

drylin® W profile guides are a cost-effective system. The design allows extremely high flexibility in the construction and installation due to the use of individual or double rails. Hard-anodised aluminium is used as rail material and provides the best friction and wear results. With its dry running lubrication-free operation, the profile guide system is extremely resistant to dirt; the cleanliness also makes the system suitable for cleanroom and hygiene applications.

- Easy installation, maintenance-free
- Resistant to dirt thanks to dry operation
- Lightweight and quiet
- Square rail with floating bearing function for 90 degree installation
- Bearing with manual clearance adjustment available

Typical application areas

- Agricultural machinery
- Automotive
- Medical technology
- Packaging industry
- Furniture

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

max. +200 °C
min. -40 °C

Carriage lengths: 60-250 mm
Carriage widths: 54-195 mm
Rail length: up to 4,000 mm

Service life calculation
▶ www.igus.eu/drylin-expert

drylin® W profile guides | Product overview

Profile guide systems for almost unlimited design freedom

Single components: Housing bearings

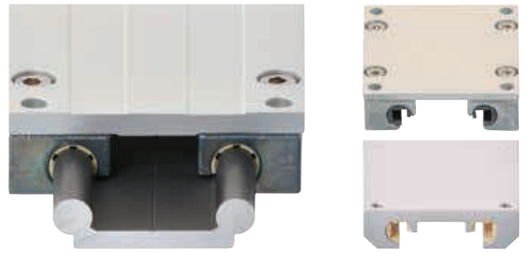
- Material: Die-cast zinc, aluminium or stainless steel
- Round or square design
- Liners made from iglidur® high performance polymers

▶ From page 860

Single components: Single rails

- Material: aluminium, hard anodised
- Design freedom
- Stainless steel rails made from V4A

▶ From page 864



Assembled systems: Complete carriages

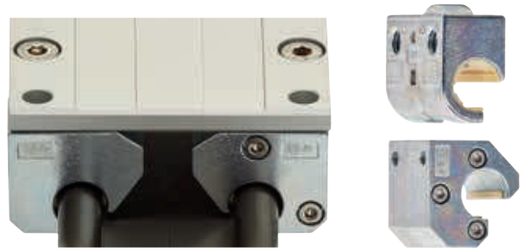
- Pre-assembled
- Variable lengths and widths
- Mono-slide carriage made from aluminium

▶ From page 866

Accessories

- Manual clamp for single bearing housing and complete carriages
- End caps for high profile rails

▶ From page 874



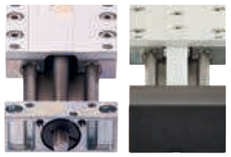
Hybrid guides

- Linear housing with integrated single or double roller
- Low driving forces
- Available as single housing or complete carriage

▶ From page 857

Based on drylin® W

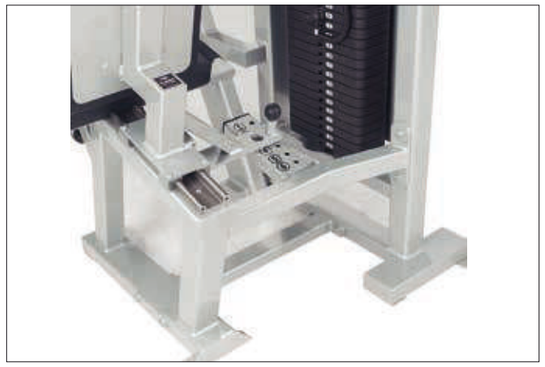
Measurement systems
▶ From Page 1037



Linear modules
SLW/SAW/GRW/ZLW
▶ From page 1175

drylin® linear bearings enable precise positioning at high speeds. Unlike conventional bearings, they do not require lubrication and are corrosion free.

Lightweight through the use of plastic and aluminium with a corrosion free coating, the guides in the drylin® range impress with their quiet and precise running.



Adjustment mechanisms on gym equipment no longer have to be maintained thanks to the igus® drylin® W profile guides.

The closing mechanism on this casting machine is subjected to high temperatures and dirt. To make it as durable as possible despite this, it is mounted with a drylin® W profile guide.

Due to the price advantage coupled with the resistance against dirt and dust, the customer opted for drylin® W.

Quiet, low vibration adjustments in the stage technology field are enabled through the use of drylin® W linear guide systems based on steel shafts in combination with stainless steel housing bearings.

Expert for linear guides: System selection & service life calculation with CAD

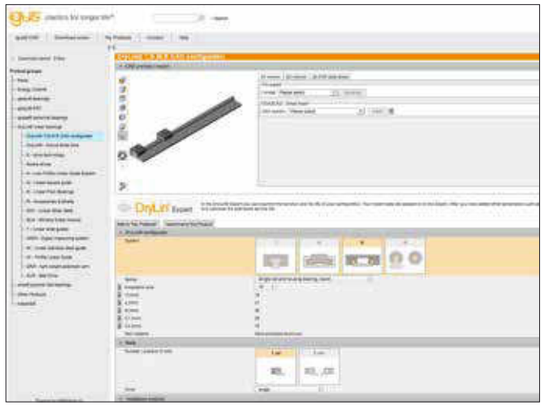
Configure and calculate linear bearings – constantly expanded by new sizes and products

Easily calculate and configure the service life of your required linear guide with only a few clicks. Select a drylin® system and add the relevant environmental parameters. Then select the bearing size, carriage, number and position. Enter the distance between the rails and the mounting. Define more relevant parameter of the guidance and select a rail length. The results are displayed.

▶ **www.igus.eu/drylin-expert**

Download app now

Download on the App Store



drylin® CAD configurator: Generate complete 3D models for drylin® linear technology according to your specifications

The igus® CAD online configurator gives you the ability to design and save your linear guide as a system, individual components directly as a 3D model in all commonly used formats, or to have these sent by e-mail – free of charge and without registration.

▶ **www.igus.eu/drylin-CAD**

Profiles

	Size					Liner material				
	06	10	16	20	25	J	J200	X	A180	E7
Single rail, round		●	●	●	●	●	○	●	●	●
Single rail, square	●	●	●	●			○			
Double rail, round		●	●	●	●	●	○	●	●	●
Double rail, square	●	●	●	●			○			
High profile, round		●	●			●	○	●	●	●
High profile, square	●						○			
Stainless steel		●	●	●	●	○	●	●	●	●
Carbon	●									
Curved rail	depends on material and radii									
Bearing carriage - material										
Zinc die-cast	●	●	●	●	●	●	○	●	●	●
Aluminium	●	●	●	●	●	●	○	●	●	●
Stainless steel		●	●	●	●	○	●	●	●	●
Bearing carriage - options										
With manual clamp	●	●	●	●	●	○	○	●	●	●
Clearance adjustment		●	●	●		○	○			
Hybrid bearing		●	●	●	●	○				
Linear guides										
Pre-assembled carriages	●	●	●	●	●	●	○	●	●	●
Hybrid carriage		●	●	●		○				
Mono-slide carriage	●	●	●	●		○				
Systems										
Lead screw modules	●	●	●	●	●	○	●	●	●	●
Belt drive axis	●	●	●				○			
With measuring system		●				○				

○ Standard
● Optional

Floating bearings for all directions (up to ±1 mm) compensate misalignments and parallelism errors.

Floating bearings aid assembly – when using single rails

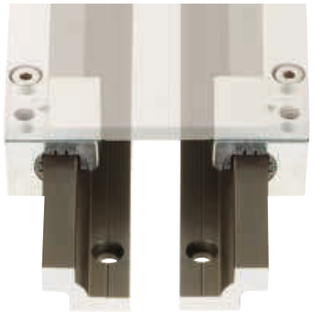
Assembly is easy with the drylin® WQ square profile. Floating bearings for all directions (±1 mm) compensate misalignments and parallelism errors between rails. This eliminates jamming, otherwise only prevented by time-consuming manual alignment of the system. Although drylin® W is a profile rail system, it is able to compensate angular errors about the x-axis. An angular adjustment of ±7° is possible here. This effectively eliminates the misalignment known to occur when fitting to sheet metal fabrications.

Possible combinations in assembled rail systems

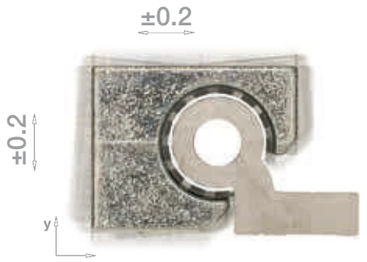
Fixed bearing Floating bearing

Fixed bearing Floating bearing

Fixed bearing Floating bearing

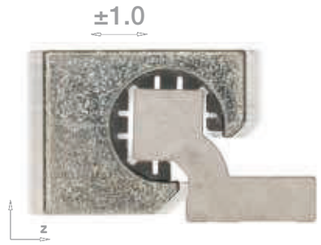


Available floating bearing blocks



LL - round

LLY - square



LLZ - square

rotating - square

drylin® liners made from high performance polymers

Extremely wear resistant tribopolymers improved by precisely blended additions of strengthening materials and solid lubricants, tested a thousand times and proved a million times – that is iglidur®. Further to the general properties, every iglidur® bearing material has a series of special features, which account for its particular suitability for certain applications and requirements. The detailed description of the materials can be found in the respective sections.

- Lubrication-free
- Corrosion resistant
- Low coefficients of friction
- Maintenance-free
- Dirt resistance
- Lightweight
- High wear resistance
- Excellent price-performance ratio

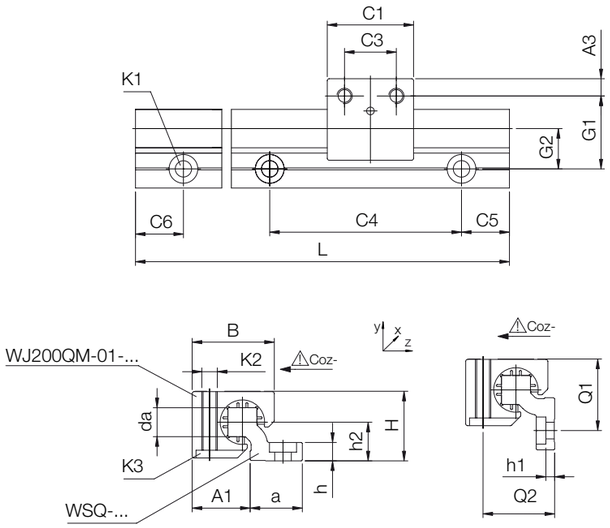
	 The all-rounder – iglidur® J	 The specialist – iglidur® J200	 The extreme – iglidur® X	 The marathon runner – iglidur® E7	 FDA-compliant – iglidur® A180
Application temperature	-50 to +90 °C	-50 to +90 °C	-100 to +250 °C	-50 to +70 °C	-50 to +90 °C
Best coefficient of friction with	Steel shaft	Aluminium, hard anodised	Steel hard chrome-plated	Steel/Stainless steel shaft	Stainless steel shaft
Volume resistance	> 10^{13} Ωcm	> 10^{8} Ωcm	< 10^{5} Ωcm	> 10^{9} Ωcm	> 10^{12} Ωcm
Moisture absorption	1.3 % weight	0.7 % weight	0.5 % weight	< 0.1 % weight	0.2 % weight
Maximum life time	Aluminium, hard anodised	Aluminium, hard anodised	Hardened stainless steel	Steel/Stainless steel shaft	Stainless steel shaft
Potential shaft material	all shaft materials	Aluminium, hard anodised	Hardened stainless steel	Steel/Stainless steel shaft	all shaft materials
Permissible stat. surface pressure	35 MPa	23 MPa	150 MPa	18 MPa	28 MPa
Part No.	JUM-...	J200UM-...	XUM-...	E7UM-...	A180UM-...

Available housing bearing & carriages	Suitable liners				
	iglidur® J	iglidur® J200	iglidur® X	iglidur® E7	iglidur® A180
Housing bearing, square					
Standard		●			
Aluminium		●			
Housing bearing, round					
Standard	●	●	●	●	●
Stainless steel	●	●	●	●	●
Aluminium	●	●	●	●	●
Aluminium, tandem	●	●	●	●	●
"Turn-to-fit"	●				
Hybrid – roll and slide	●				
Guide carriage, fitted					
Standard, assembled, square		●			
Standard, assembled, round	●	●	●	●	●
Hybrid, round	●				
"Turn-to-fit", round	●				
Complete carriages					
Mono-slide, square	●				

● Standard
● Optional

drylin® W profile guides | Product range

Single rail, square, hard-anodised aluminium



Hard anodised surfaces
▶ Page 840

Curved rail profiles
▶ Page 844

Technical data and dimensions [mm]

Part No.	Weight	H[57]	da	L	a	h	h1	h2	G1	G2	A1	Q1	Q2
	[kg/m]	±0.25	–0.1	max.									
WSQ-06	0.23	14	5	3,000	14	4	4[58]	7.5	18	10.5	13.5	17	15
WSQ-10	0.54	20	7.5	4,000	25	5.5	5.5[58]	11	27	17	18.5	26	21
WSQ-16	0.94	27	11.5	4,000	27	7.5	3.5	14	33	19	25	32	28
WSQ-20	1.41	36	15	4,000	27	9.5	4.5	20	38	21	30	37	37

Part No.	C4	C5	C5	C6	C6	K1 for screw	Iy	Iz	Wby	Wbz
		min.	max.	min.	max.	DIN 912	[mm⁴]	[mm⁴]	[mm³]	[mm³]
WSQ-06	60	20	49.5	20	49.5	M4[58]	2,200	640	220	100
WSQ-10	120	20	79.5	20	79.5	M6[58]	16,100	3,300	950	350
WSQ-16	120	20	79.5	20	79.5	M8	33,000	10,800	1,700	910
WSQ-20	120	20	79.5	20	79.5	M8	56,500	34,000	2,600	2,100

Standard hole pattern: C5=C6, please order with drawing for C5≠C6

[57] Height dimension minus the bearing clearance tolerance

[58] Plain holes

Can be combined with:

WJ200QM-...

drylin® W profile guides | Product range

Housing bearing, square, made from zinc or aluminium

Can be combined with:

WSQ-...

WSQ-...

WSX-...

Technical data and dimensions [mm]

Part No.	Floating bearing clearance	Floating bearing direction	Weight	B	C1	C3	A3	K2	K3	Stat. load capacity Coy	Coz+	Coz–
			[g]							[N]	[N]	[N]
WJ200QM-01-06	–	–	16	18	19	10	4.5	M4	M3	420	420	140
WJ200QM-01-06-LLZ	± 0.5	z	16	18	19	10	4.5	M4	M3	420	420	140
WJ200QM-01-06-LLY	± 0.5	y	16	18	19	10	4.5	M4	M3	420	420	140
WJ200QM-01-06-AL	–	–	8	18	19	10	4.5	M4	M3	420	420	140
WJ200QM-01-10	–	–	41	26	29	16	6.5	M6	M5	1,200	1,200	250
WJ200QM-01-10-LLZ	± 0.7	z	41	26	29	16	6.5	M6	M5	1,200	1,200	250
WJ200QM-01-10-LLY	± 0.7	y	41	26	29	16	6.5	M6	M5	1,200	1,200	250
WJ200QM-01-10-AL	–	–	21	26	29	16	6.5	M6	M5	1,200	1,200	250
WJ200QM-01-16	–	–	100	34.5	36	18	9	M8	M6	2,100	2,100	400
WJ200QM-01-16-LLZ	± 1.0	z	100	34.5	36	18	9	M8	M6	2,100	2,100	400
WJ200QM-01-16-LLY	± 1.0	y	100	34.5	36	18	9	M8	M6	2,100	2,100	400
WJ200QM-01-16-AL	–	–	51	34.5	36	18	9	M8	M6	2,100	2,100	400
WJ200QM-01-20	–	–	190	42.5	45	27	9	M8	M6	3,200	3,200	500
WJ200QM-01-20-LLZ	± 1.0	z	190	42.5	45	27	9	M8	M6	3,200	3,200	500
WJ200QM-01-20-LLY	± 1.0	y	190	42.5	45	27	9	M8	M6	3,200	3,200	500
WJ200QM-01-20-AL	–	–	104	42.5	45	27	9	M8	M6	3,200	3,200	500

Order example:

WJ200QM-01-06: Housing bearing, square

WJ200QM-01-06-LLZ: Housing bearing, square with floating z-direction

WJ200QM-01-06-AL: Housing bearing, square, made from aluminium

Order key – single rail

Type	Length
WSQ-06	-3000

- Guide rails
- Square
- Shafts Ø
- Rail length [mm]

Order key – housing bearing

Type	Size	Options
WJ200QM-01	-10	-LLY

- drylin® W
- iglidur® bearing material
- Housing bearing, square
- Standard
- Size
- Floating bearing in y-direction

Options:

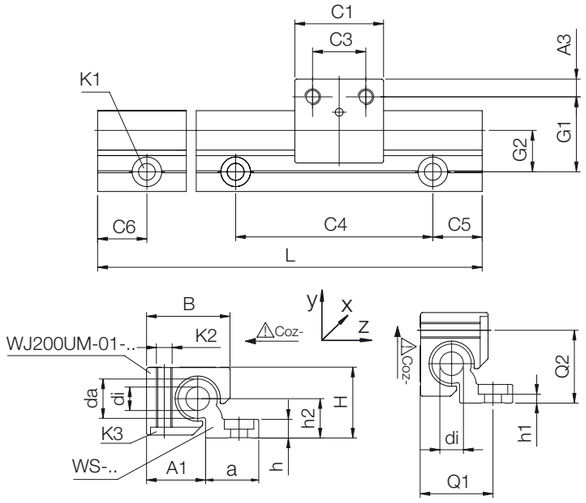
LLY: Floating bearing in y-direction

LLZ: Floating bearing in z-direction

AL: Housing bearing made from aluminium

drylin® W profile guides | Product range

Single rail, round, hard-anodised aluminium



This assembled position not possible for WS-10

Hard anodised surfaces
▶ Page 840

Stainless steel version available
▶ Page 862

Curved rail profiles
▶ Page 844

Technical data and dimensions [mm]

Part No.	Weight	H[57]	da	di	L	a	h	h1	h2	G1	G2	A1	Q1	Q2
		±0.25	–0.1		max.									
	[kg/m]													
WS-10	0.62	18	10	–	4,000	27	5.5	5.5[58]	9	27	17	16.5	–	–
WS-16	0.98	27	16	8.0	4,000	27	7.5	3.5	14	33	19	25	32	28
WS-20	1.32	36	20	10.2	4,000	27	9.5	4.5	20	38	21	30	37	37
WS-25	2.03	45	25	14	4,000	32	11.5	5.5	25	46.5	25.5	37.5	45.5	46

Part No.	C1	C3	C4	C5	C5	C6	C6	A3	K1 for screw	Iy	Iz	Wby	Wbz
				min.	max.	min.	max.		DIN 912				
										[mm⁴]	[mm⁴]	[mm³]	[mm³]
WS-10	29	16	120	20	79.5	20	79.5	6.5	M6[58]	19,000	2,850	1,000	310
WS-16	36	18	120	20	79.5	20	79.5	9	M8	36,000	12,900	1,800	940
WS-20	45	27	120	20	79.5	20	79.5	9	M8	57,100	35,000	2,700	1,900
WS-25	58	36	150	25	99.5	25	99.5	11	M10	129,000	86,000	4,900	3,800

Standard hole pattern: C5=C6, please order with drawing for C5≠C6

[57] Height dimension minus the bearing clearance tolerance

[58] Plain holes

Can be combined with:


WJ200UM(T)-...

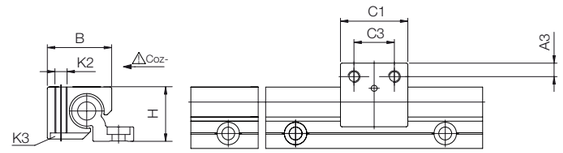

WJ200UME-...


WJUM-..-ES-FG


WJRM-...

drylin® W profile guides | Product range

Housing bearing, round, made from die-cast zinc or aluminium



Stainless steel version available
▶ Page 863

Technical data and dimensions [mm]

Part No.	Floating bearing clearance	Weight	B	C1	C3	A3	K2	K3	Stat. load capacity Coy	Coz+	Coz–
		[g]							[N]	[N]	[N]
WJ200UM-01-10	–	41	26	29	16	6.5	M6	M5	1,200	1,200	250
WJ200UM-01-10-LL	±0.2	41	26	29	16	6.5	M6	M5	1,200	1,200	250
WJ200UM-01-10-AL	–	20	26	29	16	6.5	M6	M5	1,200	1,200	250
WJ200UM-01-16	–	100	34.5	36	18	9	M8	M6	2,100	2,100	400
WJ200UM-01-16-LL	±0.2	100	34.5	36	18	9	M8	M6	2,100	2,100	400
WJ200UM-01-16-AL	–	48	34.5	36	18	9	M8	M6	2,100	2,100	400
WJ200UM-01-20	–	190	42.5	45	27	9	M8	M6	3,200	3,200	500
WJ200UM-01-20-LL	±0.25	190	42.5	45	27	9	M8	M6	3,200	3,200	500
WJ200UM-01-20-AL	–	99	42.5	45	27	9	M8	M6	3,200	3,200	500
WJ200UM-01-25	–	425	52.5	58	36	11	M10	M8	4,800	4,800	950
WJ200UM-01-25-LL	±0.25	425	52.5	58	36	11	M10	M8	4,800	4,800	950
WJ200UM-01-25-AL	–	250	52.5	58	36	11	M10	M8	4,800	4,800	950

Order example:
WJ200UM-01-10: Housing bearing, round
WJ200UM-01-10-LL: Housing bearing, round, floating bearing
WJ200UM-01-10-AL: Housing bearing, round, made from aluminium

Order key – single rail

Type	Length
WS-10	-4000

Guide rails
Shafts Ø
Rail length [mm]

Order key – housing bearing

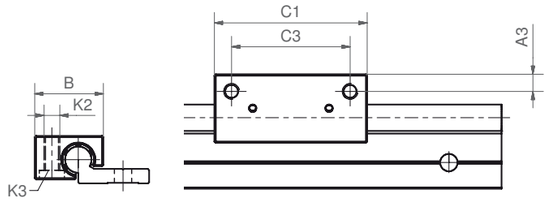
Type					Size	Options
WJ200UM	-01	-10	-LL			

drylin® W
iglidur® bearing material
Housing bearing, round
Standard
Size
Floating bearing

Options:
LL: Floating bearing
AL: Housing bearing made from aluminium

drylin® W profile guides | Product range

Housing bearing, tandem, round, anodised aluminium



Order key

Type	Size	Material
WJ200UMT-01-10-AL		

drylin® W	Liner iglidur® J200	Housing bearing, round	Tandem	Standard	Size	Aluminium

Technical data and dimensions [mm]

Part No.	Weight	B	C1	C3	A3	K2	K3	Static load capacity		
								Coy	Coz+	Coz–
	[g]							[N]	[N]	[N]
WJ200UMT-01-10-AL	43	26	58	45	6.5	M6	M5	2,400	2,400	500
WJ200UMT-01-16-AL	32	34.5	72	54	9	M8	M6	2,400	2,400	600

Can be combined with:

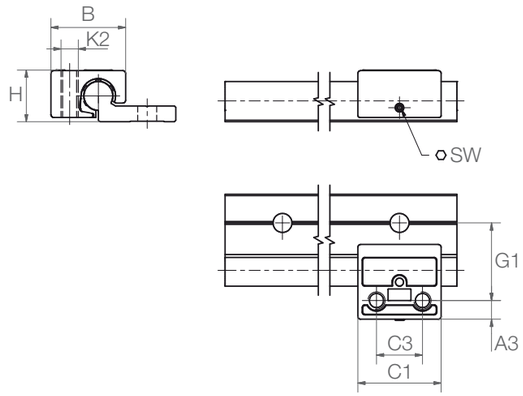
WS-... WS-..-ES-FG-... WS-... WS-...-ES-FG WSX-...

Suitable liner materials:

iglidur® J iglidur® J200 iglidur® X iglidur® E7 iglidur® A180

drylin® W profile guides | Product range

Housing bearing, round, adjustable clearance



Order key

Type	Size
WJ200UME-01-16	

drylin® W	Liner iglidur® J200	Housing bearing, round	Adjustable	Standard	Size

Allen key supplied

Technical data and dimensions [mm]

Part No.	Weight	B	C1	C3	A3	K2	H	SW	G1	Stat. load capacity		
										Coy	Coz+	Coz–
	[g]									[N]	[N]	[N]
WJUME-01-10	43	26	29	16	6.5	M6	18	1.5	27	560	560	250
WJ200UME-01-16	110	34.5	36	18	9	M8	27	2.5	33	980	980	460
WJ200UME-01-20	222	42.5	45	27	9	M8	36	2.5	38	1,500	1,500	500

Can be combined with:

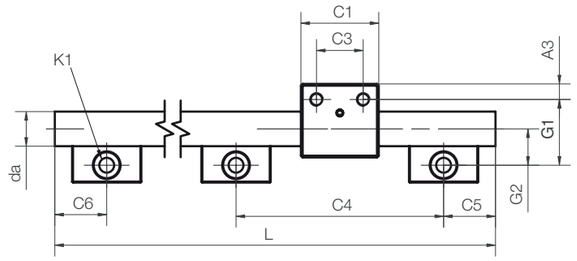
WS-... WS-..-ES-FG-... WS-... WS-...-ES-FG WSX-...

Suitable liner materials:

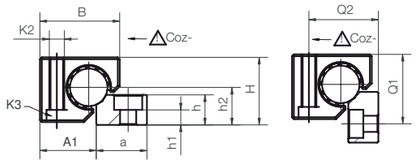
iglidur® J

drylin® W profile guides | Product range

Single rail round, made from stainless steel V4A



STAIN-LESS STEEL



Material for housing and shaft support	1.4408 (AISI 316)
Shaft material	1.4571 (AISI 316Ti)
Size 25	
Material for shaft, shaft support, housing	1.4571 (AISI 316Ti)

Technical data and dimensions [mm]

Part No.	Weight	H[57]	da	L	a	h	h1	h2	G1	G2	A1	Q1	Q2
	[kg/m]	±0.25	-0.1	max.	–0.3								
WS-10-ES-FG	0.87	18	10	3,000	27	5.5	5.5[58]	9	27	17	16.5	-	-
WS-16-ES-FG	2.22	27	16	3,000	27	12.0	4.5	14	33	19	25	32	28
WS-20-ES-FG	3.37	36	20	3,000	27	16.0	8.0	20	38	21	30	37	37
WS-25-ES	5.21	45	25	3,000	32	20.0	9.0	25	46.5	25.5	37.5	45.5	46

Part No.	C1	C3	C4	C5	C5	C6	C6	A3	K1 for screw	Iy	Iz	Wby	Wbz
				min.	max.	min.	min.		DIN 912	[mm⁴]	[mm⁴]	[mm³]	[mm³]
WS-10-ES-FG	29	16	120	20	79.5	20	79.5	6.5	M6[58]	491	491	98	98
WS-16-ES-FG	36	18	120	20	79.5	20	79.5	9.0	M8	3,217	3,217	402	402
WS-20-ES-FG	45	27	120	20	79.5	20	79.5	9.0	M8	7,854	7,854	785	785
WS-25-ES	58	36	150	25	99.5	25	99.5	11.0	M10	19,175	19,175	1,534	1,534

[57] Height dimension minus the bearing clearance tolerance

[58] Plain holes

Can be combined with:


WJ200UM(T)-...


WJ200UME-...


WJUM-..-ES-FG


WJRM-...

Suitable liner materials:

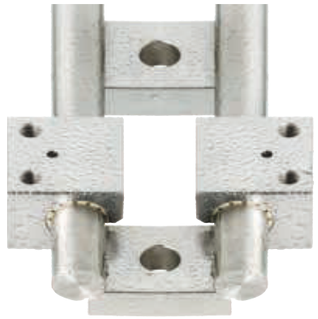

iglidur® J

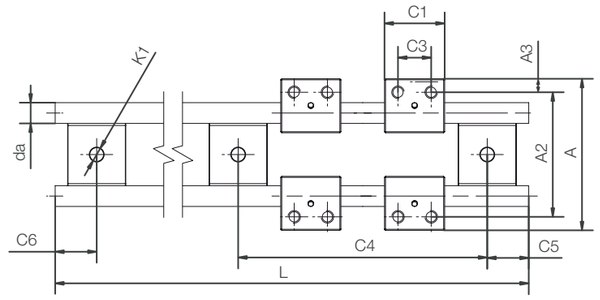

iglidur® E7


iglidur® A180

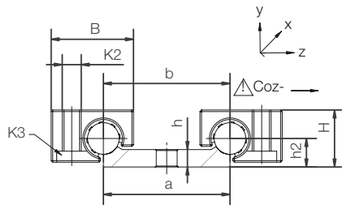
drylin® W profile guides | Product range

Round double rail and housing bearing, made from V4A stainless steel





Size 10-20	
Material for housing and shaft support	1.4408 (AISI 316)
Shaft material	1.4571 (AISI 316Ti)
Size 25	
Material for shaft, shaft support, housing	1.4571 (AISI 316Ti)



Technical data and dimensions [mm]

Part No.	Weight	H[57]	da	L	a	b	h	h2	A	A2
	[kg/m]	±0.25	h9	max.	–0.3					
WS-10-40-ES-FG	1.58	18	10	3,000	40	40	5.5	9	73	60

Part No.	C4	C5 min.	C5 max.	C6 min.	C6 max.	K1 for screw DIN 912
WS-10-40-ES-FG	120	20	79.5	20	79.5	M6

[57] Height dimension minus the bearing clearance tolerance

Housing bearing round, made from stainless steel V4A

STAIN-LESS STEEL

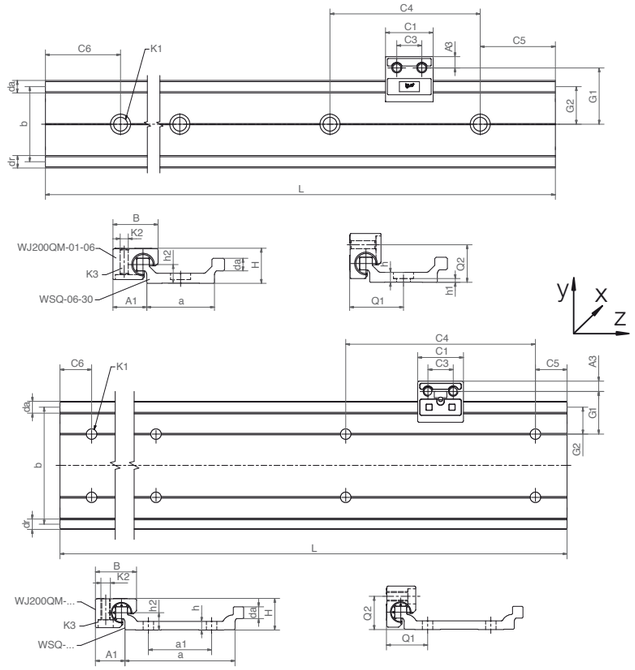
Technical data and dimensions [mm]

Part No.	Weight	B	C1	C3	A3	K2	K3	Stat. load capacity		
							Countersunk head screw	Coy [N]	Coz+ [N]	Coz- [N]
	[g]									
WJUM-01-10-ES-FG[59]	57	26	29	16	6.5	M6	M5	3,800	3,800	950
WJUM-01-16-ES-FG[59]	134	34.5	36	18	9	M8	M6	6,900	6,900	1,450
WJUM-01-20-ES-FG[59]	280	42.5	45	27	9	M8	M6	11,000	11,000	1,900
WJUM-01-25-ES[59]	564	52.5	58	36	11	M10	M8	16,000	16,000	3,600

[59] Alternative with XUMO-01-... liners for high temperatures available. Part No. WXUM-01-...

drylin® W profile guides | Product range

Double rail, square, hard-anodised aluminium



Hard anodised surfaces
▶ Page 840

Curved rail profiles
▶ Page 844

Technical data and dimensions [mm]

Part No.	Weight	H[57]	da	dr	L	a	A1	b	h	h1	h2	G1	G2	a1[61]	Q1	Q2
	[kg/m]	±0.25	–0.1		max.											
WSQ-06-30	0.45	14	5	5	3,000	27-0,4	13.5	30	4	4[58]	7.5	22.5	15	–	21.5	15
WSQ-06-60	0.70	5	5	5	3,000	58-0.4	13.5	61	4	4[58]	7.0	42.5	30.5	40	17	15
WSQ-10-40	0.92	20	75	6.7	4,000	36-0,5	18.5	40	5.5	5.5[58]	11	30	20	–	29	21
WSQ-10-80	1.41	20	7.5	6.7	4,000	70-0,7	18.5	74	5.5	5.5[58]	11	27	17	40	26	21
WSQ-10-120	2.02	20	7.5	6.7	4,000	116-0,7	18.5	120	5.5	5.5[58]	11	30	20	80	29	21
WSQ-16-60	1.84	27	11.5	10.7	4,000	54-0,5	35.5	58	7.5	3.5	14	43	29	–	42	28
WSQ-20-80	3.30	36	15	14.1	4,000	74-0,7	30.0	82	9.5	4.5	20	38	21	40	37	37

Part No.	C4	C5		C6		K1 for screw	Iy	Iz	Wby	Wbz
		min.	max.	min.	max.	DIN 912	[mm⁴]	[mm⁴]	[mm³]	[mm³]
WSQ-06-30	60	20	49.5	20	49.5	M5[58]	19,000	1,250	1,100	200
WSQ-06-60	60	20	49.5	20	49.5	M5[58]	117,900	1,600	3,500	290
WSQ-10-40	120	20	79.5	20	79.5	M6[58]	71,600	5,580	3,000	610
WSQ-10-80	120	20	79.5	20	79.5	M6[58]	335,000	7,070	8,300	700
WSQ-10-120	120	20	79.5	20	79.5	M6[58]	1,175,000	8,000	18,400	760
WSQ-16-60	120	20	79.5	20	79.5	M8	324,700	20,500	9,400	1,700
WSQ-20-80	120	20	79.5	20	79.5	M8	1,145,000	75,300	23,600	4,500

[57] Height dimension minus the bearing clearance tolerance [58] Plain holes

[61] WSQ-06-30/-10-40/-16-60 a single row of mounting holes down the centreline, WSQ-10-80/-10-120/-20-80 two parallel rows of mounting holes

Can be combined with:

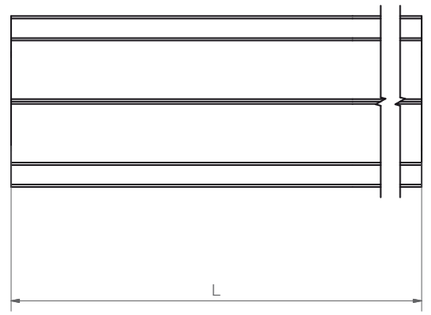

WJQM-...

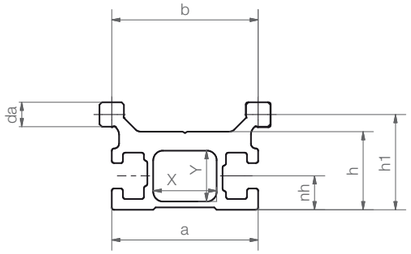

WW-...

WWC-...

drylin® W profile guides | Product range

High profile rail, square, hard-anodised aluminium





Suitable end caps
▶ Page 876

Technical data and dimensions [mm]

Part No.	Weight	da	L	a	b	h	h1	nh	X	Y	Iy	Iz
	[kg/m]	–0.1	max.								[mm⁴]	[mm⁴]
WSX-06-30	0.76	5	4,000	29.7	30	16	19.5	7	12	10	30,391	11,674

Order example:
WSX-06-30: High profile rail, square
WSQ-06-30: Standard double rail, square

Order key

Type	Length
WS Q-06-30	-3000

Profile rail	Square	Shafts-Ø	Rail width [mm]	Rail length [mm]

Order key

Type	Length
WS X-06-30	-4000

Profile rail	High profile rail	Shafts-Ø	Rail width [mm]	Rail length [mm]

Can be combined with:

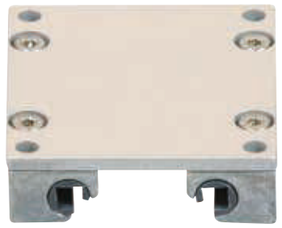

WJQM-...

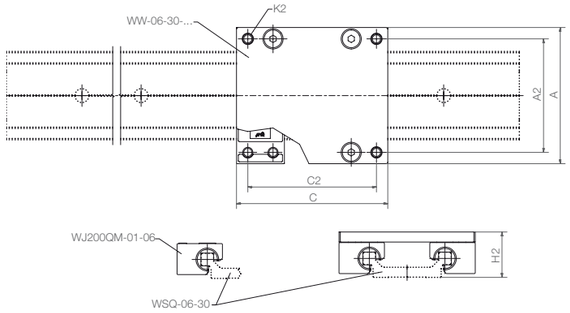

WW-...

WWC-...

drylin® W profile guides | Product range

Guide carriage, assembled, square





Order key
complete system ▶ Page 878

Type	Size

WW-06-30-06

Guide carriage	Shafts-Ø [mm]	Profile width	Carriage length

All parts can be ordered individually
or as an assembled system ▶ Page 868

Technical data and dimensions [mm]

Part No.	Weight	A	C	A2	C2	K2	H2[57]	Stat. load capacity				
		Width	Length				±0.25	Coy	Coz	Mox	Moy	Moz
	[kg]							[N]	[N]	[Nm]	[Nm]	[Nm]
WW-06-30-06	0.10	54	60	45	51	M4	18	1,680	840	25	34	34
WW-06-30-08	0.11	54	80	45	71	M4	18	1,680	840	25	51	51
WW-06-30-10	0.12	54	100	45	91	M4	18	1,680	840	25	68	68
WW-06-60-06	0.13	85	60	76	51	M4	18	1,680	840	50	34	34
WW-06-60-08	0.15	85	80	76	71	M4	18	1,680	840	50	51	51
WW-06-60-10	0.17	85	100	76	91	M4	18	1,680	840	50	68	68

[57] Height dimension minus the bearing clearance tolerance

Order example:
WW-06-30-06: fitted guide carriage
WWC-06-30-06: Mono-Slide guide carriage

Can be combined with:

WSQ-...

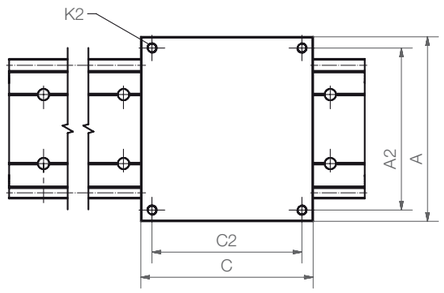

WSXQ-...

Suitable liner materials:


iglidur® J200

drylin® W profile guides | Product range

Mono-slide carriage, anodised aluminium



Order key
complete system ▶ Page 878

Type	Size

WWC-10-40-10

Mono-Slide guide carriage	Shafts-Ø [mm]	Profile width	Length of carriage

Technical data and dimensions [mm]

Part No.	Weight	A	C	A2	C2	K2	H2[57]	Stat. load capacity				
		Width	Length				±0.2	Coy	Coz	Mox	Moy	Moz
	[kg]							[N]	[N]	[Nm]	[Nm]	[Nm]
WWC-06-30-06	0.07	54	60	45	51	M4	16	1,680	840	25	34	34
WWC-06-30-08	0.09	54	80	45	71	M4	16	1,680	840	25	51	51
WWC-06-30-10	0.12	54	100	45	91	M4	16	1,680	840	25	68	68
WWC-10-40-10	0.21	73	100	60	87	M6	22	4,800	2,400	96	170	170
WWC-10-40-15	0.32	73	150	60	137	M6	22	4,800	2,400	96	290	290
WWC-10-40-20	0.42	73	200	60	187	M6	22	4,800	2,400	96	410	410
WWC-10-80-10	0.28	107	100	94	87	M6	22	4,800	2,400	178	170	170
WWC-10-80-15	0.42	107	150	94	137	M6	22	4,800	2,400	178	290	290
WWC-10-80-20	0.56	107	200	94	187	M6	22	4,800	2,400	178	410	410
WWC-10-120-10	0.36	153	100	140	87	M6	22	4,800	2,400	288	170	170
WWC-10-120-15	0.54	153	150	140	137	M6	22	4,800	2,400	288	290	290
WWC-10-120-20	0.72	153	200	140	187	M6	22	4,800	2,400	288	410	410
WWC-16-60-10	0.41	104	100	86	82	M8	30	8,400	4,200	240	270	270
WWC-16-60-15	0.61	104	150	86	132	M8	30	8,400	4,200	240	480	480
WWC-16-60-20	0.80	104	200	86	182	M8	30	8,400	4,200	240	690	690
WWC-20-80-15	0.99	134	150	116	132	M8	40	12,800	6,400	525	670	670
WWC-20-80-20	1.33	134	200	116	182	M8	40	12,800	6,400	525	990	990
WWC-20-80-25	1.66	134	250	116	232	M8	40	12,800	6,400	525	1,250	1,250

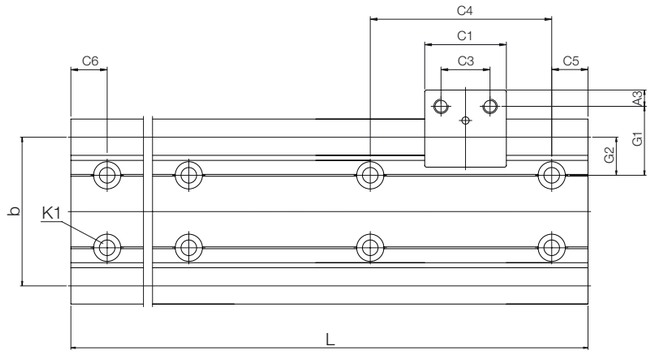
[57] Height dimension minus the bearing clearance tolerance

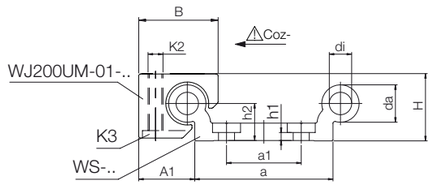
Suitable liner materials:

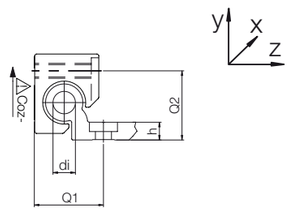

iglidur® J

drylin® W profile guides | Product range

Double rail, round, hard-anodised aluminium







This orientation not possible for WS-10-40/WS-10-80/WS-10-120

Hard anodised surfaces
▶ Page 840

Curved rail profiles
▶ Page 844

Technical data and dimensions [mm]

Part No.	Weight	H[57]	da	di	L	a	A1	b	h	h1	h2	G1	G2	a1[62]	Q1	Q2
	[kg/m]	±0.25			max.											
WS-10-40	1.00	18	10-0,1	–	4,000	40-0,5	16.5	40	5.5	5.5[58]	9	30	20	–	–	–
WS-10-80	1.50	18	10-0,1	–	4,000	74-0,7	16.5	74	5.5	5.5[58]	9	27	17	40	–	–
WS-10-120	2.02	18	10-0,1	–	4,000	120-0,7	16.5	120	5.5	5.5[58]	9	30	20	80	–	–
WS-16-60	1.96	27	16-0,1	8.0	4,000	54-0,5	25.0	58	7.5	3.5	14	43	29	–	32	28
WS-20-80	3.30	36	20-0,1	10.2	4,000	74-0,7	30.0	82	9.5	4.5	20	38	21	40	37	37
WS-25-120	5.8	45	25-0,15	14.0	4,000	120-0,7	37.5	131	11.5	5.5	25	46.5	25.5	80	45.5	46

[57] Height dimension minus the bearing clearance tolerance

[62] WS-10-40/-16-60 a single row of mounting holes down the centreline; WS-10-80/-10-120/-20-80/-25-120 two parallel rows of mounting holes

Part No.	C4	C5		C6		K1 for screw	Iy	Iz	Wby	Wbz
		min.	max.	min.	max.	DIN 912	[mm⁴]	[mm⁴]	[mm³]	[mm³]
WS-10-40	120	20	79.5	20	79.5	M6[58]	91,000	5,100	3,600	590
WS-10-80	120	20	79.5	20	79.5	M6[58]	388,000	6,100	9,200	650
WS-10-120	120	20	79.5	20	79.5	M6[58]	1,303,000	7,100	20,000	720
WS-16-60	120	20	79.5	20	79.5	M8	367,600	26,100	9,900	1,900
WS-20-80	120	20	79.5	20	79.5	M8	1,080,000	78,700	21,000	4,000
WS-25-120	150	25	99.5	25	99.5	M10	4,867,000	215,000	62,400	8,500

Standard hole pattern: C5=C6, please order with drawing for C5≠C6.

[58] Plain holes

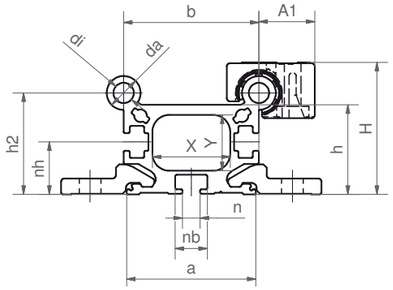
drylin® W profile guides | Product range

High profile rail, round, hard-anodised aluminium

WSX-10-40

WSX-10-80

WSX-16-60



Technical data and dimensions [mm]

Part No.	Weight	H[57]	da	di	L	a	A1	b	h	h2	s	K1	C1	C3	G1
	[kg/m]	±0.25	–0.1		max.										
WSX-10-40	1.3	39 ±0.02	10	6	4,000	38.2	16.5	40	26.5	30	60	M6	29	16	30
WSX-10-80	2	39 ±0.02	10	6	4,000	72.2	16.5	74	26.5	30	94	M6	29	16	47
WSX-16-60	4.2	65 ±0.02	16	6	4,000	62	25	58	49	52	100	M8	36	18	50

nh	n	nb	X	Y	Iy	Iz
					[mm⁴]	[mm⁴]
15.5	5.2	9.5	23	16	97,560	54,910
15.5	5.2	9.5	55	16	483,653	83,613
27.6	10	15.4	40	27.0	540,876	773,489

[57] Height dimension minus the bearing clearance tolerance

Order key

Type	Length
WS-10-40	-3000

Profile rail, round | Shafts-Ø | Rail width [mm] | Rail length [mm]

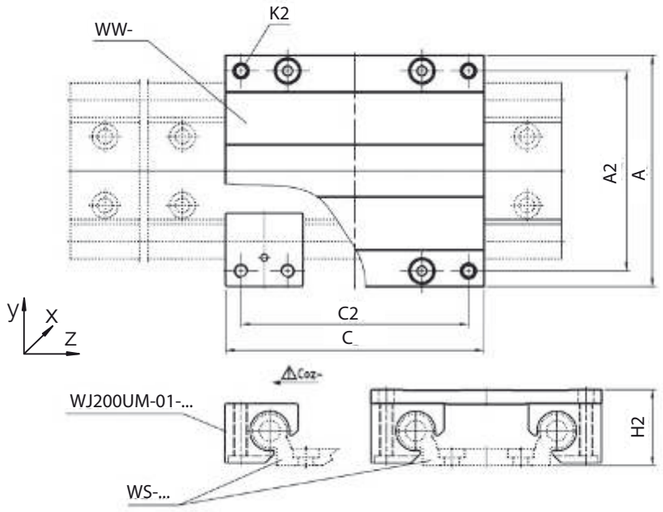
Order key

Type	Length
WS X-10-40	-4000

Profile rail | High profile rail | Shafts-Ø | Rail width [mm] | Rail length [mm]

drylin® W profile guides | Product range

Assembled guide carriage, round



In the following sizes, also available with adjustable clearance:
10, 16 and 20; order example: WWE-10-40-15

Technical data and dimensions [mm]

Part No.	Weight	A	C	A2	C2	K2	H2[57]	Stat. load capacity				
		Width	Length				±0.25	Coy	Coz	Mox	Moy	Moz
	[kg]							[N]	[N]	[Nm]	[Nm]	[Nm]
WW-10-40-10	0.29	73	100	60	87	M6	24	4,800	2,400	96	170	170
WW-10-40-15	0.34	73	150	60	137	M6	24	4,800	2,400	96	290	290
WW-10-40-20	0.40	73	200	60	187	M6	24	4,800	2,400	96	410	410
WW-10-80-10	0.34	107	100	94	87	M6	24	4,800	2,400	178	170	170
WW-10-80-15	0.42	107	150	94	137	M6	24	4,800	2,400	178	290	290
WW-10-80-20	0.50	107	200	94	187	M6	24	4,800	2,400	178	410	410
WW-10-120-10	0.41	153	100	140	87	M6	24	4,800	2,400	288	170	170
WW-10-120-15	0.54	153	150	140	137	M6	24	4,800	2,400	288	290	290
WW-10-120-20	0.66	153	200	140	187	M6	24	4,800	2,400	288	410	410
WW-16-60-10	0.71	104	100	86	82	M8	35	8,400	4,200	240	270	270
WW-16-60-15	0.84	104	150	86	132	M8	35	8,400	4,200	240	480	480
WW-16-60-20	0.97	104	200	86	182	M8	35	8,400	4,200	240	690	690
WW-20-80-15	1.20	134	150	116	132	M8	44	12,800	6,400	525	670	670
WW-20-80-20	1.30	134	200	116	182	M8	44	12,800	6,400	525	990	990
WW-20-80-25	1.50	134	250	116	232	M8	44	12,800	6,400	525	1,250	1,250
WW-25-120-15	2.54	195	150	173	128	M10	55	19,200	9,600	1,250	880	880
WW-25-120-20	2.80	195	200	173	178	M10	55	19,200	9,600	1,250	1,360	1,360
WW-25-120-25	3.07	195	250	173	228	M10	55	19,200	9,600	1,250	1,840	1,840

[57] Height dimension minus the bearing clearance tolerance

Can be combined with:

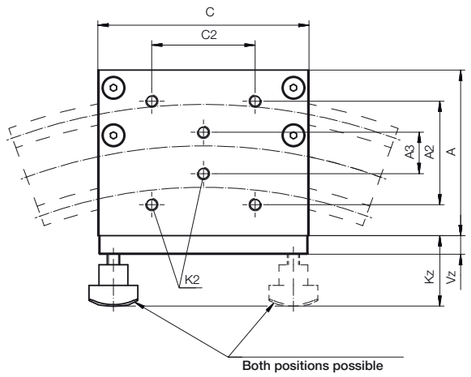
WS-... WS-...-ES-FG WSX-...

Suitable liner materials:

iglidur® J iglidur® J200 iglidur® X iglidur® E7 iglidur® A180

drylin® W profile guides | Product range

Carriage for curved rail



Order key

complete system ▶ Page 878

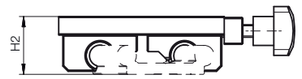
Type	Size	Option
WWB	10-40-10	HKA

Guide carriages for curved rails	Shafts-Ø	Profile width [mm]	Length of carriage [mm]	with manual clamp

Options:
Blank: Standard
HKA: With manual clamp

Curved rail profiles

▶ Page 844



Technical data and dimensions [mm]

Part No.	Weight	A	C	A2	A3	C2	K2	H2	Vz	Kz
		±0.25	–0.1							
	[kg/m]									
WWB-10-40-10	310	80	102	50	20	50	M6	28	–	–
WWB-10-40-10-HKA	310	80	102	50	20	50	M6	28	9	34

Can be combined with:

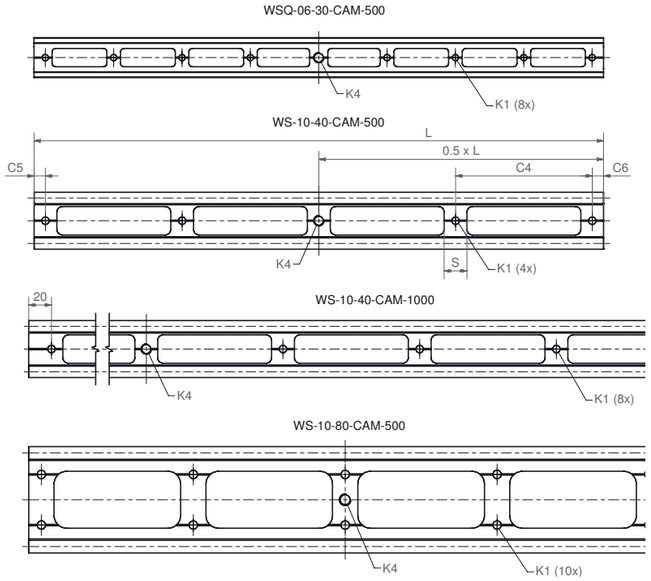
WS-... WS-...-ES-FG

More information
▶ www.igus.eu/curved

drylin® W profile guides | Product range

Double rail, reduced weight, hard-anodised aluminium

- 30 % weight reduction through machined recesses
- Matching housing bearing and carriage made from plastic, aluminium, die-cast zinc or stainless steel



drylin® W guide rail – Dimensions [mm]

Part No.	Identical profile	L	C4	C5	C6	S	K1 for screw DIN 192	K4	Weight [g]
WSQ-06-30-CAM-500	WSQ-06-30	500	60	10	10	12	M5	3/8" 16-UNC[63]	159
WS-10-40-CAM-500	WS-10-40	500	120	10	10	20	M6	3/8" 16-UNC[63]	353
WS-10-40-CAM-1000	WS-10-40	1,000	120	20	20	20	M6	3/8" 16-UNC[63]	706
WS-10-80-CAM-500	WS-10-80	500	120	10	10	20	M6	3/8" 16-UNC[63]	482

[63] * UNC = Unified National Coarse, Anglo-American. Screw thread standard

Application example:
Camera slider with standard rail and carriage
▶ www.igus.eu/camera

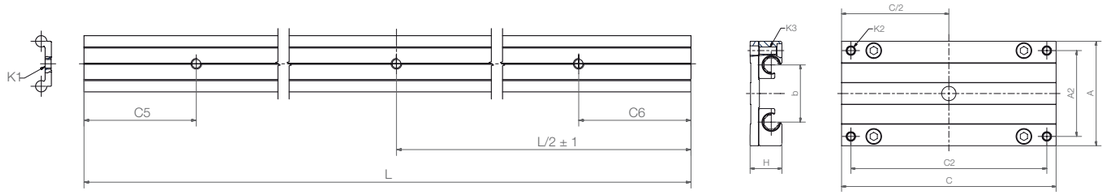
drylin® W profile guides | Product range

Double rail/carriage for camera slider

- Wear resistant, smooth and quiet motion
- Adjustable brake level due to the turn-to-fit function
- Easy and fast assembly
- Further dimensions such as standard rails WS ▶ Page 870

Technical options:

- Adjustable bearing housing ▶ Page 861
- Manual clamp ▶ Page 874



drylin® W special rails with 3 holes, 3/8" thread Dimensions [mm]

Part No.	Size	L	C5 ± 1	C6 ± 1	Weight [kg/m]
WSQ-06-30-SL-1000	06	1,000	100	100	0.45
WSQ-06-30-SL-1500	06	1,500	100	100	0.45
WS-10-40-SL-1000	10	1,000	100	100	1.00
WS-10-40-SL-1500	10	1,500	100	100	1.00
WS-10-80-SL-1000	10	1,000	100	100	1.50
WS-10-80-SL-1500	10	1,500	100	100	1.50
WS-16-60-SL-1000	16	1,000	100	100	1.96
WS-16-60-SL-1500	16	1,500	100	100	1.96
WS-20-80-SL-1000	20	1,000	100	100	3.30
WS-20-80-SL-1500	20	1,500	100	100	3.30

drylin® W complete carriage with ø10 mm through hole for 3/8" thread Dimensions [mm]

Part No.	Size	C	A
WW-06-30-06-SL	06	60	54
WW-06-30-08-SL	06	80	54
WW-06-30-10-SL	06	100	54
WW-10-40-10-SL[64) 65)]	10	100	73
WW-10-40-15-SL[64) 65)]	10	150	73
WW-10-40-20-SL[64) 65)]	10	200	73
WW-10-80-10-SL[64) 65)]	10	100	107
WW-10-80-15-SL[64) 65)]	10	150	107
WW-10-80-20-SL[64) 65)]	10	200	107

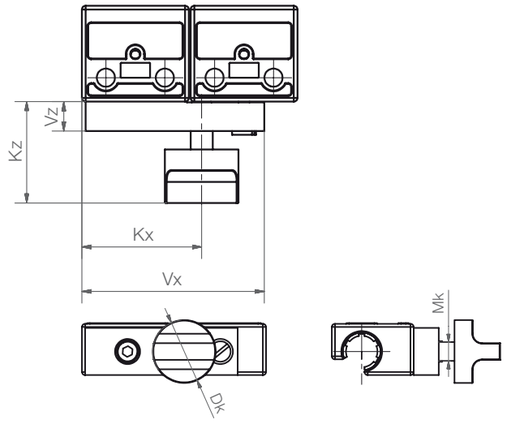
Part No.	Size	C	A
WW-16-60-10-SL[65)]	16	100	104
WW-16-60-15-SL[64) 65)]	16	150	104
WW-16-60-20-SL[64) 65)]	16	200	104
WW-20-80-15-SL[64) 65)]	20	150	134
WW-20-80-20-SL[64) 65)]	20	200	134
WW-20-80-25-SL[64) 65)]	20	250	134

[64] Optional with integrated manual clamp (add suffix "-HKA")

[65] Optional with adjustable "Turn-To-Fit" bearing (Order example: WWE-…)

drylin® W profile guides | Product range

Accessories: Manual clamp for simple positioning



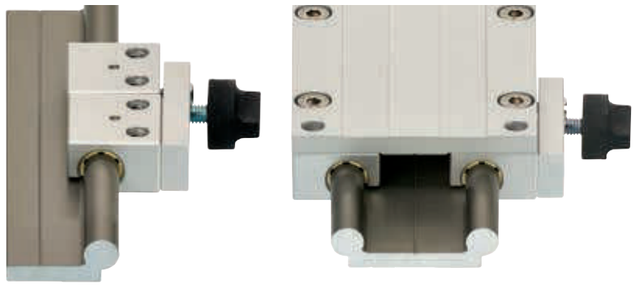
Technical data and dimensions [mm]

Part No.	Mk	Vx	Kx	Vz	Kz	Dk	Min. holding strength [67]	Min. tightening torque
WHKA-10[66]	M6	50	33	8	28	20	30 N	0.8 Nm
WHKA-16[66]	M8	72	41	10	31	28	60 N	1.5 Nm
WHKA-20[66]	M8	90	62	10	31	28	70 N	1.5 Nm
WHKA-25[66]	M8	96	65	12	31	28	70 N	1.5 Nm

[66] The manual clamp is also available assembled as a complete carriage (suffix "-HKA", order example WW-10-40-10-HKA). Dimensions complete carriage WW ▶ Page 870

[67] Condition: dry rail surface

Accessories: Aluminium manual clamp



Technical data and dimensions [mm]

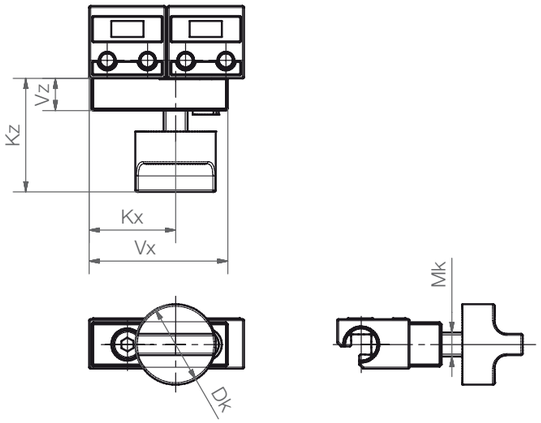
Part No.	Mk	Vx	Kx	Vz	Kz	Dk	Min. holding strength[67]	Min. tightening torque
WHKA-10-AL[68]	M6	50	33	8	28	20	30 N	0.8 Nm
WHKA-16-AL[68]	M8	72	41	10	31	28	60 N	1.5 Nm
WHKA-20-AL[68]	M8	90	62	10	31	28	70 N	1.5 Nm
WHKA-25-AL[68]	M8	96	65	12	31	28	70 N	1.5 Nm

[67] Condition: dry rail surface

[68] The manual clamp is also available assembled as a complete carriage (suffice "-AL-HKA", order example: WW-10-40-10-HKA). Dimensions complete carriage WW ▶ Page 870

drylin® W profile guides | Product range

Accessories: Manual clamp for square rails



Technical data and dimensions [mm]

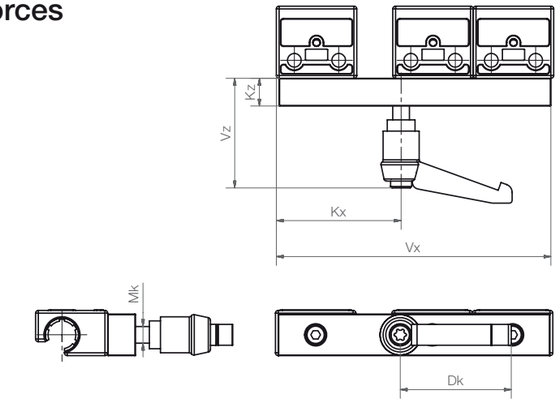
Part No.	Mk	Vx	Kx	Vz	Kz	Dk	Min. holding strength[67]	Min. tightening torque
WHKAQ-06[133] [137]	M6	34.5	21.5	8	28	20	30 N	0.8 Nm
WHKAQ-10[137]	M6	50	33	8	28	20	30 N	0.8 Nm
WHKAQ-16[137]	M8	72	41	10	31	28	60 N	1.5 Nm
WHKAQ-20[137]	M8	90	62	10	31	28	70 N	1.5 Nm

[67] Condition: dry rail surface

[133] Also Aluminium version available, suffix "-AL"

[137] The manual clamp is also available assembled as a complete carriage (suffix "-HKAQ", order example WW-06-30-06-HKAQ). Dimensions complete carriage WW ▶ Page 866

Accessories: Manual clamp for higher forces



Technical data and dimensions [mm]

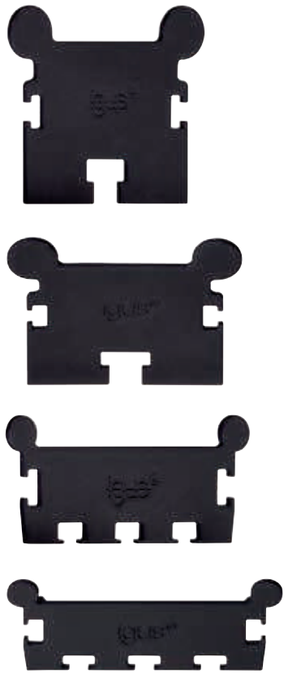
Part No.	Mk	Vx	Kx	Vz	Kz	Dk	Min. holding strength[67]	Min. tightening torque
WHKD-1010[69]	M6	100	45	40	10	40	70 N	2.5 Nm
WHKD-1015[69]	M6	150	95	40	10	40	70 N	2.5 Nm
WHKD-1615[69]	M8	150	81	40	12	40	90 N	3.5 Nm
WHKD-1620[69]	M8	200	131	40	12	40	90 N	3.5 Nm
WHKD-2015[69]	M8	150	63	40	12	40	90 N	3.5 Nm
WHKD-2020[69]	M8	200	113	40	12	40	90 N	3.5 Nm

[67] Condition: dry rail surface

[69] The manual clamp is also available assembled as a complete carriage (suffix "-HKA", order example WW-10-40-10-HKD). Dimensions complete carriage WW ▶ Page 870

drylin® W profile guides | Product range

Accessories: End caps



Part No.:
WSX-063001-EC
WSX-104001-EC
WSX-108001-EC
WSX-166001-EC

End caps for drylin® high profile rails WSX

Suitable for drylin® W high profile rails, the new end caps also offer, besides an elegant rail end, a practical protection against the ingress of dust, dirt or chips. Available in 4 installation sizes, simply click on the side, and done.

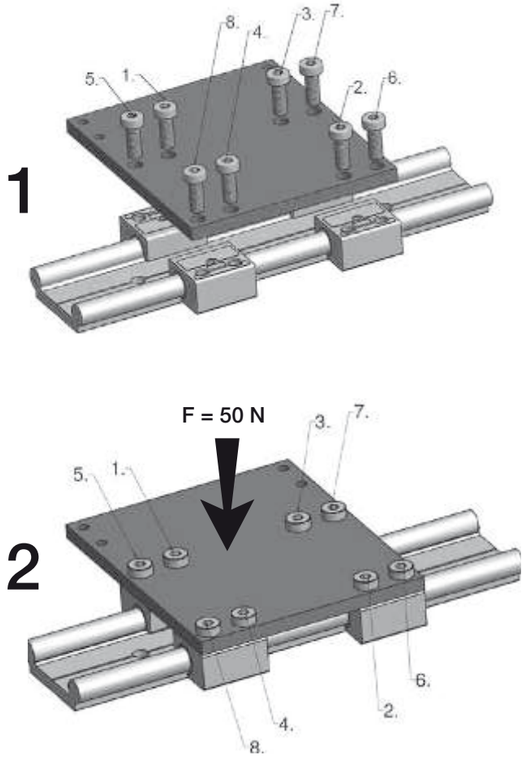
- For drylin® W high profile rails WSX ▶ Page 869
- 4 installation sizes
- Protection of the hollow chambers against the entry of foreign particle
- Easy to fit
- End caps for cutting edges

drylin® W replacement polymer liners

Size	Material	Housing bearing	Tooth profile	Part No. liners
10/16/20/25	iglidur® J200	WJ200UM-01-Ø	round	J200UMO-01-Ø
10/16/20/25 (floating bearing)	iglidur® J200	WJ200UM-01-Ø LL	round	J200UMO-01-Ø LL
10/16/20	iglidur® X	WXUM-01-Ø	round	XUMO-01-Ø
10 (adjustable)	iglidur® J	WJUME-01-10	round	JUME-01-10
16/20 (adjustable)	iglidur® J200	WJ200UME-01-Ø	round	J200UME-01-Ø
6/10/16/20	iglidur® J200	WJ200QM-01-Ø	square	J200QM-01-Ø
6/10/16/20 (floating bearing)	iglidur® J200	WJ200QM-01-Ø LLY/LLZ	square	J200QM-01-LL[70)]

[70)] Depending on assembly direction, can be used as a y or z floating bearing

drylin® W profile guides | Installation instructions

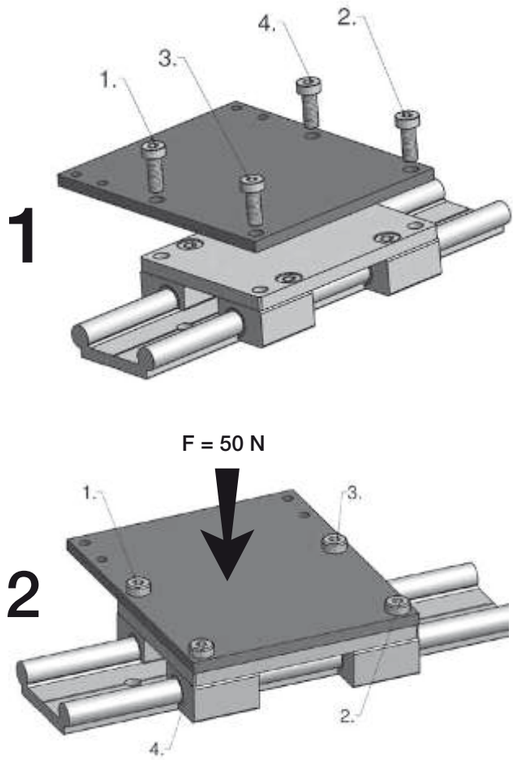


drylin® W rail with housing bearings

During the installation process, a compressive force of minimum 50 N is recommended on the centre of the mounting surface. Alternatively, a plastic hammer/soft face hammer can be used during and after the mounting to align the bearing.

Installation size	Max. tightening torque [Nm]	Thread
W-06	1.5	M4
W-10	6.0	M6
W-16	15.0	M8
W-20	15.0	M8
W-25	30.0	M10

Tightening torque for drylin® connections between metal parts ▶ Page 879



drylin® W rail with complete slide system

During the installation process, a compressive force of minimum 50 N is recommended on the centre of the mounting surface. Alternatively, a plastic hammer/soft face hammer can be used during and after the mounting to align the bearing.

Installation size	Max. tightening torque [Nm]	Thread
W-06	1.5	M4
W-10	6.0	M6
W-16	15.0	M8
W-20	15.0	M8
W-25	30.0	M10

Please refer to the drawing for the correct screw assembly sequence.

Order key complete system:

WK-10-40-15-01-1500-HKA C5=20

Complete system	Shaft diameter	Rail width	Length of carriage	Number of complete carriages	Rail length [mm]	Carriage options	Rail options

Rail options

Leave blank: Standard rail with attachment holes

C5= … mm: only with a non-symmetrical hole pattern

Carriage options

Blank: Standard

-HKA: Carriage with assembled manual clamp (available installation sizes/ lengths ▶ **From page 874**)

-HKA-AL: Carriage with assembled manual clamp (Housing made of aluminium)

Model

WK: Complete system with rails and carriage

WS: Individual rail

W(...)UM: Individual housing bearing

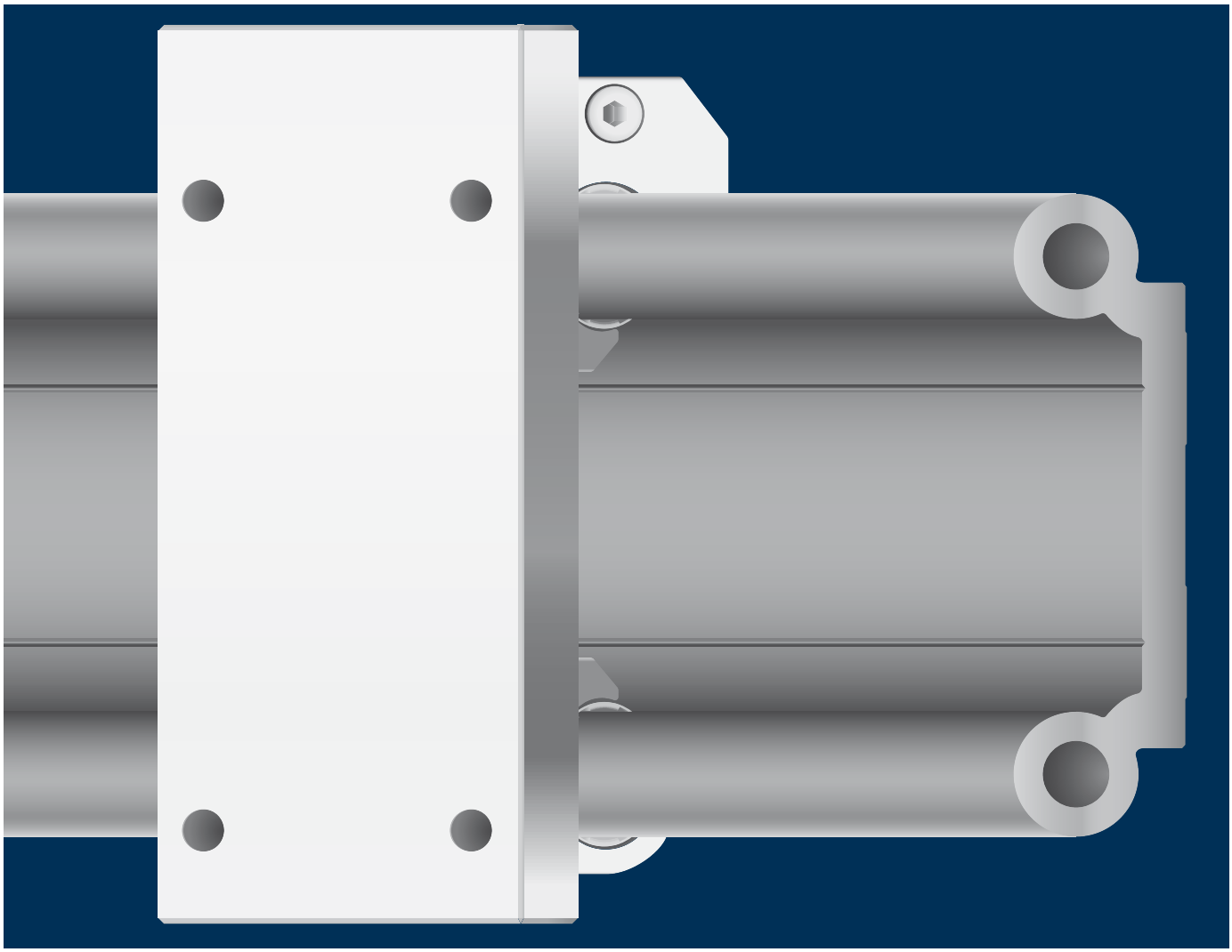
WW: Complete carriage

Order example:

WK-10-40-15-01-1500: fully assembled linear guide system comprising a rail (WS-10-40) with a length of 1,500 mm and a width of 40 mm plus a guide carriage (WW-10-40-15) with a length of 150 mm and a width of 73 mm.

Valid for guide carriages:

Standard, symmetrical hole pattern: C5=C6; in the case of C5≠C6, please order with a drawing.
Optional: rails without bores available (suffix "UNGEBOHRT").



drylin® linear technology – drylin® W hybrid bearings

Lubrication-free roll and slide

Low driving forces

For manual adjustment

Absorption of offset forces

Single bearings and complete carriages

drylin® W hybrid bearings | Advantages

Hybrid bearings from the drylin® W linear construction kit

Combined sliding and rolling for low driving forces

drylin® hybrid roller bearings offer a unique lubrication-free combination of plain and roller bearings. The integrated rollers achieve low driving forces, while the sliding effect simultaneously protect against lateral forces. This makes drylin® hybrid bearings ideal for manual adjustments in door applications (e.g. machine doors, safety doors), but also in mobile control panels. The efficient design using plastics with zinc die-casting also cuts costs. Hybrid bearings can be used on various hard-anodised aluminium profiles from the drylin® W linear construction kit.

- Smooth operation
- Low-profile
- Offset and abuse forces are easily absorbed by sliding elements
- Location on rail ensures reliability
- Matching guide rails made from hard anodised aluminium
- Low driving force required
- Cost-effective

Typical application areas

- Machine doors
- Safety doors
- Control panels

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

Service life calculation
▶ **www.igus.eu/drylin-expert**

Tightening torque for drylin® connections between metal parts
▶ **Page 845**

drylin® W hybrid bearings | Product overview

Slide and roll

Hybrid bearings with single roller

- Lubrication-free due to bearing supported plastic roller
- Low driving forces
- Can be combined with drylin® W single and double rails

▶ **Page 884**

Hybrid bearings with double rollers

- Low coefficient of rolling friction is still maintained with deviating load directions
- Increased load capacity
- Variable installation position

▶ **Page 885**

Hybrid bearing made from stainless steel with single roller

- Corrosion-free due to stainless steel housing
- Easy to clean

▶ **Page 886**

Hybrid bearing made from stainless steel with double rollers

- Corrosion-free due to stainless steel housing
- High media resistance

▶ **Page 886**

Complete carriages WWR

- Complete carriage for lateral adjustments
- Guidance via a double rail without support
- Also available as a short, compact carriage for variable multi-carriage solution

▶ **Page 890**

Complete carriages WWH

- Complete carriage with 4 integrated hybrid bearings
- For horizontal installation
- Variable carriage lengths and widths

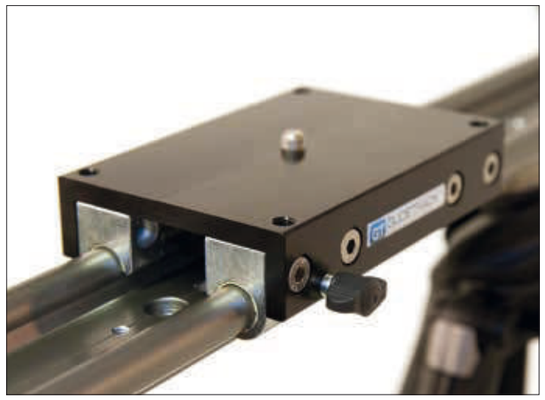
▶ **Page 888**

Suitable rail profiles
▶ **From page 863**

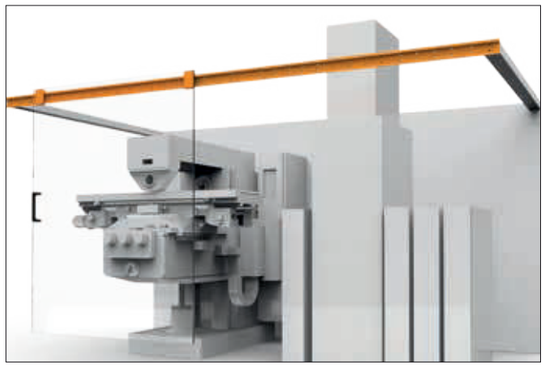
Camera slider
▶ **From page 873**

The smooth, low noise operation and the enormous cost advantages are obtained by the use of the drylin® linear bearings on the hard-anodised guide shaft to guide the doors of machine tools.

Adjustment of control panel unit



Camera stand with drylin® WJRM hybrid bearings for far smoother running. Vertical movements are now also possible.



The new drylin® W hybrid carriage with "door opener" function.

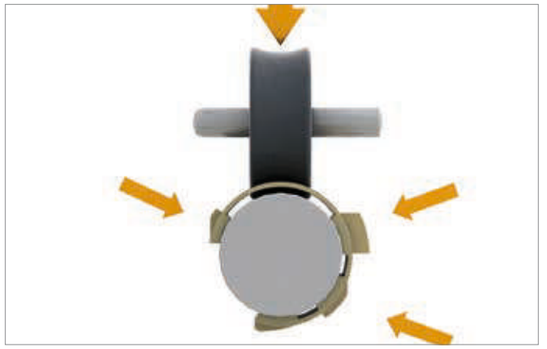
drylin® W hybrid bearings in combination with drylin® W profile guide systems offer optimum opportunities to construct dollies and sliders.

drylin® W hybrid bearings type 01

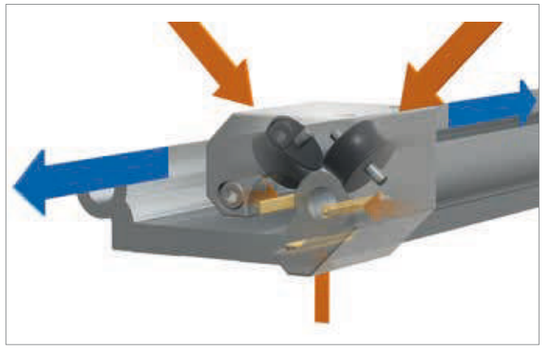
The drylin® W hybrid bearings from the WJRM-01-... type series are each equipped with a bearing-supported plastic roller. The bearing housing is available in 3 installation sizes and can be used with drylin® W single or double shaft rails in 2 installation positions. The hybrid bearing should be installed so that the bearing load is applied in the roll direction. Other load directions are possible but create greater displacement forces.

drylin® W hybrid bearings type 21

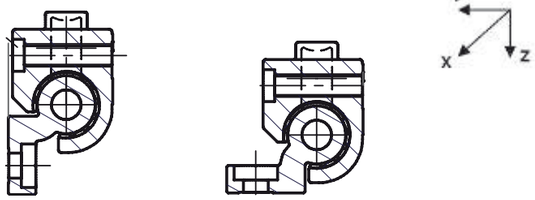
The drylin® W hybrid bearings in the WJRM-21-... type series are each equipped with two bearing-supported plastic rollers at an angle of 70° or 80°. Available in 3 sizes, they can be combined with drylin® W single and double shaft rails. The double roller bearings offer a higher load capacity than with a vertical bearing load on the installation area (y-direction). The low coefficient of rolling friction is still maintained with load directions that slightly deviate from this.



Forces absorbed by hybrid bearing



Forces absorbed by hybrid double roller bearing

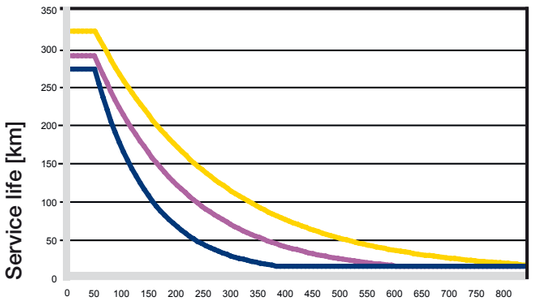


Installation position 01

Installation position 02

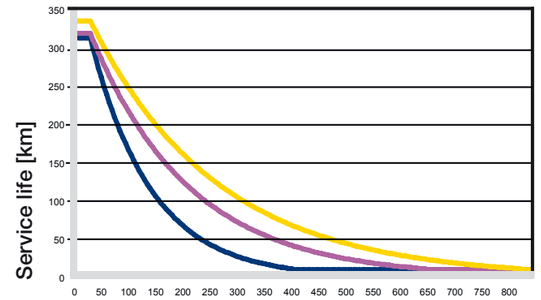
Installation position WJRM-01-...

Installation position WJRM-21-...



Load in y-direction (N)

WJRM-01-10 WJRM-01-16 WJRM-01-20

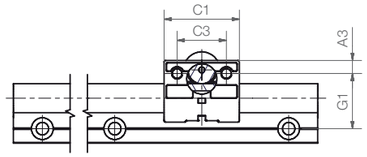


Load in y-direction (N)

WJRM-21-10 WJRM-21-16 WJRM-21-20

drylin® W hybrid bearings | Product range

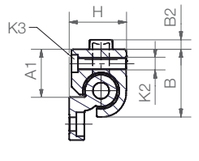
Hybrid bearings with a bearing-supported plastic roller



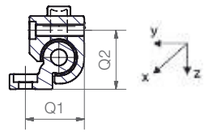
Order key

Type	Size
WJRM-01-10	

Hybrid bearings | With single roller | Size 10



Installation position 01



Installation position 02

Installation position 02 in installation size ø10 when using a WJRM-02-10 hybrid bearing

Technical data and dimensions [mm]

Part No.	Stat. load capacity Co	Dyn. load capacity Cz+ at total running distance [km]			F · v
		10	100	200	max.
	[N]	[N]	[N]	[N]	[N · m/s]
WJRM-01-10[71)]	250	250	90	50	50
WJRM-01-16	400	400	140	70	80
WJRM-01-20	550	550	200	100	80

Part No.	Coefficient of friction in z-direction	Weight	A1	A3	B	B2	C1	C3	G1	H	K2 for thread	K3 for screw	Q1	Q2
	[µ]	[g]												
WJRM-01-10[71)]	< 0.1	46	16.5	6.5	26	2.5	35	22	27	18	M6	M5	–	–
WJRM-01-16	< 0.1	131	25	9	34.5	5	48	30	33	27	M8	M6	32	28
WJRM-01-20	< 0.1	232	30	9	42.5	6	52	34	38	36	M8	M6	37	37

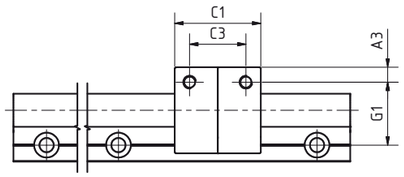
[71)] Deviating from WJRM-02-10, available with an expanded opening angle for installation position 02

Can be combined with:

WS-... | WS-..-ES-FG-... | WS-... | WS-...-ES-FG | WSX-...

drylin® W hybrid bearings | Product range

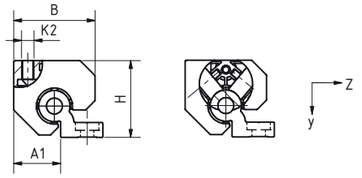
Hybrid double bearings with two angled plastic rollers



Order key

Type	Size
WJRM-21-10	

Hybrid bearings | Double roller bearing | Size 10



Technical data and dimensions [mm]

Part No.	Stat. load capacity Co	Dyn. load capacity Cz+ at total running distance [km]			F · v
		10	100	200	max.
	[N]	[N]	[N]	[N]	[N · m/s]
WJRM-21-10	350	350	125	70	50
WJRM-21-16	600	600	210	105	80
WJRM-21-20	840	840	300	150	80

Part No.	Coefficient of friction in z-direction	Weight	A1	A3	B	C1	C3	G1	H	K2 for screw
	[µ]	[g]								
WJRM-21-10	< 0.1	115	16.5	6.5	31	35	22	27	28	M6
WJRM-21-16	< 0.1	250	25	9	44	48	30	32	41	M8
WJRM-21-20	< 0.1	320	30	9	52	52	34	38	49	M8

WJRM-21-10 and WJRM-21-16: 70° angle between the rollers/WJRM-21-20: 80° angle between the rollers

WJRM-21-... optionally available with hand clamp, suffix "-HKA"

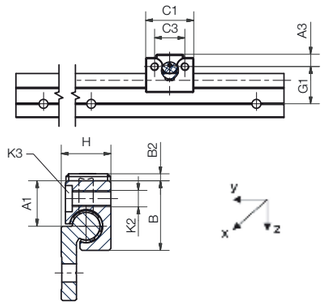
Can be combined with:

WS-... | WS-..-ES-FG-... | WS-... | WS-...-ES-FG | WSX-...

drylin® W hybrid bearings | Product range

Hybrid bearing made form stainless steel

WJRM-01 with single roller

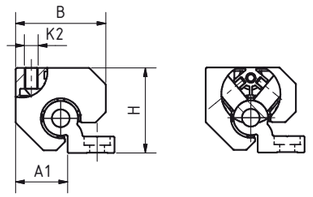


Order key

Type	Size	Material
WJRM-01-10	-	ES
Hybrid bearings	With single roller	Size 10	Stainless steel

Material
ES: Stainless steel 1.4571 (AISI 316Ti)
ES-FG: Stainless steel precision casting 1.4408

WJRM-21 with double roller



Order key

Type	Size	Material
WJRM-21-20	-	ES
Hybrid bearings	Double roller bearing	Size 20	Stainless steel

Material
ES: Stainless steel 1.4571 (AISI 316Ti)
ES-FG: Stainless steel precision casting 1.4408

Technical data and dimensions [mm]

Part No.	Stat. load capacity Co	Dyn. load capacity Cz+ at total running distance [km]			F · v
		10	100	200	Max.
	[N]	[N]	[N]	[N]	[N · m/s]
WJRM-01-10-ES-FG	250	250	90	50	50
WJRM-21-20-ES-FG	840	840	300	150	80

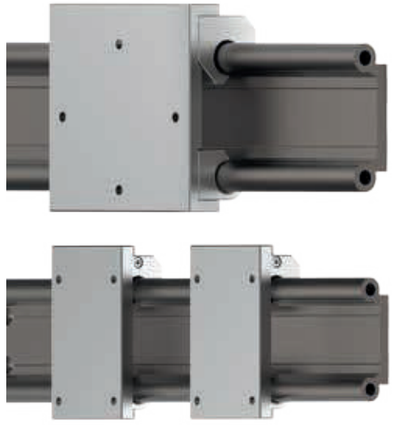
Part No.	Coefficient of friction in z-direction	Weight	A1	A3	B	B2	C1	C3	G1	H	K2 for thread
	[µ]	[g]									
WJRM-01-10-ES-FG	< 0.1	57	16.5	6.5	26	–	35	35	22	18	M6
WJRM-21-20-ES-FG	< 0.1	504	16.5	6.5	31	22	22	27	28	M6	M6

Can be combined with:

WS-... WS-..-ES-FG-... WS-... WS-...-ES-FG WSX-...

drylin® W hybrid bearings | Product range

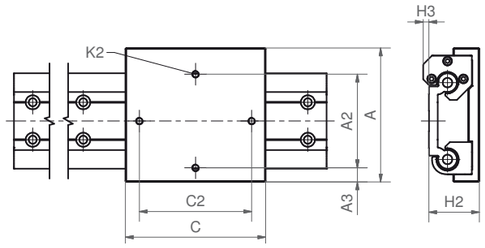
Hybrid carriages for lateral installation

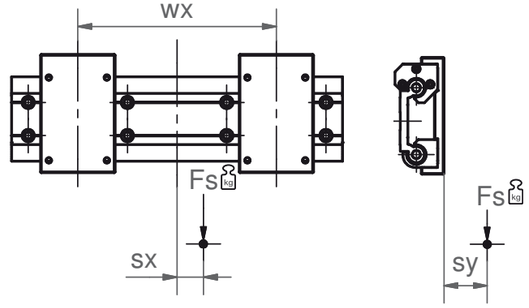


Order key

Type	Size	Option
WWR-21-80	-	01
drylin® W	Hybrid carriage	Double roller bearing	Installation size	Compact

Options:
01: Carriage, short design
15: Complete carriage, long design





Technical data and dimensions [mm]

Part No.	A	C	A2	C2	K2	H2	A3	H3	sx min.	sx max.	sy min.	sy max.
	Width	Length				±0.17						
WWR-21-80-01	143	90	100	70	M8	54	15	6	-49	+49	-34	+34
WWR-21-80-15	143	150	100	120	M8	54	15	6	-wx/2	+wx/2	-34	+34

Order example:
WWH-10-40-10: Assembled hybrid carriage with 4 single roller hybrid bearings
WWR-21-80-01: Assembled single hybrid carriage as a "door opener" with 2 single roller hybrid bearings and 2 double roller hybrid bearings

Can be combined with:

WS-20-80 WS-...-ES-FG WSX-...

drylin® W hybrid bearings | Product range

Hybrid carriages with 4 double roller bearings

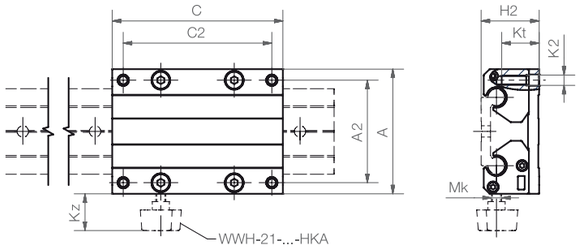
Order key

Type	Dimensions

WWH-21-10-40-10

drylin® W	Hybrid carriage	Double roller bearing	Installation size	Length of carriage [mm]

Optionally available with hand clamp, suffix "-HKA"



Technical data and dimensions [mm]

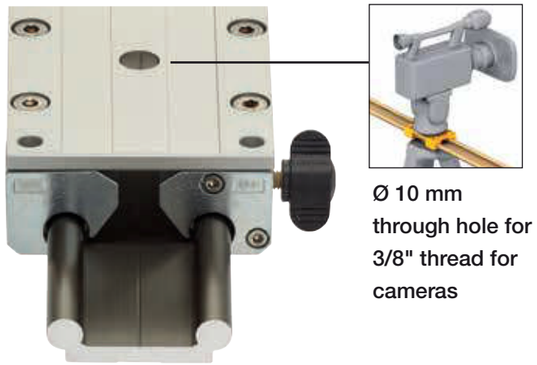
Part No.	Weight [kg]	A Width	C Length	A2	C2	K2	Kt	H2	Static load capacity Coy [N]
WWH-21-10-40-10	0.59	73	100	60	87	M6	21	34	1,400
WWH-21-10-40-15	0.64	73	150	60	137	M6	21	34	1,400
WWH-21-10-40-20	0.70	73	200	60	187	M6	21	34	1,400
WWH-21-10-80-10	0.64	107	100	94	87	M6	21	34	1,400
WWH-21-10-80-15	0.72	107	150	94	137	M6	21	34	1,400
WWH-21-10-80-20	0.80	107	200	94	187	M6	21	34	1,400
WWH-21-10-120-10	0.71	153	100	140	87	M6	21	34	1,400
WWH-21-10-120-15	0.84	153	150	140	137	M6	21	34	1,400
WWH-21-10-120-20	0.96	153	200	140	187	M6	21	34	1,400
WWH-21-16-60-10	1.31	104	100	86	82	M8	29	49	2,400
WWH-21-16-60-15	1.44	104	150	86	132	M8	29	49	2,400
WWH-21-16-60-20	1.57	104	200	86	182	M8	29	49	2,400
WWH-21-20-80-15	1.72	134	150	116	132	M8	24	57	3,360
WWH-21-20-80-20	1.82	134	200	116	182	M8	24	57	3,360
WWH-21-20-80-25	2.02	134	250	116	232	M8	24	57	3,360

Can be combined with:

WS-20-80 WS-...-ES-FG WSX-...

drylin® W hybrid bearings | Product range

Hybrid slider carriages with 4 double roller bearings



Ø 10 mm through hole for 3/8" thread for cameras

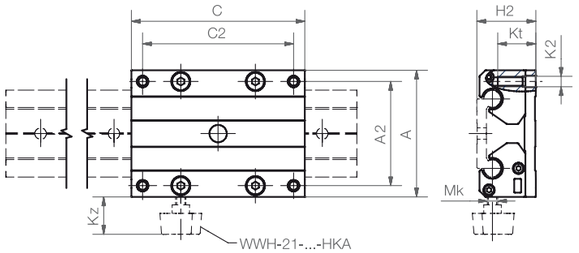
Order key

Type	Dimensions	Design

WWH-21-10-40-10-SL

drylin® W	Hybrid carriage	Double roller bearing	Installation size	Length of carriage [mm]	Slider carriage

Optionally available with hand clamp, suffix "-HKA"



Technical data and dimensions [mm]

Part No.	Weight [kg]	A Width	C Length	A2	C2	K2	Kt	H2	Static load capacity Coy [N]
WWH-21-10-40-10-SL	0.59	73	100	60	87	M6	21	34	1,400
WWH-21-10-40-15-SL	0.64	73	150	60	137	M6	21	34	1,400
WWH-21-10-40-20-SL	0.70	73	200	60	187	M6	21	34	1,400
WWH-21-10-80-10-SL	0.64	107	100	94	87	M6	21	34	1,400
WWH-21-10-80-15-SL	0.72	107	150	94	137	M6	21	34	1,400
WWH-21-10-80-20-SL	0.80	107	200	94	187	M6	21	34	1,400
WWH-21-16-60-10-SL	1.31	104	100	86	82	M8	29	49	2,400
WWH-21-16-60-15-SL	1.44	104	150	86	132	M8	29	49	2,400
WWH-21-16-60-20-SL	1.57	104	200	86	182	M8	29	49	2,400
WWH-21-20-80-15-SL	1.72	134	150	116	132	M8	24	57	3,360
WWH-21-20-80-20-SL	1.82	134	200	116	182	M8	24	57	3,360
WWH-21-20-80-25-SL	2.02	134	250	116	232	M8	24	57	3,360

Can be combined with:

WS-20-80 WS-...-ES-FG WSX-...

Can be combined with camera slider rails

▶ Page 873

drylin® W hybrid bearings | Product range

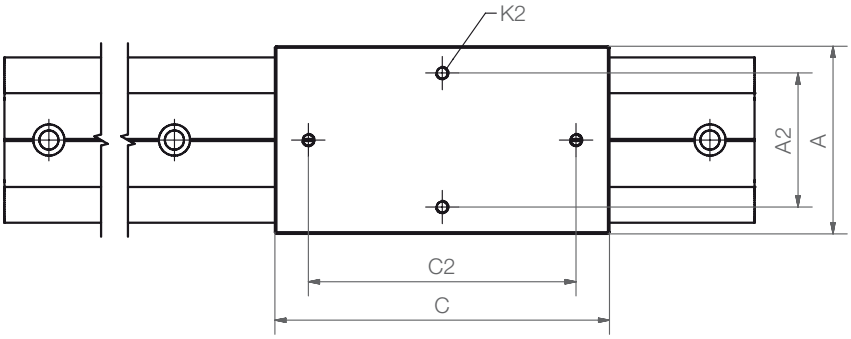
Hybrid carriages with 4 single roller bearings for horizontal installation

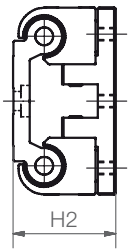
Order key

Type	Dimensions

WWH-10-40-10

drylin® W	Hybrid carriage	Installation size	Length of carriage [mm]





Technical data and dimensions [mm]

Part No.	Weight	A	A2	C	C2	K2	H2	Static load capacity				
								Coy	Coz	Mox	Moy	Moz
	[kg]						±0.17	[N]	[N]	[Nm]	[Nm]	[Nm]
WWH-10-40-10	0.35	58	40	100	80	M5	34	1,000	1,000	20	16	32
WWH-16-60-15	0.96	84	60	150	120	M6	46	1,600	1,600	45	38	77
WWH-20-80-25	1.78	114	90	250	220	M6	55	2,200	2,200	90	435	435

Can be combined with:

WS-...

WS-...-ES-FG


WSX-...

drylin® linear technology – drylin® N low-profile guide systems

- Low profile and lightweight
- Lubrication-free dry-tech® sliding elements
- Anodised aluminium rail
- High speed and acceleration possible
- Low-noise operation

drylin® N low-profile guide systems | Advantages

Light weight, maintenance free, corrosion resistant and low wear

Lubrication-free low-profile guides – drylin® N

The low-profile range drylin® N offers extremely low profiles in several widths. Like all drylin® products the carriages run without grease or oil in an anodised aluminium profile. The selected materials and the unique design make drylin® N a cost-effective and flexible guide system.

- Small mounting height between 6 and 12 mm
- Lightweight
- Many carriage options – also with preload
- Maintenance-free, dry operation
- Corrosion resistant
- Low wear with low coefficient of friction
- Rails in silver or black anodised

Typical application areas

- Agricultural machinery
- Automotive
- Medical technology
- Facade construction
- Packaging industry

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

max. +90 °C
min. -40 °C

17 mm – 80 mm

Service life calculation
▶ **www.igus.eu/drylin-expert**

Clean-Room
Cleanroom certificated
IPA Fraunhofer

RoHS 2002/95/EC
Free of toxins
ROHS 2002/95/EC

ESD compatible
(electrostatic discharge)

drylin® N low-profile guide systems | Product overview

Compact design in four different versions

Linear guide

- Four sizes: 17, 27, 40 and 80 mm
- Low profile, lightweight design
- Clear anodised (silver) or black anodised surfaces

▶ **From page 897**

Carriage – size 17

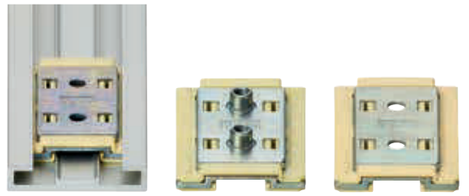
- Solid plastic made from high-performance polymer iglidur® J
- Compact for the smallest installation spaces
- Length of carriage up to 40 mm

▶ **Page 898**

Carriage – size 27

- Carriage with changeable sliding elements
- Sliding carriage with overmoulded sliding element
- Variable lengths and screw on options

▶ **Page 900**



Carriage – size 40

- Carriage with thread pin or plain hole
- Preload version available

▶ **Page 902**

Carriage – size 80

- Carriage with wide load-bearing surface
- Lubrication-free due to high-performance polymers iglidur® J/J200
- Low profile design

▶ **Page 904**

Telescopic system

- Continuous lengths up to 1,200 mm (total extension)
- Available with partial, total or over extension
- With locking mechanism if required

▶ **Page 906**

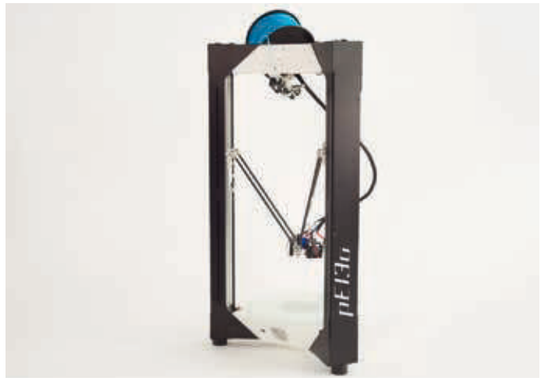
Accessories

- Manual clamp
- End caps

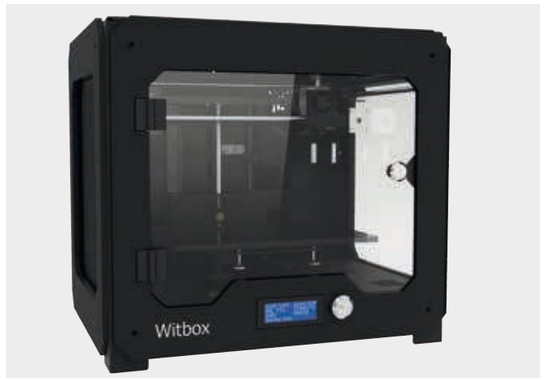
▶ **From page 895**

Based on drylin® N
drylin® SLN miniature linear module

▶ **From page 895**



The most important decision criterion for drylin® N low-profile guide systems is the low installation height.

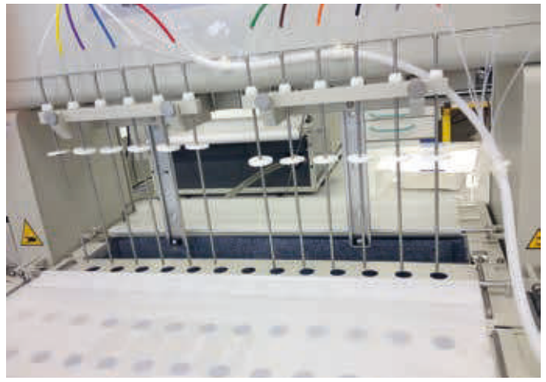


drylin® N low-profile guide systems and drylin® SD lead screw drives perform the height adjustments. As a black anodised profile, drylin® N blends into the design of the 3D printer.

In the redesigning of the table guidance for this automated teller, the focus was on a ready-to-install, cost-efficient, durable and lubrication free bearing and system.

The quiet, lubrication-free, low-profile design of drylin® N made it the ideal solution and enabled it to fulfil all relevant safety requirements. The rails could be connected to the desired length.

The removal unit is moved along the X-Y axis using the space-saving and cost-saving drylin® N low-profile guide. The rugged drylin® T guide system undertakes the vertical guidance.



The sampling device uses drylin® linear bearings to remove the products precisely and smoothly.

Expert for linear guides: System selection & service life calculation with CAD

Configure and calculate linear bearings – constantly expanded by new sizes and products

Easily calculate and configure the service life of your required linear guide with only a few clicks. Select a drylin® system and add the relevant environmental parameters. Then select the bearing size, carriage, number and position. Enter the distance between the rails and the mounting. Define more relevant parameter of the guidance and select a rail length. The results are displayed.

▶ www.igus.eu/drylin-expert

Download app now

Download on the App Store

drylin® CAD configurator: Generate complete 3D models for drylin® linear technology according to your specifications

The igus® CAD online configurator gives you the ability to design and save your linear guide as a system, individual components directly as a 3D model in all commonly used formats, or to have these sent by e-mail – free of charge and without registration.

▶ www.igus.eu/drylin-CAD

Floating bearings version

NW-... NW-... LLZ NW-... LLY NW-... LLYZ

LLZ Floating bearing in z-direction
LLY Floating bearing in y-direction
LLYZ Floating bearing in yz-direction

Floating bearing	NW-17	NW-27	NW-40	NW-80
LLY	0.6	0.45	0.4	0.6
LLZ	0.5	0.8	0.8	0.8
LLYZ	Y: 0.6 Z: 0.5	Y: 0.3 Z: 0.4	Y: 0.4 Y: 0.8	Y: 0.6 Y: 0.8

Technical details on floating bearings
▶ Page 845
The 2:1 Rule ▶ page 845

Technical options for drylin® low-profile guide systems

Clip-on sliding elements

Depending on the size, up to 3 lubrication-free sliding elements made from the high-performance polymer iglidur® J are clipped on around the zinc die-cast carriage body. These can be changed quickly and easily at any time and the zinc die-cast carriages can be reused. A set of appropriate sliding elements is available for every clip-on carriage (item no. NEK... ▶ page 898).

Overmoulded sliding elements

With this carriage type, the zinc die-cast body is made as an integral part of the high-performance polymer J/J200 during the injection moulding process. For the user, this manufacturing process offers the benefit that the sliding surfaces are permanently connected to the carriage. This makes it quicker to install the carriages in the profile. Mass storage is possible, including in the form of bulk goods, as the sliding elements cannot come loose. It is not possible to retrofit sliding elements; the carriages must be entirely replaced at the end of their service life.

Preload function

The use of sliding elements with an integrated spring preload function prevents the carriages in the rail profile from rattling. Adjustment occurs silently using the preload principle, making the guide suitable for use in noise-sensitive environments such as the automotive, medical or furniture sectors. Pretensioning increases the driving forces by max. 10 N.

Anodised surfaces

All drylin® N guide rails are anodised and are distinguished by good wear properties and corrosion resistance. Available are all rail sizes with clear anodised (silver) as well as with anti-reflex version in black anodised surface. These are technical surfaces and not decorative. Slight crack formations and colour variations cannot be prevented during production, but they do not affect the resistance, the corrosion behaviour or the gliding properties. Cutting surfaces and machined surfaces are uncoated.

Tightening torque for drylin® connections between metal parts

Metric thread (Da)	Torque [Nm]	Recommended torque [Nm]
M3	0.5 - 1.1	0.7
M4	1.0 - 2.8	1.5
M5	2.0 - 5.5	3.0
M6	4.0 - 10.0	6.0
M8	8.0 - 23.0	15.0
M10	22.0 - 46.0	30.0

Note the minimal screw in depth for aluminium and zinc parts: 1.5 x Da

System selection				
System	**N17**	**N27**	**N40**	**N80**
Rail width	17 mm	27 mm	40 mm	80 mm
Installation height	6 mm	9.5 mm	9.5 mm	12 mm
General properties				
Rail weight	150 g/m	290 g/m	450 g/m	1,140 g/m
Carriage weight	1.7 g	9–12.5 g	30 g	100 g
Max. rail length	2,000 mm	3,000 mm	3,000 mm	4,000 mm
Load capacities, static				
Fy	50 N	500 N	700 N	1,000 N
Fz	50 N	500 N	700 N	1,000 N
Mx	0.31 Nm	5 Nm	10 Nm	32.4 Nm
My, Mz	0.18 Nm	2.5 Nm	6 Nm	15 Nm
Carriage options				
Floating bearing in y-direction	●	●	●	●
Floating bearing in z-direction	●	●	●	●
Floating bearing in yz-direction	●	●	●	●
Preload (1 N)	●	●	●	–
Moulded version	–	●	●	●
Carriage with plain hole	–	●	●	–
Carriage with threaded pin	●	●	●	–
Carriage with threaded hole	–	–	–	●

Table 01: System selection ● available – not available

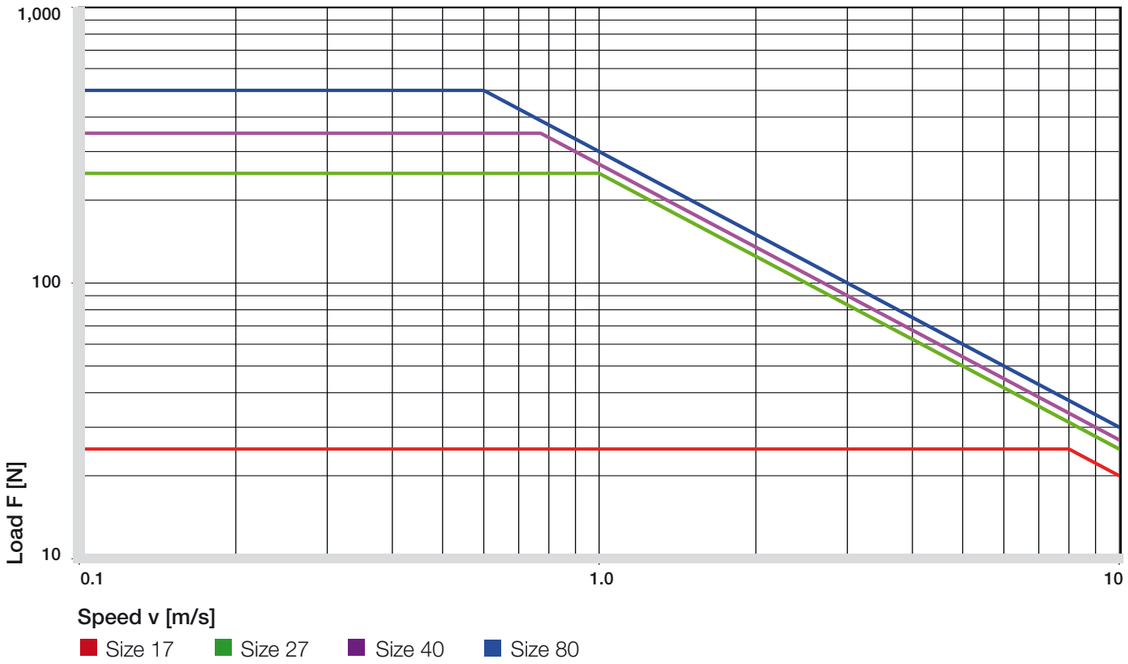


Diagram 01: F v diagram, maximum permissible dynamic load

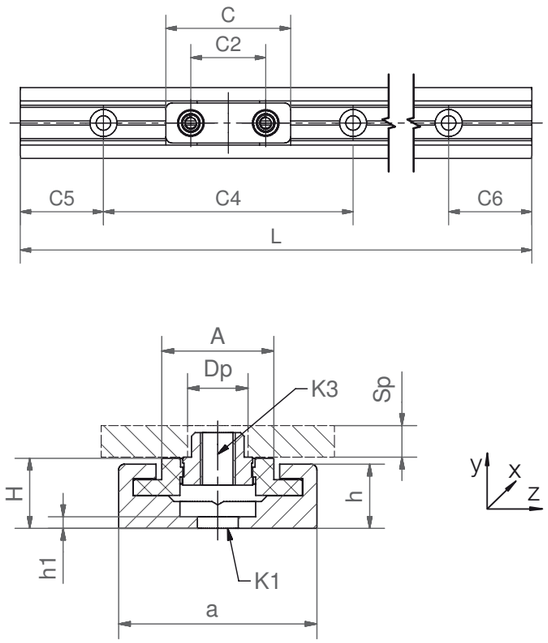
drylin® N low-profile guide systems | Product range

The linear guide for the smallest installation space

Standard | Without holes | Anti-reflex

NW-02-17 | NW-02-17-P

NW-22-17-30 | NW-22-17-40



Selection aid – guide carriage

Part No.	Single	Double	Plain hole	Threaded pin	Threaded hole	Preload	Solid plastic	Clipped-on	Moulded	High temp.
NW-02-17	●			●			●			
NW-02-17-P	●			●		●	●			
NW-22-17-30		●		●			●			
NW-22-17-40		●		●			●			

drylin® N low-profile guide systems | Product range

Guide rails and carriages – size 17

Complete system

Order key

complete system ▶ Page 910

Type	Installation size	Options
NW -	22 -	17 - 30 - LLY

drylin® N | Guide carriages | Type of carriage | Rail width | Carriage length | Floating bearing in y-direction

Type of carriage:
- **02:** Carriage with threaded pin
- **22:** Double carriage with threaded pin

Options:
- **P:** Preload

Floating bearing:
- **LLY:** Floating y-direction
- **LLZ:** Floating z-direction
- **LLYZ:** Floating yz-direction

Guide rail – dimensions [mm]

Part No.	L max.	a	C4	C5: C6 min.	C5: C6 max.	h	h1	K1[73]	Iy [mm⁴]	Iz [mm⁴]	Weight [g/m]
NS-01-17-□[72]	2,000	17	60	20	49.5	5.5	0.9	Ø3.5	1,700	120	150
NS-01-17-UNGEBOHRT-□[72]	2,000	17	–	–	–	5.5	0.9	–	1,700	120	150
NS-01-17-AR-□[72]	2,000	17	60	20	49.5	5.5	0.9	Ø3.5	1,700	120	150

Guide carriage – dimensions [mm]

Part No.	H ±0.35	A	C	C2	K3[74]	Sp	Dp	Weight [g]
NW-02-17	6.0	9.6	20	14	M3	2.5	5.0	1.7
NW-02-17-P	6.0	9.6	20	14	M3	2.5	5.0	1.7
NW-22-17-30	6.0	9.6	30	18	M3	2.5	5.0	2.4
NW-22-17-40	6.0	9.6	40	28	M3	2.5	5.0	2.6

[72] Please add the required length in mm , symmetrical standard hole pattern C5=C6

[73] For cap screw with low head (i.e. DIN 7984, DIN 6912, DIN 84, EN ISO 1707)

[74] Metal thread

For rails without mounting holes, please use part number suffix "UNGEBOHRT"

All elements can be ordered individually or as assembled systems

NS-01-17-1500: Guide rail, size 17, length 1,500 mm

NW-02-17-P-LLY: Guide carriage with threaded pin, size 17, pre-load, floating bearing in y-direction

NK-02-17-02-500-LLY: Complete system with two solid plastic guide carriages with threaded pins, size 17, floating bearing in y-direction and 500 mm guide rails with standard holes

drylin® N low-profile guide systems | Product range

The installation size with the largest variety of carriages


Standard

Without holes

Anti-reflex


NW-01-27


NW-02-27


NW-01-27-P


NW-02-27-P


NW-01-27-HT


NW-02-27-HT


NW-21-27-60-P


NW-22-27-60-P

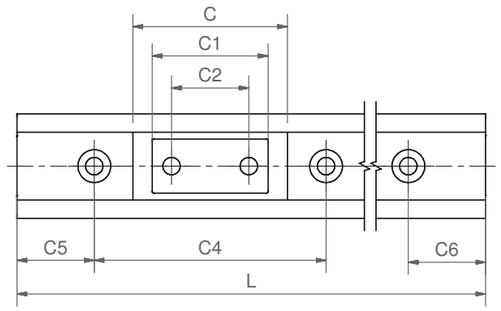

NW-11-27

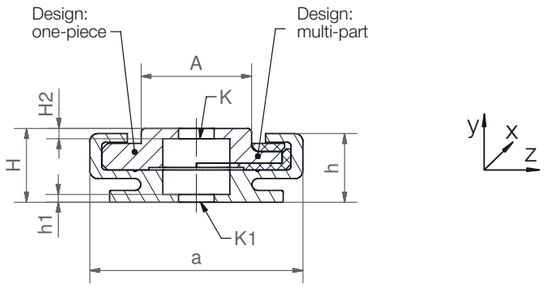

NW-12-27

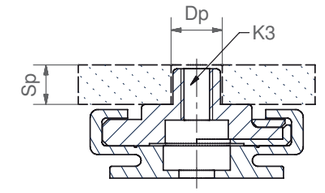

NW-32-27-60-P


NW-11-27-80


NW-12-27-80







Selection aid – guide carriage

Part No.	Single	Double	Plain hole	Threaded pin	With thread	Preload	Solid plastic	Clipped-on	Moulded	High temp.
NW-01-27	●		●					●		
NW-11-27	●		●						●	
NW-01-27-P	●		●			●		●		
NW-01-27-HT	●		●					●		●
NW-02-27	●			●				●		
NW-12-27	●			●					●	
NW-02-27-P	●			●		●		●		
NW-02-27-HT	●			●				●		●
NW-21-27-60-P	●		●			●	●			
NW-22-27-60-P	●			●		●	●			
NW-31-27-60-P	●		●			●	●			
NW-32-27-60-P	●			●		●	●			
NW-11-27-80		●	●						●	
NW-12-27-80		●		●					●	

drylin® N low-profile guide systems | Product range

Guide rails and carriages – size 27


Complete system

Order key

complete system ▶ Page 910

Type	Size	Options

NW - 01 - 27 - HT - LLY

drylin® N | Guide carriages | Type of carriage | Rail width | High temperature | Floating bearing in y-direction

Type of carriage:
See selection aid

Options:
P: Preload
HT: High temperature

Floating bearing:
LLY: Floating y-direction
LLZ: Floating z-direction
LLYZ: Floating yz-direction

Guide rail – dimensions [mm]

Part No.	L max.	a	C4	C5: C6 min.	C5: C6 max.	h	h1	K1[73]	Iy [mm⁴]	Iz [mm⁴]	Weight [g/m]
NS-01-27- □[72]	3,000	27	60	20	49.5	9	1.1	Ø4.5	6,524	588	290
NS-01-27-UNGEBOHRT- □[72]	3,000	27	–	–	–	9	1.1	–	6,524	588	290
NS-01-27-AR- □[72]	3,000	27	60	20	49.5	9	1.1	Ø4.5	6,524	588	290

Guide carriage – dimensions [mm]

Part No.	H ±0.35	A	C	C1	C2	H2	K[73]	K3[74]	M[75]	Sp	Dp	Weight [g]
NW-01-27	9.5	14.0	40	30	20	1.2	Ø4.5	–	–	–	–	10.8
NW-11-27	9.5	14.0	34	30	20	1.2	Ø4.5	–	–	–	–	10.8
NW-01-27-P	9.5	14.0	40	30	20	1.2	Ø4.5	–	–	–	–	10.8
NW-01-27-HT	9.5	14.0	40	30	20	1.2	Ø4.5	–	–	–	–	11.0
NW-02-27	9.5	14.0	40	30	20	–	–	M4	1.2	5.0	6.5	12.5
NW-12-27	9.5	14.0	34	30	20	–	–	M4	1.2	5.0	6.5	12.5
NW-02-27-P	9.5	14.0	40	30	20	–	–	M4	1.2	5.0	6.5	12.5
NW-02-27-HT	9.5	14.0	40	30	20	–	–	M4	–	5.0	6.5	13.0
NW-21-27-60-P	9.5	14.0	60	60	20	0.7	Ø4.5	–	–	–	–	9.0
NW-22-27-60-P	9.5	14.0	60	60	20	–	–	M4	1.2	5.0	6.5	12.0
NW-31-27-60-P	9.5	14.0	60	60	40	0.7	–	M4	–	–	–	9
NW-32-27-60-P	9.5	14.0	60	60	40	–	–	M4	1.2	5	6.5	12
NW-11-27-80	9.5	14.0	80	76	60	1.2	Ø4.5	–	–	–	–	25.0
NW-12-27-80	9.5	14.0	80	76	60	–	–	M4	1.2	5.0	6.5	25.0

[72] Please add the required length in mm , symmetrical standard hole pattern C5=C6
[73] For cap screw with low head (i.e. DIN 7984, DIN 6912, DIN 84, EN ISO 1707)
[74] Metal thread [75] Max. screw torque
For rails without mounting holes, please use part number suffix "UNGEBOHRT"

All elements can be ordered individually or as assembled systems
NS-01-27-1500: Guide rail, size 27, length 1,500 mm
NW-02-27-P-LLY: Guide carriage with threaded pin, size 27, pre-load, floating bearing in y-direction
NK-02-27-02-500-LLY: Complete system with two clipped-on guide carriages with threaded pins, size 27, floating bearing in y-direction and 500 mm guide rails with standard holes

drylin® N low-profile guide systems | Product range

Suitable for aluminium construction profiles


Standard


Without holes


Anti-reflex


NW-01-40

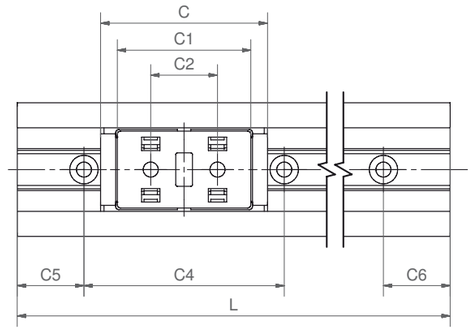

NW-02-40

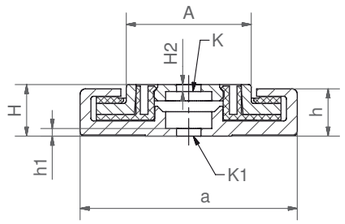

NW-01-40-P

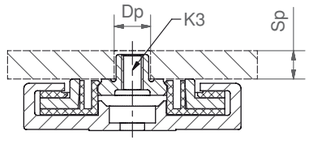

NW-02-40-P


NW-11-40


NW-12-40







Selection aid – guide carriage

Part No.	Single	Double	Plain hole	Threaded pin	Threaded hole	Preload	Solid plastic	Clipped-on	Moulded	High temp.
NW-01-40	●		●					●		
NW-01-40-P	●		●			●		●		
NW-11-40	●		●						●	
NW-02-40	●			●				●		
NW-02-40-P	●			●		●		●		
NW-12-40	●			●					●	

drylin® N low-profile guide systems | Product range

Guide rails and carriages – size 40


Complete system

Order key

complete system ▶ Page 910

Type	Size	Options
NW -	01 -	40 - P - LLY

drylin® N | Guide carriages | Type of carriage | Rail width | Preload | Floating bearing in y-direction

Type of carriage:
See selection aid

Options:
P: Preload

Floating bearing:
LLY: Floating y-direction
LLZ: Floating z-direction
LLYZ: Floating yz-direction

Guide rail – dimensions [mm]

Part No.	L max.	a	C4	C5: C6 min.	C5: C6 max.	h	h1	K1[73]	Iy [mm⁴]	Iz [mm⁴]	Weight [g/m]
NS-01-40- □[72]	3,000	40	60	20	49.5	8.7	1.3	Ø4.5	26,400	970	450
NS-01-40-UNGEBOHRT- □[72]	3,000	40	–	–	–	8.7	1.3	–	26,400	970	450
NS-01-40-AR- □[72]	3,000	40	60	20	49.5	8.7	1.3	Ø4.5	26,400	970	450

Guide carriage – dimensions [mm]

Part No.	H ±0.35	A	C	C1	C2	H2	K[73]	K3[74]	Sp	Dp	Weight [g]
NW-01-40	9.5	23.0	50	40	20	1.3	Ø4.5	–	–	–	30.0
NW-01-40-P	9.5	23.0	50	40	20	1.3	Ø4.5	–	–	–	30.0
NW-11-40	9.5	23.0	52	40	20	1.3	Ø4.5	–	–	–	30.0
NW-02-40	9.5	23.0	50	40	20	–	–	M4	5.0	6.5	30.0
NW-02-40-P	9.5	23.0	50	40	20	–	–	M4	5.0	6.5	30.0
NW-12-40	9.5	23.0	52	40	20	–	–	M4	5.0	6.5	30.0

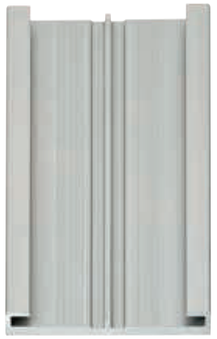
[72] Please add the required length in mm , symmetrical standard hole pattern C5=C6
[73] For cap screw with low head (i.e. DIN 7984, DIN 6912, DIN 84, EN ISO 1707)
[74] Metal thread
For rails without mounting holes, please use part number suffix "UNGEBOHRT"

All elements can be ordered individually or as assembled systems
NS-01-40-1500: Guide rail, size 40, length 1,500 mm
NW-02-40-P-LLY: Guide carriage with threaded pin, size 40, pre-load, floating bearing in y-direction
NK-02-40-02-500-LLY: Complete system with two clipped-on guide carriages with threaded pins, size 40, floating bearing in y-direction and 500 mm guide rails with standard holes

drylin® N low-profile guide systems | Product range

For high speeds with low loads

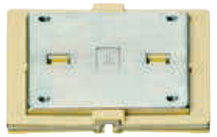
Standard



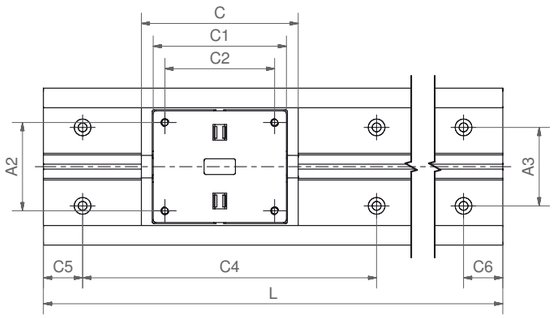
Without holes

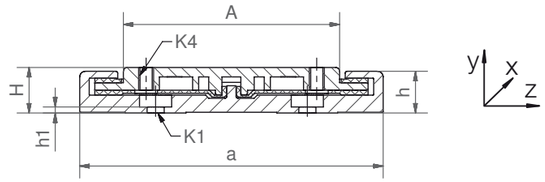
Anti-reflex

NW-12-80



NW-02-80





Selection aid – guide carriage

Part No.	Single	Double	Plain hole	Threaded pin	With thread	Preload	Solid plastic	Clipped-on	Moulded	High temp.
NW-02-80	●				●			●		
NW-12-80	●				●				●	

drylin® N low profile guide systems

drylin® N low-profile guide systems | Product range

Guide rails and carriages – size 80

Complete system

Order key

complete system ▶ Page 910

Type	Size	Options
NW -	02 -	80 - LLY
drylin® N	Guide carriages	Type of carriage	Rail width	Floating bearing in y-direction

Type of carriage:
See selection aid

Options:

Floating bearing:
- **LLY:** Floating y-direction
- **LLZ:** Floating z-direction
- **LLYZ:** Floating yz-direction

Guide rail (standard/undrilled/AR anti-reflex) – dimensions [mm]

Part No.	L max.	a	C4	A3	C5: C6 min.	C5: C6 max.	h	h1	K1[73]	Iy [mm⁴]	Iz [mm⁴]	Weight [g/m]
NS-01-80- □[72]	4,000	80	150	40	25	99.5	11	1.5	Ø4.5	27,120	2,900	1,140
NS-01-80-UNGEBOHRT- □[72]	4,000	80	–	–	–	–	11	1.5	–	27,120	2,900	1,140
NS-01-80-AR- □[72]	4,000	80	150	40	25	99.5	11	1.5	Ø4.5	27,120	2,900	1,140

Guide carriage – dimensions [mm]

Part No.	H ±0.35	A	C	C1	C2	A2	K4[74]	Weight [g]
NW-02-80	12.0	57.0	80	68	56	45	M4	100.0
NW-12-80	12.0	57.0	83	68	56	45	M4	146.3

[72] Please add the required length in mm , symmetrical standard hole pattern C5=C6

[73] For cap screw with low head (i.e. DIN 7984, DIN 6912, DIN 84, EN ISO 1707)

[74] Metal thread

For rails without mounting holes, please use part number suffix "UNGEBOHRT"

All elements can be ordered individually or as assembled systems

NS-01-80-1500: Guide rail, size 80, length 1,500 mm

NW-02-80-LLY: Guide carriage, clip-on, size 80, floating bearing in y-direction

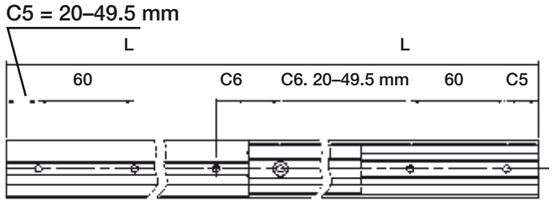
NK-02-80-02-500-LLY: Complete system with two clipped-on guide carriages with threaded pins, size 80, floating bearing in y-direction and 500 mm guide rails with standard holes

drylin® N low-profile guide systems | Product range

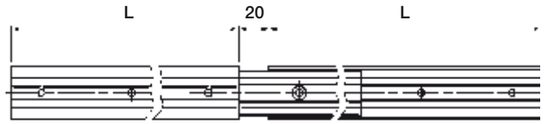
Telescopic rails

- Solid polymer guide/aluminium rail
- Lightweight
- Cost-effective
- Corrosion resistant
- Continuous lengths up to 1,200 mm (total extension)

NT-35-"L" – total extension



NT-35-"L"-"L+20" – over-extension



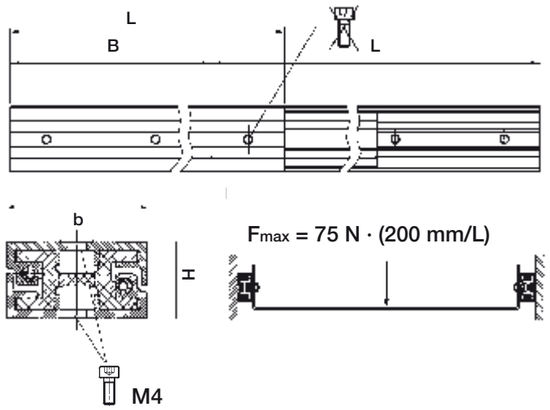
Order key

Type	Size			
N T	- 35	- 300		
drylin® N	Telescopic system	Rails width	Length [mm]	

Over extension order key

Type	Size	Option		
N T	- 35	- 300	- 320	
drylin® N	Telescopic system	Rails width	Length [mm]	Over extension [mm]

NT-35-"L"-"B" – partial extension



Partial extension order key

Type	Size	Option		
N T	- 35	- 300	- 200	
drylin® N	Telescopic system	Rails width	Length [mm]	Partial extension [mm]

Option:
Partial extension (e.g.: telescoped length 300 mm, extended length 500 mm)

Recommendation:

F_{max} calculated using this formula allows an easy manual use. The unit can take higher forces than this, but the required driving force will be correspondingly higher.

Dimensions [mm]

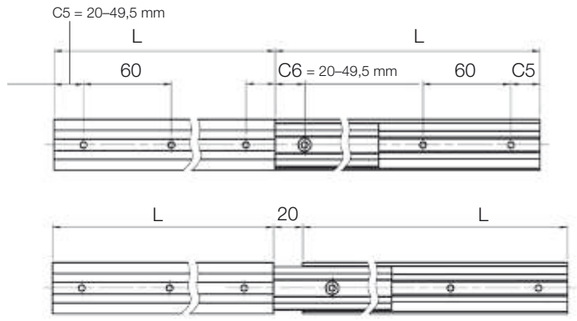
Part No.	b	H	L min.	L max.
NT-35-... mm	35	19	100	600

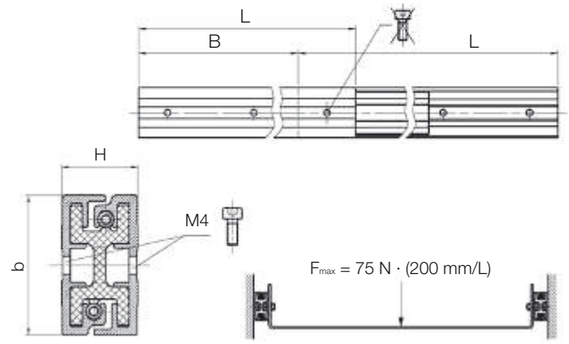
drylin® N low-profile guide systems | Product range

Telescopic rails with locking mechanism

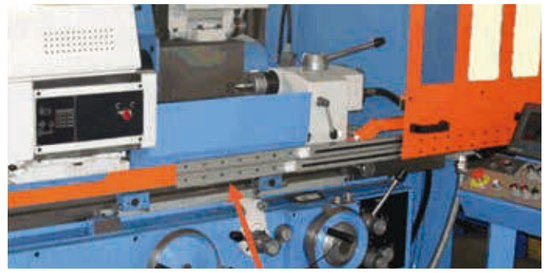
Order key

Type	Size	Option		
N T	- LM	- 35	- 300	
drylin® N	Telescopic system	Locking mechanism	Rail width	Length [mm]





drylin® NT LM in adjustment of Perspex guard



drylin® NT LM in guard door adjustment in a machine tool

drylin® detent in end and centre position at full extension – dimensions [mm]

Part No.	b	H	Lmin	Lmax
NT-LM-35-...mm	35	19	140	600

Individual position detent on request; The length divided by the locking distance must be an even number.
e.g. Lengths 250 mm, latching all 62.5 mm = 250 / 62.5 = 4

Order example:
NT-LM-35-300: drylin® N telescopic rail with locking mechanism, 35 mm width, retracted length 300 mm

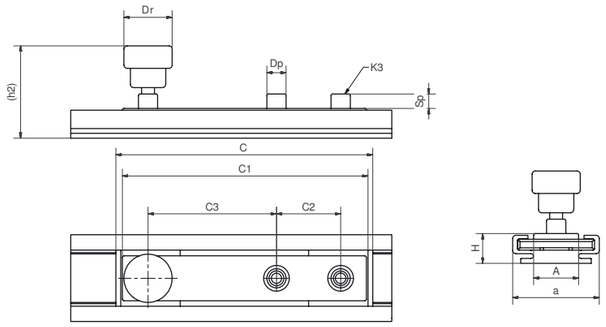
drylin® N low-profile guide systems | Product range

Accessories: Manual clamp

Order key

Type	Size	Design
NW - 02 - 27 - 80 -		HKA

drylin® N	Guide carriages	Type of carriage	Rail width	Carriage length	Manual clamp



Dimensions [mm]

Part No.	H	(h2)	A	a	C	C1	C2	C3	K3	M[142] [Nm]	Sp	Dp	Dr	Weight [g]
NW-12-27-80-HKA	9.5	32	14	27	80	76	20	40	M4	1.2	5	6.5	15	32

[142] Permissible torque of the complete system

Order example:
NW-12-27-80-HKA: Manual clamp for NW-12-27-80 carriage

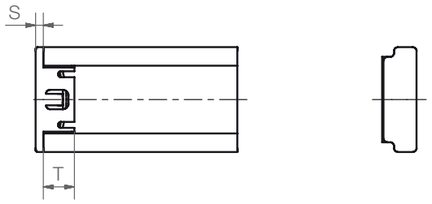
drylin® N low-profile guide systems | Product range

Accessories: End caps

Order key

Type	Size
N S K B -	40

drylin® N – End caps	Plugged	Rail width

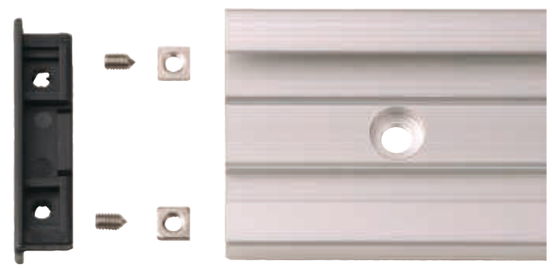


Dimensions [mm]

Part No.	S	T	for rail
NSKB-17	1.5	7	NS-01-17
NSKB-27	2	8	NS-01-27
NSK-40	1.5	8	NS-01-40
NSKB-80	2	17	NS-01-80

Order example:
NSK-40: end caps for rail size 40, bolted

Easily assembled and disassembled by hand using a screw driver. Part No.: NSKB



End caps for rail size 40, screwed
Part No.: NSK-40

drylin® N low-profile guide systems | Ordering options

Order key for a complete system:

NK-02-27-02-500-LLZ C5 = 20

Complete system	Carriage type	Size (17/27/40/80)	No. of carriages	Rail length [mm]	Carriage options	Rail options

Available options:

Rails

Leave blank: Standard rail with holes
UNGEBOHRT: Rail without holes
C5: … mm: only if hole spacing is not symmetrical

Carriage

Leave blank: Standard
LLZ: Floating z-direction
LLY: Floating y-direction
LLYZ: Floating y- and z-direction
P: Preload (max. 1 N)
only available for sizes 17/27/40

Carriage type

01: Clipped-on sliding element, plain hole
11: Overmoulded sliding element, plain hole
02: Overmoulded sliding element, threaded hole or threaded pin
12: Overmoulded sliding element, threaded hole or threaded pin
21: Solid plastic, plain hole
22: Solid plastic, threaded hole or threaded pin

drylin® N replacement liners (set)

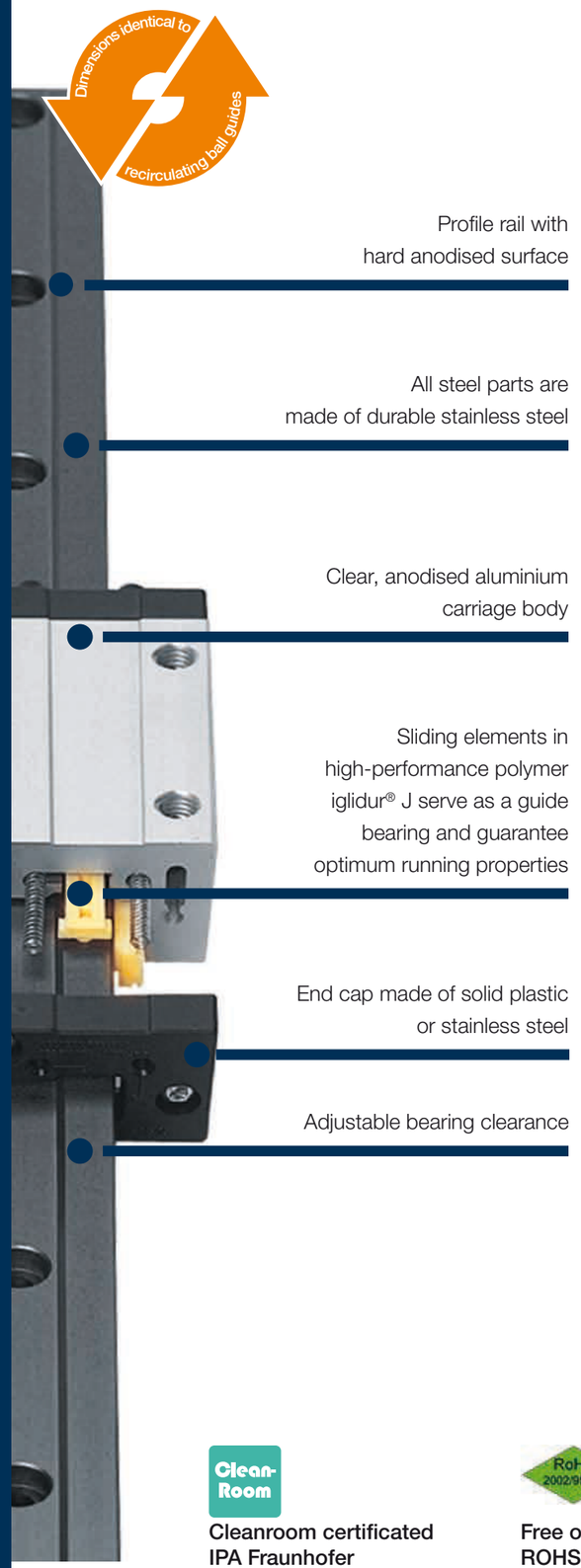
Material iglidur® J

Carriage type	Part No. Sliding part set
NW-01/02/27	NEK-01-27
NW-01/02-27P	NEK-01-27-P
NW-01/02-27-LLY	NEK-01-27-LLY
NW-01/02-27-LLZ	NEK-01-27-LLZ
NW-01/02-40	NEK-02-40
NW-01/02-40P	NEK-01-40-P
NW-01/02-40-LLY	NEK-02-40-LLY
NW-01/02-40-LLZ	NEK-02-40-LLZ
NW-02-80	NEK-02-80
NW-02-80-LLY	NEK-02-80-LLY
NW-02-80-LLZ	NEK-02-80-LLZ

drylin® linear technology – drylin® T rail guide systems

- Robust linear guides
- Adjustable bearing clearance
- Wear resistant and durable
- Dimensions are identical to recirculating ball-bearing guides
- Lubrication and maintenance-free

Resistant to dirt, low vibration, low noise, long service life



Lubrication-free rail guide systems – drylin® T

drylin® T rail guide systems were originally developed for applications in both automation and materials handling. The goal was to create a high performance, maintenance free linear guide for use in the most diverse, even extreme environments. Their dimensions are identical to most recirculating ball guides.

- 100 % lubrication-free
- Adjustable bearing clearance
- Automatic clearance adjustment
- High static load capacity
- Service life up to 50,000 km
- Resistant to dirt
- Low vibration and quiet

Typical application areas

- Machine building
- Wood working industry
- Machine tools
- Handling

Available from stock.
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

max. +90 °C
min. -40 °C

7 carriage types
Rail length up to 4,000 mm

Service life calculation
▶ www.igus.eu/drylin-expert

Cleanroom certificated
IPA Fraunhofer

Free of toxins
ROHS 2002/95/EC

ESD compatible
(electrostatic discharge)

Dimensions are identical to most recirculating ball-bearing guides

Standard/with manual clamp

- Supplied preset and can be put into operation at once
- Manual adjustable clearance
- Manual clamp direct on carriage

▶ From page 919

Automatic

- Automatically adjustment of clearance after removal of the pre-load key
- The clearance will be adjusted automatically.

▶ Page 921

Heavy duty / adjustable heavy duty

- Used for extreme conditions (dirt, adhesive residues, chips, mud, etc.)
- Plastic sliding elements are fixed and are therefore permanent
- Including clearance adjustment

▶ Page 922

Compact

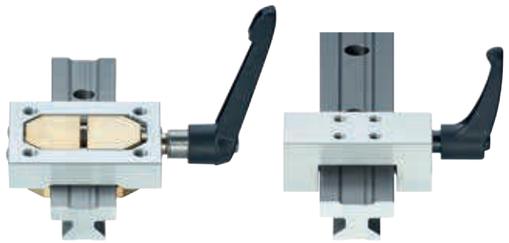
- Narrow guide carriage for small installation space
- Captive fixed plastic sliding elements
- Corrosion-resistant

▶ Page 924

Miniature guide/adjustable miniature guide

- Small compact design
- Easy to fit
- Individual clearance adjustment on carriage

▶ Page 926



Clamps

- Compact or heavy duty
- Available for sizes 15-30 mm
- Holding force up to 500 N

▶ Page 925

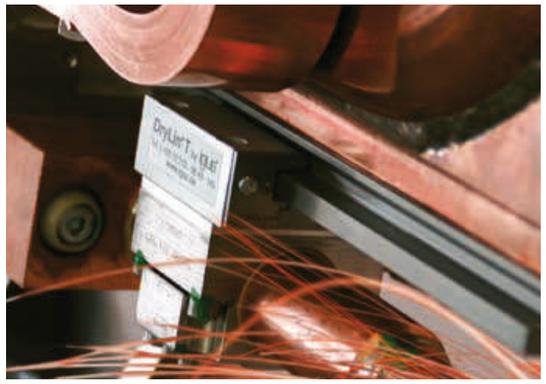
Based on drylin® T
drylin® SLT linear module

▶ From page 915

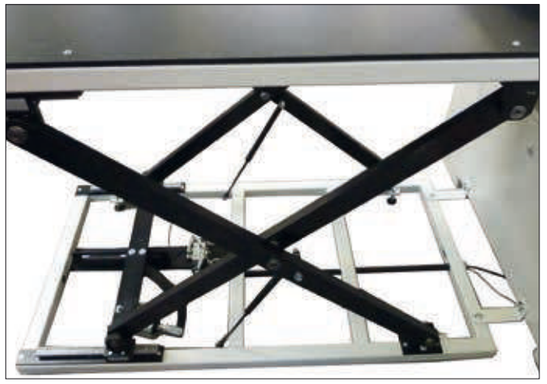
High service life and food grade quality are also prerequisites for the application like insensitivity to pungent detergents and humidity.

The adjustment of the pressing roller and the compensation of the imbalance of the grinding tools are implemented here with drylin® T in place of recirculating ball-bearing guides.

The drylin® T linear guide systems are used in these enveloping machines to guide an envelope suction opener that is mounted on one side.

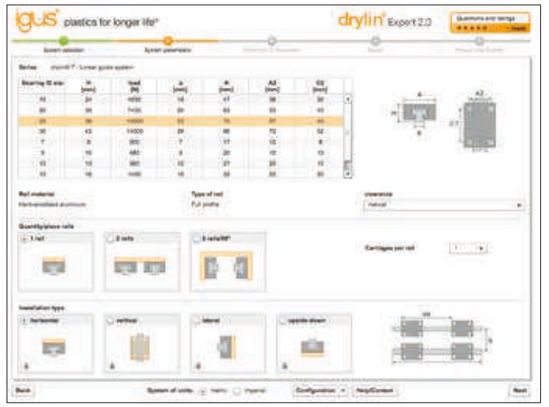


Due to the welding spatter and dust, the use of the extremely dirt-repellant drylin® T linear guide system finds the balance between high service life and low costs.



drylin® T rail guide systems with adjustable clearance change the height of the work table silently and precisely.

Major time savings: the measurement system makes tool changes far quicker. The gauge runs on a drylin® T rail. This solution also works seamlessly in dusty environments.



Expert for linear guides: System selection & service life calculation with CAD

Configure and calculate linear bearings – constantly expanded by new sizes and products

Easily calculate and configure the service life of your required linear guide with only a few clicks. Select a drylin® system and add the relevant environmental parameters. Select the bearing size, carriage, number and position. Enter the distance between the rails and the mounting. Define the coordinates for the drive location and the centre of gravity by clicking and dragging the coloured cross lines, or enter these manually. Define the weight, acceleration, the distance of the bearing and select a rail length. The results are displayed.

▶ **www.igus.eu/drylin-expert**

drylin® CAD configurator: Generate complete 3D models for drylin® linear technology according to your specifications

The igus® CAD online configurator gives you the ability to design and save your linear guide as a system, individual components directly as a 3D model in all commonly used formats, or to have these sent by e-mail – free of charge and without registration.

▶ **www.igus.eu/drylin-CAD**

Installation notes

The compensation of parallelism errors up to a maximum of 0.5 mm between mounted rails is possible with a fixed/floating bearing. During installation, take care that the floating bearing has approximately the same clearance on both sides.

In the adjacent designs you can see the version of the fixed/floating bearing system recommended by us.

The mounting surfaces of the rails and carriages should be very flat (e. g. machined surface) to prevent twisting in the system. Small discrepancies in the mounting surfaces can be compensated up to a certain amount (0.5 mm) by a greater clearance adjustment. The clearance adjustment is possible only in unloaded state. If you have any questions on design and/or assembly, please make use of our technical support.

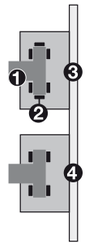
Technical details on floating bearings
▶ Page 917845
The 2:1 Rule ▶ Page 845

Installation drylin® T linear guide system

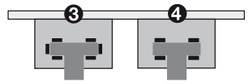
Make sure to assemble the side of the carriage saying "Reset Clearance" onto the rail first (see picture).

Lateral installation option with floating bearing in z-direction

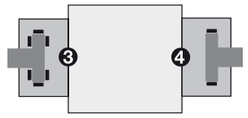
❶ Rail
❷ Sliding elements
❸ Carriage with fixed bearings
❹ Carriage with floating bearings LLZ or LLY

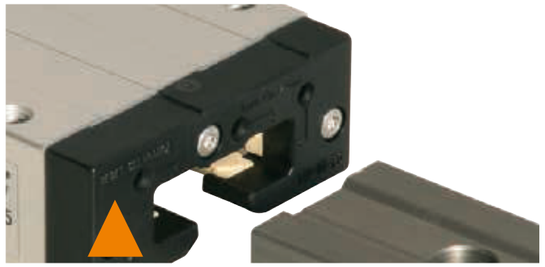


Horizontal installation with floating bearing in the z-direction

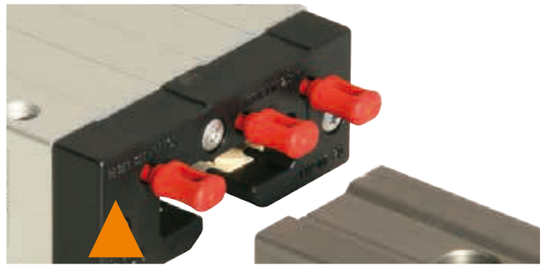


Horizontal version with floating bearing in the y-direction and lateral carriage





TW-series, adjustable clearance



TWA-series, Automatic

Tightening torque for drylin® connections between metal parts

Metric thread (Da)	Torque [Nm]	Recommended torque [Nm]
M3	0.5 - 1.1	0.7
M4	1.0 - 2.8	1.5
M5	2.0 - 5.5	3.0
M6	4.0 - 10.0	6.0
M8	8.0 - 23.0	15.0
M10	22.0 - 46.0	30.0

minimal screw in depth for aluminium and zinc parts: 1.5 x Da

Floating bearings clearance for drylin® T miniature guide systems

LLZ: Floating bearing in z-direction
LLY: Floating bearing in y-direction

Floating bearings clearance	TW-04-07	TW-04-09	TW-04-12	TW-04-15
LLY	–	0.4	0.5	0.7
LLZ	0.4	0.4	0.5	0.7

Guide rails	
Material	Aluminium, extruded section
Material	AlMgSi0.5
Coating	Hard-anodised aluminium, 50 µm
Hardness	500 HV
Guide carriages	
Base structure	Aluminium, extruded section
Material	AlMgSi0.5
Coating	Anodised aluminium
Sliding elements	Maintenance-free plain bearing iglidur® J
Bolts, springs	Stainless steel
End cap	Plastic (TW-01/TWA-01), steel (TW-02)
Max. surface speed	15 m/s
Temperature range	–40 °C to +90 °C

Table 01: drylin® – technical data

Type	C_{0Y} [kN]	$C_{0(-Y)}$ [kN]	C_{0Z} [kN]	M_{0X} [Nm]	M_{0Y} [Nm]	M_{0Z} [Nm]
04-07	0.2	0.2	0.1	1.2	0.6	0.6
04-09	0.48	0.48	0.24	3.4	1.8	1.8
04-12	0.96	0.96	0.48	9.2	4.4	4.4
04-12 (TWE)	0.48	0.48	0.24	4.6	2.2	2.2
04-15	1.4	1.4	0.7	17	8	8
04-15 (TWE)	0.7	0.7	0.35	8.5	4	4
01-15	4	4	2	32	25	25
01-/02-20	7.4	7.4	3.7	85	45	45
01-/02-/03-25	10	10	5	125	65	65
01-/02-30	14	14	7	200	100	100

Table 02: drylin® – permissible static load capacity

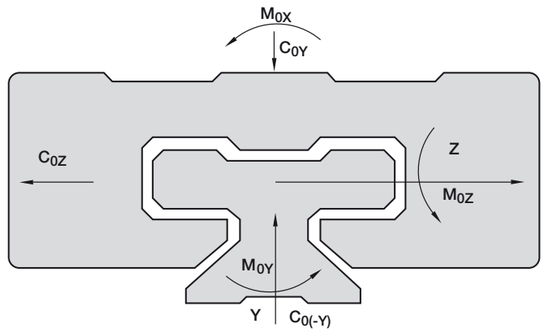


Diagram 01: Designation of load directions

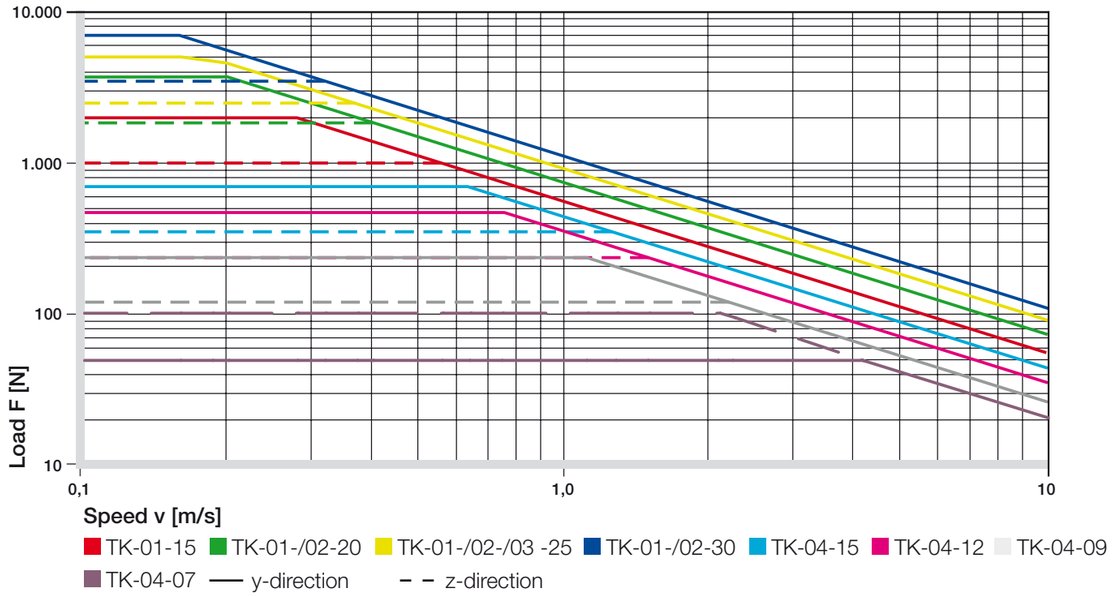


Table 02: drylin® – permissible static load capacity

drylin® T rail guide systems | Product range

Linear guides

TS-01

TS-11

Order key

complete system ▶ Page 928

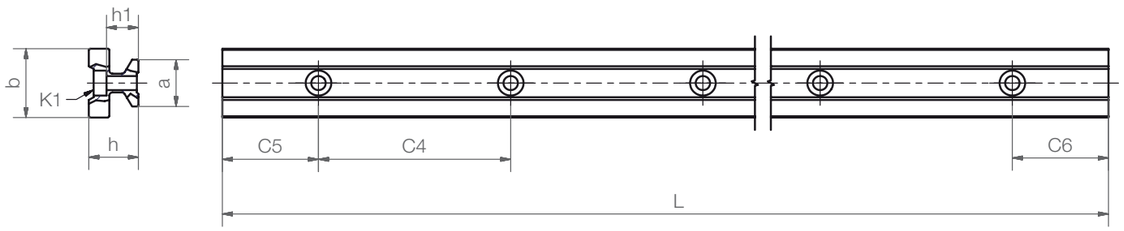
Type	Options

TS - 01 - 15 - 1000

Guide rails	Type 01	Installation size	Rail length [mm]

Curved rail profiles
▶ Page 844

Options:
TS-01: Standard rail
TS-11: Weight-reduced rail
Hard anodised surfaces
▶ Page 842



Dimensions [mm]

Part No.	Weight	L	a	C4	C5	C5	C6	C6	h	h1	K1 for screw	b	Iy	Iz	Wby	Wbz
		Max.	–0.2		min.	Max.	min.	Max.								
	[kg/m]										DIN 912		[mm⁴]	[mm⁴]	[mm³]	[mm³]
TS-01-15	0.6	4,000	15	60	20	49.5	20	49.5	15.5	10.0	M4	22	6,440	4,290	585	488
TS-01-20	1.0	4,000	20	60	20	49.5	20	49.5	19.0	12.3	M5	31	22,570	11,520	1,456	1,067
TS-11-20	0.5	4,000	20	120	20	79.5	20	79.5	19.0	12.3	M5	31	12,140	6,360	780	620
TS-01-25	1.3	4,000	23	60	20	49.5	20	49.5	21.5	13.8	M6	34	34,700	19,300	2,041	1,608
TS-01-30	1.9	4,000	28	80	20	59.5	20	59.5	26.0	15.8	M8	40	70,040	40,780	3,502	2,832

Standard hole pattern symmetric C5 = C6
For rails without mounting holes, please use part number suffix "UNGEBOHRT"

Can be combined with:

TW-01-...

TWA-01-...

TW-01-HKA

TW-02-...

TW-03-...

Technical data
▶ Page 917

drylin® T rail guide systems | Product range

Guide carriage – manual adjustable clearance

TW-01

Complete system

Order key

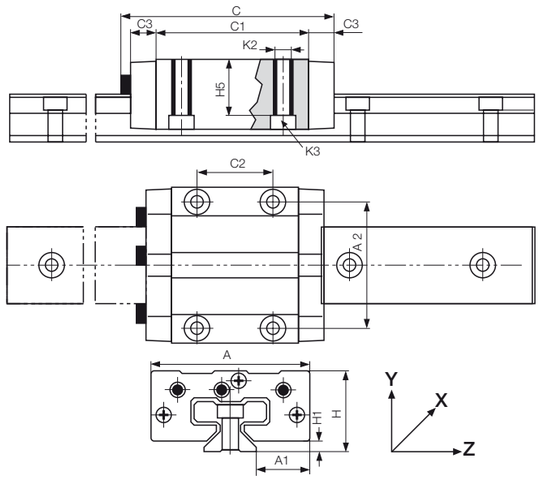
complete system ▶ Page 928

Type	Options

TW - 01 - 15 - LLY

Guide carriages	Manual clearance adjustment	Installation size	Floating bearing

Options:
LLY: Floating bearing in y-direction
LLZ: Floating bearing in z-direction



Dimensions [mm]

Part No.	Weight	H	A	C	A1	A2	C1	C2	C3	H1	H5	K2- thread	Torque	K3 for screw
		±0.35			±0.35					±0.35			Max.	
	[kg]												[Nm]	DIN 912
TW-01-15	0.11	24	47	74	16.0	38	50	30	9	4.0	16.0	M5	1.5	M4
TW-01-20	0.19	30	63	87	21.5	53	61	40	10	5.0	19.8	M6	2.5	M5
TW-01-25	0.29	36	70	96	23.5	57	68	45	11	5.0	24.8	M8	6.0	M6
TW-01-30	0.50	42	90	109	31.0	72	79	52	12	6.5	27.0	M10	15.0	M8

All elements can be ordered individually or as assembled systems
TW-01-20-LLY: Standard guide carriage with manually adjustable clearance, installation size 20 and floating bearing in y-direction
TK-01-20-2-500: Complete system with two standard guide carriages type 01, installation size 20 and standard guide rail, 500 mm length

Can be combined with:

TS-01-...

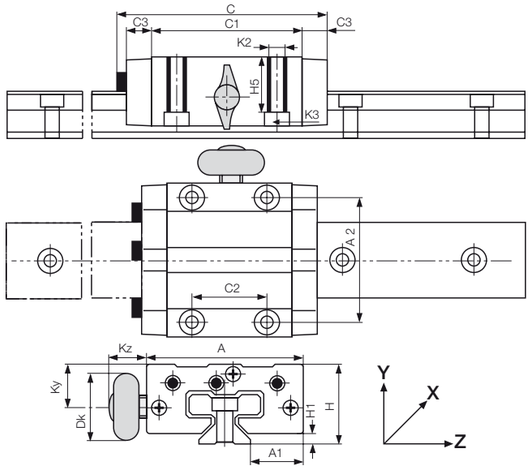
Technical data
▶ Page 917

drylin® T rail guide systems | Product range

Guide carriage – with manual clamp

TW-01-HKA

Complete system



Order key

complete system ▶ Page 928

Type	Options

TW - 01 - 15 - HKA

Guide carriages	Manual clearance adjustment clearance	Installation size	Manual clamp

Other dimensions as standard design
TW-01-... ▶ Page 921

Dimensions [mm]

Part No.	Size	Kz	Ky	Dk	Clamp thread
TW-01-15-HKA	15	19.0	11.5	20.0	M6
TW-01-20-HKA	20	18.0	15.0	28.0	M8
TW-01-25-HKA	25	17.0	19.0	28.0	M8
TW-01-30-HKA	30	20.0	21.5	28.0	M8

All elements can be ordered individually or as assembled systems
TW-01-20-HKA: Guide carriage with manually adjustable clearance, installation size 20 and manual clamp
TK-01-20-HKA-2-500: Complete system with two standard guide carriages type 01 with manual clamp, installation size 20 and standard guide rail, 500 mm length

The manual clamp has been developed for simple tasks. The creep behaviour of the clamped plastic causes a reduction in clamping force over time (up to 70 %). Therefore safety-related parts should not be clamped. Please contact our technical consultant, if you require other options for the clamping.

Can be combined with:

TS-01-...

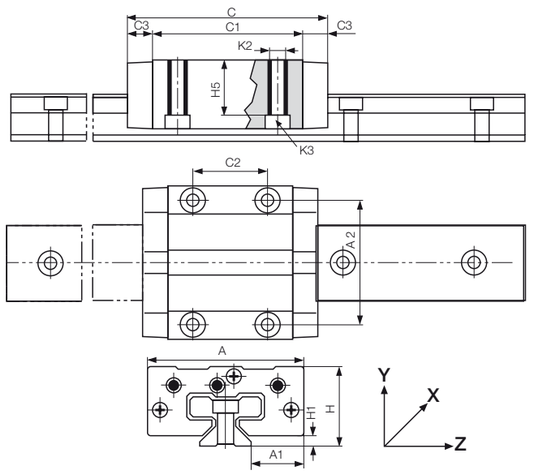
Technical data
▶ Page 917

drylin® T rail guide systems | Product range

Guide carriage – automatic clearance adjustment

TWA-01

Complete system



Order key

complete system ▶ Page 928

Type	Options

TWA - 01 - 15 - LLY

Guide carriages Automatic version	Standard	Installation size	Floating bearing

Options:
LLY: Floating bearing in y-direction
LLZ: Floating bearing in z-direction

Dimensions [mm]

Part No.	Weight	H	A	C	A1	A2	C1	C2	C3	H1	H5	K2-Thread	Torque	K3 for screw
	[kg]	±0.35			±0.35					±0.35			Max. [Nm]	DIN 912
TWA-01-15	0.11	24	47	68	16.0	38	50	30	9	4.0	16.0	M5	1.5	M4
TWA-01-20	0.19	30	63	81	21.5	53	61	40	10	5.0	19.8	M6	2.5	M5
TWA-01-25	0.29	36	70	90	23.5	57	68	45	11	5.0	24.8	M8	6.0	M6
TWA-01-30	0.50	42	90	103	31.0	72	79	52	12	6.5	27.0	M10	15.0	M8

All elements can be ordered individually or as assembled systems
TW-01-20-LLY: Guide carriage with automatic clearance adjustment, installation size 20 and floating bearing in y-direction
TKA-01-20-2-500: Complete system with two standard guide carriages type 01, automatic clearance adjustment, installation size 20 and standard guide rail, 500 mm length

Can be combined with:

TS-01-...

Technical data
▶ Page 917

drylin® T rail guide systems | Product range

Guide carriage – heavy duty for extreme conditions

TW-02

Complete system

Order key

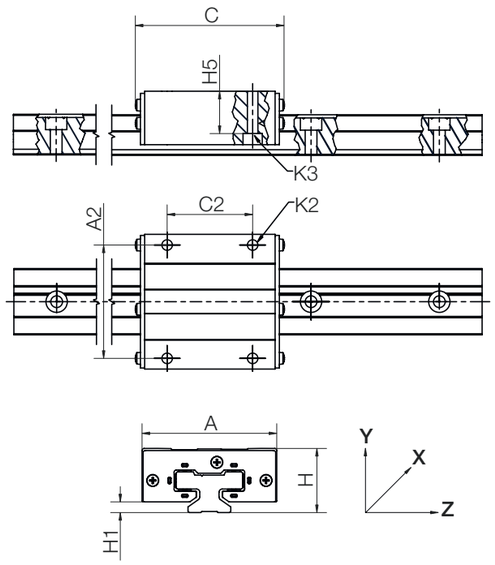
complete system ▶ Page 928

Type

TW - 02 - 20

Guide carriages | Heavy Duty | Installation size

Floating bearing on request



Dimensions [mm]

Part No.	Weight [kg]	H ±0.35	H5	A	C	A2	C2	H1 ±0.35	K2	K3
TW-02-20	0.19	30	19.8	63	70	53	40	5.0	M6	M5
TW-02-25	0.29	36	24.8	70	77	57	45	5.0	M8	M6
TW-02-30	0.50	42	27.0	90	92	72	52	6.5	M10	M8

All elements can be ordered individually or as assembled systems

TW-02-20: Heavy duty guide carriage, installation size 20

TK-02-20-2-500: Complete system with two heavy duty carriages type 02, installation size 20 and standard guide rail, 500 mm length

Can be combined with:

TS-01-...

Technical data ▶ Page 917

drylin® T rail guide systems | Product range

Guide carriage – heavy duty for extreme conditions, with adjustable clearance

TW-12

Complete Set

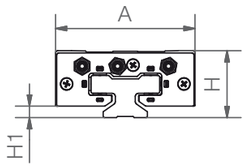
Order key

complete system ▶ Page 928

Type

TW - 12 - 20

Guide carriages | Heavy Duty, precise | Installation size



Dimensions [mm]

Part No.	Weight [kg]	H ±0.35	H5	A	C	A2	C2	H1 ±0.35	K2	K3
TW-12-20	0.19	30	19.8	63	72	53	40	5.0	M6	M5

All elements can be ordered individually or as assembled systems

TW-12-20: Heavy duty guide carriage, installation size 20

TK-12-20-2-500: Complete system with two heavy duty carriages, precise type 12, installation size 20 and standard guide rail, 500 mm length

Can only be combined with:

TS-01-20

TS-11-20

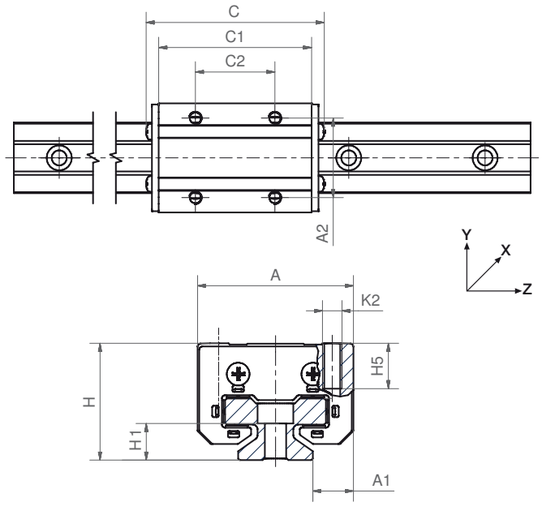
Technical data ▶ Page 917

drylin® T rail guide systems | Product range

Compact for tough applications

TW-03

Complete system



Order key
complete system ▶ Page 928

Type

TW - 03 - 25

Guide carriages | Compact | Installation size

Dimensions [mm]

Part No.	Weight [kg]	H ±0.35	A	C	A1	A2	C1	C2 ±0.35	H1	H5	K2	Torque Max. [Nm]
TW-03-25	0.16	36	48	81	14	35	67.4	35	5	13	M6	6.0

All elements can be ordered individually or as assembled systems
TW-03-25: Compact guide carriage, installation size 25
TK-03-25-2-500: Complete system with two compact guide carriages type 03, installation size 25 and standard guide rail, 500 mm length

Can only be combined with:

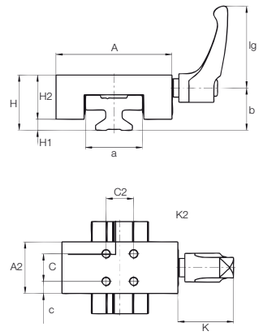
TS-01-20 TS-11-20

Technical data
▶ Page 917

drylin® T rail guide systems | Product range

Accessories: manual clamp – compact design

TWBM-11



Order key
complete system ▶ Page 928

Type

TWBM - 11 - 25

Manual clamp | Compact design | Installation size

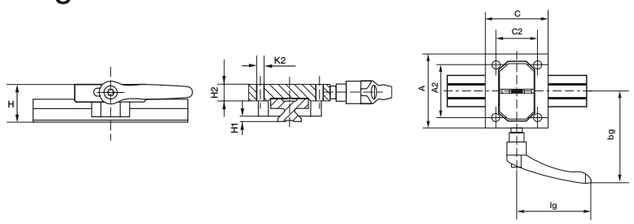
Options:
11: Thin, compact design with plastic clamping elements
01: Solid design with brass clamping components, combined sizes diameters identical to TW-01-25

Dimensions [mm]

Part No.	Clamp force [N]	A	a	A2	H	H1	H2	K	K2	C	C2	c	lg	b
TWBM-11-15	180	47	22	23	24	4	20	30	M4	15	15	4	44	18.9
TWBM-11-20	180	63	31	28	30	6	24	30	M5	15	15	6.5	44	23.0
TWBM-11-25	400	70	34	35	36	5	31	39	M6	20	20	7.5	63.63	26.2
TWBM-11-30	500	90	40	38	42	6.5	35.5	47	M6	20	20	9	78	32.4

Accessories: manual clamp – solid design

TWBM-01



Dimensions [mm]

Part No.	Clamp force [N]	A	A2	H	H1	H2	K2	C	C2	lg	bg
TWBM-01-25	500	80	57	36	5	16	M8	68	45	80	99

Can only be combined with:

TS-01-...

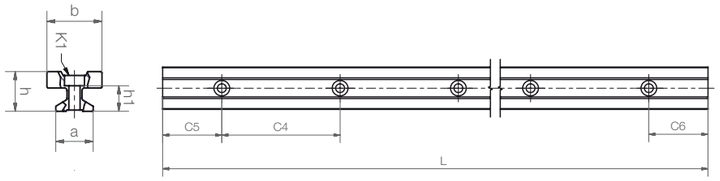
Technical data
▶ Page 917

drylin® T rail guide systems | Product range

Low-profile guide rails

TS-04

Complete system



Order key
complete system ▶ Page 928

Type

TS - 04 - 07

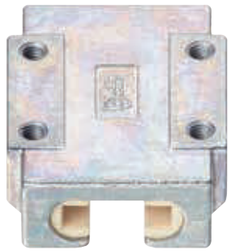
Guide rails | Miniature | Installation size

Curved rail profiles
▶ Page 844

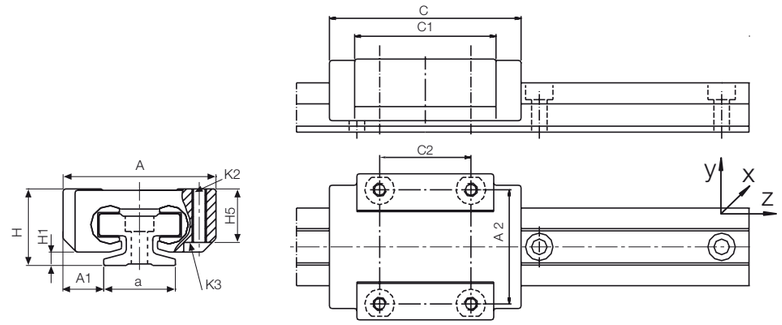
Dimensions [mm]

Part No.	Weight	L	a	C4	C5	C5	C6	C6	h	h1	K1 for screw	b	Iy	Iz	Wby	Wbz
		Max.	–0.2		min.	Max.	min.	Max.								
	[kg/m]										DIN 912		[mm⁴]	[mm⁴]	[mm³]	[mm³]
TS-04-07	0.08	2,000	7	15	5	12	5	12	5.5	3.7	M2	8	131	90	32	29
TS-04-09	0.11	2,000	9	20	5	14.5	5	14.5	6.3	4.6	M2	9.6	252	169	52	49
TS-04-12	0.20	2,000	12	25	5	17.0	5	17.0	8.6	5.9	M3	13	856	574	132	120
TS-04-15	0.33	3,000	15	40	10	29.5	10	29.5	10.8	7.0	M3	17	2,420	1,410	285	239

Miniature carriage – standard



TW-04



Dimensions [mm]

Part No.	Weight	H	A	C	A1	A2	C1	C2	H1	H5	K2 th-read	Torque	K3 for screw
		±0.2	–0.2	±0.3	±0.35				±0.35				
	[g]											[Nm]	DIN 912
TW-04-07	8	8	17	23	5	12	21	8	1.5	-	M2	0.25	-
TW-04-09	17	10	20	29	5.5	15	18	13	1.7	7.2	M2	0.25	M2
TW-04-12	34	13	27	34	7.5	20	22	15	2.2	9.5	M3	0.50	M2 (M3)[77]
TW-04-15	61	16	32	42	8.5	25	31	20	2.8	11	M3	0.50	M2 (M3)[77]

[77] (M...) = bored out

drylin® T rail guide systems | Product range

Adjustable miniature guide carriage

TWE-04

Complete system

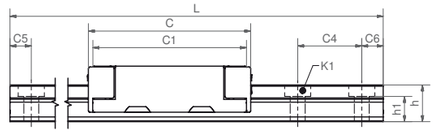
Order key
complete system ▶ Page 928

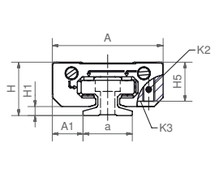
Type

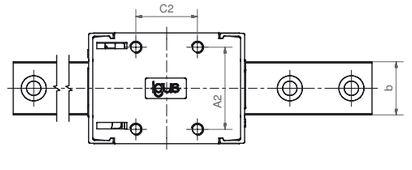
TW E - 04 - 12

Guide carriages | Adjustable clearance | Miniature | Installation size

High corrosion resistance by use of re-coating finish







Dimensions [mm]

Part No.	Weight	H	A	C	A1	A2	C1	C2	H1	H5	K2 thread	K3 for screw
		±0.2	–0.2	±0.3	±0.35				±0.35			
	[g]											DIN 912
TWE-04-12	36	13	27	38	7.5	20	36	15	2.2	9.5	M3	M2
TWE-04-15	61	16	32	45	8.5	25	31	20	2.8	11	M3	M2

Press in, turn, snap into place

Tool: Screwdriver with 3 mm edge width

Right side: Setting the height clearance

Left side: Setting the lateral clearance

Can be combined with:

TS-04-...

Technical data
▶ Page 917

drylin® T rail guide systems | Ordering options

Order key complete system:

Type	Options	Length

TK(A)-01-15-HKA-2-2000

Complete Set (Automatic version)	Type	Installation size	Options	No. of carriages	Rail length [mm]

Complete set options:
- **TK:** Complete set with guide rail and carriage
- **TKA:** Complete set automatic version
- **TKE:** Complete set, version with adjustable clearance

Type:
- **01:** Standard
- **02:** Heavy Duty
- **04:** Miniature

Options:
- **blank:** Standard
- **-LLY:** Guide carriage with floating bearing in y-direction
- **-LLZ:** Guide carriage with floating bearing in z-direction
- **-HKA:** Guide carriage with manual clamp (only for Type 01)

Order example:

TK-01-15-HKA-2-2000-LLY: Complete set comprising two standard guide carriages type 01, installation size 15 with manual clamp and one standard guide rail, 2,000 mm long, all carriages with floating bearing in y-direction

Linear rail info:

Optional rails without holes available (suffix "UNGEBOHRT").
Clear anodised rails optionally available (suffix "CA": e.g. TS-01-15-CA).
Standard hole pattern symmetric C5 = C6

drylin® T replacement liners (set)

Material iglidur® J ▶ Page 141
Material iglidur® A180 ▶ Page 349

Guide carriages	Part No. Sliding part set
TW-01-15	TEK-01-15
TW-01-20	TEK-01-20
TW-01-25	TEK-01-25
TW-01-30	TEK-01-30
TW-02-20	TEK-02-20
TW-02-25	TEK-02-25
TW-02-30	TEK-02-30
TW-12-20	TEK-12-20
TW-04-09	TEK-04-09
TW-04-12	TEK-04-12
TW-04-15	TEK-04-15

drylin® T end caps for series 01 guide rail holes:

Rail	Part No. End cap
TS-01-15	TSZ-011501
TS-01-20	TSZ-012001
TS-01-25	TSZ-012501
TS-01-30	TSZ-013001

When using the end caps, screws with a low screw head must be used to attach the rail.

drylin® T rail guides | Adjusting the clearance

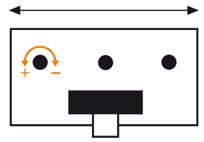
drylin® T – adjusting the clearance

drylin® T linear guide systems always require a minimum clearance between carriage and rail They are supplied with pre-adjusted clearance ready for installation. If you have special requirements, please indicate this in your order whether particularly limited or extended bearing clearance is required. If necessary, the clearance of the guide carriages can be readjusted. This should always take place when there is no load on the carriage.

TW-01-...

TW-12-20

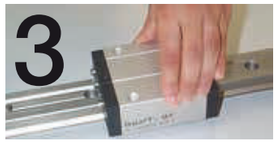
1. After removing the protective end cap, loosen the locknuts. Width across flats:
- SW 5 for TW-01-15, TW-01-20 and TW-12-20
- SW 7 for TW-01-25 and TW-01-30

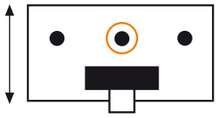


Lateral guide:
– less clearance
+ more clearance

2. Adjust the bearing clearance for the 3 guide points with an Allen key. Width across flats:
- 1.5 mm for TW-01-15, TW-01-20 and TW-12-20
- 2.0 mm for TW-01-25 and TW-01-30

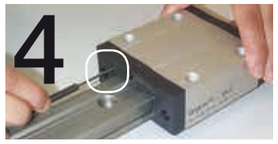
3. Check the clearance of the carriage after adjusting the 3 levels. If it is sufficient, tighten the locknuts and fit the end cap.

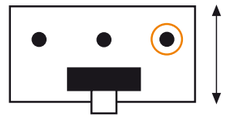




Vertical guide left

4. There is a danger that excessive reduction of the clearances can seize the sliding elements and that the clearance cannot be reset simply by loosening the adjustment screws. The sliding elements are then released by pressing the reset button on the opposite end. Use the correct size pin for this purpose:
- 2.5 mm for TW-01-15, TW-01-20 and TW-12-20
- 3.0 mm for TW-01-25 and TW-01-30





Vertical guide right

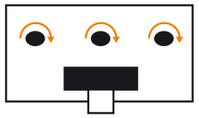
drylin® T rail guides | Adjusting the clearance

drylin® T Automatic – adjusting the clearance

The drylin® T Automatic series offers an automatic adjustment of the clearance. A readjustment takes place automatically in steps of 0.1 mm, in case varying load occur in the clearance direction.

TWA-01-...

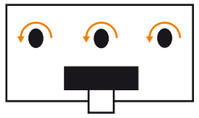
1. The system will be delivered with 3 red keys which are already plugged in. They are necessary for mounting the carriage onto the rail. If these keys are removed, then the keys should be replaced into the openings and turned right by 90 °. The clearance of the glide bar is cancelled.



locked

2. When the carriage is on the rail, loosen the keys by turning them left 90 ° and remove them. The clearance will be adjusted automatically.

3. Test the clearance of the carriage using slight to and fro movements. Fine adjustment can be undertaken during this process.



unlocked

4. You can remove the carriage at any time. In order to do so, simply replace the keys back into the openings by pushing in and turning through 90 degrees (see step 1).

drylin® T rail guides | Assembly

For the exact calculation of the drylin® T linear guide system it is essential to find out whether the position of the forces is within the allowable limits, and if the sliding pad where the highest forces occur is not overloaded.
The calculation of the necessary driving force and the maximum permissible speed is important. Each orientation requires a different formula for calculation.

Please note that the following calculations do not contain any guarantees with regard to impact loads and acceleration forces. The drive should always take place precisely in the x direction, as additional loads and increased drive resistances (danger of seizing) occur (for e. g. in crank drive) that cannot be ignored.

Variables in the calculation:

Fa:	Drive Force	[N]
Fs:	Applied Mass	[N]
Fy, Fz:	Bearing Load in y- or z-direction	[N]
sx, sy, sz:	Location of the centre of gravity in x-, y- or z-direction	[mm]
ay, az:	Location of the driving force in y- or z-direction	[mm]
wx:	Distance between carriages, on a rail	[mm]
LX:	Constant based on the installation size	[mm]
Zm:	Constant based on the installation size	[mm]
Y0:	Constant based on the installation size	[mm]
b:	Distance between guide rails	[mm]
μ:	Coefficient of friction, μ = 0 for static loads, μ = 0.2 for dynamic loads	
ZW:	Number of carriages per rail	

Recommended procedure

1st step:

Select the orientation

- horizontal
  - 1 rail and 1 carriage
  - 1 rail and 2 carriages
  - 2 rails and 4 carriages
- lateral
  - 1 rail and 1 carriage
  - 1 rail and 2 carriages
  - 2 rails and 4 carriages
- vertical
  - 1 rail and 1 carriage
  - 1 rail and 2 carriages
  - 2 rails and 4 carriages

2nd step:

Check to see whether the offset distances of the applied forces are within the permissible values

3rd step:

Calculate the necessary drive force

4th step:

Calculate the maximum bearing load in y- and z-directions

5th step:

Check out the maximum bearing load of the most strongly affected bearing with the load calculated in step No. 4.

6th step:

Determination of the maximum permitted speed for the load from step No. 4

The constant values [mm]

Part No.	Lx	Zm	Y0
TW-01-15	41	16	11.5
TW-01-20	51	23	15.0
TW-01-25	56	25	19.0
TW-01-30	65	29	21.5

Coefficients

	1 rail, 1 carriage	1 rail, 2 carriages	2 rails, 3-4 carriages
K1	|(ay + Y0)/Lx|	|(ay + Y0)/Wx|	|(ay + Y0)/Wx|
K2	(sy + Y0)/Lx	(sy + Y0)/Wx	(sy + Y0)/Wx
K3	|az/Lx|	|az/Wx|	|az/Wx|
K4	|sx/Lx|	|sx/Wx|	|sx/Wx|
K5	sz/Lx	|sz/Wx|	|sz/Wx|
K6	|(sy + Y0)/Zm|	|(sy + Y0)/Zm|	|(sy + Y0)/b|
K7	|sz/Zm|	|sz/Zm|	|(sz/b) – 0.5|

drylin® T | System design

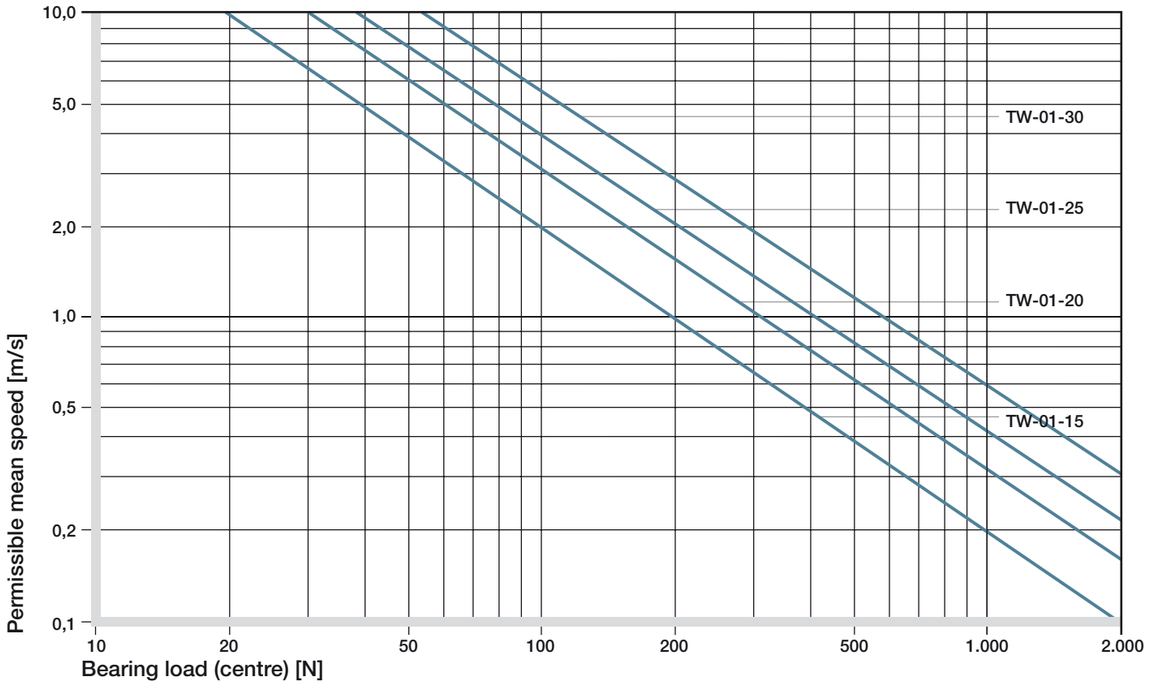


Diagram 04: Diagram to determine the maximum permissible speed for the calculated bearing load

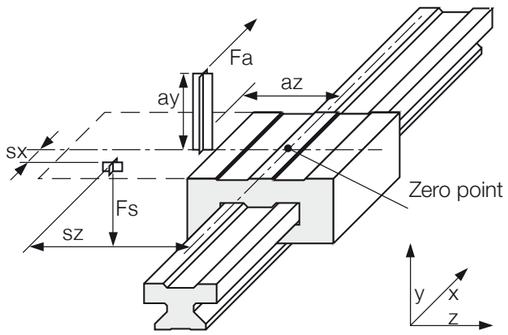
Part No.	Fy_{max}, Fz_{max} [N]
TW-01-15	2,000
TW-01-20	3,700
TW-01-25	5,000
TW-01-30	7,000

Table 03: Maximum permissible load per sliding element

drylin® T | Mounting version horizontal

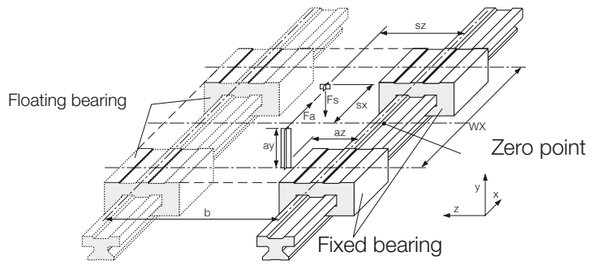
Maximum permitted distances:

Variation: 1 rail, 1 carriage		
sy + sz	<	2 Lx – Y0
ay + az	<	2 Lx – Y0
sy	<	5 Zm
sz	<	5 Zm



Maximum permitted distances:

Variation: 1 rail, 2 carriages Variation: 2 rail, 4 carriages		
sy + sz	<	2 Lx – Y0
ay + az	<	2 Lx – Y0



1st step:

Select version
1 rail and 1 carriage
1 rail and 2 carriages
2 rails and 4 carriages

2nd step:

Check to see whether the maximum distances of the applied forces are within the permissible values. (See maximum permissible distances).

3rd step:

Calculate the necessary drive force

3.1 Maximum bearing load
in **x-** and **z-direction**
outside of the carriage(s)

$$Fa_1 = \frac{\mu}{1-2\mu K_3} \cdot Fs$$

3.2 maximum bearing load
in **z-direction**
outside of the carriage(s)

$$Fa_2 = \frac{2\mu K_7}{1-2\mu K_3} \cdot Fs$$

3.3 Maximum bearing load
in **x-direction**
outside of the carriage(s)

$$Fa_3 = \frac{2\mu K_4}{1-2\mu K_3-2\mu K_1} \cdot Fs$$

If the position of the centre of gravity is not specified:

$$Fa: MAX\ (Fa_1, Fa_2, Fa_3)$$

4th step:

Calculate the maximum bearing load

4.1 Maximum bearing load
in **y-direction**

$$Fy_{max} = \frac{2\,Fs}{Zw}\left(\frac{2K_4}{Zw}+0.5\right)\cdot\left(K_7+0.5\right)+\frac{2Fa\,K_1}{Zw^2}$$

4.2 Maximum bearing load
in z-direction

$$Fz_{max}: \frac{4Fa\,K_3}{Zw^2}$$

drylin® T | Mounting version lateral

1st step:

Select version
1 rail and 1 carriage
1 rail and 2 carriages
2 rails and 4 carriages

2nd step:

Check to see whether the maximum distances of the applied forces are within the permissible values. (See maximum permissible distances).

3rd step:

Calculate the necessary drive force
First two calculations must be made:

$$Fa_1 = \frac{(1+2K_6)\mu}{1-2\mu K_1} \cdot Fs$$

$$Fa_2 = \frac{(2K_4+2K_6)\mu}{1-2\mu K_1-2\mu K_3} \cdot Fs$$

The drive force Fa corresponds to the calculated maximum value:

$$Fa: MAX\ (Fa_1, Fa_2)$$

v4th step:

Calculate the maximum bearing load

4.1 Maximum bearing load
in y**-direction**

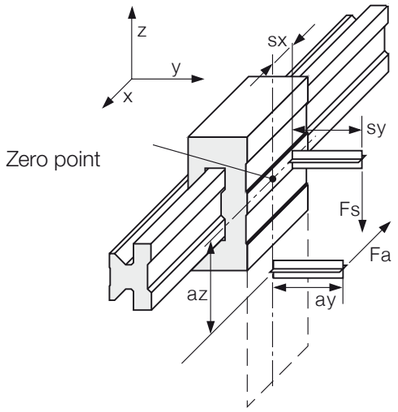
$$Fy_{max} = \frac{Fs\,K_6}{Zw} + \frac{2Fa\,K_1}{Zw^2}$$

4.2 Maximum bearing load
in z-direction

$$Fz_{max} = \frac{2Fs}{Zw}\left(\frac{2K_4}{Zw} + 0.5\right) + \frac{4Fa\,K_3}{Zw^2}$$

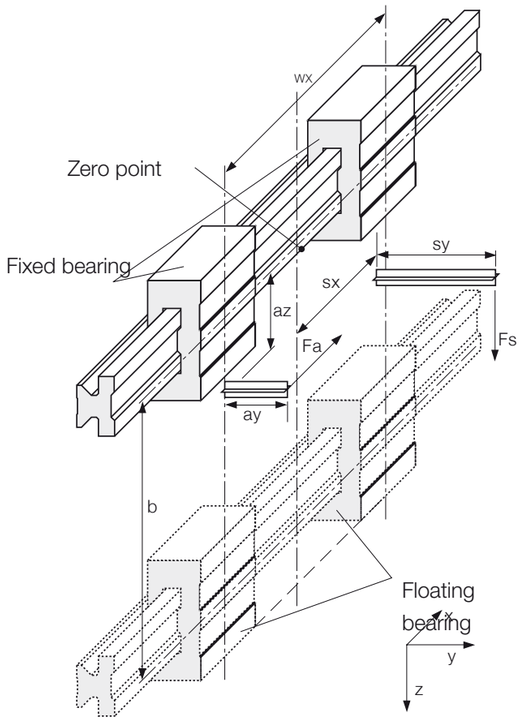
Maximum permitted distances:

Variation: 1 rail, 1 carriage		
sy + sz	<	2 Lx – Y0
ay + az	<	2 Lx – Y0
sy	<	5 Zm
sz	<	5 Zm



Maximum permitted distances:

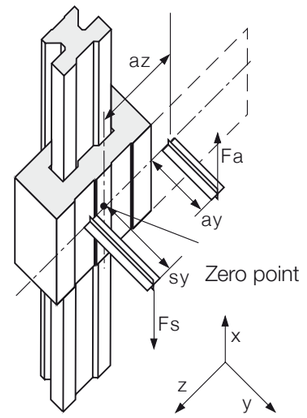
Variation: 1 rail, 2 carriages Variation: 2 rail, 4 carriages		
sy + sz	<	2 wx – Y0
ay + az	<	2 wx – Y0



drylin® T | Mounting version vertical

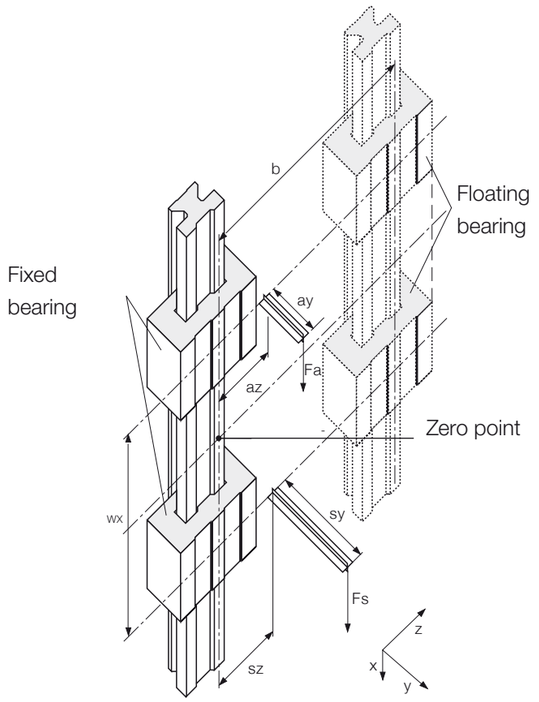
Maximum permitted distances:

Variation: 1 rail, 1 carriage		
sy + sz	<	2 Lx – Y0
ay + az	<	2 Lx – Y0
sy	<	5 Zm
sz	<	5 Zm



Maximum permitted distances:

Variation: 1 rail, 2 carriages Variation: 2 rail, 4 carriages		
sy + sz	<	2 wx – Y0
ay + az	<	2 wx – Y0



1st step:

Select version
1 rail and 1 carriage
1 rail and 2 carriages
2 rails and 4 carriages

2nd step:

Check to see whether the maximum distances of the applied forces are within the permissible values. (See maximum permissible distances).

3rd step:

Calculate the necessary drive force
First four calculations must be made:

$$Fa_1 = \frac{2\mu(sz+sy+Y0)-wx}{2\mu(az+ay+Y0)-wx} \cdot Fs$$

$$Fa_2 = \frac{2\mu(-sz+sy+Y0)-wx}{2\mu(-az+ay+Y0)-wx} \cdot Fs$$

$$Fa_3 = \frac{2\mu(sz-sy-Y0)-wx}{2\mu(az-ay-Y0)-wx} \cdot Fs$$

$$Fa_4 = \frac{2\mu(sz+sy+Y0)+wx}{2\mu(az+ay+Y0)+wx} \cdot Fs$$

The drive force Fa corresponds to the calculated maximum value:

$$Fa: MAX\ (Fa_1, Fa_2, Fa_3, Fa_4)$$

4th step:

Calculate the maximum bearing load

4.1 Maximum bearing load
in **y-direction**

$$Fy_{max} = \left| Fa\,\frac{ay+Y0}{wx} - Fs\,K_2 \right| \cdot \frac{2}{Zw^2}$$

4.2 Maximum bearing load
in **z-direction**

$$Fz_{max} = \left| Fa\,\frac{az}{wx} - Fs\,K_5 \right| \cdot \frac{4}{Zw2}$$

My sketches

drylin® linear technology – drylin® R round shaft guide systems

Lubrication-free drylin® liners

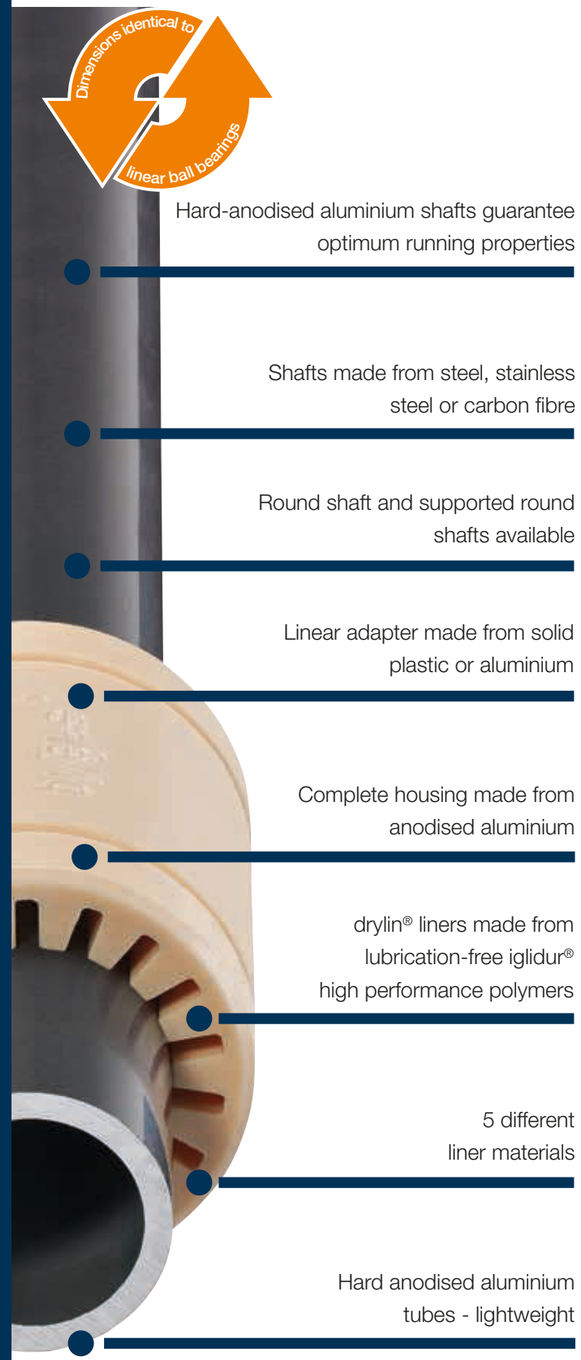
Resistance to dust and dirt

Low friction

Extremely quiet operation

Many adapter and housing options

Extremely wear-resistant, robust in challenging environments and lightweight



Lubrication-free round shaft guide systems – drylin® R

drylin® R round shaft guide systems are based on extremely wear-resistant polymers specially developed for the linear technology. The dimensions are compatible with standard ball bearings. The special geometry guarantees reliability even in extreme environments.

- 100% lubrication-free
- Dimensionally interchangeable with standard recirculating ball bearings
- Large variety of choice in housing shapes
- Shafts, shaft blocks and accessories available from stock
- Replaceable liners
- VA stainless steel housing available

Typical application areas

- Agricultural machinery
- Automotive
- Medical technology
- Facade construction
- Packaging industry

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

Up to Ø 60 mm
More dimensions on request.

Imperial dimensions available
▶ From page 1400

Service life calculation
▶ www.igus.eu/drylin-expert

Clean-Room
Cleanroom certificated IPA Fraunhofer

RoHS 2002/95/EC
Free of toxins ROHS 2002/95/EC

ESD compatible (electrostatic discharge)

Dimensions correspond to standard for recirculating ball bearings with replaceable liners

Liners and pressfit bearings

- Made from iglidur® high-performance polymers
- Easy to fit
- Unaffected by dirt and dust
- Low friction, optimised wear quality

▶ Page 946

Linear plain bearings

- Dimensionally interchangeable with standard recirculating ball bearings
- Extremely lightweight
- Aluminium or stainless steel adapter with liner made from iglidur®

▶ Page 962

Closed pillow blocks

- Pre-assembled linear housing with drylin® liners
- Material: hard anodised aluminium
- Fixed and floating bearing version available

▶ Page 976

Linear and housing bearings, open design

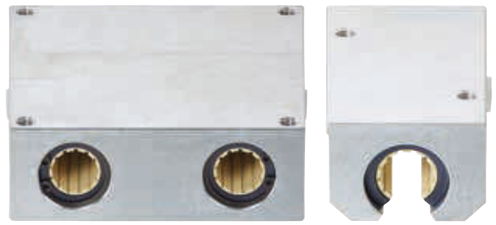
- For supported shafts
- Round or mounted design
- Clearance adjustment (optional)

▶ Page 973

Flange pillow block

- Pre-assembled housing with drylin® liners
- Round or square flange
- Tandem flange housing for additional stability

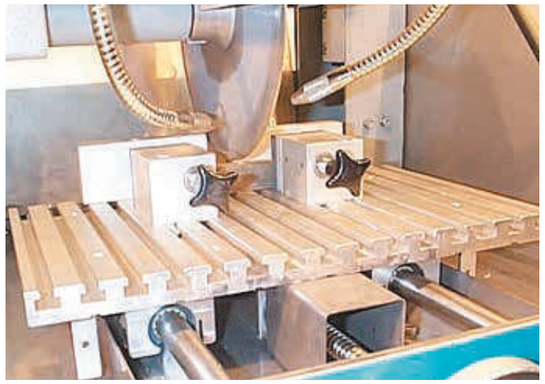
▶ Page 988



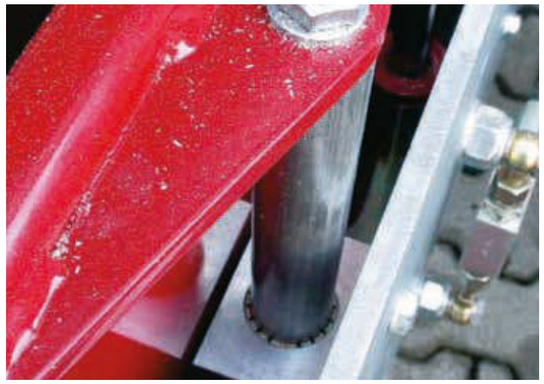
Quad block

- Closed and open design
- Torque resistant quad block housing with 4 linear adapters
- Also available as tandem housing

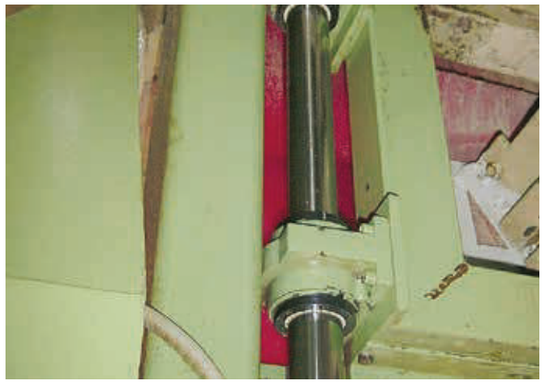
▶ Page 992



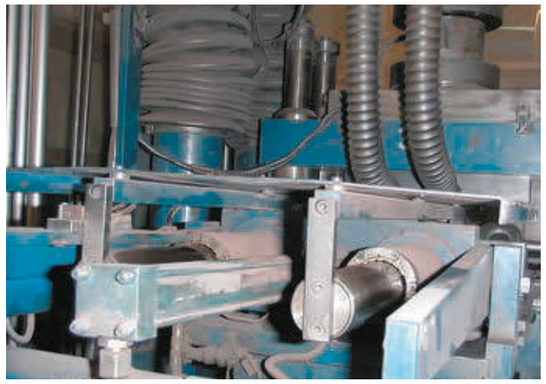
drylin® R linear bearings on supported aluminium shafts are used in this grinder to guide the cutting table. The drylin® components stand for extreme dirt resistance, accurate guidance and smooth operation.



Saw mill: linear guide with iglidur® J plastic liner for the angle stops. The iglidur® J is best suited for most linear applications due to its low wear and low friction properties.

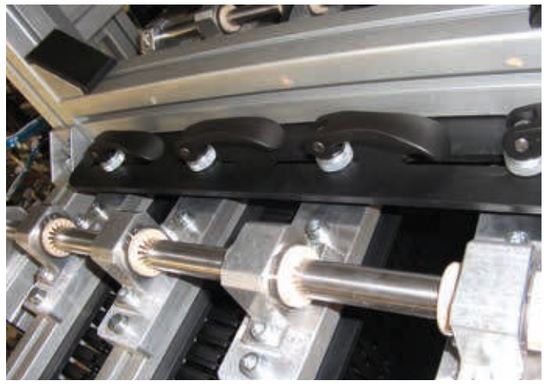


The machine now runs entirely free of troubles for multiple years with drylin® RJUM-01 linear bearings despite the extremely heavy - duty operation.



By changing over to the drylin® R linear bearing, the maintenance rate of this compaction unit could be extended by 2 years, despite high stressing from powder particles and abrasive agents.

Since the sliding bearing should be maintenance free, precise, compact, durable and very resilient, liners were mounted directly in the passages of the machine frame.



The production line should be adjusted without setup time being required. drylin® linear guides, which enable precise and fast adjustment, were used for this.

Expert for linear guides: System selection & service life calculation with CAD

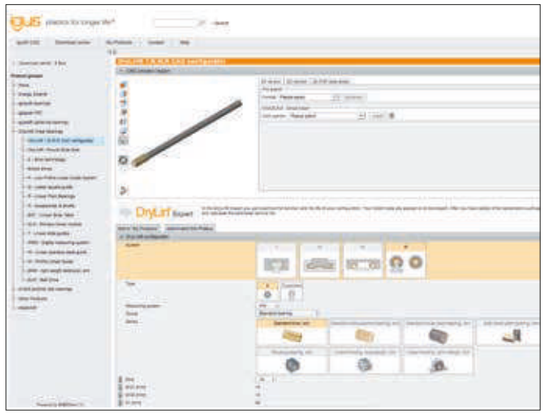
Configure and calculate linear bearings – constantly expanded by new sizes and products

Easily calculate and configure the service life of your required linear guide with only a few clicks. Select a drylin® system and add the relevant environmental parameters. Then select the bearing size, carriage, number and position. Enter the distance between the rails and the mounting. Define more relevant parameter of the guidance and select a rail length. The results are displayed.

▶ **www.igus.eu/drylin-expert**

Download app now

Download on the App Store

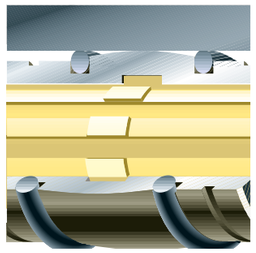


drylin® CAD configurator: Generate complete 3D models for drylin® linear technology according to your specifications

The igus® CAD online configurator gives you the ability to design and save your linear guide as a system, individual components directly as a 3D model in all commonly used formats, or to have these sent by e-mail – free of charge and without registration.

▶ **www.igus.eu/drylin-CAD**

drylin® R linear bearings



The drylin® standard round bearings consist of a interchangeable iglidur® J liner that is manufactured to be a mechanical fit into an anodised aluminium adapter. The axial securing of the liner is carried out by a snap ring groove. drylin® R linear bearings, made from solid polymer, are dimensionally equivalent to standard ball bearings. They are made entirely out of wear resistant iglidur® J material and can offer technical advantages in addition to the clear price advantage. Thus, applications in which machine parts are primarily stainless steel, i.e. food and filling equipment, are well suited for the use of solid plastic bearings. An additional weight-saving is also easily obtained.

Both versions are designed for the installation in housing bores with the tolerance H7. The mounting is done like in ball bearings with circlips according to DIN 471/472.

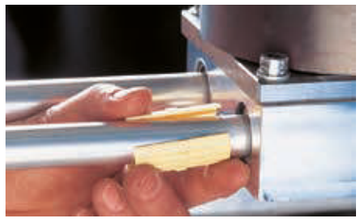
The narrow design of the 02 design series, is pressfit or bonded into the H7-housing. Standard commercial 2-component adhesives can be used for this purpose.

Dirt, dust, fibres

An important feature of all the available linear bearings is their tolerance of dirt. For most systems the application of wipers or seals is recommended for even low dirt accumulation. No other system features such a high safety with dust, lint and coarse dirt as drylin®. The patented design of the bearing surface using individual slide pads connected by thin film sections, provides performance benefits for dirty environments. Dirt, even when it becomes wet on the shaft, is wiped away by the individual glide pads and is moved into the open areas. The running sections of the drylin® bearing then glide on the shaft that has been cleared of all contaminants.

Split linear bearings

Applications that are on the edge of technical feasibility or in extremely harsh environments often require frequent replacement of the linear bearings. In many cases, drylin® can give a multiple increase in the service life. However, in extreme applications, replacement of the bearings is necessary, even with drylin®. drylin® linear bearings can provide considerable cost reductions in such cases as only the polymer bearing liner has to be replaced. This often means a reduction of more than 90 % in replacement part costs. In addition the dismantling of the shafts is avoided. The split bearings are easily pulled off the housing and opened. The slotted liner can be simply mounted on the shaft. Clip a new bearing liner over the shaft, put the two housing halves together, install – done! With this product line of split drylin® bearings, installation times can be reduced to a minimum.



	 The all-rounder – iglidur® J	 The specialist – iglidur® J200	 The extreme – iglidur® X	 The marathon runner – iglidur® E7	 FDA compliant – iglidur® A180
Application temperature	-50 to +90 °C	-50 to +90 °C	-100 to +250 °C	-50 to +70 °C	-50 to +90 °C
Best coefficient of friction with	Steel shaft	Aluminium, hard anodised	Steel hard chrome-plated	Steel/Stainless steel shaft	Stainless steel shaft
Volume resistance	> 10^{13} Ωcm	> 10^{8} Ωcm	< 10^{5} Ωcm	> 10^{9} Ωcm	> 10^{12} Ωcm
Moisture absorption	1.3 % weight	0.7 % weight	0.5 % weight	< 0.1 % weight	0.2 % weight
Maximum life time	Aluminium, hard anodised	Aluminium, hard anodised	Hardened stainless steel	Steel/Stainless steel shaft	Stainless steel shaft
Potential shaft material	all shaft materials	Aluminium, hard anodised	Hardened stainless steel	Steel/Stainless steel shaft	all shaft materials
Permissible stat. surface pressure	35 MPa	23 MPa	150 MPa	18 MPa	28 MPa
Part No.	JUM-...	J200UM-...	XUM-...	E7UM-...	A180UM-...

Serie L1 - low-clearance press-fit bearings

The series L1 plain bearings are composed of the iglidur® L100 bearing material, an extremely wear-resistant plastic compound. They are sub-divided into a press-fit area and a gliding range. The gliding range is composed of individual crossbars which are linked to each other by thin film bridges. These film bridges compensate the expansion of the bearing through heating or moisture. This separation enables the almost clearance free design of the bearings, as there is no clamping of the shaft. The cylinder-shaped press-fit area is also visually very distinct from the gliding range. The function of this area, which shows a distinct clearance compared to the shaft, is to fix the bushing firmly in the housing by means of a press fit.

Compressive strength

iglidur® plain bearings are homogeneously filled with solid lubricants. In this way, lubricants cannot be removed, even at high loads. The iglidur® L100 material allows an average static surface pressure of 70 MPa. However, only half of the bearing surface can carry loads and this is taken into account in the calculation.

Surface speeds

The following table shows possible surface speeds of L1 bearings.

- Extremely high wear resistance
- Low coefficient of friction
- Vibration dampening

iglidur® L100	Rotating	Oscillating	Linear
Continuous [m/s]	1.5	1.5	3
Short-term [m/s]	3	3	10

Table 02: Maximum surface speed for iglidur® L100

Material properties:
iglidur® J ▶ Page 143
iglidur® J200 ▶ Page 299
iglidur® X ▶ Page 239
iglidur® E7 ▶ Page 1432
iglidur® A180 ▶ Page 351
iglidur® L100 ▶ Page 1435

- High static compressive strength
- Good chemical resistance
- Resistant to dirt
- Also suitable for soft and rough shafts

Coefficients of sliding friction

Plain bearings of the L1 series are designed for dry operation against steel. The best results are attained with surface finishes from 0.3 to 0.8 Ra. The coefficients of sliding friction reduces with increasing load. Typical values in dry operation are 0.2 to 0.3. But the value can be higher with less suitable shafts.

Operating temperatures

Temperatures affect the compressive strength, the wear and the securing of the bearing in the housing. In tests, a secure pressfit could be held up to a temperature of +70 °C. At higher temperatures, an additional securing of the bearing is recommended. With effective securing, L1 plain bearings could also be used at temperatures over +130 °C.

iglidur® L100	Application temperatures
Minimum	–30 °C
Max. long-term	+100 °C
Max. short-term	+190 °C

Table 03: Temperature limits for iglidur® L100

Floating bearings for linear plain bearing

drylin® R linear bearings in the 03 design series offer great advantages in applications with parallel shafts. By their geometry, they are able to compensate for alignment and parallelism errors and should be used on the shaft located furthest from the drive mechanism. The design provides a spherical area on the outside diameter of the aluminium adapter for self-alignment. Reductions in load capacity are prevented, since the shaft always lies on the total projected surface. Due to the even load distribution over the entire bearing, edge loads are not possible with the self-aligning drylin®- linear bearings. In order to compensate for parallelism errors between two shafts, the outer diameter is designed to be smaller than the housing bore diameter by 0.2 to 0.3 mm (depending on the size). With the use of mounted O-rings, these bearings have an elastic bearing seat. The clearance between the bearing and housing allows for the maximum compensation of possible shaft mis-alignment. The drylin® R self-aligning bearings are supplied hard anodised. These surfaces guarantee the highest wear resistance if the aluminium bearing moves in the housing during compensation adjustments. Another option is the housing bearing in the OJUM-06 LL and RJUM-06 LL design series. The mounting of the bearing allows a parallelism adjustment between the shafts by ±3 mm. The particular suspension of the supporting housing on an axis running in the z-direction enables an angular error compensation of up to 3.5°.

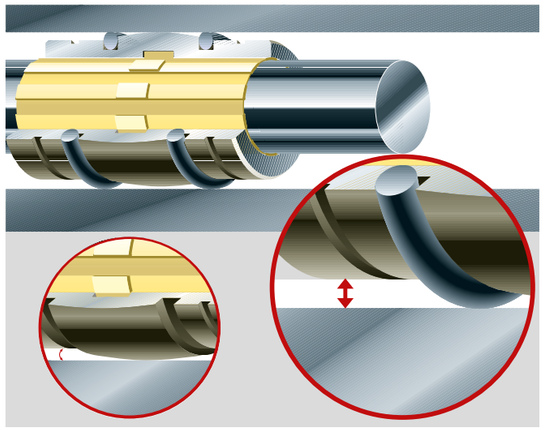


Figure 02: By defined installation clearance and externally mounted O-rings, the self-aligning drylin® R bearings of the type series 03 can compensate parallelism errors. The spherical drylin® adapter can compensate for parallelism errors. A hard-anodisation protects the aluminium adapter from wear.

Eccentric forces

To ensure successful use of maintenance-free drylin® linear bearings, it is necessary to follow certain recommendations: If the distance between the driving force point and the fixed bearings is more than twice the bearing spacing (2:1 rule), a static friction value of 0.25 can theoretically result in jamming on the guides.
This principle applies regardless of the value of the load or drive force. The friction product is always related to the fixed bearings. The greater the distance between the drive and guide bearings, the higher the degree of wear and required drive force.
Failure to observe the 2:1 rule during a use of linear slide bearings can result in uneven motion or even system blockage. Such situations can often be remedied with relatively simple modifications. If you have any questions on design and/or assembly, please contact our application engineers.

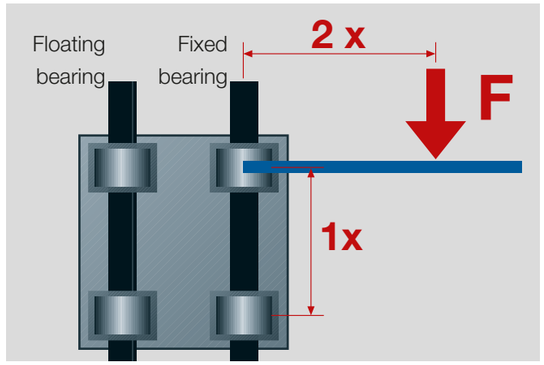


Figure 03: The 2:1 rule

OJUM-06-LL
▶ Page 983

RJUM-06-LL
▶ Page 982

Series RJUM-03 / OJUM-03	±0.5°
Series RJUM-06-LL/OJUM-06-LL	±3.5°

Table 04: Compensation of misalignment errors

Series RJUM-03/OJUM-03	±0.1 mm
Series RJUM-06-LL/OJUM-06-LL	±3.0 mm

Table 05: Compensation of parallelism errors

drylin® R shaft guides are designed for completely lubrication free operation. The dimensions of the respective linear adapter and housing meet the standard for recirculating ball bearings. During assembly, please note the following installation instructions:

Construction tips for drylin® linear plain bearings:
The values for "F_{max}." relate to the performance of the iglidur® liners made from high-performance plastics and cannot be used as only selection tool for the calculation of an application. The maximum carrying capacity of the entire bearing system depends on the geometry, housing shape, the housing material, the connection including the screws used and requires a separate inspection. For a detailed analysis, please use our online configurator at **▶ www.igus.eu/drylin-expert**

Recommended tolerance for the shaft: h6-h10
Surface roughness [Ra]: 0.15-0-6
Guide shafts round/supported **▶ Page 1037**

Recommended housing bore H7
Linear plain bearing RJUM-01/03, TJUM-01/03, RJM, RJMP, RJ260(U)M02, pressfit bearing WLM, WLFM

Liners:
JUM, XUM, JUMO, XUMO, JUI, JUIO, E7UM, E7UMO
● Interlocking clip-on in the housing bore ● Axial securing is given by a snap ring groove ● Torque protection through engagement of the safety pin in hole ø z

Pressfit bearings:
WLM, WLFM
● Installation by pressing into the H7 housing bore

Linear plain bearings:
RJUM-01, RJUM-11, RJUM-ES, TJUM-01, RJUM-03, TJUM-03, RJUI-01, RJUI-03, TJUI-01, TJUI-03
● Secured by DIN 471 or 472 circlips, metric types (not included in delivery)

Solid plastic bearings:
RJM, RJI-01
● Fastening with circlips according to DIN 471 or 472 (not included in delivery) ● The E9 inner tolerance applies only after the press-fit

Solid polymer bearings:
RJMP
● Easy assembly by soft press-fit ● Secured by DIN 471 or 472 circlips, metric types (not included in delivery)

Linear plain bearings:
RJUM-02
● Secured by press-fit in steel housing bore H7 or aluminium housing bore K7 ● Alternatively, the adapter can be glued with commercially available 2-component adhesive into a housing

Compact bearing:
RJ260 (UM-02)
● Axial saving and press fit into housing bore H7 ● Alternatively, the adapter can be glued with commercially available 2-component adhesive into a housing

Linear plain bearings:
OJUM-01, OJUM-03, OJUI-01, OJUI-03
● Secure the bearing with setscrews (not included in delivery)

Quad block: RQA, RGA
Tandem design: RTA
● The bearing in the housing is secured by DIN 472 circlips

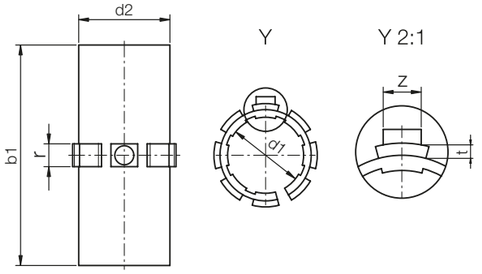
Linear housing:
RGAS
● The bearing in the housing is secured by DIN 471 circlips

Quad block: OQA, OGA,
Linear housing: OGAS,
Tandem design: OTA
● The bearings of the housings are secured by set screws

Pillow block: RJUM/E/T-05, RJUM-06/-LL, OJUM/E-06/-LL,
Flange housing: FJUM/T-01/02
Quad Block: RGA, OGA
Tandem design: RTA, OTA
Linear bearing: RGAS, OGAS
● Mounting screws of the housing DIN 912-8.8 ● Circlips according to DIN 7980

drylin® R liners | Product range

Closed, long design for round shafts – made from iglidur® J (all-rounder)



Order key

Type	Size
J U M-01-10	

iglidur® J | Liner | Metric | Standard | d1

Inch Imperial dimensions ▶ Page 1400

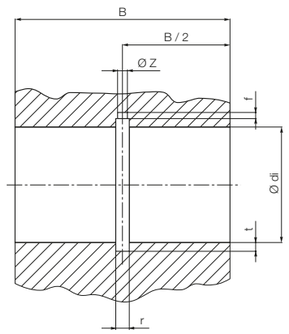
78) According to igus® testing method ▶ Page 1000
Please note: installation instructions ▶ Page 945
min. -50 °C
max. +90 °C

Dimensions [mm]

d1	d1-Tolerance78)	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.030 +0.070	12	28	3.0	0.8	2.5	1.10	**JUM-01-10**
12	+0.030 +0.070	14	31	3.0	0.8	3.0	1.50	**JUM-01-12**
16	+0.030 +0.070	18	35	3.5	0.8	3.5	2.20	**JUM-01-16**
20	+0.030 +0.070	23	44	5.0	0.8	3.5	4.90	**JUM-01-20**
25	+0.030 +0.070	28	57	5.0	0.8	4.0	8.23	**JUM-01-25**
30	+0.040 +0.085	34	67	5.0	0.8	4.0	14.95	**JUM-01-30**
35	+0.040 +0.085	39	69	5.0	0.8	4.0	18.20	**JUM-01-35**
40	+0.040 +0.085	44	79	6.0	1.3	5.0	23.16	**JUM-01-40**
50	+0.050 +0.150	55	99	7.0	1.3	6.0	45.35	**JUM-01-50**
60	+0.050 +0.150	65	124	8.0	2.5	6.5	70.00	**JUM-01-60**79)

Housing bore for liner JUM-01 | dimensions [mm]

Shaft Ø	di H7	B h10	r +0.05	t +0.1	f +0.5	Z +0.2	Part No.
10	12	29	3.0	1.0	1.0	2.6	**JUM-01-10**
12	14	32	3.0	1.0	1.5	3.1	**JUM-01-12**
16	18	36	3.5	1.0	1.7	3.6	**JUM-01-16**
20	23	45	5.0	1.0	2.0	3.6	**JUM-01-20**
25	28	58	5.0	1.0	2.0	4.1	**JUM-01-25**
30	34	68	5.0	1.0	2.0	4.1	**JUM-01-30**
35	39	70	5.0	1.0	2.0	4.1	**JUM-01-35**
40	44	80	6.0	1.5	2.5	5.1	**JUM-01-40**
50	55	100	7.0	1.5	2.5	6.1	**JUM-01-50**
60	65	125	8.0	2.5	3.0	6.5	**JUM-01-60**79)



79) in two parts

Can be combined with:

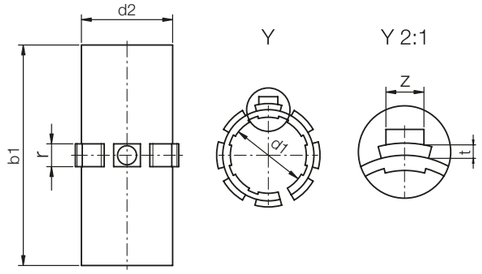

RJUM-01/-03
TJUM-01/-03


RJUM-06/-06-LL


FJUM-01/-02

drylin® R liners | Product range

Long, open design for supported shafts – made from iglidur® J (all-rounder)



Order key

Type	Size
J U M O-01-10	

iglidur® J | Liner | Metric | Open | Standard | d1

Inch Imperial dimensions ▶ Page 1400

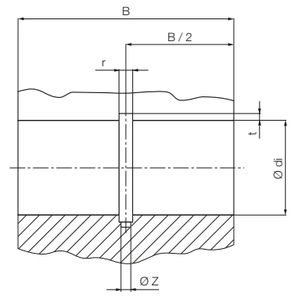
78) According to igus® testing method ▶ Page 1000
Please note: installation instructions ▶ Page 945
min. -50 °C
max. +90 °C

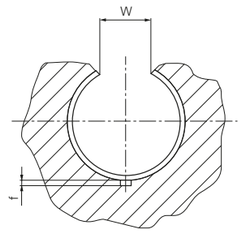
Dimensions [mm]

d1	d1-Tolerance78)	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.030 +0.070	12	28	3.0	0.8	2.5	0.90	**JUMO-01-10**
12	+0.030 +0.070	14	31	3.0	0.8	3.0	1.16	**JUMO-01-12**
16	+0.030 +0.070	18	35	3.5	0.8	3.5	1.71	**JUMO-01-16**
20	+0.030 +0.070	23	44	5.0	0.8	3.5	4.16	**JUMO-01-20**
25	+0.030 +0.070	28	57	5.0	0.8	4.0	6.97	**JUMO-01-25**
30	+0.040 +0.085	34	67	5.0	0.8	4.0	12.38	**JUMO-01-30**
40	+0.040 +0.085	44	79	6.0	1.3	5.0	20.18	**JUMO-01-40**
50	+0.050 +0.150	55	99	7.0	1.3	6.0	38.60	**JUMO-01-50**
60	+0.050 +0.150	65	124	8.0	2.5	6.5	60.10	**JUMO-01-60**79)

Housing bore for liner JUMO-01 | dimensions [mm]

Shaft Ø	di H7	B h10	W	r +0.5	t +0.05	f +0.1	Z +0.2	Part No.
10	12	29	7.3	3.0	1.0	1.0	2.6	**JUMO-01-10**
12	14	32	9.0	3.0	1.0	1.5	3.1	**JUMO-01-12**
16	18	36	11.6	3.5	1.0	1.7	3.6	**JUMO-01-16**
20	23	45	12.0	5.0	1.0	2.0	3.6	**JUMO-01-20**
25	28	58	14.5	5.0	1.0	2.0	4.1	**JUMO-01-25**
30	34	68	16.6	5.0	1.0	2.0	4.1	**JUMO-01-30**
40	44	80	21.0	6.0	1.5	2.5	5.1	**JUMO-01-40**
50	55	100	25.5	7.0	1.5	2.5	6.1	**JUMO-01-50**
60	65	125	27.2	8.0	2.5	3.0	6.5	**JUMO-01-60**79)





79) in two parts

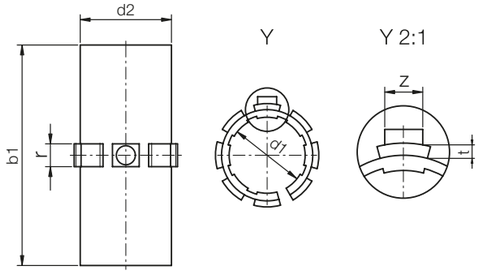
Can be combined with:


OJUM-01/-03


OJUM-06/-06-LL

drylin® R liners | Product range

Long, closed design, precise for round shafts – made from iglidur® J (all-rounder)



Order key

Type	Size
J U M-11-10	

iglidur® J | Liner | Metric | Precise | d1

- Max. bearing clearance reduced by 50%
- Increased bearing area: longer service life

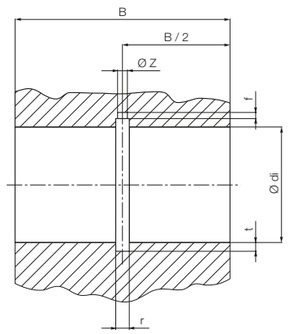
78) According to igus® testing method ▶ Page 1000
Please note: installation instructions ▶ Page 945
min. -50 °C
max. +90 °C

Dimensions [mm]

d1	d1-Tolerance78)	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.000 +0.040	12	28	3.0	0.8	2.5	1.23	**JUM-11-10**
12	+0.000 +0.040	14	31	3.0	0.8	3.0	1.65	**JUM-11-12**
16	+0.000 +0.040	18	35	3.5	0.8	3.5	2.42	**JUM-11-16**
20	+0.000 +0.040	23	44	5.0	0.8	3.5	5.49	**JUM-11-20**
25	+0.000 +0.040	28	57	5.0	0.8	4.0	8.86	**JUM-11-25**
30	+0.000 +0.050	34	67	5.0	0.8	4.0	16.63	**JUM-11-30**
40	+0.000 +0.050	44	79	6.0	1.3	5.0	26.06	**JUM-11-40**
50	+0.000 +0.060	55	99	7.0	1.3	6.0	48.82	**JUM-11-50**

Housing bore for liner JUM-11 | dimensions [mm]

Shaft Ø	di H7	B h10	r +0.05	t +0.1	f +0.5	Z +0.2	Part No.
10	12	29	3.0	1.0	1.0	2.6	**JUM-11-10**
12	14	32	3.0	1.0	1.5	3.1	**JUM-11-12**
16	18	36	3.5	1.0	1.7	3.6	**JUM-11-16**
20	23	45	5.0	1.0	2.0	3.6	**JUM-11-20**
25	28	58	5.0	1.0	2.0	4.1	**JUM-11-25**
30	34	68	5.0	1.0	2.0	4.1	**JUM-11-30**
40	44	80	6.0	1.5	2.5	5.1	**JUM-11-40**
50	55	100	7.0	1.5	2.5	6.1	**JUM-11-50**



Can be combined with:


RJUM-01/-03
TJUM-01/-03

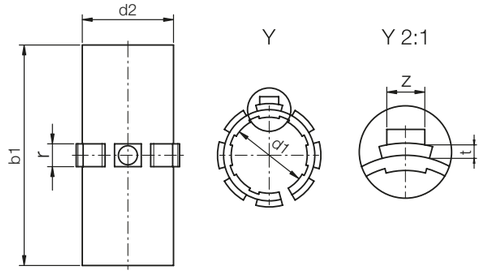

RJUM-06/-06-LL


FJUM-01/-02

drylin® R round shaft guide systems

drylin® R liners | Product range

Long, open design, precise for supported shafts – made from iglidur® J (all-rounder)



Order key

Type	Size
J U M O-11-10	

iglidur® J | Liner | Metric | Open | Precise | d1

- Max. bearing clearance reduced by 50%
- Increased bearing area: longer service life

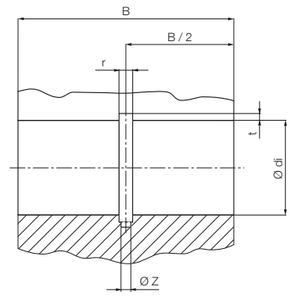
78) According to igus® testing method ▶ Page 1000
Please note: installation instructions ▶ Page 945
min. -50 °C
max. +90 °C

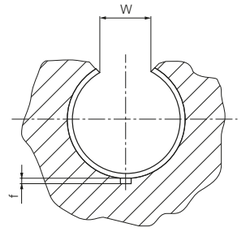
Dimensions [mm]

d1	d1-Tolerance78)	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.000 +0.040	12	28	3.0	0.8	2.5	1.10	**JUMO-11-10**
12	+0.000 +0.040	14	31	3.0	0.8	3.0	1.50	**JUMO-11-12**
16	+0.000 +0.040	18	35	3.5	0.8	3.5	2.20	**JUMO-11-16**
20	+0.000 +0.040	23	44	5.0	0.8	3.5	4.90	**JUMO-11-20**
25	+0.000 +0.040	28	57	5.0	0.8	4.0	8.23	**JUMO-11-25**
30	+0.000 +0.050	34	67	5.0	0.8	4.0	14.95	**JUMO-11-30**
40	+0.000 +0.050	44	79	6.0	1.3	5.0	23.16	**JUMO-11-40**
50	+0.000 +0.060	55	99	7.0	1.3	6.0	45.35	**JUMO-11-50**

Housing bore for liner JUMO-11 | dimensions [mm]

Shaft Ø	di H7	B h10	W +0.2	r +0.05	t +0.1	f +0.5	Z +0.2	Part No.
10	12	29	7.3	3.0	1.0	1.0	2.6	**JUMO-11-10**
12	14	32	9.0	3.0	1.0	1.5	3.1	**JUMO-11-12**
16	18	36	11.6	3.5	1.0	1.7	3.6	**JUMO-11-16**
20	23	45	12.0	5.0	1.0	2.0	3.6	**JUMO-11-20**
25	28	58	14.5	5.0	1.0	2.0	4.1	**JUMO-11-25**
30	34	68	16.6	5.0	1.0	2.0	4.1	**JUMO-11-30**
40	44	80	21.0	6.0	1.5	2.5	5.1	**JUMO-11-40**
50	55	100	25.5	7.0	1.5	2.5	6.1	**JUMO-11-50**





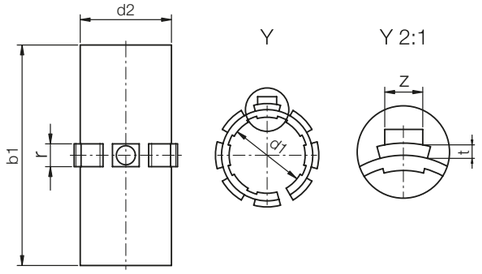
Can be combined with:


OJUM-01/-03


OJUM-06/-06-LL

drylin® R liners | Product range

Short, closed design for round shafts – made from iglidur® J (all-rounder)



Order key

Type	Size
J U M	-02-10

iglidur® J	Liner	Metric	Compact	d1

- Available also as low-clearance version (JUM-12...)

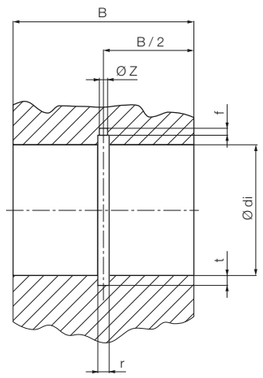
78) According to igus® testing method ▶ Page 1000
Please note: installation instructions ▶ Page 945
min. -50 °C
max. +90 °C

Dimensions [mm]

d1	d1-Tolerance78)	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.030 +0.070	12	25	3.0	0.8	2.5	1.02	**JUM-02-10**
12	+0.030 +0.070	14	27	3.0	0.8	3.0	1.27	**JUM-02-12**
16	+0.030 +0.070	18	29	3.5	0.8	3.5	1.82	**JUM-02-16**
20	+0.030 +0.070	23	29	5.0	0.8	3.5	3.27	**JUM-02-20**
25	+0.030 +0.070	28	39	5.0	0.8	4.0	5.75	**JUM-02-25**
30	+0.040 +0.085	34	49	5.0	0.8	4.0	11.28	**JUM-02-30**
40	+0.040 +0.085	44	59	6.0	1.3	5.0	17.94	**JUM-02-40**
45	+0.040 +0.085	50	59	7.0	1.3	6.0	27.00	**JUM-02-45**
50	+0.050 +0.150	55	69	7.0	1.3	6.0	32.56	**JUM-02-50**

Housing bore for liner JUM-02 | dimensions [mm]

Shaft Ø	di H7	B h10	r +0.05	t +0.1	f +0.5	Z +0.2	Part No.
10	12	26	3.0	1.0	1.0	2.6	**JUM-02-10**
12	14	28	3.0	1.0	1.5	3.1	**JUM-02-12**
16	18	30	3.5	1.0	1.7	3.6	**JUM-02-16**
20	23	30	5.0	1.0	2.0	3.6	**JUM-02-20**
25	28	40	5.0	1.0	2.0	4.1	**JUM-02-25**
30	34	50	5.0	1.0	2.0	4.1	**JUM-02-30**
40	44	60	6.0	1.5	2.5	5.1	**JUM-02-40**
45	50	60	7.0	1.5	2.5	6.1	**JUM-02-45**
50	55	70	7.0	1.5	2.5	6.1	**JUM-02-50**



Can be combined with:

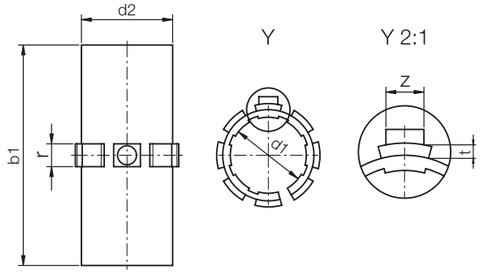

RJUM-02


RJUM-05/RJUME-05
TJUM-05/RJUMT-05


FJUMT-01/-02

drylin® R liners | Product range

Long, closed design for round shafts – made from iglidur® E7 (the endurance runner)



Order key

Type	Size
E7 U M	-01-10

iglidur® E7	Liner	Metric	Standard	d1

- Recommended in combination with steel and stainless steel shafts

Inch Imperial dimensions ▶ Page 1400

78) According to igus® testing method ▶ Page 1000
Please note: installation instructions ▶ Page 945
min. -50 °C
max. +70 °C

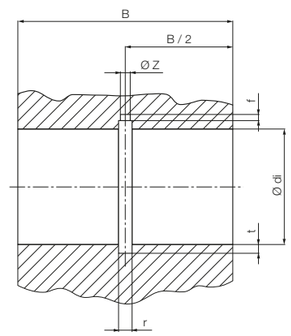
Dimensions [mm]

d1	d1-Tolerance78)	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.030 +0.070	12	28	3.0	0.8	2.5	0.73	**E7UM-01-10**
12	+0.030 +0.070	14	31	3.0	0.8	3.0	1.01	**E7UM-01-12**
16	+0.030 +0.070	18	35	3.5	0.8	3.5	1.45	**E7UM-01-16**
20	+0.030 +0.070	23	44	5.0	0.8	3.5	3.25	**E7UM-01-20**
25	+0.030 +0.070	28	57	5.0	0.8	4.0	5.44	**E7UM-01-25**
30	+0.040 +0.085	34	67	5.0	0.8	4.0	9.88	**E7UM-01-30**
40	+0.040 +0.085	44	79	6.0	1.3	5.0	17.3	**E7UM-01-40**
50	+0.050 +0.150	55	99	7.0	1.3	6.0	36.3	**E7UM-01-50**79)
60	+0.050 +0.150	65	124	8.0	2.5	6.5	54.8	**E7UM-01-60**79)

Housing bore for liner E7UM-01 | dimensions [mm]

Shaft Ø	di H7	B h10	r +0.5	t +0.05	f +0.1	Z +0.2	Part No.
10	12	29	3.0	1.0	1.0	2.6	**E7UM-01-10**
12	14	32	3.0	1.0	1.5	3.1	**E7UM-01-12**
16	18	36	3.5	1.0	1.7	3.6	**E7UM-01-16**
20	23	45	5.0	1.0	2.0	3.6	**E7UM-01-20**
25	28	58	5.0	1.0	2.0	4.1	**E7UM-01-25**
30	34	68	5.0	1.0	2.0	4.1	**E7UM-01-30**
40	44	80	6.0	1.5	2.5	5.1	**E7UM-01-40**
50	55	100	7.0	1.5	2.5	6.1	**E7UM-01-50**79)
60	65	125	8.0	2.5	3.0	6.5	**E7UM-01-60**79)

79) in two parts



Can be combined with:


RJUM-01/-03
TJUM-01/-03

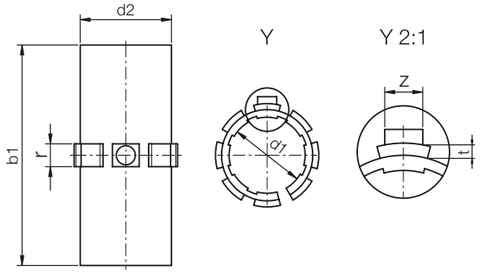

RJUM-01-ES


RJUM-06/-06-LL


FJUM-01/-02

drylin® R liners | Product range

Long, open design for supported shafts – made from iglidur® E7 (the marathon runner)



Order key

Type	Size
E7 U M O	-01-10

iglidur® E7	Liner	Metric	Open	Standard	d1

- Recommended in combination with steel and stainless steel shafts

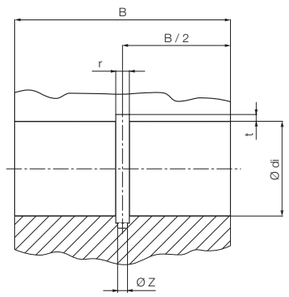
[78] According to igus® testing method ▶ Page 1000
Please note: installation instructions ▶ Page 945
min. -50 °C
max. +70 °C

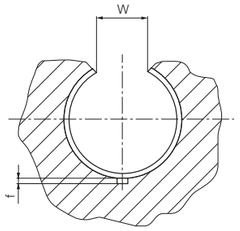
Dimensions [mm]

d1	d1-Tolerance[78]	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.030 +0.070	12	28	3.0	0.8	2.5	0.73	**E7UMO-01-10**
12	+0.030 +0.070	14	31	3.0	0.8	3.0	1.01	**E7UMO-01-12**
16	+0.030 +0.070	18	35	3.5	0.8	3.5	1.45	**E7UMO-01-16**
20	+0.030 +0.070	23	44	5.0	0.8	3.5	3.25	**E7UMO-01-20**
25	+0.030 +0.070	28	57	5.0	0.8	4.0	5.44	**E7UMO-01-25**
30	+0.040 +0.085	34	67	5.0	0.8	4.0	9.88	**E7UMO-01-30**
40	+0.040 +0.085	44	79	6.0	1.3	5.0	17.3	**E7UMO-01-40**
50	+0.050 +0.150	55	99	7.0	1.3	6.0	36.4	**E7UMO-01-50[79]**
60	+0.050 +0.150	65	124	8.0	2.5	6.5	54.8	**E7UMO-01-60[79]**

Housing bore for liner E7UMO-01 | dimensions [mm]

Shaft Ø	di H7	B h10	W	r +0.5	t +0.05	f +0.1	Z +0.2	Part No.
10	12	29	7.3	3.0	1.0	1.0	2.6	**E7UMO-01-10**
12	14	32	9.0	3.0	1.0	1.5	3.1	**E7UMO-01-12**
16	18	36	11.6	3.5	1.0	1.7	3.6	**E7UMO-01-16**
20	23	45	12.0	5.0	1.0	2.0	3.6	**E7UMO-01-20**
25	28	58	14.5	5.0	1.0	2.0	4.1	**E7UMO-01-25**
30	34	68	16.6	5.0	1.0	2.0	4.1	**E7UMO-01-30**
40	44	80	21.0	6.0	1.5	2.5	5.1	**E7UMO-01-40**
50	55	100	25.5	7.0	1.5	2.5	6.1	**E7UMO-01-50[79]**
60	65	125	27.2	8.0	2.5	3.0	6.5	**E7UMO-01-60[79]**





[79] in two parts

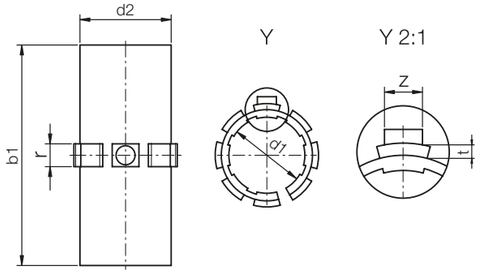
Can be combined with:

OJUM-01/-03

OJUM-06/-06-LL

drylin® R liners | Product range

Short, closed design for round shafts – made from iglidur® E7 (the marathon runner)



Order key

Type	Size
E7 U M	-02-10

iglidur® E7	Liner	Metric	Compact	d1

- Recommended in combination with steel and stainless steel shafts

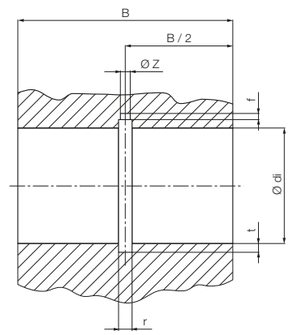
[78] According to igus® testing method ▶ Page 1000
Please note: installation instructions ▶ Page 945
min. -50 °C
max. +70 °C

Dimensions [mm]

d1	d1-Tolerance[78]	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.030 +0.070	12	28	3.0	0.8	2.5	0.73	**E7UM-02-10**
12	+0.030 +0.070	14	31	3.0	0.8	3.0	1.01	**E7UM-02-12**
16	+0.030 +0.070	18	35	3.5	0.8	3.5	1.45	**E7UM-02-16**
20	+0.030 +0.070	23	44	5.0	0.8	3.5	3.25	**E7UM-02-20**
25	+0.030 +0.070	28	57	5.0	0.8	4.0	5.44	**E7UM-02-25**
30	+0.040 +0.085	34	67	5.0	0.8	4.0	9.88	**E7UM-02-30**
40	+0.040 +0.085	44	79	6.0	1.3	5.0	17.3	**E7UM-02-40**

Housing bore for liner E7UM-02 | dimensions [mm]

Shaft Ø	di H7	B h10	r +0.05	t +0.1	f +0.5	Z +0.2	Part No.
10	12	26	3.0	1.0	1.0	2.6	**E7UM-02-10**
12	14	28	3.0	1.0	1.5	3.1	**E7UM-02-12**
16	18	30	3.5	1.0	1.7	3.6	**E7UM-02-16**
20	23	30	5.0	1.0	2.0	3.6	**E7UM-02-20**
25	28	40	5.0	1.0	2.0	4.1	**E7UM-02-25**
30	34	50	5.0	1.0	2.0	4.1	**E7UM-02-30**
40	44	60	6.0	1.5	2.5	5.1	**E7UM-02-40**



Can be combined with:

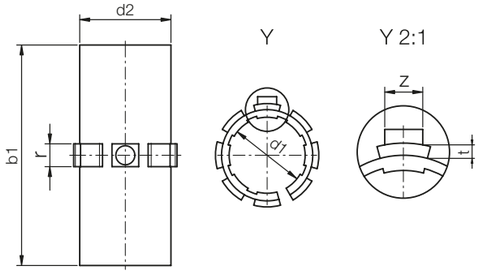
RJUM-02

RJUM-05/RJUME-05
TJUM-05/RJUMT-05

FJUMT-01/-02

drylin® R liners | Product range

Long, closed design for round shafts – made from iglidur® X (the extreme)



Order key

Type	Size
X U M-01-12	

iglidur® X | Liner | Metric | Standard | d1

- For high temperature applications
- Recommended in combination with stainless steel or chrome-plated shafts
- In two parts

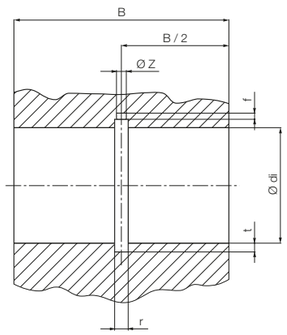
78) According to igus® testing method ▶ Page 1000
Please note: installation instructions ▶ Page 945
min. -100 °C
max. +250 °C

Dimensions [mm]

d1	d1-Tolerance78)	d2	b1	r	t	Z	Weight [g]	Part No.
12	+0.016 +0.086	14	31	3.0	0.8	3.0	1.46	**XUM-01-12**
14	+0.016 +0.086	16	30	3.5	0.6	3.5	1.81	**XUM-01-14**
16	+0.016 +0.086	18	35	3.5	0.8	3.5	2.13	**XUM-01-16**
20	+0.020 +0.104	23	44	5.0	0.8	3.5	4.70	**XUM-01-20**
25	+0.020 +0.104	28	57	5.0	0.8	4.0	8.27	**XUM-01-25**
30	+0.025 +0.125	34	67	5.0	0.8	4.0	15.57	**XUM-01-30**
40	+0.025 +0.125	44	79	6.0	1.3	5.0	24.0	**XUM-01-40**

Housing bore for liner XUM-01 | dimensions [mm]

Shaft Ø	di H7	B h10	r +0.05	t +0.1	f +0.5	Z +0.2	Part No.
12	14	32	3.0	1.0	1.5	3.1	**XUM-01-12**
14	16	31	3.5	0.8	1.7	3.6	**XUM-01-14**
16	18	36	3.5	1.0	1.7	3.6	**XUM-01-16**
20	23	45	5.0	1.0	2.0	3.6	**XUM-01-20**
25	28	58	5.0	1.0	2.0	4.1	**XUM-01-25**
30	34	68	5.0	1.0	2.0	4.1	**XUM-01-30**
40	44	80	6.0	1.5	2.5	5.1	**XUM-01-40**



Can be combined with:

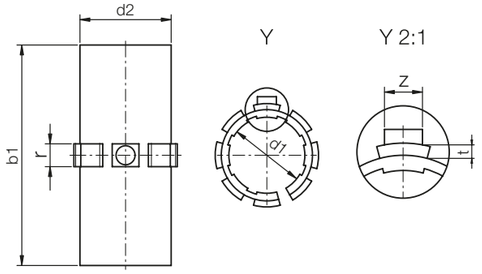

RJUM-01/-03
TJUM-01/-03


RJUM-06/-06-LL


FJUM-01/-02

drylin® R liners | Product range

Long, open design for supported shafts – made from iglidur® X (the extreme)



Order key

Type	Size
X U M O-01-10	

iglidur® X | Liner | Metric | Open | Standard | d1

- For high temperature applications
- Recommended in combination with stainless steel or chrome-plated shafts
- In two parts

78) According to igus® testing method ▶ Page 1000
Please note: installation instructions ▶ Page 945
min. -100 °C
max. +250 °C

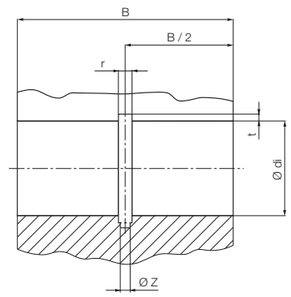
Dimensions [mm]

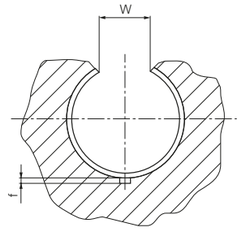
d1	d1-Tolerance78)	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.016 +0.086	12	28	3.0	0.8	2.5	1.00	**XUMO-01-10**110)
12	+0.016 +0.086	14	31	3.0	0.8	3.0	1.46	**XUMO-01-12**
16	+0.016 +0.086	18	35	3.5	0.8	3.5	2.13	**XUMO-01-16**
20	+0.020 +0.104	23	44	5.0	0.8	3.5	4.70	**XUMO-01-20**
25	+0.020 +0.104	28	57	5.0	0.8	4.0	8.27	**XUMO-01-25**
30	+0.025 +0.125	34	67	5.0	0.8	4.0	15.57	**XUMO-01-30**
40	+0.025 +0.125	44	79	6.0	1.3	5.0	24.00	**XUMO-01-40**

Housing bore for liner XUMO-01 | dimensions [mm]

Shaft Ø	di H7	B h10	W +0.2	r +0.05	t +0.1	f +0.5	Z +0.2	Part No.
10	12	29	7.3	3.0	1.0	1.0	2.6	**XUMO-01-10**110)
12	14	32	9.0	3.0	1.0	1.5	3.1	**XUMO-01-12**
16	18	36	11.6	3.5	1.0	1.7	3.6	**XUMO-01-16**
20	23	45	12.0	5.0	1.0	2.0	3.6	**XUMO-01-20**
25	28	58	14.5	5.0	1.0	2.0	4.1	**XUMO-01-25**
30	34	68	16.6	5.0	1.0	2.0	4.1	**XUMO-01-30**
40	44	80	21.0	6.0	1.5	2.5	5.1	**XUMO-01-40**

110) One-piece





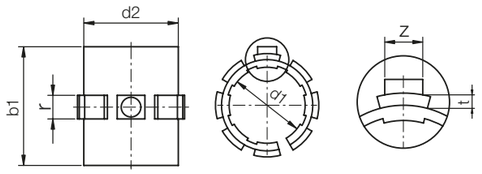
Can be combined with:


OJUM-01/-03
TJUM-01/-03


OJUM-06/-06-LL

drylin® R liners | Product range

Short, closed design for round shafts – made from iglidur® X (the extreme)



Order key

Type	Size
X U	M-02-12

iglidur® X	Liner	Metric	Compact	d1

- For high temperature applications
- Recommended in combination with stainless steel or chrome-plated shafts
- In two parts

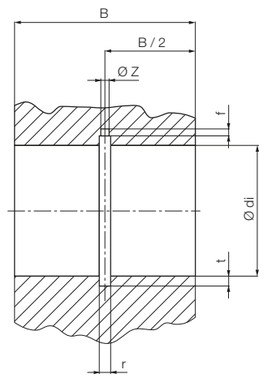
78) According to igus® testing method ▶ Page 1000
Please note: installation instructions ▶ Page 945
min. -100 °C
max. +250 °C

Dimensions [mm]

d1	d1-Tolerance78)	d2	b1	r	t	Z	Weight [g]	Part No.
12	+0.016 +0.086	14	27	3.0	0.8	3.0	1.46	**XUM-02-12**
16	+0.016 +0.086	18	29	3.5	0.8	3.5	2.13	**XUM-02-16**
20	+0.020 +0.104	23	29	5.0	0.8	3.5	4.70	**XUM-02-20**
25	+0.020 +0.104	28	39	5.0	0.8	4.0	8.27	**XUM-02-25**
30	+0.025 +0.125	34	49	5.0	0.8	4.0	15.57	**XUM-02-30**
40	+0.025 +0.125	44	59	6.0	1.3	5.0	24.00	**XUM-02-40**

Housing bore for liner XUM-02 | dimensions [mm]

Shaft Ø	di H7	B h10	r +0.05	t +0.1	f +0.5	Z +0.2	Part No.
12	14	28	3.0	1.0	1.5	3.1	**XUM-02-12**
16	18	30	3.5	1.0	1.7	3.6	**XUM-02-16**
20	23	30	5.0	1.0	2.0	3.6	**XUM-02-20**
25	28	40	5.0	1.0	2.0	4.1	**XUM-02-25**
30	34	50	5.0	1.0	2.0	4.1	**XUM-02-30**
40	44	60	6.0	1.5	2.5	5.1	**XUM-02-40**



Can be combined with:


RJUM-02


RJUM-01-ES


RJUM-05/RJUME-05
TJUM-05/RJUMT-05

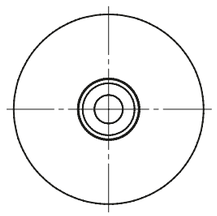

FJUMT-01/-02

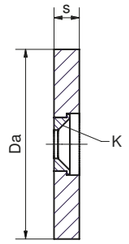
My sketches

drylin® R round shaft guide systems

drylin® R sliding discs | Product range

Large force dsiplacement on different surfaces





Order key

Type	Size
RSD J-40-06	

Slide disc | iglidur® J | Outer Ø | Width

- Made from the high-performance plastic iglidur® J
- Low coefficient of friction
- Screw through the reinforced hole in the middle for a firm hold

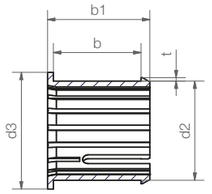
min. -50 °C
max. +90 °C

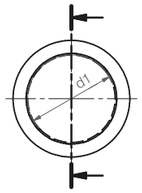
Dimensions [mm]

Outer Ø Da	Wear limit	Width s	For countersunk screw K	Max. static load capacity [N]	Part No.
40	1.5	6 ± 0.05	M6	28,500	**RSDJ-40-06**
60	2.5	8 ± 0.05	M8	66,000	**RSDJ-60-08**
80	2.5	8 ± 0.05	M8	120,000	**RSDJ-80-08**

drylin® R clip | Product range

Clip-in liners





Order key

Type	Size
J U C M-01-10	

iglidur® J | Liner | Clip-on | Metric | Standard | d1

- Quick installation by hand for sheet thicknesses of 14 to 30 mm
- No axial securing required

[78] According to igus® testing method ▶ Page 1000
[82] Design standards ▶ Page 944
Please note: installation instructions ▶ Page 945
min. -50 °C
max. +90 °C

Technical data

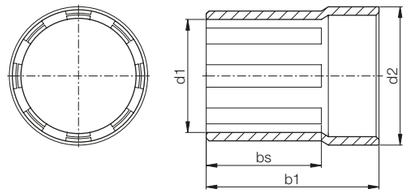
Part No.	d1-Tolerance[78]	F max. dynamic[82] P = 5 MPa	F max. static[82] P = 35 MPa	Weight
	[mm]	[N]	[N]	[g]
JUCM-1216-16	+0.04 +0.10	320	1,600	2.5
JUCM-1418-18	+0.04 +0.10	440	2,200	2.9
JUCM-1620-20	+0.04 +0.10	560	2,800	3.9
JUCM-1822-20	+0.04 +0.10	630	3,150	4.2
JUCM-2024-25	+0.04 +0.12	880	4,400	5.8
JUCM-2227-27	+0.04 +0.12	1,000	5,000	9.4
JUCM-2227-34	+0.04 +0.12	1,300	6,500	10.3
JUCM-2529-30	+0.04 +0.12	1,300	6,500	8.6
JUCM-3034-30	+0.04 +0.12	1,500	7,500	10.0

Dimensions [mm]

d1	d2	d3	B	B1	t	Part No.
12	16	20	16	20.5	0.8	**JUCM-1216-16**
14	18	22	18	22.5	0.8	**JUCM-1418-18**
16	20	25	20	24.5	0.8	**JUCM-1620-20**
18	22	26	20	24.5	0.8	**JUCM-1822-20**
20	24	30	25	30.0	1.0	**JUCM-2024-25**
22	27	34	27	32	1.0	**JUCM-2227-27**
22	27	32	34	39.5	1.0	**JUCM-2227-34**
25	29	35	30	35.5	1.0	**JUCM-2529-30**
30	34	40	30	35.0	1.2	**JUCM-3034-30**

drylin® R press-fit bearings | Product range

Made from iglidur® L100



Order key

Type	Size
W L M	-0608-10

iglidur® L100	Series L1	Metric	Inner Ø	Outer Ø	Length

- Extreme wear resistance
- Low coefficients of friction

80) Measured with gage

Please note: installation instructions ▶ Page 945

Material table ▶ Page 1435

min. -40 °C

max. +100 °C

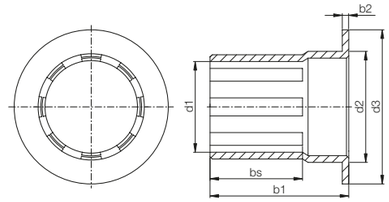
Dimensions [mm]

d1	d1-Tolerance80)	d2	b1	bs	Part No.
6	+0.000 +0.040	8	10	6	**WLM-0608-10**
8	+0.000 +0.050	10	12	8	**WLM-0810-12**
10	+0.000 +0.050	12	14.5	10	**WLM-1012-14**
10	+0.000 +0.050	12	16	10	**WLM-1012-16**
12	+0.000 +0.050	14	16	10	**WLM-1214-16**
12	+0.000 +0.050	14	25	15	**WLM-1214-25**
16	+0.000 +0.050	18	18	10	**WLM-1618-18**
16	+0.000 +0.050	18	26	16	**WLM-1618-26**
20	+0.000 +0.060	23	22.5	12.5	**WLM-2023-22**
20	+0.000 +0.060	23	30	20	**WLM-2023-30**
22	+0.000 +0.060	25	30	20	**WLM-2225-30**
25	+0.000 +0.060	28	29	19	**WLM-2528-29**
25	+0.000 +0.060	28	35	25	**WLM-2528-35**
30	+0.000 +0.060	34	34	24	**WLM-3034-34**
30	+0.000 +0.060	34	40	30	**WLM-3034-40**
40	+0.000 +0.060	44	40	30	**WLM-4044-40**
40	+0.000 +0.060	44	50	40	**WLM-4044-50**
50	+0.000 +0.070	55	50	40	**WLM-5055-50**
50	+0.000 +0.070	55	60	50	**WLM-5055-60**

drylin® R round shaft guide systems

drylin® R press-fit bearings | Product range

Made from iglidur® L100



Order key

Type	Size
W L F M	-1214-15

iglidur® L100	Series L1	With flange	Metric	Inner Ø	Outer Ø	Length

- Extreme wear resistance
- Low coefficients of friction

80) Measured with gage

Please note: installation instructions ▶ Page 945

Material table ▶ Page 1435

min. -40 °C

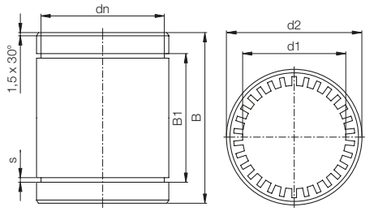
max. +100 °C

Dimensions [mm]

d1	d1-Tolerance80)	d2	d3	b1	b2	bs	Part No.
12	+0.000 +0.050	14	20	15.0	1.0	9	**WLFM-1214-15**
16	+0.000 +0.050	18	24	16.0	1.0	10	**WLFM-1618-16**
20	+0.000 +0.060	23	30	16.5	1.5	10	**WLFM-2023-16**
25	+0.000 +0.060	28	35	21.5	1.5	11	**WLFM-2528-21**
30	+0.000 +0.060	34	42	27.0	2.0	15	**WLFM-3034-27**
40	+0.000 +0.060	44	52	32.0	2.0	20	**WLFM-4044-32**
50	+0.000 +0.070	55	63	37.5	2.5	25	**WLFM-5055-37**

drylin® R solid polymer bearings | Product range

Standard type made from iglidur® J (all-rounder)



Order key

Type	Size
R J M	-01-10

Closed | iglidur® J | Metric | Standard | d1

- Assembly by pressiftting
- Secured by circlips

min. -20 °C
max. +60 °C

78) According to igus® testing method ▶ Page 1000
82) Design standards ▶ Page 944
83) Applies by room temperature: pressfit decrease with time depending on the temperature
Please note: installation instructions ▶ Page 945
Imperial dimensions ▶ Page 1400

Technical data

Part No.	d1-Tolerance[78]	F max. dynamic[82] P = 2.5 MPa	F max. static[82] P = 17.5 MPa	Weight	Pressfit force up to
	[mm]	[N]	[N]	[g]	[N]
RJM-01-08	+0.025 +0.061	250	1,750	4	400
RJM-01-10	+0.032 +0.075	363	2,538	7	700
RJM-01-12	+0.032 +0.075	480	3,360	9	1,300
RJM-01-16	+0.032 +0.075	720	5,040	13	1,100
RJM-01-20	+0.040 +0.092	1,125	7,875	24	1,500
RJM-01-25	+0.040 +0.092	1,813	12,688	47	3,500
RJM-01-30	+0.040 +0.092	2,550	17,850	72	4,500
RJM-01-40	+0.050 +0.112	4,000	28,000	127	4,200

Dimensions [mm]

d1	d2	B	B1	s	dn	Part No.
8	16	25	16.2	1.10	15.2	**RJM-01-08**
10	19	29	21.6	1.30	17.5	**RJM-01-10**
12	22	32	22.6	1.30	20.5	**RJM-01-12**
16	26	36	24.6	1.30	24.2	**RJM-01-16**
20	32	45	31.2	1.60	29.6	**RJM-01-20**
25	40	58	43.7	1.85	36.5	**RJM-01-25**
30	47	68	51.7	1.85	43.5	**RJM-01-30**
40	62	80	60.3	2.15	57.8	**RJM-01-40**

Can be combined with:


RQA-04

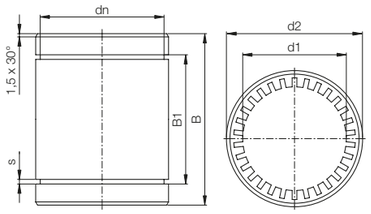

RTA-04


RGA-04


RGAS-04

drylin® R solid polymer bearings | Product range

Standard type, precise, made from iglidur® J (all-rounder)



Order key

Type	Size
R J M P	-01-10

Closed | iglidur® J | Metric | Precise | Standard | d1

- Easy assembly by soft pressfit
- Reduced bearing clearance
- Secured by circlips

78) According to igus® testing method ▶ Page 1000
82) Design standards ▶ Page 944
Please note: installation instructions ▶ Page 945

min. -20 °C
max. +60 °C

Imperial dimensions ▶ Page 1400

Technical data

Part No.	d1-Tolerance[78]	F max. dynamic[82] P = 2.5 MPa	F max. static[82] P = 17.5 MPa	Weight
	[mm]	[N]	[N]	[g]
RJMP-01-06	+0.000 +0.030	200	1,400	2
RJMP-01-08	+0.000 +0.040	250	1,750	4
RJMP-01-10	+0.000 +0.040	363	2,538	7
RJMP-01-12	+0.000 +0.040	480	3,360	9
RJMP-01-16	+0.000 +0.040	720	5,040	13
RJMP-01-20	+0.000 +0.040	1,125	7,875	24
RJMP-01-25	+0.000 +0.050	1,813	12,688	47
RJMP-01-30	+0.000 +0.050	2,550	17,850	72

Dimensions [mm]

d1	d2	B	B1	s	dn	Part No.
6	12	19	13.5	1.10	11.5	**RJMP-01-06**
8	16	25	16.2	1.10	15.2	**RJMP-01-08**
10	19	29	21.6	1.30	17.5	**RJMP-01-10**
12	22	32	22.6	1.30	20.5	**RJMP-01-12**
16	26	36	24.6	1.30	24.2	**RJMP-01-16**
20	32	45	31.2	1.60	29.6	**RJMP-01-20**
25	40	58	43.7	1.85	36.5	**RJMP-01-25**
30	47	68	51.7	1.85	43.5	**RJMP-01-30**

Can be combined with:


RQA-04

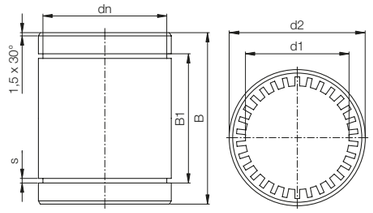

RTA-04


RGA-04


RGAS-04

drylin® R solid polymer bearings | Product range

Linear plain bearings with Japanese dimensions made from iglidur® J4



Order key

Type	Size
R J 4 J P-01-10	

Closed | iglidur® J4 | Japan standard | Precise | Standard | d1

- Alternative to ball bearings with Japanese dimension
- Quickly assembled
- Secured by circlips

78) According to igus® testing method ▶ Page 1000
82) Design standards ▶ Page 944
Please note: installation instructions ▶ Page 945
Material table ▶ Page 1432

min. -20 °C
max. +60 °C

Technical data

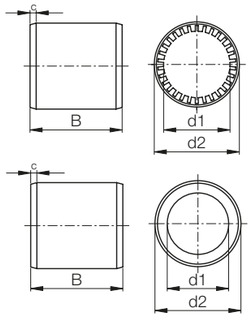
Part No.	d1-Tolerance78)	F max. dynamic82) P = 5 MPa	F max. static82) P = 35 MPa	Weight
	[mm]	[N]	[N]	[g]
RJ4JP-01-08	+0.000 +0.040	200	800	2
RJ4JP-01-10	+0.000 +0.040	300	1,200	6
RJ4JP-01-12	+0.000 +0.040	400	1,600	8
RJ4JP-01-16	+0.000 +0.040	700	2,800	16
RJ4JP-01-20	+0.000 +0.040	1,000	4,000	23
RJ4JP-01-25	+0.000 +0.050	1,550	6,500	47
RJ4JP-01-30	+0.000 +0.050	2,200	8,500	72

Dimensions [mm]

d1	d2	B	B1	s	dn	Part No.
8	15	24	17.5	1.1	14.3	**RJ4JP-01-08**
10	19	29	22.0	1.3	18.0	**RJ4JP-01-10**
12	21	30	23.0	1.3	20.0	**RJ4JP-01-12**
16	28	37	26.5	1.6	26.6	**RJ4JP-01-16**
20	32	42	30.5	1.6	30.3	**RJ4JP-01-20**
25	40	59	41.1	1.85	37.5	**RJ4JP-01-25**
30	47	64	44.6	1.85	42.5	**RJ4JP-01-30**

drylin® R solid polymer bearings | Product range

Low-cost linear plain bearings made from iglidur® J260



Order key

Type	Size
R J260 U M-02-12	

Closed | iglidur® J260 | Grooved | Metric | Compact | d1

- 2 variations: RJ260M (with plain design) and RJ260UM (grooved structure)

78) According to igus® testing method ▶ Page 1000
82) Design standards ▶ Page 944
Please note: installation instructions ▶ Page 945

min. -20 °C
max. +60 °C

Technical data

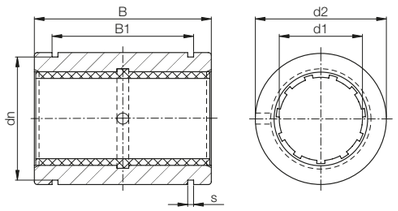
Part No.	d1-Tolerance78)	F max. dynamic82) P = 2.5 MPa	F max. static82) P = 17.5 MPa	Weight
	[mm]	[N]	[N]	[g]
RJ260UM-02-12	+0.035 +0.080	420	2,940	6.2
RJ260UM-02-16	+0.035 +0.080	600	4,200	9.7
RJ260UM-02-20	+0.040 +0.095	750	5,250	11.7
RJ260UM-02-25	+0.040 +0.095	1,250	8,750	22.8

Dimensions [mm]

d1	d2	B	C	Part No.
12	19	28	1.5x15°	**RJ260UM-02-12**
16	24	30	1.5x15°	**RJ260UM-02-16**
20	28	30	2.0x15°	**RJ260UM-02-20**
25	35	40	2.0x15°	**RJ260UM-02-25**

drylin® R linear bearings | Product range

Closed, anodised aluminium adapter



Order key

Type						Size
R	J	U	M-	01-	10	
Closed	iglidur® J	Liner	Metric	Standard		d1

- Secured by circlips

78) According to igus® testing method ▶ Page 1000
81) Ø < 10 mm use iglidur® JSM sleeve bearings
82) Design standards ▶ Page 944
Please note: installation instructions ▶ Page 945

Technical data

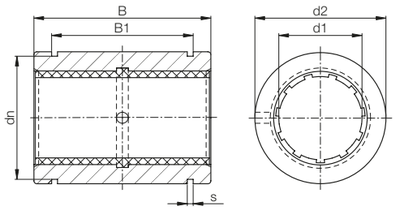
Part No.	d1-Tolerance[78]	F max. dynamic[82] P = 5 MPa	F max. static[82] P = 35 MPa	Weight
	[mm]	[N]	[N]	[g]
RJZM-01-05[81]	+0.025 +0.060	525	3,675	5
RJZM-01-06[81]	+0.025 +0.060	525	3,675	5
RJZM-01-08[81]	+0.032 +0.070	960	6,720	9
RJUM-01-10	+0.030 +0.088	725	5,075	14
RJUM-01-12	+0.030 +0.088	960	6,720	21
RJUM-01-16	+0.030 +0.088	1,440	10,080	28
RJUM-01-20	+0.030 +0.091	2,250	15,750	49
RJUM-01-25	+0.030 +0.091	3,625	25,375	108
RJUM-01-30	+0.040 +0.110	5,100	35,700	162
RJUM-01-40	+0.040 +0.115	8,000	56,000	334
RJUM-01-50	+0.050 +0.130	9,000	87,500	579
RJUM-01-60	+0.050 +0.140	12,000	120,000	1,070

Dimensions [mm]

d1	d2	B	B1	s	dn	Part No.
	h7	h10	H10	H10	h10	
5	12	22	14.2	1.10	11.5	**RJZM-01-05**[81]
6	12	22	14.2	1.10	11.5	**RJZM-01-06**[81]
8	16	25	16.2	1.10	15.2	**RJZM-01-08**[81]
10	19	29	21.6	1.30	17.5	**RJUM-01-10**
12	22	32	22.6	1.30	20.5	**RJUM-01-12**
16	26	36	24.6	1.30	24.2	**RJUM-01-16**
20	32	45	31.2	1.60	29.6	**RJUM-01-20**
25	40	58	43.7	1.85	36.5	**RJUM-01-25**
30	47	68	51.7	1.85	43.5	**RJUM-01-30**
40	62	80	60.3	2.15	57.8	**RJUM-01-40**
50	75	100	77.3	2.65	70.5	**RJUM-01-50**
60	90	125	101.7	3.15	86.5	**RJUM-01-60**

drylin® R linear bearings | Product range

Closed, anodised aluminium adapter, precise



Order key

Type						Size
R	J	U	M-	11-	10	
Closed	iglidur® J	Liner	Metric	Precise		d1

- Max. bearing clearance reduced by 50%
- Secured by circlips

78) According to igus® testing method ▶ Page 1000
82) Design standards ▶ Page 944
Please note: installation instructions ▶ Page 945

Technical data

Part No.	d1-Tolerance[78]	F max. dynamic[82] P = 5 MPa	F max. static[82] P = 35 MPa	Weight
	[mm]	[N]	[N]	[g]
RJUM-11-10	+0.000 +0.058	725	5,075	14
RJUM-11-12	+0.000 +0.058	960	6,720	21
RJUM-11-16	+0.000 +0.058	1,440	10,080	28
RJUM-11-20	+0.000 +0.061	2,250	15,750	49
RJUM-11-25	+0.000 +0.061	3,625	25,375	108
RJUM-11-30	+0.000 +0.075	5,100	35,700	162
RJUM-11-40	+0.000 +0.080	8,000	56,000	334
RJUM-11-50	+0.000 +0.090	12,500	87,500	579

Dimensions [mm]

d1	d2	B	B1	s	dn	Part No.
	h7	h10	H10	H10	h10	
10	19	29	21.6	1.30	17.5	**RJUM-11-10**
12	22	32	22.6	1.30	20.5	**RJUM-11-12**
16	26	36	24.6	1.30	24.2	**RJUM-11-16**
20	32	45	31.2	1.60	29.6	**RJUM-11-20**
25	40	58	43.7	1.85	36.5	**RJUM-11-25**
30	47	68	51.7	1.85	43.5	**RJUM-11-30**
40	62	80	60.3	2.15	57.8	**RJUM-11-40**
50	75	100	77.3	2.65	70.5	**RJUM-11-50**

Can be combined with:


RQA-01


RTA-01


RGA-01


RGAS-01

Available with drylin® liners (optional: J200/A180):

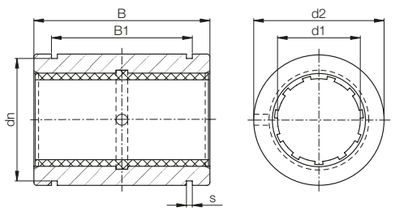

J


E7


X

drylin® R linear bearings | Product range

Closed stainless steel adapter made from 1.4305



Order key

Type						Size	Size
R	J	U	M-	01-	12-	ES	
Closed	igliduR® J	Liner	Metric	Standard	d1	Stainless steel	

● Secured by circlips

78) According to igus® testing method ▶ Page 1000
82) Design standards ▶ Page 944
Please note: installation instructions ▶ Page 945

Technical data

Part No.	d1-Tolerance78)	F max. dynamic82) P = 5 MPa	F max. static82) P = 35 MPa	Weight
	[mm]	[N]	[N]	[g]
RJUM-01-12-ES	+0.030 +0.088	960	6,720	60
RJUM-01-16-ES	+0.030 +0.088	1,440	10,080	84
RJUM-01-20-ES	+0.030 +0.091	2,250	15,750	147
RJUM-01-25-ES	+0.030 +0.091	3,625	25,375	324
RJUM-01-30-ES	+0.040 +0.110	5,100	35,700	486

Dimensions [mm]

d1	d2	B	B1	s	dn	Part No.
	h7	h10	H10	H10	h10	
12	22	32	22.6	1.30	20.5	**RJUM-01-12-ES**
16	26	36	24.6	1.30	24.2	**RJUM-01-16-ES**
20	32	45	31.2	1.60	29.6	**RJUM-01-20-ES**
25	40	58	43.7	1.85	36.5	**RJUM-01-25-ES**
30	47	68	51.7	1.85	43.5	**RJUM-01-30-ES**

Available with drylin® liners (optional: J200/A180):

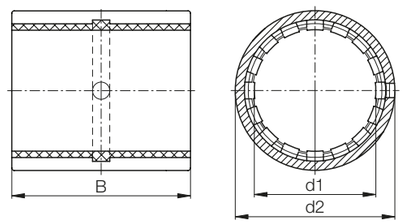

J


E7


X

drylin® R linear bearings | Product range

Closed, anodised aluminium adapter, short design



Order key

Type						Size	Size
R	J	U	M-	02-	10		
Closed	igliduR® J	Liner	Metric	Compact	d1		

● Also available as a reduced clearance version RJUM-12 (Ø 10-50 mm)

78) According to igus® testing method ▶ Page 1000
81) Ø < 10 mm with pressfitted cylindrical bearings
82) Design standards ▶ Page 944
Please note: installation instructions ▶ Page 945

Technical data

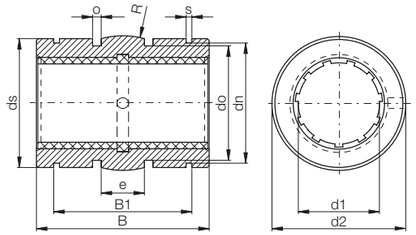
Part No.	Housing bore	d1-Tolerance78)	Fmax. dynamic82)	Fmax. static82)	Weight
	Ø H7 [mm]	[mm]	[N]	[N]	[g]
RJZM-02-0681)	12	+0.032 +0.070	600	4,200	4
RJZM-02-0881)	15	+0.032 +0.070	650	4,550	6
RJUM-02-10	17	+0.030 +0.088	650	4,550	8
RJUM-02-12	19	+0.030 +0.088	840	5,880	10
RJUM-02-16	24	+0.030 +0.088	1,200	8,400	17
RJUM-02-20	28	+0.030 +0.091	1,500	10,500	18
RJUM-02-25	35	+0.030 +0.091	2,500	17,500	42
RJUM-02-30	40	+0.040 +0.110	3,750	26,250	56
RJUM-02-40	52	+0.040 +0.115	6,000	42,000	113
RJUM-02-50	62	+0.050 +0.130	8,750	61,250	147

Dimensions [mm]

d1	d2	B	Part No.
	k7	h10	
6	12	22	**RJZM-02-06**81)
8	15	24	**RJZM-02-08**81)
10	17	26	**RJUM-02-10**
12	19	28	**RJUM-02-12**
16	24	30	**RJUM-02-16**
20	28	30	**RJUM-02-20**
25	35	40	**RJUM-02-25**
30	40	50	**RJUM-02-30**
40	52	60	**RJUM-02-40**
50	62	70	**RJUM-02-50**

drylin® R linear bearings | Product range

Closed aluminium adapter (floating bearing)



Order key

Type						Size
R	J	U	M-	03	-	10
Closed	igliduR® J	Liner	Metric	Self-aligning		d1

- With reduced outer diameter, spherical area on the outer diameter, O-rings for elastic seating and hard anodised surface

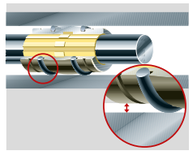
78) According to igus® testing method ▶ Page 1000
81) Ø < 10 mm with pressfitted cylindrical bearings
82) Design standards ▶ Page 944
Please note: installation instructions ▶ Page 945
Floating bearing ▶ Page 946
Inch Imperial dimensions ▶ Page 1403

Technical data

Part No.	Housing bore	d1-Tolerance[78]	F max. dynamic[82] P = 5 MPa	F max. static[82] P = 35 MPa	Weight
	Ø H7 [mm]	[mm]	[N]	[N]	[g]
RJZM-03-08[81]	16	+0.032 +0.070	960	6,720	8
RJUM-03-10	19	+0.030 +0.088	725	5,075	11
RJUM-03-12	22	+0.030 +0.088	960	6,720	17
RJUM-03-16	26	+0.030 +0.088	1,440	10,080	23
RJUM-03-20	32	+0.030 +0.091	2,250	15,750	44
RJUM-03-25	40	+0.030 +0.091	3,625	25,375	92
RJUM-03-30	47	+0.040 +0.110	5,100	35,700	145
RJUM-03-40	62	+0.040 +0.115	8,000	56,000	311
RJUM-03-50	75	+0.050 +0.150	12,500	87,500	542

Dimensions [mm]

d1	d2 h8	B h10	B1 H10	s H10	dn h10	ds h10	do	o +0.1	e	R	Part No.
8	15.8	24.9	16.4	1.10	15.0	15.5	13.2	1.86	5.0	20.0	**RJZM-03-08**[81]
10	18.8	28.9	21.8	1.30	17.5	18.5	15.4	1.86	5.0	13.0	**RJUM-03-10**
12	21.8	31.9	22.8	1.30	20.5	21.5	18.4	1.86	6.0	18.0	**RJUM-03-12**
16	25.8	35.9	24.9	1.30	24.2	25.5	20.4	2.86	8.0	32.0	**RJUM-03-16**
20	31.8	44.8	31.5	1.60	29.6	31.5	26.4	2.86	10.0	50.0	**RJUM-03-20**
25	39.8	57.8	44.1	1.85	36.5	39.0	34.4	2.86	12.5	39.0	**RJUM-03-25**
30	46.7	67.8	52.1	1.85	43.5	46.0	41.4	2.86	15.0	57.0	**RJUM-03-30**
40	61.7	79.8	60.9	2.15	57.8	61.0	56.4	2.86	20.0	100.0	**RJUM-03-40**
50	74.7	99.8	78.0	2.65	70.5	74.0	69.4	2.86	25.0	157.0	**RJUM-03-50**



Can be combined with:


RQA-03


RTA-03


RGA-03


RGAS-03

Available with drylin® liners (optional: J200/A180):

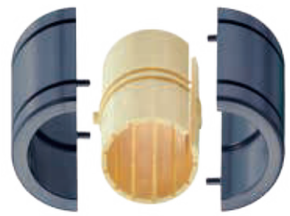

J

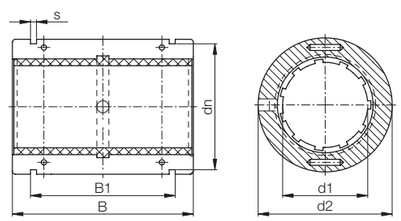

E7


X

drylin® R linear bearings | Product range

Split anodised aluminium adapter





Order key

Type						Size
T	J	U	M-	01	-	10
Split	igliduR® J	Liner	Metric	Standard		d1

- Quick replacement of bearing lining without dismantling the shaft

78) According to igus® testing method ▶ Page 1000
82) Design standards ▶ Page 944
Please note: installation instructions ▶ Page 945
Inch Imperial dimensions ▶ Page 1404

Technical data

Part No.	d1-Tolerance[78]	F max. dynamic[82] P = 5 MPa	F max. static[82] P = 35 MPa	Weight
	[mm]	[N]	[N]	[g]
TJUM-01-10	+0.030 +0.092	725	5,075	14
TJUM-01-12	+0.030 +0.097	960	6,720	19
TJUM-01-16	+0.030 +0.097	1,440	10,080	27
TJUM-01-20	+0.030 +0.103	2,250	15,750	49
TJUM-01-25	+0.030 +0.103	3,625	25,375	106
TJUM-01-30	+0.040 +0.124	5,100	35,700	166
TJUM-01-40	+0.040 +0.124	8,000	56,000	347
TJUM-01-50	+0.050 +0.196	12,500	87,500	577

Dimensions [mm]

d1	d2	B h10	B1 H10	s H10	dn h10	Part No.
10	19 –0.020 –0.040	29	21.6	1.30	17.5	**TJUM-01-10**
12	22 –0.020 –0.040	32	22.6	1.30	20.5	**TJUM-01-12**
16	26 –0.020 –0.040	36	24.6	1.30	24.2	**TJUM-01-16**
20	32 –0.020 –0.045	45	31.2	1.60	29.6	**TJUM-01-20**
25	40 –0.030 –0.055	58	43.7	1.85	36.5	**TJUM-01-25**
30	47 –0.030 –0.055	68	51.7	1.85	43.5	**TJUM-01-30**
40	62 –0.030 –0.060	80	60.3	2.15	57.8	**TJUM-01-40**
50	75 –0.030 –0.060	100	77.3	2.65	70.5	**TJUM-01-50**

Can be combined with:


RQA-01


RTA-01


RGA-01


RGAS-01

Available with drylin® liners (optional: J200/A180):

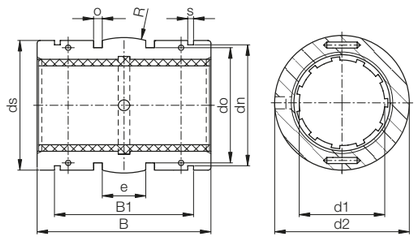

J


E7


X

drylin® R linear bearings | Product range

Split aluminium adapter (floating bearing)



Order key

Type						Size
T	J	U	M-	03	-	10

Split | igliduR® J | Liner | Metric | Self-aligning | d1

- Split aluminium adapter with spherical middle area for automatic compensation of misalignments and O-rings for elastic seating

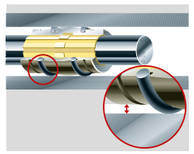
78) According to igus® testing method ▶ Page 1000
82) Design standards ▶ Page 944
Please note: installation instructions ▶ Page 945
Floating bearing ▶ 946
Inch Imperial dimensions ▶ Page 1404

Technical data

Part No.	d1-Tolerance78)	F max. dynamic82) P = 5 MPa	F max. static82) P = 35 MPa	Weight
	[mm]	[N]	[N]	[g]
TJUM-03-10	+0.030 +0.092	725	5,075	11
TJUM-03-12	+0.030 +0.097	960	6,720	17
TJUM-03-16	+0.030 +0.097	1,440	10,080	23
TJUM-03-20	+0.030 +0.103	2,250	15,750	44
TJUM-03-25	+0.030 +0.103	3,625	25,375	92
TJUM-03-30	+0.040 +0.124	5,100	35,700	145
TJUM-03-40	+0.040 +0.124	8,000	56,000	311
TJUM-03-50	+0.050 +0.196	12,500	87,500	542

Dimensions [mm]

d1	d2	B	B1	s	dn	ds	do	o	e	R	Part No.
		h10	H10	H10	h10	h10		+0.1			
10	19 –0.020 –0.040	28.9	21.8	1.30	17.5	18.5	15.4	1.86	5.0	13.0	**TJUM-03-10**
12	22 –0.020 –0.040	31.9	22.8	1.30	20.5	21.5	18.4	1.86	6.0	18.0	**TJUM-03-12**
16	26 –0.020 –0.040	35.9	24.9	1.30	24.2	25.5	20.4	2.86	8.0	32.0	**TJUM-03-16**
20	32 –0.020 –0.045	44.8	31.5	1.60	29.6	31.5	26.4	2.86	10.0	50.0	**TJUM-03-20**
25	40 –0.030 –0.055	57.8	44.1	1.85	36.5	39.0	34.4	2.86	12.5	39.0	**TJUM-03-25**
30	47 –0.030 –0.055	67.8	52.1	1.85	43.5	46.0	41.4	2.86	15.0	57.0	**TJUM-03-30**
40	62 –0.030 –0.060	79.8	60.9	2.15	57.8	61.0	56.4	2.86	20.0	100.0	**TJUM-03-40**
50	75 –0.030 –0.060	99.8	78.0	2.65	70.5	74.0	69.4	2.86	25.0	157.0	**TJUM-03-50**



Can be combined with:


RQA-03


RTA-03


RGA-03


RGAS-03

Available with drylin® liners (optional: J200/A180):

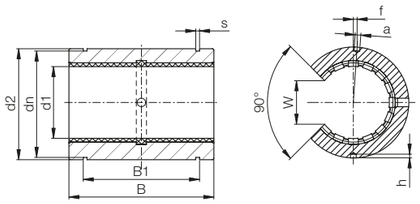

J

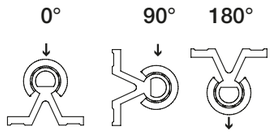

E7


X

drylin® R linear bearings | Product range

Open, anodised aluminium adapter - for supported shafts





Order key

Type						Size
O	J	U	M-	01	-	10

Split | igliduR® J | Liner | Metric | Standard | d1

78) According to igus® testing method ▶ Page 1000
82) Design standards ▶ Page 944
Please note: installation instructions ▶ Page 945
Inch Imperial dimensions ▶ Page 1402

Technical data

Part No.	d1-Tolerance78)	F max. dynamic82) P = 5 MPa			F max. static82) P = 35 MPa			Weight
		0°	90°	180°	0°	90°	180°	[g]
OJUM-01-10	+0.030 +0.088	725	500	196	5,075	3,500	1,370	11
OJUM-01-12	+0.030 +0.088	960	635	240	6,720	4,445	1,680	15
OJUM-01-16	+0.030 +0.088	1,440	990	396	10,080	6,943	2,772	21
OJUM-01-20	+0.030 +0.091	2,250	1,800	900	15,750	12,600	6,300	42
OJUM-01-25	+0.030 +0.091	3,625	2,953	1,523	25,375	20,670	10,658	70
OJUM-01-30	+0.040 +0.110	5,100	4,250	2,278	35,700	29,735	15,946	132
OJUM-01-40	+0.040 +0.115	8,000	6,810	3,800	56,000	47,660	26,660	278
OJUM-01-50	+0.050 +0.150	12,500	10,750	6,125	87,500	75,265	42,875	479

Dimensions [mm]

d1	d2	B	W	a	dn	B1	s	f	h	Part No.
	h7	h10	–1	+0.1	h10	H10	H10	±0.2	-0.5	
10	19	29	7.3	0.0	17.5	21.6	1.30	0	1.2	**OJUM-01-10**
12	22	32	9.0	3.0	20.5	22.6	1.30	1.33 (7°)	1.2	**OJUM-01-12**
16	26	36	11.6	2.2	24.2	24.6	1.30	0	1.2	**OJUM-01-16**
20	32	45	12.0	2.2	29.6	31.2	1.60	0	1.2	**OJUM-01-20**
25	40	58	14.5	3.0	36.5	43.7	1.85	–1.5 (–4.3°)	1.5	**OJUM-01-25**
30	47	68	16.6	3.0	43.5	51.7	1.85	2 (4.9°)	2.0	**OJUM-01-30**
40	62	80	21.0	3.0	57.8	60.3	2.15	1.5 (2.8°)	2.0	**OJUM-01-40**
50	75	100	25.5	5.0	70.5	77.3	2.65	2.5 (3.8°)	2.0	**OJUM-01-50**

Can be combined with:


RQA-01


RTA-01


RGA-01


RGAS-01

Available with drylin® liners (optional: J200/A180):

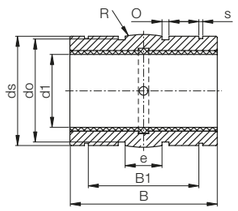

J

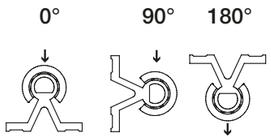

E7

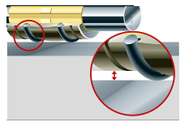

X

drylin® R linear bearings | Product range

Open, anodised aluminium adapter, floating bearing







- With reduced outer diameter, spherical area on the outer diameter, O-rings for elastic seating and hard anodised surface

Order key

Type	Size
O J U M	-03-10

Open	igliduR® J	Liner	Metric	Self-aligning	d1

78) According to igus® testing method ▶ Page 1000

82) Design standards ▶ Page 944

Please note: installation instructions ▶ Page 945

Inch Imperial dimensions ▶ Page 1402

Technical data

Part No.	Housing bore	d1-Tolerance78)	F max. dynamic82) P = 5 MPa			F max. static82) P = 35 MPa			Weight
	Ø H7 [mm]		0°	90°	180°	0°	90°	180°	[g]
OJUM-03-10	19	+0.030 +0.088	725	500	196	5,075	3,500	1,370	10
OJUM-03-12	22	+0.030 +0.088	960	635	240	6,720	4,445	1,680	13
OJUM-03-16	26	+0.030 +0.088	1,440	990	396	10,080	6,943	2,772	19
OJUM-03-20	32	+0.030 +0.091	2,250	1,800	900	15,750	12,600	6,300	38
OJUM-03-25	40	+0.030 +0.091	3,625	2,953	1,523	25,375	20,670	10,658	63
OJUM-03-30	47	+0.040 +0.110	5,100	4,250	2,278	35,700	29,735	15,946	119
OJUM-03-40	62	+0.040 +0.115	8,000	6,810	3,800	56,000	47,660	26,600	250
OJUM-03-50	75	+0.050 +0.150	12,500	10,750	6,125	87,500	75,265	42,875	431

Dimensions [mm]

d1	d2	ds	e	o	do	B1	s	B	R	W	a	f	h	Part No.
	h7	h10		+0.1		H10	H10	h10		–1	+0.1	±0.2	–0.5	
10	18.8	18.5	5.0	1.86	15.4	21.8	1.30	28.9	13.0	7.3	0.0	0	1.2	**OJUM-03-10**
12	21.8	21.5	6.0	1.86	18.4	22.8	1.30	31.9	18.0	9.0	3.0	1.33 (7°)	1.2	**OJUM-03-12**
16	25.8	25.5	8.0	2.86	20.4	24.9	1.30	35.9	32.0	11.6	2.2	0	1.2	**OJUM-03-16**
20	31.8	31.5	10.0	2.86	26.4	31.5	1.60	44.8	50.0	12.0	2.2	0	1.2	**OJUM-03-20**
25	39.8	39.0	12.5	2.86	34.4	44.1	1.85	57.8	39.0	14.5	3.0	–1.5 (–4.3°)	1.5	**OJUM-03-25**
30	46.7	46.0	15.0	2.86	41.4	52.1	1.85	67.8	57.0	16.6	3.0	2 (4.9°)	2	**OJUM-03-30**
40	61.7	61.0	20.0	2.86	56.4	60.9	2.15	79.8	100.0	21.0	3.0	1.5 (2.8°)	2	**OJUM-03-40**
50	74.7	74.0	25.0	2.86	69.4	78.0	2.65	99.8	157.0	25.5	5.0	2.5 (3.8°)	2	**OJUM-03-50**

Can be combined with:


RQA-03


RTA-03


RGA-03


RGAS-03

Available with drylin® liners (optional: J200/A180):


J


E7

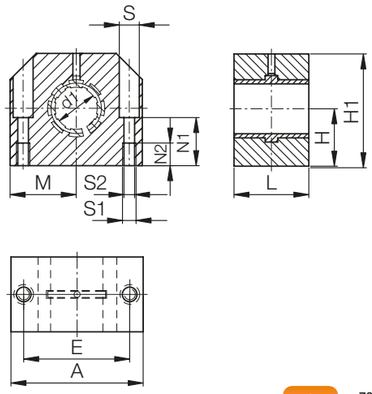

X

My sketches

drylin® R round shaft guide systems

drylin® R pillow block | Product range

Closed, anodised aluminium housing, short design



Order key

Type	Size
R J U M-05-10	

Closed
igliduR® J
Liner
Metric
Compact
d1

78) According to igus® testing method ▶ Page 1000
81) Ø < 10 mm with pressfitted cylindrical bearings
82) Design standards ▶ Page 944
Please note: installation instructions ▶ Page 945

Technical data

Part No.	d1-Tolerance[78]	F max. dynamic[82] P = 5 MPa	F max. static[82] P = 35 MPa	Weight
	[mm]	[N]	[N]	[g]
RJZM-05-08[81]	+0.032 +0.070	960	6,720	46
RJUM-05-10	+0.030 +0.088	650	4,550	71
RJUM-05-12	+0.030 +0.088	840	5,880	78
RJUM-05-16	+0.030 +0.088	1,200	8,400	106
RJUM-05-20	+0.030 +0.091	1,500	10,500	132
RJUM-05-25	+0.030 +0.091	2,500	17,500	253
RJUM-05-30	+0.040 +0.110	3,750	26,250	374
RJUM-05-40	+0.040 +0.115	6,000	42,000	713
RJUM-05-50	+0.050 +0.150	8,750	61,250	1,168

Dimensions [mm]

d1	H +0.01 -0.014	H1	A	M	E ±0.15	S	S1	S2	N1	N2	L	Part No.
8	14	27	32	16.0	23	6.0	M4	3.4	13	9	24	**RJZM-05-08[81]**
10	16	33	40	20.0	29	8.0	M5	4.3	16	11	26	**RJUM-05-10**
12	17	33	40	20.0	29	8.0	M5	4.3	16	11	28	**RJUM-05-12**
16	19	38	45	22.5	34	8.0	M5	4.3	18	11	30	**RJUM-05-16**
20	23	45	53	26.5	40	9.5	M6	5.3	22	13	30	**RJUM-05-20**
25	27	54	62	31.0	48	11.0	M8	6.6	26	18	40	**RJUM-05-25**
30	30	60	67	33.5	53	11.0	M8	6.6	29	18	50	**RJUM-05-30**
40	39	76	87	43.5	69	15.0	M10	8.4	38	22	60	**RJUM-05-40**
50	47	92	103	51.5	82	18.0	M12	10.5	46	26	70	**RJUM-05-50**

Available with drylin® liners (optional: J200/A180):

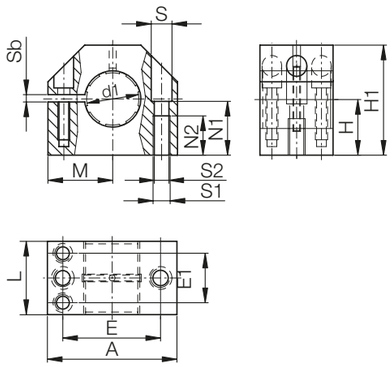

J


E7


X

drylin® R pillow block | Product range

Adjustable anodised aluminium housing, short design



Order key

Type	Size
R J U M E-05-12	

Closed
igliduR® J
Liner
Metric
Adjustable
Compact
d1

● With adjustable clearance

78) According to igus® testing method ▶ Page 1000
82) Design standards ▶ Page 944
Please note: installation instructions ▶ Page 945

Technical data

Part No.	d1-Tolerance[78]	F max. dynamic[82] P = 5 MPa	F max. static[82] P = 35 MPa	Weight
	[mm]	[N]	[N]	[g]
RJUME-05-12	adjustable	840	5,880	78
RJUME-05-16	adjustable	1,200	8,400	106
RJUME-05-20	adjustable	1,500	10,500	132
RJUME-05-25	adjustable	2,500	17,500	253
RJUME-05-30	adjustable	3,750	26,250	374
RJUME-05-40	adjustable	6,000	42,000	713
RJUME-05-50	adjustable	8,750	61,250	1,168

Dimensions [mm]

d1	H +0.01 -0.014	H1	A	M	E ±0.15	E1 ±0.15	S	S1	S2	Sb	N1	N2	L	Part No.
12	17	33	40	20.0	29	18.0	8.0	4.3	M5	2	16	11	28	**RJUME-05-12**
16	19	38	45	22.5	34	19.0	8.0	4.3	M5	2	18	11	30	**RJUME-05-16**
20	23	45	53	26.5	40	20.0	9.5	5.3	M6	2	22	13	30	**RJUME-05-20**
25	27	54	62	31.0	48	25.5	11.0	6.6	M8	2	26	18	40	**RJUME-05-25**
30	30	60	67	33.5	53	30.5	11.0	6.6	M8	2	29	18	50	**RJUME-05-30**
40	39	76	87	43.5	69	36.0	15.0	8.4	M10	2	38	22	60	**RJUME-05-40**
50	47	92	103	51.5	82	44.0	18.0	10.5	M12	2	46	26	70	**RJUME-05-50**

Available with drylin® liners (optional: J200/A180):

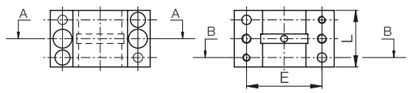

J


E7

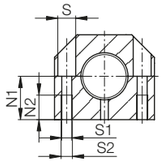

X

drylin® R pillow block | Product range

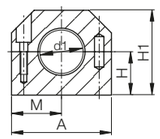
Split anodised aluminium housing, short design



Sectional view A



Sectional view B



Order key

Type						Size
T	J	U	M	-	05	-16
Split	iglidur® J	Liner	Metric	Compact		d1

- Replacement of the liner without dismantling the shaft

78) According to igus® testing method ▶ Page 1000
82) Design standards ▶ Page 944
Please note: installation instructions ▶ Page 945

Technical data

Part No.	d1-Tolerance[78]	F max. dynamic[82] P = 5 MPa	F max. static[82] P = 35 MPa	Weight
	[mm]	[N]	[N]	[g]
TJUM-05-16	+0.030 +0.120	1,200	8,400	105
TJUM-05-20	+0.030 +0.120	1,500	10,500	137
TJUM-05-25	+0.030 +0.120	2,500	17,500	253
TJUM-05-30	+0.040 +0.135	3,750	26,250	377
TJUM-05-40	+0.040 +0.135	6,000	42,000	720

Dimensions [mm]

d1	H ±0.02	H1	A	M	E ±0.15	S	S1	S2	N1	N2	L	Part No.
16	19	38	45	22.5	34	8.0	M5	4.3	18	11	30	**TJUM-05-16**
20	23	45	53	26.5	40	9.5	M6	5.3	22	13	30	**TJUM-05-20**
25	27	54	62	31.0	48	11.0	M8	6.6	26	18	40	**TJUM-05-25**
30	30	60	67	33.5	53	11.0	M8	6.6	29	18	50	**TJUM-05-30**
40	39	76	87	43.5	69	15.0	M10	8.4	38	22	60	**TJUM-05-40**

Available with drylin® liners (optional: J200/A180):

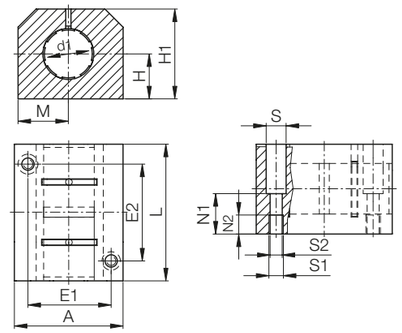

J


E7


X

drylin® R pillow block | Product range

Closed, anodised aluminium housing, tandem design



Order key

Type							Size
R	J	U	M	T	-	05	-12
Closed	iglidur® J	Liner	Metric	Tandem	Compact		d1

- Tandem design
- Equipped with 2 liners to increase the guide length

78) According to igus® testing method ▶ Page 1000
82) Design standards ▶ Page 944
Please note: installation instructions ▶ Page 945

Technical data

Part No.	d1-Tolerance[78]	F max. dynamic[82] P = 5 MPa	F max. static[82] P = 35 MPa	Weight
	[mm]	[N]	[N]	[g]
RJUMT-05-12	+0.030 +0.088	840	5,880	170
RJUMT-05-16	+0.030 +0.088	1,200	8,400	250
RJUMT-05-20	+0.030 +0.091	1,500	10,500	300
RJUMT-05-25	+0.030 +0.091	2,500	17,500	550
RJUMT-05-30	+0.040 +0.110	3,750	26,250	750
RJUMT-05-40	+0.040 +0.115	6,000	42,000	1,500
RJUMT-05-50	+0.050 +0.150	8,750	61,250	2,400

Dimensions [mm]

d1	H +0.01 -0.014	H1	A	M	E1 ±0.15	E2 ±0.15	S	S1	S2	N1	N2	L	Part No.
12	17	33	40	20	29	35	8.0	M5	4.3	16.0	11	60	**RJUMT-05-12**
16	19	38	45	22.5	34	40	8.0	M5	4.3	18.0	11	65	**RJUMT-05-16**
20	23	45	53	26.5	40	45	9.5	M6	5.3	22.0	13	65	**RJUMT-05-20**
25	27	54	62	31	48	55	11.0	M8	6.6	26.0	18	85	**RJUMT-05-25**
30	30	60	67	33.5	53	70	11.0	M8	6.6	29.0	18	105	**RJUMT-05-30**
40	39	76	87	43.5	69	85	15.0	M10	8.4	38.0	22	125	**RJUMT-05-40**
50	47	92	103	51.5	82	100	18.0	M12	10.5	46.0	26	145	**RJUMT-05-50**

Available with drylin® liners (optional: J200/A180):

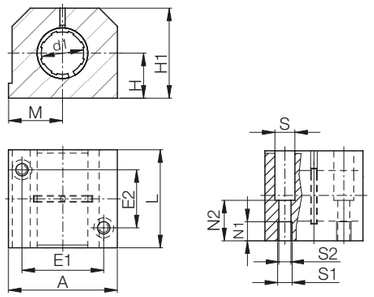

J


E7


X

drylin® R pillow block | Product range

Closed, anodised aluminium housing, long design



Order key

Type	Size
R J U M-06-12	

Closed	igliduR® J	Liner	Metric	Long design	d1

[78] According to igus® testing method ▶ Page 1000
[82] Design standards ▶ Page 944
Please note: installation instructions ▶ Page 945

Technical data

Part No.	d1-Tolerance[78]	F max. dynamic[82] P = 5 MPa	F max. static[82] P = 35 MPa	Weight
	[mm]	[N]	[N]	[g]
RJUM-06-12	+0.030 +0.088	960	6,720	121
RJUM-06-16	+0.030 +0.088	1,440	10,080	211
RJUM-06-20	+0.030 +0.091	2,250	15,750	323
RJUM-06-25	+0.030 +0.091	3,625	25,375	651
RJUM-06-30	+0.040 +0.110	5,100	35,700	1,050
RJUM-06-40	+0.040 +0.115	8,000	56,000	1,820
RJUM-06-50	+0.050 +0.150	12,500	87,500	3,250

Dimensions [mm]

d1	H	H1	A	M	E1	E2	S	S1	S2	N1	N2	L	Part No.
	+0.01 -0.014				±0.15	±0.15							
12	18	35	43	21.5	32	23	8.0	M5	4.3	16.5	11	39	**RJUM-06-12**
16	22	42	53	26.5	40	26	10.0	M6	5.3	21.0	13	43	**RJUM-06-16**
20	25	50	60	30.0	45	32	11.0	M8	6.6	24.0	18	54	**RJUM-06-20**
25	30	60	78	39.0	60	40	15.0	M10	8.4	29.0	22	67	**RJUM-06-25**
30	35	70	87	43.5	68	45	15.0	M10	8.4	34.0	22	79	**RJUM-06-30**
40	45	90	108	54.0	86	58	18.0	M12	10.5	44.0	26	91	**RJUM-06-40**
50	50	105	132	66.0	108	50	20.0	M16	13.5	49.0	34	113	**RJUM-06-50**

Available with drylin® liners (optional: J200/A180):

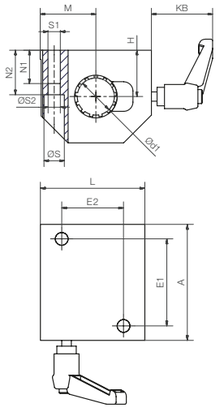

J

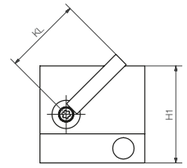

E7


X

drylin® R pillow block | Product range

Closed, anodised aluminium housing, long design with manual clamp





Order key

Type	Size	Options
R J U M-06-12-HK		

Closed	igliduR® J	Liner	Metric	Long design	d1	Manual clamp

[78] According to igus® testing method ▶ Page 1000
[82] Design standards ▶ Page 944
Please note: installation instructions ▶ Page 945

Technical data

Part No.	d1-Tolerance[78]	Fmax. dynamic[82] P = 5 MPa	Fmax. static[82] P = 35 MPa	Clamp force Axial	Weight
		0°	0°	[N]	[g]
RJUM-06-12-HK	+0.030 +0.088	960	6720	400	0.098
RJUM-06-16-HK	+0.030 +0.088	1440	10080	400	0.164
RJUM-06-20-HK	+0.030 +0.091	2250	15750	400	0.275
RJUM-06-25-HK	+0.030 +0.091	3625	25375	1,000	0.544
RJUM-06-30-HK	+0.040 +0.110	5100	35700	1,000	0.832
RJUM-06-40-HK	+0.040 +0.115	8000	56000	1,000	1.513
RJUM-06-50-HK	+0.050 +0.150	12500	87500	1,000	2.568

Dimensions [mm]

d1	H	H1	A	M	E1	E2	S	S1	S2	N1	N2	W	L	KL	KB	Part No.
	+0.01; –0.014				±0.15	±0.15							–1			
12	18	35	43	21.5	32	23	8	M5	4.3	16.5	11	10.2	39	40	33	**RJUM-06-12-HK**
16	22	42	53	26.5	40	26	10	M6	5.3	21	13	11.6	43	40	33	**RJUM-06-16-HK**
20	25	50	60	30	45	32	11	M8	6.6	24	18	12	54	40	33	**RJUM-06-20-HK**
25	30	60	78	39	60	40	15	M10	8.4	29	22	14.5	67	65	46	**RJUM-06-25-HK**
30	35	70	87	43.5	68	45	15	M10	8.4	34	22	16.6	79	65	46	**RJUM-06-30-HK**
40	45	90	108	54	86	58	18	M12	10.5	44	26	21	91	65	46	**RJUM-06-40-HK**
50	50	105	132	66	108	50	20	M16	13.5	49	34	25.5	113	65	46	**RJUM-06-50-HK**

Available with drylin® liners (optional: J200/A180):

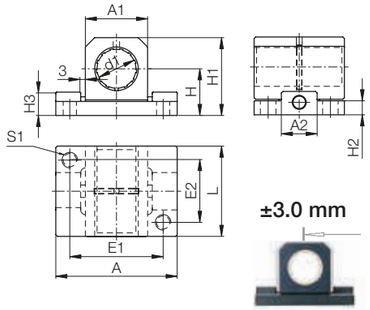

J


E7


X

drylin® R pillow block | Product range

Closed, anodised aluminium floating pillow block



Order key

Type	Size	Options
R J U M-06-12 - LL		

Closed | igliduR® J | Liner | Metric | Long design | d1 | Floating bearing

- Compensation of parallelism errors up to 6 mm
- Quick assembly even on raw profiles

[78] According to igus® testing method ▶ Page 1000
[82] Design standards ▶ Page 944
Please note: installation instructions ▶ Page 945
Floating bearing ▶ Page 946

Technical data

Part No.	d1-Tolerance[78]	Fmax. static or dynamic[82]	Weight
	[mm]	[N]	[g]
RJUM-06-12 LL	+0.030 +0.088	560	50
RJUM-06-16 LL	+0.030 +0.088	920	80
RJUM-06-20 LL	+0.030 +0.091	2,100	130
RJUM-06-25 LL	+0.030 +0.091	3,550	280
RJUM-06-30 LL	+0.040 +0.110	5,300	430
RJUM-06-40 LL	+0.040 +0.115	8,000	850
RJUM-06-50 LL	+0.050 +0.150	12,500	1,550

Dimensions [mm]

d1	H	H1	A	E1	E2	S1	L	A1	A2	H2	H3	Part No.
	±0.01			±0.15	±0.15							
12	18	28	43	32	23	M5	32	20	13	6	11	**RJUM-06-12 LL**
16	22	35	53	40	26	M6	36	26	15	7	11	**RJUM-06-16 LL**
20	25	41	60	45	32	M8	45	32	19	7	12.5	**RJUM-06-20 LL**
25	30	50	78	60	40	M10	58	40	23	9	15	**RJUM-06-25 LL**
30	35	59	87	68	45	M10	68	48	28	10	15	**RJUM-06-30 LL**
40	45	76	108	86	58	M12	80	62	80	20	20	**RJUM-06-40 LL**
50	50	89	132	108	50	M16	100	78	100	24	24	**RJUM-06-50 LL**

Available with drylin® liners (optional: J200/A180):

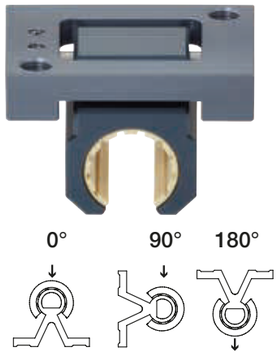

J

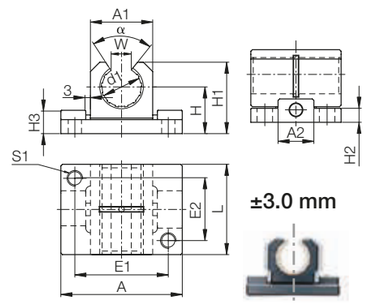

E7


X

drylin® R pillow block | Product range

Open, anodised aluminium pillow block





Order key

Type	Size	Options
O J U M-06-12 - LL		

Open | igliduR® J | Liner | Metric | Long design | d1 | Floating bearing

- Compensation of parallelism errors up to 6 mm

[78] According to igus® testing method ▶ Page 1000
[82] Design standards ▶ Page 944
Please note: installation instructions ▶ Page 945
Floating bearing ▶ Page 946

Technical data

Part No.	d1-Tolerance[78]	Fmax. static or dynamic[82]	Fmax. static load[82] at 180°	Weight
	[mm]	[N]	[N]	[g]
OJUM-06-12 LL	+0.030 +0.088	560	240	40
OJUM-06-16 LL	+0.030 +0.088	920	400	70
OJUM-06-20 LL	+0.030 +0.091	2,100	900	115
OJUM-06-25 LL	+0.030 +0.091	3,550	1,520	240
OJUM-06-30 LL	+0.040 +0.110	5,100	2,280	370
OJUM-06-40 LL	+0.040 +0.115	8,000	3,800	750
OJUM-06-50 LL	+0.050 +0.150	12,500	6,100	1,400

Dimensions [mm]

d1	H	H1	A	E1	E2	S1	L	A1	A2	H2	H3	W	α	Part No.
	±0.01			±0.15	±0.15							–1	[°]	
12	18	24.5	43	32	23	M5	32	20	13	6	11	10.2	90	**OJUM-06-12 LL**
16	22	30.5	53	40	26	M6	36	26	15	7	11	11.6	90	**OJUM-06-16 LL**
20	25	37.0	60	45	32	M8	45	32	19	7	12.5	12.0	60	**OJUM-06-20 LL**
25	30	44.0	78	60	40	M10	58	40	23	9	15	14.5	60	**OJUM-06-25 LL**
30	35	52.5	87	68	45	M10	68	48	28	10	15	16.8	60	**OJUM-06-30 LL**
40	45	69.0	108	86	58	M12	80	62	80	20	20	21.0	60	**OJUM-06-40 LL**
50	50	80.0	132	108	50	M16	100	78	100	24	24	25.5	60	**OJUM-06-50 LL**

Available with drylin® liners (optional: J200/A180):

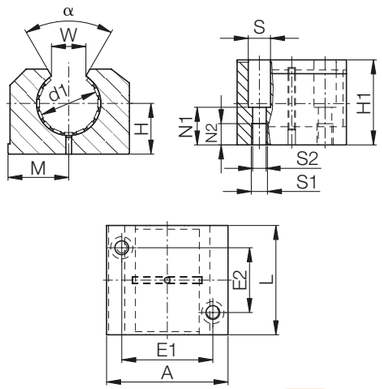

J

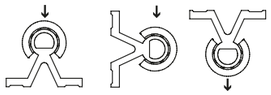

E7


X

drylin® R pillow block | Product range

Open, anodised aluminium housing, long design





Order key

Type	Size
O J U M-06-12	

Open | igliduR® J | Liner | Metric | Long design | d1

78) According to igus® testing method ▶ Page 1000
82) Design standards ▶ Page 944
Please note: installation instructions ▶ Page 945

Technical data

Part No.	d1-Tolerance78)	Fmax. dynamic82) P = 5 MPa			Fmax. static82) P = 35 MPa			Weight
		0°	90°	180°	0°	90°	180°	[g]
OJUM-06-12	+0.030 +0.088	960	635	240	6,720	4,445	1,680	95
OJUM-06-16	+0.030 +0.088	1440	990	396	10,080	6,943	2,772	158
OJUM-06-20	+0.030 +0.091	2250	1,800	900	15,750	12,600	6,300	266
OJUM-06-25	+0.030 +0.091	3625	2,953	1,523	25,375	20,670	10,658	530
OJUM-06-30	+0.040 +0.110	5100	4,250	2,278	35,700	29,735	15,946	818
OJUM-06-40	+0.040 +0.115	8000	6,810	3,800	56,000	47,660	26,600	1,485
OJUM-06-50	+0.050 +0.150	12,500	10,750	6,125	87,500	75,265	42,875	2,750

Dimensions [mm]

d1	H	H1	A	M	E1	E2	S	S1	S2	N1	N2	W	α	L	Part No.
	+0.01; –0.014				±0.15	±0.15						–1	[°]		
12	18	28	43	21.5	32	23	8.0	M5	4.3	16.5	11	10.2	78	39	**OJUM-06-12**
16	22	35	53	26.5	40	26	10.0	M6	5.3	21.0	13	11.6	78	43	**OJUM-06-16**
20	25	42	60	30.0	45	32	11.0	M8	6.6	24.0	18	12.0	60	54	**OJUM-06-20**
25	30	51	78	39.0	60	40	15.0	M10	8.4	29.0	22	14.5	60	67	**OJUM-06-25**
30	35	60	87	43.5	68	45	15.0	M10	8.4	34.0	22	16.6	57	79	**OJUM-06-30**
40	45	77	108	54.0	86	58	18.0	M12	10.5	44.0	26	21.0	56	91	**OJUM-06-40**
50	50	88	132	66.0	108	50	20.0	M16	13.5	49.0	34	25.5	54	113	**OJUM-06-50**

Available with drylin® liners (optional: J200/A180):

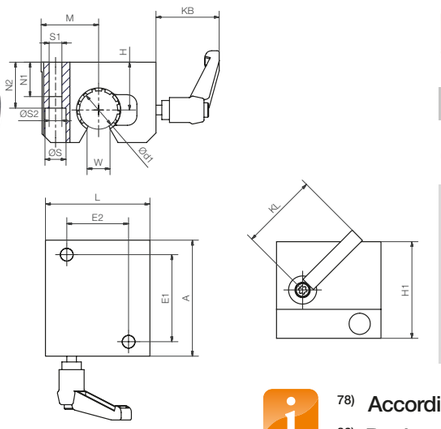

J


E7


X

drylin® R pillow block | Product range

Open, anodised aluminium housing, long design, with manual clamp



Order key

Type	Size	Options
O J U M-06-12-HK		

Open | igliduR® J | Liner | Metric | Long design | d1 | Manual clamp

78) According to igus® testing method ▶ Page 1000
82) Design standards ▶ Page 944
Please note: installation instructions ▶ Page 945

Technical data

Part No.	d1-Tolerance78)	Fmax. dynamic82) P = 5 MPa			Fmax. static82) P = 35 MPa			Clamp force Axial	Weight
		0°	90°	180°	0°	90°	180°	[N]	[g]
OJUM-06-12-HK	+0.030 +0.088	960	635	240	6720	4445	1680	400	0.098
OJUM-06-16-HK	+0.030 +0.088	1440	990	396	10080	6943	2772	400	0.164
OJUM-06-20-HK	+0.030 +0.091	2250	1800	900	15750	12600	6300	400	0.275
OJUM-06-25-HK	0.030 +0.091	3625	2953	1523	25375	20670	10658	1,000	0.544
OJUM-06-30-HK	+0.040 +0.110	5100	4250	2278	35700	29735	15946	1,000	0.832
OJUM-06-40-HK	+0.040 +0.115	8000	6810	3800	56000	47660	26600	1,000	1.513
OJUM-06-50-HK	+0.050 +0.150	12500	10750	6125	87500	75265	42875	1,000	2.568

Dimensions [mm]

d1	H	H1	A	M	E1	E2	S	S1	S2	N1	N2	L	KL	KB	Part No.
	+0.01; –0.014				±0.15	±0.15						–1			
12	18	35	43	21.5	32	23	8	M5	4.3	16.5	11	39	40	33	**OJUM-06-12-HK**
16	22	42	53	26.5	40	26	10	M6	5.3	21	13	43	40	33	**OJUM-06-16-HK**
20	25	50	60	30	45	32	11	M8	6.6	24	18	54	40	33	**OJUM-06-20-HK**
25	30	60	78	39	60	40	15	M10	8.4	29	22	67	65	46	**OJUM-06-25-HK**
30	35	70	87	43.5	68	45	15	M10	8.4	34	22	79	65	46	**OJUM-06-30-HK**
40	45	90	108	54	86	58	18	M12	10.5	44	26	91	65	46	**OJUM-06-40-HK**
50	50	105	132	66	108	50	20	M16	13.5	49	34	113	65	46	**OJUM-06-50-HK**

Available with drylin® liners (optional: J200/A180):

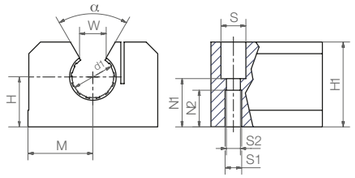

J

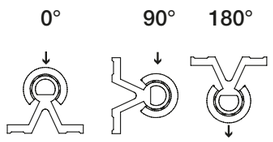

E7

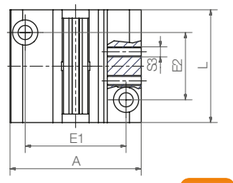

X

drylin® R pillow block | Product range

Open, anodised aluminium housing, long design, adjustable







- With two set screws (DIN 913), clearance adjustment possible

Order key

Type							Size
O	J	U	M	E	-	06	10
Open	igliduR® J	Liner	Metric	Adjustable	Long design	d1	

78) According to igus® testing method ▶ Page 1000
82) Design standards ▶ Page 944
Please note: installation instructions ▶ Page 945

Technical data

Part No.	d1-Tolerance78)	Fmax. dynamic82) P = 5 MPa			Fmax. static82) P = 35 MPa			Weight
		0°	90°	180°	0°	90°	180°	[g]
OJUME-06-12	adjustable	960	635	240	6,720	4,445	1,680	100
OJUME-06-16	adjustable	1,440	990	396	10,080	6,943	2,772	160
OJUME-06-20	adjustable	2,250	1,800	900	15,750	12,600	6,300	270
OJUME-06-25	adjustable	3,625	2,953	1,523	25,375	20,670	10,658	530
OJUME-06-30	adjustable	5,100	4,250	2,278	35,700	29,735	15,946	820
OJUME-06-40	adjustable	8,000	6,810	3,800	56,000	47,660	26,600	1,490
OJUME-06-50	adjustable	12,500	10,750	6,125	87,500	75,265	42,875	2,750

Dimensions [mm]

d1	H	H1	A	M	E1	E2	S	S1	S2	S3	N1	N2	W	α	L	Part No.
	+0.01; –0.014				±0.15	±0.15							–1	[°]		
12	18	28	43	21.5	32	23	8.0	M5	4.3	M4	16.5	11	10.2	78	39	**OJUME-06-12**
16	22	35	53	26.5	40	26	10.0	M6	5.3	M4	21.0	13	11.6	78	43	**OJUME-06-16**
20	25	42	60	30.0	45	32	11.0	M8	6.6	M5	24.0	18	12.0	60	54	**OJUME-06-20**
25	30	51	78	39.0	60	40	15.0	M10	8.4	M6	29.0	22	14.5	60	67	**OJUME-06-25**
30	35	60	87	43.5	68	45	15.0	M10	8.4	M6	34.0	22	16.6	57	79	**OJUME-06-30**
40	45	77	108	54.0	86	58	18.0	M12	10.5	M8	44.0	26	21.0	56	91	**OJUME-06-40**
50	50	88	132	66.0	108	50	20.0	M16	13.5	M8	49.0	34	25.5	54	113	**OJUME-06-50**

Available with drylin® liners (optional: J200/A180):


J


E7

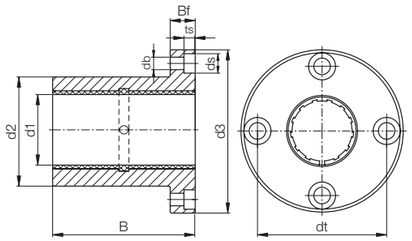

X

My sketches

drylin® R round shaft guide systems

drylin® R flange bearings | Product range

Closed, anodised aluminium adapter, round flange



Order key

Type					Size
F	J	U	M-	01-10	
With flange	iglidur® J	Liner	Metric	Round design	d1

78) According to igus® testing method ▶ Page 1000
82) Design standards ▶ Page 944
Please note: installation instructions ▶ Page 945

Technical data

Part No.	d1-Tolerance78)	Fmax. dynamic82) P = 5 MPa	Fmax. static82) P = 35 MPa	Weight
	[mm]	[N]	[N]	[g]
FJZM-01-08	+0.032 +0.070	960	6,720	20
FJUM-01-10	+0.030 +0.088	725	5,075	32
FJUM-01-12	+0.030 +0.088	960	6,720	42
FJUM-01-16	+0.030 +0.088	1,440	10,080	51
FJUM-01-20	+0.030 +0.091	2,250	15,750	88
FJUM-01-25	+0.030 +0.091	3,625	25,375	152
FJUM-01-30	+0.040 +0.110	5,100	35,700	266
FJUM-01-40	+0.040 +0.115	8,000	56,000	552
FJUM-01-50	+0.050 +0.150	12,500	87,500	853

Dimensions [mm]

d1	d2 h7	d3	dt	B	Bf	ts	db	ds	Part No.
8	16	32	24	25	8	3.1	3.5	6.0	**FJZM-01-08**
10	19	39	29	29	9	4.1	4.5	7.5	**FJUM-01-10**
12	22	42	32	32	9	4.1	4.5	7.5	**FJUM-01-12**
16	26	46	36	36	9	4.1	4.5	7.5	**FJUM-01-16**
20	32	54	43	45	11	5.1	5.5	9.0	**FJUM-01-20**
25	40	62	51	58	11	5.1	5.5	9.0	**FJUM-01-25**
30	47	76	62	68	14	6.1	6.6	11.0	**FJUM-01-30**
40	62	98	80	80	18	8.1	9.0	14.0	**FJUM-01-40**
50	75	112	94	100	18	8.1	9.0	14.0	**FJUM-01-50**

Available with drylin® liners (optional: J200/A180):

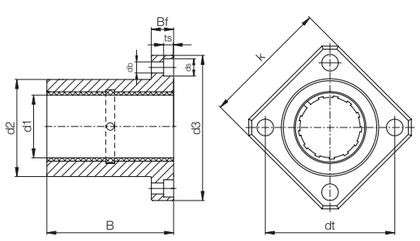

J


E7


X

drylin® R flange bearings | Product range

Closed, anodised aluminium adapter, square flange



Order key

Type					Size
F	J	U	M-	02-10	
With flange	iglidur® J	Liner	Metric	Square design	d1

78) According to igus® testing method ▶ Page 1000
82) Design standards ▶ Page 944
Please note: installation instructions ▶ Page 945

Technical data

Part No.	d1-Tolerance78)	Fmax. static or dynamic82)	Fmax. static load82) at 180°	Weight
	[mm]	[N]	[N]	[g]
FJZM-02-0882)	+0.032 +0.070	960	6,720	17
FJUM-02-10	+0.030 +0.088	725	5,075	25
FJUM-02-12	+0.030 +0.088	960	6,720	32
FJUM-02-16	+0.030 +0.088	1,440	10,080	41
FJUM-02-20	+0.030 +0.091	2,250	15,750	73
FJUM-02-25	+0.030 +0.091	3,625	25,375	135
FJUM-02-30	+0.040 +0.110	5,100	35,700	228
FJUM-02-40	+0.040 +0.115	8,000	56,000	454
FJUM-02-50	+0.050 +0.150	12,500	87,500	735

Dimensions [mm]

d1 ±0.01	d2 h7	d3	dt ±0.15	k ±0.15	B	Bf	ts	db	ds	Part No.
8	16	32	24	25	25	8	3.1	3.5	6.0	**FJZM-02-08**82)
10	19	39	29	30	29	9	4.1	4.5	7.5	**FJUM-02-10**
12	22	42	32	32	32	9	4.1	4.5	7.5	**FJUM-02-12**
16	26	46	36	35	36	9	4.1	4.5	7.5	**FJUM-02-16**
20	32	54	43	42	45	11	5.1	5.5	9.0	**FJUM-02-20**
25	40	62	51	50	58	11	5.1	5.5	9.0	**FJUM-02-25**
30	47	76	62	60	68	14	6.1	6.6	11.0	**FJUM-02-30**
40	62	98	80	75	80	18	8.1	9.0	14.0	**FJUM-02-40**
50	75	112	94	88	100	18	8.1	9.0	14.0	**FJUM-02-50**

Available with drylin® liners (optional: J200/A180):

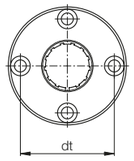

J

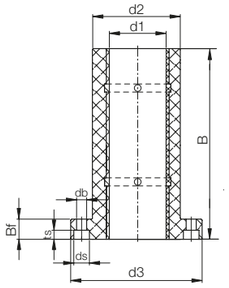

E7


X

drylin® R flange bearings | Product range

Closed, anodised aluminium adapter, round flange, tandem design





Order key

Type							Size
F	J	U	M	T-	01-	10	
With flange	iglidur® J	Liner	Metric	Tandem	Round design		d1

- Equipped with 2 liners to increase the guide length

78) According to igus® testing method ▶ Page 1000
85) Fitted with 2 pieces of JSM-0810-16
Please note: installation instructions ▶ Page 945

Technical data

Part No.	Dimension nominal diameter	d1-Tolerance78)	Guide length	Projected bearing surface	Weight
	[mm]	[mm]	[N]	[N]	[g]
FJZMT-01-0885)	8	+0.032 +0.070	45	256	27.13
FJUMT-01-10	10	+0.030 +0.088	52	250	43.75
FJUMT-01-12	12	+0.030 +0.088	57	324	57.00
FJUMT-01-16	16	+0.030 +0.088	70	464	78.28
FJUMT-01-20	20	+0.030 +0.091	80	580	126.42
FJUMT-01-25	25	+0.030 +0.091	112	975	248.85
FJUMT-01-30	30	+0.040 +0.110	123	1,470	388.37
FJUMT-01-40	40	+0.040 +0.115	151	2,360	835.00
FJUMT-01-50	50	+0.050 +0.150	192	3,450	1,352.30

Dimensions [mm]

d1	d2 h7	d3	dt	B	Bf	ts	db	ds	Part No.
8	16	32	24	25	45	3.1	3.5	6.0	**FJZMT-01-0885)**
10	19	39	29	29	52	4.1	4.5	7.5	**FJUMT-01-10**
12	22	42	32	32	57	4.1	4.5	7.5	**FJUMT-01-12**
16	26	46	36	36	70	4.1	4.5	7.5	**FJUMT-01-16**
20	32	54	43	45	80	5.1	5.5	9.0	**FJUMT-01-20**
25	40	62	51	58	112	5.1	5.5	9.0	**FJUMT-01-25**
30	47	76	62	68	123	6.1	6.6	11.0	**FJUMT-01-30**
40	62	98	80	80	151	8.1	9.0	14.0	**FJUMT-01-40**
50	75	112	94	100	192	8.1	9.0	14.0	**FJUMT-01-50**

Available with drylin® liners (optional: J200/A180):

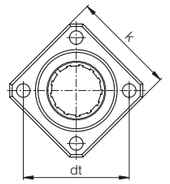

J

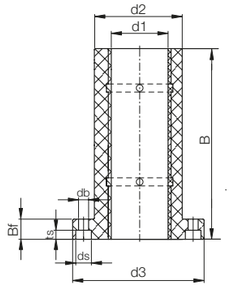

E7


X

drylin® R flange bearings | Product range

Closed, anodised aluminium adapter, square flange, tandem design





Order key

Type							Size
F	J	U	M	T-	02-	10	
With flange	iglidur® J	Liner	Metric	Tandem	Square design		d1

- Equipped with 2 liners to increase the guide length

78) According to igus® testing method ▶ Page 1000
85) Fitted with 2 pieces of JSM-0810-16
Please note: installation instructions ▶ Page 945

Technical data

Part No.	Dimension nominal diameter	d1-Tolerance78)	Guide length	Projected bearing surface	Weight
	[mm]	[mm]	[N]	[N]	[g]
FJZMT-02-0885)	8	+0.032 +0.070	45	256	23.00
FJUMT-02-10	10	+0.030 +0.088	52	250	36.58
FJUMT-02-12	12	+0.030 +0.088	57	324	48.19
FJUMT-02-16	16	+0.030 +0.088	70	464	67.79
FJUMT-02-20	20	+0.030 +0.091	80	580	110.06
FJUMT-02-25	25	+0.030 +0.091	112	975	230.06
FJUMT-02-30	30	+0.040 +0.110	123	1,470	350.74
FJUMT-02-40	40	+0.040 +0.115	151	2,360	739.30
FJUMT-02-50	50	+0.050 +0.150	192	3,450	1,249.30

Dimensions [mm]

d1	d2 h7	d3	dt	k	B	Bf	ts	db	ds	Part No.
8	16	32	24	25	45	8	3.1	3.5	6.0	**FJZMT-02-0885)**
10	19	39	29	30	52	9	4.1	4.5	7.5	**FJUMT-02-10**
12	22	42	32	32	57	9	4.1	4.5	7.5	**FJUMT-02-12**
16	26	46	36	35	70	9	4.1	4.5	7.5	**FJUMT-02-16**
20	32	54	43	42	80	11	5.1	5.5	9.0	**FJUMT-02-20**
25	40	62	51	50	112	11	5.1	5.5	9.0	**FJUMT-02-25**
30	47	76	62	60	123	14	6.1	6.6	11.0	**FJUMT-02-30**
40	62	98	80	75	151	18	8.1	9.0	14.0	**FJUMT-02-40**
50	75	112	94	88	192	18	8.1	9.0	14.0	**FJUMT-02-50**

Available with drylin® liners (optional: J200/A180):


J

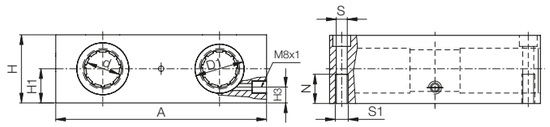

E7

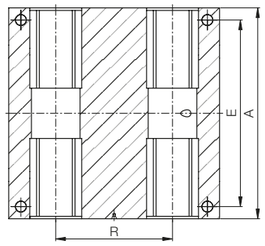

X

drylin® R quad blocks | Product range

Closed design

● Housing: aluminium, equipped with four drylin® R linear bearings





Order key

Type	Option	Size
RQA -	01 -	10
Quad block with RJUM bearings	Aluminium housing	Standard with RJUM-01	Inner Ø

Options:
01: Standard with RJUM-01
03: With RJUM-03
04: With RJM-01

Please note:
Installation instructions
▶ Page 945

Dimensions [mm]

d	D1	A	H	H1	H3	R	N	E	S	S1	Part No. Standard with RJUM-01	Self-aligning with RJUM-03	Solid polymer with RJM-01
8	16	65	23	11.5	8	32	11	55	4.3	M5	**RQA-01-08**	**–**	**RQA-04-08**
10	19	70	25	12.5	10	34	13	60	4.3	M5	**RQA-01-10**	**RQA-03-10**	**RQA-04-10**
12	22	85	32	16	13	42	13	73	5.3	M6	**RQA-01-12**	**RQA-03-12**	**RQA-04-12**
16	26	100	36	18	15	54	13	88	5.3	M6	**RQA-01-16**	**RQA-03-16**	**RQA-04-16**
20	32	130	46	23	19	72	18	115	6.6	M8	**RQA-01-20**	**RQA-03-20**	**RQA-04-20**
25	40	160	56	28	24	88	22	140	8.4	M10	**RQA-01-25**	**RQA-03-25**	**RQA-04-25**
30	47	180	64	32	27	96	26	158	10.5	M12	**RQA-01-30**	**RQA-03-30**	**RQA-04-30**
40	62	230	80	40	35	122	34	202	13.5	M16	**RQA-01-40**	**RQA-03-40**	**RQA-04-40**

Are equipped with:


RJUM-01


RJUM-03


RJM-01

Available with drylin® liners (optional: J200/A180):


J

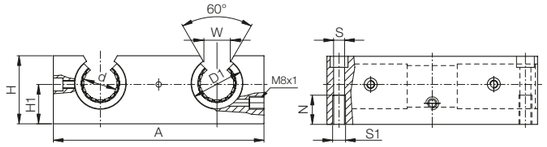

E7

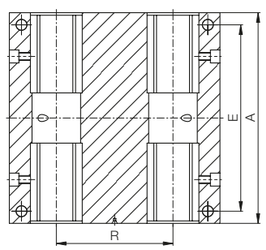

X

drylin® R quad blocks | Product range

Open design

● Housing: aluminium, equipped with four drylin® R linear bearings





Order key

Type	Option	Size
OQA -	01 -	12
Quad block with OJUM bearings	Aluminium housing	Standard with OJUM-01	Inner Ø

Options:
01: Standard with OJUM-01
03: With OJUM-03

Please note:
Installation instructions
▶ Page 945

Dimensions [mm]

d	D1	A	H	H1	W	R	N	E	S	S1	Part No. Standard with OJUM-01	Self-aligning with OJUM-03
12	22	85	30	18	14	42	13	73	5.3	M6	**OQA-01-12**	**OQA-03-12**
16	26	100	35	22	17	54	13	88	5.3	M6	**OQA-01-16**	**OQA-03-16**
20	32	130	42	25	17	72	18	115	6.8	M8	**OQA-01-20**	**OQA-03-20**
25	40	160	51	30	21	88	22	140	9.0	M10	**OQA-01-25**	**OQA-03-25**
30	47	180	60	35	21	96	26	158	10.5	M12	**OQA-01-30**	**OQA-03-30**
40	62	230	77	45	27	122	34	202	13.5	M16	**OQA-01-40**	**OQA-03-40**

Are equipped with:


OJUM-01


OJUM-03

Available with drylin® liners (optional: J200/A180):


J

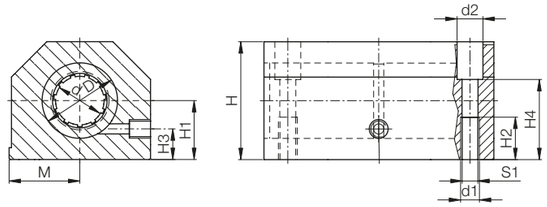

E7

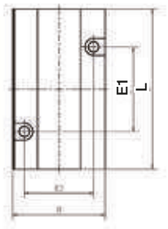

X

drylin® R quad blocks | Product range

Closed, tandem design

● Housing: aluminium, equipped with 2 drylin® R linear plain bearings to increase the guide length





Order key

Type	Option	Size
R T A -	01 -	08

Tandem housing with RJUM bearing

Aluminium housing

Standard with RJUM-01

Inner Ø

Options:

01: Standard with RJUM-01

03: With RJUM-03

04: With RJM-01

Please note:
Installation instructions
▶ Page 945

Dimensions [mm]

d	D H6	H	H1 +0.01 –0.02	H2	H3	H4	S1	B	L +0.3	M ±0.02	E1 ±0.15	E2 ±0.15	d1	d2	Part No. Standard with RJUM-01	Self-aligning with RJUM-03	Solid polymer with RJM-01
8	16	28	13	13	8	23	M5	35	62	17.5	35	25	4.20	8	**RTA-01-08**	**–**	**RTA-04-08**
12	22	35	18	13	10	25	M6	43	76	21.5	40	30	5.20	10	**RTA-01-12**	**RTA-03-12**	**RTA-04-12**
16	26	42	22	13	12	30	M6	53	84	26.5	45	36	5.20	10	**RTA-01-16**	**RTA-03-16**	**RTA-04-16**
20	32	50	25	18	13	34	M8	60	104	30.0	55	45	6.80	11	**RTA-01-20**	**RTA-03-20**	**RTA-04-20**
25	40	60	30	22	15	40	M10	78	130	39.0	70	54	8.60	15	**RTA-01-25**	**RTA-03-25**	**RTA-04-25**
30	47	70	35	26	16	48	M12	87	152	43.5	85	62	10.30	18	**RTA-01-30**	**RTA-03-30**	**RTA-04-30**
40	62	90	45	34	20	60	M16	108	176	54.0	100	80	14.25	20	**RTA-01-40**	**RTA-03-40**	**RTA-04-40**

Are equipped with:

RJUM-01

RJUM-03

RJM-01

Available with drylin® liners (optional: J200/A180):

J

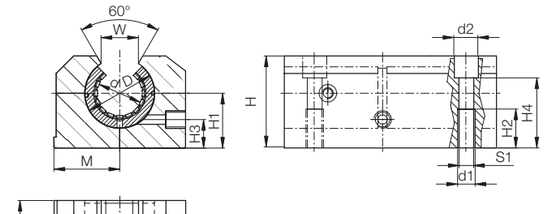
E7

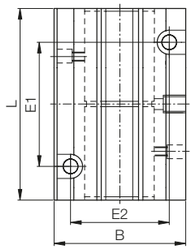
X

drylin® R quad blocks | Product range

Open, tandem design

● Housing: aluminium, equipped with 2 drylin® R linear plain bearings to increase the guide length





Order key

Type	Option	Size
O T A -	01 -	12

Tandem housing with OJUM bearings

Aluminium housing

Standard with OJUM-01

Inner Ø

Options:

01: Standard with OJUM-01

03: With OJUM-03

Please note:
Installation instructions
▶ Page 945

Dimensions [mm]

d	D H6	H	H1 +0.01 –0.02	H2	H3	H4	S1	B	L +0.3	M ±0.02	E1 ±0.15	E2 ±0.15	d1	d2	W	Part No. Standard with OJUM-01	Self-aligning with OJUM-03
12	22	30	18	13	10	25	M6	43	76	21.5	40	30	5.20	10	14	**OTA-01-12**	**OTA-03-12**
16	26	35	22	13	12	30	M6	53	84	26.5	45	36	5.20	10	17	**OTA-01-16**	**OTA-03-16**
20	32	42	25	18	13	34	M8	60	104	30.0	55	45	6.80	11	17	**OTA-01-20**	**OTA-03-20**
25	40	51	30	22	15	40	M10	78	130	39.0	70	54	8.60	15	21	**OTA-01-25**	**OTA-03-25**
30	47	60	35	26	16	48	M12	87	152	43.5	85	62	10.30	18	21	**OTA-01-30**	**OTA-03-30**
40	62	77	45	34	20	60	M16	108	176	54.0	100	80	14.25	20	27	**OTA-01-40**	**OTA-03-40**

Are equipped with:

OJUM-01

OJUM-03

Available with drylin® liners (optional: J200/A180):

J

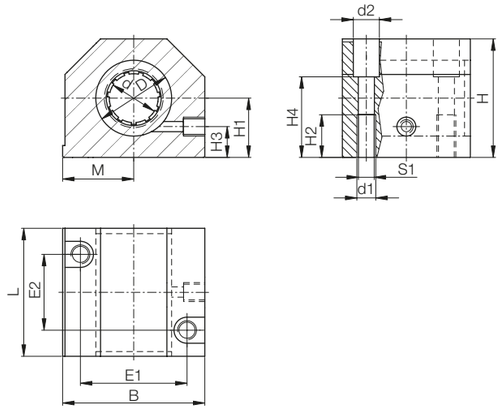
E7

X

drylin® R quad blocks | Product range

Closed, long design

● Housing: aluminium, equipped with drylin® R linear bearings



Order key

Type	Option	Size
R G A	- 01	- 12
Linear housing with RJUM bearings	Aluminium housing	Standard with RJUM-01	Inner Ø

Options:
01: Standard with RJUM-01
03: With RJUM-03
04: With RJM-01

Please note:
Installation instructions
▶ Page 945

Dimensions [mm]

d	D H6	H	H1 +0.01 –0.02	H2	H3	H4	S1	B	L ±0.3	M ±0.02	E1 ±0.15	E2 ±0.15	d1	d2	Part No. Standard with RJUM-01	Self-aligning with RJUM-03	Solid polymer bearing with RJM-01
8	16	28	13	10	8	14	M4	35	32	17.5	25	20	3.2	6	**RGA-01-08**	**–**	**RGA-04-08**
12	22	35	18	11	10	25	M5	43	39	21.5	32	23	4.2	6	**RGA-01-12**	**RGA-03-12**	**RGA-04-12**
16	26	42	22	13	12	30	M6	53	43	26.5	40	26	5.2	10	**RGA-01-16**	**RGA-03-16**	**RGA-04-16**
20	32	50	25	18	13	34	M8	60	54	30.0	45	32	6.8	11	**RGA-01-20**	**RGA-03-20**	**RGA-04-20**
25	40	60	30	22	15	40	M10	78	67	39.0	60	40	8.6	15	**RGA-01-25**	**RGA-03-25**	**RGA-04-25**
30	47	70	35	22	16	48	M10	87	79	43.5	68	45	8.6	15	**RGA-01-30**	**RGA-03-30**	**RGA-04-30**
40	62	90	45	26	20	60	M12	108	91	54.0	86	58	10.3	18	**RGA-01-40**	**RGA-03-40**	**RGA-04-40**

Are equipped with:


RJUM-01


RJUM-03


RJM-01

Available with drylin® liners (optional: J200/A180):


J

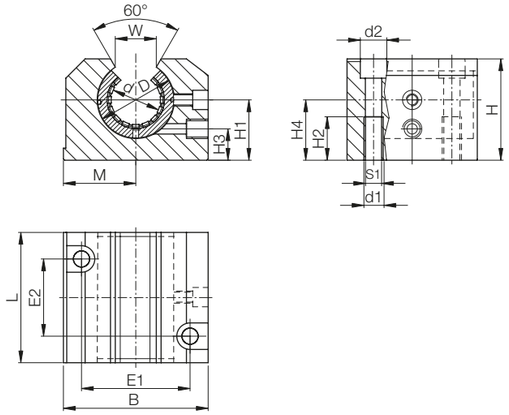

E7


X

drylin® R quad blocks | Product range

Open, long design

● Housing: aluminium, equipped with drylin® R linear bearings



Order key

Type	Option	Size
O G A	- 01	- 12
Linear housing with OJUM bearings	Aluminium housing	Standard with OJUM-01	Inner Ø

Options:
01: Standard with OJUM-01
03: With OJUM-03

Please note:
Installation instructions
▶ Page 945

Dimensions [mm]

d	D H6	H	H1 +0.01 –0.02	H2	H3	H4	S1	B	L ±0.3	M ±0.02	E1 ±0.15	E2 ±0.15	d1	d2	W +0.6	Part No. Standard with OJUM-01	Self-aligning with OJUM-03
12	22	28	18	11	8	25	M5	43	39	21.5	32	23	4.2	8	14	**OGA-01-12**	**OGA-03-12**
16	26	35	22	13	12	30	M6	53	43	26.5	40	26	5.2	10	17	**OGA-01-16**	**OGA-03-16**
20	32	42	25	18	13	34	M8	60	54	30.0	45	32	6.8	11	17	**OGA-01-20**	**OGA-03-20**
25	40	51	30	22	15	40	M10	78	67	39.0	60	40	8.6	15	21	**OGA-01-25**	**OGA-03-25**
30	47	60	35	22	16	48	M10	87	79	43.5	68	45	8.6	15	21	**OGA-01-30**	**OGA-03-30**
40	62	77	45	26	20	60	M12	108	91	54.0	86	58	10.3	18	27	**OGA-01-40**	**OGA-03-40**

Are equipped with:


OJUM-01


OJUM-03

Available with drylin® liners (optional: J200/A180):


J

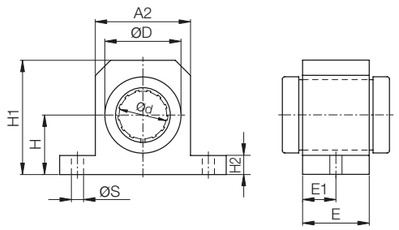

E7

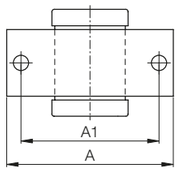

X

drylin® R pillow block | Product range

Closed, short design

- Housing: aluminium, equipped with drylin® R linear bearings
- Variations:
  Standard: RGAS-01-Ø
  Self-aligning: RGAS-03-Ø
  Solid polymer bearing (cost-effective, light): RGAS-04-Ø





Order key

Type	Option	Size
R G A S -	01	- 12
Linear housing with RJUM bearings	Aluminium housing	Small	Standard with RJUM-01	Inner Ø

Options:
01: Standard with RJUM-01
03: With RJUM-03
04: With RJM-01

Please note:
Installation instructions
▶ Page 945

Dimensions [mm]

d	D	H	H1	H2	A	A1	A2	E	E1	S	Part No. Standard with RJUM-01	Self-aligning with RJUM-03	Solid polymer with RJM-01
12	22	18	35.0	6	52	42	30	20	10	5.3	**RGAS-01-12**	**RGAS-03-12**	**RGAS-04-12**
16	26	22	40.5	7	56	46	34	22	11	5.3	**RGAS-01-16**	**RGAS-03-16**	**RGAS-04-16**
20	32	25	48.0	8	70	58	40	28	14	6.4	**RGAS-01-20**	**RGAS-03-20**	**RGAS-04-20**
25	40	30	58.0	10	80	68	50	40	20	6.4	**RGAS-01-25**	**RGAS-03-25**	**RGAS-04-25**
30	47	35	67.0	10	88	76	58	48	24	6.4	**RGAS-01-30**	**RGAS-03-30**	**RGAS-04-30**
40	62	45	85.0	12	108	94	74	56	28	8.4	**RGAS-01-40**	**RGAS-03-40**	**RGAS-04-40**

Are equipped with:


RJUM-01


RJUM-03


RJM-01

Available with drylin® liners (optional: J200/A180):


J

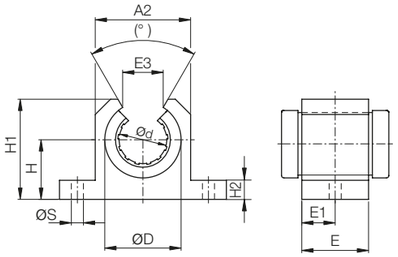

E7

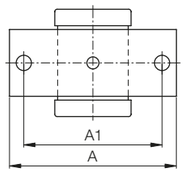

X

drylin® R pillow block | Product range

Closed, short design

- Housing: aluminium, equipped with drylin® R linear bearings
- Variations:
  Standard: OGAS-01-Ø
  Self-aligning: OGAS-03-Ø





Order key

Type	Option	Size
O G A S -	01	- 12
Linear housing with OJUM bearings	Aluminium housing	Small	Standard with OJUM-01	Inner Ø

Options:
01: Standard with OJUM-01
03: With OJUM-03

Please note:
Installation instructions
▶ Page 945

Dimensions [mm]

d	D	H	H1	H2	A	A1	A2	E	E1	E3	(°)	S	Part No. Standard with OJUM-01	Self-aligning with OJUM-03
12	22	18	28	6	52	42	30	20	10	14	78	5.3	**OGAS-01-12**	**OGAS-03-12**
16	26	22	33.5	7	56	46	34	22	11	17	78	5.3	**OGAS-01-16**	**OGAS-03-16**
20	32	25	42	8	70	58	40	28	14	17	60	6.4	**OGAS-01-20**	**OGAS-03-20**
25	40	30	51	10	80	68	50	40	20	21	60	6.4	**OGAS-01-25**	**OGAS-03-25**
30	47	35	60	10	88	76	58	48	24	21	54	6.4	**OGAS-01-30**	**OGAS-03-30**
40	62	45	77	12	108	94	74	56	28	27	54	8.4	**OGAS-01-40**	**OGAS-03-40**

Are equipped with:


OJUM-01


OJUM-03

Available with drylin® liners (optional: J200/A180):


J


E7


X

igus® testing method for measuring the tolerance of drylin® plain bearings

To ensure the correct function of a drylin® bearing, it is necessary to use the bearing with a defined minimum clearance. The quality control of this dimension is carried out with a plug gauge test. For this purpose, specific force is defined with which the plug gauge is loaded when the plain bearing is tested.

Part No.	Test force [N]	Øi test housing	Min. bearing Øi (c. gauge-free)	Max. bearing Øi (with c. gauge)
E7UM/JUM-01/02-10	0.981	12.000 mm	10.030 mm	10.070 mm
E7UM/JUM-01/02-12	1.373	14.000 mm	12.030 mm	12.070 mm
E7UM/JUM-01/02-16	1.864	18.000 mm	16.030 mm	16.070 mm
E7UM/JUM-01/02-20	2.649	23.000 mm	20.030 mm	20.070 mm
E7UM/JUM-01/02-25	3.729	28.000 mm	25.030 mm	25.070 mm
E7UM/JUM-01/02-30	4.807	34.000 mm	30.040 mm	30.090 mm
E7UM/JUM-01/02-40	7.063	44.000 mm	40.040 mm	40.090 mm
E7UM/JUM-01/02-50	9.810	55.000 mm	50.050 mm	50.150 mm
E7UM/JUM-01/02-60	13.047	65.000 mm	60.050 mm	60.150 mm
JUI-01-06	0.981	0.4684"	0.3768"	0.3776"
JUI-01-08	1.373	0.5934"	0.5016"	0.5024"
JUI-01-10	1.864	0.7184"	0.6268"	0.6276"
JUI-01-12	2.649	0.8747"	0.7516"	0.7524"
JUI-01-16	3.729	1.1247"	1.0016"	1.0024"
JUI-01-20	4.807	1.4058"	1.252"	1.2531"
JUI-01-24	7.063	1.6558"	1.5020"	1.5031"
JUI-01-32	9.810	2.1870"	2.0024"	2.0039"
RJM-01-08	0.981	16.000 mm	8.025 mm	8.061 mm
RJM-01-10	0.981	19.000 mm	10.025 mm	10.061 mm
RJM-01-12	1.373	22.000 mm	12.032 mm	12.075 mm
RJM-01-16	1.864	26.000 mm	16.032 mm	16.075 mm
RJM-01-20	2.649	32.000 mm	20.040 mm	20.092 mm
RJM-01-25	3.729	40.000 mm	25.040 mm	25.092 mm
RJM-01-30	4.807	47.000 mm	30.040 mm	30.092 mm
RJM-01-40	7.063	62.000 mm	40.050 mm	40.112 mm
RJI-01-06	0.981	0.6250"	0.3762"	0.3776"
RJI-01-08	1.373	0.8750"	0.5013"	0.5030"
RJI-01-10	1.864	1.1250"	0.6265"	0.6282"
RJI-01-12	2.649	1.2500"	0.7516"	0.7536"
RJI-01-16	3.729	1.5625"	1.0035"	1.0056"
RJI-01-20	4.807	2.0000"	1.252"	1.2544"
RJI-01-24	7.063	2.3750"	1.5020"	1.5044"
RJI-01-32	9.810	3.0000"	2.0024"	2.0053"
RJ260(U)M-02-12	1.373	19.000 mm	12.032 mm	12.084 mm
RJ260(U)M-02-16	1.864	24.000 mm	16.032 mm	16.084 mm
RJ260(U)M-02-20	2.649	28.000 mm	20.040 mm	20.100 mm
RJ260(U)M-02-25	3.729	35.000 mm	25.040 mm	25.100 mm

Part No.	Test force [N]	Øi test housing	Min. bearing Øi (c. gauge-free)	Max. bearing Øi (with c. gauge)
XUMO-01-10	0.981	12.000 mm	9.98 mm	10.02 mm
XUM-01/02-12	1.373	14.000 mm	12.02 mm	12.06 mm
XUM-01-14	1.500	16.000 mm	14.02 mm	14.06 mm
XUM-01/02-16	1.864	18.000 mm	16.02 mm	16.06 mm
XUM-01/02-20	2.649	23.000 mm	20.03 mm	20.07 mm
XUM-01/02-25	3.729	28.000 mm	24.97 mm	25.01 mm
XUM-01/02-30	4.807	34.000 mm	29.96 mm	30.01 mm
XUM-01/02-40	7.063	44.000 mm	40.00 mm	40.05 mm

Explanation:
The iglidur® X material has a higher stiffness than iglidur® J. This causes shifts – depending on the diameter – compared to the ratio of test force to LD diameter. The parts are designed in such a way that under load the clearance between the iglidur® X and iglidur® J bearings is as identical as possible. Thereby in the use of iglidur® X liners, increased shifting forces can occur in the unloaded new condition on an h-toleranced shaft.

When using a plain bearing (JUM/RJM) in connection with a housing (RJUM, OJUM, RGA) the factory tolerance of the housing bore (standard case: H7) is also added to the minimum clearance stated above. The total from these two values then produces the maximum possible bearing tolerance.

The effective clearance is also influenced by the shaft tolerance. The maximum shaft undersize value should be added to give the maximum possible clearance.

F_{max} dynamic:
The maximum values are the result of the projected surface and 5 MPa surface pressure.

F_{max} static:
The maximum values are the result of the projected surface and 35 MPa surface pressure.

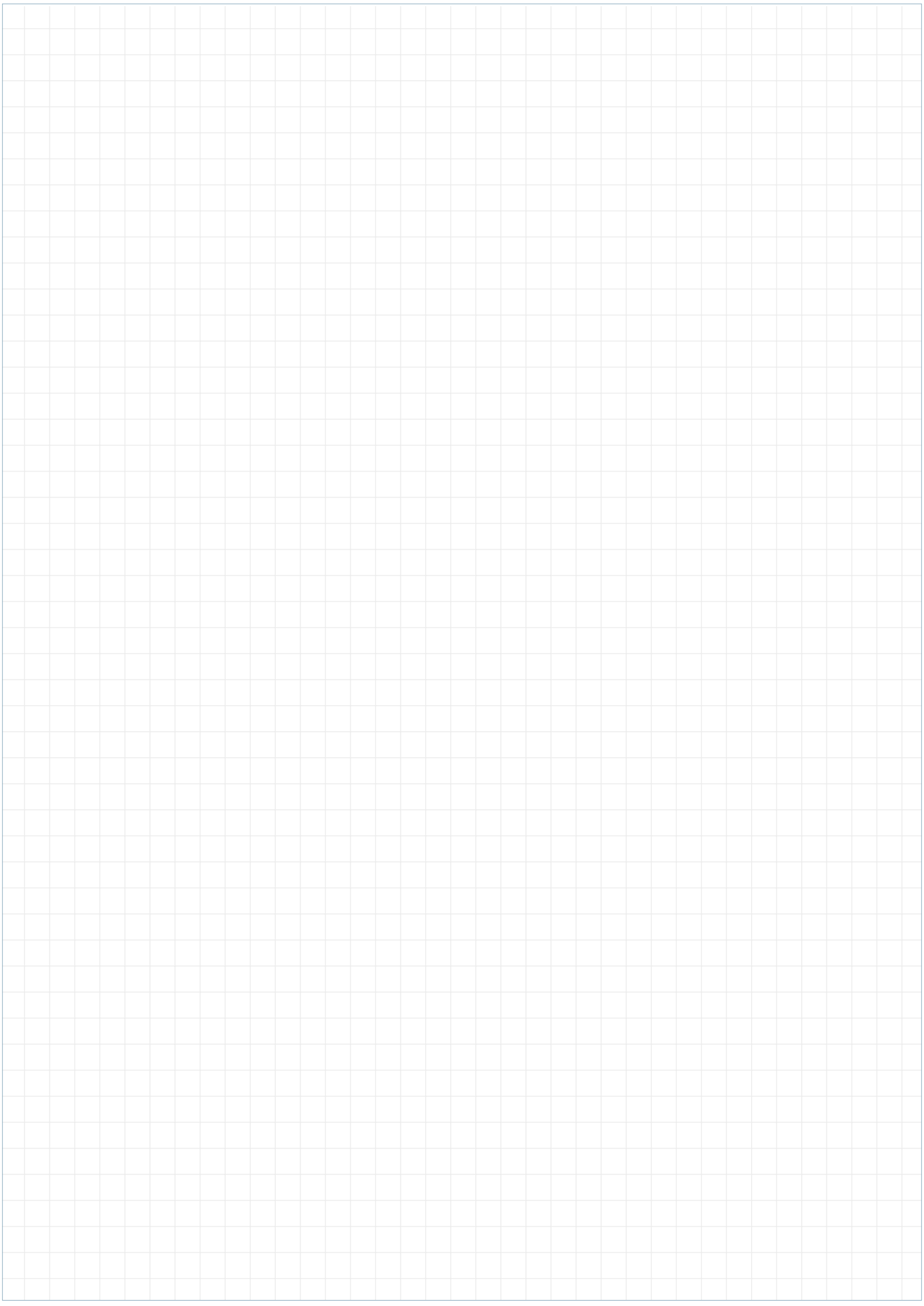
Installation instructions
▶ Page 945

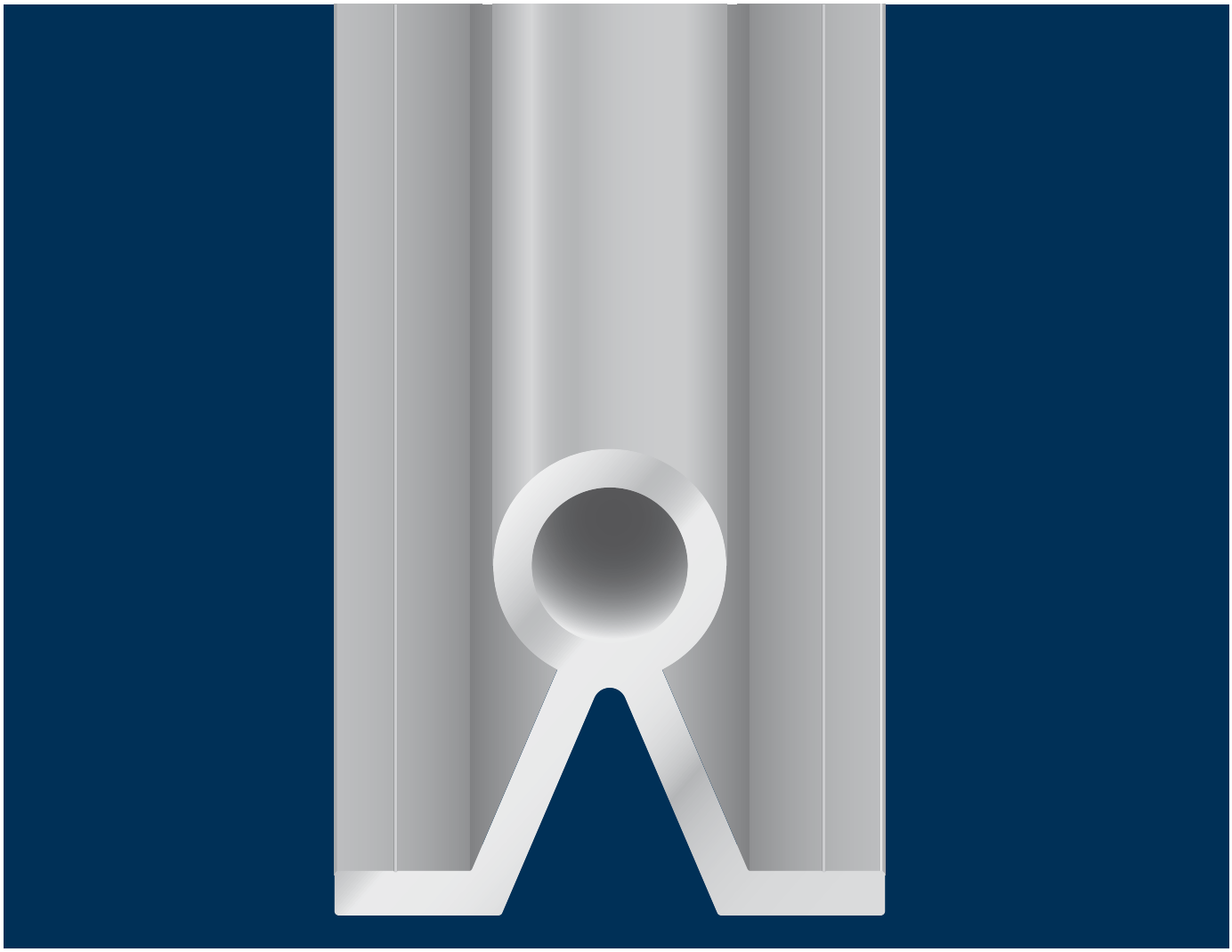
Tightening torque for drylin® connections between metal parts

Metric thread (Da)	Torque [Nm]	Recommended torque [Nm]
M3	0.5 - 1.1	0.7
M4	1.0 - 2.8	1.5
M5	2.0 - 5.5	3.0
M6	4.0 - 10.0	6.0
M8	8.0 - 23.0	15.0
M10	22.0 - 46.0	30.0

Note the minimal screw in depth for aluminium and zinc parts: 1.5 x Da

My sketches





drylin® linear technology – drylin® shafts

Hard anodised aluminium shafts for optimum running performance

Stainless steel for high corrosion resistance

Hardened steel and stainless steel shafts

Carbon fibre shafts

Round shafts with and without support

drylin® shafts | Advantages

Suitable liner materials:

	 The all-rounder – iglidur® J	 The specialist – iglidur® J200	 The extreme – iglidur® X	 The marathon runner – iglidur® E7	 FDA compliant – iglidur® A180
Application temperature	-50 to +90 °C	-50 to +90 °C	-100 to +250 °C	-50 to +70 °C	-50 to +90 °C
Best coefficient of friction with	Steel shaft	Aluminium, hard anodised	Steel hard chrome-plated	Steel/Stainless steel shaft	Stainless steel shaft
Volume resistance	> 10^{13} Ωcm	> 10^{8} Ωcm	< 10^{5} Ωcm	> 10^{9} Ωcm	> 10^{12} Ωcm
Moisture absorption	1.3 % weight	0.7 % weight	0.5 % weight	< 0.1 % weight	0.2 % weight
Maximum life time	Aluminium, hard anodised	Aluminium, hard anodised	Hardened stainless steel	Steel/Stainless steel shaft	Stainless steel shaft
Potential shaft material	all shaft materials	Aluminium, hard anodised	Hardened stainless steel	Steel/Stainless steel shaft	all shaft materials
Permissible stat. surface pressure	35 MPa	23 MPa	150 MPa	18 MPa	28 MPa
Part No.	JUM-...	J200UM-...	XUM-...	E7UM-...	A180UM-...

Available shaft materials:

Aluminium

- Ideal in combination with liners made from iglidur® J/J200
- Lightweight
- Low wear
- Corrosion resistant
- Available from stock

Steel

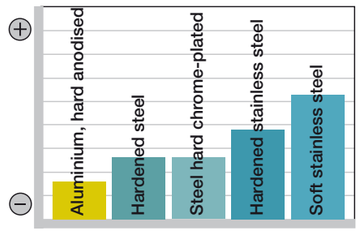
- iglidur® E7 liners for up to 8 times longer service life
- Low-priced standard
- High load capacity
- Dry area applications
- Hard chrome-plated also available
- Lower coefficient of friction against plastic bearings

Stainless steel

- iglidur® A180 liners for food and pharmaceutical applications
- High corrosion resistance
- High chemical resistance
- Ideal solution for wet applications
- V4A for extremely chemical intensive applications

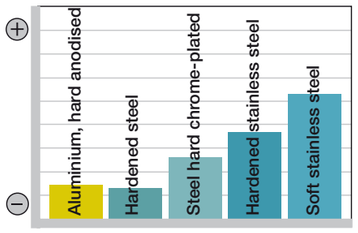
Please remember that this is a technical surface. Small colour variations are possible due to variable coating depths.

Wear



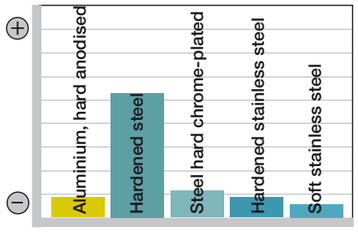
iglidur® J against particular shaft materials

Coefficient of friction



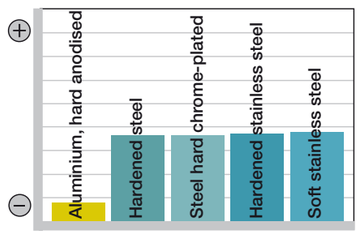
iglidur® J against particular shaft materials

Corrosion



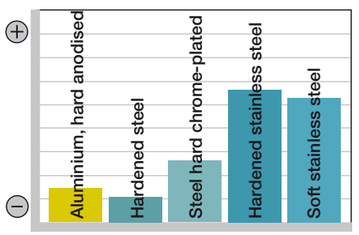
iglidur® J against particular shaft materials

Weight



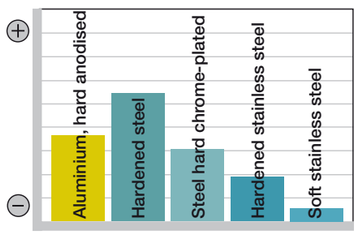
iglidur® J against particular shaft materials

Costs



iglidur® J against particular shaft materials

Chemical charge

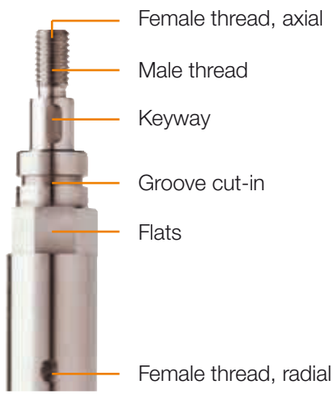


iglidur® J against particular shaft materials

drylin® shafts | Product range

	Aluminium			Steel				Hardened stainless steel				Soft		Carbon fibre
Marking				SWUM		SWUMH		EWUM		EEWUM		EWUMS		CWM
	AWMP/ AWMPV	AWMU	AWMR	SWM	SWUMN	SWMH	SWUMHN	EWM	EWUMN	EEWM	EEWUMN	EWMR	EWMS	
Material	EN AW 6061/6060			1.1213		1.1213 HV		1.4125		1.4034		1.4301	1.4571	CFK Composite
Ø 6	●			▲		▲		▲[2]		▲				
Ø 8	●			▲		▲		▲[2]		▲				
Ø 10	●	●		▲		▲		▲[2]		▲		▲	▲	
Ø 12	●	●	●	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Ø 16	●	●	●	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Ø 20	●	●	●	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Ø 25	●	●	●	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
Ø 30	●[1]/●	●		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Ø 40	●[1]/●	●		▲	▲	▲	▲	▲	▲	▲				
Ø 50	●[1]			▲	▲	▲	▲	▲	▲	▲	▲			
Ø 60	●[1]													
Ø Tolerance	h8	–0.1	h9	h6	h6	h7	h7	h6	h6	h6	h6	h9	h9	-0.1 mm
Max. supply length Ø 8–10	3,000			3,000		3,000				3,000				2,000
Max. supply length Ø 12–50	3,000	4,000	3,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	3,000	3,000	2,000
Surface	hard anodised			hardened/ ground		hard chrome-plated		hardened/ ground		hardened/ ground		drawn, polished		UCU unidirectional/ cross winding/ unidirectional
Surface roughness Ra	< 0.6			0.15–0.3		0.15–0.3		0.15–0.3		0.15–0.3		0.3–0.6		< 0.6 µm
Hardness	up to 550 HV			60+4 HRC		60+4 HRC		52+8 HRC		52+8 HRC		soft		
Roundness	≤ 1/2 ø Tolerance			≤ 1/2 ø Tolerance		≤ 1/2 ø Tolerance		≤ 1/2 ø Tolerance		≤ 1/2 ø Tolerance		≤ 1/2 ø Tolerance		± 0.05 mm

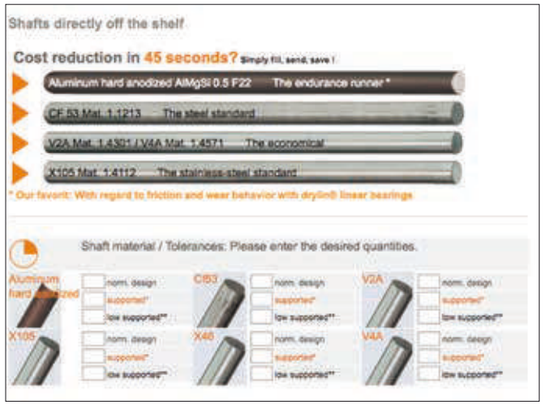
Delivery time: ● from stock ▲ simply cut shafts 3–8 days; machined shafts 12 days [1] Hollow shaft 30 · 7,5; 40 · 10; 50 · 11 [2] Material 1.4112



Special machining

All shafts can be individually machined. Please send us your drawing. We can then provide a quotation quickly.

Query form ▶ **Page 1024**



Queries can also be sent online:

▶ **www.igus.eu/shaftinquiry**

drylin® shafts | Product range

Precision aluminium shafts

AWMP AWMR

igus® recommendation: linear bearings equipped with iglidur® E7 liners for 8 times longer service life

- Material: EN AW 6061/6060
- Straightness: EN 754-3
- Hardness: 75 HB
- Surface: hard anodised
- Hardness: up to 550 HV
- Imperial dimensions on request

Order key

Type	Size	Options

A W M P - 06 - 2000

Aluminium shaft	Metric	Precision	Outer Ø	Shaft length [mm]

AWMP: Solid shaft up to Ø 25 mm
hollow shaft from Ø 30 mm
AWMR: Tube

Hard anodised surfaces
▶ Page 840

Dimensions [mm]

Part No.	Design	Outer Ø	Tolerance	Insulation thickness	Inner Ø	Max. length	Weight [kg/m]
AWMP-06	Solid shaft	6	h8	–	–	3,000	0.08
AWMP-08	Solid shaft	8	h8	–	–	3,000	0.14
AWMP-10	Solid shaft	10	h8	–	–	3,000	0.22
AWMP-12	Solid shaft	12	h8	–	–	3,000	0.32
AWMR-12	Tube	12	h8	2	8	3,000	0.17
AWMP-16	Solid shaft	16	h8	–	–	3,000	0.56
AWMR-16	Tube	16	h8	2	12	3,000	0.25
AWMP-20	Solid shaft	20	h8	–	–	3,000	0.88
AWMR-20	Tube	20	h9	2	16	3,000	0.32
AWMP-25	Solid shaft	25	h8	–	–	3,000	1.37
AWMR-25	Tube	25	h9	3	19	3,000	0.59
AWMP-30	Hollow shaft	30	h8	7.5	15	3,000	1.48
AWMPV-30	Solid shaft	30	h8	–	–	3,000	1.9
AWMP-40	Hollow shaft	40	h8	10	20	3,000	2.63
AWMPV-40	Solid shaft	40	h8	–	–	3,000	3.4
AWMP-50	Hollow shaft	50	h8	11	28	3,000	3.75
AWMP-60	Hollow shaft	60	h8	11	38	3,000	4.7

Order example:
AWMP-12-500: precision aluminium shaft Ø 12 mm, 500 mm in length

drylin® shafts | Product range

Supported aluminium shafts

AWMU

- Material: EN AW 6061/6060
- Straightness: DIN 12020
- Hardness: 75 HB
- Surface: hard anodised
- Hardness: up to 550 HV
- Hole pitches symmetrical C5 = C6

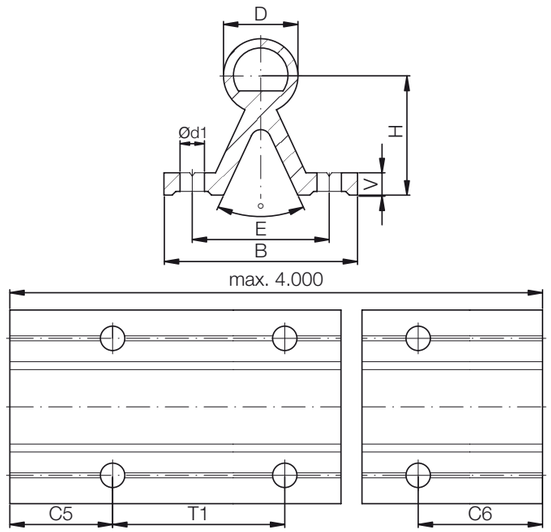
Hard anodised surfaces
▶ Page 840

Order key

Type	Size	Options

A W M U - 12 - 2000

Aluminium shaft	Metric	Supported	Outer Ø	Shaft length [mm]



Dimensions [mm]

Part No.	D –0.1	B	H ±0.25	V	d1	(°)	E ±0.25	T1	C5/C6 min.	C5/C6 max.	Max. length	Weight [kg/m]
AWMU-12	12	40	22	5	4.5	50	29	75	20	57	4,000	0.75
AWMU-16	16	45	26	5	5.5	50	33	100	20	69	4,000	1.00
AWMU-20	20	52	32	6	6.6	50	37	100	20	69	4,000	1.42
AWMU-25	25	57	36	6	6.6	50	42	120	20	79	4,000	1.81
AWMU-30	30	69	42	7	9.0	50	51	150	20	94	4,000	2.69
AWMU-40[86)]	40	73	50	8	9.0	50	55	200	20	119	4,000	4.06

[86)] **Tolerance for shaft diameter D is –0.15**

Order example:
AWMU-16-500: supported aluminium shaft Ø 16 mm, 500 mm in length

drylin® shafts | Product range

Standard steel shafts

SWM SWUMN SWUM

igus® recommendation: linear bearings equipped with iglidur® E7 liners for 8 times longer service life

- Completely supported and mounted with standard aluminium support
- Available shaft materials:
  - ▶ Cf53 steel (1.1213), hardened/ground
  - ▶ Cf53 steel (1.1213 HV), hard-chromed

Order key

Type	Size	Options
S W M	- 06	- 2000
Steel shaft	Metric	Outer Ø	Shaft length [mm]

- For supported shafts:
  - ▶ Partial shaft support supplied in lengths of 600 mm max.
  - ▶ Standard pitch T2, T1 also possible on request
  - ▶ Hole pitches symmetrical C5 = C6

Dimensions [mm] – steel shafts 1.1213

Part No.	d	Weight [kg/m]	Max. length	Effective hardness depth (with 1.1213)
SWM-06	06	0.222	3,000	0.8
SWM-08	08	0.359	4,000	0.9
SWM-10	10	0.617	4,000	0.9
SWM-12	12	0.888	6,000	1.0
SWM-16	16	1.578	6,000	1.2
SWM-20	20	2.466	6,000	1.6
SWM-25	25	3.853	6,000	1.8
SWM-30	30	5.549	6,000	2.0
SWM-40	40	9.865	6,000	2.2
SWM-50	50	15.413	6,000	2.4

Dimensions [mm] – hard-chromed steel shafts 1.1213

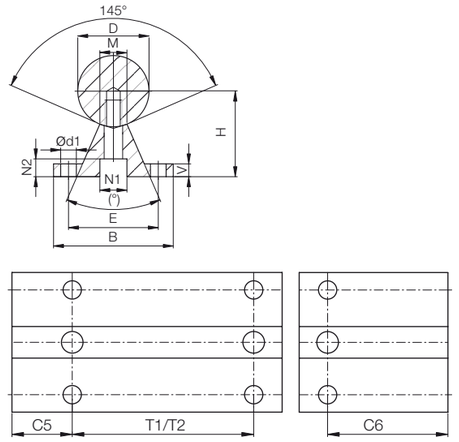
Part No.	d	Weight [kg/m]	Max. length	Effective hardness depth (with 1.1213)
SWMH-06	06	0.222	3,000	0.8
SWMH-08	08	0.359	4,000	0.9
SWMH-10	10	0.617	4,000	0.9
SWMH-12	12	0.888	6,000	1.0
SWMH-16	16	1.578	6,000	1.2
SWMH-20	20	2.466	6,000	1.6
SWMH-25	25	3.853	6,000	1.8
SWMH-30	30	5.549	6,000	2.0
SWMH-40	40	9.865	6,000	2.2
SWMH-50	50	15.413	6,000	2.4

Order example:
SWM-16-500: steel shaft 16 mm Ø 1.1213, 500 mm in length

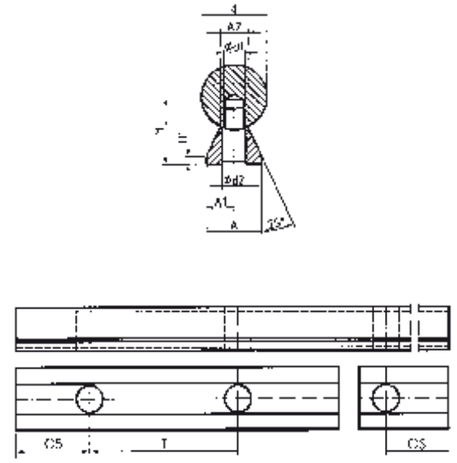
drylin® shafts | Product range

Supported standard steel shaft

SWUM



SWUMN



Dimensions [mm] – supported steel shafts 1.1213

Part No.	D	B	H ±0.02	V	N1	N2	d1	M	(°)	E	T1[87] ±0.15	C5/C6 min. for T1	C5/C6 max. for T1	T2 Standard	C5/C6 min. for T2 Standard	C5/C6 max. for T2 Standard	Weight [kg/m]
SWUM-12	12	40	22	5	8.0	5.0	4.5	5.8	50	29	75	20	57	120	20	79	1.75
SWUM-16	16	45	26	5	9.5	6.0	5.5	7.0	50	33	100	20	69	150	20	94	2.64
SWUM-20	20	52	32	6	11.0	6.5	6.6	8.3	50	37	100	20	69	150	20	94	3.97
SWUM-25	25	57	36	6	14.0	8.5	6.6	10.8	50	42	120	20	79	200	20	119	5.65
SWUM-30	30	69	42	7	17.0	10.5	9.0	11.0	50	51	150	20	94	200	20	119	7.93
SWUM-40	40	73	50	8	17.0	10.5	9.0	15.0	50	55	200	20	119	300	20	169	12.88
SWUM-50	50	84	60	9	19.0	12.5	11.0	19.0	46	63	200	20	119	300	20	169	19.60

[87] Pitch T1 on request; standard is T2

Dimensions [mm] – supported steel shafts 1.1213

Part No.	d	H	H1 ±0.02	A	A1	A2 ±0.02	d1	d2	T	C5/C6 min.	C5/C6 max.	Weight [kg/m]
SWUMN-12	12	14.5	3	11	5.5	5.4	M4	4.5	75	20	57	1.62
SWUMN-16	16	18	3	14	7.0	7.0	M5	5.5	75	20	57	2.54
SWUMN-20	20	22	3	17	8.5	8.1	M6	6.6	75	20	57	3.81
SWUMN-25	25	26	3	21	10.5	10.3	M8	9.0	75	20	57	5.62
SWUMN-30	30	30	3	23	11.5	11.0	M10	11.0	100	20	69.5	7.63
SWUMN-40	40	39	4	30	15.0	15.0	M12	13.5	100	20	69.5	13.47
SWUMN-50	50	46	5	35	17.5	19.0	M14	15.5	100	20	69.5	20.31

Low level supported shafts are delivered unassembled.

Order example:
SWUM-16-500: supported steel shaft 16 mm ø made from 1.1213, 500 mm length

drylin® shafts | Product range

Stainless steel shafts

EWM EEWM EWMR

STAIN-
LESS
STEEL

igus® recommendation: linear bearings equipped with iglidur® E7 liners for 8 times longer service life

- Completely supported and mounted with standard aluminium support
- For supported shafts:
  - ▶ Shaft support supplied in lengths of 600 mm max.
  - ▶ Standard pitch T2, T1 also possible on request
  - ▶ Hole pitches symmetrical C5 = C6

Dimensions [mm] – hardened stainless steel 1.4125

Part No.	d	Weight [kg/m]	Max. length	Effective hardness depth (with 1.4125)
EWM-06[88)]	06	0.222	3,000	0.8
EWM-08[88)]	08	0.359	4,000	0.9
EWM-10[88)]	10	0.617	4,000	0.9
EWM-12	12	0.888	6,000	1.0
EWM-16	16	1.578	6,000	1.2
EWM-20	20	2.466	6,000	1.6
EWM-25	25	3.853	6,000	1.8
EWM-30	30	5.549	6,000	2.0
EWM-40	40	9.865	6,000	2.2
EWM-50	50	15.413	6,000	2.4

[88)] Material X90 (1.4112)

drylin® shafts | Product range

Materials 1.4125, 1.4034, 1.4301, 1.4571

Order key

Type	Size	Options

E W M - 06 - 2000

Steel shaft	Metric	Outer Ø	Shaft length [mm]

Available shaft materials:

Stainless steel (1.4125 or 1.4112), hardened/ground ▶ EWM
Stainless steel (1.4034), hardened/ground ▶ EEWM
Stainless steel (1.4301), drawn ▶ EWMR
Stainless steel (1.4571), drawn ▶ EWMS

Dimensions [mm] – hardened stainless steel 1.4034

Part No.	d	Weight [kg/m]	Max. length	Effective hardness depth (with 1.4034)
EEWM-06	06	0.222	3,000	0.8
EEWM-08	08	0.359	4,000	0.9
EEWM-10	10	0.617	4,000	0.9
EEWM-12	12	0.888	6,000	1.0
EEWM-16	16	1.578	6,000	1.2
EEWM-20	20	2.466	6,000	1.6
EEWM-25	25	3.853	6,000	1.8
EEWM-30	30	5.549	6,000	2.0
EEWM-40	40	9.865	6,000	2.2
EEWM-50	50	15.413	6,000	2.4

Dimensions [mm] – stainless steel 1.4301 (EWMR) or 1.4571 soft stainless steel (EWMS)

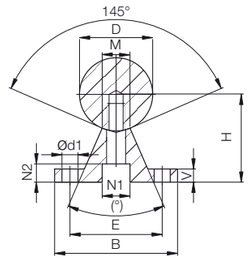
Part No.	d	Weight [kg/m]	Max. length
EWMR-10	10	0.617	3,000
EWMS-10	10	0.617	3,000
EWMR-12	12	0.888	3,000
EWMR-16	16	1.578	3,000
EWMR-20	20	2.466	3,000
EWMS-20	20	2.466	3,000
EWMR-25	25	3.853	3,000
EWMR-30	30	5.549	3,000

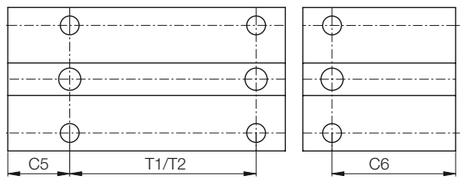
Order example:
EWM-16-500: stainless steel shaft 16 mm Ø 1.4125, 500 mm in length

drylin® shafts | Product range

Supported stainless steel shafts

EWUM





STAIN-LESS STEEL

igus® recommendation: linear bearings equipped with iglidur® E7 liners for 8 times longer service life

Shaft support blocks for Ø 20 mm made from stainless steel VA

- Connecting dimensions as standard supports made from aluminium

Dimensions [mm] – supported stainless steel shafts 1.4125

Part No.	D	B	H	V	N1	N2	d1	M	(°)	E	T1[87]	C5/C6		T2	C5/C6		Weight
												min.	max.		min.	max.	
			±0.02								±0.15	for T1		Standard	for T2 Standard		[kg/m]
EWUM-12	12	40	22	5	8.0	5.0	4.5	5.8	50	29	75	20	57	120	20	79	1.75
EWUM-16	16	45	26	5	9.5	6.0	5.5	7.0	50	33	100	20	69	150	20	94	2.64
EWUM-20	20	52	32	6	11.0	6.5	6.6	8.3	50	37	100	20	69	150	20	94	3.97
EWUM-25	25	57	36	6	14.0	8.5	6.6	10.8	50	42	120	20	79	200	20	119	5.65
EWUM-30	30	69	42	7	17.0	10.5	9.0	11.0	50	51	150	20	94	200	20	119	7.93
EWUM-40	40	73	50	8	17.0	10.5	9.0	15.0	50	55	200	20	119	300	20	169	12.88
EWUM-50	50	84	60	9	19.0	12.5	11.0	19.0	46	63	200	20	119	300	20	169	19.60

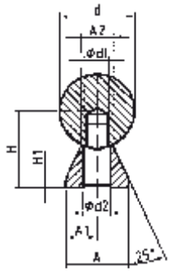
[87] Pitch T1 on request; standard is T2

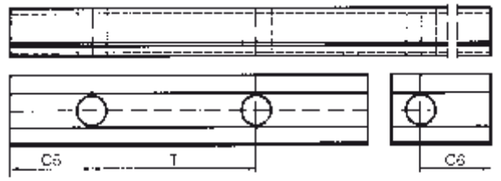
Order example:
EWUM-16-500-T: low level supported stainless steel shaft (1.4125) 16 mm Ø, 500 mm in length, pitch T1

drylin® shafts | Product range

Low level supported stainless steel shafts

EWUMN





Order key

Type	Size	Options
E W U M N	- 20	- 2000 - T1
Low level supported stainless steel shaft, metric	Outer Ø	Shaft length [mm]	Hole pattern

EWUM: Supported stainless steel shaft
EWUMN: Low level supported stainless steel shaft

Available materials and shafts:
1.4125 (AISI 440C), max. 6,000 mm

Hole pattern:
T2: T2 pitch (standard)
T1: T1 pitch (on request)

Dimensions [mm] – low level supported stainless steel shafts 1.4125

Part No.	d	H	H1	A	A1	A2	d1	d2	T	C5/C6		Weight
		±0.02				±0.02				min.	max.	[kg/m]
EWUMN-12	12	14.5	3	11	5.5	5.4	M4	4.5	75	20	57	1.62
EWUMN-16	16	18	3	14	7.0	7.0	M5	5.5	75	20	57	2.54
EWUMN-20	20	22	3	17	8.5	8.1	M6	6.6	75	20	57	3.81
EWUMN-25	25	26	3	21	10.5	10.3	M8	9.0	75	20	57	5.62
EWUMN-30	30	30	3	23	11.5	11.0	M10	11.0	100	20	69.5	7.63
EWUMN-40	40	39	4	30	15.0	15.0	M12	13.5	100	20	69.5	13.47
EWUMN-50	50	46	5	35	17.5	19.0	M14	15.5	100	20	69.5	20.31

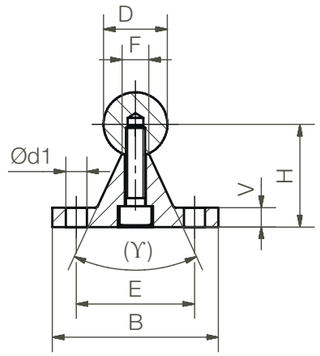
Low level supported shafts are delivered unassembled.

Order example:
EWUMN-16-500: low level supported stainless steel shaft (1.4125) 16 mm Ø, 500 mm in length

drylin® shafts | Product range

Partially supported stainless steel shafts

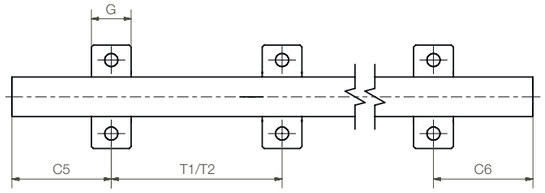
EWUM-ES/
EWUMS-ES



igus® recommendation: linear bearings equipped with iglidur® E7 liners for 8 times longer service life

Shaft support blocks for Ø 20 mm made from stainless steel VA

- Connecting dimensions as standard supports made from aluminium



Dimensions [mm] – partially supported stainless steel shafts 1.4125

Part No.	D	B	H	V	d1	E	ϒ	F	G	T1	C5/C6 for T1		T2	C5/C6 for T2	
	h6		±0.02										Standard		
											min.	max.		min.	max.
EWUM-ES-12	12	40	22	5	4.5	29	–	5.8	14	75	20	57	120	20	79
EWUM-ES-16	16	45	26	5	5.5	33	–	7.0	16	100	20	69	150	20	94
EWUM-ES-20	20	52	32	6	6.6	37	50°	8.3	20	100	20	69	150	20	94
EWUM-ES-25	25	57	36	6	6.6	42	–	10.8	25	150	20	79	200	20	119
EWUM-ES-30	30	69	42	7	9.0	51	–	11.0	25	150	20	94	200	20	119
EWUM-ES-40	40	73	50	8	9.0	55	–	15.0	25	200	20	119	300	20	169

T2 pitch = standard, T1 on request

Order example:
EWUM-ES-20-500: partially supported stainless steel shaft, 1.4125 material, T2 pitch (standard), outer Ø 20 mm, 500 mm length

drylin® shafts | Product range

STAIN-LESS STEEL

Order key

Type	Size	Options

E W U M S - ES - 20 - 2000 - T1

Partially supported stainless steel shafts, metric	Material	Outer Ø	Shaft length [mm]	Hole pattern

Available materials and lengths:

1.4125 (AISI 440C), max. 6.000 mm
▶ EWUM
1.4571 (AISI 361T1), max. 3.000 mm
▶ EWUMS

Options:

blank: 1.4125 material
S: 1.4571 material

Hole pattern:

T2: T2 pitch (standard)
T1: T1 pitch (on request)

Dimensions [mm] – partially supported stainless steel shafts 1.4125

Part No.	D	B	H	V	d1	E	ϒ	F	G	T1	C5/C6 for T1		T2	C5/C6 for T2	
	h6		±0.02										Standard		
											min.	Max.		min.	Max.
EWUMS-ES-12	12	40	22	5	4.5	29	–	5.8	14	75	20	57	120	20	79
EWUMS-ES-16	16	45	26	5	5.5	33	–	7.0	16	100	20	69	150	20	94
EWUMS-ES-20	20	52	32	6	6.6	37	50°	8.3	20	100	20	69	150	20	94
EWUMS-ES-25	25	57	36	6	6.6	42	–	10.8	25	150	20	79	200	20	11 9
EWUMS-ES-30	30	69	42	7	9.0	51	–	11.0	25	150	20	94	200	20	119
EWUMS-ES-40	40	73	50	8	9.0	55	–	15.0	25	200	20	119	300	20	169

T2 pitch = standard, T1 on request

Order example:
EWUMS-ES-20-500-T1: partially supported stainless steel shaft, 1.4571 material, T1 pitch, outer Ø 20 mm, 500 mm length

drylin® shafts | Product range

Carbon fibre shaft

CWM

- Material: CFK Composite
- Roundness tolerance: ± 0.05 mm
- Diameter tolerance: -0.1 mm
- Application temperature: Max. +80 °C
- Colour: Black

Order key

Type	Size	Options
C W M	- 12	- 1000
Carbon fibre shaft	Metric	Outer Ø	Shaft length [mm]

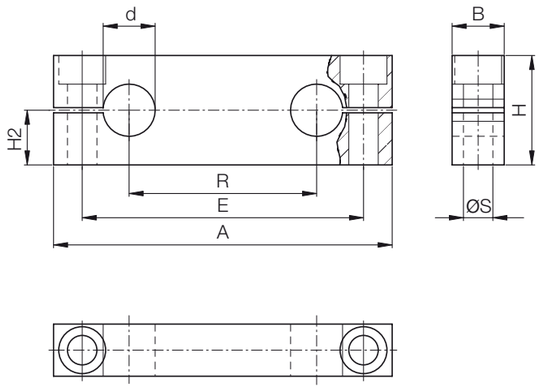
Dimensions [mm]

Part No.	Design	Diameter –0.1	Max. length	Weight [g]
CWM-12	Hollow shaft	12/9	2,000 mm	70
CWM-16	Hollow shaft	16/12.5	2,000 mm	120
CWM-20	Hollow shaft	20/16	2,000 mm	170
CWM-30	Hollow shaft	30/26	2,000 mm	270

Order example:
CWM-16-500: carbon fibre shaft Ø 16 mm, 500 mm length

drylin® shafts | Product range

Shaft end supports, floating



Order key

Type	Size
T A -	08
Shaft end support, floating	Inner Ø

Material: Aluminium
Threaded fixing hole

Dimensions [mm]

Part No.	d	A	B	H	H2 ±0.015	ø S	E	R	Weight [g]
TA-08	8	65	12	22	11	M5	52	32	40
TA-10	10	70	12	21	10.5	M5	55	24	37
TA-12	12	85	14	28	14	M6	70	42	70
TA-16	16	100	18	32	16	M8	82	54	130
TA-20	20	130	20	42	21	M10	108	72	220
TA-25	25	160	25	52	26	M12	132	88	440
TA-30	30	180	25	58	29	M12	150	96	560
TA-40	40	230	30	72	36	M16	190	122	1,000

Order example:
TA-10: floating shaft end support with inner Ø 10 mm

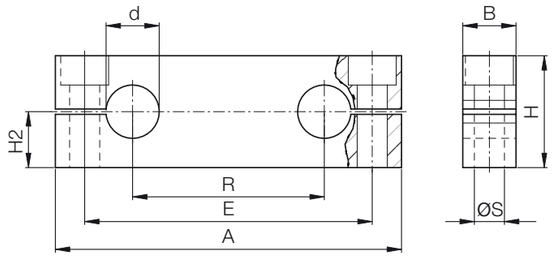
drylin® shafts | Product range

Shaft end supports, fixed

Order key

Type	Size
T A F - 08	
Shaft end support	Inner Ø
Fixed	

Material: Aluminium
Plain fixing hole



Dimensions [mm]

Part No.	d	A	B	H	H2 ±0.015	ø S	E	R	Weight [g]
TAF-08	8	65	12	23	12.5	5.5	52	32	40
TAF-10	10	70	12	25	14.0	5.5	55	24	45
TAF-12	12	85	14	32	18.0	6.6	70	42	90
TAF-16	16	100	18	36	20.0	9.0	82	54	140
TAF-20	20	130	20	46	25.0	11.0	108	72	250
TAF-25	25	160	25	56	30.0	13.5	132	88	470
TAF-30	30	180	25	64	35.0	13.5	150	96	620
TAF-40	40	230	30	80	44.0	17.5	190	122	1,150

Order example:
TAF-12: fixed shaft end support with inner Ø 12 mm

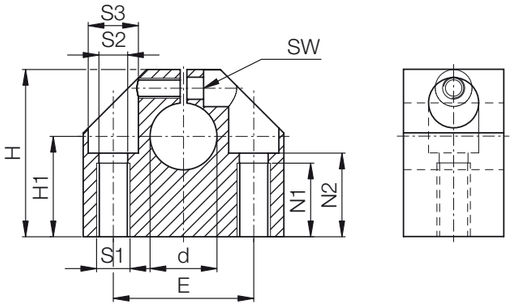
drylin® shafts | Product range

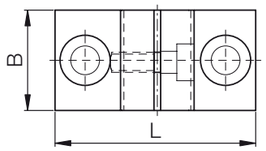
Shaft end blocks, standard version

Order key

Type	Size
W A - 08	
Shaft end block Standard version	Inner Ø

Material: Aluminium





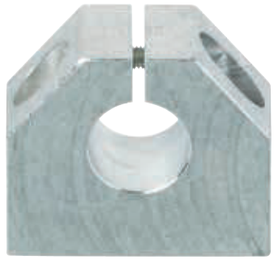
Dimensions [mm]

Part No.	d	B	H	H1 ±0.02	L	S1	S2	S3	E ±0.1	N1	N2	SW	Weight [g]
WA-08	8	18	28	15	32	M4	3.3	6	22	9	13.0	2.5	40
WA-12	12	20	35	20	43	M6	5.2	10	30	13	16.5	3.0	100
WA-16	16	24	42	25	53	M8	6.8	11	38	18	21.0	4.0	150
WA-20	20	30	50	30	60	M10	8.6	15	42	22	25.0	5.0	230
WA-25	25	38	60	35	78	M12	10.3	18	56	26	30.0	6.0	410
WA-30	30	40	70	40	87	M12	10.3	18	64	26	34.0	6.0	530
WA-40	40	48	90	50	108	M16	14.25	20	82	34	44.0	8.0	990
WA-50	50	58	105	60	132	M20	17.5	26	100	43	49.0	10.0	1,250
WA-60	60	74	130	75	164	M27	22	33	124	43	59.0	10.0	2,950

Order example:
WA-08: shaft end block, standard design with inner Ø 8 mm

drylin® shafts | Product range

Shaft end blocks, compact design

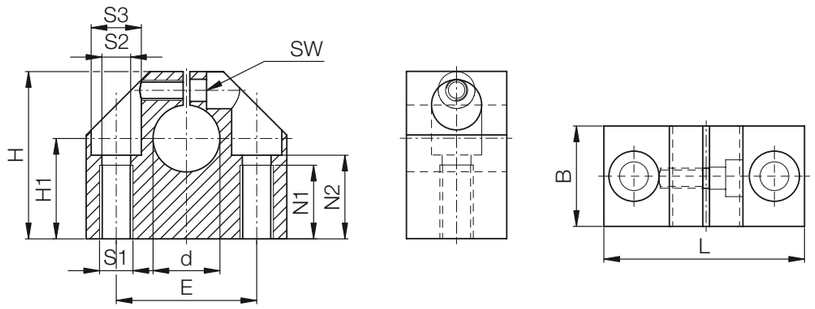


Order key

Type	Size
W A C - 06	

Shaft end block
Compact version
Inner Ø

Material: Aluminium



Dimensions [mm]

Part No.	d	B	H	H1 +0.01 up to +0.02	L	S1	S2	S3	E ±0.1	N1	N2	SW	Weight [g]
WAC-06	6	16	27	15	32	M5	4.2	8	22	11	13	2.5	30
WAC-08	8	16	27	16	32	M5	4.2	8	22	11	13	2.5	30
WAC-10	10	18	33	18	40	M6	5.2	10	27	13	16	3.0	50
WAC-12	12	18	33	19	40	M6	5.2	10	27	13	16	3.0	50
WAC-14	14	20	38	20	45	M6	5.2	10	32	13	18	3.0	70
WAC-16	16	20	38	22	45	M6	5.2	10	32	13	18	3.0	70
WAC-20	20	24	45	25	53	M8	6.8	11	39	18	22	4.0	120
WAC-25	25	28	54	31	62	M10	8.6	15	44	22	26	5.0	170
WAC-30	30	30	60	34	67	M10	8.6	15	49	22	29	5.0	220
WAC-40	40	40	76	42	87	M12	10.3	18	66	26	38	6.0	480
WAC-50	50	50	92	50	103	M16	14.25	20	80	34	46	8.0	820

Order example:
WAC-12: shaft end block, compact design with inner Ø 12 mm

drylin® shafts | Product range

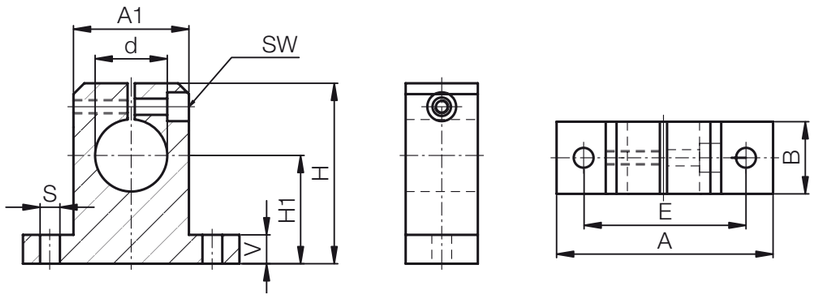
Shaft end blocks, narrow version

Order key

Type	Size
W A S - 08	

Shaft end block
Narrow version
Inner Ø

Material: Aluminium



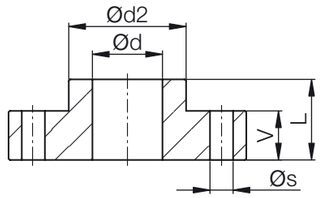
Dimensions [mm]

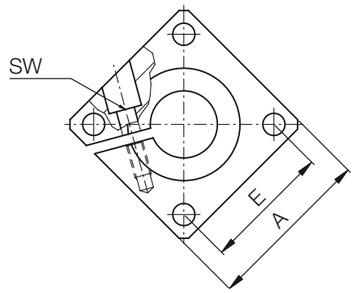
Part No.	d	H	H1 ±0.02	A	A1	B	E	S	V	SW	Weight [g]
WAS-08	8	27	15	32	16	10	25	4.5	5.0	2.5	12
WAS-12	12	35	20	42	20	12	32	5.5	5.5	3.0	23
WAS-16	16	42	25	50	26	16	40	5.5	6.5	3.0	35
WAS-20	20	50	30	60	32	20	45	5.5	8.0	4.0	67
WAS-25	25	58	35	74	38	25	60	6.6	9.0	4.0	140
WAS-30	30	68	40	84	45	28	68	9.0	10.0	5.0	200
WAS-40	40	86	50	108	56	32	86	11.0	12.0	6.0	480

Order example:
WAS-12: shaft end block, narrow design with inner Ø 12 mm

drylin® shafts | Product range

Flangedshaft end block





Order key

Type	Size
W A F -	12

Shaft end block
With flange
Inner Ø

Material: Aluminium

Dimensions [mm]

Part No.	Ø d	A	L	Ø d2	E	Ø s	V	SW	Weight [g]
WAF-12	12	40	20	23.5	30 ± 0.12	5.5	12	3	60
WAF-16	16	50	20	27.5	35 ± 0.12	5.5	12	3	80
WAF-20	20	50	23	33.5	38 ± 0.15	6.6	14	4	100
WAF-25	25	60	25	42.0	42 ± 0.15	6.6	16	5	150
WAF-30	30	70	30	49.5	54 ± 0.15	9.0	19	6	300
WAF-40	40	100	40	65.0	68 ± 0.25	11.0	26	8	700
WAF-50	50	100	50	75.0	75 ± 0.25	11.0	36	8	1,200

Order example:
WAF-16: flanged shaft end block with inner Ø 16 mm

drylin® | Expert 2.0 | Online tools

Expert for linear guides: System selection & service life calculation with CAD

Configure and calculate linear bearings – constantly expanded by new sizes and products

Easily calculate and configure the service life of your required linear guide with only a few clicks. Select a drylin® system and add the relevant environmental parameters. Select the bearing size, carriage, number and position. Enter the distance between the rails and the mounting. Define more relevant parameter of the guidance and select a rail length. The results are displayed.

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Download the app now

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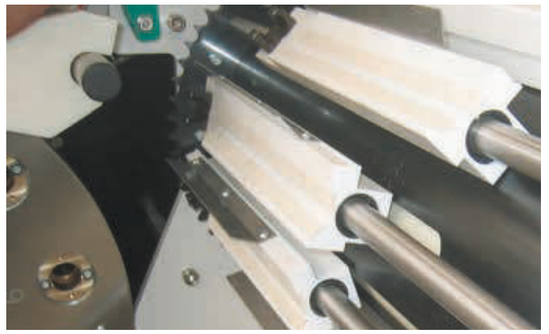
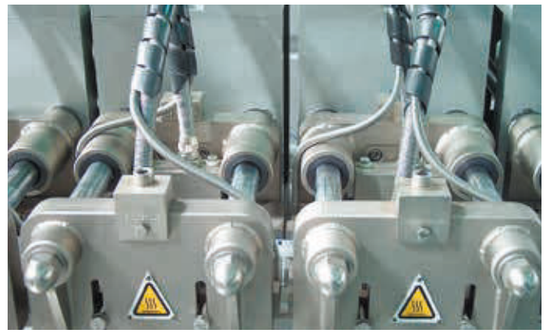
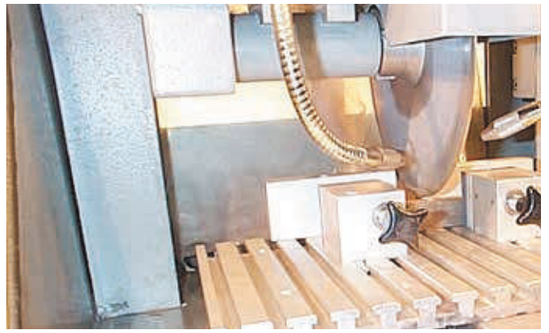


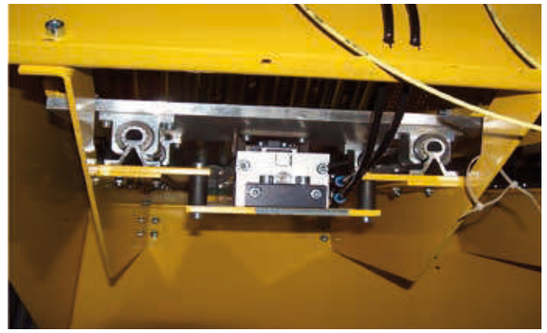
Aluminium shafts in combination with iglidur® J enable high speeds due to the lightweight.



Stainless steel shafts combined with iglidur® X, offer maximum resistance at +120 °C. Cleaning in filling machine.



Stainless steel combined with iglidur® J in cut-off grinding machine. Grinding particles and coolants, extreme conditions.



Cost-effective guide for work piece carriage in a machine tool through supported aluminium shaft.

drylin®
Shafts

Fax-Reply to +49 2203-9649-334
Send an e-mail to info@igus.de
or online ► www.igus.eu/shaftinquiry

Date:	Phone: +49 2203 9649-145 Fax: +49 2203 9649-334
From: Phone: Fax:	To: **igus® GmbH** Technical marketing drylin® department P.O. Box 90 61 23 51127 Cologne, Germany

Lower costs in 45 seconds? Simply fill in, send off, save!

Step 1:
Please choose the required shaft material

☐ 

Aluminium, hard anodised

☐ 

Cf53 steel (1.1213), hardened

☐ 

Stainless steel (1.4034), hardened

☐ 

Stainless steel (1.4301), drawn

☐ 

Cf53 steel (1.1213 HV), hard-chromed

☐ 

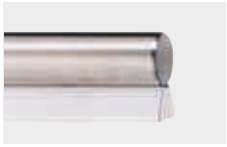
Stainless steel (1.4125), hardened

☐ 

Stainless steel (1.4571), drawn

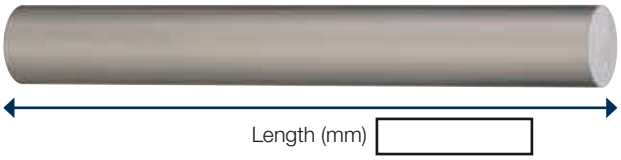
Step 2:
Please choose the required version

☐ 
Standard design

☐ 
Low level supported

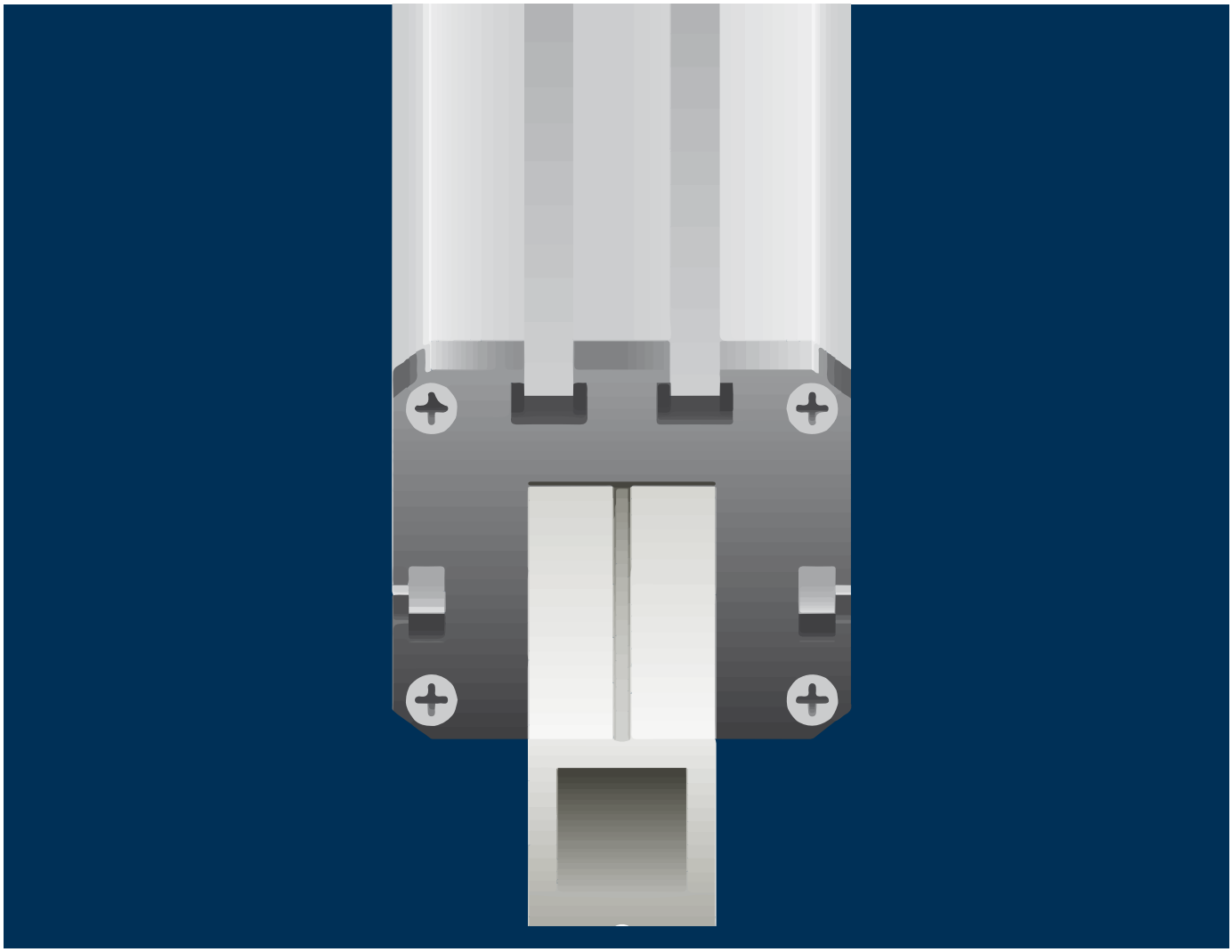
☐ 
Standard supported

Step 3:
Please enter the required dimensions



Step 4:
Please draw a sketch of the required machining.

1 Bevel	☐ one side	☐ both sides
2 Key surface	☐ one side	☐ both sides
3 Trunion	☐ one side	☐ both sides
4 Keyway, recess	Quantity _____	
5 Male thread axial	☐ one side	☐ both sides
6 Female thread axial	☐ one side	☐ both sides
Female thread, radial	Quantity _____	
7 Other surface processing	☐ one side	☐ both sides



drylin® linear technology – drylin® Q square linear guides

Torque-resistant linear guides

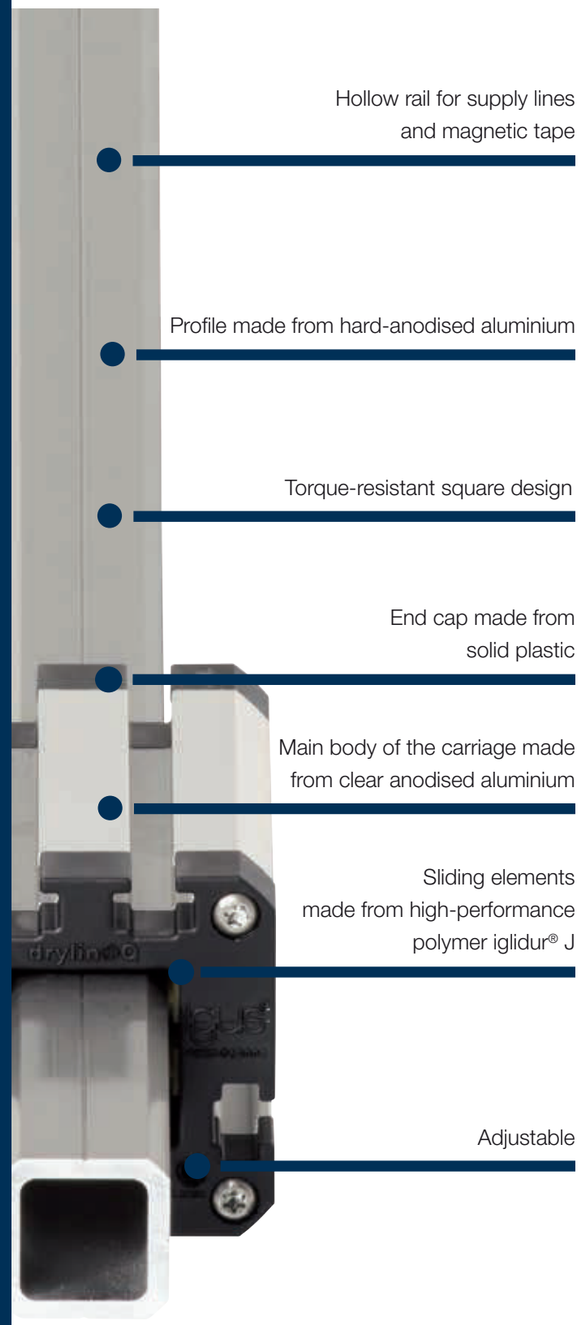
Square section rail made from hard-anodised aluminium

Apply moments up to 10 Nm

Adjustable linear carriage with or without manual clamp

Lubrication-free and lightweight

Torque resistant, space saving, light, unsupported installation



Lubrication-free square linear guides – drylin® Q

Linear movement with torque resistance, completely lubrication-free. The drylin® Q linear system offers the user maximum flexibility in the design. Individual housing options such as solid plastic bearings and adjustable systems with and without manual clamp are available. Due to the hollow design, the rugged hard-anodised aluminium profile is very light and is suitable for the installation of supply cables. Options for mounting are extensive, among others, using slot nuts; size 20 can also be combined with all 20/20 aluminium profiles.

- 100 % lubrication-free
- Torque-resistant
- Adjustable
- Applied forces from all directions possible
- Dirt resistance
- Low vibration and quiet
- Numerous mounting options

Typical application areas

- Machine building
- Wood working industry
- Machine tools
- Handling

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

max. +90 °C
min. -40 °C

3 sizes (10/12/20)
Rail length: 1,500/3,000 mm

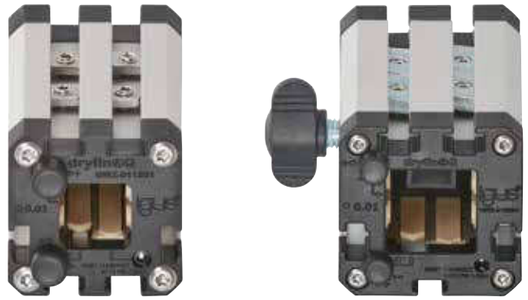
Technical details on floating bearings, 2:1 Rule, Tightening torque for drylin® connections between metal parts ▶ Page 845

Linear system with individual housing versions

Square section rail

- Material: aluminium, hard anodised
- Lightweight and corrosion resistant
- Hollow rail design for feeding supply cables

▶ **Page 1028**



Linear carriage

- Unsupported carriage version with/without manual clamp
- Numerous fastening options on all sides via slot nuts
- Bearing clearance adjustable

▶ **Page 1029**

Bearing carriage

- Enclosed anodised aluminium housing
- Apply moments up to 3 Nm (Size 10) and up to 10 Nm (Size 20)
- Torque-resistant sliding elements made from iglidur® J

▶ **Page 1031**

Accessories

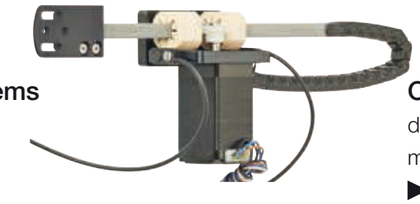
- Supports made from plastic and end caps for aluminium profiles
- Adapter kit for grippers and sensors
- Adapter for igus® e-chains® series E2 micro

▶ **Page 1034**

Measuring systems

drylin® QKM

▶ **Page 1040**



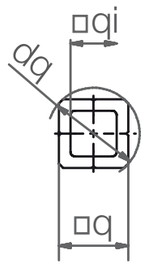
Cantilever drive

drylin® GRQ miniature linear module

▶ **Page 1239**

drylin® Q square linear guides | Product range

Square section rail



Order key

Type	Size	Option
A W M Q - 10 -		1000

Aluminium shaft	Metric	Type square	Installation size	Length [mm]

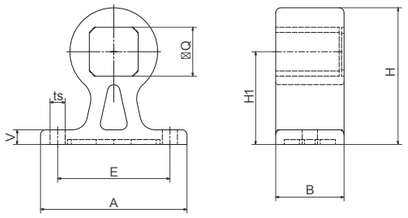
Dimensions [mm]

Part No.	Weight [kg/m]	q	dq	qi ±0.02	Max. length
AWMQ-10	0.082	7.5	10	5	1,500
AWMQ-12	0.193	12	16	8.5	1,500
AWMQ-20	0.46	20	25	15	3,000

Matching accessories

Supports made from plastic

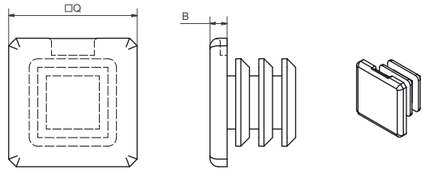
- Cost-effective mounting option
- Can also be used as floating support



Dimensions [mm]

Part No.	A	H	B	Q	H1	E	ts	V
STZ-Q10-01-FL	30	21	14	7.5	14	20	3.3	3
STZ-Q20-01-FL	60	56	28	20	38	46	6.2	6

End caps for square section rail



Dimensions [mm]

Part No.	Q	B
STZ-Q10-01-C	7.5	1
STZ-Q20-01-C	20	5

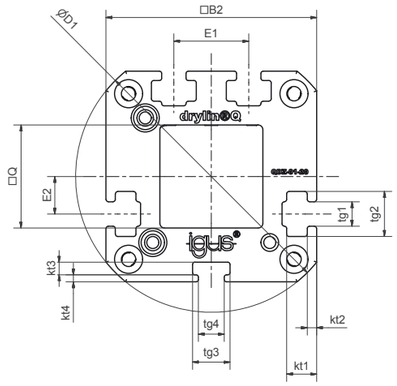
drylin® Q square linear guides | Product range

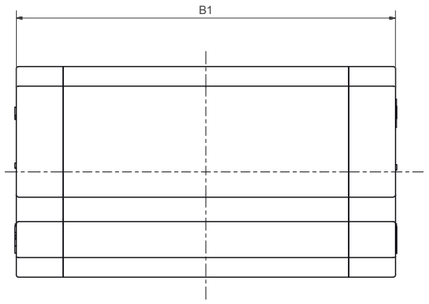
Adjustable linear carriage

Order key

Type	Size
Q W E - 01 -	20

Square	Linear carriage	Adjustable	Type standard	Installation size





Dimensions [mm]

Part No.	Weight [g]	M max. [Nm]	B1	B2 h7	D1	Q	E1	E2	tg1	tg2	tg3	tg4	kt1	kt2	kt3	kt4
QWE-01-12	110	5	80	34	44	12	12	6	5.5	8	8	–	–	–	3	1.25
QWE-01-20	210	10	81	45	58	20	16	8	5.5	9.6	8	5.5	6.4	2	2.7	1.5

Accessories: Slot nuts

Slot nuts offer mounting options (e.g. of sensors) on four sides of the housing. 8 pieces are included in the delivery of a QWE carriage.
Part No. NOR-20602

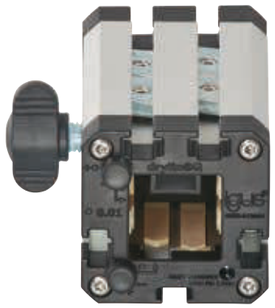
Can be combined with:

AWMQ-12

AWMQ-20

drylin® Q square linear guides | Product range

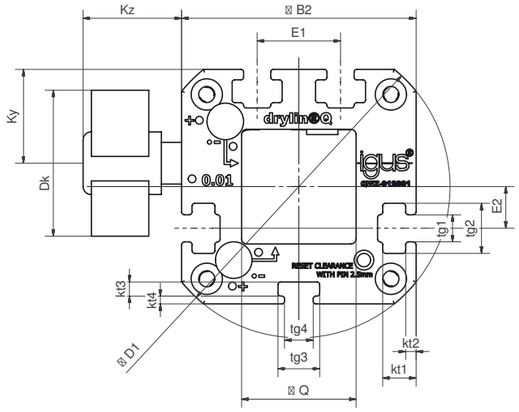
Adjustable linear carriage with manual clamp

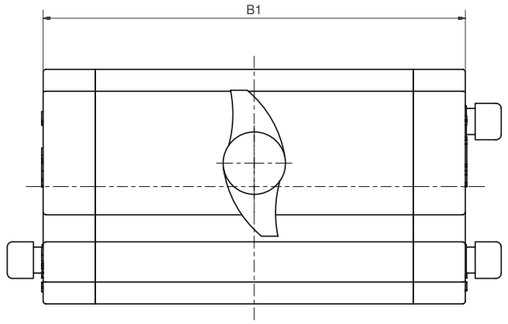


Order key

Type	Size	Options
Q W E - 01	- 20	- HKA

Square	Linear carriage	Adjustable	Type standard	Installation size	Manual clamp





Dimensions [mm]

Part No.	Weight [g]	M max. [Nm]	B1	B2 h7	D1	Q	E1	E2	tg1	tg2	tg3	tg4
QWE-01-12-HKA	–	–	80	34	44	12	12	6	5.5	8	8	–
QWE-01-20-HKA	215	10	81	45	58	20	16	8	5.2	9.6	8	5.5

Part No.	kt1	kt2	kt3	kt4	Dk	Ky	Kz
QWE-01-12-HKA	–	–	3	1.25	18	14	19
QWE-01-20-HKA	6.4	2	2.7	1.5	28	18	19

The manual clamp has been developed for simple tasks. The creep behaviour of the plastic causes the clamping force to reduce over time (up to 70%). Therefore safety-related parts should not be clamped. Please contact our applications consultant if you require other options for the clamping.

Can be combined with:

AWMQ-20

drylin® Q square linear guides | Product range

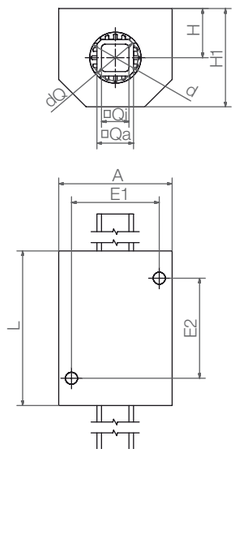
Q20 pillow block

Order key

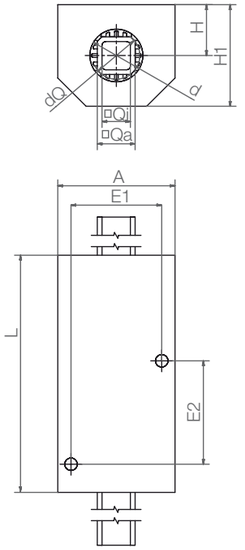
Type	Size
Q J R M T	- 05 - 20

Square	igliduR® J	Closed design	Metric	Tandem (optional)	Type compact	Installation size

QJRM-05-20



QJRMT-05-20



Dimensions [mm]

Part No.	Weight [kg]	A	H ±0.02	H1	dQ	Qa	Qi	E1 ±0.15	E2 ±0.15	d	L
QJRMT-05-20	0.55	62	27	54	25	20	15	48	55	28	85
QJRM-05-20	0.25	62	27	54	25	20	15	48	–	28	40

Can be combined with:

AWMQ-20

drylin® Q square linear guides | Product range

Flange bearing

QJFMT-02-...

QJFM-02-...

Order key

Type	Option	Size
Q J F M T -	02	- 10

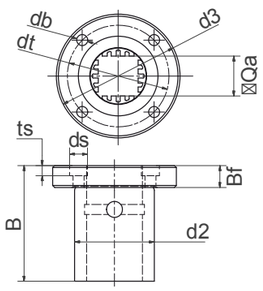
Square | iglidur® J | With flange | Metric | Tandem (optional) | **Type** | Installation size

Options:

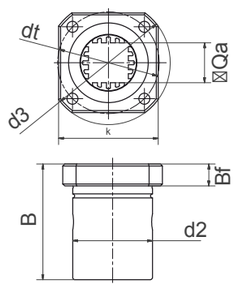
01: Round flange

02: Square flange

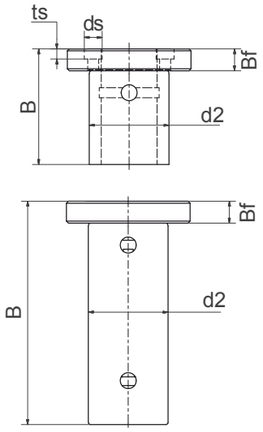
QJFM-01



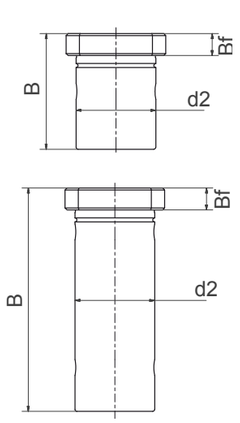
QJFM-02



QJFMT-01



QJFMT-02



Dimensions [mm]

Part No.	Weight [kg]	k	d2 h7	Bf	Qa	d3 ±0.15	dt ±0.15	B	db	ds	ts
QJFMT-02-10	0.038	30	19	9	7.5	39	29	52	4.5	7.5	4.1
QJFMT-01-20	0.24	–	40	11	20	62	51	112	5.5	9.0	5.1
QJFMT-02-20	0.24	50	40	11	20	62	51	112	5.5	9.0	5.1
QJFM-01-20	0.14	–	40	11	20	62	51	58	5.5	9.0	5.1
QJFM-02-20	0.14	50	40	11	20	62	51	58	5.5	9.0	5.1

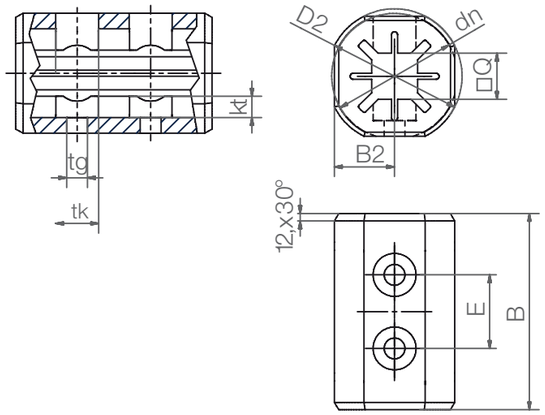
Can be combined with:

AWMQ-10

AWMQ-20

drylin® Q square linear guides | Product range

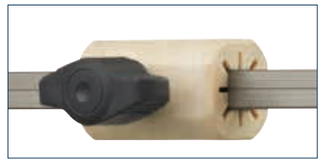
Q10 pillow block



Order key

Type	Size
Q J R M P - 01	- 10

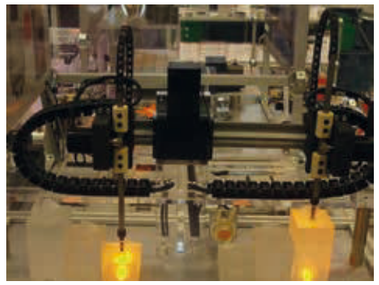
Square | iglidur® J | Closed design | Metric | Solid plastic | Type standard | Installation size



Manual clamp available.
Suffix "-HKA"

Dimensions [mm]

Part No.	Weight [g]	M max. [Nm]	B	B2	D2	dn	E	Q	tk	tg	kt
QJRMP-01-10	11.3	3	32	9.8	22	22	12	7.5	6	3.4	3.5



Pipette unit equipped with drylin® Q square linear system combined with drylin® GRW cantilever axis and NEMA step motor

Can be combined with:

AWMQ-10

drylin® Q square linear guides | Product range

Accessories

- Hollow rail for supply lines (compressed air, cable)
- Extremely compact
- A host of possible applications

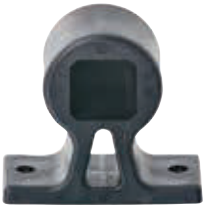
Accessories: Component parts

Adapter for flange shaft block

Part No.
STZ-Q10-AR-1012-16

Adapter kit e.g. for grippers/sensors

Part No.
STZ-Q10-01-AM



Supports made from plastic

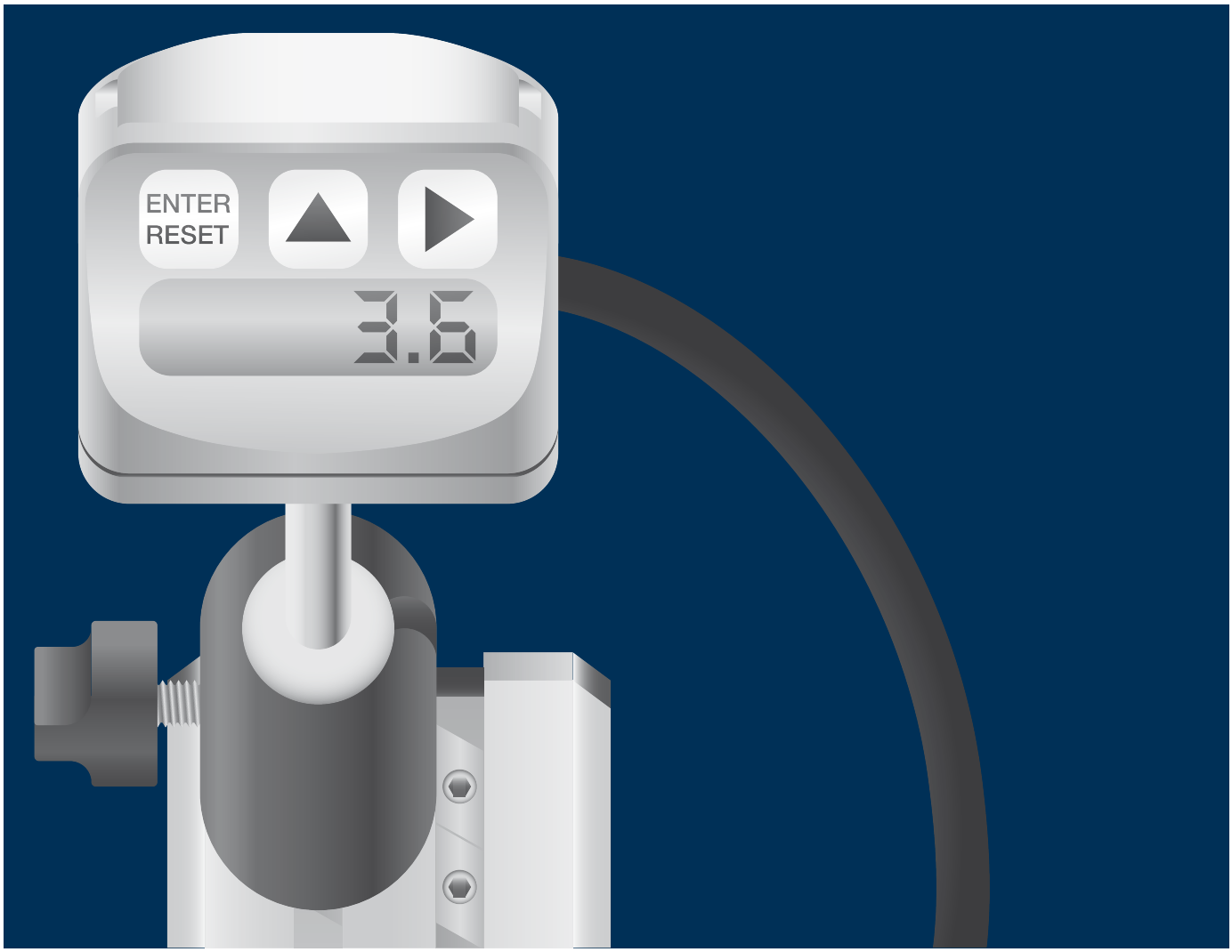
Part No.
STZ-Q10-01-FL
STZ-Q10-01-LL

Chain connection for e-chain® E2 micro

Part No.
STZ-Q10-01-AC-E2

End caps for square section rail

Part No.
STZ-Q10-01-C
STZ-Q20-01-C



drylin® linear technology – digital measuring systems

Ready-to-install complete systems

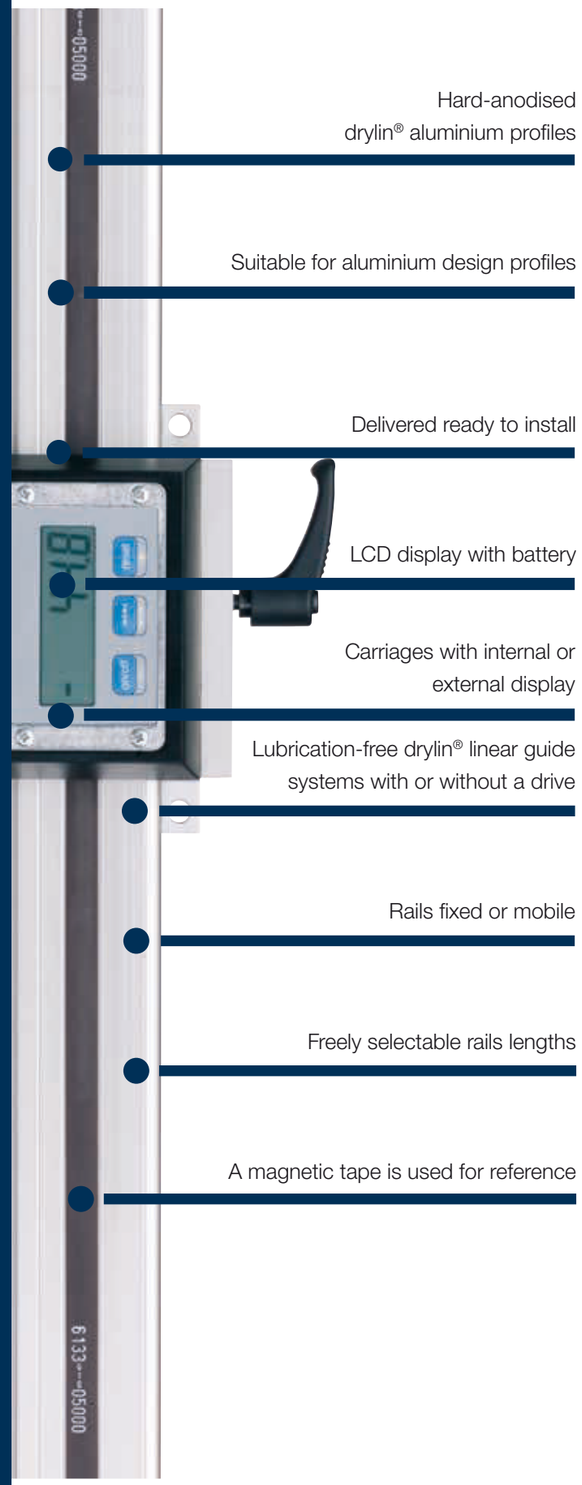
Sensor, measuring display, magnetic tape included

Battery operation

Ideal for positioning stops

Operation without mains supply

Lubrication-free, light, quiet, long service life, cost-effective



Digital drylin® measuring systems

The drylin® measuring systems use magnetic tape with incremental measuring systems. The integrated battery ensures a service life of many years and enables almost absolute measurement. The sensor, measuring display and magnetic tape are integrated in lubrication-free drylin® W and Q linear guide systems. With customer-specific rail lengths, systems are supplied as ready-to-install linear modules. Typical application areas are format adjustments and mechanical stop adjustments.

- Simple installation
- Easy to adjust
- Lubrication and maintenance-free
- Battery powered
- Unsupported use
- Optional:
  Mounted rail ▶ measuring carriage moves
  Mounted measuring rail ▶ rail moves

Typical application areas

- Format adjustments
- Bending machines
- Band saws
- Stop dog positioning for profiles, frames, plates, tubes, wood and bar stock

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

max. +70 °C
min. -10 °C

Carriage widths: 45 - 134 mm
Rail length: up to 4,000 mm

Profile guide systems for almost unlimited design freedom

drylin® Q for unsupported structures

- Carriage with integrated measuring sensor
- With fixed or flexible adjustable display
- Protected magnetic tape

▶ Page 1040

drylin® SLW with integrated measuring sensor

- Driven by trapezoidal thread
- Programmable display
- Positioning can be freely adjusted and locked

▶ Page 1041

drylin® W with digital measuring display

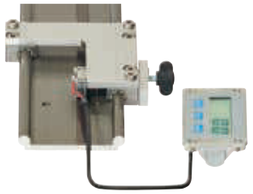
- Max. rail length up to 4,000 mm
- Measuring display attached to the side of the carriage
- Lubrication-free adjusting of the carriage

▶ Page 1042

drylin® W with fixed measuring display

- Max. rail length: 2,000 mm
- Measuring display fixed in place
- Moving rail with stationary carriage

▶ Page 1042



drylin® W with external measuring display

- Carriage with integrated sensor
- Flexible positioning of the measuring sensor
- Including manual clamp

▶ Page 1043

drylin® W for external data output

- Variable sensor type, output power and cable length
- Cable guide and protection through igus® e-chain®
- 1 and 4 edge triggering

▶ Page 1044

Measuring display for series SLWM/QKM

Properties	
Measuring principle	Incremental, with zero function
Display	LCD display 7.5 mm high digits
Display accuracy	max. 0.1 mm
Display/display area	-99 999 …+99 999
Function	Digit direction, decimal point, unit of measurement (mm, imperial), preset activation
Power supply	Battery 1/2 AA, 3.6 V integrated, service life of up to 4 years
Magnetic sensor	Securely connected (external)
Type	Installation housing
Housing	Plastic
Protection class	IP54 display IP67 sensor
Working temperature	0…+50 °C
Humidity	35-85%
Speed	Max. 2.5 m/s
Display keyboard	3 function buttons

Measuring display for series WKM/WKMEDR

Properties	
Measuring principle	Incremental, with zero function
Display	Lowest power LCD with integrated sensor, battery operated
Display accuracy	Max. 0.1 mm
Repeatability	± 1 digit
Display/display area	-99 999 …+99 999
Function	Incremental and reset function Direct input offset value
Power supply	Battery integrated, service life of up to 10 years
Magnetic sensor	Securely connected
Type	Installation housing
Housing	Zinc die-casting
Protection class	IP20 overall device IP60 display page
Working temperature	0…+60 °C
Humidity	95% rel. humidity, condensation not permissible
Speed	Max. 3.5 m/s

Length measuring system WKMEX

Properties	
Measuring principle	Incremental
Repeatability	± 0.025 mm
Measuring principle	Linear
Pole division	5 mm
Sensor housing	Zinc die-casting
Protection class	IP67
Application temperature	-10 … +70 °C
Bearing temperature	-25 … +85 °C
Max. humidity	95%, non-condensing
Max. speed	4.0 m/s
VDC power supply	5 VDC or 10… 30 VDC
Current draw	5 VDC: max. 200 mA 10.. 30 VDC: max. 150mA
Evaluation electronics	Sensor with integrated evaluation electronics and index impulse
Output power	5 V-TTL line driver or 10.. 30 V_HTL
Source tracks	A, A‘,B, B‘, Z, Z‘
Max. cable length	Max. cable length 5V/5V-TTL: 10m 10-30V/10-30V: 30m 10-30V/5V-TTL: 50m
Max. permissible distance from magnetic tape	2.0 mm
Connection method	Open cable ends

Magnetic tape for measuring display WKM

Properties	
Encoding	Incremental, single-track system
Basic pole division	5 mm pole division
Band width	10 mm
Operating temperature, processed	0° ... +60°C
Tape structure	Magnetic tape stuck on with adhesive tape
External magnetic influence	External magnetic fields on the magnetic tape surface must not exceed 64 mT (640 Oe; 52KA/m) as this can damage or destroy the magnetic tape encoding
Protection class	Carrier tape, stainless steel (optional)

drylin® digital measuring systems | Product range

Integrated measuring systems

Order key

Type	Option	Size
Q K M -	01	- 20

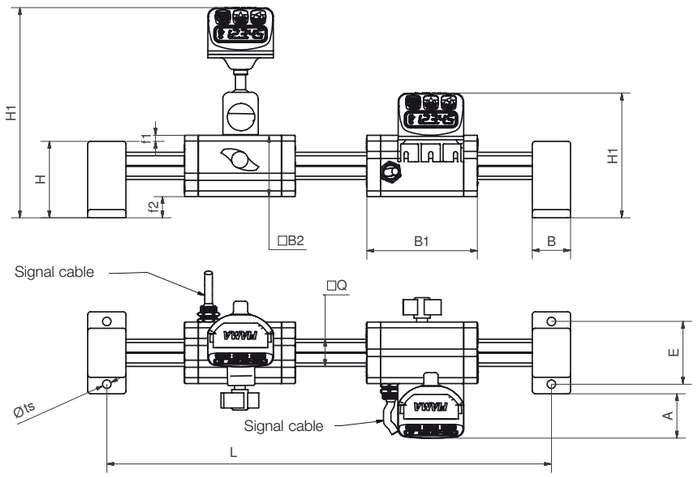
Square | Measuring system | Metric | Carriage type | Installation size

Options:

01: Display fixed in place

02: Display flexible with angle joint

- Protected magnetic tape
- Attachment options using slot nuts
- Manual clamp on carriage
- Unsupported attachment
- Profile AWMQ-20 max. length 1,500 mm
- Sensor integrated in the carriage, saving space
- Technical data ▶ **Page 1038**



QKM-02-20 QKM-01-20

Dimensions [mm]

Part No.	M max. [Nm]	L Shaft end support + carriage + stroke	B h7	B1	B2	H	H1	E	Q	ts	f1	f2	A
QKM-01-20	10	28 + 94 + stroke	28	94	45	58	155	46	20	6.2	4.5	15.5	33
QKM-02-20	10	28 + 94 + stroke	28	94	45	58	92	46	20	6.2	4.5	15.5	33

drylin® digital measuring systems | Product range

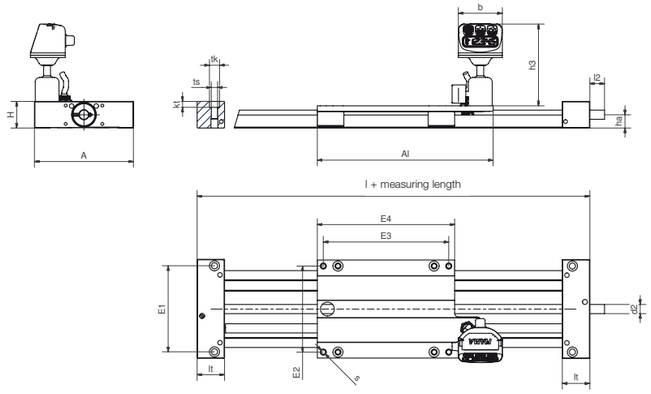
Ready-to-install systems for external data output

Order key

Type	Size
S L W M -	1080

Linear module drylin® SLW | Measuring system | Installation size SLW linear module

- Sensor integrated in the carriage, saving space
- Operation without mains supply
- Integrated magnetic tape
- Extensive accessories available
- Technical data ▶ **Page 1038**
- Technical data drylin® linear module SLW ▶ **Page 1196**



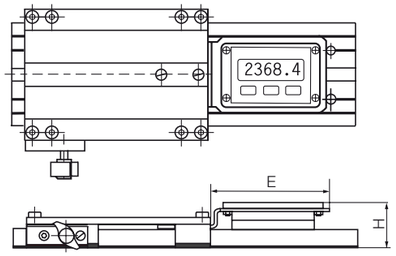
Dimensions [mm]

Part No.	A	Al	H	E1	E2	E3	E4	l	l2	lt	tk	kt	ts	s	ha	d2	h3	b
SLWM-1080	108	192	29	94	94	137	150	236	17	22	11	6.4	6.8	6.6	14.5	TR10x2	90	50

drylin® digital measuring systems | Product range

Digital measuring systems with position readout

WKM, Series 10 and 20



Order key

Type	Design

WKM -10-80-15-01-L

drylin® W measuring system	Installation size	Rail width	Carriage length	Number of carriages	Display left-mounted

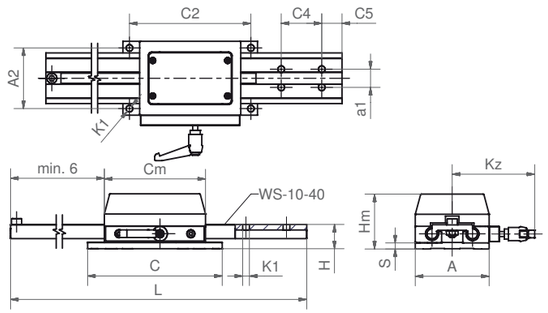
- Lockable carriage
- Display optionally to the right (R) or left (L) of the guide carriage
- Max. rail length 4,000 mm (effective measuring length max. 3,757 mm)
- Technical data ▶ **Page 1039**

Dimensions [mm]

Part No.	drylin® linear profile[89]	H	E
WKM-10-80-15-01-L	WK-10-80-15-01	36	93
WKM-10-80-15-01-R	WK-10-80-15-01	36	93
WKM-20-80-15-01-L	WK-20-80-15-01	40	93
WKM-20-80-15-01-R	WK-20-80-15-01	40	93

[89] Profile dimensions ▶ Page 880

WKM, Series 11

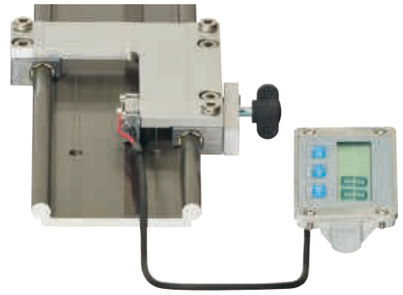


Dimensions [mm]

Part No.	L max.	C4	C5	a1	C2	A2	K1	C	A	H	S	Cm	Hm	kz
WKM-11-40	2,000	40	20	18	120	60	6.6	133	73	24	6	100	54	82

drylin® digital measuring systems | Product range

Measuring system with positionable readout display



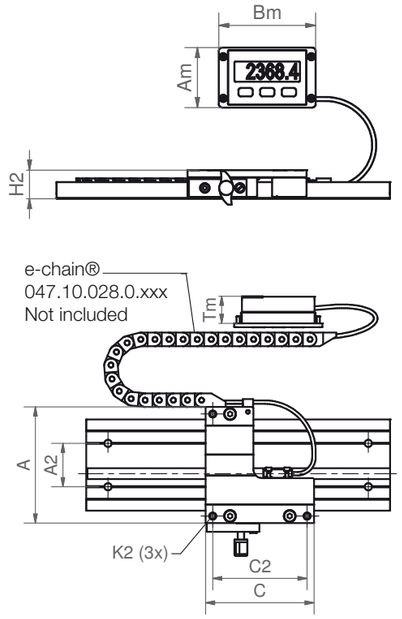
Order key

Type	Size

WKMEDR - 10-80-10

drylin® W measuring system	External display	Attached on the right	Installation size	Rail width	Carriage length

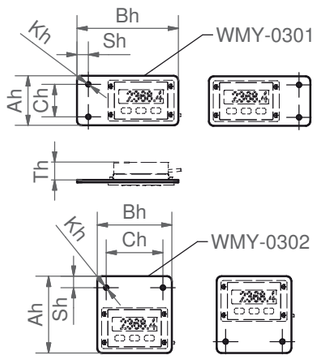
- Technical data ▶ **Page 1040**



Options:

R: Attachment to the right of the guide carriage

L: Attachment to the left of the guide carriage



Options for attaching the external display

Dimensions [mm]

Part No.	A Width	C Length	A2	C2	K2	H2 ±0.17	Am	Bm	Tm
WKMEDR(L)[90]-10-80-10	107	100	94	87	M6	24	82	51	25

[90] Suitable for attachment on the right (R) or left (L)

Dimensions Display incl. support [mm]

Part No.	Ah	Bh	Ch	Sh	Kh	Th
WMY-0301	61	125	40	14	ø5.4	22
WMY-0302	94.5	92	70	14	ø5.4	22

drylin® digital measuring systems | Product range

Ready-to-install system for external data output

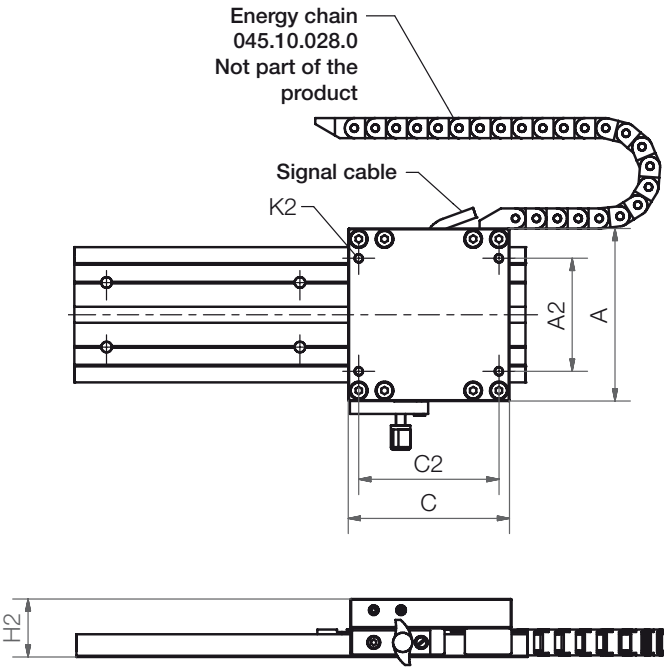
Order key

Type	Size/Design

WKM EX-10-80-10-2.5-00-01-1000

drylin® W measuring system	External data output	Size (Shaft Ø)	Rail width	Rail length 100 mm	Cable length [m]	Sensor type	No. of carriages	Rail length [mm]

- At 4 edge triggering (setting parameters of the display or control system, for example, IW4) and +20°C ambient temperature: resolution: ±(0.025 + 0.02 · L) L = measurement length in metres; repeatability: ±0.025 mm
- At 1 edge triggering (setting parameters of the display or control system, for example, IW1) and +20°C ambient temperature: resolution: ±(0.1 + 0.02 · L) L = measurement length in metres; repeatability: ±0.025 mm
- Small sensor with integrated evaluation electronics
- Output signals: differential mode sustained short circuit-proof with inverted signals (A. A/, B, B/, Z, Z/)
- Technical data ▶ **Page 1039**



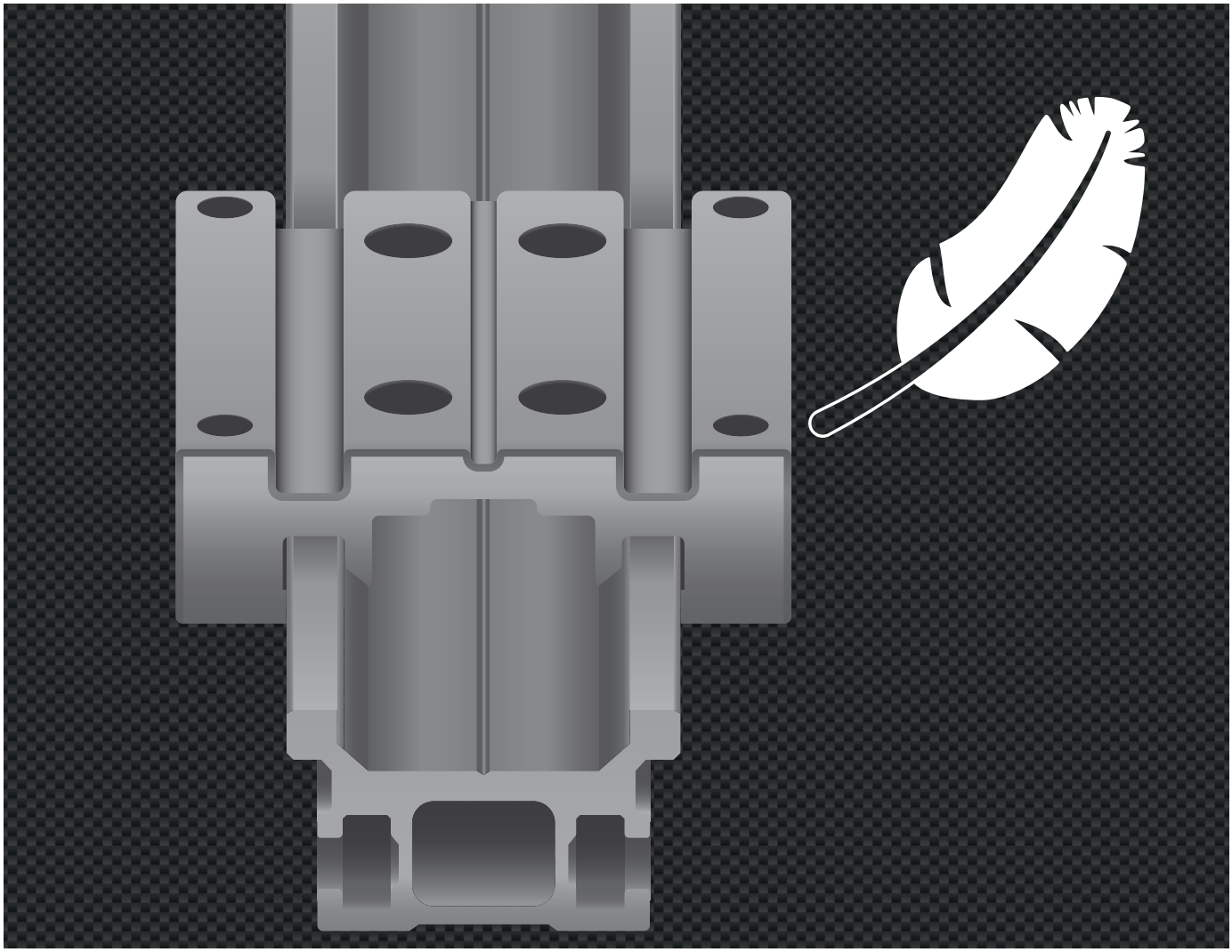
Dimensions [mm]

Part No.	H2	C	C2	A	A2	K2	Resolution
WKMEX-10-80	36	100	87	107	70	M6	0.1

Versions

Sensor type	Nominal voltage	Output power	Max. length of signal cable
00	10–30 V	HTL 10–30 V	30 m
01	10–30 V	TTL Line Driver	50 m
11	5 V	TTL Line Driver	10 m

To place an order, please add the sensor type to the part number.
Order example: WKMEX-10-80-00



drylin® linear technology – carbon fibre

Extremely lightweight and robust

Non-metallic

Non-magnetic

X-ray transparent

Lubrication and maintenance-free

Extremely light and 100% lubrication-free

Extremely lightweight – drylin® carbon fibre

Extremely lightweight and yet extremely strong – tribologically optimised drylin® linear systems made from plastic and carbon fibre combine these properties. Whether as guide system or linear axis: All systems are 100% lubrication-free and maintenance-free.

- Extremely lightweight
- Wear resistant
- Tough and reliable
- Non-metallic
- Non-magnetic
- X-ray transparent

Typical application areas

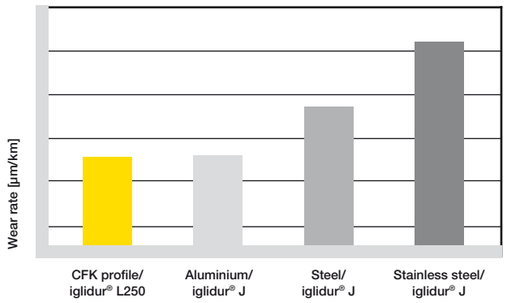
- Aircraft interior
- Laboratory and medical technology
- Measuring technology

Available in 3-8 days
Detailed information about delivery time online.

Pricing online
No minimum order value. From batch size 1.

max. +60 °C
min. 0 °C

Wear comparison:



Linear guide systems and modules made of solid plastic and carbon fibre

drylin® W linear guide system made from carbon fibre/plastic

- Extremely lightweight and strong carbon profile
- Tribologically optimised
- Solid plastic carriage made from iglidur® L250

▶ Page 1048

drylin® ZLW toothed belt axis made from carbon fibre

- Absolutely non-metallic
- Neoprene toothed belt drive with glass fibre reinforcement
- Max. stroke length 1,000 mm

▶ Page 1049

drylin® SAW linear module made from carbon fibre

- drylin® W profile made from carbon
- Drive: Trapezoidal or high-helix lead screw drives
- Lightest version with carbon, solid plastic, aluminium lead screw

▶ Page 1050

drylin® SHTP linear module with round carbon fibre shafts

- Very lightweight due to carbon hollow shafts and solid plastic
- Ideal for multi-carriage solutions, also opposite
- Configurable with accessories for manual and electric adjustment

▶ Page 1051

drylin® CWM round shaft made from carbon fibre

- Very lightweight due to hollow shaft geometry
- Hollow rail for supply lines
- Surface UCU (unidirectional/cross-winding/unidirectional)

▶ Page 1052

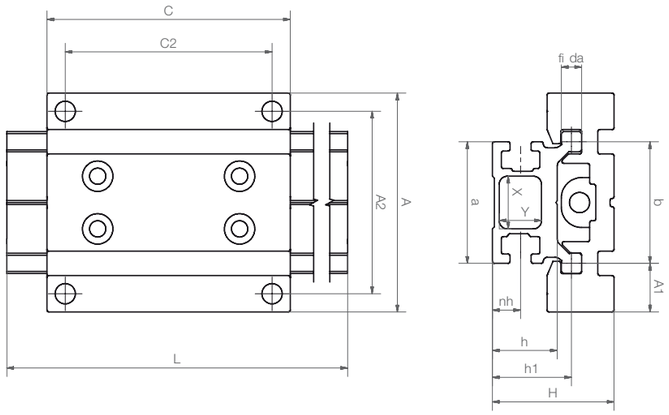
drylin® W carbon fibre | Product range

Linear guide system – extremely lightweight and strong

Order key
complete system

Type	Dimensions [mm]/Type
W K P C	-06-30-06

drylin® W	Complete system	Plastic	Carbon	Shafts-Ø	Rail width	Carriage length



Guide rail technical data

Part No.	F max. radial		Weight	Iy	Iz
	stat.	dyn.			
	[N]	[N]	[g/m]	[mm⁴]	[mm⁴]
WSPC-06-30	300	60	410	30,391	11,674

Guide profile dimensions [mm]

Part No.	a	b	da -0.1	h	h1	nh	X	Y	L
WSPC-06-30	30	30	5	16	19.5	7	13	10	3,000

Guide carriage dimensions [mm]

Part No.	H	A1	A	A2	C	C2
WWPL-06-30-06	30	12	54	45	60	51

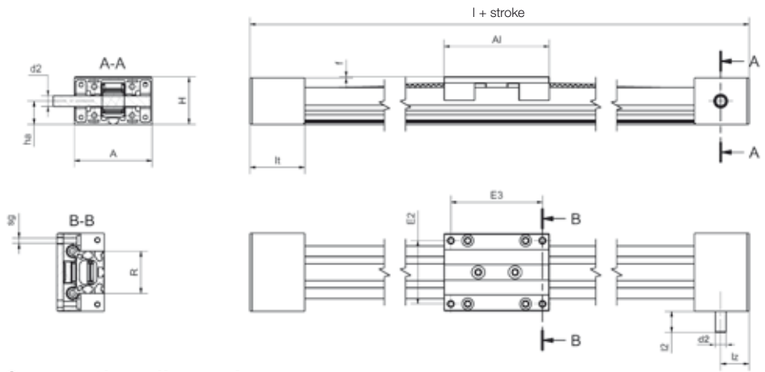
drylin® ZLW carbon fibre | Product range

Belt drive axis – non-metallic

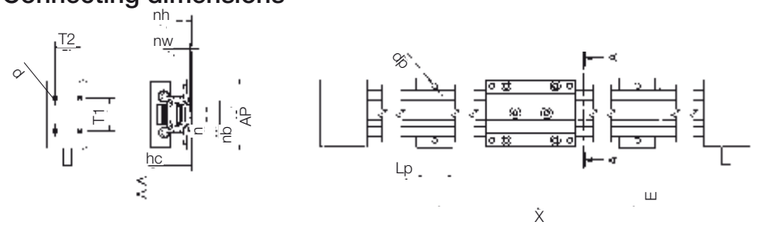
Order key

Type	Dimensions [mm]/Type
ZLW-06	30-P-1000

Belt drive axis	Shafts-Ø	Rail width	Plastic	Stroke length



Connecting dimensions



Technical data

Part No.	Weight without stroke	Weight 100 mm stroke	Max. stroke length	Trans-mission	Tooth profile	Belt drive -material	-width	-tension
	[kg]	[kg]	[mm]	[mm/U]			[mm]	[N]
Basic 02 P	0.3	0.08	1,000	54	HTD 3M	Neoprene with GF	9	25

Dimensions [mm]

Part No.	A –0.3	Al	H	E2 ±0.15	E3 ±0.15	l	R ±0.15	f	lt -0.3	ha	lz	l2	d2 h9
ZLW-0630-P	54	60	31	45	51	144	30	3	42	14	20	20	8

Connecting dimensions

Part No.	X	E ±0,2	AP –1,0	Lp	dp	d	T1 ±0,25	T2 -0,3
ZLW-0630-P	variable	40	52	15	5.5	3	20	21

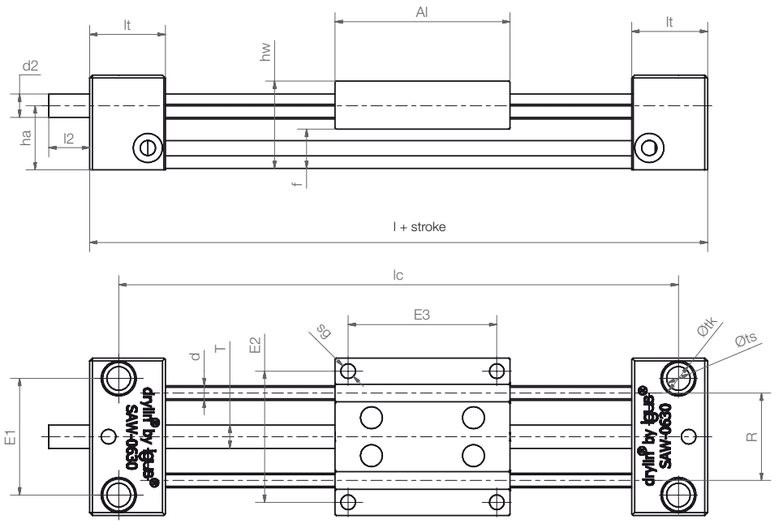
drylin® SAW carbon fibre | Product range

Linear module with high profile carbon fibre – lightweight and robust

Order key
complete system

Type	Dimensions [mm]/Type
SAW-06	30-P-1000

drylin® linear module | Shafts-Ø | Rail width | Plastic | Stroke length



Technical data

Part No.	Stroke length	Weight		Max. speed	Max. static load capacity	
		Standard	Additional			
	[mm]	[kg]	(per 100 mm) [kg]	[1/min]	axial [N]	radial [N]
SAW-0630-P-...	300	0.25	0.07	1,000	50	50

Dimensions [mm]

Part No.	A	Al	H	E1	E2	E3	E5	E6	l	lc	hw	f	lt
	–0,3			±0,15	±0,15	±0,15							±0,1
SAW-0630-P-...	54	60	32.5	40	45	51	11	23	112	92	80	13.5	26

Part No.	tk	ts	sg	d	T Ø	l2	d2	ha
SAW-0630-P-...	11	6.6	5	□ 5	8	15	Tr8x1.5	22

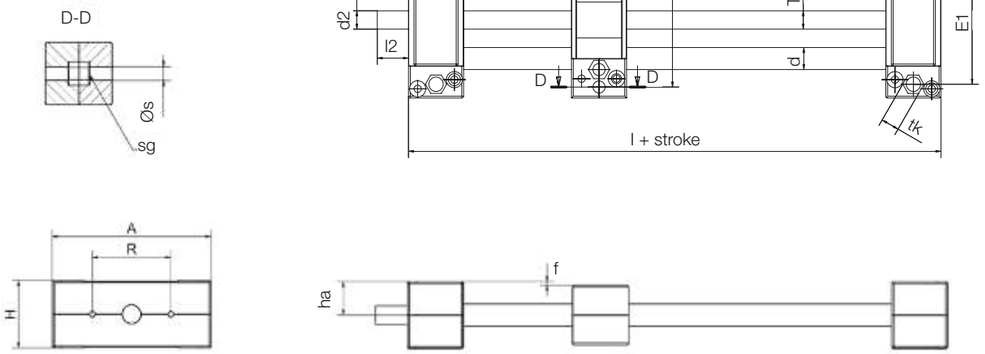
drylin® SHTP carbon fibre | Product range

Linear module with carbon fibre hollow shafts – ideal for multi-carriage solutions

Order key
complete system

Type	Dimensions [mm]/Type
SHTP-01	-12-CWM

Linear module | Plastic | Design | Dimension | Carbon shaft



Technical data

Part No.	Max. stroke length	Carbon shaft		More Information
		Weight	Additional	
	[mm]	[kg]	(per 100 mm) [kg]	
SHTP-01-12-CWM	500	0.3	0.06	Liners and lead screw nuts made from iglidur® J
SHTP-02-12-CWM	500	0.3	0.06	Bearing and nut integrated into the carriage

Dimensions [mm]

Part No.	A	Al	H	E1	E2	l	R	f	lt	tk	ts
									±0,1		+0,15
SHTP-01-12-CWM	85	30	36	70	73	90	42	2	30	10	6.0
SHTP-02-12-CWM	85	30	36	70	73	90	42	2	30	10	6.0

Part No.	s	sg	d	T	l2	d2[99]	ha	Max. static load capacity	
								Axial	Radial
								[N]	[N]
SHTP-01-12-CWM	6.3	M6	12	Tr10x2	17	Tr10x2	18	100	100
SHTP-02-12-CWM	6.3	M6	12	Tr10x2	17	Tr10x2	18	100	100

[99] Lead screw end unmachined (standard)

drylin® carbon fibre | Product range

Carbon fibre hollow shaft

- Material: CFK Composite
- Roundness tolerance: ± 0.05 mm
- Diameter tolerance: - 0.1 mm
- Application temperature: max. +80 °C

Order key

Type	Dimensions [mm]

CWM-12-1000

Carbon fibre shaft | Metric | Outer Ø | Shaft length

Dimensions [mm]

Part No.	Design	Diameter –0.1	Max. length	Weight [g]
CWM-12	Hollow shaft	12/9	2,000	70
CWM-16	Hollow shaft	16/12.5	2,000	120
CWM-20	Hollow shaft	20/16	2,000	170
CWM-30	Hollow shaft	30/26	2,000	270

drylin® linear technology – products made from stainless steel

- Temperature resistant up to +250°C
- Corrosion-resistant
- Resistant to chemicals
- Ready-to-install linear guides and modules
- Lubrication and maintenance-free

drylin® stainless steel | Advantages

Machine parts made from stainless steel are designed to survive in the worst environments. Heat, pressure, seawater, liquid and gaseous media like detergents and other chemicals. If these machine parts also have to work as a bearing, the combination with iglidur® high-performance polymers is ideal. All bearings are lubrication-free, maintenance-free and dry running.

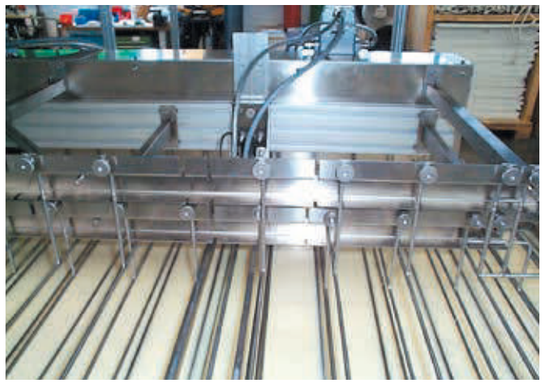
The suitable iglidur® material can be selected according to the application and used for linear and/or rotary motions.

- Lubrication-free
- Temperature resistant up to +250°C
- Corrosion-resistant
- Resistant to chemicals
- Cost-effective

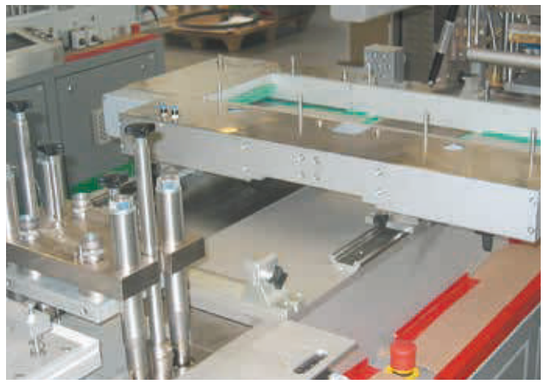
The use of 1.4571 and 1.4301 stainless steel throughout the system makes it resistant to seawater and chemical contact corrosion. Despite the lack of surface hardness, required for instance by recirculating ball bearings, they are suitable for use with plain bearings.

Typical application areas

- Food and bottling industry
- Meat processing
- Harbour and crane facilities
- Yacht building
- Chemical industry
- Electroplating industry
- Medical and rehabilitation technologies
- Packaging industry



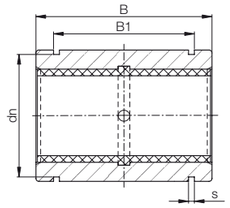
Lubrication freedom with drylin® for a baking and conveyor unit

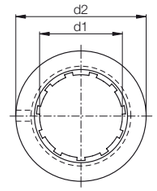


drylin® W guide rails are accredited to Cleanroom-standards and therefore used in this blister machine.

drylin® R plain bearings | Product range

Closed stainless steel adapter made from 1.4305





Order key

Type	Size	Option
R J U M	-01-12	-ES

R	J	U	M	-01	-12	-ES
Closed	iglidur® J	Liner	Metric	Standard	d1	Stainless steel

- Secured by circlips

78) According to igus® testing method ▶ Page 1000
82) Design standards ▶ Page 944
Please note: Installation instructions ▶ Page 945

Technical data

Part No.	d1-Tolerance[78]	Fmax. dynamic[82] P = 5 MPa	Fmax. static[82] P = 35 MPa	Weight
	[mm]	[N]	[N]	[g]
RJUM-01-12-ES	+0.030 +0.088	960	6,720	60
RJUM-01-16-ES	+0.030 +0.088	1,440	10,080	84
RJUM-01-20-ES	+0.030 +0.091	2,250	15,750	147
RJUM-01-25-ES	+0.030 +0.091	3,625	25,375	324
RJUM-01-30-ES	+0.040 +0.110	5,100	35,700	486

Dimensions [mm]

d1	d2 h7	B h10	B1 H10	s H10	dn h10	Part No.
12	22	32	22.6	1.30	20.5	RJUM-01-12-ES
16	26	36	24.6	1.30	24.2	RJUM-01-16-ES
20	32	45	31.2	1.60	29.6	RJUM-01-20-ES
25	40	58	43.7	1.85	36.5	RJUM-01-25-ES
30	47	68	51.7	1.85	43.5	RJUM-01-30-ES

Available with drylin® liners (optional: J200/A180):

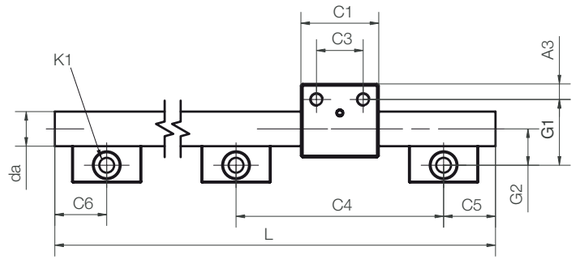
J

E7

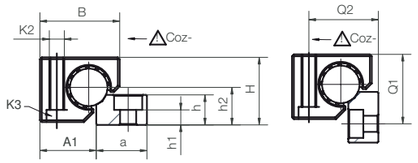
X

drylin® W profile guides | Product range

Single rail round, made from stainless steel V4A



STAIN-LESS STEEL



Material for housing and shaft support	1.4408 (AISI 316)
Shaft material	1.4571 (AISI 316Ti)
Size 25	
Material for shaft, shaft support, housing	1.4571 (AISI 316Ti)

Technical data and dimensions [mm]

Part No.	Weight	H[57]	da	L	a	h	h1	h2	G1	G2	A1	Q1	Q2
		±0.25	-0.1	Max.	–0.3								
	[kg/m]												
WS-10-ES-FG	0.87	18	10	3,000	27	5.5	5.5[58]	9	27	17	16.5	-	-
WS-16-ES-FG	2.22	27	16	3,000	27	12.0	4.5	14	33	19	25	32	28
WS-20-ES-FG	3.37	36	20	3,000	27	16.0	8.0	20	38	21	30	37	37
WS-25-ES	5.21	45	25	3,000	32	20.0	9.0	25	46.5	25.5	37.5	45.5	46

Part No.	C1	C3	C4	C5	C5	C6	C6	A3	K1 for screw	Iy	Iz	Wby	Wbz
				min.	Max.	min.	min.		DIN 912	[mm⁴]	[mm⁴]	[mm³]	[mm³]
WS-10-ES-FG	29	16	120	20	79.5	20	79.5	6.5	M6[58]	491	491	98	98
WS-16-ES-FG	36	18	120	20	79.5	20	79.5	9.0	M8	3,217	3,217	402	402
WS-20-ES-FG	45	27	120	20	79.5	20	79.5	9.0	M8	7,854	7,854	785	785
WS-25-ES	58	36	150	25	99.5	25	99.5	11.0	M10	19,175	19,175	1,534	1,534

[57] Height dimension minus the bearing clearance tolerance [58] With plain holes

Can be combined with:

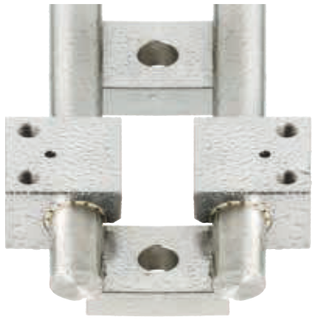
WJ200UM(T)-... WJ200UME-... WJUM-..-ES-FG WJRM-...

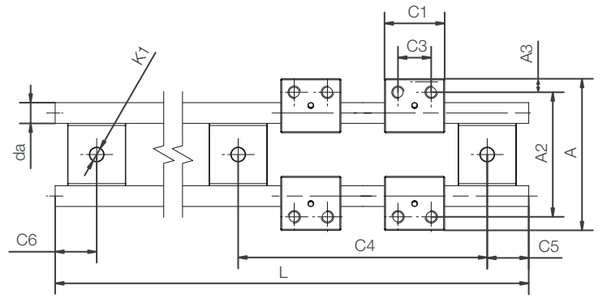
Suitable liner materials:

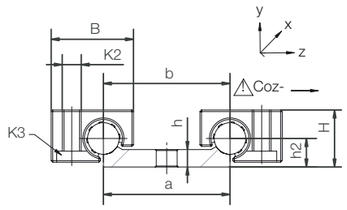
iglidur® J iglidur® E7 iglidur® A180

drylin® W profile guides | Product range

Double rail round







Size 10-20	
Material for housing and shaft support	1.4408 (AISI 316)
Shaft material	1.4571 (AISI 316Ti)
Size 25	
Material for shaft, shaft support, housing	1.4571 (AISI 316Ti)

Technical data and dimensions [mm]

Part No.	Weight	H[57]	da	L	a	b	h	h2	A	A2
	[kg/m]	±0.25	h9	Max.	–0.3					
WS-10-40-ES-FG	1.58	18	10	3,000	40	40	5.5	9	73	60

Part No.	C4	C5	C5	C6	C6	K1 for screw
		min.	Max.	min.	max.	DIN 912
WS-10-40-ES-FG	120	20	79.5	20	79.5	M6

[57] Height dimension minus the bearing clearance tolerance

drylin® W profile guides | Product range

Housing bearing, made from V4A stainless steel

Order key

Type	Design
W J UM-01-10-	ES-FG

drylin® W	iglidur® J liner	Housing bearing, round	Standard	Size 10	Stainless steel	Precision casting

Material

ES: Stainless steel 1.4571 (AISI 316Ti)

ES-FG: Stainless steel precision casting 1.4408

Technical data and dimensions [mm]

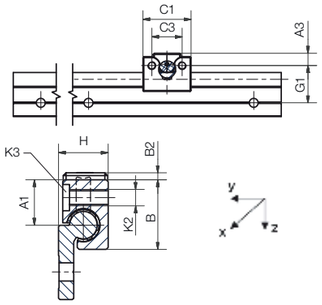
Part No.	Weight	B	C1	C3	A3	K2	K3	Stat. load capacity		
							Countersunk head screw	Coy	Coz+	Coz-
	[g]							[N]	[N]	[N]
WJUM-01-10-ES-FG[59)]	57	26	29	16	6.5	M6	M5	3,800	3,800	95
WJUM-01-16-ES-FG[59)]	134	34.5	36	18	9	M8	M6	6,900	6,900	1,450
WJUM-01-20-ES-FG[59)]	280	42.5	45	27	9	M8	M6	11,000	11,000	1,900
WJUM-01-25-ES[59)]	564	52.5	58	36	11	M10	M8	16,000	16,000	3,600

[59)] Alternative with XUMO-01-... liners for high temperatures available. Part No. WXUM-01-...

drylin® W hybrid bearings | Product range

Hybrid bearing made form stainless steel

WJRM-01 with single roller



Order key

Type	Size	Material
WJRM-01-10 -		ES

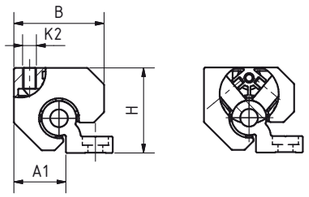
Hybrid bearing	With single roller	Size 10	Stainless steel

Material

ES: Stainless steel 1.4571 (AISI 316Ti)

ES-FG: Stainless steel precision casting 1.4408

WJRM-21 with double roller



Order key

Type	Size	Material
WJRM-21-20 -		ES

Hybrid bearing	Double roller bearing	Size 20	Stainless steel

Material

ES: Stainless steel 1.4571 (AISI 316Ti)

ES-FG: Stainless steel precision casting 1.4408

Technical data and dimensions [mm]

Part No.	Stat. load capacity Co	Dyn. load capacity Cz+ at total running distance [km]			F · v
		10	100	200	Max.
	[N]	[N]	[N]	[N]	[N · m/s]
WJRM-01-10-ES-FG	250	250	90	50	50
WJRM-21-20-ES-FG	840	840	300	150	80

Part No.	Coefficient of friction in z-direction	Weight	A1	A3	B	B2	C1	C3	G1	H	K2 for thread
	[µ]	[g]									
WJRM-01-10-ES-FG	< 0.1	57	16.5	6.5	26	–	35	35	22	18	M6
WJRM-21-20-ES-FG	< 0.1	504	16.5	6.5	31	22	22	27	28	M6	M6

Can be combined with:

WS-... | WS-..-ES-FG-... | WS-... | WS-...-ES-FG | WSX-...

drylin® shafts | Product range

Stainless steel shafts

EWM EEWM EWMR

STAIN-LESS STEEL

igus® recommendation: linear bearings equipped with iglidur® E7 liners for 8 times longer service life

- Completely supported and mounted with standard aluminium support
- For supported shafts:
  - ▶ Shaft support supplied in lengths of 600 mm max.
  - ▶ Standard pitch T2, T1 also possible on request
  - ▶ Hole pitches symmetrical C5 = C6

Dimensions [mm] – hardened stainless steel 1.4125

Part No.	d	Weight [kg/m]	Max. length	Effective hardness depth (with 1.4125)
EWM-06[88)]	06	0.222	3,000	0.8
EWM-08[88)]	08	0.359	4,000	0.9
EWM-10[88)]	10	0.617	4,000	0.9
EWM-12	12	0.888	6,000	1.0
EWM-16	16	1.578	6,000	1.2
EWM-20	20	2.466	6,000	1.6
EWM-25	25	3.853	6,000	1.8
EWM-30	30	5.549	6,000	2.0
EWM-40	40	9.865	6,000	2.2
EWM-50	50	15.413	6,000	2.4

[88)] Material X90 (1.4112)

drylin® shafts | Product range

Materials 1.4125, 1.4034, 1.4301, 1.4571

Order key

Type		Size	Options
E	W M	- 06	- 3000
Steel shaft	Metric	Outer Ø	Shaft length [mm]

Available shaft materials:

1.4125 or 1.4112, hardened/ground ▶ EWM
1.4034, hardened/ground ▶ EEWM
1.4301, drawn ▶ EWMR
1.4571, drawn ▶ EWMS

Dimensions [mm] – hardened stainless steel 1.4034

Part No.	d	Weight [kg/m]	Max. length	Effective hardness depth (with 1.4034)
EEWM-06	06	0.222	3,000	0.8
EEWM-08	08	0.359	4,000	0.9
EEWM-10	10	0.617	4,000	0.9
EEWM-12	12	0.888	6,000	1.0
EEWM-16	16	1.578	6,000	1.2
EEWM-20	20	2.466	6,000	1.6
EEWM-25	25	3.853	6,000	1.8
EEWM-30	30	5.549	6,000	2.0
EEWM-40	40	9.865	6,000	2.2
EEWM-50	50	15.413	6,000	2.4

Dimensions [mm] – stainless steel 1.4301 (EWMR) or 1.4571 drawn stainless steel (EWMS)

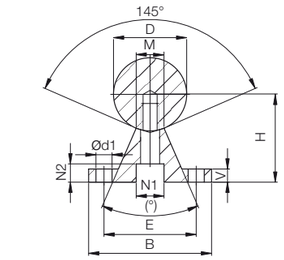
Part No.	d	Weight [kg/m]	Max. length
EWMR-10	10	0.617	4,000
EWMS-10	10	0.617	4,000
EWMR-12	12	0.888	6,000
EWMR-16	16	1.578	6,000
EWMR-20	20	2.466	3,000
EWMS-20	20	2.466	6,000
EWMR-25	25	3.853	6,000
EWMR-30	30	5.549	6,000

Order example:
EWM-16-500: Stainless steel shaft 16 mm Ø 1.4125, 500 mm in length

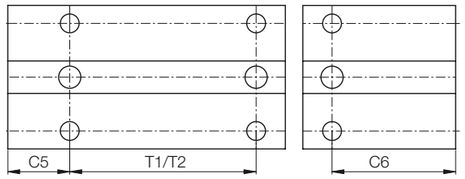
drylin® shafts | Product range

Supported stainless steel shafts

EWUM



STAIN-LESS STEEL



igus® recommendation: linear bearings equipped with iglidur® E7 liners for 8 times longer service life

Shaft support blocks for Ø 20 mm made from stainless steel VA

- Connecting dimensions as standard supports made from aluminium

Dimensions [mm] – supported stainless steel shafts 1.4125

Part No.	D	B	H	V	N1	N2	d1	M	(°)	E	T1[87]	C5/C6		T2	C5/C6		Weight
												min.	Max.		min.	Max.	
			±0.02								±0.15	for T1		Standard	for T2 Standard		[kg/m]
EWUM-12	12	40	22	5	8.0	5.0	4.5	5.8	50	29	75	20	57	120	20	79	1.75
EWUM-16	16	45	26	5	9.5	6.0	5.5	7.0	50	33	100	20	69	150	20	94	2.64
EWUM-20	20	52	32	6	11.0	6.5	6.6	8.3	50	37	100	20	69	150	20	94	3.97
EWUM-25	25	57	36	6	14.0	8.5	6.6	10.8	50	42	120	20	79	200	20	119	5.65
EWUM-30	30	69	42	7	17.0	10.5	9.0	11.0	50	51	150	20	94	200	20	119	7.93
EWUM-40	40	73	50	8	17.0	10.5	9.0	15.0	50	55	200	20	119	300	20	169	12.88
EWUM-50	50	84	60	9	19.0	12.5	11.0	19.0	46	63	200	20	119	300	20	169	19.60

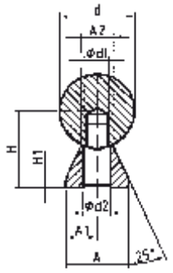
[87] Pitch T1 on request; standard is T2

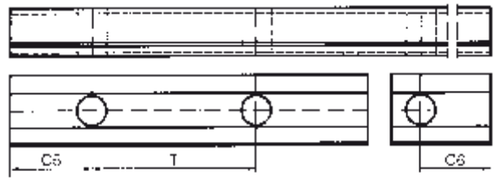
Order example:
EWUM-16-500-T: Low level supported stainless steel shaft (1.4125) 16 mm Ø, 500 mm in length, pitch T1

drylin® shafts | Product range

Low level supported stainless steel shafts

EWUMN





Order key

Type	Size	Options
E W U M N	- 20	- 2000 - T1
Low level supported stainless steel shaft, metric	Outer Ø	Shaft length [mm]	Hole pattern

EWUM: Supported stainless steel shaft
EWUMN: Low level supported stainless steel shaft

Available materials and shafts:
1.4125 (AISI 440C), max. 6,000 mm

Hole pattern:
T2: T2 pitch (standard)
T1: T1 pitch (on request)

Dimensions [mm] – low level supported stainless steel shafts 1.4125

Part No.	d	H	H1	A	A1	A2	d1	d2	T	C5/C6		Weight
		±0.02				±0.02				min.	Max.	[kg/m]
EWUMN-12	12	14.5	3	11	5.5	5.4	M4	4.5	75	20	57	1.62
EWUMN-16	16	18	3	14	7.0	7.0	M5	5.5	75	20	57	2.54
EWUMN-20	20	22	3	17	8.5	8.1	M6	6.6	75	20	57	3.81
EWUMN-25	25	26	3	21	10.5	10.3	M8	9.0	75	20	57	5.62
EWUMN-30	30	30	3	23	11.5	11.0	M10	11.0	100	20	69.5	7.63
EWUMN-40	40	39	4	30	15.0	15.0	M12	13.5	100	20	69.5	13.47
EWUMN-50	50	46	5	35	17.5	19.0	M14	15.5	100	20	69.5	20.31

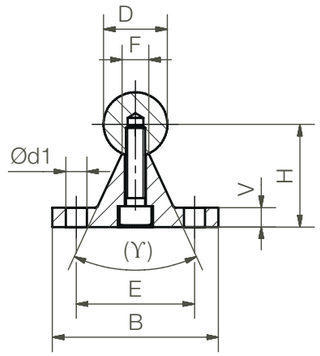
Low level supported shafts are delivered unassembled.

Order example:
EWUMN-16-500: Low level supported stainless steel shaft (1.4125) 16 mm Ø, 500 mm in length

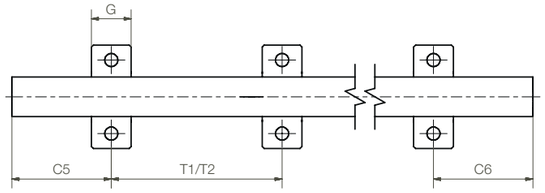
drylin® shafts | Product range

Partially supported stainless steel shafts

EWUM-ES/
EWUMS-ES



igus® recommendation: linear bearings equipped with iglidur® E7 liners for 8 times longer service life



Shaft support blocks for Ø 20 mm made from stainless steel VA

- Connecting dimensions as standard supports made from aluminium

Dimensions [mm] – partially supported stainless steel shafts 1.4125

Part No.	D	B	H	V	d1	E	ϒ	F	G	T1	C5/C6 for T1		T2 Standard	C5/C6 for T2	
	h6		±0.02								min.	Max.		min.	Max.
EWUM-ES-12	12	40	22	5	4.5	29	–	5.8	14	75	20	57	120	20	79
EWUM-ES-16	16	45	26	5	5.5	33	–	7.0	16	100	20	69	150	20	94
EWUM-ES-20	20	52	32	6	6.6	37	50°	8.3	20	100	20	69	150	20	94
EWUM-ES-25	25	57	36	6	6.6	42	–	10.8	25	150	20	79	200	20	119
EWUM-ES-30	30	69	42	7	9.0	51	–	11.0	25	150	20	94	200	20	119
EWUM-ES-40	40	73	50	8	9.0	55	–	15.0	25	200	20	119	300	20	169

T2 pitch = standard, T1 on request

Order example:
EWUM-ES-20-500: Partially supported stainless steel shaft, 1.4125 material, T2 pitch (standard), outer Ø 20 mm, 500 mm length

drylin® shafts | Product range

STAIN-LESS STEEL

Order key

Type							Size	Options
E	W	U	M	S	- ES -	20	- 2000	- T1
Partially supported stainless steel shafts, metric				Material		Outer Ø	Shaft length [mm]	Hole pattern

Available materials and lengths:

1.4125 (AISI 440C), max. 6.000 mm
▶ EWUM
1.4571 (AISI 361T1), max. 3.000 mm
▶ EWUMS

Options:

blank: 1.4125 material
S: 1.4571 material

Hole pattern:

T2: T2 pitch (standard)
T1: T1 pitch (on request)

Dimensions [mm] – partially supported stainless steel shafts 1.4125

Part No.	D	B	H	V	d1	E	ϒ	F	G	T1	C5/C6 for T1		T2 Standard	C5/C6 for T2	
	h6		±0.02								min.	Max.		min.	Max.
EWUMS-ES-12	12	40	22	5	4.5	29	–	5.8	14	75	20	57	120	20	79
EWUMS-ES-16	16	45	26	5	5.5	33	–	7.0	16	100	20	69	150	20	94
EWUMS-ES-20	20	52	32	6	6.6	37	50°	8.3	20	100	20	69	150	20	94
EWUMS-ES-25	25	57	36	6	6.6	42	–	10.8	25	150	20	79	200	20	119
EWUMS-ES-30	30	69	42	7	9.0	51	–	11.0	25	150	20	94	200	20	119
EWUMS-ES-40	40	73	50	8	9.0	55	–	15.0	25	200	20	119	300	20	169

T2 pitch = standard, T1 on request

Order example:
EWUMS-ES-20-500-T1: Partially supported stainless steel shaft, 1.4571 material, T1 pitch, outer Ø 20 mm, 500 mm length

drylin® SHT linear modules | Product range

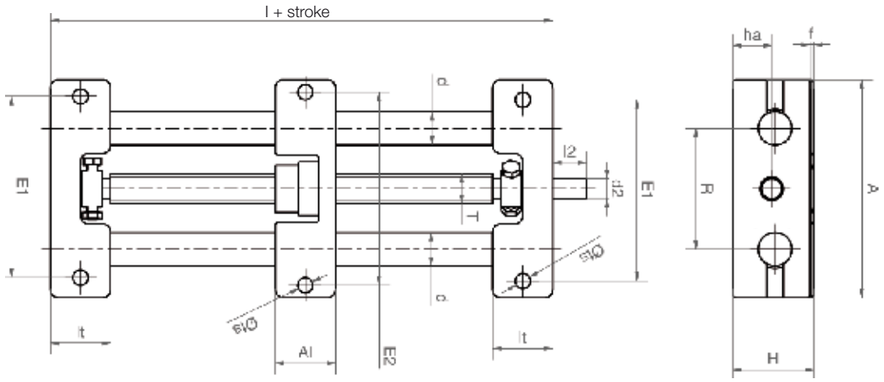
Hygienic design

STAIN-LESS STEEL

- Easily cleaned solution
- Wide gaps
- Materials: plastic and VA stainless steel
- Lead screw nuts made of FDA-compliant iglidur® A180
- Available accessories ▶ **Page 1303**

Order key
complete ▶ **Page 1192**

Type	Size	Shaft	Option
SHTC	- 20	- EWM	- HYD
Type: flexible	Installation size	Shaft material	Hygienic design



FDA The lead screw unit can be supplied completely with FDA-compliant materials.

Dimensions [mm]

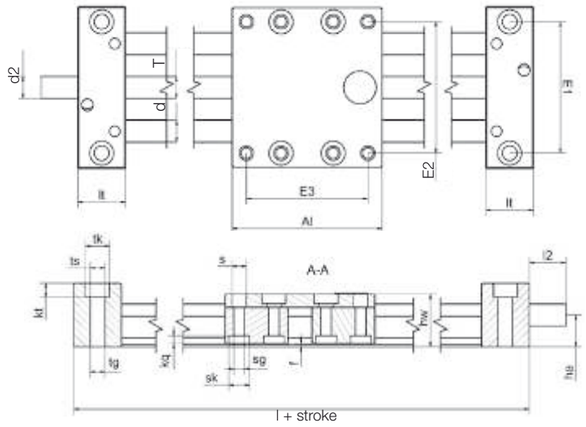
Part No.	A –0.3	Al –0.3	H	E1 ±0.15	E2 ±0.15	l	R	f	lt	ts	d	T	l2	d2	ha
SHTC-20-EWM-HYD	130	35	48	108	115	108	72	2	36	9.0	20	Tr18x4	26	12 h9	23

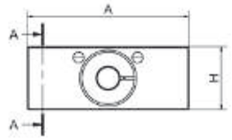
drylin® SLW linear modules | Product range

Made of stainless steel

STAIN-LESS STEEL

- Stainless steel version with corrosion resistant steel components (1.4305, 1.4408 or 1.4571)
- Choice of bearing material:
  iglidur® J = Standard
  iglidur® A180 = FDA-compliant
  iglidur® X = High temperature
  up to +150 °C [117)]
- Available accessories ▶ **Page 1303**





Order key
complete ▶ **Page 1206**

Type	Size
SLW - ESJ	- 1040
Compact	Stainless steel / iglidur® J bearing / Installation size

Technical data

Part No.	Shafts-Ø	Max. stroke length	Weight	Additional (per 100 mm)	Max. static load capacity	
	[mm]	[mm]	[kg]	[kg]	axial [N]	radial [N]
SLW-ESJ-1040	10	750	1.4	0.2	700	2,800
SLW-ESX-1040	10	750	1.4	0.2	700	2,800
SLW-ESA180-1040	10	750	1.4	0.2	700	2,800
SLW-ESJ-2080	10	750	1.4	0.2	700	2,800
SLW-ESA180-2080	20	1,000	5.7	0.64	1,600	6,400
	20	1,000	5.7	0.64	1,600	6,400

Dimensions [mm]

Part No.	A –0.3	Al –0.3	H	E1 ±0.15	E2 ±0.15	E3 ±0.15	l	hw	f	lt	tk	ts	tg
SLW-ES-1040	74	100	29	60	60	87	144	24	1.5	22	11	6.8	M8
SLW-ES-2080	134	150	46	116	116	132	206	44	1.5	28	15	8.6	M10

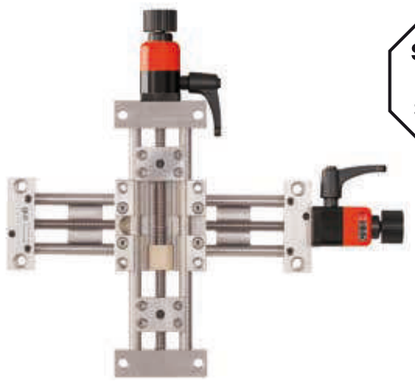
Part No.	kt ±0.1	s	sk	sg	kq	d	T	l2	d2 Standard	ha
SLW-ES-1040	6.4	6.6	9.5	M6	4.4	10	Tr10x2	17	Tr10x2[92)]	14.5
SLW-ES-2080	8.6	9.0	14	M8	5.5	20	Tr18x4	26	12h9	23.0

[92)] Lead screw end unmachined

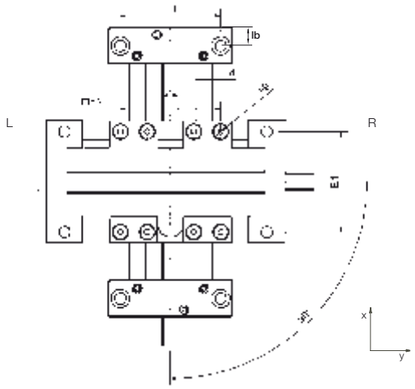
[117)] In the event of severe temperature fluctuations during transport, storage and use, thermal expansion effects cannot be ruled out

drylin® SLW XY-table | Product range

XY-table – stainless steel version



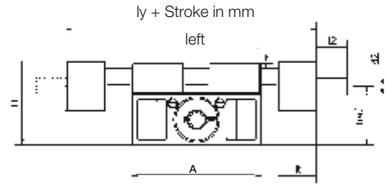
STAIN-LESS STEEL

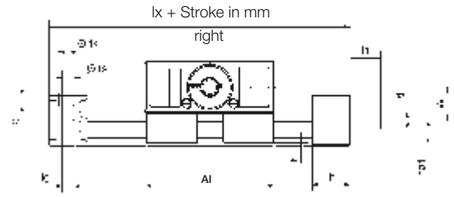


Order key

▶ Page 1191

- For manual adjustments
- High torsional stability stiffness
- Structure entirely made from VA and V4A stainless steel materials
- Chemical and corrosion resistant
- Available accessories ▶ Page 1303





Dimensions [mm]

Part No.	Max. stroke length [mm]	A –0.3	Al	H	E1 ±0.15	E2 ±0.15	Base length lx	Base length ly	f	lt	tk ±0.1	ts	tg	kt
SLW-XY-ESJ-1040	300	74	73	48	60	60	117	117	1.5	22	11	6.8	M8	6.4

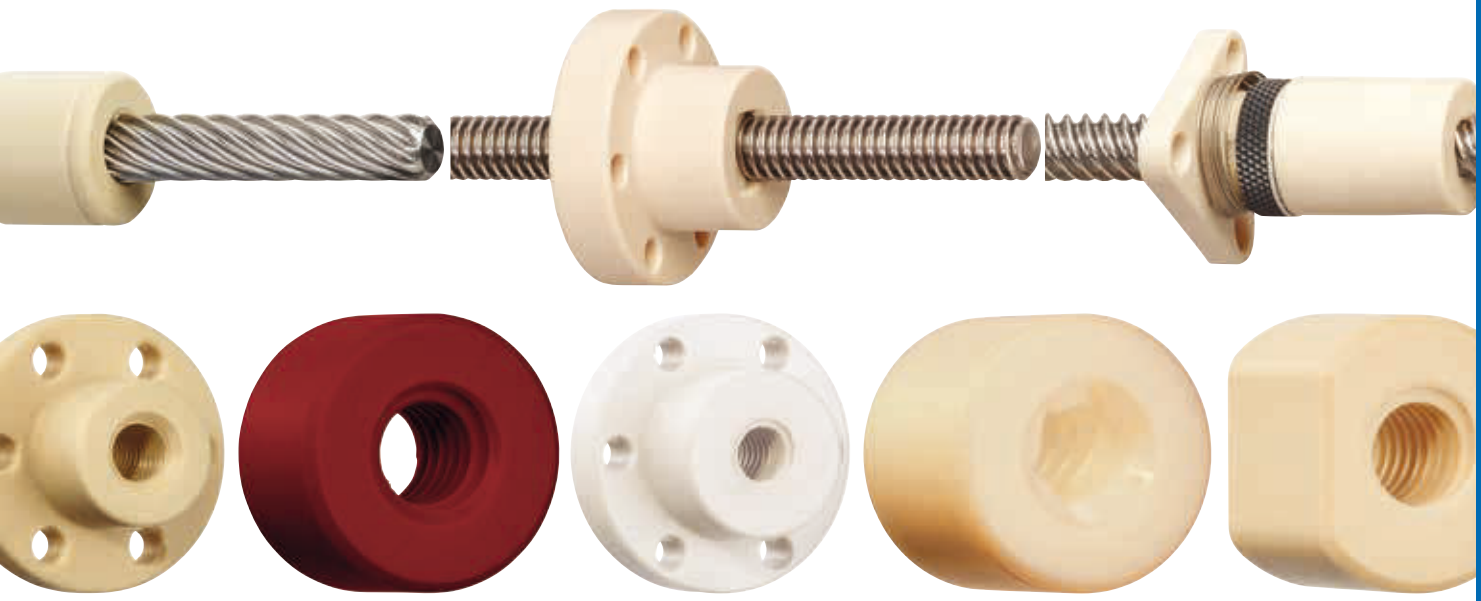
Part No.	sg	d	T	l1	d1 Standard	d1 Alternative	l2	d2 Standard	d2 Alternative	ha1	ha2	W ha2–ha1
SLW-XY-ESJ-1040	M6	10	Tr10x2	17	Tr10x2	6 h9	17	Tr10x2	6 h9	14.5	33.5	19

The hand wheel can be ordered left- or right-mounted in the y-direction.
Left: SLW-XY-ESJ-1040-L-200-300 for 200 mm stroke length on the x-axis and 300 mm on the y-axis
Right: SLW-XY-ESJ-1040-R-200-300 for 200 mm stroke length on the x-axis and 300 mm on the y-axis

My sketches

drylin®...

Lead screw technology



...plastics

drylin® lead screw technology | Product overview

drylin® lead screw technology – high helix thread with dryspin® technology

High helix lead screws stainless steel

▶ Page 1084

High helix lead screws aluminium

▶ Page 1084

Cylindrical lead screw nuts

▶ Page 1088

Lead screw nuts with flange

▶ Page 1090

drylin® lead screw technology – high helix thread with dryspin® technology

Lead screw nuts with spanner flat, with flange

▶ Page 1092

Lead screw nut with pretension iglidur® J

▶ Page 1094

Lead screw nut, zero backlash iglidur® J

▶ Page 1095

drylin® lead screw technology – high helix threads without dryspin® technology

High helix lead screws stainless steel

▶ Page 1098

Cylindrical high helix nuts

▶ Page 1102

High helix lead screw nuts with flange

▶ Page 1104

Zero-backlash high helix lead screw nuts

▶ Page 1106

drylin® lead screw technology – trapezoidal and metric threads

Lead screws C15

▶ Page 1114

Lead screws stainless steel

▶ Page 1114

Lead screws aluminium

▶ Page 1114

Lead screws with machined end

▶ Page 1114

drylin® lead screw technology – trapezoidal and metric threads

Multi start lead screws

▶ Page 1116

LH/RH lead screws

▶ Page 1118

Metric lead screws

▶ Page 1120

Cylindrical lead screw nuts, single start

▶ Page 1126

drylin® lead screw technology – trapezoidal and metric threads

Cylindrical lead screw nuts, multi start

▶ Page 1130

Cylindrical lead screw nuts with spanner flat

▶ Page 1132

Lead screw nuts with flange, single start

▶ Page 1134

Lead screw nuts with flange, multi start

▶ Page 1136

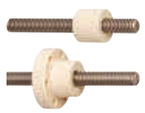
drylin® lead screw technology – trapezoidal and metric threads

Lead screw nuts with spanner flat, with flange

▶ Page 1138

Cylindrical lead screw nuts, metric

▶ Page 1140



Anti backlash lead screw nuts

▶ Page 1142

Flange lead screw nut with pretension

▶ Page 1144

drylin® lead screw technology – special designs

Split lead screw nuts, made from iglidur® J

▶ Page 1146

Lead screw nuts for linear modules

▶ Page 1148

Lead screw nuts with locating spigot

▶ Page 1149

Spherical lead screw nut in flanged bearing housing

▶ Page 1150

drylin® lead screw technology – special designs

Spherical lead screw nut in pillow block bearing housing

▶ Page 1151

Lead screw nut with quick release

▶ Page 1152

drylin® disc, iglidur® J

▶ Page 1153

Lead screw support blocks

▶ Page 1154

drylin® lead screw technology – special designs

drylin® lead screw nut housing

▶ Page 1156

Lead screw support with ball bearings

▶ Page 1158

drylin® clamping rings

▶ Page 1159

drylin® lead screw technology | Advantages

Maintenance-free, quiet operation, dirt resistant and corrosion resistant

Efficient dryspin® technology: greater efficiency due to optimised thread angle

Ideal media resistance with Material 1.4301

Extended service life due to asymmetry

Minimum backlash due to zero backlash (option)

Lead screw nuts made from lubrication-free iglidur® high performance polymers

Material selection: iglidur® J (standard), iglidur® A180 (FDA-compliant)

Low noise and vibration dampening due to the radius tooth design

Precision / nominal dimension -0.1 along the diameter

Self-locking trapezoidal and metric threads

More than 100 dimensional options with up to 10 nut version in up to 5 different materials

Reduction in play through anti-backlash function (optional)

Lubrication-free drylin® lead screw technology

Screw drives are machine elements that convert rotary motion into linear motion. drylin® screw drives are always based on self-lubricating plastic nuts, thus enabling long-lasting operation without external lubrication. The dryspin® technology offers a longer service life and greater efficiency for high helix threads thanks to the properties and geometries being tailored to the plastic nut and the lead screw.

- Efficient and durable dryspin® high helix threads
- Self-locking trapezoidal and metric threads
- Maintenance-free dry run
- Low-noise
- Corrosion resistant
- Dirt resistant

Typical application areas

- Format adjustments
- Drive technology
- Optical equipment
- Furniture industry
- Automotive industry

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

max. +150 °C
min. -20 °C

Service life calculation online
▶ www.igus.eu/drylin-expert

Imperial dimensions and ACME thread (USA standard) ▶ Page 1406

RoHS-II

According to EC Directive 2011/65/EU (RoHS 2)
Restriction of (using certain) hazardous substances

drylin® lead screw technology | Product overview

High helix threads with dryspin® technology

Lead screws in stainless steel or aluminium

- Better efficiency due to optimised thread angle
- Quiet due to round tooth flanks
- Long service life due to asymmetric dryspin® geometry

▶ From page 1084

High helix lead screw nuts from dry-tech® polymers

- Lubrication-free lead screw nuts made from 4 materials
- Design: Cylindrical, with flange or spanner flat
- reduced clearance through zero backlash

▶ From page 1088

Further high-helix thread sizes available ▶ From page 1104

Self-locking trapezoidal and metric threads

Lead screws

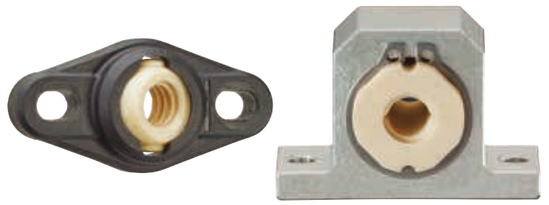
- Material: steel, stainless steel or anodised Aluminium
- Product range from M3 to Tr50x8
- Multiple start lead screws and right/left counter rotation available

▶ From page 1114

Trapezoidal lead crew nuts

- Lubrication-free lead screw nuts made from 5 materials
- Self-locking geometry
- Anti-backlash possible

▶ From page 1126



Special designs

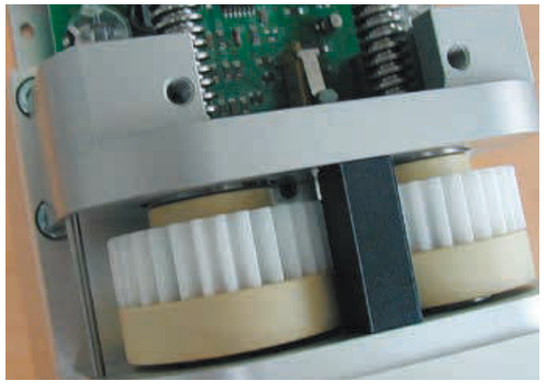
- Lead screw nuts made from drylin® linear modules, with flange or pedestal design
- Split and spherical lead screws with housing
- Disc for customised clearance adjustment
- Fast-Forward quick release nut for fast adjustment

▶ From page 1145

Lead screw technology accessories

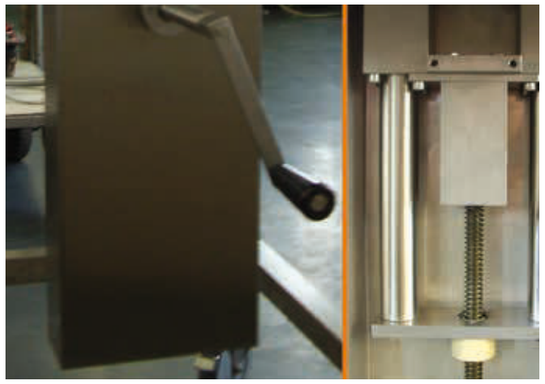
- Nut holder for drylin® lead screw nuts
- Anodised lead screw support blocks, on plain or ball bearings
- Clamping ring for securing lead screw

▶ From page 1154

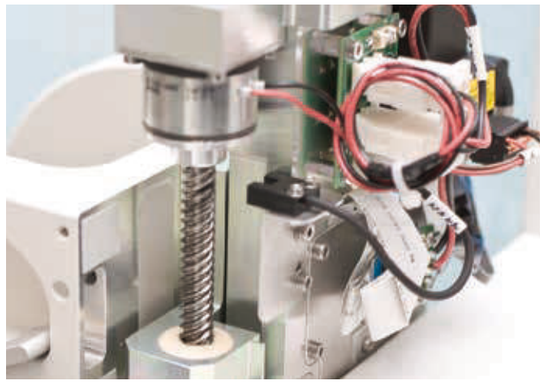


This mixing station uses two drylin® trapezoidal lead screw nuts made from iglidur® high performance polymer for the optimal mixing ratio of a two component silicone mass.

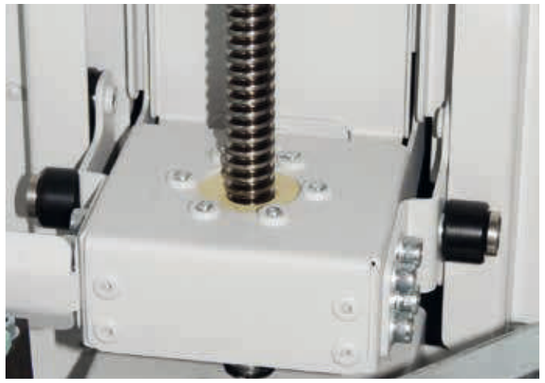
The customer was looking for an inexpensive, lightweight and maintenance-free standard solution for small installation space. Costs and weight could be reduced, thanks to the lubrication-free products from igus®.



iglidur® J plain bearings for shaft guides and drylin® trapezoidal lead screw nuts for the height adjustment.



Clean use of lubrication-free drylin® trapezoidal lead screw nuts in a piece of laboratory equipment for liquid handling.



drylin® lead screw units are used for feed mechanisms and stroke movements. In this, the customer combines a trapezoidal lead screw nut from iglidur® W300 with a rolled trapezoidal lead screw.

All of the main components of the mechanical movements, such as the linear axis, bearing, guide systems, etc. use igus® products.

drylin® lead screw modules expert and configurator

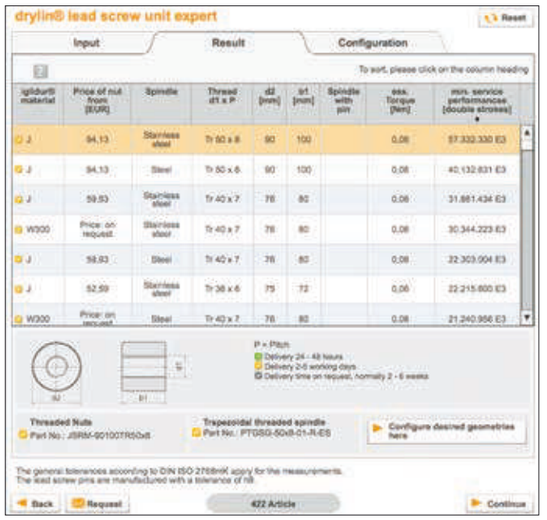
Expert for lead screw units: Find and calculate suitable lead screw units

Our drylin® expert systems for lead screw modules help you to find the right product quickly whilst giving the predicted service life. You have the option to configure and request your desired dimension for lead screw nuts and lead screws.

▶ www.igus.eu/leadscrew-expert

Download the online tools app now

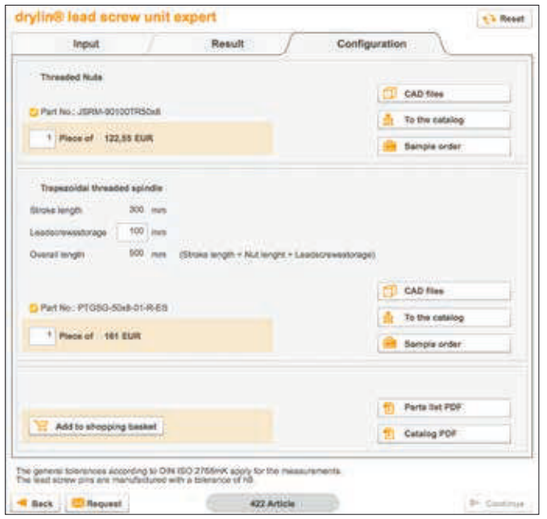
Download on the App Store

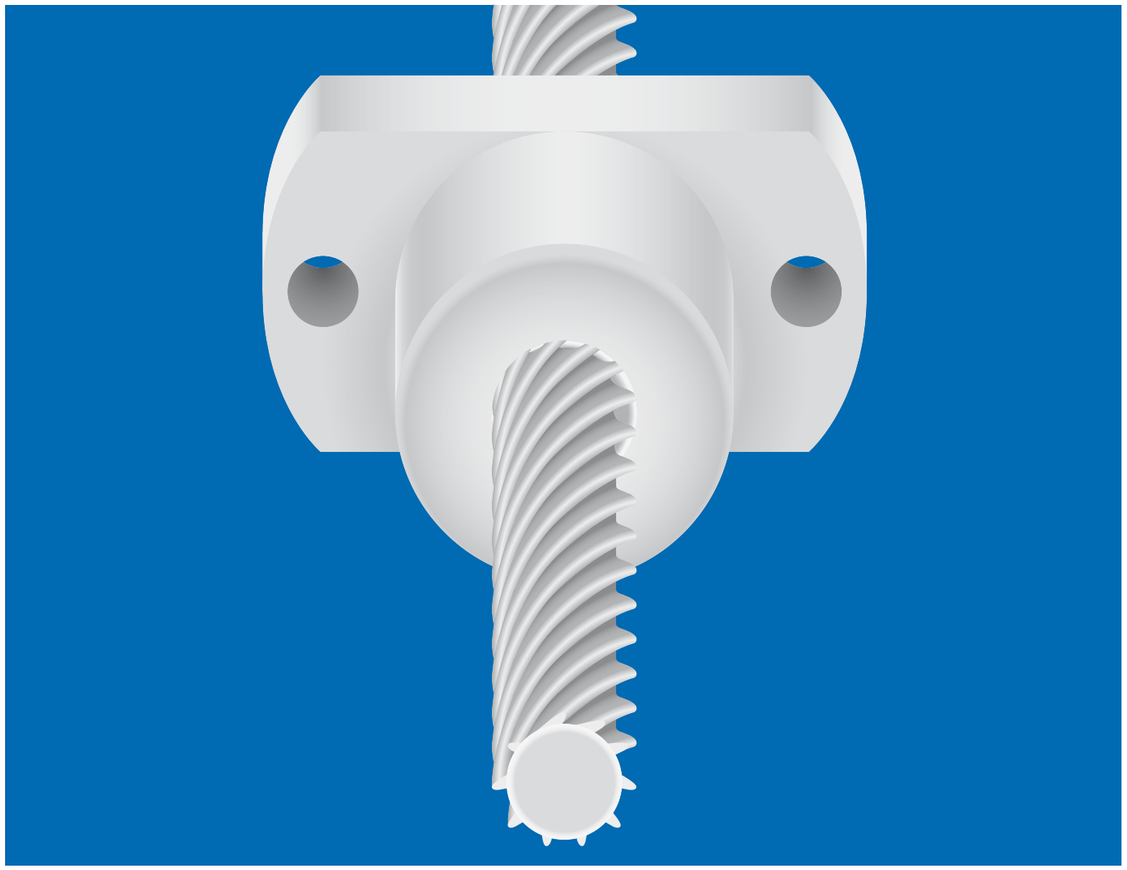


Configurator for lead screw drives: Configure required dimensions

Ask quickly and easily for lead screw nuts and lead screws in individual dimensions.

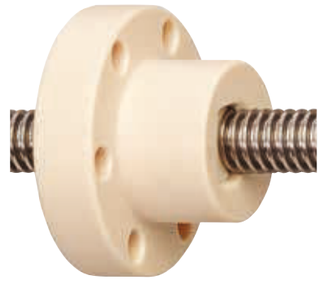
▶ www.igus.eu/leadscrew-configurator





drylin® lead screw technology – drypin® technology

- Efficient high helix thread
- Lead screw nuts from lubrication-free dry-tech® polymers
- Higher efficiency and longer service life
- Quiet operation with vibration dampening
- Dirt resistant



dryspin® Technology | Advantages

Combine more in the thread section

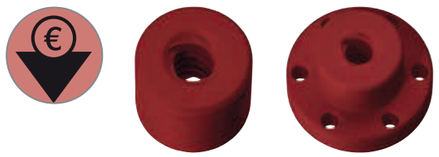
Starting immediately, there are drylin® lead screw nuts from the full range available for every technical requirement. The full range includes lead screw nuts from 4 lubricant-free iglidur® high-performance polymers, in trapezoidal and high-helix threads, cylindrical design or flange variations. The ideal nut and lead screw for every application.

- Lubrication and maintenance-free
- Service life can be calculated online
- No minimum order value
- From batch size 1

Find and calculate suitable lead screw units
▶ www.igus.eu/leadscrew-finder

High efficiency at all speeds: iglidur® J ▶ Page 141
- High speed
- Low wear
- Best coefficient of friction

For temperatures up to +150 °C: iglidur® J350 ▶ Page 173
- For high temperatures
- Good coefficient of friction with medium loads



The cost-effective option for serial production: iglidur® R ▶ Page 213
- High wear resistance for low loads
- Low humidity absorption
- Cost-effective alternative

FDA-compliant for the food/pharmaceutical industry: iglidur® A180 ▶ Page 349
- FDA-compliant
- For contact with food
- Quiet operation

dryspin® technology | Material properties

Four standard materials

	Unit	iglidur® J	iglidur® J350	iglidur® R	iglidur® A180
General properties					
Density	[g/cm³]	1.49	1.44	1.39	1.46
Colour		Yellow	Yellow	Red	White
Max. moisture absorption at +23°C and 50% relative humidity	[% weight]	0.30	0.30	0.20	0.20
Max. water absorption	[% weight]	1.30	1.60	1.10	1.30
Coefficient of sliding friction, dynamic against steel	[µ]	0.06-0,18	0.10-0,20	0.09-0,25	0.05-0,23
pv value, max. (dry)	[MPa·m/s]	0.34	0.45	0.27	0.31
Mechanical properties					
Flexural modulus	[MPa]	2,400	2,000	1,950	2,300
Flexural strength at +20°C	[MPa]	73	55	70	88
Compressive strength	[MPa]	60	60	68	78
Max. permissible surface pressure at +20°C	[MPa]	35	60	23	28
Shore-D hardness		74	80	77	76
Physical and thermal properties					
Max. long-term application temperature	[°C]	+90	+180	+90	+90
Max. short-term application temperature	[°C]	+120	+220	+110	+110
Min. application temperature	[°C]	-50	-100	.50	-50
Thermal conductivity	[W/m · K]	0.25	0.24	0.25	0.25
Coefficient of thermal expansion at +23°C	[$K^{-1} \cdot 10^{-5}$]	10	7	11	11
Electrical properties					
Specific volume resistance	[Ωcm]	> 10^{13}	> 10^{13}	> 10^{12}	> 10^{12}
Surface resistance	[Ω]	> 10^{12}	> 10^{10}	> 10^{12}	> 10^{11}

Higher efficiency due to optimised thread angle

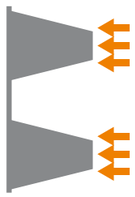
Due to a flatter thread angle in dryspin® high helix lead screws (similar to a trapezoidal thread), the applied force is efficiently converted into a translational motion. Compared with a steeper thread angle, this means a lower power loss.

Steeper thread angle, standard geometry

Flatter thread angle, dryspin® geometry

Low noise and vibration dampening due to rounded tooth geometry

Due to the radius tooth design, the contact surface between the lead screw nut and the lead screw is reduced. Thereby the dryspin® lead screw nuts move without vibration, virtually noiselessly. This is because, the greater the contact of two surfaces moving against one another, the more vibrations are transmitted, which can be perceived as a rattle or squeak. The rounded teeth minimise this effect and the thread moves without lubrication and with low noise.



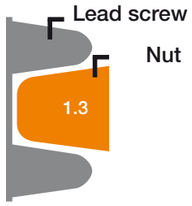
Angular tooth profile, standard geometry

Round tooth profile, dryspin® geometry

Extended service life due to asymmetry

Due to the larger distances between the individual dryspin® thread turns, the thread ideally matches the properties of the lubrication-free igus® high performance polymers. The proportion of the tribologically optimised polymer in the thread turns can be extended by a factor of 1.3 for all sizes. More wear resistant material and higher levels of efficiency are crucial for up to 5 times longer service life of standard geometries. The larger the lead screw diameter, the stronger the impact of this effect. Backlash can be minimised life-long by the use of dryspin® zero-backlash threaded nuts with integrated spring pretension.

Symmetric standard geometry



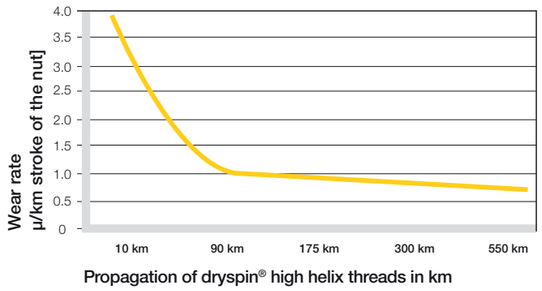
Asymmetric dryspin® geometry

Tested: Lubrication-free iglidur® materials from igus®

Liners, sliding parts and lead screw nuts from drylin® adapted for your application: lubrication-free, tested and predictable.

- 15,000 tribology tests per year
- More than 300 parallel test facilities
- 140 trillion test movements
- Continuous testing of drylin® products

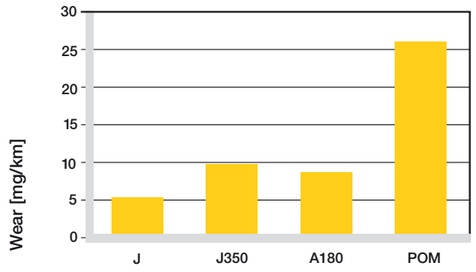
▶ **www.igus.eu/test**



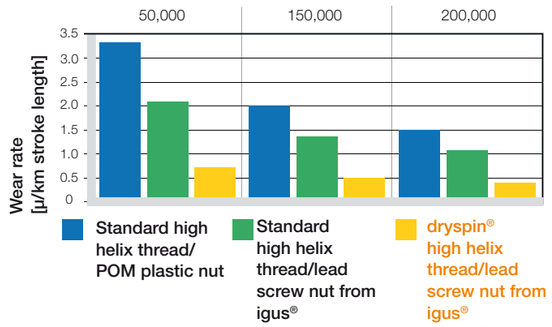
Propagation of dryspin® high helix threads in km

Wear test dryspin® high helix thread
DST 10x25, load 175 N, 540 mm stroke, 125 rev/min

dryspin® technology | Technical data



Wear test on C15 lead screw drive [mg/km]
Stroke 140 mm, 50 N, lead screw C15 rolled, 450 rev/min



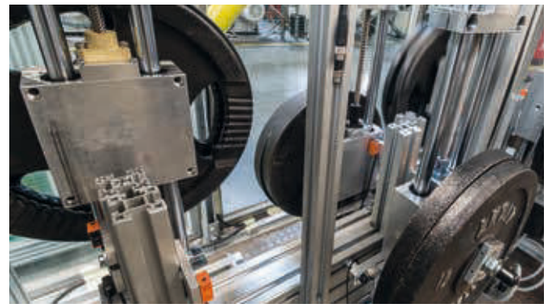
Wear-resistant high helix thread 10x50, dryspin® high helix thread / Standard high helix thread, load 36 N, 100 RPM for 50,000/150,000/200,000 cycles

dry-tech® polymers

igus® high performance polymers are used in all drylin® linear and drive units as well as lead screw drives. The lubrication is incorporated into the bearing material, rendering the bearing materials suitable for dry-running conditions, e.g. they are maintenance-free for their entire service life.

Material selection

drylin® lead screw nuts are made from tribologically optimised materials. Already during the development phase, the focus is on optimising the friction properties of the drylin® lead screw units, with the objective of attaining the lowest possible wear rates and friction values.

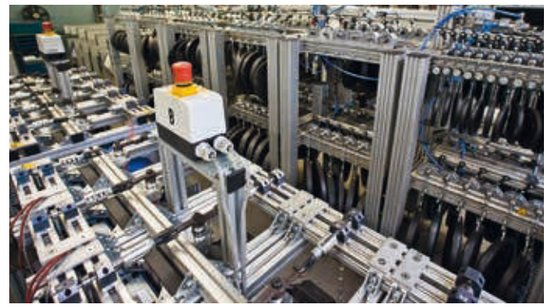


Test rig for service life determination

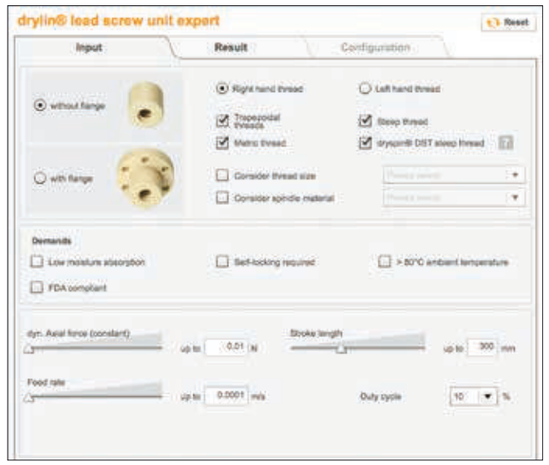
Service life

Every year, several hundred tests are set up and performed on threading test rigs in the igus® test laboratory. The results are incorporated into freely accessible online tools, where the service life and the required torque can be determined.

▶ **www.igus.eu/leadscrew-expert**



View inside bearing laboratory at igus®

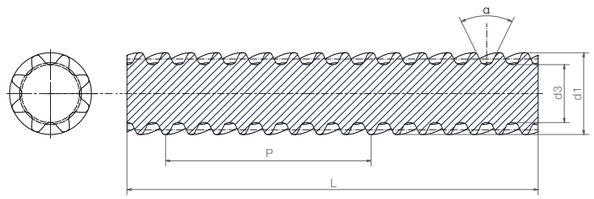


dryspin® technology | Lead screws | Product range

dryspin® high helix lead screws – corrosion-resistant

Stainless steel, rolled (1.4301)

Aluminium, rolled (EN AW 6082)



Technical data

Helix deviation	0.1 mm to 300 mm
Straightness (standard)	0.3 mm to 300 mm
Aligned	<0.1 mm to 300 mm

The tensile/compressive strength of the EN AW 6082 lead screw material is 160 MPa per mm² (elongation limit 0.2 mm).

Technical data

Thread	Hand of rotation right	Hand of rotation left	Material Stainless steel 1.4301	Material Aluminium EN AW 6082	Pitch P [mm]	Number of threads	Pitch angle α [°]	Weight Stainless steel [kg/m]	Weight Aluminium [kg/m]
Ds6,35x2,54	●	–	●	●	2.54	2	7.26	0.25	0.09
Ds6,35x5,08	●	–	●	●	5.08	4	14.29	0.25	0.09
Ds6,35x12,7	●	–	●	●	12.7	4	32.48	0.25	0.09
Ds6,35x25,4	●	–	●	●	25.4	8	51.85	0.25	0.09
Ds8x10	●	–	●	●	10	4	21.70	0.40	0.14
Ds8x15	●	●	●	●	15	6	30.83	0.40	0.14
Ds10x12	●	●	●	●	12	4	21.54	0.62	0.21
Ds10x25	●	●	●	●	25	8	38.51	0.62	0.21
Ds10x50	●	●	●	●	50	10	57.86	0.62	0.21
Ds12x5	●	–	●	●	5	2	7.55	0.89	0.31
Ds12x25	●	–	●	●	25	8	33.55	0.89	0.31
Ds14x25	●	●	●	●	25	5	29.61	1.22	0.42
Ds14x30	●	–	●	●	30	6	34.30	1.22	0.42
Ds14x40,6	●	–	●	●	40.6	8	42.71	1.22	0.42
Ds16x35	●	–	●	●	35	7	34.85	1.59	0.54
Ds18x24	●	–	●	●	24	6	22.99	2.01	0.69
Ds18x40	●	●	●	●	40	8	35.55	2.01	0.69
Ds18x80	●	–	●	●	80	12	54.74	2.01	0.69
Ds18x100	●	–	●	●	100	12	60.51	2.01	0.69
Ds20x20	●	–	●	●	20	4	17.66	2.48	0.85
Ds20x60	●	●	●	●	60	8	43.68	2.48	0.85
Ds20x80	●	–	●	●	80	12	55.07	2.48	0.85
Dx20x90	●	●	●	●	90	12	55.08	2.48	0.85

Order key

Part number	Thread	Options

DST-LS-10X50-R-1000-ES

dryspin® technology | Lead screw | Diameter | Pitch | Hand of rotation | Length [mm] | Lead screw material

Options:
Hand of rotation
R: Right
L: Left
Lead screw material
ES: Stainless steel, rolled
AL: Aluminium, rolled
Length in mm: freely selectable (see table)

Talk to us!
All drylin® leads screws can be custom machined. Please send us your drawing.
We can then provide a quotation quickly.

Dimensions [mm]

Outer Ø d1 min.	Outer Ø d1 max.	Core Ød3 d3 min.	Core Ød3 d3 max.	Max. length L ES	Max. length L AL	Part No.
6.30	6.35	4.30	4.35	1,000	1,000	DST-LS-6.35X2.54-R-□-ES
6.30	6.35	4.80	4.85	1,000	1,000	DST-LS-6.35X5.08-R-□-ES
6.30	6.35	4.30	4.35	1,000	1,000	DST-LS-6.35X12.7-R-□-ES
6.30	6.35	4.05	4.15	1,000	1,000	DST-LS-6.35X25.4-R-□-ES
7.95	8.0	5.58	5.63	1,500	1,000	DST-LS-8X10-R-□-ES
7.95	8.0	5.58	5.63	1,500	1,000	DST-LS-8X15-□-□-ES
9.90	10.0	6.85	6.95	3,000	1,000	DST-LS-10X12-□-□-ES
9.90	10.0	7.00	7.10	3,000	1,000	DST-LS-10X25-□-□-ES
9.90	10.0	7.25	7.35	3,000	1,000	DST-LS-10X50-□-□-ES
11.90	12.0	9.50	9.60	3,000	1,500	DST-LS-12X5-R-□-ES
11.90	12.0	9.05	8.95	3,000	1,500	DST-LS-12X25-R-□-ES
13.90	14.0	9.50	9.60	3,000	1,500	DST-LS-14X25-□-□-ES
13.90	14.0	9.50	9.60	3,000	1,500	DST-LS-14X30-R-□-ES
13.90	14.0	9.55	9.65	3,000	1,500	DST-LS-14X40.6-R-□-ES
15.90	16.0	11.50	11.60	3,000	1,500	DST-LS-16X35-R-□-ES
17.90	18.0	14.40	14.30	3,000	1,500	DST-LS-18X24-R-□-ES
17.90	18.0	13.50	13.60	3,000	1,500	DST-LS-18X40-□-□-ES
17.90	18.0	13.90	14.00	3,000	1,500	DST-LS-18X80-R-□-ES
17.90	18.0	13.45	13.55	3,000	1,500	DST-LS-18X100-R-□-ES
19.90	20.0	15.50	15.60	3,000	1,500	DST-LS-20X20-R-□-ES
19.90	20.0	15.45	15.55	3,000	1,500	DST-LS-20X60-□-□-ES
19.90	20.0	15.88	15.98	3,000	1,500	DST-LS-20X80-R-□-ES
19.90	20.0	15.45	15.55	3,000	1,500	DST-LS-20X90-□-□-ES

Highly efficient at all speeds: iglidur® J

Thread	Efficiency	Idling torque[118)]	Coefficient of friction
	η	[Nm]	μ
Ds6,35x2,54	33-55	0.0037	0.1-0.25
Ds6,35x5,08	47-70	0.0085	0.1-0.25
Ds6,35x12,7	60-81	0.0125	0.1-0.25
Ds6,35x25,4	57-81	0.0249	0.1-0.25
Ds8x10	55-77	0.0104	0.1-0.25
Ds8x15	60-81	0.0148	0.1-0.25
Ds10x12	55-76	0.0125	0.1-0.25
Ds10x25	61-82	0.0243	0.1-0.25
Ds10x50	52-79	0.0503	0.1-0.25
Ds12x5	34-56	0.0071	0.1-0.25
Ds14x25	60-80	0.0248	0.1-0.25
Ds14x30	61-81	0.0294	0.1-0.25
Ds16x35	61-81	0.0342	0.1-0.25
Ds18x40	61-81	0.0391	0.1-0.25
Ds18x80	55-80	0.0794	0.1-0.25
Ds18x100	49-78	0.1021	0.1-0.25
Ds20x20	52-74	0.0216	0.1-0.25
Ds20x60	60-82	0.0583	0.1-0.25
Ds20x80	57-81	0.0787	0.1-0.25
Ds20x90	55-80	0.0894	0.1-0.25

The low-cost option for serial production: iglidur® R

Thread	Efficiency	Idling torque[118)]	Coefficient of friction
	η	[Nm]	μ
Ds6,35x2,54	29-38	0.0053	0.2-0.3
Ds6,35x5,08	42-53	0.0076	0.2-0.3
Ds6,35x12,7	55-66	0.0152	0.2-0.3
Ds6,35x25,4	50-64	0.0314	0.2-0.3
Ds8x10	50-61	0.0129	0.2-0.3
Ds8x15	55-66	0.0181	0.2-0.3
Ds10x12	50-61	0.0158	0.2-0.3
Ds10x25	55-67	0.0296	0.2-0.3
Ds10x50	44-61	0.0657	0.2-0.3
Ds12x5	29-39	0.0103	0.2-0.3
Ds14x25	60-72	0.0274	0.2-0.3
Ds14x30	61-74	0.0324	0.2-0.3
Ds16x35	61-74	0.0378	0.2-0.3
Ds18x40	61-74	0.0432	0.2-0.3
Ds18x80	55-71	0.0894	0.2-0.3
Ds18x100	40-58	0.1370	0.2-0.3
Ds20x20	52-65	0.0246	0.2-0.3
Ds20x60	60-74	0.0645	0.2-0.3
Ds20x80	50-64	0.0988	0.2-0.3
Ds20x90	55-71	0.1008	0.2-0.3

[118)] Theoretical idling torque assuming the best possible coefficient of friction at a 5N load

For temperatures up to +150 °C: iglidur® J350

Thread	Efficiency	Idling torque[118)]	Coefficient of friction
	η	[Nm]	μ
Ds6,35x2,54	33-42	0.0048	0.17-0.25
Ds6,35x5,08	47-57	0.0070	0.17-0.25
Ds6,35x12,7	60-70	0.0144	0.17-0.25
Ds6,35x25,4	57-69	0.0292	0.17-0.25
Ds8x10	55-65	0.0122	0.17-0.25
Ds8x15	60-70	0.0171	0.17-0.25
Ds10x12	55-65	0.0148	0.17-0.25
Ds10x25	61-71	0.0279	0.17-0.25
Ds10x50	52-66	0.0604	0.17-0.25
Ds12x5	34-43	0.0093	0.17-0.25
Ds14x25	60-70	0.0286	0.17-0.25
Ds14x30	61-71	0.0337	0.17-0.25
Ds16x35	61-71	0.0393	0.17-0.25
Ds18x40	61-71	0.0488	0.17-0.25
Ds18x80	55-68	0.0939	0.17-0.25
Ds18x100	49-64	0.1247	0.17-0.25
Ds20x20	52-62	0.0258	0.17-0.25
Ds20x60	60-71	0.0671	0.17-0.25
Ds20x80	57-69	0.0921	0.17-0.25
Ds20x90	55-68	0.1059	0.17-0.25

FDA-compliant for the food/pharmaceuticals industry: iglidur® A180

Thread	Efficiency	Idling torque[118)]	Coefficient of friction
	η	[Nm]	μ
Ds6,35x2,54	33-45	0.0044	0.15-0.25
Ds6,35x5,08	47-61	0.0067	0.15-0.25
Ds6,35x12,7	60-73	0.0138	0.15-0.25
Ds6,35x25,4	57-72	0.0279	0.15-0.25
Ds8x10	55-68	0.0117	0.15-0.25
Ds8x15	60-73	0.0164	0.15-0.25
Ds10x12	55-68	0.0141	0.15-0.25
Ds10x25	61-74	0.0268	0.15-0.25
Ds10x50	52-70	0.0572	0.15-0.25
Ds12x5	34-46	0.0087	0.15-0.25
Ds14x25	60-72	0.0274	0.15-0.25
Ds14x30	61-74	0.0324	0.15-0.25
Ds16x35	61-74	0.0378	0.15-0.25
Ds18x40	61-74	0.0431	0.15-0.25
Ds18x80	55-71	0.0894	0.15-0.25
Ds18x100	49-68	0.1175	0.15-0.25
Ds20x20	52-65	0.0246	0.15-0.25
Ds20x60	60-74	0.6448	0.15-0.25
Ds20x80	57-72	0.0879	0.15-0.25
Ds20x90	55-71	0.1008	0.15-0.25

[118)] Theoretical idling torque assuming the best possible coefficient of friction at a 5N load

dryspin® technology | Lead screw nuts | Product range

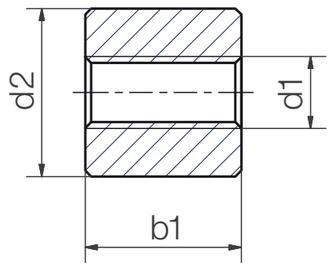
Lead screw nuts, cylindrical (Form S)

iglidur® J

iglidur® J350

iglidur® R

iglidur® A180



Technical data

Thread	Hand of rotation		Effective supporting surface	Max. stat. axial F [N] iglidur®	
	right	left	[mm²]	J / J350 / A180	R
Ds6,35x2,54	●	–	172	152	152
Ds6,35x5,08	●	–	135	152	152
Ds6,35x12,7	●	–	67	152	152
Ds6,35x25,4	●	–	74	152	152
Ds8x10	●	–	122	304	244
Ds8x15	●	●	122	304	244
Ds10x12	●	●	271	677	541
Ds10x25	●	●	249	623	499
Ds10x50	●	●	144	361	289
Ds12x5	●	–	398	995	796
Ds12x25	●	–	385	963	770
Ds14x25	●	●	444	1,110	888
Ds14x30	●	–	440	1,101	881
Ds14x40,6	●	–	434	1,085	868
Ds16x35	●	–	610	1,526	1,221
Ds18x24	●	–	844	2,110	1,688
Ds18x40	●	●	786	1,966	1,573
Ds18x80	●	–	543	1,357	1,086
Ds18x100	●	–	476	1,191	953
Ds20x20	●	–	984	2,460	1,968
Ds20x60	●	●	663	1,657	1,325
Ds20x80	●	–	686	1,715	1,372
Ds20x90	●	●	610	1,657	1,220

dryspin® technology

dryspin® technology | Lead screw nuts | Product range

Order key

Type											d2	b1	Thread		
DST	-	□	S	R	M	-	14	13	DS	10X12					
dryspin® technology		iglidur® material	Form S	Hand of rotation	Metric		Outer Ø [mm]		Length [mm]				Thread type	Diameter [mm]	Pitch

Options:
Hand of rotation
R: Right
L: Left

J	High efficiency at all speeds
J350	For temperatures up to +150 °C
R	The low-cost option for serial production
A180	FDA-compliant for the food and pharmaceutical industries

Dimensions [mm]

d1	d2	b1	Weight [g] iglidur®				Part No.
			J	J350	R	A180	
6.35	14	13	2.4	2.3	2.2	2.3	DST-□SRM-1413DS6.35X2.54
6.35	14	13	2.4	2.3	2.2	2.3	DST-□SRM-1413DS6.35X5.08
6.35	14	13	2.4	2.3	2.2	2.3	DST-□SRM-1413DS6.35X12.7
6.35	14	13	2.4	2.3	2.2	2.3	DST-□SRM-1413DS6.35X25.4
8	18	12	3.7	3.5	3.4	3.6	DST-□SRM-1812DS8X10
8	18	12	3.7	3.5	3.4	3.6	DST-□S□M-1812DS8X15
10	22	20	9.0	8.7	8.4	8.8	DST-□S□M-2020DS10X12
10	22	20	9.0	8.7	8.4	8.8	DST-□S□M-2020DS10X25
10	22	20	9.0	8.7	8.4	8.8	DST-□S□M-2020DS10X50
12	26	24	14.9	14.4	13.9	14.6	DST-□SRM-2624DS12X5
12	26	24	14.9	14.4	13.9	14.6	DST-□SRM-2624DS12X25
14	30	27	22.2	21.5	20.8	21.8	DST-□S□M-3027DS14X25
14	30	27	22.2	21.5	20.8	21.8	DST-□SRM-3027DS14X30
14	30	27	22.2	21.5	20.8	21.8	DST-□SRM-3027DS14X40.6
16	36	32	38.9	37.6	36.3	38.2	DST-□SRM-3632DS16X35
18	40	36	53.8	52.0	50.1	52.7	DST-□SRM-4036DS18X24
18	40	36	53.8	52.0	50.1	52.7	DST-□S□M-4036DS18X40
18	40	36	53.8	52.0	50.1	52.7	DST-□SRM-4036DS18X80
18	40	36	53.8	52.0	50.1	52.7	DST-□SRM-4036DS18X100
20	45	40	76.1	73.5	71.0	74.5	DST-□SRM-4540DS20X20
20	45	40	76.1	73.5	71.0	74.5	DST-□S□M-4540DS20X60
20	45	40	76.1	73.5	71.0	74.5	DST-□SRM-4540DS20X80
20	45	40	76.1	73.5	71.0	74.5	DST-□S□M-4540DS20X90

dryspin® technology | Lead screw nuts | Product range

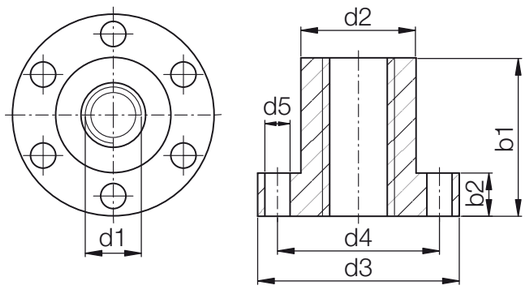
Lead screw nuts with flange (Form F)

iglidur® J

iglidur® J350

iglidur® R

iglidur® A180



Order key

Type | d2 | b1 | Thread

DST - □ F R M - 25 25 DS 10X12

dryspin® technology | iglidur® material | Form F | Hand of rotation | Metric | Outer Ø [mm] | Length [mm] | Thread type | Diameter [mm] | Pitch

Options:
Hand of rotation
R: Right
L: Left

J	High efficiency at all speeds
J350	For temperatures up to +150 °C
R	The low-cost option for serial production
A180	FDA-compliant for the food and pharmaceutical industries

Technical data

Thread	Hand of rotation		Effective supporting surface	Max. stat. axial F [N] iglidur®	
	right	left	[mm²]	J / J350 / A180	R
Ds6,35x2,54	●	–	199	125	125
Ds6,35x5,08	●	–	156	125	125
Ds6,35x12,7	●	–	78	125	125
Ds6,35x25,4	●	–	86	125	125
Ds8x10	●	–	203	508	406
Ds8x15	●	●	205	635	507
Ds10x12	●	●	343	845	677
Ds10x25	●	●	312	780	623
Ds10x50	●	●	181	453	361
Ds12x5	●	–	581	1,425	1,140
Ds12x25	●	–	562	1,405	1,124
Ds14x25	●	●	576	1,428	1,142
Ds14x30	●	–	571	1,428	1,142
Ds14x40,6	●	–	434	1,085	868
Ds16x35	●	–	668	1,670	1,335
Ds18x24	●	–	844	2,110	1,688
Ds18x40	●	●	764	1,910	1,529
Ds18x80	●	–	528	1,320	1,056
Ds18x100	●	–	463	1,158	926
Ds20x20	●	–	1,083	2,708	2,165
Ds20x60	●	●	729	1,823	1,458
Ds20x80	●	–	755	1,888	1,510
Ds20x90	●	●	671	1,678	1,342

Dimensions [mm]

d1	d2	d3	d4	d5	b1	b2	Weight [g] iglidur®				Part No.
							J	J350	R	A180	
6.35	13	25	15	3.2	15	5	4.9	4.8	4.6	4.8	**DST-□FRM-1315DS6.35X2.54**
6.35	13	25	15	3.2	15	5	4.9	4.8	4.6	4.8	**DST-□FRM-1315DS6.35X5.08**
6.35	13	25	15	3.2	15	5	4.9	4.8	4.6	4.8	**DST-□FRM-1315DS6.35X12.7**
6.35	13	25	15	3.2	15	5	4.9	4.8	4.6	4.8	**DST-□FRM-1315DS6.35X25.4**
8	20	34	28	4	20	5	12.3	11.9	11.5	12.0	**DST-□FRM-2020DS8X10**
8	20	34	28	4	20	5	12.3	11.9	11.5	12.0	**DST-□F□M-2020DS8X15**
10	25	42	34	5	25	10	28.7	27.7	26.8	28.1	**DST-□F□M-2525DS10X12**
10	25	42	34	5	25	10	28.7	27.7	26.8	28.1	**DST-□F□M-2525DS10X25**
10	25	42	34	5	25	10	28.7	27.7	26.8	28.1	**DST-□F□M-2525DS10X50**
12	28	48	38	6	35	12	47.6	46.0	44.4	46.6	**DST-□FRM-2835DS12X5**
12	28	48	38	6	35	12	47.6	46.0	44.4	46.6	**DST-□FRM-2835DS12X25**
14	28	48	38	6	35	12	45.4	43.9	42.4	44.5	**DST-□F□M-2835DS14X25**
14	28	48	38	6	35	12	45.4	43.9	42.4	44.5	**DST-□FRM-2835DS14X30**
14	28	48	38	6	35	12	45.4	43.9	42.4	44.5	**DST-□FRM-2835DS14X40.6**
16	28	48	38	6	35	12	43.0	41.5	40.1	42.1	**DST-□FRM-2835DS16X35**
18	28	48	38	6	35	18	50.9	49.2	47.4	49.8	**DST-□FRM-2835DS18X24**
18	28	48	38	6	35	18	50.9	49.2	47.4	49.8	**DST-□F□M-2835DS18X40**
18	28	48	38	6	35	18	50.9	49.2	47.4	49.8	**DST-□FRM-2835DS18X80**
18	28	48	38	6	35	18	50.9	49.2	47.4	49.8	**DST-□FRM-2835DS18X100**
20	32	55	45	7	44	12	60.2	58.2	56.2	59.0	**DST-□FRM-3244DS20X20**
20	32	55	45	7	44	12	60.2	58.2	56.2	59.0	**DST-□F□M-3244DS20X60**
20	32	55	45	7	44	12	60.2	58.2	56.2	59.0	**DST-□FRM-3244DS20X80**
20	32	55	45	7	44	12	60.2	58.2	56.2	59.0	**DST-□F□M-3244DS20X90**

dryspin® technology | Lead screw nuts | Product range

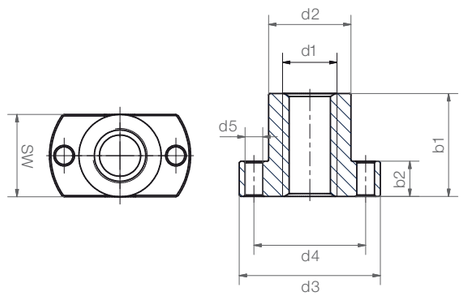
Lead screw nuts with spanner flat, with flange

iglidur® J

iglidur® J350

iglidur® R

iglidur® A180



Order key

Type					SW	d2	b1	Thread
DST -	□	F	R	M	- 25	25	25	DS 10X12

dryspin® technology	iglidur® material	Form F	Hand of rotation	Metric	Hex flats [mm]	Outer Ø [mm]	Length [mm]	Thread type	Diameter [mm]	Pitch

Options:
Hand of rotation
R: Right
L: Left

J	High efficiency at all speeds
J350	For temperatures up to +150 °C
R	The low-cost option for serial production
A180	FDA-compliant for the food and pharmaceutical industries

Technical data

Thread	Hand of rotation		Effective	Max. stat. axial F [N]	
	right	left	supporting surface	iglidur®	
			[mm²]	J / J350 / A180	R
Ds6,35x2,54	●	–	199	125	125
Ds6,35x5,08	●	–	156	125	125
Ds6,35x12,7	●	–	78	125	125
Ds6,35x25,4	●	–	114	125	125
Ds8x10	●	–	203	507	406
Ds8x15	●	●	205	513	410
Ds10x12	●	●	343	858	686
Ds10x25	●	●	312	779	623
Ds10x50	●	●	253	632	506
Ds12x5	●	–	581	1,452	1,162
Ds12x25	●	–	562	1,405	1,124
Ds14x25	●	●	576	1,440	1,152
Ds14x30	●	–	571	1,427	1,142
Ds14x40,6	●	–	562	1,405	1,124
Ds16x35	●	–	668	1,669	1,335
Ds18x24	●	–	821	2,053	1,643
Ds18x40	●	●	764	1,911	1,529
Ds18x80	●	–	528	1,319	1,056
Ds18x100	●	–	463	1,158	926
Ds20x20	●	–	1,083	2,707	2,165
Ds20x60	●	●	729	1,822	1,458
Ds20x80	●	–	755	1,888	1,510
Ds20x90	●	●	671	1,678	1,342

Dimensions [mm]

d1	d2	d3	d4	d5	b1	b2	SW	Weight [g] iglidur®				Part No.
								J	J350	R	A180	
6.35	13	25	19	3.2	15	5	13	3.7	3.6	3.4	3.6	DST-□FRM-131315DS6.35X2.54
6.35	13	25	19	3.2	15	5	13	3.7	3.6	3.4	3.6	DST-□FRM-131315DS6.35X5,08
6.35	13	25	19	3.2	15	5	13	3.7	3.6	3.4	3.6	DST-□FRM-131315DS6.35X12.7
6.35	13	25	19	3.2	15	5	13	3.7	3.6	3.4	3.6	DST-□FRM-131315DS6.35X25.4
8	20	36	28	4	20	8	20	12.7	12.3	11.8	12.4	DST-□FRM-202020DS8X10
8	20	36	28	4	20	8	20	12.7	12.3	11.8	12.4	DST-□F□M-202020DS8X15
10	25	42	34	5	25	10	25	23.7	22.9	22.1	23.2	DST-□F□M-252525DS10X12
10	25	42	34	5	25	10	25	23.7	22.9	22.1	23.2	DST-□F□M-252525DS10X25
10	25	42	34	5	25	10	25	23.7	22.9	22.1	23.2	DST-□F□M-252525DS10X50
12	28	48	38	6	35	12	28	39.2	37.9	36.6	38.4	DST-□FRM-282835DS12X5
12	28	48	38	6	35	12	28	39.2	37.9	36.6	38.4	DST-□FRM-282835DS12X25
14	28	48	38	6	35	12	28	37.1	35.9	34.6	36.4	DST-□F□M-282835DS14X25
14	28	48	38	6	35	12	28	37.1	35.9	34.6	36.4	DST-□FRM-282835DS14X30
14	28	48	38	6	35	12	28	37.1	35.9	34.6	36.4	DST-□FRM-282835DS14X40.6
16	28	48	38	6	35	12	28	34.6	33.5	32.3	33.9	DST-□FRM-282835DS16X35
18	28	48	38	6	35	12	28	31.9	30.8	29.7	31.2	DST-□FRM-282835DS18X24
18	28	48	38	6	35	12	28	31.9	30.8	29.7	31.2	DST-□F□M-282835DS18X40
18	28	48	38	6	35	12	28	31.9	30.8	29.7	31.2	DST-□FRM-282835DS18X80
18	28	48	38	6	35	12	28	31.9	30.8	29.7	31.2	DST-□FRM-282835DS18X100
20	32	55	45	7	44	12	32	49.2	47.6	45.9	48.2	DST-□FRM-323244DS20X20
20	32	55	45	7	44	12	32	49.2	47.6	45.9	48.2	DST-□F□M-323244DS20X60
20	32	55	45	7	44	12	32	49.2	47.6	45.9	48.2	DST-□FRM-323244DS20X80
20	32	55	45	7	44	12	32	49.2	47.6	45.9	48.2	DST-□F□M-323244DS20X90

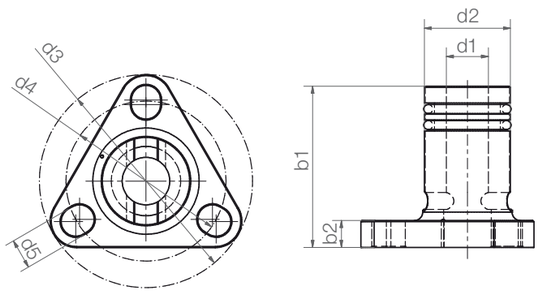
dryspin® technology | Lead screw nuts | Product range

Lead screw nuts with radial pre-load

Order key

Part number	Type	Thread
DST-J F R M -LC- 0001 - DS10X12		

dryspin® technology	igliduR® J	Form F	Hand of rotation	Metric	Low-cost	Type 0001	Thread type	Thread Ø [mm]	Pitch



Technical data

Thread	Effective supporting surface [mm²]	Max. stat. F axial [N]	Max. idling torque (with O-ring)	Weight [g]	Part No.
Ds6,35x2,54	277	40	0.005-0.02	3.8	DST-JFRM-LC-0001-DS6.35X2.54
Ds6,35x5,08	217	40	0.005-0.02	3.8	DST-JFRM-LC-0001-DS6.35X5.08
Ds6,35x12,7	108	40	0.005-0.02	3.8	DST-JFRM-LC-0001-DS6.35X12.7
Ds6,35x25,4	119	40	0.005-0.02	3.8	DST-JFRM-LC-0001-DS6.35X25.4
Ds8x10	287	75	0.01-0.03	12.1	DST-JFRM-LC-0001-DS8X10
Ds8x15	287	75	0.01-0.03	12.1	DST-JFRM-LC-0001-DS8X15
Ds10x12	383	75	0.01-0.03	12.1	DST-JFRM-LC-0001-DS10X12
Ds10x25	353	75	0.01-0.03	12.1	DST-JFRM-LC-0001-DS10X25
Ds10x50	204	75	0.01-0.03	12.1	DST-JFRM-LC-0001-DS10X50

Dimensions [mm]

Thread	d1	d2	d3	d4	d5	b1	b2	Part No.
Ds6,35x2,54	6.35	10	28.5	22.2	3.7	20.9	4.1	DST-JFRM-LC-0001-DS6.35X2.54
Ds6,35x5,08	6.35	10	28.5	22.2	3.7	20.9	4.1	DST-JFRM-LC-0001-DS6.35X5.08
Ds6,35x12,7	6.35	10	28.5	22.2	3.7	20.9	4.1	DST-JFRM-LC-0001-DS6.35X12.7
Ds6,35x25,4	6.35	10	28.5	22.2	3.7	28.3	4.1	DST-JFRM-LC-0001-DS6.35X25.4
Ds8x10	8	16	38.1	28.3	5.2	28.3	4.8	DST-JFRM-LC-0001-DS8X10
Ds8x15	8	16	38.1	28.3	5.2	28.3	4.8	DST-JFRM-LC-0001-DS8X15
Ds10x12	10	16	38.1	28.3	5.2	28.3	4.8	DST-JFRM-LC-0001-DS10X12
Ds10x25	10	16	38.1	28.3	5.2	28.3	4.8	DST-JFRM-LC-0001-DS10X25
Ds10x50	10	16	38.1	28.3	5.2	28.3	4.8	DST-JFRM-LC-0001-DS10X50

dryspin® technology

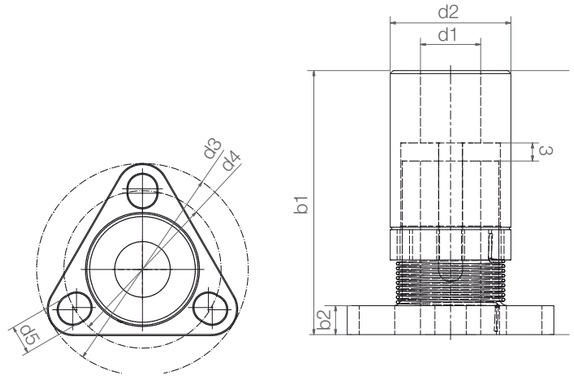
dryspin® technology | Lead screw nuts | Product range

Zero backlash option

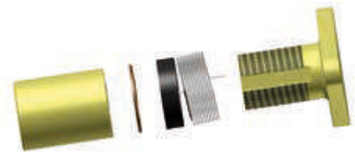
Order key

Part number	Type	Thread
DST-J F R M -ZB- 0001 - DS10X12		

dryspin® technology	igliduR® J	Form F	Hand of rotation	Metric	Zero backlash	Type 0001	Thread type



Installation instructions and video tutorials
▶ www.igus.eu/zero-backlash



Technical data

Thread	Effective supporting surface [mm²]	Max. stat. F axial [N]	Max. idling torque (with spring)	Weight [g]	Part No.
Ds6,35x2,54	410	75	0.005-0.02	5.1	DST-JFRM-ZB-0001-DS6.35X2.54
Ds6,35x5,08	322	75	0.005-0.02	5.1	DST-JFRM-ZB-0001-DS6.35X5.08
Ds6,35x12,7	161	75	0.005-0.02	5.1	DST-JFRM-ZB-0001-DS6.35X12.7
Ds6,35x25,4	177	75	0.005-0.02	5.1	DST-JFRM-ZB-0001-DS6.35X25.4
Ds8x10	315	150	0.01-0.03	15.2	DST-JFRM-ZB-0001-DS8X10
Ds8x15	315	150	0.01-0.03	15.2	DST-JFRM-ZB-0001-DS8X15
Ds10x12	555	150	0.01-0.04	15.2	DST-JFRM-ZB-0001-DS10X12
Ds10x25	511	150	0.01-0.04	15.2	DST-JFRM-ZB-0001-DS10X25
Ds10x50	296	150	0.01-0.04	15.2	DST-JFRM-ZB-0001-DS10X50

Dimensions [mm]

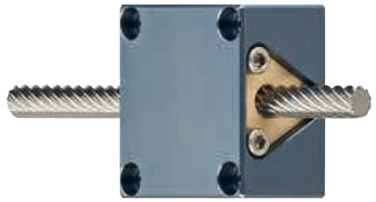
Thread	d1	d2	d3	d4	d5	b1 [40)]	b2	Part No.
Ds6,35x2,54	6.35	13.5	28	22.2	3.7	31-36	4.1	DST-JFRM-ZB-0001-DS6.35X2.54
Ds6,35x5,08	6.35	13.5	28	22.2	3.7	31-36	4.1	DST-JFRM-ZB-0001-DS6.35X5.08
Ds6,35x12,7	6.35	13.5	28	22.2	3.7	31-36	4.1	DST-JFRM-ZB-0001-DS6.35X12.7
Ds6,35x25,4	6.35	13.5	28	22.2	3.7	31-36	4.1	DST-JFRM-ZB-0001-DS6.35X25.4
Ds8x10	8	20	38.1	28.3	5.2	41-47	4.8	DST-JFRM-ZB-0001-DS8X10
Ds8x15	8	20	38.1	28.3	5.2	41-47	4.8	DST-JFRM-ZB-0001-DS8X15
Ds10x12	10	20	38.1	28.3	5.2	41-47	4.8	DST-JFRM-ZB-0001-DS10X12
Ds10x25	10	20	38.1	28.3	5.2	41-47	4.8	DST-JFRM-ZB-0001-DS10X25
Ds10x50	10	20	38.1	28.3	5.2	41-47	4.8	DST-JFRM-ZB-0001-DS10X50

[40)] Variable according to thread pitch / clearance

dryspin® Technology | Product range

Accessories for dryspin® technology

igus® offers a large design kit for dryspin® lead screw units. Bearing housing for lead screws and lead screw nuts enable the design of an individual linear table. With drylin® E NEMA lead screw motors, dryspin® combines the highest precision with a longer service life.



Lead screw nut housing

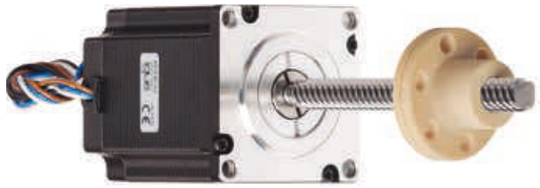
- Universal support for dryspin® flange lead screw nut
- Material: aluminium hard anodised
- Available individually or completely pre-assembled

▶ **Page 1156**

Lead screw support blocks

- Lead screw support block including clamping rings and lubrication-free plain bearings
- Material: aluminium hard anodised
- Fixed and floating bearing version available

▶ **Page 1158**



drylin® E lead screw motor with dryspin® technology

- NEMA 11/17/23 stepper motors
- Direct centring of the dryspin® lead screw for highest precision
- Many combination options

▶ **Page 1303**

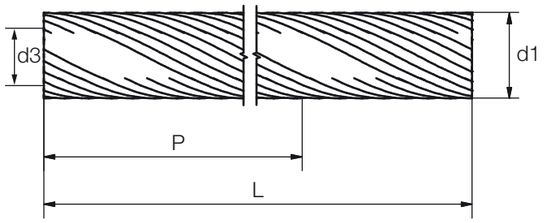
Special components

- Special machined lead screw which can be configured online
- Custom machining nuts/lead screw on request

My sketches

drylin® SG | Lead screws | Product range

High helix lead screws made from stainless steel (1.4021)



Technical data

Helix deviation	<0.09 mm to 300 mm
Straightness (standard)	0.3 mm to 300 mm
Aligned	<0.1 mm to 300 mm
Tolerance (according to DIN 103)	7e

The tensile/compressive strength of the EN AW 6082 lead screw material is 160 MPa per mm² (elongation limit 0.2 mm).

Technical data

Thread	Hand of rotation right	Hand of rotation left	Pitch P [mm]	Number of threads	Pitch-Angle α [°]	Weight [kg/m]
Sg05x5	●	–	5	4	17.56	0.18
Sg6,35x12,7	●	–	12.7	6	32.48	0.25
Sg08x10	●	–	10	4	21.69	0.42
Sg08x15	●	–	15	6	30.83	0.40
Sg10x12	●	●	12	4	20.91	0.62
Sg10x50	●	●	50	10	57.86	0.62
Sg12x25	●	●	25	5	33.55	0.88
Sg18x24	●	●	24	8	22.99	2.17
Sg18x100	●	–	100	20	60.51	2.19

Order key

Part number	Thread	Options

PTGSG-08X10-R-1000-ES

Lead screw	Diameter	Pitch	Hand of rotation	Length [mm]	Lead screw material

Options:
Hand of rotation
R: Right
L: Left
Length in mm: Freely selectable (see table)

Talk to us!
All drylin® leads screws can be custom machined. Please send us your drawing.
We can then provide a quotation quickly.

Dimensions [mm]

Outer Ø d1	Core Ø d3	Max. length L	Part No.
5.4	3.6	1,000	PTGSG-05X5-R-□□□□-ES
6.3	4.6	1,000	PTGSG-06.35X12.7-R-□□□□-ES
8.2	5.5	1,500	PTGSG-08X10-R-□□□□-ES
8.0	5.9	3,000	PTGSG-08X15-R-□□□□-ES
10.0	7.1	3,000	PTGSG-10X12-□-□□□□-ES
10.0	7.4	3,000	PTGSG-10X50-□-□□□□-ES
11.9	8.0	3,000	PTGSG-12X25-□-□□□□-ES
18.7	15.7	3,000	PTGSG-18X24-□-□□□□-ES
18.8	16.2	3,000	PTGSG-18X100-R-□□□□-ES

Highly efficient at all speeds: iglidur® J

Thread	Efficiency	Idling torque[118)]	Coefficient of friction
	η	[Nm]	μ
Sg05x5	52-74	0.0054	0.1-0.25
Sg6,35x12,7	60-81	0.0125	0.1-0.25
Sg08x10	55-77	0.0104	0.1-0.25
Sg08x15	60-81	0.0148	0.1-0.25
Sg10x12	55-76	0.0125	0.1-0.25
Sg10x50	52-79	0.0503	0.1-0.25
Sg12x25	61-81	0.0245	0.1-0.25
Sg18x24	56-77	0.0246	0.1-0.25
Sg18x100	49-78	0.1021	0.1-0.25

For temperatures up to +150 °C: iglidur® J350

Thread	Efficiency	Idling torque[118)]	Coefficient of friction
	η	[Nm]	μ
Sg05x5	52-62	0.0065	0.17-0.25
Sg6,35x12,7	60-70	0.0144	0.17-0.25
Sg08x10	55-65	0.0122	0.17-0.25
Sg08x15	60-70	0.0171	0.17-0.25
Sg10x12	55-65	0.0148	0.17-0.25
Sg10x50	52-66	0.0604	0.17-0.25
Sg12x25	61-71	0.0281	0.17-0.25
Sg18x24	56-66	0.0288	0.17-0.25
Sg18x100	49-64	0.1272	0.17-0.25

[118)] Theoretical idling torque assuming the best possible coefficient of friction at a 5N load

The low-cost option for serial production: iglidur® R

Thread	Efficiency	Idling torque[118)]	Coefficient of friction
	η	[Nm]	μ
Sg05x5	47-58	0.0069	0.2-0.3
Sg6,35x12,7	55-66	0.0152	0.2-0.3
Sg08x10	50-61	0.0129	0.2-0.3
Sg08x15	55-66	0.0181	0.2-0.3
Sg10x12	50-61	0.0158	0.2-0.3
Sg10x50	44-61	0.0657	0.2-0.3
Sg12x25	55-67	0.0299	0.2-0.3
Sg18x24	51-62	0.0307	0.2-0.3
Sg18x100	49-58	0.1370	0.2-0.3

FDA-compliant for the food/pharmaceuticals industry: iglidur® A180

Thread	Efficiency	Idling torque[118)]	Coefficient of friction
	η	[Nm]	μ
Sg05x5	52-65	0.0061	0.15-0.25
Sg6,35x12,7	60-73	0.0138	0.15-0.25
Sg08x10	55-68	0.0117	0.15-0.25
Sg08x15	60-73	0.0164	0.15-0.25
Sg10x12	55-68	0.0141	0.15-0.25
Sg10x50	52-70	0.0572	0.15-0.25
Sg12x25	61-73	0.0271	0.15-0.25
Sg18x24	56-69	0.0276	0.15-0.25
Sg18x100	49-68	0.1175	0.15-0.25

[118)] Theoretical idling torque assuming the best possible coefficient of friction at a 5N load

drylin® SG | Lead screw nuts | Product range

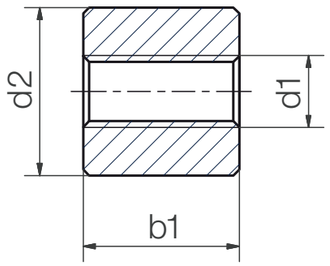
Cylindrical high helix nuts without dryspin® technology

iglidur® J

iglidur® J350

iglidur® R

iglidur® A180



Order key

Type		d2	b1	Thread
☐ S	R M -	18	12	SG 08X10

iglidur® material	Form S	Hand of rotation	Metric	Outer Ø [mm]	Length [mm]	Thread type	Diameter [mm]	Pitch

Options:
Hand of rotation
R: Right
L: Left

J	High efficiency at all speeds
J350	For temperatures up to +150 °C
R	The low-cost option for serial production
A180	FDA-compliant for the food and pharmaceutical industries

Technical data

Thread	Hand of rotation right	Hand of rotation left	Effective supporting surface [mm²]	Max. stat. axial F [N] iglidur® J / J350 / A180	Max. stat. axial F [N] iglidur® R
Sg05x5	●	-	197	100[43]	100[43]
Sg6,35x12,7	●	-	92	100[43]	100[43]
Sg08x10	●	-	127	275[43]	275[43]
Sg08x15	●	-	110	275	220
Sg10x12	●	●	195	487	389
Sg10x12	●	●	260	649	519
Sg10x50	●	●	142	355	284
Sg10x50	●	●	178	444	355
Sg12x25	●	●	302	754	603
Sg18x24	●	●	548	1370	1096
Sg18x100	●	-	261	653	522
Sg18x100	●	-	261	653	522
Sg18x100	●	-	348	870	696

[43] Reduced axial load due to nut geometry

Other thread sizes, nut geometries and higher loads upon request

Dimensions [mm]

d1	d2	b1	Weight [g] iglidur® J	Weight [g] iglidur® J350	Weight [g] iglidur® R	Weight [g] iglidur® A180	Part No.
5	14	13	2.60	2.51	2.43	2.55	☐SRM-1413SG05X5
6.35	14	13	2.37	2.29	2.21	2.32	☐SRM-1413SG06.35X12.7
8	18	12	3.65	3.53	3.41	3.58	☐SRM-1812SG08X10
8	18	12	3.65	3.53	3.41	3.58	☐SRM-1812SG08X15
10	22	15	6.74	6.51	6.29	6.60	☐S☐M-2215SG10X12
10	22	20	8.99	8.69	8.38	8.81	☐S☐M-2220SG10X12
10	22	15	6.74	6.51	6.29	6.60	☐S☐M-2215SG10X50
10	22	20	8.99	8.69	8.38	8.81	☐S☐M-2220SG10X50
12	26	24	14.94	14.44	13.94	14.64	☐S☐M-2624SG12X25
18	30	27	18.20	17.59	16.98	17.83	☐S☐M-3027SG18X24
18	30	27	18.20	17.59	16.98	17.83	☐SRM-3027SG18X100
18	40	27	40.32	38.96	37.61	39.51	☐SRM-4027SG18X100
18	40	36	53.76	51.95	50.15	52.67	☐SRM-4036SG18X100

drylin® SG | Lead screw nuts | Product range

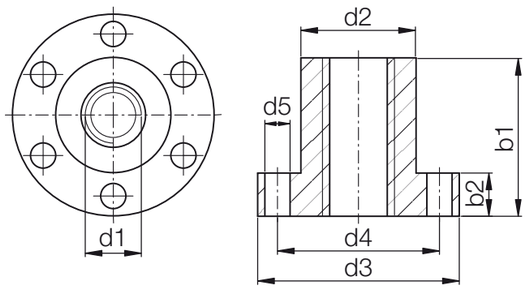
High helix lead screw nuts with flange without dryspin® technology

iglidur® J

iglidur® J350

iglidur® R

iglidur® A180



Order key

Type				d2	b1	Thread
☐	F	R	M	- 20	20	SG 08X10

iglidur® material	Form F	Hand of rotation	Metric	Outer Ø [mm]	Length [mm]	Thread type	Diameter [mm]	Pitch

Options:
Hand of rotation
R: Right
L: Left

J	High efficiency at all speeds
J350	For temperatures up to +150 °C
R	The low-cost option for serial production
A180	FDA-compliant for the food and pharmaceutical industries

Technical data

Thread	Hand of rotation right	Hand of rotation left	Effective supporting surface [mm²]	Max. stat. axial F [N] iglidur® J / J350 / A180	Max. stat. axial F [N] iglidur® R
Sg05x5	●	-	227	100[43]	100[43]
Sg6,35x12,7	●	-	107	100[43]	100[43]
Sg08x10	●	-	212	458[43]	458[43]
Sg08x15	●	-	183	459	367
Sg10x12	●	●	325	811	649
Sg10x50	●	●	178	444	355
Sg12x25	●	●	440	1,100	880
Sg18x24	●	●	710	1,776	1,420
Sg18x100	●	-	338	846	677

[43] Reduced axial load due to nut geometry

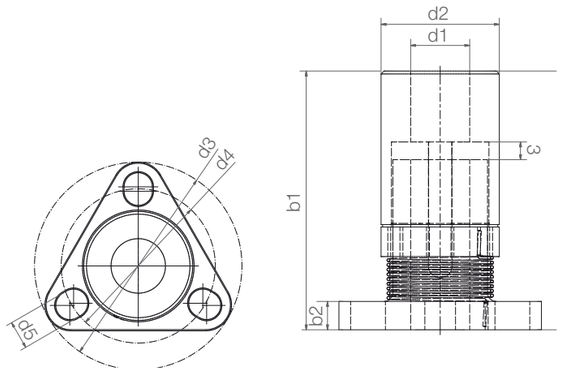
i thread sizes, nut geometries and higher loads upon request

Dimensions [mm]

d1	d2	d3	d4	d5	b1	b2	Weight [g] iglidur® J	Weight [g] iglidur® J350	Weight [g] iglidur® R	Weight [g] iglidur® A180	Part No.
5	13	25	19	3	15	5	5.20	5.02	4.85	5.09	☐FRM-1315SG05X5
6.35	13	25	19	3	15	5	4.93	4.76	4.60	4.83	☐FRM-1315SG06.35X12.7
8	20	34	28	4	20	5	12.29	11.88	11.46	12.04	☐FRM-2020SG08X10
8	20	34	28	4	20	5	12.29	11.88	11.46	12.04	☐FRM-2020SG08X15
10	25	42	34	5	25	10	28.69	27.73	26.76	28.11	☐F☐M-2525SG10X12
10	25	42	34	5	25	10	28.69	27.73	26.76	28.11	☐F☐M-2525SG10X50
12	28	48	38	6	35	12	47.56	45.96	44.37	46.60	☐F☐M-2835SG12X25
18	28	48	38	6	35	12	40.19	38.84	37.49	39.38	☐F☐M-2835SG18X24
18	28	48	38	6	35	12	40.19	38.84	37.49	39.38	☐FRM-2835SG18X100

drylin® SG | Lead screw nuts | Product range

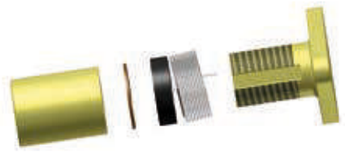
Zero backlash lead screw nuts without dryspin® technology

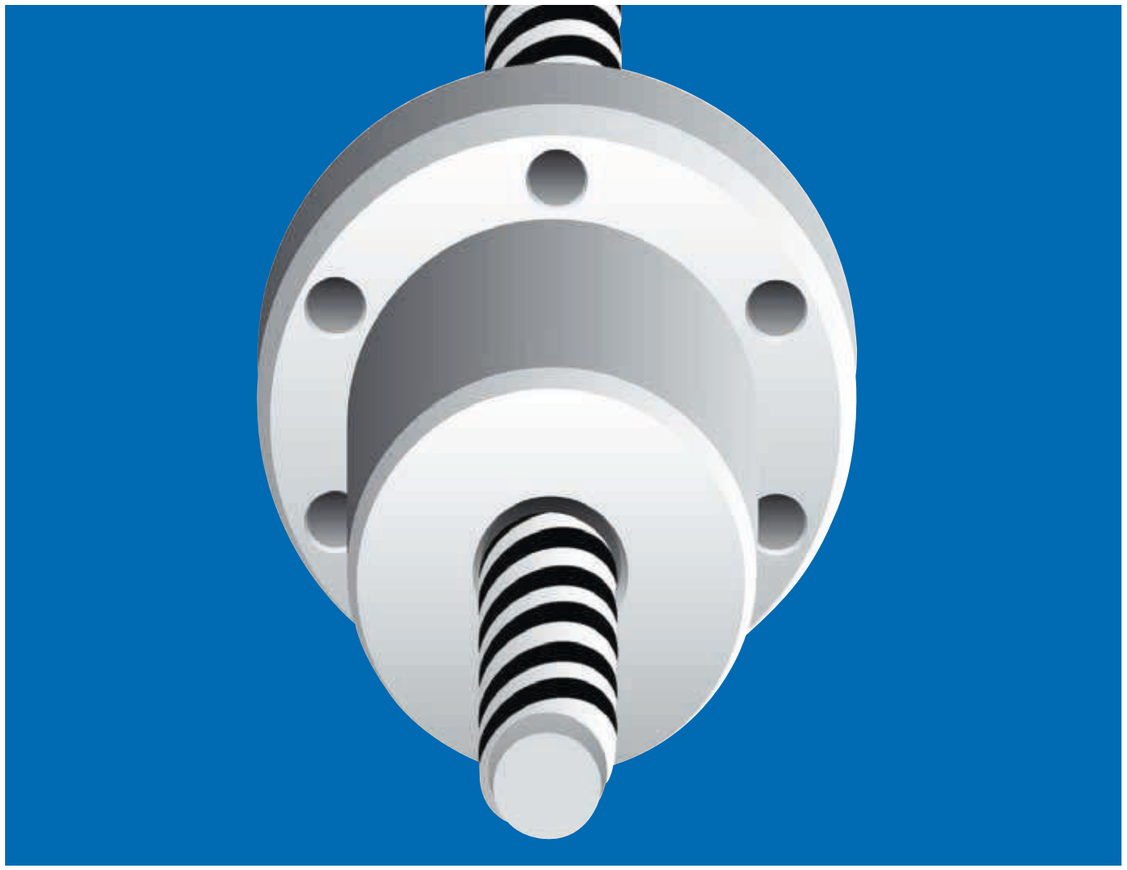


Order key

Part number									Type	Thread
J	F	R	M	-ZB-	0001				HH	10X2
Material	Form F	Hand of rotation	Metric	Zero backlash	Series		Trapezoidal thread	Diameter	Pitch	

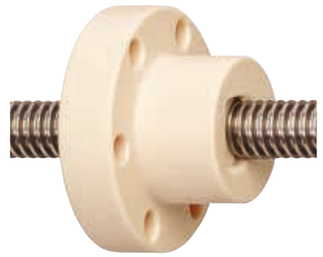
Installation instructions and video tutorials
▶ www.igus.eu/zero-backlash





drylin® lead screw technology – trapezoidal and metric threads

- Self-locking
- Maintenance-free dry operation
- Resistant to dirt and long service life
- Lead screw nuts from lubrication-free dry-tech® polymers
- Lead screws made from steel, stainless steel or aluminium



Technical data

Thread	Effective supporting surface [mm²]	max. stat. axial F [N]	Max. idling torque (with spring)	Weight [g]	Part No.
Sg05x5	469	75	0.105-0.07	5.15	JFRM-ZB-0001-HH05X5
Sg06.35x12.7	220	75	0.105-0.07	5.15	JFRM-ZB-0001-HH06.35X12.7
Sg08x10	435	150	0.06-0.08	8.15	JFRM-ZB-0001-HH08X10
Sg08x15	376	150	0.06-0.08	8.15	JFRM-ZB-0001-HH08X15
Sg10x12	532	150	0.06-0.09	15.16	JFRM-ZB-0001-HH10X12
Sg10x50	291	150	0.06-0.09	15.16	JFRM-ZB-0001-HH10X50

Dimensions [mm]

Thread	d1	d2	d3	d4	d5	b1[40)]	b2	Part No.
Sg05x5	5	13.5	28	22.2	3.7	31-36	4.1	JFRM-ZB-0001-HH05X5
Sg06.35x12.7	6.35	13.5	28	22.2	3.7	31-36	4.1	JFRM-ZB-0001-HH06.35X12.7
Sg08x10	8	20	38.1	28.3	5.2	41-47	4.8	JFRM-ZB-0001-HH08X10
Sg08x15	8	20	38.1	28.3	5.2	41-47	4.8	JFRM-ZB-0001-HH08X15
Sg10x12	10	20	38.1	28.3	5.2	41-47	4.8	JFRM-ZB-0001-HH10X12
Sg10x50	10	20	38.1	28.3	5.2	41-47	4.8	JFRM-ZB-0001-HH10X50

[40)] Variable according to thread pitch / clearance

Radial forces

drylin® lead screw nuts are designed to absorb axial forces. Any radial forces that may occur in the application should be absorbed by additional linear guides.

▶ drylin® linear guides, starting from page 825

Temperature

drylin® lead screw nuts, which are manufactured from maintenance-free iglidur® materials, are principally suited for use in temperatures ranging from –20 °C to +90 °C (+150 °C, depending on material). Please note that the temperature also has an effect on the clearance of the nut, as well as the maximum load capacity. When the application is exposed to particularly low or high temperatures, we recommend testing the suitability of the lead screw nuts in this specific case by a practical test. In order to provide for the use in all temperature ranges, we have lead screw nuts available in various clearance classes.

Wet applications

Trapezoidal lead screw nuts from iglidur® J or iglidur® A180 must be used for applications in humid environments, especially for wet applications. These material are characterised by very low moisture absorption.

▶ iglidur® J, page 141 and ▶ iglidur® A180, page 349

Dirt

With the use of the maintenance-free iglidur® materials for lead screw nut production, drylin® lead screw drives feature completely dry-running operation. By deliberately avoiding lubricants, the adhesion of soft particles, such as dust and fibres is reduced. When compared to conventional, lubricated materials, it is common to see significant improvements in the service life in contaminated environments. However, in environments with significant contamination and hard particles, such as metal chips or granite dust, the lead screw should be covered.

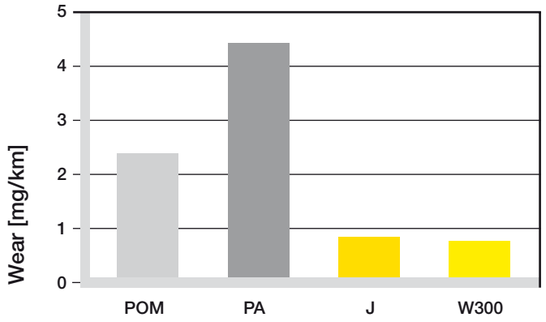


Diagram 01: Wear test on a rolled trapezoidal lead screw

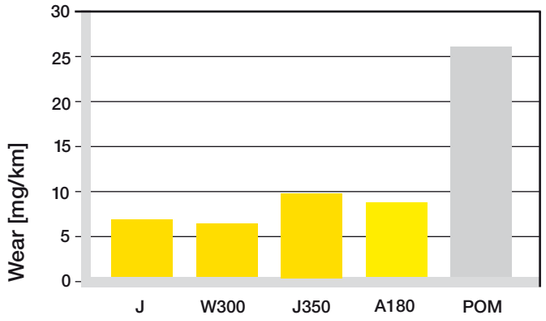


Diagram 02: Wear test on C15 lead screw drive
Stroke 140 mm, 50 N, lead screw C15 rolled, 450 rev/min

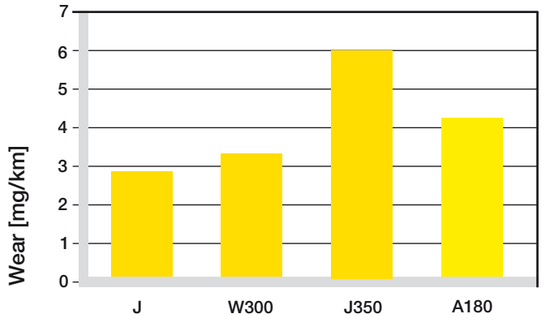


Diagram 03: Wear test on a VA lead screw
Stroke 140 mm, 50 N, lead screw C15 rolled, 450 rev/min

Lead screw drive inspection

drylin® lead screw drives are manufactured in accordance with DIN 103. Inspection is performed with standard thread plug gauges after production. The DIN 103 standard is converted to the corresponding size for any thread sizes that are not shown in the standard table. The hygroscopic and thermal properties of the material must be taken into account during selection. Dimensional changes can occur as a result of moisture and/or thermal exposure at the point of use. For these reasons, general DIN-compatibility cannot be guaranteed.

Noise

Noise can generally occur with the use of lead screw drives. In particular, long lead screws and long travel distances can cause self-induced vibrations in the systems.
Due to their good sliding characteristics, lead screw nuts from the tribologically optimised iglidur® materials tend to develop less noise than conventional plastics or metallic materials, such as bronze or brass. If your gliding lead screw drive develops noise, please contact us to discuss this with our experts.

▶ Anti backlash nut, page 1142

Clearance

The reliable operation of lead screw drives requires a basic amount of clearance. Application specific parameters must be observed in addition to the screw drive clearance caused by manufacturing tolerances. In addition to thermal and hygroscopic environmental influences, the minimum clearance to be accounted for in the application must also take into account the friction heat generated by the application. The use of gliding lead screw drives is therefore not recommended for precision drives without conducting practical tests. In practice, pre-tensioning has proven to be an effective counter-measure for undesirable clearance. In addition to the solutions from our standard product range, our technical support team will be pleased to discuss other options.

Efficiency

Efficiency is the ratio between the output and input power rating. drylin® lead screw nuts are characterised by low friction values, resulting in high efficiencies.
Single start trapezoidal lead screw nuts achieve efficiencies between 20 and 48% under dry running conditions.
High helix lead screw nuts achieve efficiencies between 50 and 80% under dry running conditions.
Even though drylin® lead screw nuts were developed for completely dry running conditions, lubrication can help to additionally increase efficiency.

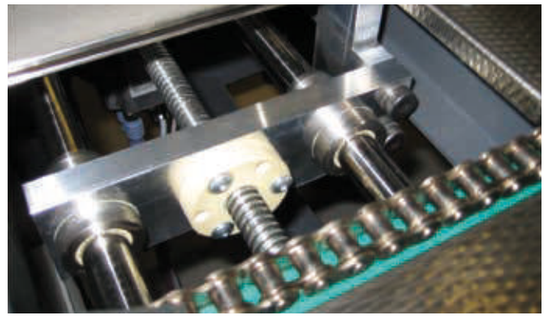
Self locking

Single start trapezoidal lead screw drives are self-locking. This means that the flank angle and the sliding friction prevent movement of the nut or the lead screw without the application of outside forces. As soon as the static friction is exceeded, the components are no longer self-locking. Multi start trapezoidal screw drives have a "residual self-locking" feature; high helix screw drives have no self-locking feature.

Anti backlash lead screw nuts

Backlash is the phenomenon created in the lead screw drives by the axial clearance. By means of a radial pretensioning vibrations (often the cause of noises, especially with long spindles and high speed) are significantly reduced.

Anti-backlash lead screw nuts in a glue application system of a seam gluing machine (wood industry). These ensure the utmost precision for this clearance-free adjustment drive.



Format adjustment in the paper industry with anti-backlash lead screw nut

Zero backlash lead screw nuts

Lead screw drives with steep thread for quick adjustments of small loads. The zero backlash principle provides for minimal backlash for the life of the product. Ideal for precise positioning and feed movements in medical, laboratory and printing systems and other life-science fields.
High helix nuts without zero backlash feature or trapezoidal thread should be used for high loads, dirt accumulation or extreme external influences.

Lead screw nut assembly

drylin® lead screw nuts must be secured against twisting and sag.

Lead screw nuts with flange

The maximum tightening torque for the assembly of flanged lead screw nuts is 2.5 Nm. We recommend that assembly screws are secured with a semi permanent thread locking glue. Metallic ferrules should be used for even higher tightening torques.

Cylindrical lead screw nuts

The outer diameter of cylindrical lead screw nuts is not designed for a press fit. We therefore recommend the use of keyways. In practice, a screw mount has proven to be effective with low forces. Gluing lead screws nuts is not recommended. However, if the lead screw nuts must be glued into place, suitable tests need to be performed under any circumstances.

Lead screw selection

The suitability and the operating behaviour of the system largely depend on the lead screws used with the nut. We recommend purchasing the nut and lead screw as a system from a single source. Lead screws are inspected with DIN 103 compliant gauges. In principle, drylin® lead screw drives can be used with lead nuts made from steel, stainless steel or hard-anodised aluminium. "Split" lead screws (right and left-handed threads on one lead screw) are available in addition to right-handed and left-handed versions.

Custom lead screws

Take advantage of our machining service - we manufacture ready to fit lead screws based on your needs. Please send us your drawing. We can then provide a quotation quickly.

Custom lead screw example

Custom nuts

Take advantage of our machining service - we manufacture lead screws nuts to suit your application. Please send us your drawing. We can then provide a quotation quickly.

Custom nut examples

Material selection

drylin® lead screw nuts are supplied in 5 standard materials:

iglidur® J: This material has the best friction values with the most leads crew materials and low moisture absorption
▶ **iglidur® J, page 141**

iglidur® W300: This material features high static strength
▶ **iglidur® W300, page 153.**

iglidur® J350: This material features high resistance to temperatures. Lead screw nuts from iglidur® J350 can be used up to 150 °C.
▶ **iglidur® J350, page 173**

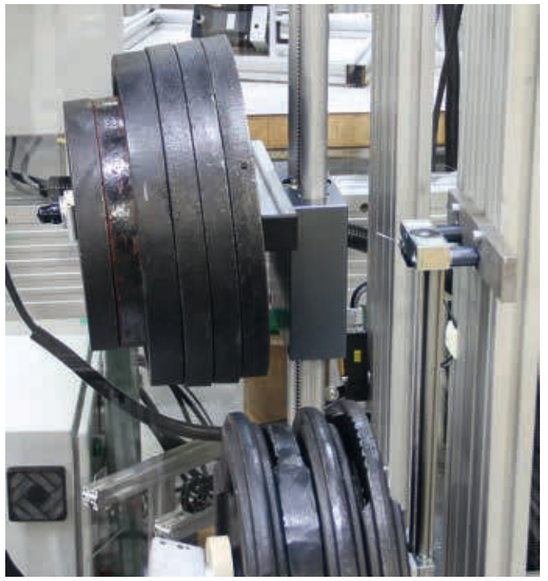
iglidur® R: This low-cost material is characterised by a low coefficient of friction and low wear.
▶ **iglidur® R, page 213**

iglidur® A180: This material meets the requirements of the FOOD AND DRUG ADMINISTRATION (FDA) and can therefore be used in direct contact with foods and pharmaceuticals. ▶ **iglidur® A180, page 349**

drylin® TR | Technical data

Service life

drylin® lead screw nuts are made from tribologically optimised materials. Already during the development phase, the focus is on optimising the friction properties of the drylin® lead screw units, with the objective of attaining the lowest possible wear rates and friction values. In order to make the most precise statements about service life and wear resistance, several hundred tests are conducted each year on the test equipment at the igus® test lab in Cologne. Our experts will gladly test your application as well.



Test rig at the igus® lab to determine service life

iglidur® material	Surface pressure
iglidur® J	4.0 MPa
iglidur® W300	5.0 MPa
iglidur® J350	3.0 MPa
iglidur® R	2.0 MPa
iglidur® A180	3.5 MPa

Table 01: Permitted continuous surface pressure in the threads

Tightening torque for drylin® connections between metal parts

Metric thread (Da)	Torque [Nm]	Recommended torque [Nm]
M3	0.5 - 1.1	0.7
M4	1.0 - 2.8	1.5
M5	2.0 - 5.5	3.0
M6	4.0 - 10.0	6.0
M8	8.0 - 23.0	15.0
M10	22.0 - 46.0	30.0

Note the minimal screw in depth for aluminium and zinc parts: 1.5 x Da

Required drive torque

The required drive torque of the threaded nut is obtained from the axial load, the lead screw pitch, the coefficient of surface friction of lead screw unit and the lead screw bearing. At high speeds, the acceleration torque must be taken into account, which may cause increased breakaway torque depending on the installation. Dirt, dust and the surface or the condition of the lead screw can increase the drive torque. However, lubrication can temporarily reduce the required drive forces.

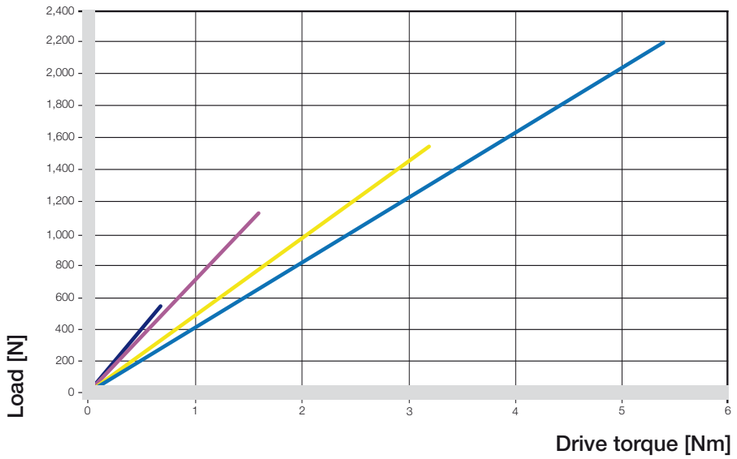


Diagram 06:
Required drive torque of lead screw units Ø8 to Ø14 - assuming μ: 0.25, without considering the lead screw bearing

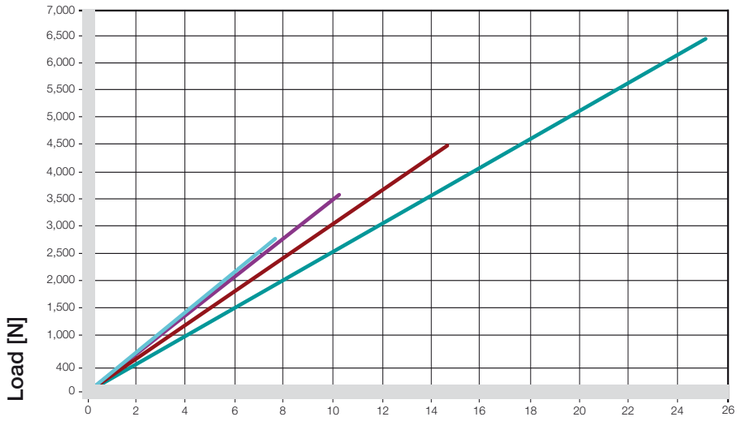


Diagram 07:
Required drive torque of lead screw units Ø16 to Ø24 - assuming μ: 0.25, without considering the lead screw bearing

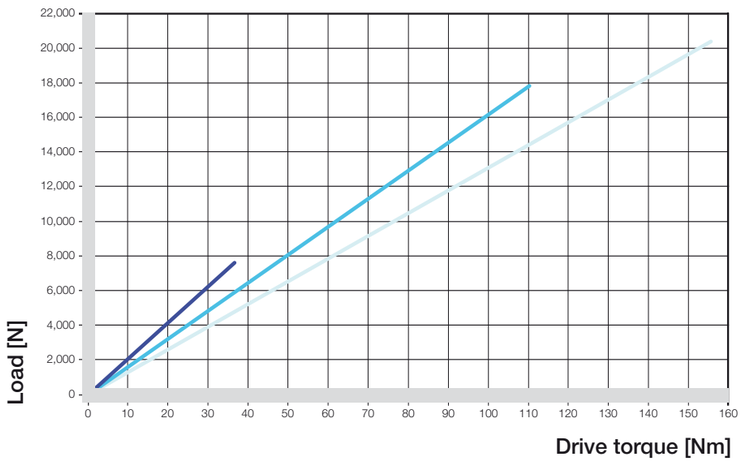


Diagram 08:
Required drive torque of lead screw units Ø30 to Ø50 - assuming μ: 0.25, without considering the lead screw bearing

Max. permissible pv value

With the pv value and the percentage contact area stated in the dimensions tables, the permissible sliding speed and from it the feed speed for each thread size can be determined.

Operating time (ESD)	pv value$_{max.}$ [MPa · m/s]	(applicable for iglidur® J, W300, A180, R and J350)
100 %	0.08	
50 %	0.2	
10 %	0.4	

Table 03: Standard values when using drylin® plastic nuts without lubrication (with 500 mm stroke). A correction factor must be reckoned for very short or long strokes.

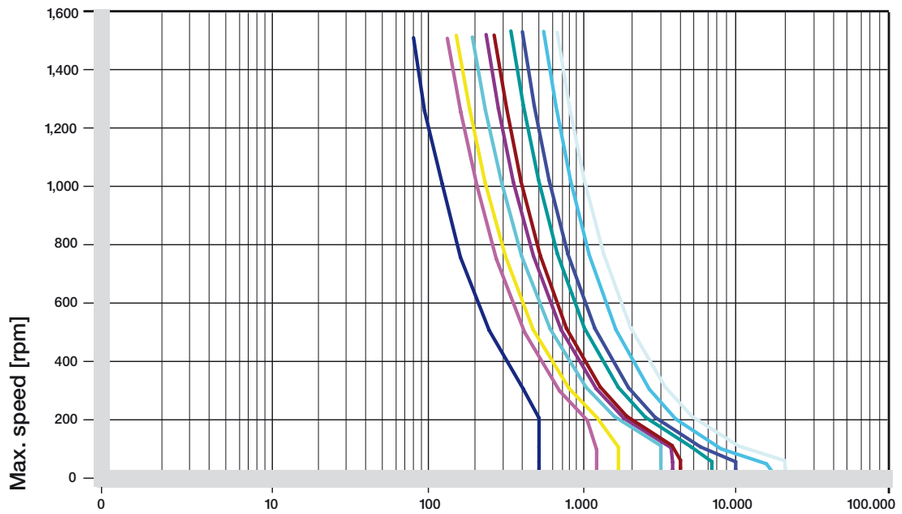


Diagram 09: Maximum dynamic load with lead screw units with 10% ESD

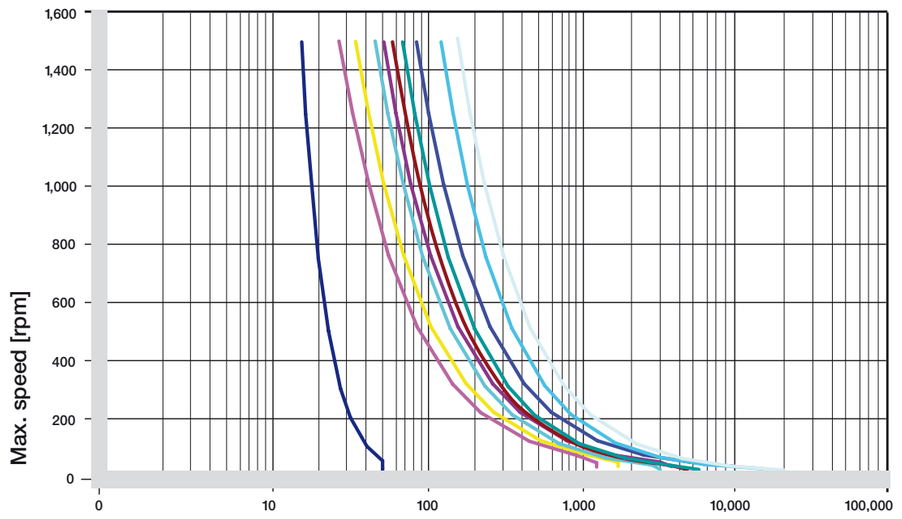


Diagram 10: Maximum dynamic load for lead screw units with 100% ESD

Tr08x1,5 Tr10x2 Tr12x3 Tr16x4 Tr18x4
Tr20x4 Tr24x5 Tr30x6 Tr40x7 Tr50x8

drylin® TR | Lead screws | Product range

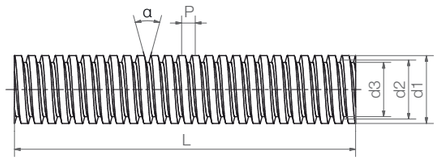
Single start lead screws

C15, rolled (1.0401)

Stainless steel, rolled (1.4301)

Aluminium, rolled (EN AW 6082)

With machined end

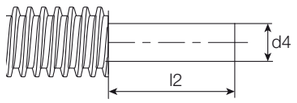


Technical data

Helix deviation	0.1 mm to 300 mm
Straightness (standard)	0.3 mm to 300 mm
Aligned	<0.1 mm to 300 mm
Tolerance (according to DIN 103)	7e

The tensile/compressive strength of the EN AW 6082 lead screw material is 160 MPa per mm² (elongation limit 0.2 mm).

With machined end



Technical data

Thread	Dir. of rotation right	Dir. of rotation left	Material C15	Material Stainless steel 1.4301	Material Aluminium EN AW 6082	Pitch P [mm]	Pitch-Angle α [°]	Weight C15 [kg/m]	Weight Stainless steel [kg/m]	Weight Aluminium [kg/m]
Tr08x1,5	●	●	●	●	–	1.5	3.42	0.39	0.40	0.14
Tr10x2	●	●	●	●	●	2	3.64	0.62	0.62	0.21
Tr10x3	●	●	●	●	–	3	5.45	0.62	0.62	0.21
Tr12x3	●	●	●	●	●	3	4.55	0.89	0.89	0.31
Tr14x3	●	●	●	●	–	3	3.90	1.21	1.22	0.42
Tr14x4	●	●	●	●	–	4	5.20	1.21	1.22	0.42
Tr16x2	●	●	●	●	–	2	2.28	1.58	1.59	0.54
Tr16x4	●	●	●	●	●	4	4.55	1.58	1.59	0.54
Tr18x4	●	●	●	●	●	4	4.05	2.00	2.01	0.69
Tr20x4	●	●	●	●	●	4	3.64	2.47	2.48	0.85
Tr24x5	●	●	●	●	–	5	3.79	3.55	3.57	1.22
Tr26x5	●	●	●	●	–	5	3.50	4.17	4.19	1.43
Tr28x5	●	●	●	●	–	5	3.25	4.83	4.86	1.66
Tr30x6	●	●	●	●	–	6	3.64	5.55	5.58	1.91
Tr32x6	●	●	●	●	–	6	3.42	6.31	6.35	2.17
Tr36x6	●	●	●	●	–	6	3.04	7.99	8.04	2.75
Tr40x7	●	●	●	●	–	7	3.19	9.86	9.93	3.39
Tr50x8	●	●	●	●	–	8	2.92	15.41	15.51	5.30

Technical data – lead screws with machined end

Thread	Material C15	Material Stainless steel 1.4301	Material Aluminium EN AW 6082	Pitch P [mm]	Pitch-Angle [°]	Weight C15 [kg/m]	Weight Stainless steel [kg/m]
Tr10x2	●	●	–	2	3.64	0.62	0.62
Tr14x4	●	●	–	4	5.20	1.21	1.22
Tr18x4	●	●	–	4	4.05	2.00	2.01
Tr24x5	●	●	–	5	3.79	3.55	3.57

Order key

Part number	Thread	Options

PTGSG-10X 2 -01- R -Z-1000-ES

Lead screw | Diameter | Pitch | Number of turns | Hand of rotation | With machined end | Length [mm] | Lead screw material

Options:
Hand of rotation
R: Right
L: Left
Length in mm: Freely selectable (see table)
Lead screw material
blank: C15, rolled
ES: Stainless steel, rolled
AL: Aluminium, rolled

Talk to us!
● Custom machining of drylin® lead screws

Inch **ACME lead screw (USA standard)**
▶ Page 1406

Dimensions [mm]

Outer Ø d1 min.	Outer Ø d1 max.	Flank Ø d2 min.	Flank Ø d2 max.	Core Ø d3 min.	Core Ø d3 max.	Max. length L C15 / ES	Max. length L AL	Part No.
7.8	8	7.1	7.2	5.4	6.2	1,500	–	PTGSG-08X1.5-01-□-□
9.8	10	8.7	8.9	7.2	7.5	3,000	1,000	PTGSG-10X2-01-□-□
9.8	10	8.2	8.4	6.2	6.5	3,000	–	PTGSG-10X3-01-□-□
11.8	12	10.2	10.4	7.7	8.5	3,000	1,000	PTGSG-12X3-01-□-□
13.8	14	12.2	12.4	9.7	10.5	3,000	–	PTGSG-14X3-01-□-□
13.7	14	11.6	11.9	9.1	9.5	3,000	–	PTGSG-14X4-01-□-□
15.8	16	14.7	14.9	11.8	12.8	3,000	–	PTGSG-16X2-01-□-□
15.7	16	13.6	13.9	10.5	11.5	3,000	1,000	PTGSG-16X4-01-□-□
17.7	18	15.6	15.9	12.5	13.5	3,000	2,000	PTGSG-18X4-01-□-□
19.7	20	17.6	17.9	14.5	15.5	3,000	2,000	PTGSG-20X4-01-□-□
23.7	24	21.1	21.4	17.3	18.5	3,000	–	PTGSG-24X5-01-□-□
25.7	26	23.1	23.4	19.3	20.5	3,000	–	PTGSG-26X5-01-□-□
27.7	28	25.1	25.4	21.3	22.5	3,000	–	PTGSG-28X5-01-□-□
29.6	30	26.5	26.9	21.6	23.0	3,000	–	PTGSG-30X6-01-□-□
31.6	32	28.5	28.9	24.5	25.0	3,000	–	PTGSG-32X6-01-□-□
35.6	36	32.5	32.9	27.6	29.0	3,000	–	PTGSG-36X6-01-□-□
39.6	40	36.0	36.4	30.4	32.0	3,000	–	PTGSG-40X7-01-□-□
49.6	50	45.5	45.9	39.2	41.0	3,000	–	PTGSG-50X8-01-□-□

Dimensions [mm] – lead screw with machined end

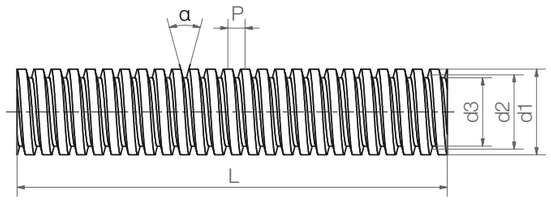
Outer Ø d1 min.	Outer Ø d1 max.	Flank Ø d2 min.	Flank Ø d2 max.	Core Ø d3 min.	Core Ø d3 max.	l2	Keyway Ø d4	max. Length L	Part No.
9.8	10	8.7	8.9	7.2	7.5	17	6 h9	1,000	PTGSG-10X2-01-□-Z-□
13.7	14	11.6	11.9	9.1	9.5	20	8 h9	2,000	PTGSG-14X4-01-□-Z-□
17.7	18	15.6	15.9	12.5	13.5	118	12 h9	2,000	PTGSG-18X4-01-□-Z-□
23.7	24	21.1	21.4	17.3	18.5	144	14 h9	2,000	PTGSG-24X5-01-□-Z-□

drylin® TR | Lead screws | Product range

Multi start lead screws

C15, rolled (1.0401)

Stainless steel, rolled (1.4301)



Technical data

Helix deviation	0.1 mm to 300 mm
Straightness (standard)	0.3 mm to 300 mm
Aligned	<0.1 mm to 300 mm
Tolerance (according to DIN 103)	7e

Technical data

Thread	Hand of rotation		Material		Pitch	Pitch-	Weight	
	right	left	C15	Stainless steel 1.4301	P	Angle α	C15	Stainless steel
					[mm]	[°]	[kg/m]	[kg/m]
Tr06x2P1	●	–	●	●	2	6.06	0.22	0.22
Tr10x4P2	●	●	●	●	6	7.26	0.62	0.62
Tr12x6P3	●	●	●	●	8	9.04	0.89	0.89
Tr16x8P4	●	●	●	●	8	9.04	1.58	1.59
Tr18x8P4	●	●	●	●	8	8.05	2.00	2.01
Tr20x8P4	●	●	●	●	8	7.26	2.47	2.48

Order key

Part number	Thread	Options

PTGSG-10X4P2-02- R -1000-ES

Lead screw | Diameter | Pitch | Number of turns | Hand of rotation | Length [mm] | Lead screw material

Options:

Hand of rotation
- **R:** Right
- **L:** Left

Length in mm: Freely selectable (see table)

Lead screw material
- **blank:** C15, rolled
- **ES:** Stainless steel, rolled
- **AL:** Aluminium, rolled

Talk to us!

All drylin® leads screws can be custom machined. Please send us your drawing. We can then provide a quotation quickly.

Dimensions [mm]

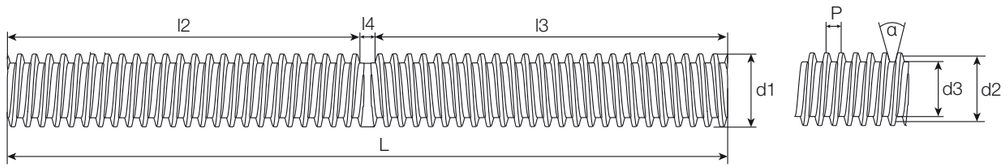
Outer Ø d1		Flank Ø d2		Core Ø d3		Max. length L	Part No.
min.	max.	min.	max.	min.	max.		
5.9	6	5.2	5.3	3.4	3.5	3,000	PTGSG-06X2P1-02-□-□
9.8	10	8.7	8.9	7.2	7.5	3,000	PTGSG-10X4P2-02-□-□
11.8	12	10.2	10.4	7.7	8.5	3,000	PTGSG-12X6P3-02-□-□
15.7	16	13.6	13.9	10.5	11.5	3,000	PTGSG-16X8P4-02-□-□
17.7	18	15.6	15.9	12.5	13.5	3,000	PTGSG-18X8P4-02-□-□
19.7	20	17.6	17.9	14.5	15.5	3,000	PTGSG-20X8P4-02-□-□

drylin® TR | Lead screws | Product range

LH/RH lead screws

Technical data

Helix deviation	0.1 mm to 300 mm
Straightness (standard)	0.3 mm to 300 mm
Aligned	<0.1 mm to 300 mm
Tolerance (according to DIN 103)	7e



Technical data

Thread	Hand of rotation		Material		Pitch	Pitch-Angle α	Weight	
	right	left	C15	Stainless steel 1.4301	P		C15	Stainless steel
					[mm]	[°]	[kg/m]	[kg/m]
Tr10x2	●	●	●	●	2	3.64	0.62	0.62
Tr14x4	●	●	●	●	4	5.20	1.21	1.22
Tr18x4	●	●	●	●	4	4.05	2.00	2.01
Tr24x5	●	●	●	●	5	3.79	3.55	3.57

[46] Non-usable thread transition
[47] Length right-thread (l3)
[48] Length left-thread (l2)

Order key

Part number	Thread	Options

PTGSG-10X2-01-R/L-100-100-ES

Lead screw	Diameter	Pitch	Turns	LH/RH	[47] Length right [mm]	[48] Length left [mm]	Lead screw material
PTGSG	10X2	01	R/L		100	100	ES

Options:
[47] **l3:** Length right-hand thread
[48] **l2:** Length left-hand thread
Length in mm: Freely selectable (see table)
Lead screw material
blank: C15, rolled
ES: Stainless steel, rolled

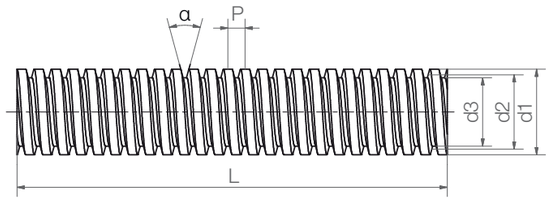
Talk to us!
All drylin® leads screws can be custom machined. Please send us your drawing.
We can then provide a quotation quickly.

Dimensions [mm]

Outer Ø d1		Flank Ø d2		Core Ø d3		Thread transition	max. total length	Part No.
min.	max.	min.	max.	min.	max.	l4 [46]	L	
9.8	10	8.7	8.9	7.2	7.5	20	1,000	PTGSG-10X2-01-R/L-□[47]-□[48]
13.7	14	11.6	11.9	9.1	9.5	30	1,000	PTGSG-14X4-01-R/L-□[47]-□[48]
17.7	18	15.6	15.9	12.5	13.5	55	1,500	PTGSG-18X4-01-R/L-□[47]-□[48]
23.7	24	21.1	21.4	17.3	18.5	60	2,000	PTGSG-24X-5-01-R/L-□[47]-□[48]

drylin® TR | Lead screws | Product range

Metric lead screws



Technical data

Helix deviation	0.1 mm to 300 mm
Straightness (standard)	0.3 mm to 300 mm
Aligned	<0.1 mm to 300 mm
Tolerance (according to DIN 103)	7e

Technical data

Thread	Hand of rotation		Material		Pitch	Pitch-Angle	Weight
	right	left	C15	Stainless steel 1.4301	P [mm]	α [°]	[kg/m]
M3	●	–	–	●	0.5	3.04	0.06
M4	●	–	–	●	0.7	3.19	0.10
M5	●	–	–	●	0.8	2.92	0.16
M6	●	–	–	●	1.0	3.04	0.22

Order key

Part number	Thread	Options

PTGSG-M3-01-R-1000-ES

Lead screw	Thread size	Turns	Hand of rotation	Length [mm]	Lead screw material

Options:
Length in mm: Freely selectable (see table)
Lead screw material
ES: Stainless steel, rolled

Talk to us!
All drylin® leads screws can be custom machined. Please send us your drawing.
We can then provide a quotation quickly.

Dimensions [mm]

Outer Ø d1		Flank Ø d2		Core Ø d3		Max. length L	Part No.
min.	max.	min.	max.	min.	max.		
2.8	3.0	2.5	2.6	2.2	2.3	1,000	**PTGSG-M3-01-R-500-ES**
3.8	4.0	3.4	3.5	2.9	3.1	1,000	**PTGSG-M4-01-R-500-ES**
4.8	4.9	4.3	4.4	3.8	4.0	1,000	**PTGSG-M5-01-R-500-ES**
5.7	5.9	5.2	5.3	4.5	4.7	3,000	**PTGSG-M6-01-R-500-ES**

drylin® TR | Lead screw nuts | Technical data

Highly efficient at all speeds: iglidur® J

Thread	Efficiency	Idling torque[118)]	Coefficient of friction
	η	[Nm]	μ
Single start			
Tr08x1,5	19-37	0.0032	0.1-0.25
Tr10x2	20-39	0.0041	0.1-0.25
Tr10x3	27-48	0.0049	0.1-0.25
Tr12x3	24-44	0.0054	0.1-0.25
Tr14x3	24-40	0.0059	0.1-0.25
Tr14x4	26-47	0.0067	0.1-0.25
Tr16x2	14-28	0.0056	0.1-0.25
Tr16x4	24-44	0.0072	0.1-0.25
Tr18x4	22-41	0.0077	0.1-0.25
Tr20x4	20-39	0.0082	0.1-0.25
Tr24x5	21-40	0.0100	0.1-0.25
Tr26x5	19-38	0.0105	0.1-0.25
Tr28x5	18-36	0.0113	0.1-0.25
Tr30x6	20-39	0.0124	0.1-0.25
Tr32x6	19-37	0.0129	0.1-0.25
Tr36x6	17-34	0.0139	0.1-0.25
Tr40x7	18-36	0.0157	0.1-0.25
Tr50x8	17-34	0.0189	0.1-0.25
multi start			
Tr06x2P1	29-51	0.0031	0.1-0.25
Tr10x4P2	33-55	0.0057	0.1-0.25
Tr12x6P3	37-60	0.0079	0.1-0.25
Tr16x8P4	37-60	0.0105	0.1-0.25
Tr18x8P4	35-58	0.011	0.1-0.25
Tr20x8P4	33-55	0.0115	0.1-0.25
Metric			
M3	17-34	0.0012	0.1-0.25
M4	18-36	0.0016	0.1-0.25
M5	17-34	0.0019	0.1-0.25
M6	17-34	0.0023	0.1-0.25

Highly resilient and wear-resistant: iglidur® W300

Efficiency	Idling torque[118)]	Coefficient of friction
η	[Nm]	μ
19-33	0.0036	0.12-0.25
20-34	0.0046	0.12-0.25
27-44	0.0054	0.12-0.25
24-39	0.0060	0.12-0.25
21-36	0.0066	0.12-0.25
26-43	0.0075	0.12-0.25
14-25	0.0064	0.12-0.25
24-39	0.0081	0.12-0.25
22-37	0.0086	0.12-0.25
20-34	0.0093	0.12-0.25
21-35	0.0113	0.12-0.25
19-34	0.0119	0.12-0.25
18-32	0.0125	0.12-0.25
20-34	0.0138	0.12-0.25
19-33	0.0145	0.12-0.25
17-30	0.0157	0.12-0.25
18-31	0.0177	0.12-0.25
17-30	0.0215	0.12-0.25
29-46	0.0034	0.12-0.25
33-51	0.0063	0.12-0.25
37-56	0.0085	0.12-0.25
37-56	0.0119	0.12-0.25
35-53	0.0119	0.12-0.25
33-51	0.0126	0.12-0.25
17-30	0.0013	0.12-0.25
18-31	0.0018	0.12-0.25
17-30	0.0021	0.12-0.25
17-30	0.0026	0.12-0.25

[118)] Theoretical idling torque assuming the best possible coefficient of friction at a 5N load

drylin® TR | Lead screw nuts | Technical data

For temperatures up to +150 °C: iglidur® J350

Thread	Efficiency	Idling torque[118)]	Coefficient of friction
	η	[Nm]	μ
Single start			
Tr08x1,5	19-26	0.0046	0.17-0.25
Tr10x2	20-27	0.0059	0.17-0.25
Tr10x3	27-35	0.0067	0.17-0.25
Tr12x3	24-34	0.0069	0.17-0.25
Tr14x3	21-28	0.0084	0.17-0.25
Tr14x4	26-34	0.0093	0.17-0.25
Tr16x2	14-19	0.0084	0.17-0.25
Tr16x4	24-31	0.0101	0.17-0.25
Tr18x4	22-29	0.0109	0.17-0.25
Tr20x4	20-27	0.0118	0.17-0.25
Tr24x5	21-28	0.0143	0.17-0.25
Tr26x5	19-26	0.0152	0.17-0.25
Tr28x5	18-25	0.0163	0.17-0.25
Tr30x6	20-27	0.0177	0.17-0.25
Tr32x6	19-26	0.0186	0.17-0.25
Tr36x6	17-24	0.0203	0.17-0.25
Tr40x7	18-24	0.0228	0.17-0.25
Tr50x8	-	-	-
multi start			
Tr06x2P1	29-38	0.0042	0.17-0.25
Tr10x4P2	33-42	0.0076	0.17-0.25
Tr12x6P3	37-47	0.0101	0.17-0.25
Tr16x8P4	37-47	0.0135	0.17-0.25
Tr18x8P4	35-44	0.0144	0.17-0.25
Tr20x8P4	33-42	0.0152	0.17-0.25
M3	17-24	0.0017	0.17-0.25
M4	18-24	0.0023	0.17-0.25
M5	17-23	0.0028	0.17-0.25
M6	17-24	0.0034	0.17-0.25

The low-cost option for serial production: iglidur® R

Efficiency	Idling torque[118)]	Coefficient of friction
η	[Nm]	μ
16-23	0.0053	0.2-0.3
17-24	0.0067	0.2-0.3
23-32	0.0075	0.2-0.3
20-28	0.0085	0.2-0.3
18-25	0.0095	0.2-0.3
23-31	0.0104	0.2-0.3
12-16	0.0097	0.2-0.3
20-28	0.0114	0.2-0.3
19-26	0.0124	0.2-0.3
17-24	0.0134	0.2-0.3
18-25	0.0162	0.2-0.3
17-23	0.0172	0.2-0.3
16-22	0.0182	0.2-0.3
17-24	0.0200	0.2-0.3
16-23	0.0210	0.2-0.3
-	-	-
-	-	-
-	-	-
25-34	0.0047	0.2-0.3
29-38	0.0084	0.2-0.3
33-43	0.0111	0.2-0.3
33-43	0.0148	0.2-0.3
31-40	0.0158	0.2-0.3
29-38	0.0168	0.2-0.3
15-21	0.0019	0.2-0.3
15-22	0.003	0.2-0.3
14-20	0.0032	0.2-0.3
15-21	0.0038	0.2-0.3

[118)] Theoretical idling torque assuming the best possible coefficient of friction at a 5N load

drylin® TR | Lead screw nuts | Technical data

FDA-compliant for the food/pharmaceuticals industry: iglidur® A180

Thread	Efficiency	Idling torque[118)]	Coefficient of friction
	η	[Nm]	μ
Single start			
Tr08x1,5	19-28	0.0042	0.15-0.25
Tr10x2	20-30	0.0054	0.15-0.25
Tr10x3	27-38	0.0062	0.15-0.25
Tr12x3	24-44	0.0054	0.15-0.25
Tr14x3	21-31	0.0077	0.15-0.25
Tr14x4	26-47	0.0067	0.15-0.25
Tr16x2	14-21	0.0076	0.15-0.25
Tr16x4	24-34	0.0093	0.15-0.25
Tr18x4	22-32	0.0100	0.15-0.25
Tr20x4	20-30	0.0108	0.15-0.25
Tr24x5	21-30	0.0131	0.15-0.25
Tr26x5	19-29	0.0134	0.15-0.25
Tr28x5	18-27	0.0146	0.15-0.25
Tr30x6	20-30	0.0162	0.15-0.25
Tr32x6	19-28	0.0169	0.15-0.25
Tr36x6	17-26	0.0184	0.15-0.25
Tr40x7	18-27	0.0207	0.15-0.25
Tr50x8	-	-	-
multi start			
Tr06x2P1	29-41	0.0039	0.15-0.25
Tr10x4P2	33-45	0.0071	0.15-0.25
Tr12x6P3	37-50	0.0095	0.15-0.25
Tr16x8P4	37-50	0.0126	0.15-0.25
Tr18x8P4	35-48	0.0134	0.15-0.25
Tr20x8P4	33-45	0.0141	0.15-0.25
Metric			
M3	17-26	0.0015	0.15-0.25
M4	18-27	0.0021	0.15-0.25
M5	17-25	0.0025	0.15-0.25
M6	17-26	0.0031	0.15-0.25

[118)] Theoretical idling torque assuming the best possible coefficient of friction at a 5N load

My sketches

drylin® trapezoidal thread

drylin® TR | Lead screw nuts | Product range

Single start lead screw nuts, cylindrical (Form S)

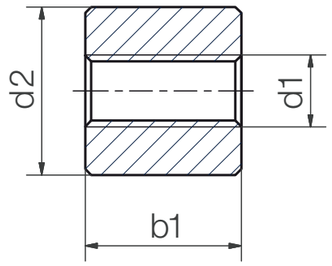
iglidur® J

iglidur® W300

iglidur® J350

iglidur® R

iglidur® A180



Order key

Type							d2	b1	Thread
☐S	R	M	-	22	15	TR 10X2			

iglidur® material	Form S	Hand of rotation	Metric	Outer Ø [mm]	Length [mm]	Thread type	Diameter	Lead

Options:
Hand of rotation
R: Right
L: Left

J	High efficiency at all speeds
W(300)	Extremely strong and wear-resistant
J350	For temperatures up to +150 °C
R	The low-cost option for serial production
A180	FDA-compliant for the food and pharmaceutical industries

Technical data

Thread	Hand of rotation right	Hand of rotation left	Effective supporting surface [mm²]	Max. stat. axial F [N] iglidur® J	W300	J350	R	A180
Tr08x1,5	●	●	205	500[43)]	500[43)]	500[43)]	500[43)]	500[43)]
Tr08x1,5	●	●	137	547	683	410	273	478
Tr10x2	●	●	212	848	1,060	636	424	742
Tr10x2	●	●	283	1,131	1,414	848	565	990
Tr10x3	●	●	200	801	1,001	601	401	701
Tr10x3	●	●	267	1,068	1,335	801	534	935
Tr12x3	●	●	297	1,188	1,484	891	594	1,039
Tr12x3	●	●	396	1,583	1,979	1,188	792	1,385
Tr14x3	●	●	550	2,199	2,749	1,649	1,100	1,924
Tr14x4	●	●	396	1,583	1,979	1,188	792	1,385
Tr14x4	●	●	528	2,111	2,639	1,583	1,056	1,847
Tr16x2	●	●	565	2,262	2,827	1,696	1,131	1,979
Tr16x2	●	●	754	3,016	3,770	2,262	1,508	2,639
Tr16x4	●	●	528	2,111	2,639	1,583	1,056	1,847
Tr16x4	●	●	528	2,111	2,639	1,583	1,056	1,847
Tr16x4	●	●	704	2,815	3,519	2,111	1,407	2,463
Tr18x4	●	●	679	2,3624[43)]	2,362[43)]	2,362[43)]	2,362[43)]	2,362[43)]
Tr18x4	●	●	679	2,714	3,393	2,036	1,357	2,375
Tr18x4	●	●	905	3,619	4,524	2,714	1,810	3,167

[43)] Reduced axial load due to nut geometry

Dimensions [mm]

d1	d2	b1	Weight [g] iglidur® J	W300	J350	R	A180	Part No.
8	14	18	2.8	2.9	2.7	2.6	2.7	**☐S☐M-1418TR08X1.5**
8	18	12	3.7	3.8	3.5	3.4	3.6	**☐S☐M-1812TR08X1.5**
10	22	15	6.7	7.0	6.5	6.3	6.6	**☐S☐M-2215TR10X2**
10	22	20	9.0	9.3	8.7	8.4	8.8	**☐S☐M-2220TR10X2**
10	22	15	6.7	7.0	6.5	6.3	6.6	**☐S☐M-2215TR10X3**
10	22	20	9.0	9.3	8.7	8.4	8.8	**☐S☐M-2220TR10X3**
12	26	18	11.2	11.6	10.8	10.5	11.0	**☐S☐M-2618TR12X3**
12	26	24	14.9	15.4	14.4	13.9	14.6	**☐S☐M-2624TR12X3**
14	30	28	23.1	23.8	22.3	21.5	22.6	**☐S☐M-3028TR14X3**
14	30	21	17.3	17.9	16.7	16.1	17.0	**☐S☐M-3021TR14X4**
14	30	28	23.1	23.8	22.3	21.5	22.6	**☐S☐M-3028TR14X4**
16	36	24	29.2	30.1	28.2	27.2	28.6	**☐S☐M-3624TR16X2**
16	36	32	38.9	40.2	37.6	36.3	38.2	**☐S☐M-3632TR16X2**
16	30	24	18.1	18.7	17.5	16.9	17.7	**☐S☐M-3024TR16X4**
16	36	24	29.2	30.1	28.2	27.2	28.6	**☐S☐M-3624TR16X4**
16	36	32	38.9	40.2	37.6	36.3	38.2	**☐S☐M-3632TR16X4**
18	30	27	18.2	18.8	17.6	17.0	17.8	**☐S☐M-3027TR18X4**
18	40	27	40.3	41.6	39.0	37.6	39.5	**☐S☐M-4027TR18X4**
18	40	36	53.8	55.5	52.0	50.1	52.7	**☐S☐M-4036TR18X4**

drylin® TR | Lead screw nuts | Product range

Single start lead screw nuts, cylindrical (Form S)

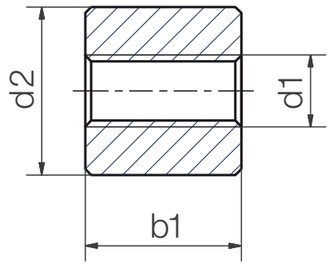
iglidur® J

iglidur® W300

iglidur® J350

iglidur® R

iglidur® A180



Order key

Type				d2	b1	Thread
☐S	R	M	-	30	25	TR 20X4

iglidur® material	Form S	Hand of rotation	Metric	Outer Ø [mm]	Length [mm]	Thread type	Diameter	Lead

Options:
Hand of rotation
R: Right
L: Left

J	High efficiency at all speeds
W(300)	Extremely strong and wear-resistant
J350	For temperatures up to +150 °C
R	The low-cost option for serial production
A180	FDA-compliant for the food and pharmaceutical industries

Technical data

Thread	Hand of rotation right	Hand of rotation left	Effective supporting surface [mm²]	Max. stat. axial F [N] J	W300	J350	R	A180
Tr20x4	●	●	707	2.060[43]	3.534	2.121	1.414	2.474
Tr20x4	●	●	848	3.393	4.241	2.545	1.696	2.969
Tr20x4	●	●	1.131	4.524	5.655	3.393	2.262	3.958
Tr24x5	●	●	1.216	4.863	6.079	3.647	2.432	4.255
Tr24x5	●	●	1.621	6.484	8.105	4.863	3.242	5.674
Tr26x5	●	●	1.440	5.759	7.198	4.319	2.879	5.039
Tr26x5	●	●	1.920	7.678	9.598	5.759	3.839	6.718
Tr28x5	●	●	1.682	6.729	8.412	5.047	3.365	5.888
Tr28x5	●	●	2.243	8.972	11.215	6.729	4.486	7.851
Tr30x6	●	●	1.909	7.634	9.543	5.726	3.817	6.680
Tr30x6	●	●	2.545	10.179	12.723	7.634	5.089	8.906
Tr32x6	●	●	3.134	12.535	15.669	9.401	6.267	10.968
Tr36x6	●	●	3.732	14.929	18.661	-	-	13.063
Tr40x7	●	●	4.587	18.347	22.934	-	-	16.054
Tr50x8	●	●	7.226	28.903	-	-	-	-

[43] Reduced axial load due to nut geometry

Dimensions [mm]

d1	d2	b1	Weight [g] J	W300	J350	R	A180	Part No.
20	30	25	14,6	15,1	14,1	13,6	14,3	**☐S☐M-3025TR20X4**
20	45	30	57,0	58,9	55,1	53,2	55,9	**☐S☐M-4530TR20X4**
20	45	40	76,1	78,5	73,5	71,0	74,5	**☐S☐M-4540TR20X4**
24	50	36	81,1	83,6	78,3	75,6	79,4	**☐S☐M-5036TR24X5**
24	50	48	108,1	111,5	104,4	100,8	105,9	**☐S☐M-5048TR24X5**
26	50	39	83,2	85,9	80,5	77,7	81,6	**☐S☐M-5039TR26X5**
26	50	52	111,0	114,5	107,3	103,5	108,8	**☐S☐M-5052TR26X5**
28	60	42	138,4	142,8	133,8	129,1	135,6	**☐S☐M-6042TR28X5**
28	60	56	184,5	190,4	178,3	172,2	180,8	**☐S☐M-6056TR28X5**
30	60	45	142,2	146,7	137,4	132,6	139,3	**☐S☐M-6045TR30X6**
30	60	60	189,6	195,6	183,2	176,9	185,8	**☐S☐M-6060TR30X6**
32	60	60	180,9	186,7	174,8	168,7	177,2	**☐S☐M-6060TR32X6**
36	75	72	364,8	376,4	-	-	357,4	**☐S☐M-7572TR36X6**
40	76	80	391,0	403,4	-	-	383,1	**☐S☐M-7680TR40X7**
50	90	100	655,3	-	-	-	-	**☐S☐M-90100TR50X8**

drylin® TR | Lead screw nuts | Product range

Multi start lead screw nuts, cylindrical (Form S)

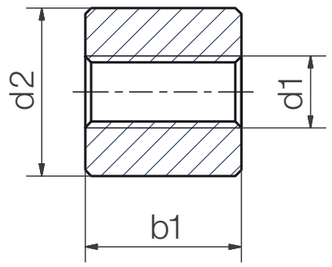
iglidur® J

iglidur® W300

iglidur® J350

iglidur® R

iglidur® A180



Order key

Type				d2	b1	Thread
☐	S	R	M -	28	35	TR 12X6P3

iglidur® material	Form S	Hand of rotation	Metric	Outer Ø [mm]	Length [mm]	Thread type	Diameter	Lead

Options:
Hand of rotation
R: Right
L: Left

J	High efficiency at all speeds
W(300)	Extremely strong and wear-resistant
J350	For temperatures up to +150 °C
R	The low-cost option for serial production
A180	FDA-compliant for the food and pharmaceutical industries

Technical data

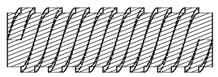
Thread	Hand of rotation		Effective supporting surface	Max. stat. axial F [N] iglidur®				
	right	left	[mm²]	J	W300	J350	R	A180
Tr06x2P1	●	-	112	200[43]	200[43]	200[43]	200[43]	200[43]
Tr12x6P3	●	●	396	1,346	1,682	1,009	673	1,178
Tr12x6P3	●	●	396	1,346	1,682	1,009	673	1,178
Tr16x8P4	●	●	528	1,794	2,243	1,346	897	1,570
Tr16x8P4	●	●	704	2,393	2,991	1,794	1,196	2,094
Tr18x8P4	●	-	804	2,734	3,418	2,051	1,367	2,393
Tr20x8P4	●	-	1,131	3,845	4,807	2,884	1,923	3,365

[43] Reduced axial load due to nut geometry

Dimensions [mm]

d1	d2	b1	Weight [g] iglidur®					Part No.
			J	W300	J350	R	A180	
6	14	13	2.4	2.5	2.4	2.3	2.4	**☐SRM-1413TR06X2P1**
12	26	24	14.9	12.4	14.4	13.9	14.6	**☐S☐M-2624TR12X6P3**
12	30	24	21.2	17.7	20.5	19.8	20.8	**☐S☐M-3024TR12X6P3**
16	30	24	18.1	15.1	17.5	16.9	17.7	**☐S☐M-3024TR16X8P4**
16	36	32	38.9	32.4	37.6	36.3	38.2	**☐S☐M-3632TR16X8P4**
18	40	36	53.8	44.7	52.0	50.1	52.7	**☐SRM-4036TR18X8P4**
20	45	40	76.1	63.3	73.5	71.0	74.5	**☐SRM-4540TR20X8P4**

Definition: two-start lead screw nuts
Example 8P4 pitch



P4: Distance to the next thread 4 mm
8: Pitch 8 mm

drylin® TR | Lead screw nuts | Product range

Cylindrical lead screw nuts with spanner flat

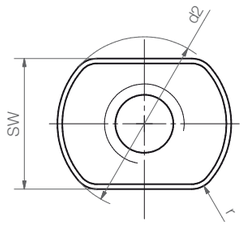
iglidur® J

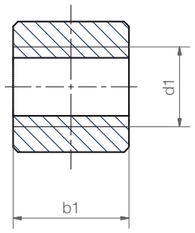
iglidur® W300

iglidur® J350

iglidur® R

iglidur® A180





Order key

Type				SW	d2	b1	Thread			
☐	S	R	M	- 17	20	20	TR	10X2		

iglidur® material	Form S	Hand of rotation	Metric	Width across flats	Outer Ø [mm]	Length [mm]	Trapezoidal thread	Diameter	Lead

Options:
Hand of rotation
R: Right
L: Left

J	High efficiency at all speeds
W(300)	Extremely strong and wear-resistant
J350	For temperatures up to +150 °C
R	The low-cost option for serial production
A180	FDA-compliant for the food and pharmaceutical industries

Technical data

Thread	Hand of rotation right	Hand of rotation left	Effective supporting surface [mm²]	Max. stat. axial F [N] iglidur® J	W300	J350	R	A180
Tr10x2	●	●	283	1,131	1,414	848	565	990
Tr12x3	●	●	396	1,583	1,979	1,188	792	1,385
Tr16x4	●	●	528	2,111	2,639	1,583	1,056	1,847
Tr20x4	●	●	1,131	4,524	5,655	3,393	2,262	3,958
Tr24x5	●	●	1,621	6,484	8,105	4,863	3,242	5,674
Tr30x6	●	●	2,545	10,179	12,723	7,634	5,089	8,906

Dimensions [mm]

d1	d2	b1	SW	Weight [g] iglidur® J	W300	J350	R	A180	Part No.
10	20	20	17	4.7	3.9	4.5	4.4	4.6	**☐S☐M-172020TR10X2**
12	26	24	19	10.9	9.1	10.5	10.2	10.7	**☐S☐M-192624TR12X3**
16	36	24	27	22.0	18.3	21.3	20.5	21.6	**☐S☐M-273624TR16X4**
20	45	40	30	57.3	47.7	55.4	53.5	56.2	**☐S☐M-304540TR20X4**
24	50	48	36	75.7	63.0	73.2	70.6	74.2	**☐S☐M-365048TR24X5**
30	60	50	45	105.3	87.7	101.8	98.3	103.2	**☐S☐M-456050TR30X6**

drylin® TR | Lead screw nuts | Product range

Single start lead screw nuts with flange (Form F)

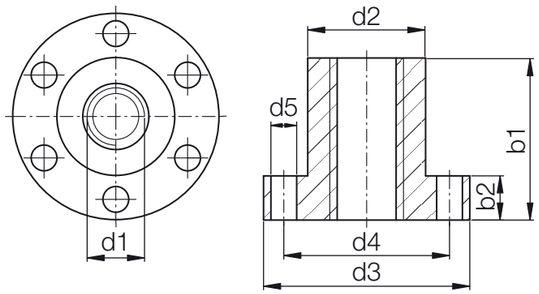
iglidur® J

iglidur® W300

iglidur® J350

iglidur® R

iglidur® A180



Order key

Type	d2	b1	Thread

☐ F R M - 22 20 TR 10X2

iglidur® material	Form F	Hand of rotation	Metric	Outer Ø [mm]	Length [mm]	Trapezoidal thread	Diameter	Lead

Options:
Hand of rotation
R: Right
L: Left

J	High efficiency at all speeds
W(300)	Extremely strong and wear-resistant
J350	For temperatures up to +150 °C
R	The low-cost option for serial production
A180	FDA-compliant for the food and pharmaceutical industries

Technical data

Thread	Hand of rotation right	Hand of rotation left	Effective supporting surface [mm²]	Max. stat. axial F [N] iglidur® J	W300	J350	R	A180
Tr08x1,5	●	●	228	911	1,139	683	456	797
Tr10x2	●	●	353	1,414	1,767	1,060	707	1,237
Tr10x3	●	●	334	1,335	1,669	1,001	668	1,168
Tr12x3	●	●	577	2,309	2,886	1,732	1,155	2,020
Tr14x3	●	●	687	2,749	3,436	2,062	1,374	2,405
Tr14x4	●	●	660	2,639	3,299	1,979	1,319	2,309
Tr16x2	●	●	825	3,299	4,123	2,474	1,649	2,886
Tr16x4	●	●	770	3,079	3,848	2,309	1,539	2,694
Tr18x4	●	●	880	3,519	4,398	2,639	1,759	3,079
Tr20x4	●	●	1,244	4,976	6,220	3,732	2,488	4,354
Tr24x5	●	●	1,486	5,944	7,430	4,458	2,972	5,201
Tr26x5	●	●	1,698	6,320[43)]	6,320[43)]	6,320[43)]	6,320[43)]	6,320[43)]
Tr28x5	●	●	1,843	4,560[43)]	4,560[43)]	4,560[43)]	4,560[43)]	4,560[43)]
Tr30x6	●	●	1,951	3,576[43)]	3,576[43)]	3,576[43)]	3,576[43)]	3,576[43)]
Tr30x6	●	●	1,951	7,804	9,755	-	-	6,828
Tr32x6	●	●	2,095	8,382	10,477	6,286	4,191	7,334
Tr36x6	●	●	3,629	14,514	-	-	-	-
Tr40x7	●	●	4,013	16,054	-	-	-	-

[43)] Reduced axial load due to nut geometry

Dimensions [mm]

d1	d2	d3	d4	d5	b1	b2	Weight [g] iglidur® J	W300	J350	R	A180	Part No.
8	20	36	28	4	20	8	16.3	13.5	15.7	15.2	15.9	**☐F☐M-2020TR08X1.5**
10	25	42	34	5	25	10	28.7	23.9	27.7	26.8	28.1	**☐F☐M-2525TR10X2**
10	25	42	34	5	25	10	28.7	23.9	27.7	26.8	28.1	**☐F☐M-2525TR10X3**
12	28	48	38	6	35	12	47.6	39.6	46.0	44.4	46.6	**☐F☐M-2835TR12X3**
14	28	48	38	6	35	12	45.4	37.8	43.9	42.4	44.5	**☐F☐M-2835TR14X3**
14	28	48	38	6	35	12	45.4	37.8	43.9	42.4	44.5	**☐F☐M-2835TR14X4**
16	28	48	38	6	35	12	43.0	35.8	41.5	40.1	42.1	**☐F☐M-2835TR16X2**
16	28	48	38	6	35	12	43.0	35.8	41.5	40.1	42.1	**☐F☐M-2835TR16X4**
18	28	48	38	6	35	12	40.2	33.4	38.8	37.5	39.4	**☐F☐M-2835TR18X4**
20	32	55	45	7	44	12	60.2	50.1	58.2	56.2	59.0	**☐F☐M-3244TR20X4**
24	32	55	45	7	44	12	51.2	42.6	49.5	47.7	50.1	**☐F☐M-3244TR24X5**
26	38	62	50	7	46	14	80.7	67.1	78.0	75.2	79.0	**☐F☐M-3846TR26X5**
28	38	62	50	7	46	14	74.8	62.3	72.3	69.8	73.3	**☐F☐M-3846TR28X5**
30	38	62	50	7	46	14	68.6	57.1	66.3	64.0	67.2	**☐F☐M-3846TR30X6**
30	45	70	58	7	46	16	114.4	95.2	-	-	112.1	**☐F☐M-4546TR30X6**
32	45	70	58	7	46	16	72.6	60.4	70.1	67.7	71.1	**☐F☐M-4546TR32X6**
36	67	95	81	7	70	25	394.3	-	-	-	-	**☐F☐M-6770TR36X6**
40	67	95	81	7	70	25	369.4	-	-	-	-	**☐F☐M-6770TR40X7**

drylin® TR | Lead screw nuts | Product range

Multi start lead screw nuts with flange (Form F)

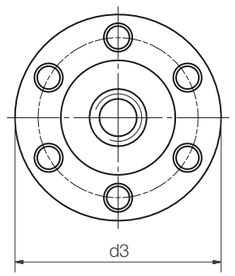
iglidur® J

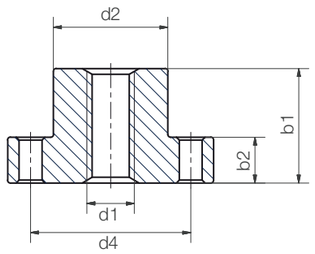
iglidur® W300

iglidur® J350

iglidur® R

iglidur® A180





Order key

Type								d2	b1	Thread
☐	F	R	M	-	28	35	TR 12X6P3			

iglidur® material	Form F	Hand of rotation	Metric	Outer Ø [mm]	Length [mm]	Thread type	Diameter	Lead

Options:
Hand of rotation
R: Right
L: Left

J	High efficiency at all speeds
W(300)	Extremely strong and wear-resistant
J350	For temperatures up to +150 °C
R	The low-cost option for serial production
A180	FDA-compliant for the food and pharmaceutical industries

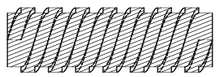
Technical data

Thread	Hand of rotation right	Hand of rotation left	Effective supporting surface [mm²]	Max. stat. axial F [N] iglidur® J	W300	J350	R	A180
Tr06x2P1	●	-	130	441	551	1,124	936	386
Tr10x4P2	●	-	353	1,202	1,502	1,051	3,064	2,552
Tr12x6P3	●	●	577	1,963	2,453	5,005	4,171	1,717
Tr16x8P4	●	●	770	2,617	3,271	6,673	5,561	2,290
Tr18x8P4	●	-	880	2,991	3,738	7,627	6,355	2,617
Tr20x8P4	●	-	1,244	4,230	5,287	10,786	8,988	3,701

Dimensions [mm]

d1	d2	d3	d4	d5	b1	b2	Weight [g] iglidur® J	W300	J350	R	A180	Part No.
6	13	25	19	3.2	15	5	5.0	4.2	4.8	4.7	4.9	**☐FRM-1315TR06X2P1**
10	25	42	34	5	25	10	25.6	21.3	25.1	24.8	23.9	**☐FRM-2835TR10X4P2**
12	28	48	38	6	35	12	47.6	39.6	46.0	44.4	46.6	**☐F☐M-2835TR12X6P3**
16	28	48	38	6	35	12	43.0	35.8	41.5	40.1	42.1	**☐F☐M-2835TR16X8P4**
18	28	48	38	6	35	12	40.2	33.4	38.8	37.5	39.4	**☐FRM-2835TR18X8P4**
20	32	55	45	7	44	12	60.2	50.1	58.2	56.2	59.0	**☐FRM-3244TR20X8P4**

Definition: two-start lead screw nuts
Example 8P4 pitch

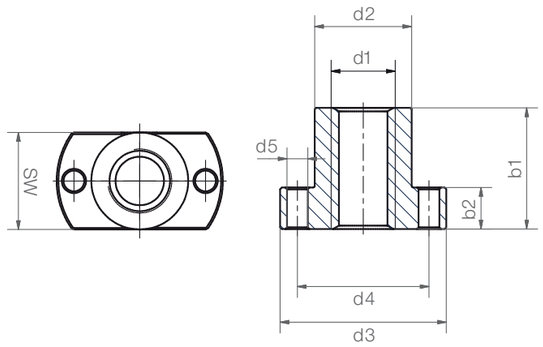


P4: Distance to the next thread 4 mm
8P: Pitch 8 mm

drylin® TR | Lead screw nuts | Product range

Lead screw nuts with spanner flat, with flange

iglidur® J | iglidur® W300 | iglidur® J350 | iglidur® R | iglidur® A180



Order key

Type	SW	d2	b1	Thread

☐ F R M - 13 13 13 TR 6X2 P1

iglidur® material	Form F	Hand of rotation	Metric	Width across flats	Outer Ø [mm]	Length [mm]	Trapezoidal thread	Diameter	Lead

Options:
Hand of rotation
R: Right
L: Left

J	High efficiency at all speeds
W(300)	Extremely strong and wear-resistant
J350	For temperatures up to +150 °C
R	The low-cost option for serial production
A180	FDA-compliant for the food and pharmaceutical industries

Technical data

Thread	Hand of rotation		Effective	Max. stat. axial F [N] iglidur®				
	right	left	supporting surface					
single start			[mm²]	J	W300	J350	R	A180
Tr08x1,5	●	●	228	911	1,139	683	456	797
Tr10x2	●	●	353	1,414	1,767	1,060	707	1,237
Tr12x3	●	●	577	2,309	2,886	1,732	1,155	2,020
Tr14x4	●	●	660	2,639	3,299	1,979	1,319	2,309
Tr16x4	●	●	770	3,079	3,848	2,309	1,539	2,694
Tr18x4	●	●	880	3,519	4,398	2,639	1,759	3,079
multi start								
Tr06x2P1	●	-	118	175[43)]	175[43)]	175[43)]	175[43)]	175[43)]
Metric								
M5x0,8	●	-	56	75[43)]	75[43)]	75[43)]	75[43)]	75[43)]

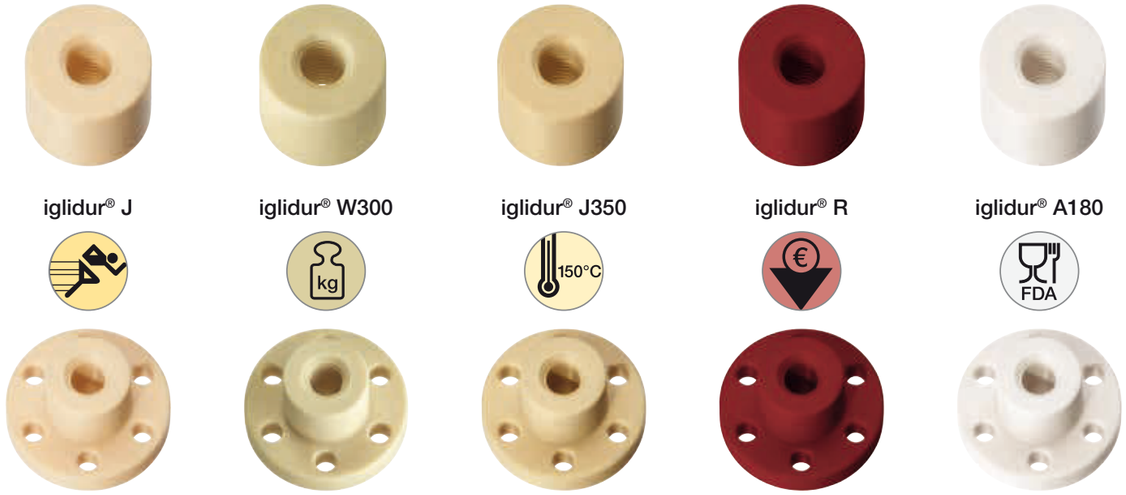
[43)] Reduced axial load due to nut geometry

Dimensions [mm]

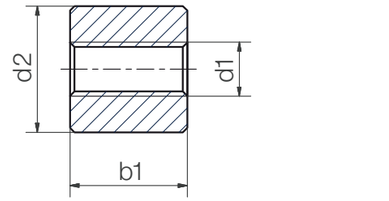
d1	d2	d3	d4	d5	b1	b2	SW	Weight [g] iglidur®					Part No.
								J	W300	J350	R	A180	
8	20	36	28	4	20	8	20	12.7	10.6	11.8	-	12.4	☐F☐M-202020TR08X1.5
10	25	42	34	5	25	10	25	23.7	19.7	22.1	-	23.2	☐F☐M-252525TR10X2
12	28	48	38	6	35	12	28	39.2	32.7	36.6	-	38.4	☐F☐M-282835TR12X3
14	28	48	38	6	35	12	28	37.1	30.9	34.6	-	36.4	☐F☐M-282835TR14X4
16	28	48	38	6	35	12	28	34.6	28.8	32.3	-	33.9	☐F☐M-282835TR16X4
18	28	48	38	6	35	12	28	31.9	26.5	29.7	-	31.2	☐F☐M-282835TR18X4
6	13	25	19	3.2	15	5	13	3.8	3.1	3.5	-	3.7	☐FRM-131315TR06X2P1
5	9	18	15.2	3.2	13	3	9	1.3	1.1	1.2	-	1.3	☐FRM-090913M5

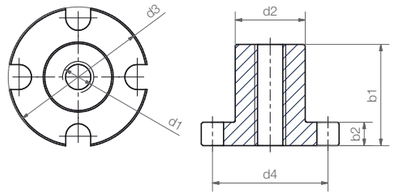
drylin® TR | Lead screw nuts | Product range

Metric lead screw nuts, right-hand thread



iglidur® J | iglidur® W300 | iglidur® J350 | iglidur® R | iglidur® A180





Also available as lead screw nut with flange and spanner flat ▶ Page 1138

Order key

Type				d2	b1	Thread
☐	S	R	M	- 14	13	M3

Options:
Form S: Cylindrical
Form F: With flange

	iglidur® material	Form S	Hand of rotation	Metric	Outer Ø [mm]	Length [mm]	Diameter

J	High efficiency at all speeds
W(300)	Extremely strong and wear-resistant
J350	For temperatures up to +150 °C
R	The low-cost option for serial production
A180	FDA-compliant for the food and pharmaceutical industries

Technical data

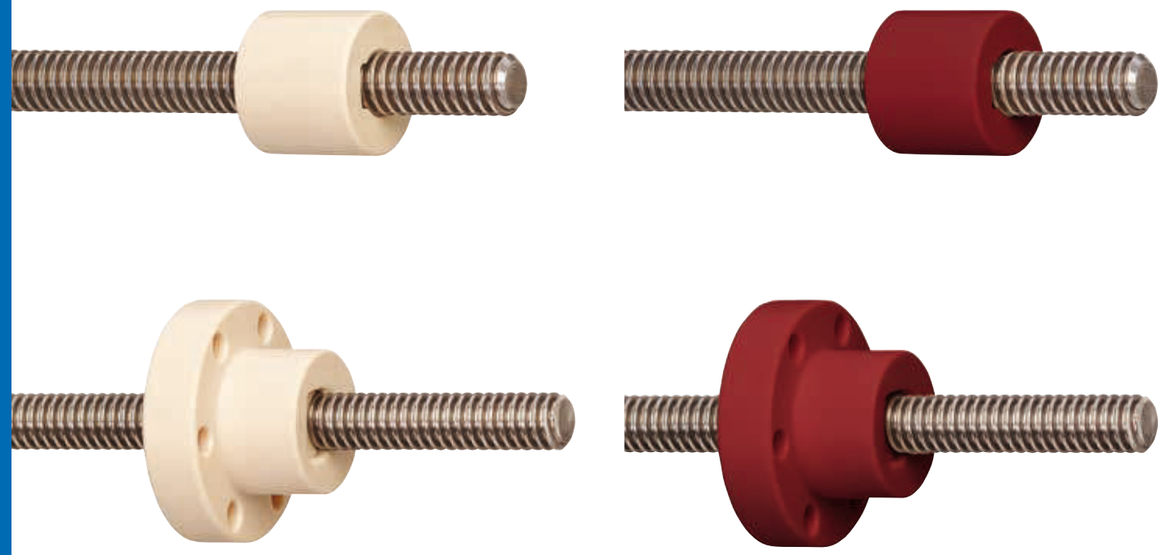
Thread	Effective supporting surface [mm²]	Max. stat. axial F [N] iglidur® J	W300	J350	R	A180
Cylindrical (Form S)						
M3	56	225	281	168	112	197
M4	75	298	373	224	149	261
M5	94	376	470	282	188	329
M6	112	449	562	337	225	393
With flange (Form F)						
M3	56	225	281	168	112	197
M4	75	298	373	224	149	261
M5	94	376	470	282	188	329
M6	130	518	648	389	259	454

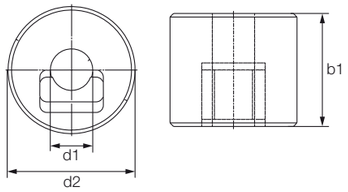
Dimensions [mm]

d1	d2	d3	d4	d5	b1	b2	Weight [g] iglidur® J	W300	J350	R	A180	Part No.
3	14				13		2.8	2.4	2.7	2.7	2.8	☐SRM-1413M3
4	14				13		2.7	2.3	2.6	2.6	2.7	☐SRM-1413M4
5	14				13		2.6	2.2	2.5	2.4	2.5	☐SRM-1413M5
6	14				13		2.4	2.0	2.4	2.3	2.4	☐SRM-1413M6
d1	**d2**	**d3**	**d4**	**d5**	**b1**	**b2**						
3	9	18	15.2	3.2	13	3	1.9	1.6	1.9	1.8	1.9	☐FRM-0913M3
4	9	18	15.2	3.2	13	3	1.8	1.5	1.8	1.7	1.8	☐FRM-0913M4
5	9	18	15.2	3.2	13	3	1.7	1.4	1.6	1.6	1.7	☐FRM-0913M5
6	13	25	19	3.2	13	5	4.7	3.9	4.5	4.4	4.6	☐FRM-1315M6

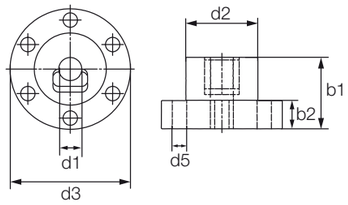
drylin® TR | Lead screw nuts | Product range

Anti-backlash lead screw nuts, cylindrical/with flange





JSRM



JFRM

Backlash refers to the play at reversal, which is caused in a lead screw drive by the axial clearance. By means of a radial pretensioning vibrations (often the cause of noises, especially with long spindles and high speed) are significantly reduced.

Order key

Type										d2	b1	Thread
☐	S	R	M	-	AB	-	25	25	TR	10	X	2
	igliduR® material	Form S	Hand of rotation	Metric	Anti Backlash		Outer Ø [mm]	Length [mm]	Trapezoidal thread	Diameter		Lead

Options:
Form S: Cylindrical
Form F: With flange

J	High efficiency at all speeds
R	The low-cost option for serial production

Technical data – cylindrical design

Thread	Hand of rotation		Effective	Max. stat. axial F [N]	
	right	left	supporting surface	iglidur®	
Cylindrical (form S)			[mm²]	J	R
Tr08x1,5	●	-	228	683	342
Tr10x2	●	-	283	848	424
Tr12x3	●	-	396	1,188	594
Tr16x4	●	-	704	2,111	1,056
Tr18x4	●	-	905	2,714	1,357
Tr20x4	●	-	1,131	3,393	1,696
Tr24x5	●	-	1,621	4,863	2,432

Technical data – with flange

Thread	Hand of rotation		Effective	Max. stat. axial F [N]	
	right	left	supporting surface	iglidur®	
With flange (Form F)			[mm²]	J	R
Tr10x2	●	-	353	1,060	530
Tr10x3	●	-	334	1,001	501
Tr12x3	●	-	396	1,188	594
Tr14x4	●	-	471	1,414	707
Tr16x2	●	-	613	1,838	919
Tr16x4	●	-	704	2,111	1,056
Tr18x4	●	-	905	2,714	1,357
Tr20x4	●	-	1,131	3,393	1,696
Tr24x5	●	-	1,621	4,863	2,432

Dimensions [mm] – cylindrical design

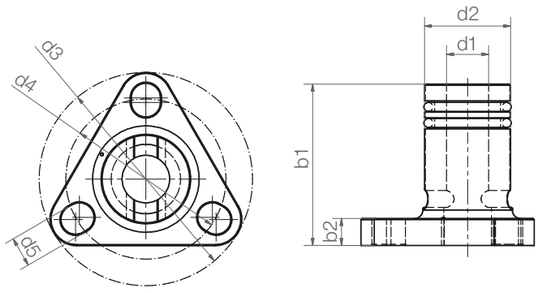
d1	d2	b1	Weight [g] iglidur®		Part No.
			J	R	
8	22	20	9.8	9.2	☐SRM-AB-2220-TR08X1.5
10	22	20	9.0	8.4	☐SRM-AB-2220-TR10X2
12	26	24	14.9	13.9	☐SRM-AB-2624-TR12X3
16	36	32	38.9	36.3	☐SRM-AB-3632-TR16X4
18	40	36	53.8	50.1	☐SRM-AB-4036-TR18X4
20	45	40	76.1	71.0	☐SRM-AB-4540-TR20X4
24	50	48	108.1	100.8	☐SRM-AB-5048-TR24X5

Dimensions [mm] – with flange

d1	d2	d3	d4	d5	b1	b2	Weight [g] iglidur®		Part No.
							J	R	
10	25	42	34	5	25	10	28.7	26.8	☐FRM-AB-2525-TR10X2
10	25	42	34	5	25	10	28.7	26.8	☐FRM-AB-2525-TR10X3
12	28	48	35	5	35	12	30.3	28.3	☐FRM-AB-2835-TR12X3
14	28	48	38	6	35	12	45.4	42.4	☐FRM-AB-2835-TR14X4
16	28	48	38	6	35	12	43.0	40.1	☐FRM-AB-2835-TR16X2
16	28	48	38	6	35	12	43.0	40.1	☐FRM-AB-2835-TR16X4
18	28	48	38	6	35	12	40.2	37.5	☐FRM-AB-2835-TR18X4
20	32	55	45	7	44	12	60.2	56.2	☐FRM-AB-3244-TR20X4
24	32	55	45	7	44	12	51.2	47.7	☐FRM-AB-3244-TR24X5

drylin® TR | Lead screw nuts | Product range

Flange lead screw nut with pretension



Order key

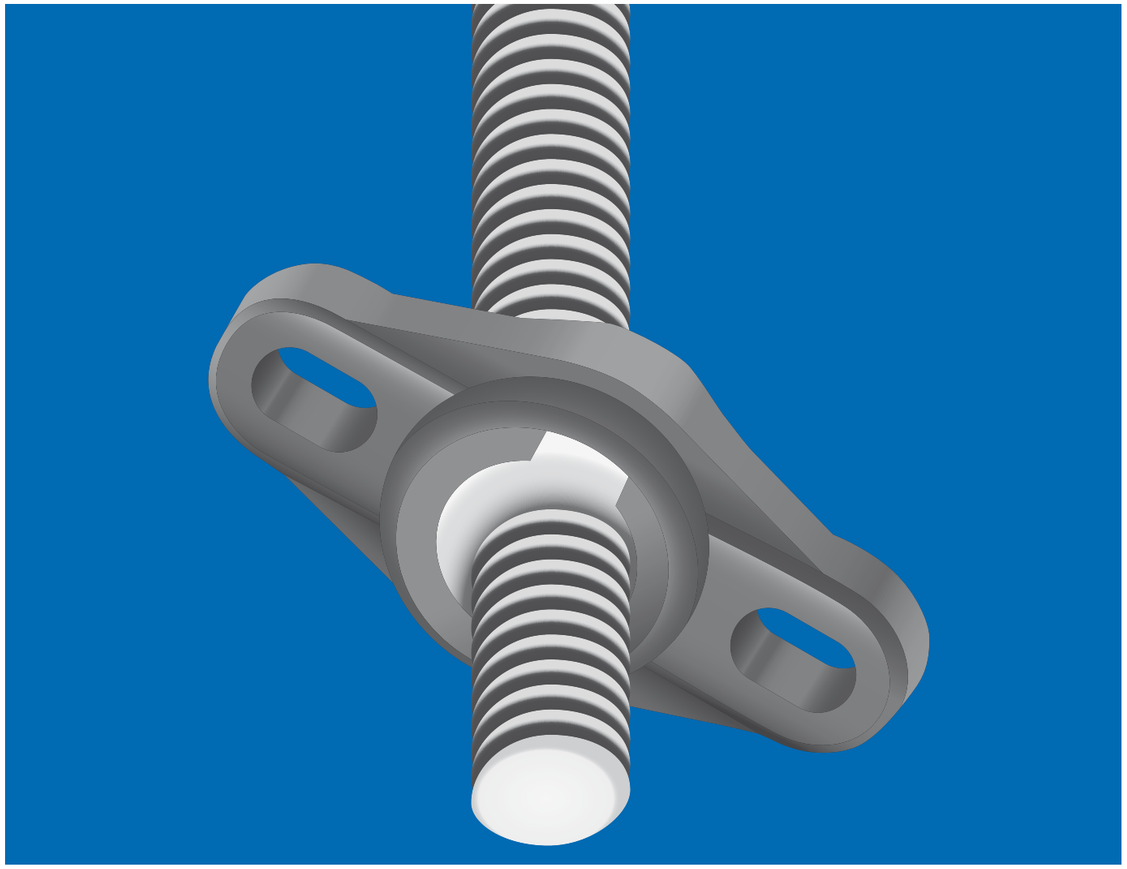
Type						Thread		
J	F	R	M	- LC -	0001	TR	10	X2
igliduR® material	Form F	Hand of rotation	Metric	Low-cost	Type	Trapezoidal thread	Diameter	Lead

Technical data

Thread	Effective supporting surface	Max. stat. axial F	Max. idling torque (with O-ring)	Weight	Part No.
Single start	[mm²]	[N]		[g]	
Tr08x1,5	378	75	0.01-0.03	6.8	JFRM-LC-0001-TR08X1.5
Tr10x2	486	75	0.01-0.03	6.8	JFRM-LC-0001-TR10X2
Tr10x3	427	75	0.01-0.03	6.8	JFRM-LC-0001-TR10X3
multi start					
Tr06x2P1	164	40	0.01-0.03	3.9	JFRM-LC-0001-TR06X2P1

Dimensions [mm]

Thread	d1	d2	d3	d4	d5	b1	b2	Part No.
Single start								
Tr08x1,5	8	16.0	38.1	28.3	5.2	28.3	4.8	JFRM-LC-0001-TR08X1.5
Tr10x2	10	16.0	38.1	28.3	5.2	28.3	4.8	JFRM-LC-0001-TR10X2
Tr10x3	10	16.0	38.1	28.3	5.2	28.3	4.8	JFRM-LC-0001-TR10X3
multi start								
Tr06x2P1	6	10.0	28.5	22.2	3.7	20.9	4.1	JFRM-LC-0001-TR06X2P1



drylin® lead screw technology – special designs

- Angle compensation with spherical balls
- With quick-release mechanism (Fast forward)
- Split lead screw nuts
- Accessories for lead screw nuts and lead screws
- Lubrication and maintenance-free

drylin® TR | Special geometries | Product range

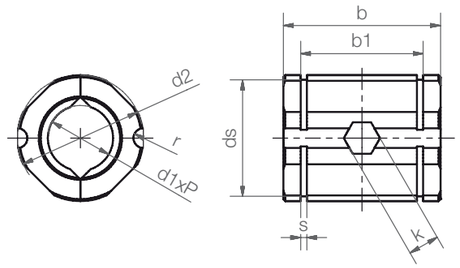
Split lead screw nuts, made from iglidur® J

Order key

Part number	Dimension	Thread
J T R M -	22 30	TR10X2

Material	Split nut	Hand of rotation	Metric	d2	b1	Trapezoidal thread	Diameter	Lead
Material	Split nut	Hand of rotation	Metric	d2	b1	Trapezoidal thread	Diameter	Lead

This part includes 2 nut halves and 1 piece nut each based on DIN 934 made from V2A to prevent twisting



Technical data

Part No.	Max. load axial static[50] [N]	Max. load axial static[51] [N]	Mounting with nut DIN 934
JTRM-2230TR10X2	300	500	M4
JTRM-3240TR20X4	1,000	1,500	M5
JTRM-3240TR20X8P4	1,000	1,500	M5

Dimensions [mm]

Thread	b	b1	d2	ds	k	r	s	Part No.
Tr10x2	30	22.6	22	20.5	7	1.5	1.3	JTRM-2230TR10X2
Tr20x4	40	31.2	32	29.6	8	2.5	1.6	JTRM-3240TR20X4
Tr20x8P4	40	31.2	32	29.6	8	2.5	1.6	JTRM-3240TR20X8P4

[50] Mounting in the housing via radially inserted nut DIN934

[51] Mounting in the housing via circlips DIN471

drylin® trapezoidal thread

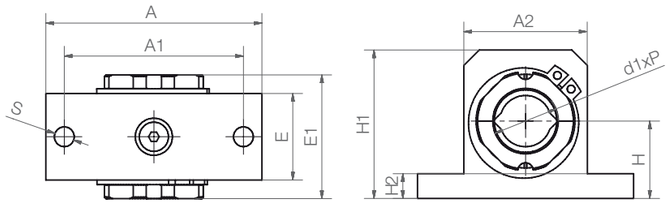
drylin® TR | Special geometries | Product range

Also available with housing block

Order key

Part number	Thread
R G A S - J T R M -	TR10X2

Linear housing	Aluminium	Small	Material	Split nut	Hand of rotation	Metric	Trapezoidal thread	Diameter	Lead
Linear housing	Aluminium	Small	Material	Split nut	Hand of rotation	Metric	Trapezoidal thread	Diameter	Lead



Technical data

Part No.	Nut	Locking ring
RGAS-JTRM-TR10x2	DIN 439 M4	DIN 471-A22
RGAS-JTRM-TR20x4	DIN 439 M5	DIN 471-A32
RGAS-JTRM-TR20x8P4	DIN 439 M5	DIN 471-A32

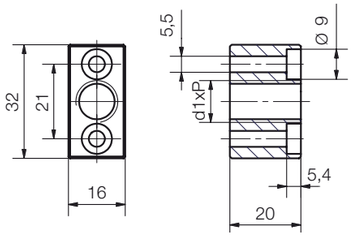
Dimensions [mm]

Thread	H	H1	H2	A	A1	A2	E	E1	S	Part No.
Tr10x2	18	35	6	52	42	30	20	32	5.3	RGAS-JTRM-TR10X2
Tr20x4	25	48	8	70	58	40	28	40	6.4	RGAS-JTRM-TR20X4
Tr20x8P4	25	48	8	70	58	40	28	40	6.4	RGAS-JTRM-TR20X8P4

drylin® TR | Special geometries | Product range

Lead screw nuts for linear modules

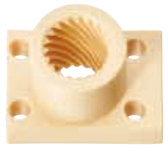
Square lead screw nuts

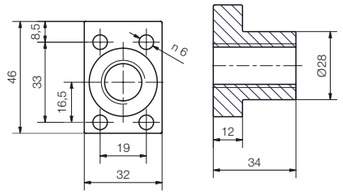


Dimensions

Part No.	Thread d1xP	Hand of rotation	from SHT linear module	
SHT-1210-TRM10x2	Tr10x2	right	SHT-12	▶ p. 1180
SHT-1210-TRM10x2-L	Tr10x2	left	SHT-12	▶ p. 1180
SHT-1210-TRM10x3	Tr10x3	right	SHT-12	▶ p. 1180
SHT-1210-TRM10x3-L	Tr10x3	left	SHT-12	▶ p. 1180
SHT-1210-SM10x12	Sg10x12	right	SHTS-12	▶ p. 1183
SHT-1210-SM10x12-L	Sg10x12	left	SHTS-12	▶ p. 1183
SHT-1210-SM10x50	Sg10x50	right	SHTS-12	▶ p. 1183
SHT-1210-SM10x50-L	Sg10x50	left	SHTS-12	▶ p. 1183

Lead screw nuts with flange



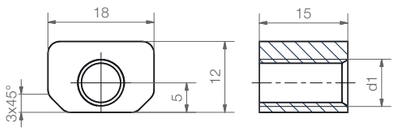


Please note: not symmetrical

Dimensions

Part No.	Thread d1xP	Hand of rotation	from SHT linear module	
SHT-2018-SM18x100	Sg18x100	right	SHTS-20	▶ p. 1183
SHT-2018-SM18x100-L	Sg18x100	left	SHTS-20	▶ p. 1183
SHT-2018-TRM18x4	Tr18x4	right	SHT-20	▶ p. 1183
SHT-2018-TRM18x4-L	Tr18x4	left	SHT-20	▶ p. 1180
SHT-2018-TRM18x8	Tr18x8P4	right	SHT-20	▶ p. 1180
SHT-2018-TRM18x8-L	Tr18x8P4	left	SHT-20	▶ p. 1180

Lead screw nuts

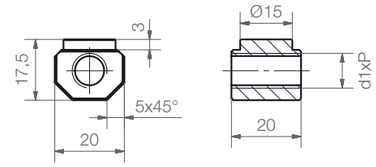


Dimensions

Part No.	Thread d1xP	Hand of rotation	from SLW linear module	
SWZ-063001	M08x1	right	SLW-0630	▶ p. 1196
SWZ-063003	M08x1	left	SLW-0630	▶ p. 1196
SWZ-063009	Tr08x1,5	right	SLW-0630	▶ p. 1196
SWZ-063010	Tr08x1,5	left	SLW-0630	▶ p. 1196
SWZ-063007	Sg08x10	right	SLW-0630	▶ p. 1196
SWZ-063008	Sg08x10	left	SLW-0630	▶ p. 1196
SWZ-063004	Sg08x10	right	SLW-0630	▶ p. 1196

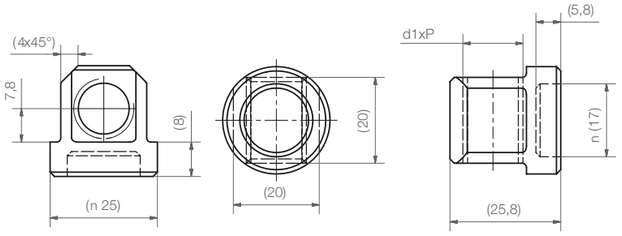
drylin® TR | Special geometries | Product range

Lead screw nuts with locating spigot



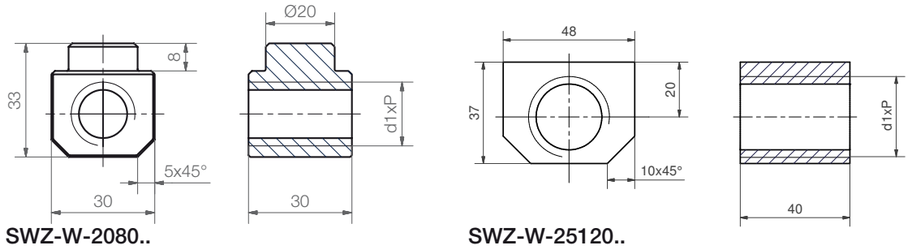
Dimensions

Part No.	Thread d1xP	Hand of rotation	from SLW linear module	
SWZ-W-104003	Tr10x2	right	SLW-1040	▶ p. 1196
SWZ-W-104004	Tr10x2	left	SLW-1040	▶ p. 1196
SWZ-W-104009	Tr10x3	right	SLW-1040	▶ p. 1196
SWZ-W-104015	Tr10x3	left	SLW-1040	▶ p. 1196
SWZ-W-104005	Sg10x12	right	SLWS-1040	▶ p. 1199
SWZ-W-104005-L	Sg10x12	left	SLWS-1040	▶ p. 1199
SWZ-W-104007	Sg10x50	right	SLWS-1040	▶ p. 1199
SWZ-W-104010	Sg10x50	left	SLWS-1040	▶ p. 1199



Dimensions

Part No.	Thread d1xP	Hand of rotation	from SLW linear module	
SWZ-W-166001	Tr14x4	right	SLW-1660	▶ p. 1196
SWZ-W-166002	Tr14x3	right	SLW-1660	▶ p. 1196
SWZ-W-166003	Tr14x4	left	SLW-1660	▶ p. 1196



SWZ-W-2080..

SWZ-W-25120..

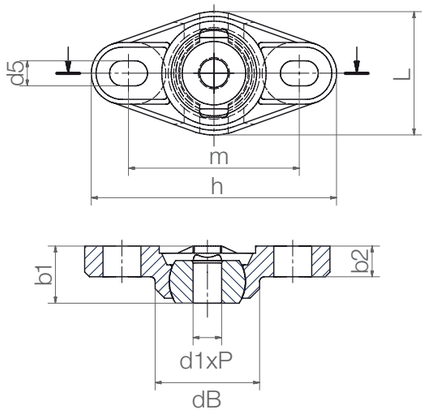
Dimensions

Part No.	Thread d1xP	Hand of rotation	from SLW linear module	
SWZ-W-208003	Tr18x4	right	SLW-2080	▶ p. 1196
SWZ-W-208004	Tr18x4	left	SLW-2080	▶ p. 1196
SWZ-W-208008	Tr18x8P4	right	SLW-2080	▶ p. 1196
SWZ-W-208009	Tr18x8P4	left	SLW-2080	▶ p. 1196
SWZ-W-208006	Sg18x100	right	SLWS-2080	▶ p. 1199
SWZ-W-208007	Sg18x100	left	SLWS-2080	▶ p. 1199
SWZ-W-208010	Sg18x24	right	SLWS-2080	▶ p. 1199
SWZ-W-208011	Sg18x24	left	SLWS-2080	▶ p. 1199
SWZ-W-2512001[119)]	Tr24x5	right	SLW-25120	▶ p. 1196
SWZ-W-2512002[119)]	Tr24x5	left	SLW-25120	▶ p. 1196

[119)] without locating spigot

drylin® TR | Special geometries | Product range

Spherical trapezoidal lead screw nut with spherical ball in flanged bearing housing



Order key

Part number										Thread		
J	F	R	K	M	-	EFOM	-	TR08X1.5				
Material	Form F	Hand of rotation	Series K	Metric		Flanged bearing housing		Trapezoidal thread	Diameter	Lead		

Options:

SG: High helix thread

TR: Trapezoidal thread

Dimensions [mm] – trapezoidal thread

Thread	Effective supporting surface [mm²]	d1	h	L	b1	b2	m	dB	d5	max. stat. axial F [N]	Pivoting angle stat.	Pivoting angle dyn.	Part No.
Tr08x1.5	102	8	52	26	12	6.5	36	22.2	5.3x8	100	25°	30°	**JFRKM-EFOM-TR08X1.5**
Tr10x2	127	10	52	26	12	6.5	36	22.2	5.3x8	100	25°	30°	**JFRKM-EFOM-TR10X2**
Tr10x3	120	10	52	26	12	6.5	36	22.2	5.3x8	100	25°	30°	**JFRKM-EFOM-TR10X3**

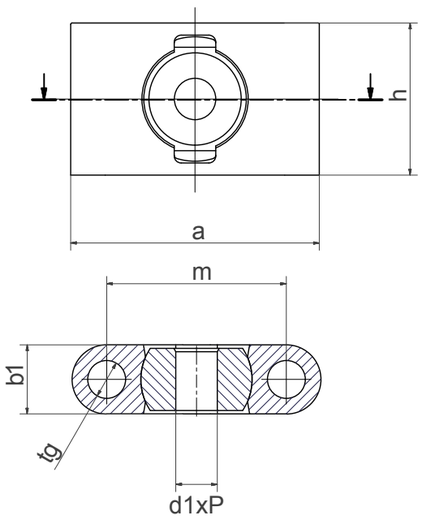
Dimensions [mm] – high helix thread

Thread	Effective supporting surface [mm²]	d1	h	L	b1	b2	m	dB	d5	max. stat. axial F [N]	Pivoting angle stat.	Pivoting angle dyn.	Part No.
Sg08x15	61	8	52	26	12	6.5	36	22.2	5.3x8	50	25°	30°	**JFRKM-EFOM-SG08X15**
Sg10x12	82	10	52	26	12	6.5	36	22.2	5.3x8	50	25°	30°	**JFRKM-EFOM-SG10X12**

drylin® trapezoidal thread

drylin® TR | Special geometries | Product range

Spherical lead screw nut with spherical ball in pillow block bearing housing



Order key

Part number										Thread		
J	F	R	K	M	-	ESTM	-	TR08X1.5				
Material	Form F	Hand of rotation	Series K	Metric		Pillow block bearing housing		Trapezoidal thread	Diameter	Lead		

Options:

SG: High helix thread

TR: Trapezoidal thread

Dimensions [mm] – trapezoidal thread

Thread	Effective supporting surface [mm²]	h	a	b1	m	tg	max. stat. axial F [N]	Pivoting angle stat.	Pivoting angle dyn.	Part No.
Tr08x1.5	102	22	36	10	26	5.5	100	25°	30°	**JFRKM-ESTM-TR08X1.5**
Tr10x2	127	22	36	10	26	5.5	100	25°	30°	**JFRKM-ESTM-TR10X2**
Tr10x3	120	22	36	10	26	5.5	100	25°	30°	**JFRKM-ESTM-TR10X3**

Dimensions [mm] – high helix thread

Thread	Effective supporting surface [mm²]	h	a	b1	m	tg	max. stat. F axial [N]	Pivoting angle stat.	Pivoting angle dyn.	Part No.
Sg08x15	61	22	36	10	26	5.5	50	25°	30°	**JFRKM-ESTM-SG08X15**
Sg10x12	82	22	36	10	26	5.5	50	25°	30°	**JFRKM-ESTM-SG10X12**

drylin® TR | Special geometries | Product range

Lead screw nut with quick-release – fast forward

Fast forward mechanism: A combination of accurate positioning and quick manual adjustment with trapezoidal lead screw nuts.

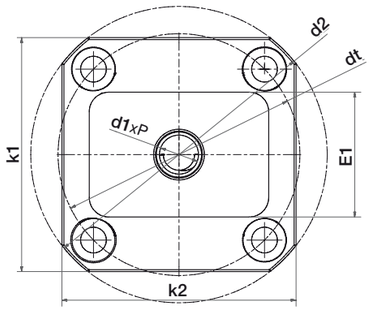
- For quick format adjustments
- Incl. brake through automatic interlocking with thread
- Housing: AL anodised, leadscrew nut made from iglidur® J
- Tough and reliable
- Only recommended for horizontal applications
- Max. axial load stat.: 200 N, dyn.: 50 N

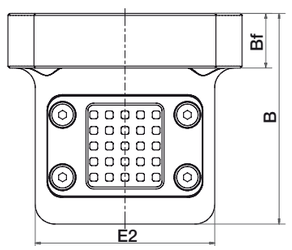
see SHT-FF ▶ **Page 1187**

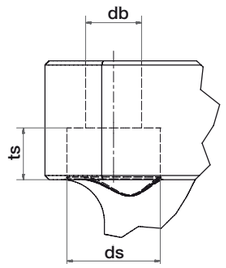
Order key

Part number	Thread
F T R M - FF -	10X2

Form F	Trapezoidal thread	Hand of rotation	Metric	Fast Forward	Diameter	Lead







Dimensions [mm]

Thread	d2	dt	B	Bf	ts	db	ds	k1	k2	E1	E2	Part No.
Tr10x2	76	62	54	14	6.1	6.6	11	60	60	32	46	**FTRM-FF-10X2**

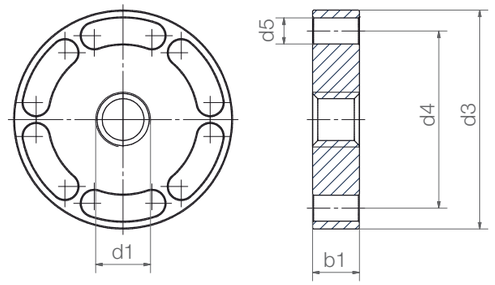
drylin® TR | Special geometries | Product range

drylin® disc, made from iglidur® J

Order key

Type	d3	b1	Thread
J D R M -	42	09	TR 10X2

iglidur® material	Form: Disk	Hand of rotation	Metric	Outer Ø [mm]	Height [mm]	Trapezoidal thread	Diameter	Lead



Material properties:
iglidur® J ▶ Page 143

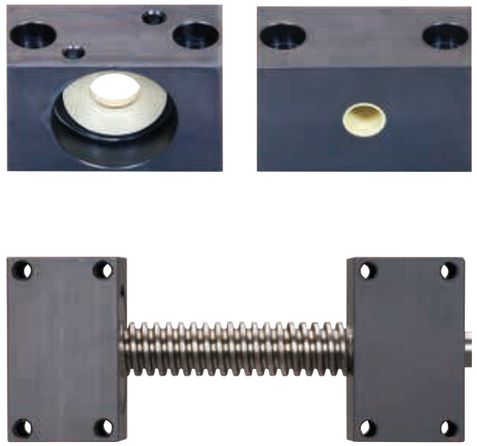
Technical data and dimensions [mm]

Thread	Effective supporting surface [mm²]	max. stat. axial F [N]	d1	d3	d4	d5	b1	Weight [g]	Part No.
Tr10x2	127	508	10	42	34	5	9	17.5	**JDRM-4209TR10X2**
Tr12x3	181	724	12	48	38	6	11	27.8	**JDRM-4811TR12X3**
Tr14x4	207	828	14	48	38	6	11	27.1	**JDRM-4811TR14X4**
Tr16x4	241	964	16	48	38	6	11	26.4	**JDRM-4811TR16X4**
Tr18x4	276	1,104	18	48	38	6	11	25.5	**JDRM-4811TR18X4**
Tr20x4	367	1,468	20	55	45	7	13	39.9	**JDRM-5513TR20X4**
Tr24x5	439	1,756	24	55	45	7	13	37.3	**JDRM-5513TR24X5**
Tr30x6	551	2,204	30	62	50	7	14	48.2	**JDRM-6214TR30X6**
Tr36x6	829	3,316	36	70	58	7	16	67.5	**JDRM-7016TR36X6**

[49] Max. stat. F axial can be added when used with flange nut

drylin® TR | Special geometries | Product range

Lead screw support blocks



Order key

Part No.	Thread	Options
SLS	- 10X2	- FL - LH

- Lead screw support
- Diameter
- Pitch
- Fixed bearing
- Left-hand thread option

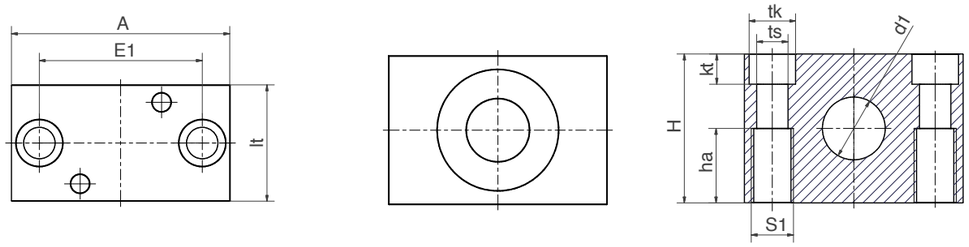
Scope of delivery: Anodised support block
FL: Fixed bearing with anodised clamp rings with RH thread (standard) and maintenance-free iglidur® plain bearing [52)]
LL: Floating bearing with maintenance-free iglidur® plain bearing

Options:
FL: Fixed bearing
LL: Floating bearing
LH: Left-thread option only for TR10x2, R10x3, TR18x4, TR24x5

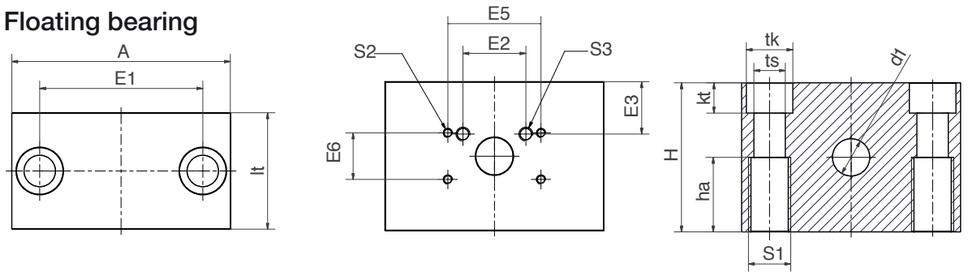
Accessories ▶ From page 1303

▶ Page 1259

Fixed bearing



Floating bearing



[52)] FL support block with TR10x2, TR10x3, TR18x4, TR24x5 leadscrew also available with clamp rings with left thread

Technical data and dimensions [mm] – (similar for both right and left-threads)

Part No.	Weight [g]	Max. stat. bearing load axial [N]	S1	S2	S3
SLS-10X2-LL	115	-	M8	M4	M6
SLS-10X2-FL (LH)	88	700	M8	-	-
SLS-10X3-LL	115	-	M8	M4	M6
SLS-10X3-FL (LH)	88	700	M8	-	-
SLS-10X12-LL	115	-	M8	M4	M6
SLS-10X12-FL	88	700 [53)]	M8	-	-
SLS-10X50-LL	115	-	M8	M4	M6
SLS-10X50-FL	88	700 [53)]	M8	-	-
SLS-18X4-LL	295	-	M10	M4	M6
SLS-18X4-FL (LH)	205	1,600	M10	-	-
SLS-18X8P4-LL	295	-	M10	M4	M6
SLS-18X8P4-FL	205	1,600	M10	-	-
SLS-18X24-LL	295	-	M10	M4	M6
SLS-18X24-FL	205	1,600 [53)]	M10	-	-
SLS-18X100-LL	295	-	M10	M4	M6
SLS-18X100-FL	205	1,600 [53)]	M10	-	-
SLS-24X5-LL	725	-	M16	M4	M6
SLS-24X5-FL (LH)	525	2,500	M16	-	-

Part No.	A	H	E1	E2	E3	E5	E6	lt	kt	tk	ts	d1	ha
SLS-10X2-LL	50	32	36	27	6.5	40	20	30	6.5	11	6.6	10	16
SLS-10X2-FL (LH)	50	32	36	-	-	-	-	30	6.5	11	6.6	10	16
SLS-10X3-LL	50	32	36	27	6.5	40	20	30	6.5	11	6.6	10	16
SLS-10X3-FL (LH)	50	32	36	-	-	-	-	30	6.5	11	6.6	10	16
SLS-10X12-LL	50	32	36	27	6.5	40	20	30	6.5	11	6.6	10	16
SLS-10X12-FL	50	32	36	-	-	-	-	30	6.5	11	6.6	10	16
SLS-10X50-LL	50	32	36	27	6.5	40	20	30	6.5	11	6.6	10	16
SLS-10X50-FL	50	32	36	-	-	-	-	30	6.5	11	6.6	10	16
SLS-18X4-LL[54)]	72	46	54	27	13.5	40	20	36	8.6	15	9	12	23
SLS-18X4-FL (LH)	72	46	54	-	-	-	-	36	8.6	15	9	18	23
SLS-18X8P4-LL[54)]	72	46	54	27	13.5	40	20	36	8.6	15	9	12	23
SLS-18X8P4-FL	72	46	54	-	-	-	-	36	8.6	15	9	18	23
SLS-18X24-LL[54)]	72	46	54	27	13.5	40	20	36	8.6	15	9	12	23
SLS-18X24-FL[55)]	72	46	54	-	-	-	-	36	8.6	15	9	18	23
SLS-18X100-LL[54)]	72	46	54	27	13.5	40	20	36	8.6	15	9	12	23
SLS-18X100-FL[55)]	72	46	54	-	-	-	-	36	8.6	15	9	18	23
SLS-24X5-LL[54)]	94	64	70	27	22.5	40	20	50	13	20	13.5	14	32
SLS-24X5-FL (LH)	94	64	70	-	-	-	-	50	13	20	13.5	24	32

[53)] Can exceed max. stat. load of the nut
[54)] Lead screw end must be turned to d1-value
[55)] Lead screw end must be turned to 18 mm

drylin® TR | Special geometries | Product range

drylin® lead screw nut housing

- Standard lead screw nuts secured with fixing screws
- Can be fixed from above
- One retainer can be used for various thread geometry
- Limitless combinations

Order key

Part number

MH - 1210 - AL

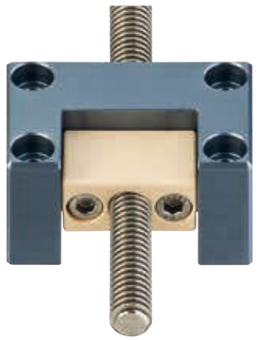
Lead screw nut housing	Nut design (see drawing)	Aluminium

MH-2835-AL / MH-3244-AL

MH-ZB0810-AL

MH-2018-AL

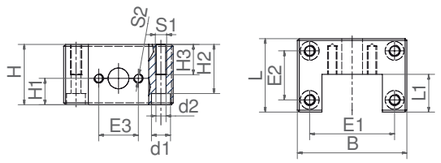
MH-1210-AL



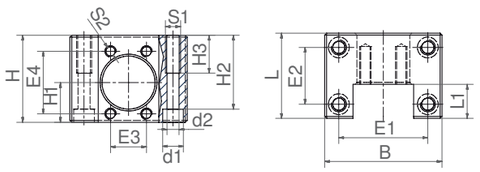
drylin® TR | Special geometries | Product range

Fully assembled with nut or individual

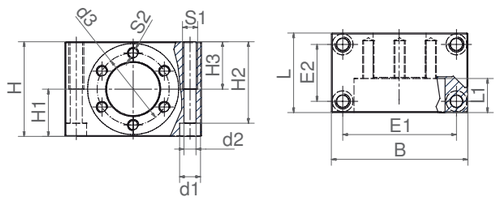
MH-1210-AL



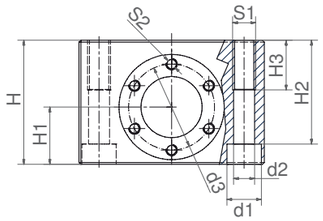
MH-2018-AL



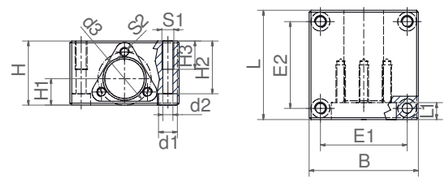
MH-2835-AL

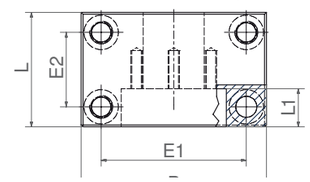


MH-3244-AL



MH-ZB0810-AL





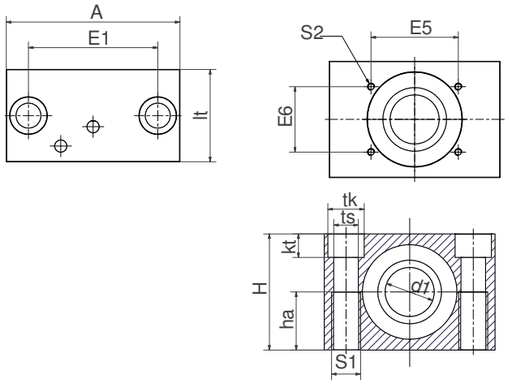
Dimensions [mm]

Part No.	H	H1	H2	H3	S1	S2	B ± 0.3	L ± 0.3	L1	E1 ±0.15	E2 ±0.15	E3	E4	d1	d2	d3	Can be combined with SLS
MH-1210-AL	32	14	26	16	M6	M5	58	39	20	45	26	21	-	10	5.3	-	✓
MH-2018-AL	46	21	39	20	M8	M6	62	45	18	47	30	19	33	11	6.4	-	✓
MH-2835-AL	50	25	43	25	M8	M6	72	42	18	60	30	-	-	11	6.4	38	–
MH-3244-AL	65	30	54.4	26	M12	M6	97	60	20	76	39	-	-	18	11	45	✓
MH-ZB0810-AL	34	14	28	15	M6	M5	58	34	9	46	46	-	-	10	5.3	28.2	✓

Part No.	Nut design	Thread
MH-1210-AL	SHT-1210-TRM	Tr10x2 / Tr10x3 / Sg10x12 / Sg10x50
MH-2018-AL	SHT-2018-TRM	Tr18x4 / Tr18x8P4 / Sg18x24 / Sg18x100
MH-2835-AL	FRM-2835	Tr12x3 / Tr12x6P3 / Sg12x25 / Tr14x3 / Tr14x4 / Tr16x2 / Tr16x4 / Tr16x8P4 / Tr18x4 / Tr18x8P4 / Sg18x24 / Sg18x100
MH-3244-AL	FRM-3244	Tr20x4 / Tr20x8P4 / Tr24x5
MH-ZB0810-AL	Zero backlash	Sg08x10 / Sg08x15 / Sg10x12 / Sg10x50

drylin® TR | Special geometries | Product range

Lead screw support with ball bearings



Order key

Part No.	Thread	Bearing
SLS -	10X2 -	BB
Lead screw support	Diameter	Pitch	Ball bearing

Accessories ▶ From page 1303

drylin E compatible

▶ Page 1259

Technical data and dimensions [mm]

Part No.	Weight [g]	Max. stat. load capacity axial [N]	S1	S2
SLS-10X2-BB	110	350	M8	M4
SLS-10X12-BB	110	350	M8	M4
SLS-10X50-BB	110	350	M8	M4
SLS-18X4-BB	265	1,000	M10	M4
SLS-18X8P4-BB	265	1,000	M10	M4
SLS-18X24-BB	265	1,000	M10	M4
SLS-18X100-BB	265	1,000	M10	M4
SLS-24X5-BB	350	1,500	M16	M4

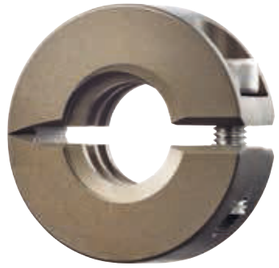
Part No.	A	H	E1	E5	E6	lt	kt	tk	ts	d1	ha
SLS-10X2-BB	50	32	36	40	20	30	6.5	11	6.6	10	16
SLS-10X12-BB	50	32	36	40	20	30	6.5	11	6.6	10	16
SLS-10X50-BB	50	32	36	40	20	30	6.5	11	6.6	10	16
SLS-18X4-BB	72	46	54	48	36	36	8.6	15	9.0	18	23
SLS-18X8P4-BB	72	46	54	48	36	36	8.6	15	9.0	18	23
SLS-18X24-BB[55]	72	46	54	48	36	36	8.6	15	9.0	18	23
SLS-18X100-BB[55]	72	46	54	48	36	36	8.6	15	9.0	18	23
SLS-24X5-BB	94	64	70	48	36	50	13	20	13.5	24	32

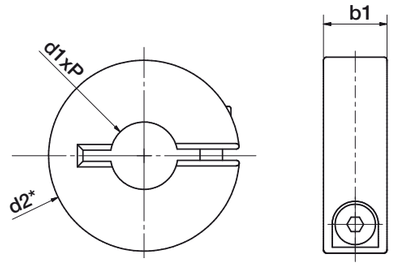
[55] Lead screw end must be turned to 18 mm

drylin® trapezoidal thread

drylin® TR | Special geometries | Product range

drylin® clamping ring, right and left-handed thread





Order key

Part number	Thread
CRR - 01 -	TR10X2
Clamping ring	Hand of rotation	Type	Trapezoidal thread	Diameter	Lead

Dimensions [mm]

Thread	d2[56] h9	b1	Max. stat. F axial [N]	Part No. right-handed
Tr08x1.5	16	9	1,530	CRR-01-TR08X1.5
Tr10x2	24	8	1,800	CRR-01-TR10X2
Tr12x3	28	8	2,096	CRR-01-TR12X3
Tr14x4	30	11	3,312	CRR-01-TR14X4
Tr16x4	34	11	3,840	CRR-01-TR16X4
Tr18x4	36	13	5,216	CRR-01-TR18X4
Tr20x4	45	15	6,784	CRR-01-TR20X4
Tr24x5	45	15	8,096	CRR-01-TR24X5

Thread	d2[56] h9	b1	Max. stat. F axial [N]	Part No. left-handed
Tr08x1.5	16	9	1,530	CRL-01-TR08X1.5
Tr10x2	24	8	1,800	CRL-01-TR10X2
Tr12x3	28	8	2,096	CRL-01-TR12X3
Tr14x4	30	11	3,312	CRL-01-TR14X4
Tr16x4	34	11	3,840	CRL-01-TR16X4
Tr18x4	36	13	5,216	CRL-01-TR18X4
Tr20x4	45	15	6,784	CRL-01-TR20X4
Tr24x5	45	15	8,096	CRL-01-TR24X5

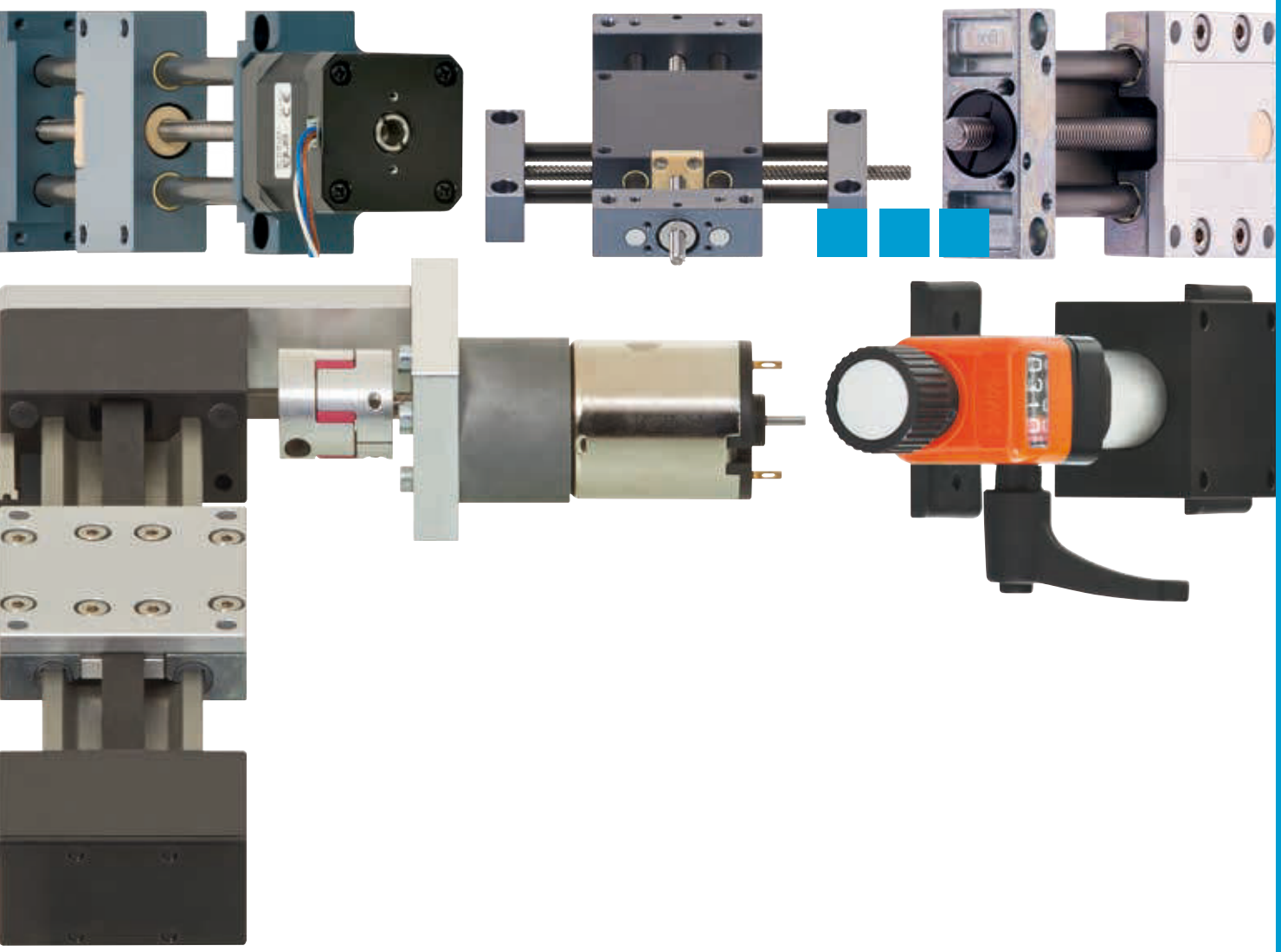
[56] Outside clamping ring dimension. Screw head may protrude. Installation dimension: d2 (+2mm)

Dimensions [mm] – clamping ring without thread

Ø	d2	b1	Part No.
10	24	8	KRM-S10
12	28	11	KRM-S12
14	30	11	KRM-S14
16	34	11	KRM-S16
18	36	13	KRM-S18
24	45	15	KRM-S24

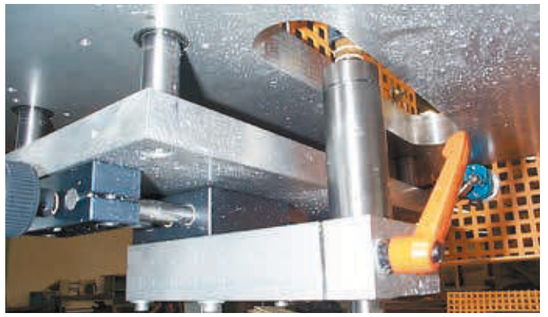
drylin®

Drive technology



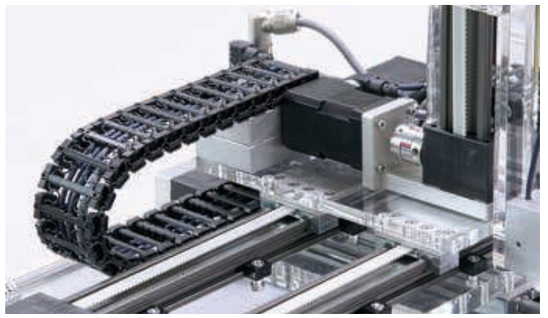
...plastics

CAMERA/LASER ADJUSTMENT IN LABELING SYSTEM
In a labeling system the camera and laser positioning are guided with two drylin® SHT/SLWE-XY -XY-table units.
(Co. Pago Etikettiersysteme GmbH)

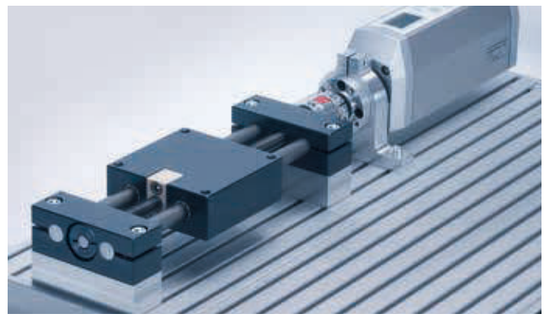


POSITIONING OF MILLING HEADS
Aluminium dust and chips cannot stick due to the absence of lubricants at any of the bearing points of the drylin® lead screw table SHT.
(Berchtold GmbH)

HEIGHT ADJUSTMENT OF CODING DEVICE
The drylin® lead screw unit gives variable and precise adjustment, free from any maintenance or lubrication.
(Filtec Europe GmbH)

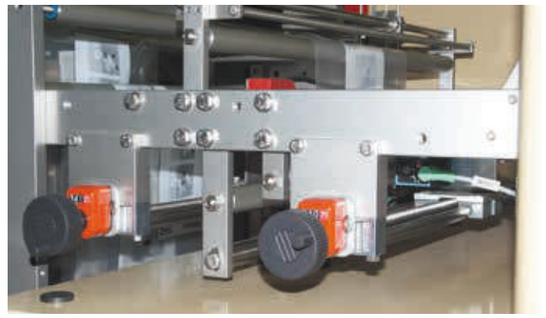


PICK AND PLACE
Quick and maintenance-free handling with drylin® toothed belt axes (X, Y, Z axis).



ELECTRIC ACTUATOR
drylin® lead screw table combined with an electric actuator for use in a variety of format adjustments.
(Festo AG & Co. KG)

ADJUSTMENT OF INSPECTION CAMERA
drylin® ZLW toothed belt axis in an inspection camera adjustment for checking the position of sealing rings.
(OLPE Jena GmbH)



WEB EDGE DETECTION
The drylin® SLW lead screw unit with position indicator and hand wheel adjusts the sensors which detect the edge of the webbing and any print marks.

Other exciting applications ▶ www.igus.eu/drylin-applications

drylin® drive technology – linear modules SHT

Standard:

SHT

▶ Page 1180

Preload:

SHT-PL

▶ Page 1181

Flexible:

SHTC

▶ Page 1182

The fast one with high helix thread:

SHTS

▶ Page 1183

Linear modules SHT

With ball bearing supported lead screw:

SHT-BB

▶ Page 1184

With quick release mechanism:

SHTC-FF

▶ Page 1186

With quick release mechanism:

SHT-FF

▶ Page 1187

High temperature up to +150 °C:

SHT-HTX

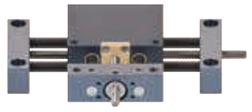
▶ Page 1188

Linear modules SHT

Hygienic design:

SHTC-HYD

▶ Page 1189



XY-tables:

SHT-XY

▶ Page 1190

Linear modules SLW

Compact:

SLW

▶ Page 1196

Preload:

SLWE-PL

▶ Page 1197

Linear modules SLW

With ball bearing lead screw supports:

SLEW-BB

▶ Page 1198

The fast one with high helix thread:

SLWS

▶ Page 1199

With protected lead screw:

SLW-PT

▶ Page 1200

Two linear units are rolled into one:

SLWT

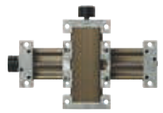
▶ Page 1201

Linear modules SLW

Stainless steel version:

SLW-ES

▶ Page 1202



XY-tables:

SLW-XY

▶ Page 1204

XY-tables – stainless steel version:

SLW-XY-ES

▶ Page 1205

Linear modules SAW

New

Dynamic high design:

SAW

▶ Page 1210

Linear modules SAW

New

Direct drive short design:

SAWC

▶ Page 1211

New

With motor available from stock:

DLE-SA

▶ Page 1212

Linear module "light" SHTP – ...

Small and low-cost:

SHTP Mini

▶ Page 1215

Light and strong:

SHTP

▶ Page 1216

... solid plastic

With quick release mechanism:

SHTP-FF

▶ Page 1218

Linear unit easytube

Single tube linear unit easytube:

SET

▶ Page 1222

easytube with flange on both sides:

SET-F

▶ Page 1223

easytube with carrier flange on one side:

SETB

▶ Page 1224

Linear unit easytube

easytube with measurement scale:

SETM-SC

▶ Page 1225

easytube "light":

SETC

▶ Page 1226

Flat linear module

New

With ball bearing supported lead screw based on drylin® T: SLT-BB

▶ Page 1229

Miniature linear module

Miniature linear module Basic:

SLN

▶ Page 1233

Miniature linear module Preload:

SLN-27

▶ Page 1234

Cantilever axis

New

Cantilever axis:

GRW

▶ Page 1238

New

Gripper axis:

GRQ

▶ Page 1239

Cantilever axis

New

Lift/swivel unit:

HSQ

▶ Page 1240

Tooth Belt Axis ZLW

Standard toothed belt axes:

ZLW

▶ Page 1243

New

Cost-effective toothed belt axes:

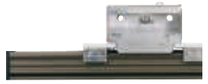
ZLW-ECO

▶ Page 1249

drylin® drive technology | Product overview

Tooth belt axis ZLW

Opposed toothed belt axes:
ZLW-OD
▶ Page 1252

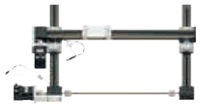


Cantilever axis:
ZAW
▶ Page 1254

drylin® E – electric drive technology

Linear axes with motor
▶ Page 1260

With motor available from stock:
DLE-SA
▶ Page 1264



New

Pre-configured assembly from stock:
drylin® linear robots
▶ Page 1290

Precise, efficient and compact:
lead screw motors
▶ Page 1298

Accessories for drylin® drive technology

V-drive, flexible positioning
▶ Page 1306

V-drive for heavy duty
▶ Page 1307

Hygienic-Design V-drive
▶ Page 1307

Position indicator
▶ Page 1308

Accessories for drylin® drive technology

Lead screw clamp
▶ Page 1309

Hand wheels
▶ Page 1310

Flexshafts
▶ Page 1311

Stepper motors
▶ Page 1314

Accessories for drylin® drive technology

DC motor with spur gear
▶ Page 1318

New

Protective cover for DC motors
▶ Page 1321

Couplings
▶ Page 1322

Motor flanges
▶ Page 1323

Accessories for drylin® drive technology

Connecting cables for stepper motors
▶ Page 1324

Proximity switches:
Limit and reference switches
▶ Page 1325

Spacer for height adjustment:
SLW/SHT linear module
▶ Page 1326

Mounting bracket
▶ Page 1327

Accessories for drylin® drive technology

Adapter kit for linear robot setup
▶ Page 1328

T-grooved plate
▶ Page 1329

Slot nuts for mounting
▶ Page 1330

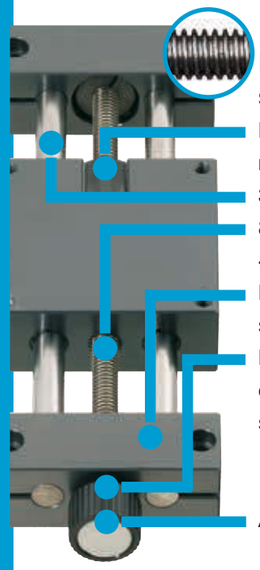
Clamps
▶ Page 1331

Accessories for drylin® drive technology

Adapter plate
▶ Page 1332

Stainless steel angle kit
▶ Page 1333

The drylin® product portfolio provides lubrication-free linear drives that are driven either by a trapezoidal thread, high helix thread or toothed belt. The user can choose a suitable individual solution from lightweight solid plastic units up to heavy duty stainless steel solutions. In all systems, the stroke length is freely selectable and the drive given either via hand wheel or motor.



Linear modules with lead screw drive

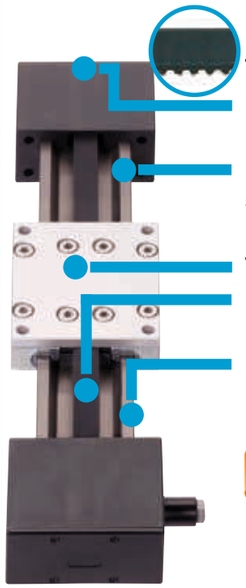
Polymer bearings and lead screw nuts give lubrication-free operation
3 shaft materials
8 trapezoidal thread pitches, 4 high helix thread pitches
Body material made from stainless steel, aluminium, zinc or plastic
Leadscrew machining to drawing or plain drive shaft (Steel, stainless steel- or aluminium lead screws)

Available accessories

When to use it?
- For format adjustments
- In extreme environments
- When a cost-effective, ready-to-fit solution is required
- When corrosion resistance is required
- For low noise

When not to use it?
- For high loads combined with very high speeds
- When positioning accuracy <0.1 mm is necessary
- When high running performance is required in continuous operation

Standard min. 0 °C, max. +60 °C
HTX-Version min. 0 °C, max. +150 °C



Toothed belt axes

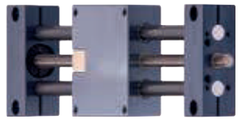
Deflection with grooved ball bearing
Lubrication-free linear guide system with polymer plain bearings
Various carriage lengths
Polyurethane or neoprene toothed belts
Hard-anodised aluminium profile

When to use it?
- Fast positioning of small loads
- Quiet operation
- Flat design
- Underwater use with UW-belt
- Cost-effective solution as basic version
- Long-term use

When not to use it?
- When high loads need to travel at highly dynamic forces
- When positioning accuracy < 0.1 mm is necessary

Standard[91)] min. 0 °C, max. +60 °C
LT-Version min. -30 °C, max. +60 °C

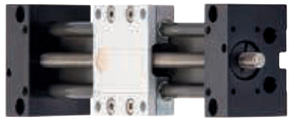
[91)] **Does not apply to accessories**



Linear modules SHT

- Trapezoidal or high-helix lead screw drives
- Ball-bearing mounted lead screw units for higher dynamic forces
- Carriage in either quad or compact design

▶ Page 1177



Linear modules SAW

- Drive: Lead screw ball bearing
- Rail profile in high design
- Extremely torsion-resistant

▶ Page 1207

Linear modules SET easytube

- Corrosion resistant
- Low weight due to aluminium and plastic
- Simple, smooth design, protected lead screw

▶ Page 1219

Miniature linear modules SLN

- Based on drylin® N, low profile height
- Versions Basic, adjustable and preload

▶ Page 1231

Tooth belt axis ZLW

- Versions Basic, Standard and Eco
- For fast positioning
- Ball bearings in deflection pulleys

▶ Page 1241

Linear modules SLW

- Based on drylin® W
- Trapezoidal or high-helix lead screw drives
- Torsion-resistant dual shaft system

▶ Page 1193

Linear module "light" SHTP

- Lightweight
- Cost-effective
- Corrosion resistant

▶ Page 1213

Linear modules SLT

- Variable pitch
- Adjustable drylin® T miniature carriage
- Lead screw arrangement can be selected either left or right

▶ Page 1227

Cantilever axis GRW

- Dynamic force transmission through rack
- Assembly option for limit and reference switch

▶ Page 1235

drylin® E – electric drive technology

- Lubrication-free linear modules with motor
- Ready to install with motor, cable and initiator
- Drive: lead screw, toothed belt or rack

▶ Page 1259

Accessories for linear modules

- Position indicator, hand wheels, screw clamps, angle drives and so on

▶ Page 1303

Linear modules

Linear module	Shaft Ø [mm]	Thread	Lead	Screws Self locking head	Carriages length [mm]	Compatible with drylin® E
SHT-08	8	Tr	06x2	+	35/65	+
	8	Sg	6.35x12.7	-		
SHT-12	12	Tr	10x2	+	30/85	+
	12	Sg	10x12	-		
	12	Sg	10x50	-		
SHT-20	20	Tr	18x4	+	36/130	+
	20	Tr	18x8	+		
	20	Sg	18x100	-		
SHT-30	30	Tr	24x5	+	50/180	+
SHTC-40	40	Tr	26x5	+	70	+
SHTC-50	50	Tr	30x6	+	80	+
SLW-0630	□5	M	M8x1.25	+	60/100	+**
	5	Tr	08x1.5	+		
	5	Sg	08x15	-		
SLW-1040 **SLW-1080** **SLW-10120**	10	Tr	10x2	+	69/100/150/200	+**
	10	Sg	10x12	-		
	10	Sg	10x50	-		
SLW-1660	16	Tr	14x4	+	100/150/200	+
SLW-2080	20	Tr	18x4	+	150/200/250	+
	20	Tr	18x8	+		
	20	Sg	18x100	-		
SLW-25120	30	Tr	24x5	+	150/200/250	+
SAW-0630	□5	Tr	08x1.5	+	60/100	+
	5	Sg	08x15	-		
SAW-1040	10	Tr	10x2	+	69/100/150	+ 10 10
	10	Sg	10x12	-		
	10	Sg	10x50	-		
SAW-1080	10	Tr	12x3	+	100	+ 10 10
	10	Sg	12x6	-		
	10	Sg	12x25	-		
SAW-1660	16	Tr	14x4	+	100/150/200	+
SLT-0412	5	Tr	08x1.5	+	38	+
	5	Sg	08x15	-		
SLT-0415	10	Tr	12x3	+	45	+ 10 10
	10	Sg	12x6	-		
	10	Sg	12x25	-		
SLN-27	27	M	M5x0.8	+	35	+ 10
	10	Sg	5x5	-		
SHTP-01-06	6	M	M8x1.25	+	45	-
SHTP-01-10	10	Tr	06x2	+	36	-
SHTP-01-12 **SHTP-02-12**	12	Tr	10x2	+	55	-
SET-12	12	M	M4x0.7	+	45	-
SET-25	25	Tr	10x2	+	36	-
SET-30	30	Tr	12x3	+	55	-

[120] When configuring your linear module, we ask that you note the igus® specifications for maximum stroke lengths. The performance and load specifications shown above for all drive units are based exclusively on stroke lengths within the recommended values. Exceeding these can result in undesirable effects to the function such as increased wear and noise. Belt or lead screw contact cannot be excluded, and the rated performance and load specifications may not be attainable.

Lead screw slide mounted [121]					Lead screw mounted with ball bearings						
Max. stroke length [120] [mm]	Max. static, axial load capacity [N]	Max. static, radial load capacity [N]	Max. speed [rpm]	Max. feed [m/min.]	Max. stroke length [120] [mm]	Max. stat. axial [N]	Max. stat. radial [N]	Max. speed [rpm]	Max. feed [m/min.]	Technical options (Pages 1172+1173)	Page
					300	100	400	1,000	2.0	ZB	1180
					300	25	100	600	7.6	ZB	1180
750	700	2,800	100	0.2	500	350	1,400	1,500	3.0	PL	1181
750	100	400	100	1.2	500	100	400	400	4.8	ZB	1180
750	100	400	100	5.0	500	100	400	200	10.0	ZB	1180
1,000	1,600	6,400	100	0.4	900	1,000	4,000	1,500	6.0	PL	1181
1,000	500	2,000	100	0.8	900	500	2,000	1,000	8.0	PL	1181
1,000	400	1,600	100	10.0	900	400	1,600	200	20.0	-	1180
1,250	2,500	10,000	100	0.5	1,000	1,500	6,000	1,200	6.0	PL	1181
1,500	4,000	16,000	100	0.5	-	-	-	-	-	-	1182
1,500	6,250	25,000	100	0.6	-	-	-	-	-	-	1182
300	50	200	100	0.1						-	1194
300	100	400	100	0.2	300	100	400	1,000	1.5	-	1194
300	50	200	100	1.5	300	50	200	600	9.0	-	1194
750	700	2,800	100	0.2	500	350	1,400	1,500	3.0	TTF/PL	1194
750	100	400	100	1.2	500	100	400	400	4.8	TTF/PL	1194
750	100	400	100	5.0	500	100	400	200	10.0	TTF/PL	1194
750	1,200	4,800	100	0.4	750	700	2,800	1,500	6.0	TTF/PL	1194
1,000	1,600	6,400	100	0.4	900	1,000	4,000	1,500	6.0	TTF/PL	1194
1,000	500	2,000	100	0.8	900	500	2,000	1,000	8.0	TTF/PL	1194
1,000	400	1,600	100	10.0	900	400	1,600	200	20.0	TTF/PL	1194
1,250	2,500	10,000	100	0.5	1,000	1,500	6,000	1,200	6.0	-	1194
-	-	-	-	-	300	100	400	1,000	1.5	-	1210
-	-	-	-	-	300	50	100	600	9.0	-	1210
-	-	-	-	-	500	500	2,000	1,500	3.0	TTF/PL	1210
-	-	-	-	-	500	100	400	400	4.8	TTF/PL	1210
-	-	-	-	-	500	100	400	200	10.0	TTF/PL	1210
-	-	-	-	-	750	750	3,000	1,500	4.5	TTF/PL	1210
-	-	-	-	-	750	400	400	1,000	6.0	TTF/PL	1210
-	-	-	-	-	750	200	400	300	7.5	TTF/PL	1210
-	-	-	-	-	750	750	3,000	1,500	6.0	TTF/PL	1210
-	-	-	-	-	300	100	400	1,000	1.5	-	1229
-	-	-	-	-	300	25	100	600	9.0	-	1229
-	-	-	-	-	600	200	800	1,500	4.5	-	1229
-	-	-	-	-	600	100	400	1,000	6.0	-	1229
-	-	-	-	-	600	50	200	300	7.5	-	1229
250	10	40	100	0.1	250	10	40	250	0.2	-	1233
250	10	40	100	0.5	250	10	40	500	2.5	-	1233
300	50	200	100	0.1	-	-	-	-	-	-	1215
350	100	400	100	0.2	-	-	-	-	-	-	1216
500	200	800	100	0.2	-	-	-	-	-	-	1216
200	10	40	100	0.1	-	-	-	-	-	-	1222
750	150	600	100	0.2	-	-	-	-	-	-	1222
850	200	800	100	0.3	-	-	-	-	-	-	1222

[121] Linear modules on slide bearings require an aluminium shaft end support when connected to a motor The technical values in the specifications are maximum values for each criterion, e.g. speed, stroke length etc.; they are not cumulative values. Suitability under consideration of the individual parameters for usage can be checked online at www.igus.eu/linearmodule-finder.

In addition to the standard configurations, drylin®-drives offer numerous solutions for the many requirements of different applications.

Adjustable radial clearance

The "turn to fit" feature allows individual clearance adjustment by hand. The adjustment is done in 0.01-mm increments and cannot be triggered unintentionally during the operation (SLW type series 10-20).

For lineal modules
Types SLW and SAW

For lineal modules
Type SHT

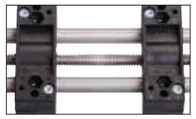
Preload (PL)

The optional axial pretension reduces the backlash of the system. Positioning and repeatability can be optimised. The required drive torque increases only slightly.

For lineal modules
Types SHT, SLW and SAW

Right-left and reverse

In addition to the standard right-handed lead screws, left-hand thread lead screws and counter lead screws can also be used. This option often used in format adjustments can be specified for all diameters and types. Also available as a multi-carriage system or with right/left reverse travel.



Online customer drawing
▶ www.igus.eu/customerdrawing

Linear modules with ball-bearing mounted lead screw

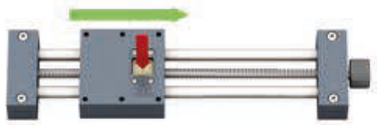
The SHT and SLW linear modules with ball bearing mounted leads crews give quiet operation, reduced vibration, and increased dynamic capability. These are also suitable for applications with motor drives.

Zero-Backlash (ZB)

Self-adjusting zero-backlash lead screw nuts are available for SHT modules in size 08 and 12. For movements that require repeatability and which are implemented through high helix thread, the ZB function provides a minimal lifelong backlash.

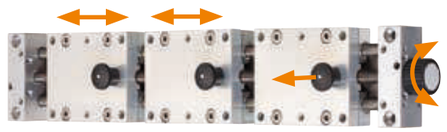
Fast Forward (FF)

SHT linear modules and SHTP plastic linear modules offer a combination of accurate positioning and fast manual adjustment.



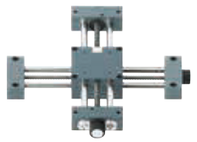
drylin® SLW "Stop and Go"

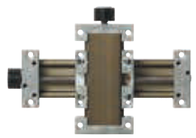
This additional function for linear carriages enables the use of an unlimited number of carriages on one guide – controlled by only one lead screw. The connection to the lead screw is engaged or released via the button.



XY-Table

The SHT and SLW linear modules can also be configured as XY cross-slide tables. XY adjustments can therefore be given with a single unit.



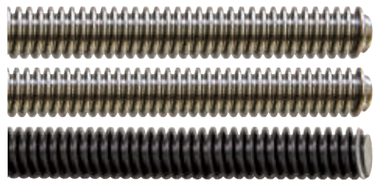


Shaft materials

When using linear axes of the SHT series, you can choose a shaft material from steel, stainless steel, or hard-anodised aluminium (standard). The short delivery time and excellent coefficients of friction and wear make the aluminium version the most common choice.

Lead screw materials

All drylin® linear modules can be delivered with self-locking trapezoidal steel and stainless steel lead screws; upon request, these can also be made from hard-anodised aluminium. The SHT and SLW series can also be configured with high-helix stainless steel lead screws. This allows for much higher pitches and drive speeds, but without the self-locking feature.

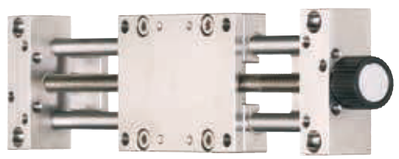


Bearing materials

The bearing surfaces of the drylin® drive units are equipped with lubrication and maintenance-free igus® high performance polymers.
Options include materials for high temperature application up to +150 °C (iglidur® X, type HTX), and also for FDA-compliant environments (iglidur® A180).

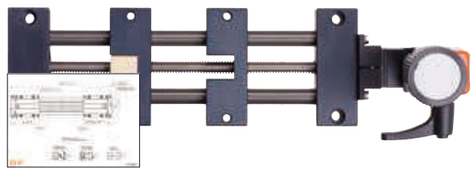
Complete solutions made from stainless steel

The use of 1.4571 and 1.4301 makes of the guides resistant to seawater and chemical contact corrosion, and the guide shafts are also made from 1.4571.



Linear modules with several carriages

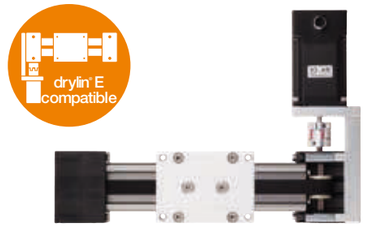
All drylin® linear modules can be configured with multiple carriages. The short carriages from the SHTC series are ideally suited for this. The second (or additional) carriage can be installed as a freely moving unit without lead screw, or as a fixed unit with its own trapezoidal lead screw.



Online customer drawing
▶ www.igus.eu/customerdrawing

Linear modules with motor

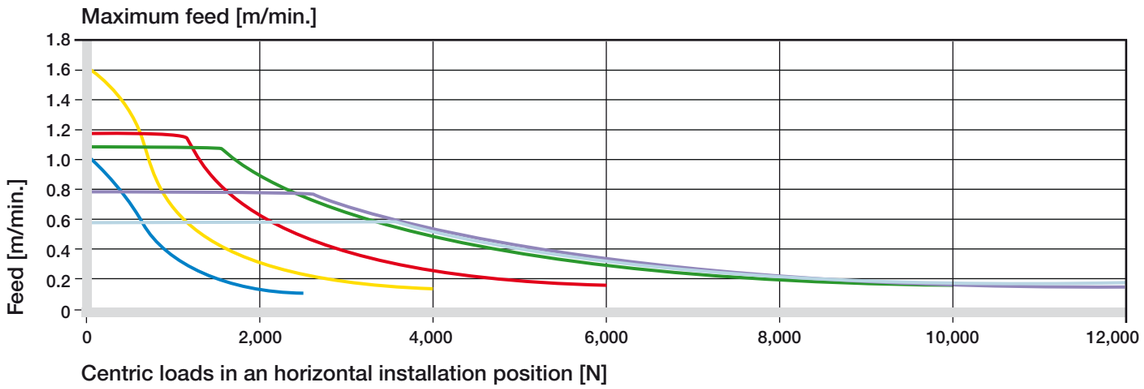
Several drylin® drive units are compatible with the drylin® E modular kit. As linear axes, they can be easily and quickly configured directly to the matching igus® stepper motors, power cables and initiators – assembled and tested from one source.

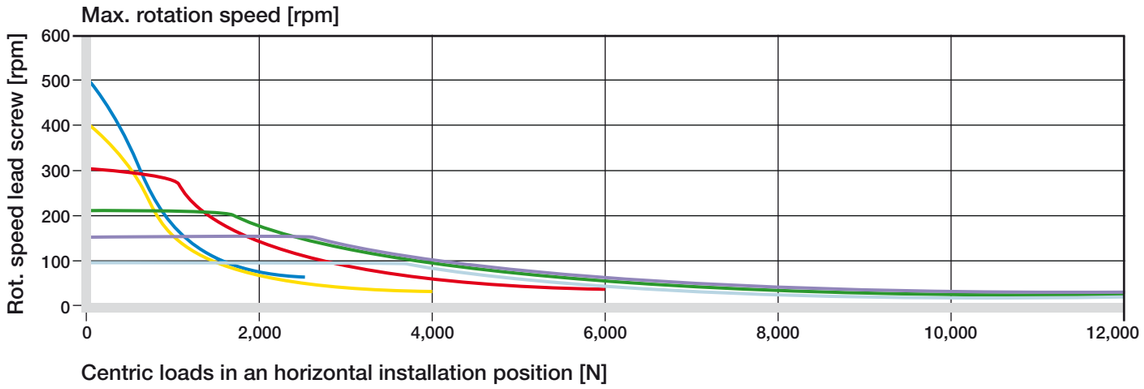


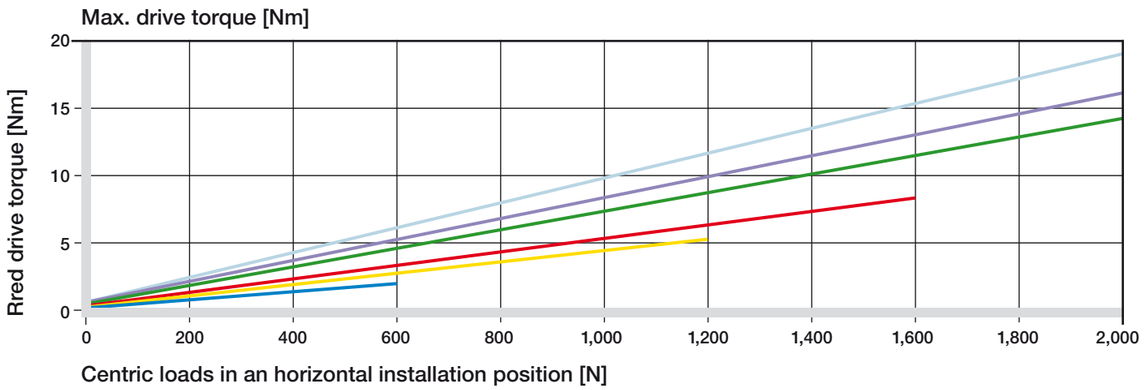
drylin® linear lead screw units have been developed for position settings of all types. The linear setting is achieved by means of trapezoidal lead screw that can be operated manually or by motor. The maximum linear continuous speed is 1.6 m/min according to thread and load. The suitability of the linear slide unit for an application can be checked using the graphs below.

HORIZONTAL

HORIZONTAL





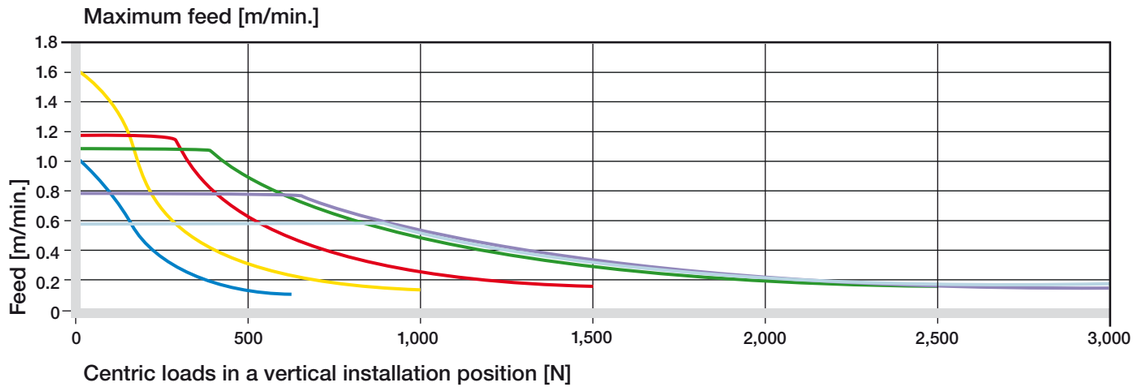


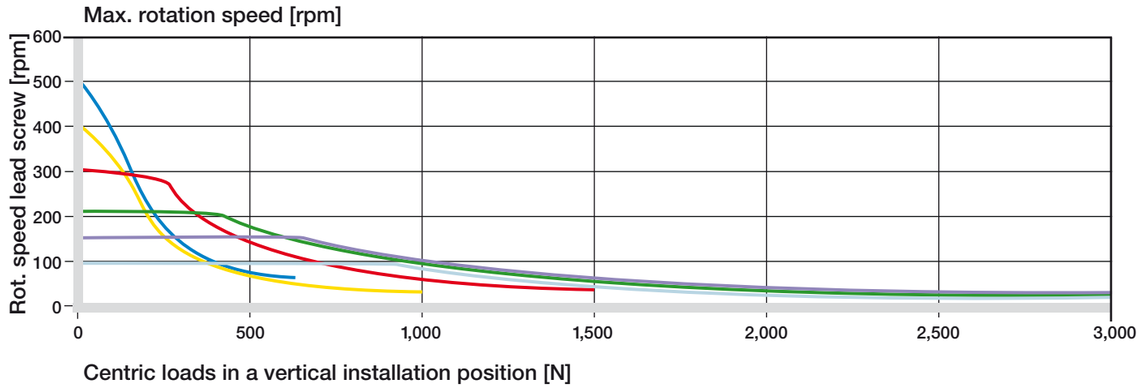
The following trapezodial lead screw drive sizes are used in SHT, SLW and SET linear modules

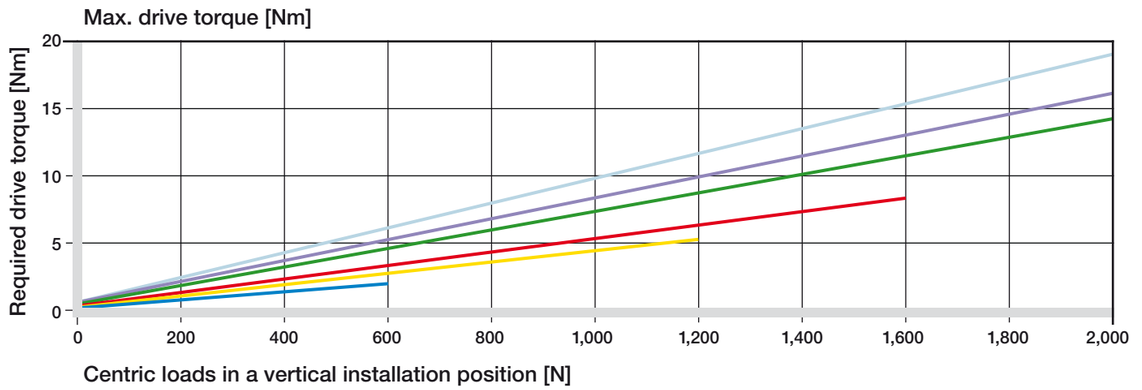
- **TR 10 x 2:** SHT-12, SHTC-12, SHTP-12, SLW-1040, SLW-1080, SLW-1040-ES, SET-25
- **Tr 14 x 4:** SLW-1660
- **Tr 18 x 4:** SHT-20, SHTC-20, SLW-2080
- **Tr 24 x 5:** SHT-30, SHTC-30, SLW-25120
- **Tr 26 x 5:** SHTC-40
- **Tr 30 x 6:** SHTC-50

VERTICAL

VERTICAL

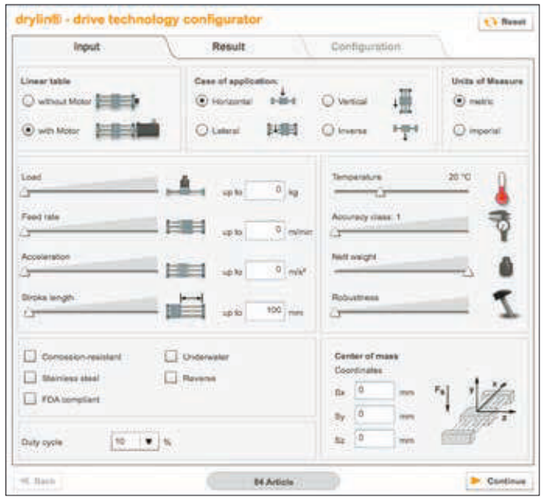


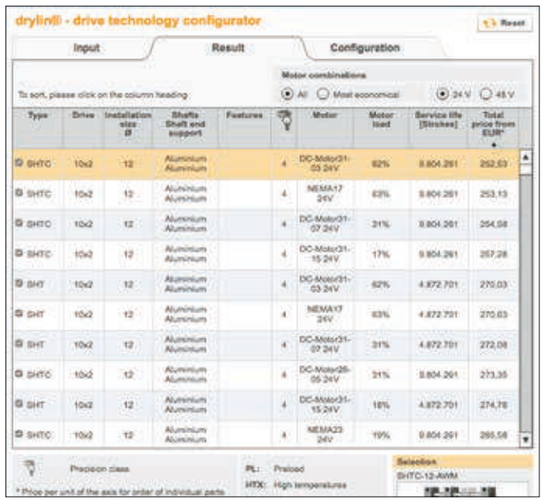


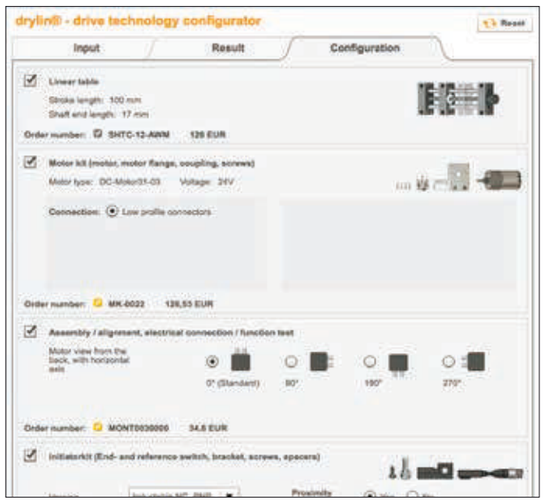


drylin® drive technology | Product finder online

Online configuration of linear systems



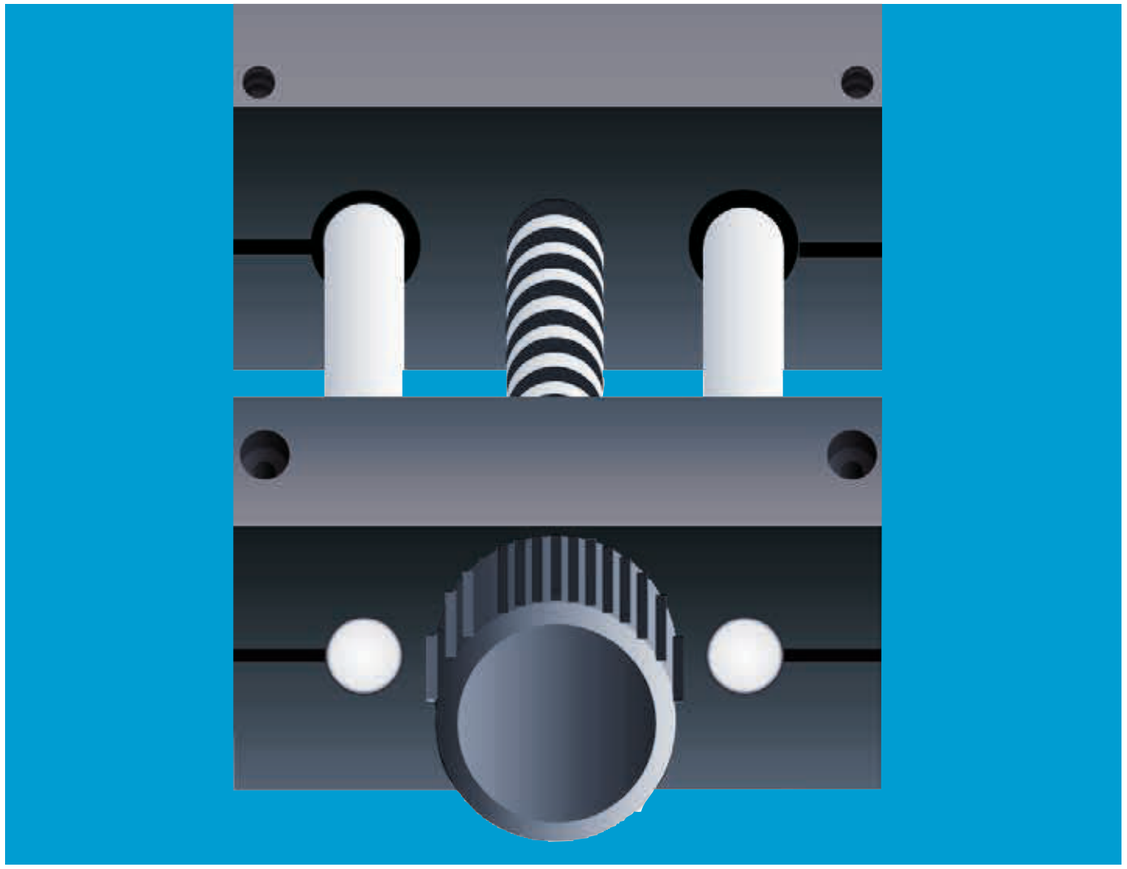




Complete drive technology configurable with or without motor

After you have selected your application parameters, the product finder shows an overview of the lead screw modules and the motors that are suitable. The product finder calculates the price of the linear axis as well as the utilization rate of the motors and the service life in strokes. With just few clicks, you can put together a complete linear axis incl. motor, connecting cables and built-on parts.

▶ **www.igus.eu/linearmodule-configurator**



drylin® general drive technology – linear modules SHT

- Trapezoidal or high-helix lead screw drives
- Ball-bearing mounted lead screw units for higher dynamic forces
- Lead screws made from steel, stainless steel or aluminium
- Carriage in either quad block or compact design
- Lubrication and maintenance-free

Robust and precise

Lubrication-free linear modules – drylin® SHT

The drylin® SHT linear modules can be moved lubrication-free, while also offering high precision and robust components. The units can be individually configured with various shaft and lead screw materials, carriage lengths and additional functions. The SHT series is suitable for manual and motorised operation and is supplied ready for connection with drylin® E-motors.

- All sliding surfaces are completely lubrication-free due to the use of iglidur® high performance polymers
- Freely selectable stroke lengths
- High temperature version available
- SHT linear modules can be configured as a multi-carriage system or with right/left reverse travel

Typical application areas

- Format adjustment
- Actuators
- Sensor adjustment
- Marking and engraving technology
- Laboratory equipment

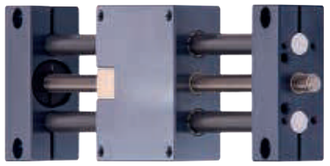
Available in 3-8 days
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

Carriage lengths: 30 - 180 mm
Pitch: 2–100 mm/rotation
Stroke lengths: up to 1,500 mm

Product finder
▶ www.igus.eu/sht-productfinder

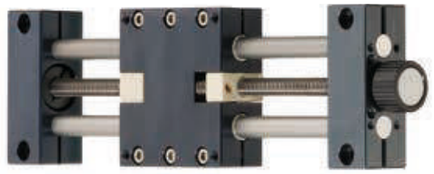
100% lubrication and maintenance-free



Linear module SHT – standard

- Solid design
- Three different sizes
- Various materials for shaft and lead screw
- Maintenance-free and optionally corrosion resistant

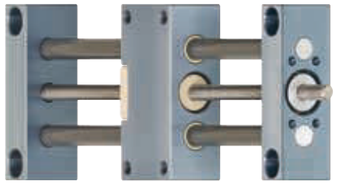
▶ Page 1180



Linear module SHT-PL "preload"

- Preloaded trapezoidal lead screw nuts, preload force: 50 N
- Manually and continuously adjustable radial clearance
- Low weight due to aluminium and plastic

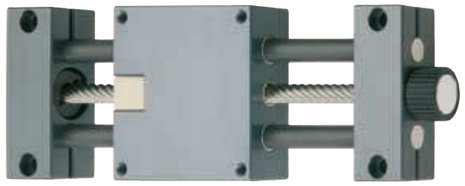
▶ Page 1181



Linear module SHTC – flexible

- High flexibility due to short carriages
- Ideal for two carriages
- 5 sizes from Ø 12 up to 50 mm

▶ Page 1182



Linear module SHTS – the fast one

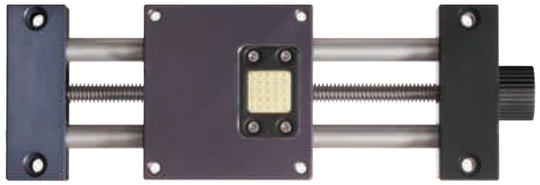
- With high helix lead screw
- High-Speed-solution for fast positioning
- Up to 100 mm travel/rotation

▶ Page 1183

Linear module SHT-BB "ball-bearing supported"

- Higher rotation speed and higher precision
- Belt drive permits radial loads
- Constant drive torque
- Less axial clearance

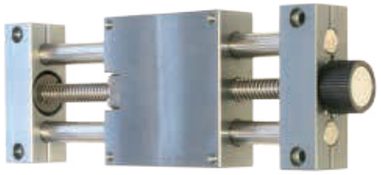
▶ Page 1184



Linear module SHT-FF "fast-forward"

- With quick-release mechanism
- Precise and fast positioning
- Including self-locking brake
- Only recommended for horizontal applications

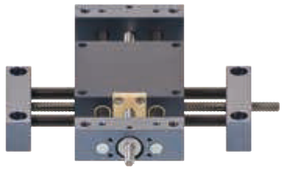
▶ Page 1187



Special designs

- High temperature version up to +150 °C
- Hygienic design, light, washable

▶ From page 1188



XY-Table

- XY-tables standard and preload

▶ From page 1190

drylin® SHT | Linear modules | Product range

Standard

- Solid design
- Various materials for shaft and lead screw
- Maintenance-free and optionally corrosion resistant
- Tr10x2, Tr18x4, Tr24x5
- Temperature resistant up to +60 °C
- Available accessories ▶ **Page 1303**
- Lead screw nuts are available separately ▶ **Page 1148**
- Available with motor ▶ **Page 1261**

drylin® E compatible

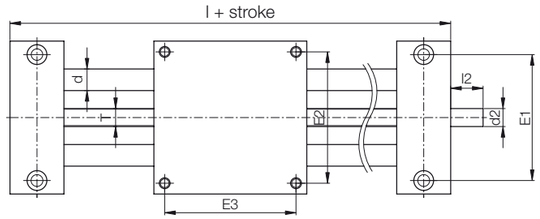
reddot design award winner 2006

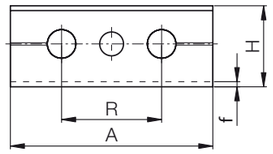
Order key

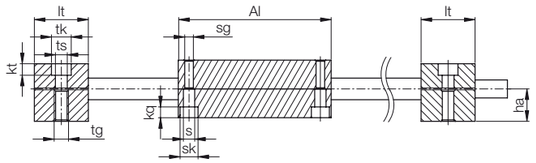
complete ▶ **Page 1192**

SHT-12-AWM

- Shaft material
- Installation size
- Standard







Technical data

Part No.	Max. stroke length	Aluminium shaft		Steel shaft		Max. static load capacity	
		Weight	Additional (per 100 mm)	Weight	Additional (per 100 mm)	axial	radial
	[mm]	[kg]	[kg]	[kg]	[kg]	[N]	[N]
SHT-12-AWM	750	1.1	0.1	1.3	0.2	700	2,800
SHT-20-AWM	1,000	3.2	0.3	3.9	0.6	1,600	6,400
SHT-30-AWM	1,250	8.6	0.6	10.9	1.4	2,500	10,000

Dimensions [mm]

Part No.	A –0.3	Al –0.3	H	E1 ±0.15	E2 ±0.15	E3 ±0.15	l	R	f	lt	tk	ts
SHT-12-AWM	85	85	34	70	73	73	145	42	2	30	11	6.6
SHT-20-AWM	130	130	48	108	115	115	202	72	2	36	15	9.0
SHT-30-AWM	180	180	68	150	158	158	280	96	4	50	20	13.5

Part No.	tg	kt ±0.1	s	sk	sg	kq	d	T	l2	d2 Standard	ha
SHT-12-AWM	M8	6.4	6.3	10	M6	6.0	12	Tr10x2	17	Tr10x2[92)]	18
SHT-20-AWM	M10	8.6	6.4	11	M8	7.0	20	Tr18x4	26	12h9	23
SHT-30-AWM	M16	12.6	11.0	18	M12	10.6	30	Tr24x5	38	14h9	36

92) Lead screw end unmachined

drylin® SHT | Linear modules | Product range

Preload-Version

Preloaded trapezoidal lead screw nut

drylin® E compatible

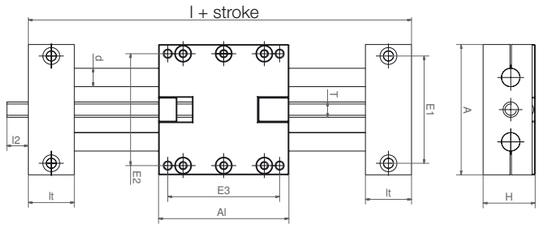
Order key

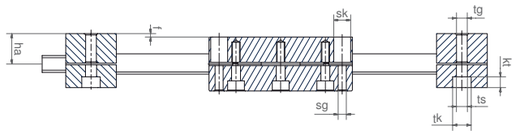
complete ▶ **Page 1192**

SHT-12-AWM-PL

- Preload
- Shaft material
- Installation size
- Standard

- Preloaded trapezoidal lead screw nuts, preload force: 50 N
- Manually and continuously adjustable radial clearance
- Low weight due to aluminium and plastic
- Lead screw end unmachined
- Temperature resistant up to +60 °C
- Available accessories ▶ **Page 1303**
- Lead screw nuts are available separately ▶ **Page 1148**
- Available with motor ▶ **Page 1261**





Technical data

Part No.	Max. stroke length	Aluminium shaft		Steel shaft		Max. static load capacity	
		Weight	Additional (per 100 mm)	Weight	Additional (per 100 mm)	axial	radial
	[mm]	[kg]	[kg]	[kg]	[kg]	[N]	[N]
SHT-12-AWM-PL	750	1.1	0.1	1.3	0.2	700	2,800
SHT-20-AWM-PL	1,000	3.2	0.3	3.9	0.6	1,600	6,400
SHT-30-AWM-PL	1,250	8.6	0.6	10.9	1.4	2,500	10,000

Dimensions [mm]

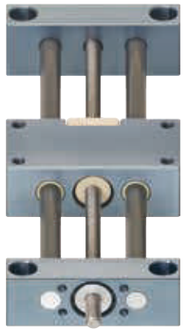
Part No.	A –0.3	Al –0.3	H	E1 ±0.15	E2 ±0.15	E3 ±0.15	l	R	f	lt	tk	ts
SHT-12-AWM-PL	85	85	34	70	73	73	145	42	2	30	11	6.6
SHT-20-AWM-PL	130	130	48	108	115	115	202	72	2	36	15	9.0
SHT-30-AWM-PL	180	180	68	150	158	158	280	96	4	50	20	13.5

Part No.	tg	kt ±0.1	sk	sg	d	T	l2	d2 Standard	ha
SHT-12-AWM-PL	M8	6.4	10	M6	12	Tr10x2	17	Tr10x2[92)]	18
SHT-20-AWM-PL	M10	8.6	11	M8	20	Tr18x4	26	12h9	23
SHT-30-AWM-PL	M16	12.6	18	M12	30	Tr24x5	38	14h9	36

92) Lead screw end unmachined

drylin® SHT | Linear modules | Product range

Flexible



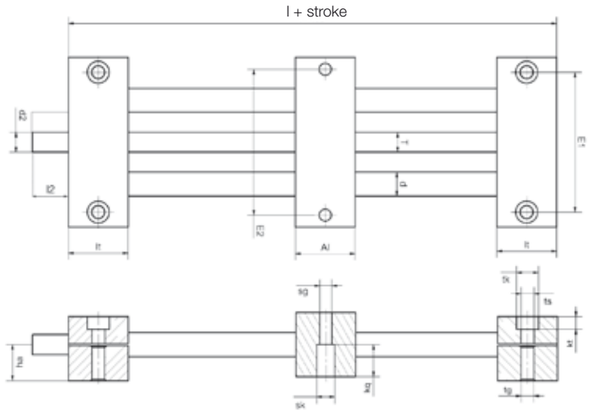
- High flexibility
- Ideal for two carriages
- Adjustable
- Available accessories ▶ **Page 1303**
- Lead screw nuts are available separately ▶ **Page 1148**
- Available with motor ▶ **Page 1261**

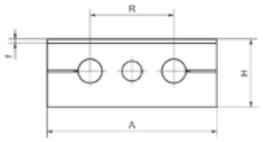
drylin® E compatible

Order key
complete ▶ Page 1192

SHTC-12-AWM

- Shaft material
- Installation size
- Type: flexible





Technical data

Part No.	Max. stroke length	Aluminium shaft		Steel shaft		Max. static load capacity	
		Weight	Additional (per 100 mm)	Weight	Additional (per 100 mm)	axial	radial
	[mm]	[kg]	[kg]	[kg]	[kg]	[N]	[N]
SHTC-12-AWM	750	0.7	0.1	0.8	0.2	700	2,800
SHTC-20-AWM	1,000	1.9	0.3	2.3	0.6	1,600	6,400
SHTC-30-AWM	1,250	4.6	0.6	5.8	1.4	2,500	10,000
SHTC-40-SWMH	1,500	11.0	0.9	16.0	2.4	4,000	16,000
SHTC-50-SWMH	1,500	17.0	1.2	26.3	3.5	6,250	25,000

Dimensions [mm]

Part No.	A	Al	H	E1	E2	l	R	f	lt	tk	ts	tg
	–0.3	–0.3		±0.15	±0.15							
SHTC-12-AWM	85	30	34	70	73	90	42	2	30	11	6.6	M8
SHTC-20-AWM	130	36	48	108	115	108	72	2	36	15	9.0	M10
SHTC-30-AWM	180	50	68	150	158	150	96	4	50	20	13.5	M16
SHTC-40-SWMH	230	70	84	202	202	210	122	4	70	20	13.5	M16
SHTC-50-SWMH	280	80	100	250	250	240	152	4	80	20	13.5	M16

Part No.	kt	sk	sg	kq	d	T	l2	d2	ha
	±0.1							Standard	
SHTC-12-AWM	6.4	10	M6	6.0	12	Tr10x2	17	Tr10x2[92)]	18
SHTC-20-AWM	8.6	11	M8	7.0	20	Tr18x4	26	12h9	23
SHTC-30-AWM	12.6	18	M12	10.6	30	Tr24x5	38	14h9	36
SHTC-40-SWMH	12.6	20	M16	39	40	Tr26x5	45	16h9	44
SHTC-50-SWMH	12.6	20	M16	49	50	Tr30x6	50	20h9	52

[92)] Lead screw end unmachined

drylin® SHT | Linear modules | Product range

The fast one with high helix thread

- Pitch Sg10x12, Sg10x50, Sg18x100
- High-speed-solution
- Available accessories ▶ **Page 1303**
- Lead screw nuts are available separately ▶ **Page 1148**
- Available with motor ▶ **Page 1261**

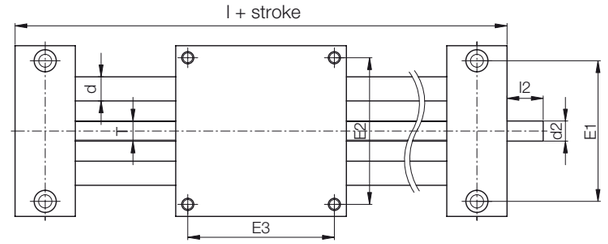
drylin® E compatible

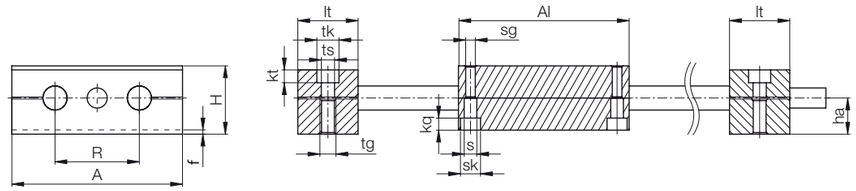
reddot design award winner 2006

Order key
complete ▶ Page 1192

SHTS-12-AWM-10x12

- Lead
- Shaft material
- Dimension
- High helix thread
- Standard





Technical data

Part No.	Max. stroke length	Aluminium shaft		Max. static load capacity	
		Weight	Additional (per 100 mm)	axial	radial
	[mm]	[kg]	[kg]	[N]	[N]
SHTS-12-AWM-10x12	750	1.1	0.1	100	400
SHTS-12-AWM-10x50	750	1.1	0.1	100	400
SHTS-20-AWM-18x100	1,000	3.2	0.3	400	1,600

Dimensions [mm]

Part No.	A	Al	H	E1	E2	E3	l	R	f	lt	tk	ts	tg
				±0.15	±0.15	±0.15							
SHTS-12-AWM-10x12	85	85	34	70	73	73	145	42	2	30	11	6.6	M8
SHTS-12-AWM-10x50	85	85	34	70	73	73	145	42	2	30	11	6.6	M8
SHTS-20-AWM-18x100	130	130	48	108	115	115	202	72	2	36	15	9.0	M10

Part No.	kt	s	sk	sg	kq	d	T	l2	d2	ha
	±0.1								Standard	
SHTS-12-AWM-10x12	6.4	6.3	10	M6	6.0	12	10x12	17	Sg10x12[92)]	18
SHTS-12-AWM-10x50	6.4	6.3	10	M6	6.0	12	10x50	17	Sg10x50[92)]	18
SHTS-20-AWM-18x100	8.6	6.4	11	M8	7.0	20	18x100	26	12h9	23

[92)] Lead screw end unmachined

drylin® SHT | Linear modules | Product range

With ball bearing lead screw supports

- Higher speeds
- Higher precision
- Less axial clearance
- Belt drive permits radial loads
- Constant drive torque
- Zero-backlash function available for sizes 08 and 12
- Available accessories ▶ **Page 1303**
- Lead screw nuts are available separately ▶ **Page 1148**
- Available with motor ▶ **Page 1268**

drylin E compatible

Order key
complete ▶ **Page 1192**

SHT-BB-12-AWM

- Shaft material
- Installation size
- Ball bearing
- Standard

Order key
complete ▶ **Page 1192**

SHT-08-ZB-AWM

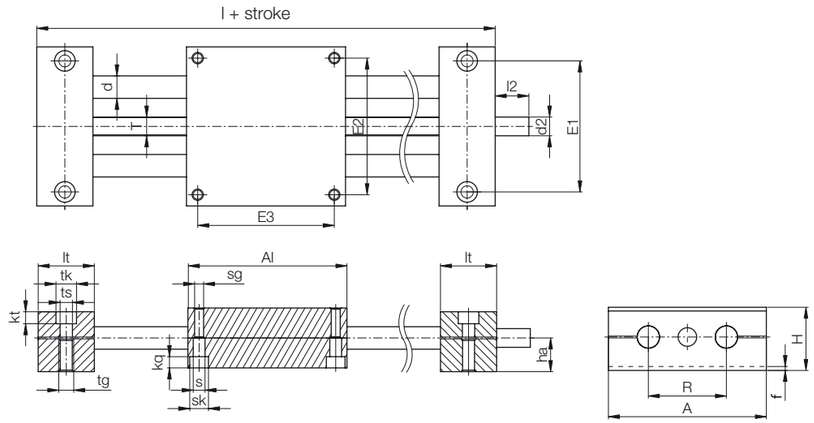
- Shaft material
- Ball bearing, zero-backlash
- Installation size
- Standard

Technical data

Part No.	Max. stroke length	Aluminium shaft		Steel shaft		Max. static load bearing capacity	
		Weight	Additional (per 100 mm)	Weight	Additional (per 100 mm)	axial	radial
	[mm]	[kg]	[kg]	[kg]	[kg]	[N]	[N]
SHTC-08-ZB	300	0.240	0.05	0.270	0.094	100	360
SHT-08-ZB-AWM-6X2P1	300	0.205	0.05	0.228	0.103	100	400
SHT-08-ZB-AWM-6.35x12,7	300	0.205	0.05	0.228	0.103	100	400
SHT-12-ZB-AWM-10x12	500	1.1	0.1	1.3	0.2	150	600
SHT-BB-12-AWM	500	1.1	0.1	1.3	0.2	350	1,400
SHT-BB-20-AWM	900	3.2	0.3	3.9	0.6	1,000	4,000
SHT-BB-30-AWM	1,000	8.6	0.6	10.9	1.4	1,500	6,000

drylin® SHT | Linear modules | Product range

drylin® SHT linear modules



Dimensions [mm]

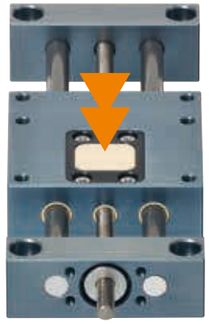
Part No.	A	Al	H	E1	E2	E3	l	R	f	lt	tk	ts
	–0.3	–0.3		±0.15	±0.15	±0.15						
SHTC-08-ZB	65	36	23	52	55	26	96	32	1.5	15.5	10	5.5
SHT-08-ZB-AWM-6X2P1	65	65	23	52	55	55	96	32	1.5	15.5	10	5.5
SHT-08-ZB-AWM-6.35x12,7	65	65	23	52	55	55	96	32	1.5	15.5	10	5.5
SHT-12-ZB-AWM-10x12	85	85	34	70	73	73	145	42	2	30	11	6.6
SHT-BB-12-AWM	85	85	34	70	73	73	145	42	2	30	11	6.6
SHT-BB-20-AWM	130	130	48	108	115	115	202	72	2	36	15	9.0
SHT-BB-30-AWM	180	180	68	150	158	158	280	96	4	50	20	13.5

Part No.	tg	kt	s	sk	sg	kq	d	T	l2	d2	ha
		±0.1								Standard	
SHTC-08-ZB	M6	7	4.2	8	M5	4.6	8	6 / 6.35	17	6 / 6.35	13
SHT-08-ZB-AWM-6X2P1	M6	7	4.2	8	M5	4.6	8	Tr6x2	17	Tr6x2[92)]	13
SHT-08-ZB-AWM-6.35x12,7	M6	7	4.2	8	M5	4.6	8	6.35x12.7	17	6.35[92)]	13
SHT-12-ZB-AWM-10x12	M8	6.4	6.3	10	M6	6.0	12	10x12	17	10x12[92)]	18
SHT-BB-12-AWM	M8	6.4	6.3	10	M6	6.0	12	Tr10x2	17	Tr10x2[92)]	18
SHT-BB-20-AWM	M10	8.6	6.4	11	M8	7.0	20	Tr18x4	26	12h9	23
SHT-BB-30-AWM	M16	12.6	11.0	18	M12	10.6	30	Tr24x5	38	14h9	36

[92)] Lead screw end unmachined

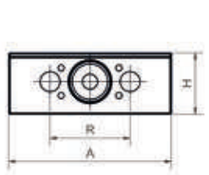
drylin® SHT | Linear modules | Product range

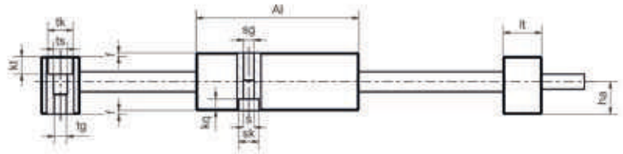
With "Fast-Forward" quick release mechanism

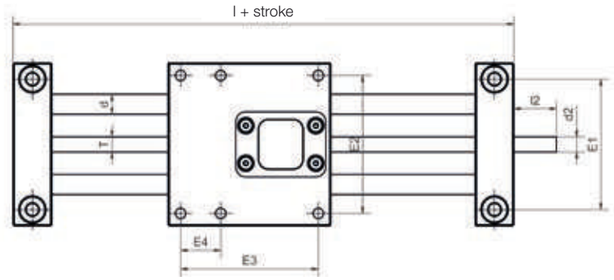


- Fast manual format adjustments
- Precise aluminium version
- Variable stroke length
- Multi-carriage solutions
- Only recommended for horizontal applications
- Available accessories ▶ **Page 1303**
- Available with motor ▶ **Page 1261**

drylin® E compatible







Technical data

Part No.	Max. stroke length	Aluminium shaft		Max. static load capacity
		Weight	Additional (per 100 mm)	radial
	[mm]	[kg]	[kg]	[N]
SHTC-08-AWM-FF	300	0.35	0.04	100
SHT-12-AWM-FF	750	1.1	0.1	2,800

Dimensions [mm]

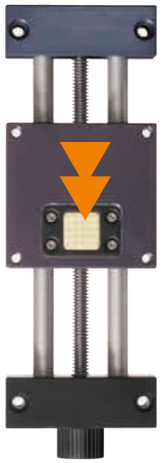
Part No.	A	Al	H	E1	E2	E3	E4	l	R	lt	l2	d2
SHTC-08-AWM-FF	65	65	23	52	55	55	16	96	32	15.5	17	6
SHT-12-AWM-FF	85	85	34	70	73	73		145	42	30	17	Tr10x2[92)]

Part No.	f	tk	ts	tg	kt	s	sk	sg	kg	d	T	ha
		±0.1								Standard		
SHTC-08-AWM-FF	1.5	10	5.5	M6	7	4.2	8	M5	4.6	8	6	13
SHT-12-AWM-FF	2	11	6.6	M8	6.4	6.3	10	M6	6.0	12	Tr10x2	18

[92)] Lead screw end unmachined

drylin® SHT | Linear modules | Product range

With "Fast-Forward" quick release mechanism



- Fast manual format adjustments
- Aluminium version
- For fast format adjustments
- Including self-locking brake
- Variable stroke length
- Only recommended for horizontal applications
- Max. stat. axial load 200 N (horizontal mounting position)
- Max. dynamic. axial load 50 N
- Available accessories ▶ **Page 1303**
- Available with motor ▶ **Page 1261**

drylin® E compatible

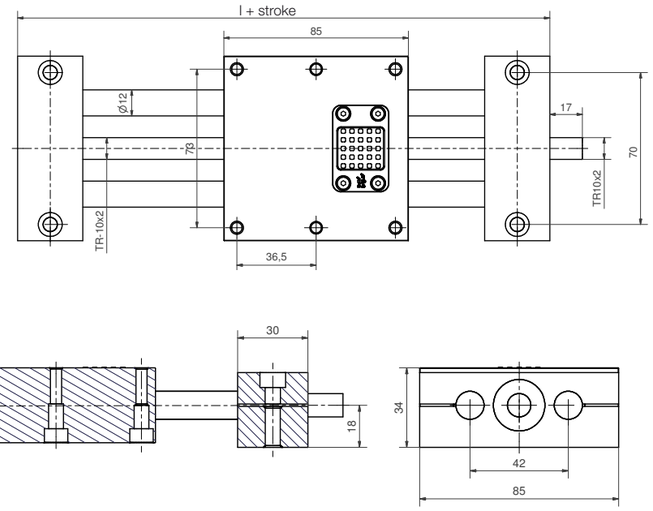
Order key

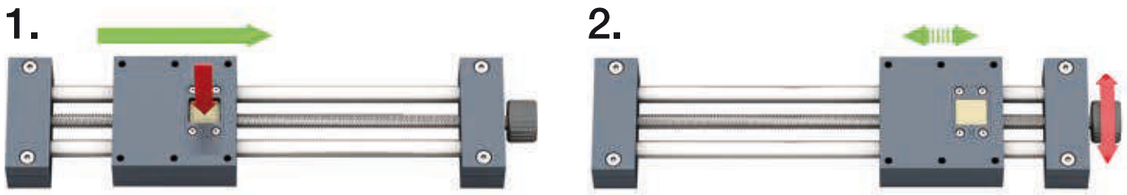
complete ▶ Page 1192

SHT-12-AWM-FF

- Fast Forward
- Shaft material
- Installation size
- Standard

product design award 2011





press ▶ disengage ▶ move manually ▶ click into place ▶ fine-tuning

drylin® SHT | Linear modules | Product range

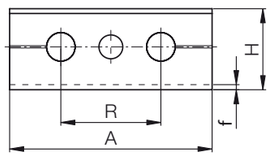
High temperature up to +150 °C

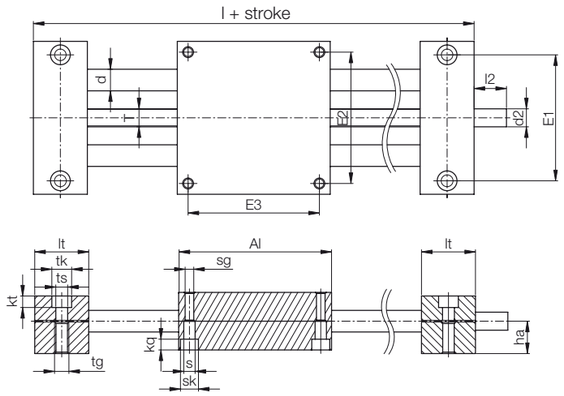
- Shafts and lead screw made from stainless steel, bearings and nut iglidur® X
- Carriages and shaft ends made from anodised aluminium
- Temperature resistant up to +150 °C
- Available accessories ▶ Page 1303

Order key
complete ▶ Page 1192

SHT-20-EWM-HTX

- High temperature
- Shaft material
- Dimension
- Standard





Technical data

Part No.	Max. stroke length	Steel shaft		Max. static load capacity	
		Weight	Additional (per 100 mm)	axial	radial
	[mm]	[kg]	[kg]	[N]	[N]
SHT-12-EWM-HTX	750	1.3	0.2	700	2,800
SHT-20-EWM-HTX	1,000	3.9	0.6	1,600	6,400

Dimensions [mm]

Part No.	A	Al	H	E1	E2	E3	l	R	f	lt	tk	ts
	–0.3	–0.3		±0.15	±0.15	±0.15						
SHT-12-EWM-HTX	85	85	34	70	73	73	145	42	2	30	11	6.6
SHT-20-EWM-HTX	130	130	48	108	115	115	202	72	2	36	15	9.0

Part No.	tg	kt	s	sk	sg	kq	d	T	l2	d2	ha
		±0.1								Standard	
SHT-12-EWM-HTX	M8	6.4	6.3	10	M6	6.0	12	Tr10x2	17	Tr10x2[92)]	18
SHT-20-EWM-HTX	M10	8.6	6.4	11	M8	7.0	20	Tr18x4	26	12 h9	23

92) Lead screw end unmachined

117) In the event of severe temperature fluctuations during transport, storage and use, thermal expansion effects cannot be ruled out.

drylin® SHT | Linear modules | Product range

Hygienic design

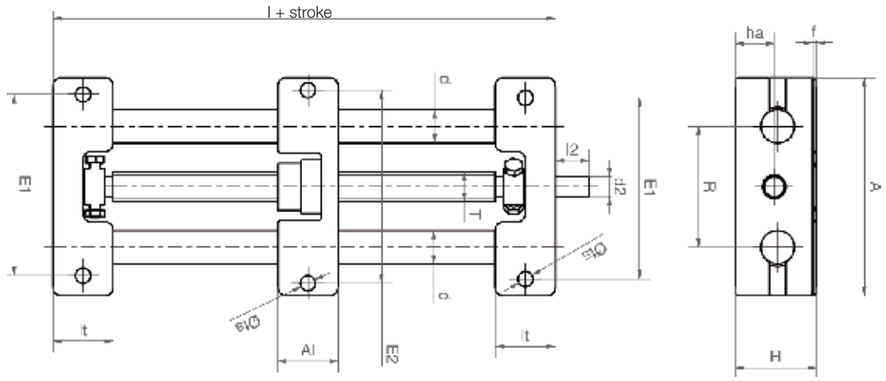
STAIN-LESS STEEL

Order key
complete ▶ Page 1192

SHTC-20-EWM-HYD

- Hygienic Design
- Shaft material
- Dimension
- Type: flexible

- Lightweight
- Washable
- Wide gaps
- Materials: plastic and VA stainless steel
- Lead screw nuts made of FDA-compliant iglidur® A180
- Available accessories ▶ Page 1303



FDA

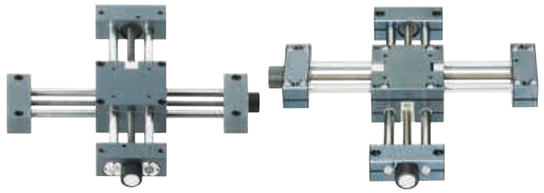
The lead screw unit can be supplied completely with FDA-compliant materials.

Dimensions [mm]

Part No.	A	Al	H	E1	E2	l	R	f	lt	ts	d	T	l2	d2	ha
	–0.3	–0.3		±0.15	±0.15										
SHTC-20-EWM-HYD	130	35	48	108	115	108	72	2	36	9.0	20	Tr18x4	26	12 h9	23

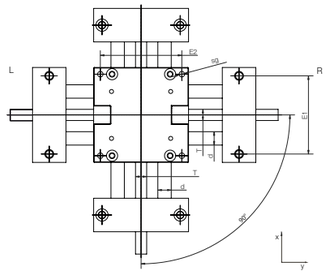
drylin® SHT | XY-tables | Product range

XY-table standard/preload



drylin® SHT

drylin® SHT-PL

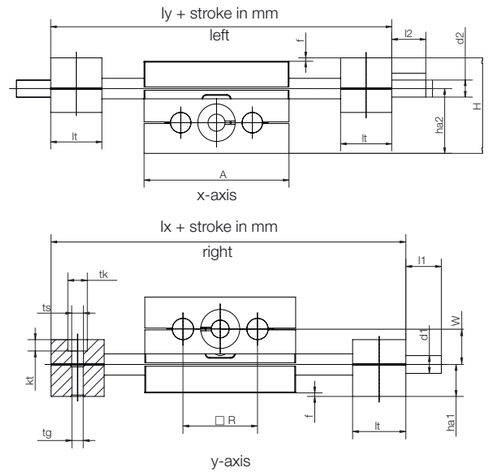


- Available as standard and preload version
- High precision, extreme stiffness and accurate alignment due to the single-piece carriage
- Adjustments by trapezoidal thread
- Assembly of upper unit with left or right adjustment possible
- Available accessories ▶ **Page 1303**

Order key
complete ▶ Page 1191

SHT-XY-12-AWM-PL-R

- R: y-unit right adjustment
- L: y-unit left adjustment
- Preload (optional)
- Shaft material
- Dimension
- XY-table
- Standard



Dimensions [mm]

Part No.	Max. stroke length [mm]	A	H	E1	E2	Base length lx	Base length ly	R	f	lt	tk	ts	tg	kt
		–0.3		±0.15	±0.15									
SHT-XY-08-AWM	150	65	42	52	56	96	96	32	1.5	15.5	10	5.5	M6	7
SHT-XY-12-AWM	350	85	56	70	73	145	145	42	2	30	11	6.6	M8	6.4
SHT-XY-12-AWM-PL	350	85	56	70	73	145	145	42	2	30	11	6.6	M8	6.4
SHT-XY-20-EWM-PL[93)]	500	130	86	108	115	202	202	72	2	36	15	9.0	M10	8.6

Part No.	sg	d	T	l1	d1 Standard	d1 Alternative	l2	d2 Standard	d2 Alternative	ha1	ha2	W ha2–ha1
SHT-XY-08-AWM	M5	8	Tr6x2/Tr6.35x2.54	15.5	5	–	15	5	–	13	29	16
SHT-XY-12-AWM	M6	12	Tr10x2	17	Tr10x2	6 h9	17	Tr10x2	6 h9	18	38	20
SHT-XY-12-AWM-PL	M6	12	Tr10x2	17	Tr10x2	6 h9	17	Tr10x2	6 h9	18	38	20
SHT-XY-20-EWM-PL[93)]	M8	20	TR18x4	26	TR18x4	12 h9	26	12 h9	–	23	63	40

Required accessories (e.g. hand wheel) can be ordered left- or right-mounted in the y-direction.
Order example for SHT-XY-12-AWM-L-200-300-HR, left adjustment, stroke 200/300 mm, 2 hand wheels
93) For size 20 we recommend stainless steel shafts (EWM), AWM also available

drylin® SHT linear modules

drylin® SHT | XY-tables | Order key

Order key XY-table

SHT-XY-12-AWM-PL-L-200-300-HR-ES

Lead screw material
- **blank:** Steel C15
- **ES:** Stainless steel 1.4305 (Standard with EWM)

Accessories/Options
- **blank:** Without extras (standard)
- **HK:** Lead screw clamp (2x)
- **PA:** Position indicator (2x)
- **HR:** Hand wheel (2x)
- **HTX:** High temperature version up to +180 °C
- **Z:** Pins in TR10x2

Stroke y-direction

Stroke x-direction

Adjustement y-unit
- **L:** Lead screw end on the left side
- **R:** Lead screw end on the right side

Preload
- **blank:** Standard
- **PL:** Preloaded

Shaft material
- **AWM:** Hard anodised aluminium
- **SWM:** Cf53 (1.1213)
- **EWM:** Stainless steel X105 (1.4125)

Dimensions
- **12:** Size ø 12 mm
- **20:** Size ø 20 mm

Type XY-Table

drylin® SHT | Linear modules | Order key

Order key for a complete system

SHT-12-AWM-150-HR-ES

Lead screw material
- **blank:** Steel C15 (standard)
- **ES:** Stainless steel 1.4305 (standard with EWM)
- **AL:** Anodised aluminium

Options
- **blank:** Without extras (standard)
- **HK:** Lead screw clamp
- **PA:** Position indicator
- **HR:** Hand wheel
- **PL:** Preloaded
- **HTX:** High temperature version up to +180 °C
- **HYD:** Hygienic Design
- **Z:** Pins in TR10x2
- **FF:** Fast Forward
- **ZB:** Zero-Backlash

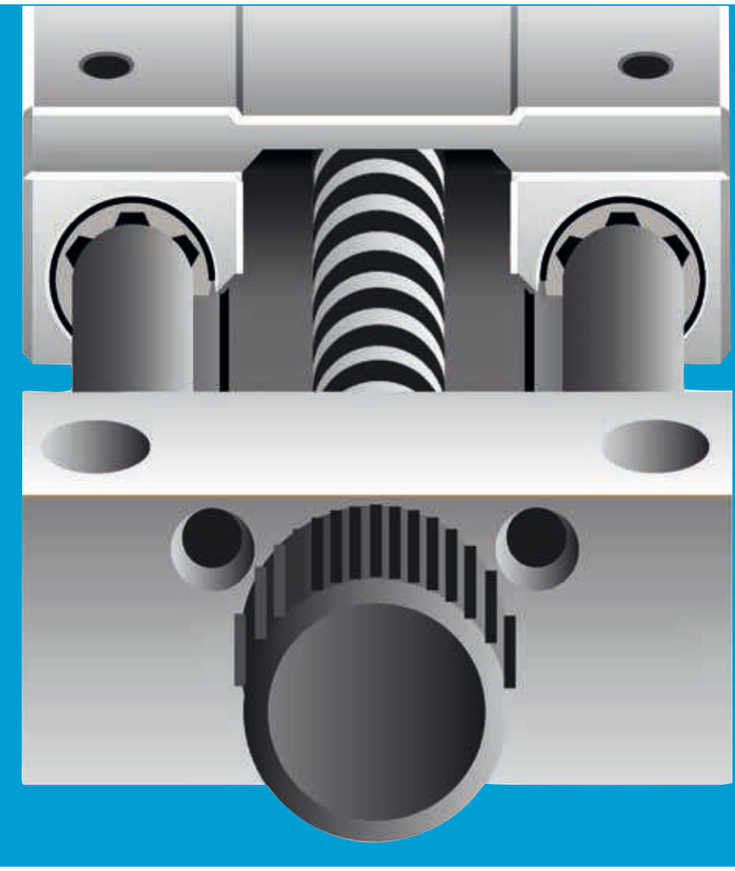
Stroke length in mm

Shaft material
- **AWM:** Hard anodised aluminium
- **SWM:** Cf53 (1.1213)
- **EWM:** Stainless steel X105 (1.4125)

Dimensions
- **12:** Size ø 12 mm (SHT, SHTC, SHTS)
- **20:** Size ø 20 mm (SHT, SHTC, SHTS)
- **30:** Size ø 30 mm (SHT, SHTC)
- **40:** Baugröße ø 40 mm (SHTC)
- **50:** Baugröße ø 50 mm (SHTC)

Type
- **SHT:** Standard
- **SHT-PL:** Preload
- **SHTC:** Flexible
- **SHT-BB:** With ball-bearing mounted lead screw
- **SHTS:** With high helix lead screw
- **SHT-XY:** XY-table

delivery time
with alu shaft AWMP: 2-3 days, with stainless steel shafts EWM or steel shaft SWM: 3-8 days



drylin® general drive technology – linear modules SLW

Lubrication-free linear modules based on drylin® W guides

Trapezoidal or high-helix lead screw drives

Torsion-resistant dual shaft system

Many carriage and rail options

Suitable for manual and motor-operated adjustments

Modular design

Shaft end supports are made from anodised aluminium or from chromated die-cast zinc

Lead screw mounted with plain or ball bearings

drylin® W linear guide system

Lubrication and maintenance-free drylin® lead screw nuts

Mounting plates made from anodised aluminium

Fully configured carriages with four drylin® W individual bearing housings with lubrication-free drylin® liners

Lead screw material: steel or stainless steel

Drive: self-locking trapezoidal thread or fast adjust high helix thread

For manual adjustments, large range of accessories available ▶ **Page 1303**

Configurable with motor as a ready to install linear drive (drylin® E ▶ **Page 1259**)

Lubrication-free linear modules – drylin® SLW

Extremely torsion resistant aluminium dual shaft rails and many carriage versions characterise the drylin® W product range, and form a well rounded modular kit for the drylin® SLW linear drives. The modules are very low profile, as well as robust. The drylin® SLW linear stages are ideal for manual adjustments, but also can be fitted with a motor to make an electrical linear actuator.

- Variable carriage widths and lengths
- Flat drylin® guide rails or high profile
- Corrosion resistant made from stainless steel available

Typical application areas

- Format and lane adjustments
- Packaging technology
- Height adjustments
- 3D printers
- Camera adjustment

Available in 3-8 days
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

Carriage lengths: 60-250 mm
Carriage widths: 54-195 mm
Stroke lengths: up to 1,250 mm

Product finder
▶ **www.igus.eu/slw-productfinder**

Flat and torsionally stable

Linear module SLW –compact

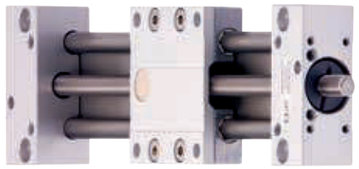
- High torsional stability, fully supported
- Cost-effective
- Shaft end supports made according to installation size of chromated zinc, anodised aluminium or plastic

▶ **Page 1196**

Linear module SHT-PL "preload"

- Lubrication-free and precise
- Preloaded trapezoidal nut (preload force: 50 N)
- Manually adjustable radial clearance, reduction of the axial clearance

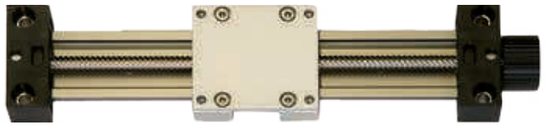
▶ **Page 1197**



Linear module SHT-BB "ball-bearing supported"

- Efficient and dynamic
- Quiet, reduced clearance
- Up to 1,500 rpm (according to length and load)

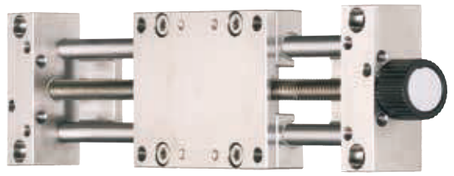
▶ **Page 1198**



Linear module SLWS with lead screw

- Fast positioning
- High-helix lead screw drives
- Up to 100 mm stroke per rotation

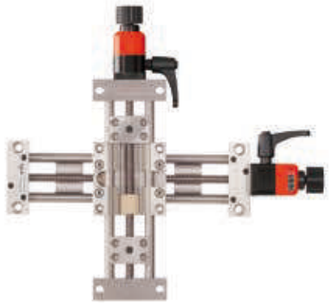
▶ **Page 1199**



Linear module SLW – stainless steel version

- With corrosion resistant steel components
- Choice of bearing material: iglidur® J (standard), iglidur® A180 (FDA-compliant), iglidur® X (high temperature up to +150 °C)
- For environments involving contact with water and chemicals

▶ **Page 1202**



Linear module special designs

- SLW with protect mechanism for applications with high levels of dirt
- High flexibility through SLWT with dual lead screw
- XY-table solutions

▶ **Page 1201**

drylin® SLW | Linear modules | Product range

Compact

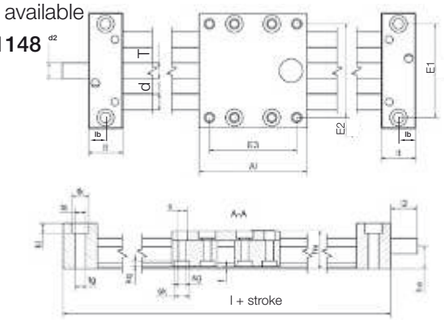
- Flat and compact
- High torsional stability
- Fully supported
- Aluminium drylin® W guide rails, hard anodised
- Available accessories ▶ **Page 1303**
- Lead screw nuts are available separately ▶ **Page 1148** [92]
- Available with motor ▶ **Page 1261**

Order key
complete ▶ Page 1206

SLW-1040

- Dimension
- Compact

drylin® E compatible



Technical data and dimensions [mm]

Part No.	Design	Max. stroke length [mm]	Shaft weight [kg]	Additional (per 100 mm) [kg]	Max. static load capacity axial [N]	Max. static load capacity radial [N]	End block material
SLW-0630	■	300	0.2	0.08	50	200	Plastic
SLW-1040	●	750	0.7	0.10	700	2,800	Zinc die-casting
SLW-1080	●	750	0.9	0.20	700	2,800	Aluminium
SLW-10120	●	750	1.6	0.25	700	2,800	Aluminium
SLW-1660	●	750	1.5	0.30	1,200	4,600	Aluminium
SLW-2080	●	1,000	3.0	0.40	1,600	6,400	Aluminium
SLW-25120	●	1,250	5.9	0.90	2,500	10,000	Aluminium

Part No.	A –0.3	Al[94] –0.3	H	E1 ±0.15	E2 ±0.15	E3 ±0.15	l	hw	f	lt	lb	tk	ts	tg
SLW-0630	54	60	20	40	45	51	100	18	1.2	20	8	11	6.6	–
SLW-1040	74	69	29	60	60	56	113	24	1.5	22	11	11	6.8	M8
SLW-1080	108	100	29	94	94	87	144	24	1.5	22	11	11	6.8	M8
SLW-10120	154	100	29	140	140	87	144	24	1.5	22	11	11	6.8	M8
SLW-1660	104	100	37	84	86	82	150	35	1.5	25	12.5	15	9.0	M10
SLW-2080	134	150	46	116	116	132	206	44	1.5	28	14	15	8.6	M10
SLW-25120	200	150	60	173	173	128	220	55	2.5	35	17.5	20	13.5	M16

Part No.	kt ±0.1	s	sk	sg	kq	d	T	l2	d2 Standard	ha
SLW-0630	8.0	4.5	7.0	M4	2.0	6	M8	15	M8	9.5
SLW-1040	6.4	6.6	9.5	M6	4.4	10	Tr10x2	17	Tr10x2[92]	14.5
SLW-1080	6.4	6.6	9.5	M6	4.4	10	Tr10x2	17	Tr10x2[92]	14.5
SLW-10120	M8	6.4	9.5	M6	4.4	10	Tr10x2	17	Tr10x2[92]	14.50
SLW-1660	8.6	9.0	11	M8	5.5	16	Tr14x4	20	Tr14x4[92]	18.5
SLW-2080	8.6	9.0	14	M8	5.5	20	Tr18x4	26	12h9	23.0
SLW-25120	12.6	11.0	15	M10	5.0	25	Tr24x5	38	14h9	30.0

[92] Lead screw end unmachined; [94] Carriages also in 100, 150, 200 and 250 mm lengths available on request

drylin® SLW | Linear modules | Product range

Preload Version

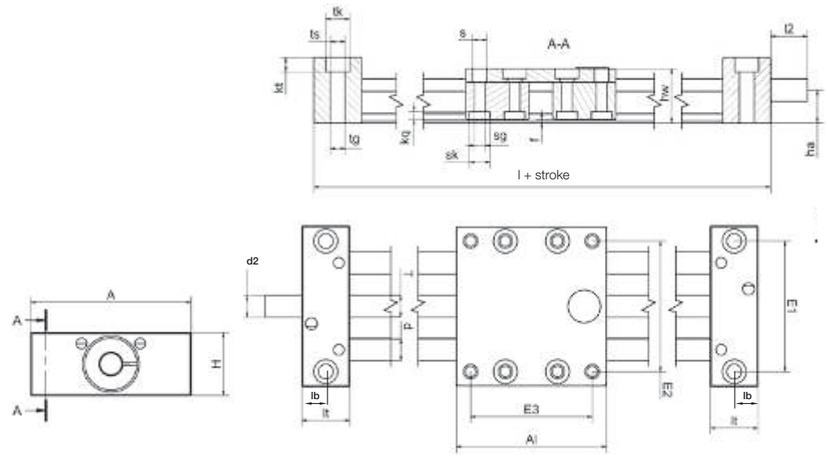
- Radial and axial pre-load
- Manual adjustable clearance
- High torsional stability
- Fully supported
- Aluminium drylin® W guide rails, hard anodised
- Available accessories ▶ **Page 1303**
- Lead screw nuts are available separately ▶ **Page 1148**
- Available with motor ▶ **Page 1261**

Order key
complete ▶ Page 1206

SLWE-1040-PL

- Preload
- Dimension
- Adjustable clearance
- Compact

drylin® E compatible



Technical data ▶ See SLW on left side

Dimensions [mm]

Part No.	A –0.3	Al[94] –0.3	H	E1 ±0.15	E2 ±0.15	E3 ±0.15	l	hw	f	lt	lb	tk	ts
SLWE-1040-PL	74	69	29	60	60	56	113	24	1.5	22	11	11	6.8
SLWE-1080-PL	108	100	29	94	94	87	144	24	1.5	22	11	11	6.8
SLWE-1660-PL	104	100	37	84	86	82	150	35	1.5	25	12.5	15	9.0
SLWE-2080-PL	134	150	46	116	116	132	206	44	1.5	28	14	15	8.6

Part No.	tg	kt ±0.1	s	sk	sg	kq	d	T	l2	d2 Standard	ha
SLWE-1040-PL	M8	6.4	6.6	9.5	M6	4.4	10	Tr10x2	17	Tr10x2[92]	14.5
SLWE-1080-PL	M8	6.4	6.6	9.5	M6	4.4	10	Tr10x2	17	Tr10x2[92]	14.5
SLWE-1660-PL	M10	8.6	9.0	11.0	M8	5.5	16	Tr14x4	20	Tr14x4[92]	18.5
SLWE-2080-PL	M10	8.6	9.0	14.0	M8	5.5	20	Tr18x4	26	12h9	23.0

[92] Lead screw end unmachined; [94] Carriages also in 100, 150, 200 and 250 mm lengths available on request

drylin® SLW | Linear modules | Product range

With ball bearing lead screw supports

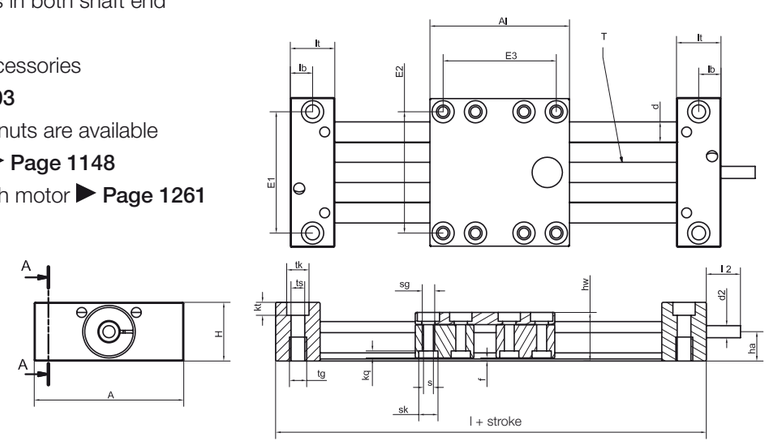
- Lower drive force
- Optimised clearance
- Up to 1,500 rpm (according to length and load)
- Aluminium drylin® W guide rails, hard anodised
- Quiet operation – reduced vibration of the overall system
- Ball bearings in both shaft end supports
- Available accessories ▶ **Page 1303**
- Lead screw nuts are available separately ▶ **Page 1148**
- Available with motor ▶ **Page 1261**

drylin E compatible

Order key
complete ▶ Page 1206

SLWE-BB-1040

- Dimension
- Ball bearing
- Adjustable
- Compact



Technical data

Part No.	Design[96]	Max. stroke length	Weight	Additional (per 100 mm)	Max. static load capacity axial	Max. static load capacity radial	Max. rotation speed	Max. feed rate
		[mm]	[kg]	[kg]	[N]	[N]	[1/min]	[m/min]
SLW-BB-0630	■	300	0.25	0.08	100	200	1,000	1.5
SLWE-BB-1040	●	500	0.90	0.10	500	2,000	1,500	3.0
SLWE-BB-1080	●	500	1.10	0.20	500	2,000	1,500	3.0
SLWE-BB-1660	●	750	1.80	0.30	700	2,800	1,500	6.0
SLWE-BB-2080	●	900	3.30	0.40	1,250	5,000	1,500	6.0

Dimensions [mm]

Part No.	A -0.3	Al -0.3	H	E1 ±0.15	E2 ±0.15	E3 ±0.15	l	hw	f	lt	lb	tk	ts	tg
SLW-BB-0630	54	60	20	40	45	51	112	18	1.2	26	14	11	6.8	M8
SLWE-BB-1040	74	69	29	60	60	56	129	24	1.5	30	19	11	6.8	M8
SLWE-BB-1080	108	100	29	94	94	87	144	24	1.5	30	19	11	6.8	M8
SLWE-BB-1660	104	100	37	84	86	82	170	35	1.5	35	22.5	15	9.0	M10
SLWE-BB-2080	134	150	46	116	116	132	230	44	1.5	40	26	15	8.6	M10

Part No.	kt ±0.1	sk	sg	kq	s	d	T	l2	d2 Standard	d2[95] on request	ha
SLW-BB-0630	8.0	7.0	M4	2.0	4.5	6	Tr8x1.5	15	Tr08x1.5	–	9.5
SLWE-BB-1040	6.4	9.5	M6	4.4	6.6	10	Tr10x2	17	Tr10x2	6 h9	14.5
SLWE-BB-1080	6.4	9.5	M6	4.4	6.6	10	Tr10x2	17	Tr10x2	6 h9	14.5
SLWE-BB-1660	8.6	11.0	M8	5.5	9.0	16	Tr14x4	20	Tr14x4	8 h9	18.5
SLWE-BB-2080	8.6	14.0	M8	5.5	9.0	20	Tr18x4	26	12 h9	–	23.0

[95] Optional machined lead screw end [96] Double rails, square ▶ Page 864, round ▶ Page 868

drylin® SLW | Linear modules | Product range

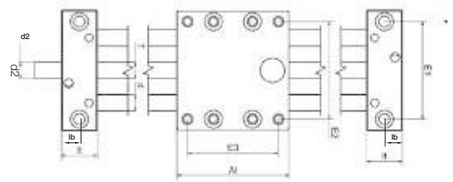
Compact with high helix thread

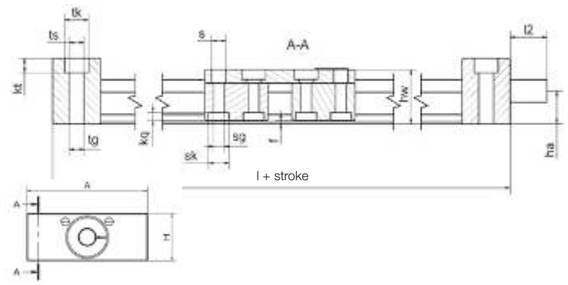
- Pitch 08x15, 10x12, 10x50, 18x100
- High torsional stability
- Aluminium drylin® W guide rails, hard anodised
- BB-version with ball bearings lead screw supports available
- Available accessories ▶ **Page 1303**
- Lead screw nuts are available separately ▶ **Page 1148**

Order key
complete ▶ Page 1206

SLWS-0630-08x15

- Lead
- Dimension
- High helix thread
- Compact





Technical data and dimensions [mm]

Part No.	Design[96]	Max. stroke length	Weight	Additional (per 100 mm)	Max. static load capacity axial	Max. static load capacity radial
			[kg]	[kg]	[N]	[N]
SLWS-0630-08X15	■	300	0.2	0.08	50	200
SLWS-1040-10X12	●	750	0.7	0.10	100	400
SLWS-1040-10X50	●	750	0.7	0.10	100	400
SLWS-1080-10X12	●	750	0.9	0.20	100	400
SLWS-1080-10X50	●	750	0.9	0.20	100	400
SLWS-2080-18X100	●	750	0.9	0.20	400	1,600

Part No.	A -0.3	Al -0.3	H	E1 ±0.15	E2 ±0.15	E3 ±0.15	l	hw	f	lt	lb	tk	ts	tg
SLWS-0630-08X15	54	60	20	40	45	51	100	17.5	1.2	20	10	11	6.6	–
SLWS-1040-10X12	74	69	29	60	60	56	113	24	1.5	22	11	11	6.8	M8
SLWS-1040-10X50	74	69	29	60	60	56	113	24	1.5	22	11	11	6.8	M8
SLWS-1080-10X12	108	100	29	94	94	87	144	24	1.5	22	11	11	6.8	M8
SLWS-1080-10X50	108	100	29	94	94	87	144	24	1.5	22	11	11	6.8	M8
SLWS-2080-18X100	134	150	46	116	116	132	206	44	1.5	28	14	15	8.6	M10

Part No.	kt ±0.1	s	sk	sg	kq	d	T	l2	d2	ha
SLWS-0630-08X15	8.0	4.5	7.0	M4	2.0	6	Sg08x15	15	Sg8x15[92]	9.5
SLWS-1040-10X12	6.4	6.6	9.5	M6	4.4	10	Sg10x12	17	Sg10x12[92]	14.5
SLWS-1040-10X50	6.4	6.6	9.5	M6	4.4	10	Sg10x50	17	Sg10x50[92]	14.5
SLWS-1080-10X12	6.4	6.6	9.5	M6	4.4	10	Sg10x12	17	Sg10x12[92]	14.5
SLWS-1080-10X50	6.4	6.6	9.5	M6	4.4	10	Sg10x50	17	Sg10x50[92]	14.5
SLWS-2080-18X100	12.6	11.0	15	M8	5.0	25	Sg18x100	38	14h9	30.0

[92] Lead screw end unmachined [96] Double rails, square ▶ Page 864, round ▶ Page 868

drylin® SLW | Linear modules | Product range

With protected lead screw

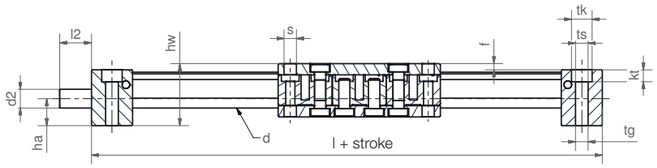
- drylin® W profile rail as a protective mechanism
- Available with pitches 10x2, 10x12,10x50
- Low profile design
- Available with motor ▶ **Page 1261**

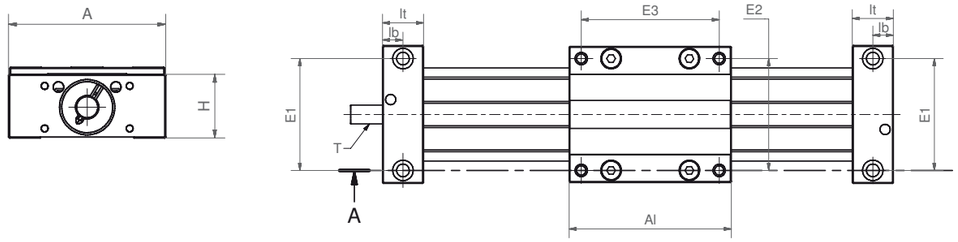
Order key
complete ▶ Page 1206

SLW-BB-PT-1040

- Dimension
- Protect
- Ball bearing
- Compact

drylin E compatible





Technical data

Part No.	Max. stroke length	Weight	Additional (per 100 mm)	Max. static load capacity axial	Max. static load capacity radial[97]	End block material
	[mm]	[kg]	[kg]	[N]	[N]	
SLW-PT-1040	750	0.75	0.20	700	2,000	Aluminium
SLW-BB-PT-1040	750	1.10	0.20	500	2,000	Aluminium

Dimensions [mm]

Part No.	A -0.3	Al -0.3	H	E1/E2 ±0.15	E3 ±0.15	l	hw	f	lt	lb	tk	ts	tg
SLW-PT-1040	74	87	29	60	74	131	33.25	3.25	22	11	11	6.8	M8
SLW-BB-PT-1040	74	87	29	60	74	147	33.25	3.25	30	19	11	6.8	M8

Part No.	kt ±0.1	d	T	l2	d2	d2[98]	ha
SLW-PT-1040	6.4	10	Tr10x2	17	Tr10x2	6 h9	14.50
SLW-BB-PT-1040	6.4	10	Tr10x2	17	Tr10x2	6 h9	14.50

[97] Depends on load and rotation speed [98] Thread/remaining thread visible

drylin® SLW | Linear modules | Product range

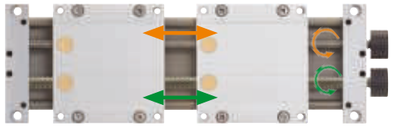
Two linear units are rolled into one

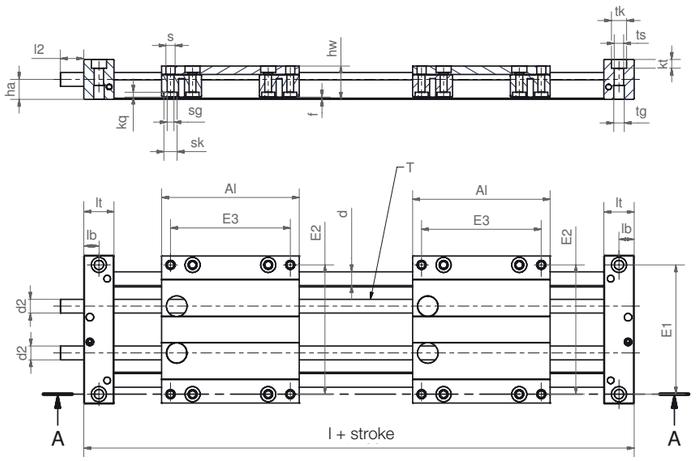
- Carriages can be controlled separately
- Different lead screw pitches can be applied
- Separate manual adjustment of carriages
- High flexibility
- Clearance adjustment (optional)

Order key
complete ▶ Page 1206

SLWT-1080

- Dimension
- Double linear unit
- Compact





Technical data

Part No.	Max. stroke length	Weight	Additional (per 100 mm)	Max. static load capacity axial	Max. static load capacity radial	End block material
	[mm]	[kg]	[kg]	[N]	[N]	
SLWT-1080	750	1.6	0.25	700	2,000	Aluminium

Dimensions [mm]

Part No.	A -0.3	Al -0.3	H	E1 ±0.15	E2 ±0.15	E3 ±0.15	l	hw	f ±0.1	lt	lb	tk	ts
SLWT-1080	108	100	29	94	94	87	244	24	1.5	22	11	11	6.8

Part No.	tg ±0.1	kt	sk	s	sg	kq	d	T	l2	d2	d2	ha
						Standard	Alternative					
SLWT-1080	M8	6.4	9.5	6.6	M6	4.4	10	Tr10x2[92]	17	Tr10x2	6 h9	14.50

[92] Lead screw end unmachined

drylin® SLW | Linear modules | Product range

Made of stainless steel

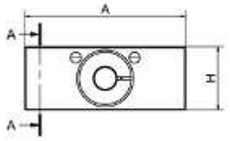
- Stainless steel version with corrosion resistant steel components (1.4305, 1.4408 or 1.4571)
- Choice of bearing material:
  iglidur® J: Standard
  iglidur® A180: FDA-compliant
  iglidur® X: High temperature up to +150 °C [117)]
- Available accessories
  ▶ Page 1303

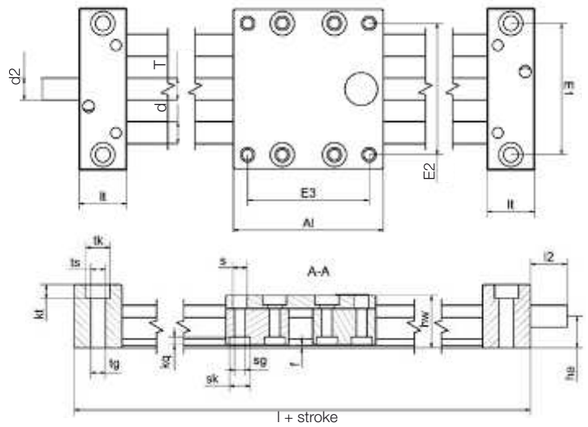
Order key
complete ▶ Page 1206

SLW-ESJ-1040

- Dimension
- Bearing material iglidur® J
- Stainless steel
- Compact

STAIN-LESS STEEL





Technical data

Part No.	Shafts-Ø	Max. stroke length	Weight	Additional (per 100 mm)	Max. static load capacity	
	[mm]	[mm]	[kg]	[kg]	axial [N]	radial [N]
SLW-ESJ-1040	10	750	1.4	0.2	700	2,800
SLW-ESX-1040	10	750	1.4	0.2	700	2,800
SLW-ESA180-1040	10	750	1.4	0.2	700	2,800
SLW-ESJ-2080	20	1,000	5.7	0.64	1,600	6,400
SLW-ESA180-2080	20	1,000	5.7	0.64	1,600	6,400

Dimensions [mm]

Part No.	A	Al	H	E1	E2	E3	l	hw	f	lt	lb	tk	ts	tg
	–0.3	–0.3		±0.15	±0.15	±0.15								
SLW-ES-1040	74	100	29	60	60	87	144	24	1.5	22	11	11	6.8	M8
SLW-ES-2080	134	150	46	116	116	132	206	44	1.5	28	14	15	8.6	M10

Part No.	kt	s	sk	sg	kq	d	T	l2	d2	ha
	±0.1								Standard	
SLW-ES-1040	6.4	6.6	9.5	M6	4.4	10	Tr10x2	17	Tr10x2[92)]	14.5
SLW-ES-2080	8.6	9.0	14	M8	5.5	20	Tr18x4	26	12h9	23.0

[92)] Lead screw end unmachined

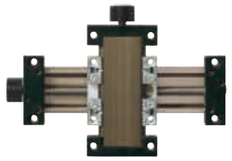
[117)] In the event of severe temperature fluctuations during transport, storage and use, thermal expansion effects cannot be ruled out

My sketches

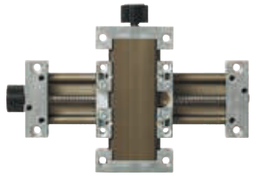
drylin® SLW linear modules

drylin® SLW | XY-tables | Product range

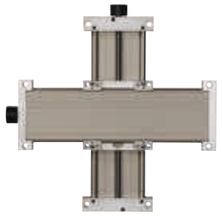
Compact XY-tables for manual adjustments



SLW-XY-0630



SLW-XY-1040



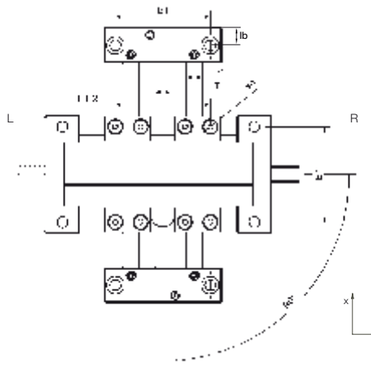
SLW-XY-1080

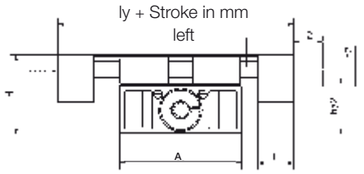
- Aluminium drylin® W guide rails, hard anodised
- Preload version SLWE-XY-PL also available (optional, sizes: 1040/1080)
- Available accessories ▶ **Page 1303**

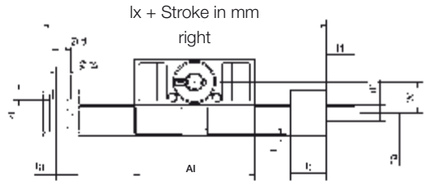
Order key
complete ▶ **Page 1206**

SLW-XY-1040-PL

- Preload (optional with sizes 1040 and 1080)
- Dimension
- XY-table
- Compact







Dimensions [mm]

Part No.	Max. stroke length	A	Al	H	E1	E2	Base length	Base length	f	lt	lb	tk	ts	tg	kt
	[mm]	–0.3			±0.15	±0.15	lx	ly							
SLW-XY-0630	150	54	54	38	40	45	94	94	1.5	20	10	11	6.6	–	8
SLW-XY-1040	300	74	73	48	60	60	117	117	1.5	22	11	11	6.8	M8	6.4
SLW-XY-1080	300	108	107	48	94	94	151	151	1.5	22	11	11	6.8	M8	6.4

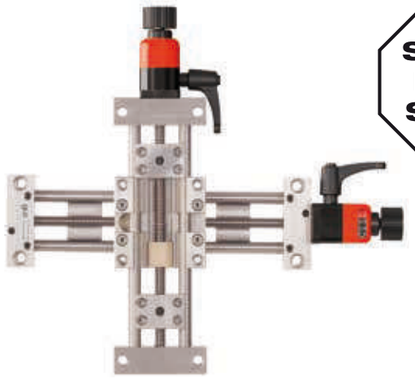
Part No.	sg	d	T	l1	d1	d1	l2	d2	d2	ha1	ha2	W
					Standard	Alternative		Standard	Alternative			ha2–ha1
SLW-XY-0630	M4	5	M8	15	M8	–	15	M8	–	9.5	28.5	18.4
SLW-XY-1040	M6	10	Tr10x2	17	Tr10x2	6 h9	17	Tr10x2	6 h9	14.5	33.5	20
SLW-XY-1080	M6	10	Tr10x2	17	Tr10x2	6 h9	17	Tr10x2	6 h9	14.5	33.5	19

The hand wheel can be ordered left- or right-mounted in the y-direction.
Left: SLW-XY-1040-L-200-300 for 200 mm stroke length on the x-axis and 300 mm on the y-axis
Right: SLW-XY-1040-R-200-300 for 200 mm stroke length on the x-axis and 300 mm on the y-axis

drylin® SLW linear modules

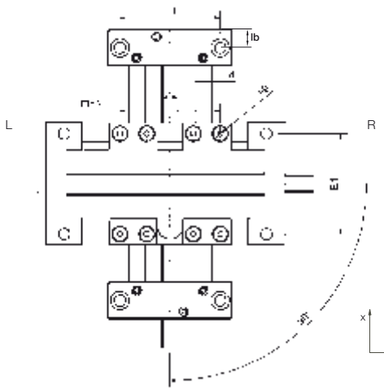
drylin® SLW | XY-tables | Product range

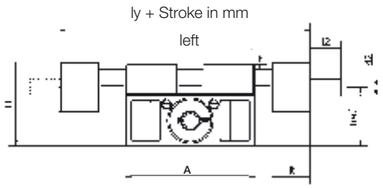
XY-tables – stainless steel version

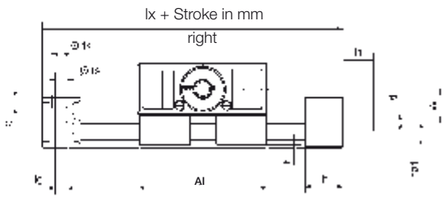


STAIN-LESS STEEL

- For manual adjustments
- High torsional stability
- Structure entirely made from VA and V4A stainless steel materials
- Chemical and corrosion resistant
- Available accessories ▶ **Page 1303**







Dimensions [mm]

Part No.	Max. stroke length	A	Al	H	E1	E2	Base length	Base length	f	lt	lb	tk	ts	tg	kt
	[mm]	–0.3			±0.15	±0.15	lx	ly				±0.1			
SLW-XY-ESJ-1040	300	74	73	48	60	60	117	117	1.5	22	11	11	6.8	M8	6.4

Part No.	sg	d	T	l1	d1	d1	l2	d2	d2	ha1	ha2	W
					Standard	Alternative		Standard	Alternative			ha2–ha1
SLW-XY-ESJ-1040	M6	10	Tr10x2	17	Tr10x2	6 h9	17	Tr10x2	6 h9	14.5	33.5	19

The hand wheel can be ordered left- or right-mounted in the y-direction.
Left: SLW-XY-ESJ-1040-L-200-300 for 200 mm stroke length on the x-axis and 300 mm on the y-axis
Right: SLW-XY-ESJ-1040-R-200-300 for 200 mm stroke length on the x-axis and 300 mm on the y-axis

drylin® SLW | Linear modules | Order key

Order key complete system:

SLW-1040-150-HR-ES

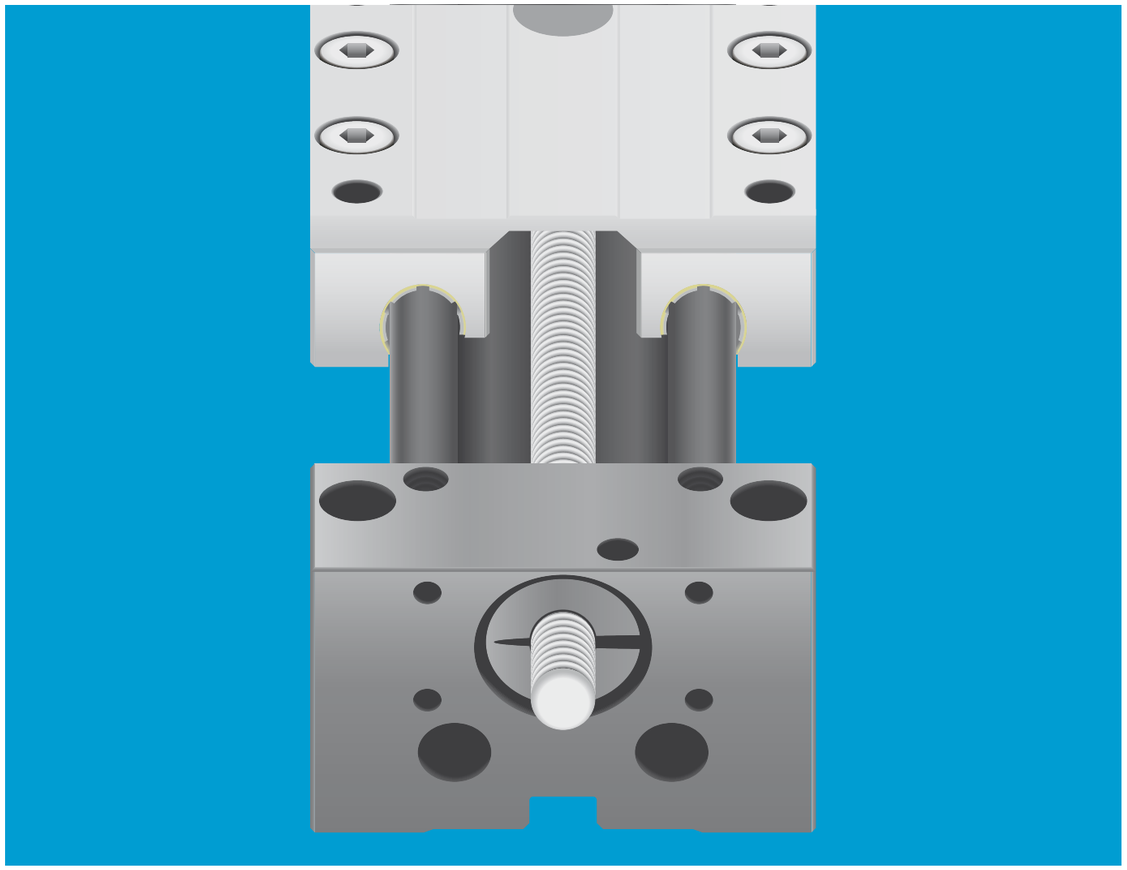
Lead screw material
- **blank:** Steel C15 (standard)
- **ES:** Stainless steel 1.4305
- **AL:** Anodised aluminium

Additional options
- **blank:** Without extras (standard)
- **HK:** Lead screw clamp
- **PA:** Position indicator
- **HR:** Hand wheel
- **PL:** Preloaded
- **Z:** Pins in TR10x2 (optional)
- **WT:** V-drive

Stroke length in mm

Dimensions
- **0630:** Shaft ø 6 mm, width 30 mm (SLW, SLWS)
- **1040:** Shaft ø 10 mm, width 40 mm (SLW, SLWE)
- **1080:** Shaft ø 10 mm, width 80 mm (SLW, SLWE)
- **1660:** Shaft ø 16 mm, width 60 mm (SLW, SLWE)
- **2080:** Shaft ø 20 mm, width 80 mm (SLW, SLWE)
- **25120:** Shaft ø 25 mm, width 120 mm (SLW)

Type
- **SLW:** Standard
- **SLWE-PL:** With preload
- **SLWE-BB:** Leadscrew drive with ball-bearing
- **SLWS:** With high helix lead screw
- **SAW:** High design
- **SLW-ES:** Stainless steel version
- **SLW-XY:** XY-tables



drylin® general drive technology – linear modules SAW

Lubrication-free linear modules based on drylin® W guides

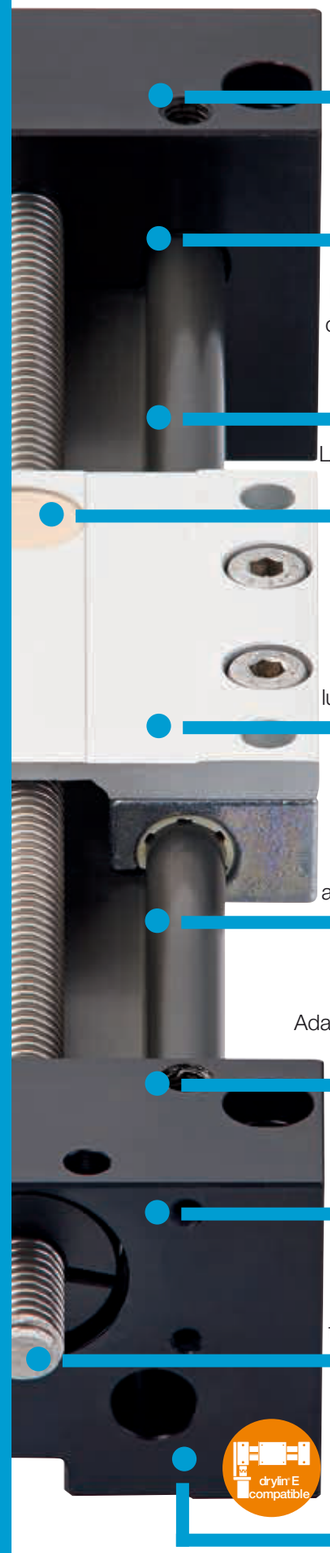
Trapezoidal or high-helix lead screw drives

Robust design

Ready-to-install stepper or DC motors

Dynamic ball bearing

Compact high design



Lubrication-free linear modules – drylin® SAW

The drylin® W high profile provides the torsion-resistant base for the linear axes of the SAW series. Thanks to the ball-bearing lead screw and high-profile design, the SAW linear modules are perfectly suitable for the direct connection to stepper or DC motors. Slots in profile sections enable initiators to be freely positioned and, at the same time, enable set-up as a multi-axis linear robot by means of suitable adapter plates.

- Optimised unit for motor connection
- drylin® W high profile with variable mounting options using clamping elements / slot nuts
- For manual or electrical adjustments
- Ideal for single and/or multi-axial constructions

Typical application areas

- Positioning functions
- 3D scanner
- Format adjustments
- Linear robot structures
- Height adjustments

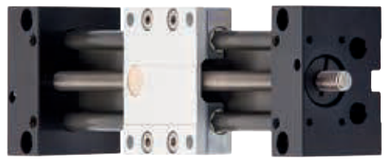
Available in 3-8 days
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

Carriage lengths: 60-250 mm
Carriage widths: 54-107 mm
Stroke lengths: up to 750 mm

Product finder
▶ **www.igus.eu/saw-productfinder**

Dynamic ball bearing



Linear module SAW

- Robust high design in 4 sizes
- Trapezoidal or high-helix lead screw drives
- For manual positioning or motorised operation

▶ **Page 1210**

Linear module SAWC

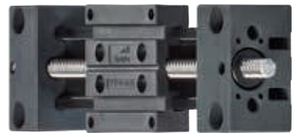
- Compact short design
- With integrated drylin® E lead screw motor
- Optimised ratio of useful length to total length

▶ **Page 1211**

Linear module DLE

- Configured linear modules with NEMA stepper motors
- Available in 24 hours
- Pre-assembled and tested

▶ **Page 1212**



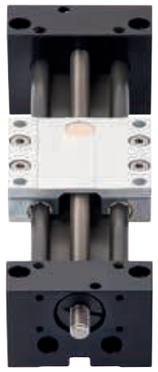
Linear module SAW-P

- Dynamic linear module with drylin® W carbon profile
- Extremely lightweight and robust
- Stroke lengths up to 300 mm

▶ **Page 1050**

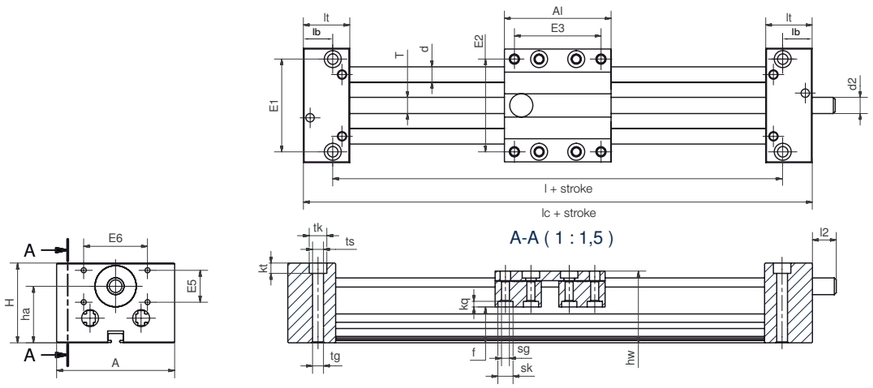
drylin® SAW| Linear modules | Product range

Dynamic in high design



- Trapezoidal or high helix threads
- Ball bearing leadscrew supports
- Rail profile in high design, extremely torsion-resistant
- Aluminium drylin® W guide rails, hard anodised
- High stability
- Cost-effective and 100% lubrication-free
- Available accessories ▶ **Page 1303**
- Lead screw nuts are available separately ▶ **Page 1148**

drylin® E compatible



Technical data

Part No.	Max. stroke length [mm]	Weight [kg]	Additional (per 100 mm)	Max. speed [U/min.]	Max. static load capacity axial [N]	radial [N]
SAW-0630	300	0.5	0.1	1,000	100	400
SAW-1040	500	1.0	0.1	1,500	500	2,000
SAW-1080	750	1.9	0.2	1,500	750	2,000
SAW-1660	750	2.8	0.5	1,500	750	3,000

Dimensions [mm]

Part No.	A -0.3	Al -0.3	H	E1 +0.15	E2 +0.15	E3 +0.15	E5	E6	l	lc	hw	f	lt	lb
SAW-0630	54	60/100	32	40	45	51/91	11	23	112/152	92	30	13.5	26	10
SAW-1040	74	69/100/150	50	60	60	56/87/137	20	40	129/160/210	91	45	22.5	30	19
SAW-1080	108	100	58	94	94	87	–	–	163	131.5	49	22.5	31.5	15.75
SAW-1660	104	150	77	84	86	132	20	40	220	175	72	38.5	35	22.5

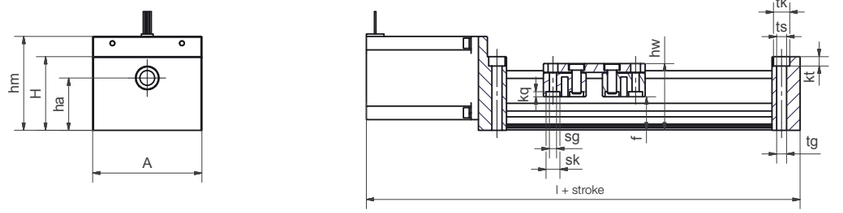
Part No.	tk	ts	tg	kt ±0.1	sk	sg	kq	d	T Ø	l2	d2	ha
SAW-0630	11	6.6	–	20	–	5	10	□5	Tr8x1.5	15	Tr8x1.5	21.5
SAW-1040	11	6.8	M8	6.4	9.5	M6	3.5	10	Tr10x2	17	Tr10x2 Ø6 h9[113)]	35.5
SAW-1080	11	6.8	M8	18	9.5	M6	3.5	10	Tr12x3	17	Tr12x3 Ø8 h9[113)]	37.5
SAW-1660	15	9.0	M10	8.6	11	M8	5.5	16	Tr14x4	20	Tr14x4 Ø8 h9[113)]	59.0

[113)] Lead screw end unmachined, also available with machined end

drylin® SAWC | Linear modules | Product range

Direct drive in short design

- Smaller installation space and more stroke
- Compact short design due to the use of drylin® E lead screw motors
- Optimised ratio of useful length to total length (compared to the SAW series, up to 70 mm)
- Improved operating characteristics
- Space saving and low weight
- Available accessories ▶ **Page 1303**



Technical data

Part No.	Max. stroke length [mm]	Weight [kg]	Additional (per 100 mm)	Max. speed [U/min.]	Max. static load capacity axial [N]	radial [N]
SAWC-0630	300	0.5	0.1	1,000	100	200
SAWC-1040	500	1.0	0.1	1,500	500	2,000

Dimensions [mm]

Part No.	A -0.3	Al -0.3	H	E1 +0.15	E2 +0.15	E3 +0.15	l	lc	hw	f	lt	lb
SAWC-0630	54	50	42.5	40	45	51	139	75	30	13.5	15	7.5
SAWC-1040	74	69	50	60	60	56	183	82	45	22.5	19	9.5

Part No.	tk	ts	tg	kt ±0.1	sk	sg	kq	d	T Ø	l2	d2	ha
SAWC-0630	8	4.2	M5	20	7	M4	2	5	Tr08x1.5 Sg08x15	21.5	42.5	21.5
SAWC-1040	11	6.8	M8	6.4	9.5	M6	3.5	10	Tr10x2[92)] Sg10x12	35.5	64	35.5

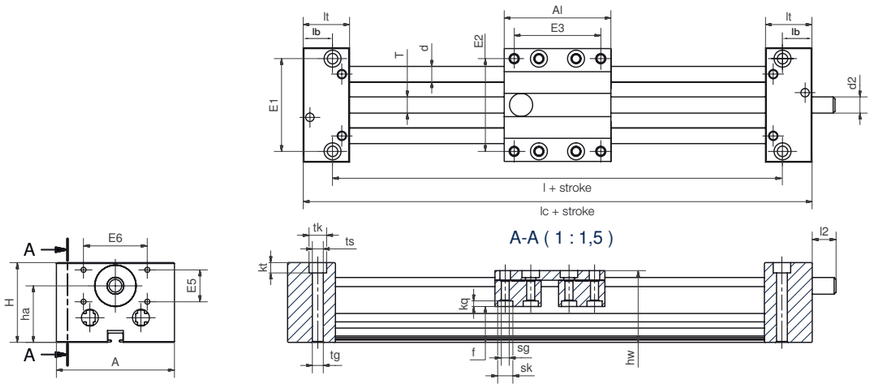
[92)] Lead screw end unmachined

drylin® DLE | Linear modules | Product range

Linear modules with motor – deliverable within 24 hours from stock

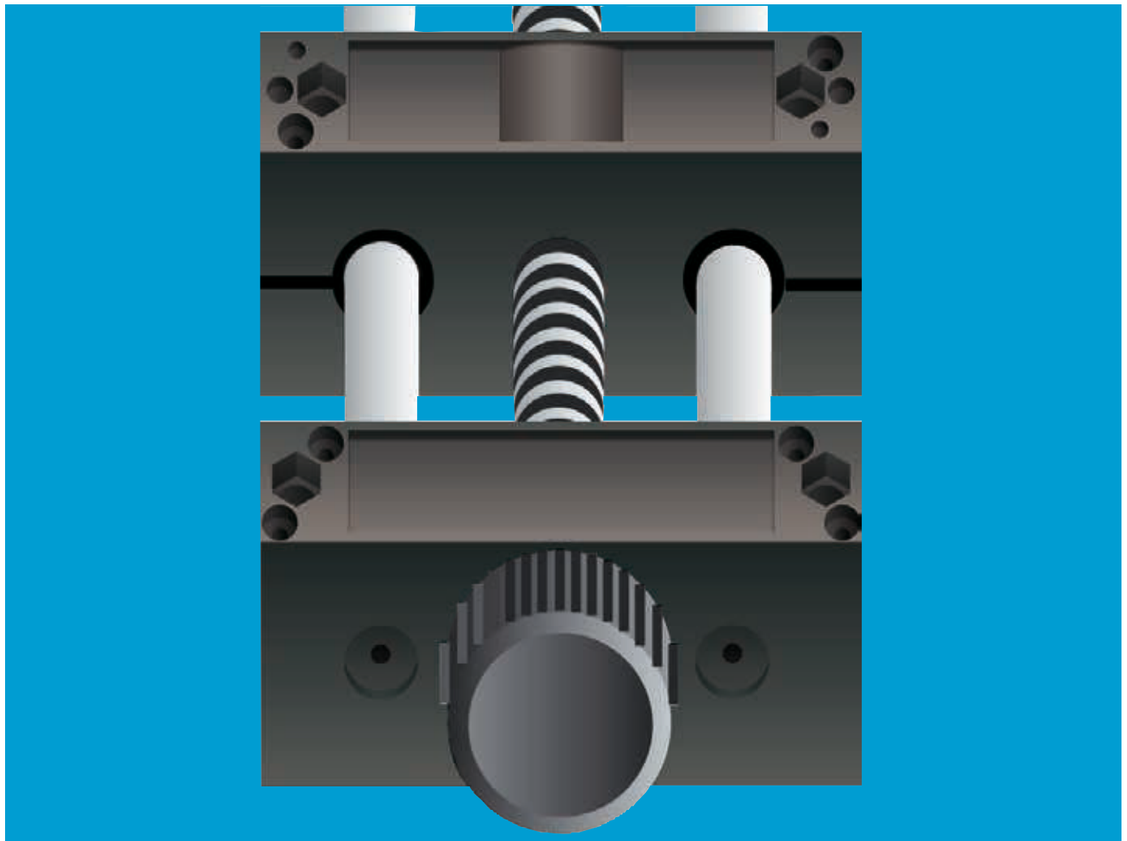
- drylin® linear modules with motor
- Available from stock
- Ready-to-install and pre-assembled
- NEMA stepper motors with stranded wires
- Available accessories

▶ **Page 1303**



Technical data

Part No.	Installation size	Length of carriage	Stroke length	Motor type	Max. static load capacity	
					axial [N]	radial [N]
DLE-SA-0004	SAW-0630 Tr08x1.5	60	250	NEMA17 stranded wires	100	400
DLE-SA-0005	SAW-1040 Tr10x2	69	500	NEMA23 stranded wires	500	2,000
DLE-SA-0006	SAW-1080 Tr12x3	100	500	NEMA23XL stranded wires	750	2,000



drylin® general drive technology – linear modules SHTP

Lubrication-free polymer linear modules

Drive: trapezoidal thread

Lightweight

Corrosion resistant

Ideal for multi-carriage solutions

drylin® SHTP | Linear modules "light" | Advantages

Light and cost-effective

Shaft end blocks from corrosion resistant, robust plastic

Drive: self-locking trapezoidal thread or fast adjust high helix thread

Plastic guide carriages are available with threads integrated into the housing, also with completely lubrication-free drylin® R liners and drylin® trapezoidal lead screw nuts

Shaft material: aluminium, steel or stainless steel

Lead screw material: steel or stainless steel

For manual adjustment

Extensive accessories available
▶ Page 1303

Lubrication-free linear modules – drylin® SHTP

The drylin® SHTP series is characterised by the weight reducing use of solid plastic components as shaft end supports and carriages. All 3 installation sizes move without lubrication and are configurable with corrosion free materials. This cost-effective alternative with multiple optional accessories is suited for manual adjustment tasks, such as sensor adjustments.

- Very light, flat design
- Ideal for multi-carriage solutions
- Low-cost alternative to home-made solutions

Typical application areas

- Gripper technology
- Format adjustments
- Camera adjustment

Available in 3-8 days
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

Carriage lengths: 26-45 mm
Stroke lengths: up to 500 mm

Product finder
▶ www.igus.eu/shtp-productfinder

drylin® SHTP | Linear modules | Product range

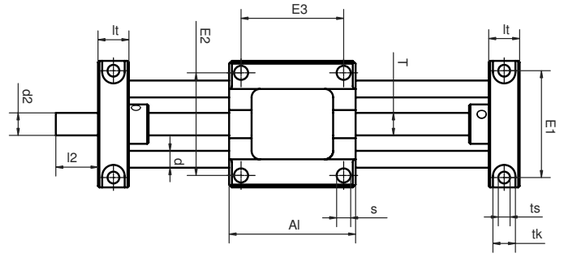
Small and cost-effective – solid plastic

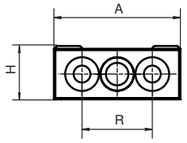
- Miniature version
- Lightweight
- Very low price
- Corrosion resistant
- Carriages and shaft end supports made from high-performance polymers
- Available accessories
▶ Page 1303

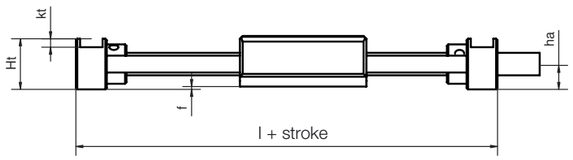
Order key

SHTP-01-06-AWM

- Shaft material
- Dimension
- Design
- Type SHT-Polymer







Technical data

Part No.	Max. stroke length	Aluminium shaft		Max. static load capacity		More Information
		Weight	Additional [kg]	axial	radial	
	[mm]	[kg]	(per 100 mm)	[N]	[N]	
SHTP-01-06-AWM	300	0.11	0.06	50	50	Carriage, square, with 4 symmetrical mounting holes

Dimensions [mm]

Part No.	A	Al	H	Ht	E1	E2	E3	l	R	f	kt	lt	tk	ts
SHTP-01-06-AWM	45	45	19	18	38	36.5	36.5	67	25	1	3	11	8	42

Part No.	s	d	T	l2	d2[99)]	ha
SHTP-01-06-AWM	5.1	6	M8	15	M8	9

[99)] Lead screw end unmachined (standard)

drylin® SHTP | Linear modules | Product range

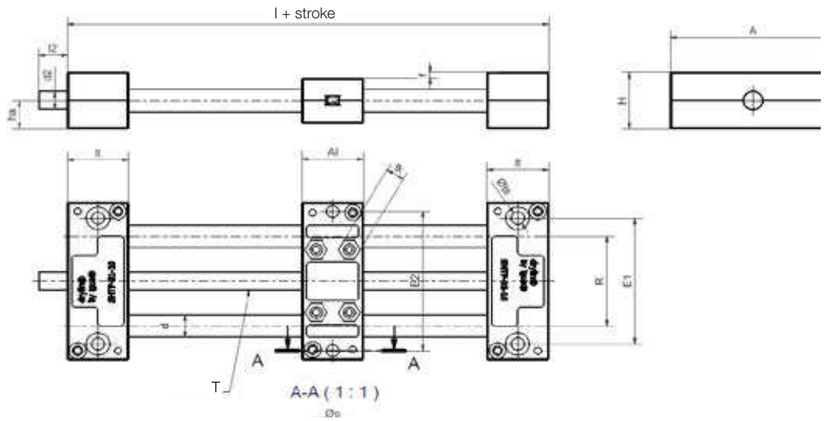
Light and robust – plastic and aluminium

- Lightweight
- Low-profile design
- Ideal for multi-carriage solutions
- Available accessories
  ▶ **Page 1303**

Order key

SHTP-01-10

- Dimension
- Design
- Type SHT-Polymer



Technical data

Part No.	Max. stroke length [mm]	Aluminium shaft Weight [kg]	Aluminium shaft Additional [kg] (per 100 mm)	More Information
SHTP-01-10	350	0.2	0.08	Liners and lead screw nuts made from iglidur® J

Dimensions [mm]

Part No.	A	Al	H	E1	E2	l	R	f	lt ±0.1	tk	ts +0.15
SHTP-01-10	70	26	25	56	62	78	40	2.5	26	8	5.5

Part No.	s	sg	d	T	l2	d2[99]	ha	Max. static load capacity axial [N]	Max. static load capacity radial [N]
SHTP-01-10	5.2	M5	10	Tr08x1.5	15	Tr08x1.5	12.5	100	400

[99] **Lead screw end unmachined (standard)**

drylin® SHTP | Linear modules | Product range

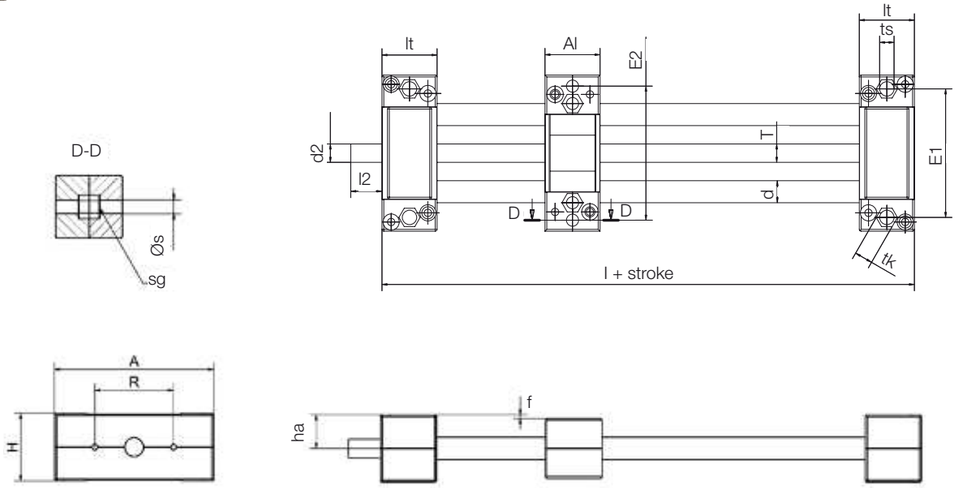
Economical – solid plastic

- Solid polymer design
- Lightweight
- Cost-effective
- Corrosion resistant
- Available accessories
  ▶ **Page 1303**
- Available with motor
  ▶ **Page 1261**

Order key

SHTP-01-12-AWM

- Shaft material
- Dimension
- Design
- Type SHT-Polymer



Technical data

Part No.	Max. stroke length [mm]	Aluminium shaft Weight [kg]	Aluminium shaft Additional [kg] (per 100 mm)	More Information
SHTP-01-12	500	0.35	0.11	Liners and lead screw nuts made from iglidur® J
SHTP-02-12	500	0.35	0.11	Bearing and nut integrated into the carriage

Dimensions [mm]

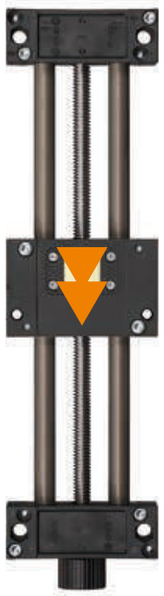
Part No.	A	Al	H	E1	E2	l	R	f	lt ±0.1	tk	ts +0.15
SHTP-01-12	85	30	36	70	73	90	42	2	30	10	6.0
SHTP-02-12	85	30	36	70	73	90	42	2	30	10	6.0

Part No.	s	sg	d	T	l2	d2[99]	ha	Max. static load capacity axial [N]	Max. static load capacity radial [N]
SHTP-01-12	6.3	M6	12	Tr10x2	17	Tr10x2	18	200	400
SHTP-02-12	6.3	M6	12	Tr10x2	17	Tr10x2	18	200	400

[99] **Lead screw end unmachined (standard)**

drylin® SHTP | Linear modules | Product range

With "Fast-Forward" quick release mechanism



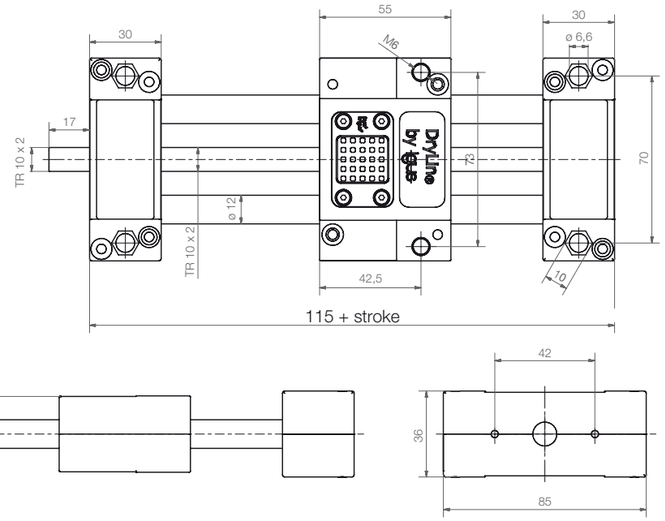
- Light solid polymer model
- For fast format adjustments
- Self-locking
- Variable stroke length
- Only recommended for horizontal applications
- Max. stat. axial load 200 N
- Max. dynamic. axial load 50 N
- Available accessories

▶ Page 1303

Order key

SHTP-01-12-AWM-FF

- Fast Forward
- Shaft material
- Dimension
- Design
- Type SHT-Polymer

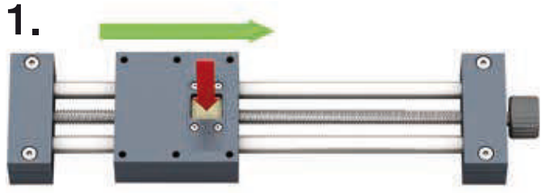


Technical data

Part No.	Max. stroke length [mm]	Weight [kg]	Additional weight (per 100 mm)
SHTP-01-12-AWM-FF[100)]	500	0.35	0.11

[100)] Liners and trapezoidal lead screw nut made from iglidur® J

1.



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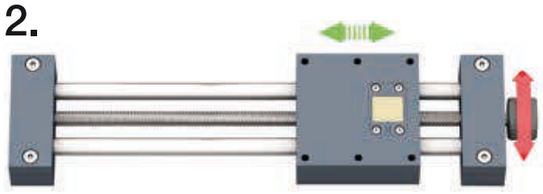
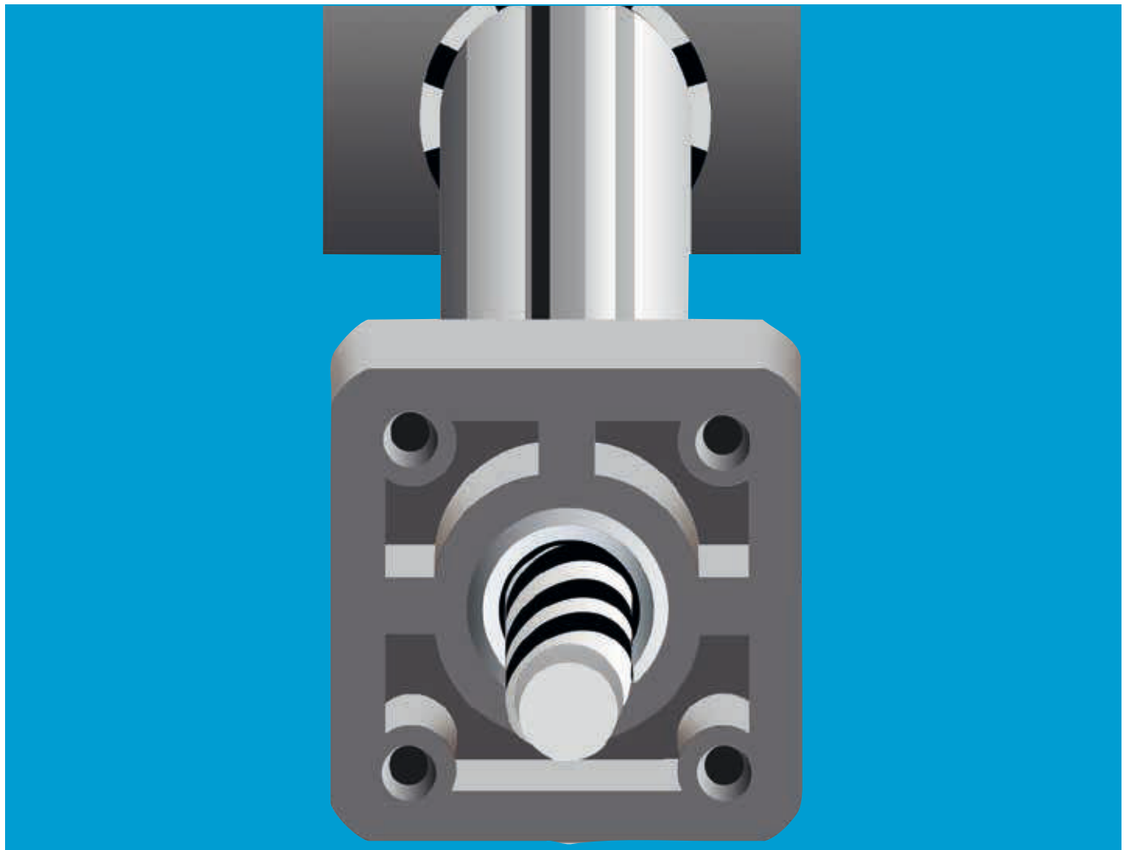


press > disengage > move manually > click into place > fine-tuning



drylin® general drive technology – linear modules SET

- Lubrication-free single-tube adjustment
- Drive: trapezoidal thread
- Simple, smooth design
- Lightweight due to aluminium and plastic
- Temperature resistance up to +50 °C

Single-tube adjustment

Shaft end blocks made from robust plastic, also available as a flanged version

Guide tube made from anodised aluminium

Carriages, trapezoidal lead screw nuts and torque support made from lubrication-free plain bearing polymers

Trapezoidal lead screw (inside) made from steel or stainless steel

Guide tube available with measurement scale

Stainless steel clamping rings, journal and axial bearings made from plain bearing polymers

Large range of accessories available ▶ **Page 1303**

Lubrication-free linear unit "easytube"

The linear unit for easy adjustment functions is characterised by a simple but effective and solid design. A complete system is built up from few components. The outer anodised aluminium tube guides the carriage/s and at the same time protects the trapezoidal lead screw and lead screw nut from external influences. Carriage, torque support and trapezoidal lead screw nut in one component and are made from a special plain bearing high-performance polymer. This guarantees freedom from lubrication with simultaneously low coefficient of friction and optimal wear rates. The iglidur® bearing materials are also used in the axial bearings of the lead screw.

- Protected lead screw
- Effective design
- Available with measurement scale without lead screw
- Flanged version for axial mounting

Typical application areas
- Sensor and camera positioning
- Format adjustment

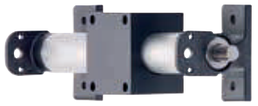
Available in 3-8 days
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

Carriage lengths: 30-55 mm
Stroke lengths: up to 850 mm

Product finder
▶ **www.igus.eu/set-productfinder**

Efficient design with protected lead screw and variable mounting



easytube single tube linear unit
- For light format adjustments
- Protected lead screw, torque-resistant
- Trapezoidal or high-helix lead screw drives

▶ **Page 1222**

easytube with flange, on both sides
- For axial mounting
- Simple, smooth design

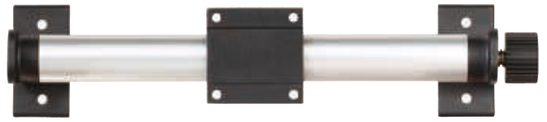
▶ **Page 1223**

easytube with carrier flange on one side
- For horizontal and vertical installation
- Massive aluminium carrier flange on one side
- Space saving structure

▶ **Page 1224**

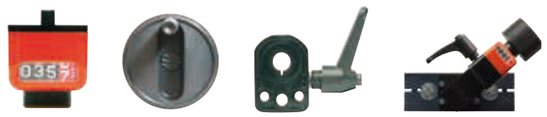
easytube with measurement scale
- With lasered, wash-proof scale
- Carriage with clamp
- Available with/without lead screw

▶ **Page 1225**



easytube "light"
- Weight-optimised linear carriage
- Compact structure
- Also in flange version available

▶ **Page 1226**

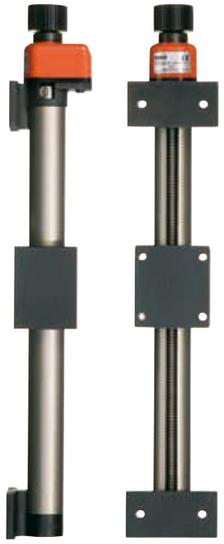


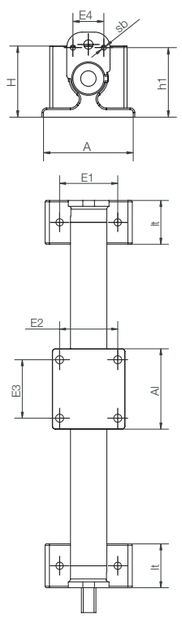
Accessories for linear modules
- Position indicator, hand wheels, screw clamps, angle drives and so on

▶ **From page 1303**

drylin® SET | easytube | Product range

easytube

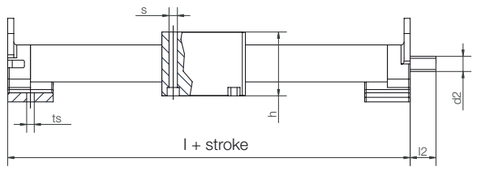




Order key

SET-25-AWM

- Shaft material
- Dimension
- easytube



- For simple adjustments
- Trapezoidal lead screw inside
- Corrosion-free with stainless steel lead screw
- Low weight due to aluminium and plastic
- Temperature resistant up to +60 °C
- Available accessories ▶ **Page 1303**

Technical data

Part No.	Max. stroke length	Aluminium shaft		Max. static load capacity	
		Weight shaft end supports and carriage	Additional (per 100 mm)	axial	radial
	[mm]	[kg]	[kg]	[N]	[N]
SET-12-AWM	200	0.05	0.03	10	20
SET-25-AWM	750	0.15	0.12	150	300
SET-30-AWM	850	0.20	0.21	200	400

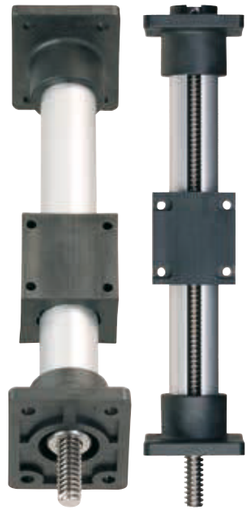
Dimensions [mm]

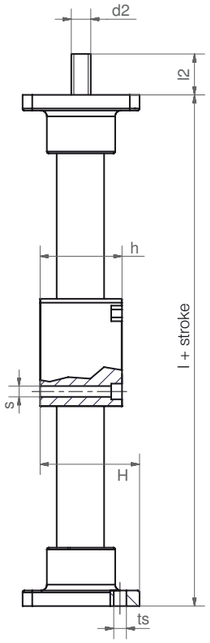
Part No.	A	Al	H	E1	E2	E3	E4	l	h	h1	lt	ts	s	sb	l2	d2[92)]
SET-12-AWM	30	30	23.5	20	20	20	–	60	22	–	15	3.3	4.2	–	10	M4
SET-25-AWM	60	55	44	40	40	40	20	115	39	45	30	5.2	5.2	M4	17	Tr10x2
SET-30-AWM	80	55	49	60	40	40	20	125	39	50	35	6.5	5.2	M4	20	Tr12x3

[92)] Lead screw end unmachined

drylin® SET | easytube | Product range

With flange

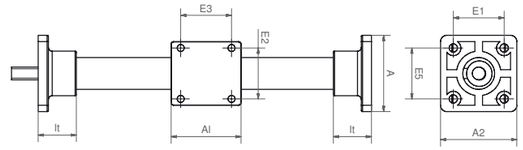




Order key

SET-25-AWM-F

- With flange
- Shaft material
- Dimension
- easytube



- Flanged version for axial mounting
- Simple, smooth design
- Available accessories ▶ **Page 1303**

Technical data

Part No.	Max. stroke length	Aluminium shaft		Max. static load capacity	
		Weight shaft end supports and carriage	Additional (per 100 mm)	axial	radial
	[mm]	[kg]	[kg]	[N]	[N]
SET-25-AWM-F	750	0.15	0.12	150	300
SET-30-AWM-F	850	0.20	0.21	200	400

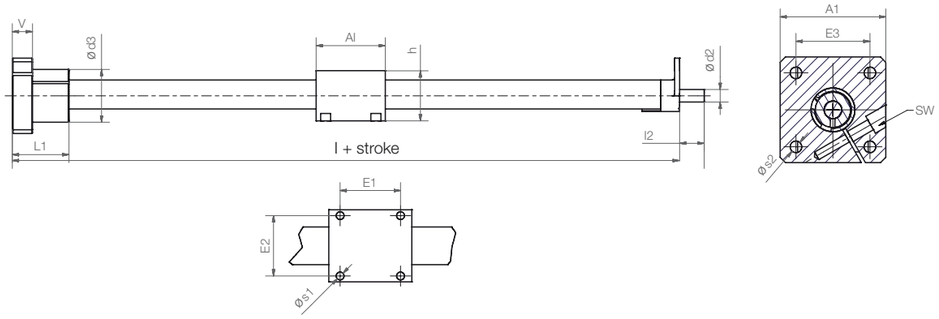
Dimensions [mm]

Part No.	Al	A	A2	H	E1	E2	E3	E5	l	h	lt	ts	s	l2	d2[92)]
SET-25-AWM-F	55	60	60	49	40	40	40	40	115	39	30	5.2	5.2	27	Tr10x2
SET-30-AWM-F	55	60	80	59	60	40	40	40	125	39	35	6.5	5.2	30	Tr12x3

[92)] Lead screw end unmachined

drylin® SET | easytube | Product range

Preloaded on one side



Order key

SETB-25-AWM

- Shaft material
- Dimension
- easytube

- Horizontal and vertical installation at one end
- Ideal for the positioning of sensors and cameras in format adjustments
- Easy assembly
- Flexible installation
- Space saving
- Protected lead screw

Technical data

Part No.	Max. stroke length	Max. static load capacity	
		axial	radial at arm[128]
	[mm]	[N]	[N]
SETB-25-AWM	300	150	12.5

Dimensions [mm]

Part No.	A1	Al	h	E1	E2	E3	V	L1	l2	d2[92]	d3	l	s1	s2	SW
SETB-25-AWM	60	55	39	40	40	42	16	45	17	Tr10x2	42	130	5.2	6.6	5

[92] Lead screw end unmachined

More dimensions on request

[128] The supporting torque at the clamping flange must not exceed 10 Nm

drylin® SET | easytube | Product range

With measurement scale

Order key

SETM-25-AWM-200-SC

- Scaling
- Stroke length
- Shaft material
- Dimension
- Manual
- without lead
- screw (optional)
- easytube

- Lasered scale
- Corrosion resistant
- Continuously clamped
- Available with/without lead screw
- 3 stroke lengths available from stock

Technical data		
F radial	[N]	300
Max. extension at maximum load	[mm]	66
Max. extension at nominal load 100 N	[mm]	200
Max. drive force without load	[N]	10
Max. holding strength	[N]	100
Max. stroke length	[mm]	600

Dimensions [mm]

Part no. measurement scale without lead screw	Part no. measurement scale with trapezoidal lead screw 10x2	Stroke length
		[mm]
SETM-25-AWM-200-SC	SET-25-AWM-200-SC	200
SETM-25-AWM-400-SC	SET-25-AWM-400-SC	400
SETM-25-AWM-600-SC	SET-25-AWM-600-SC	600

More dimensions see SET ▶ Page 1197

drylin® SET | easytube | Product range

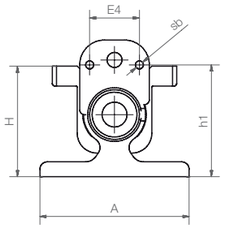
Weight-optimised carriage option

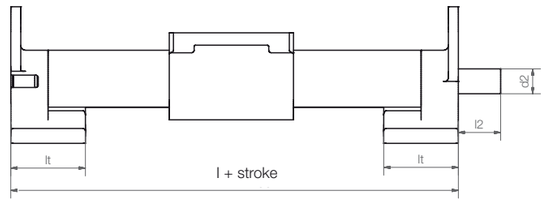
- Weight-optimised
- For cost-sensitive adjusting movements
- Simplified solid assembly
- Light, clean and low noise

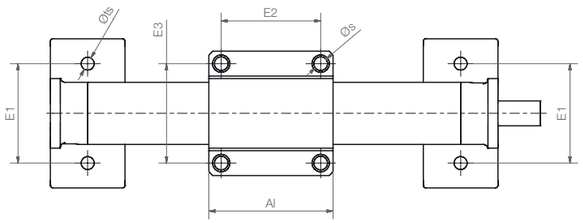
Order key

SETC-25-AWM

- Shaft material
- Dimension
- easytube







Technical data

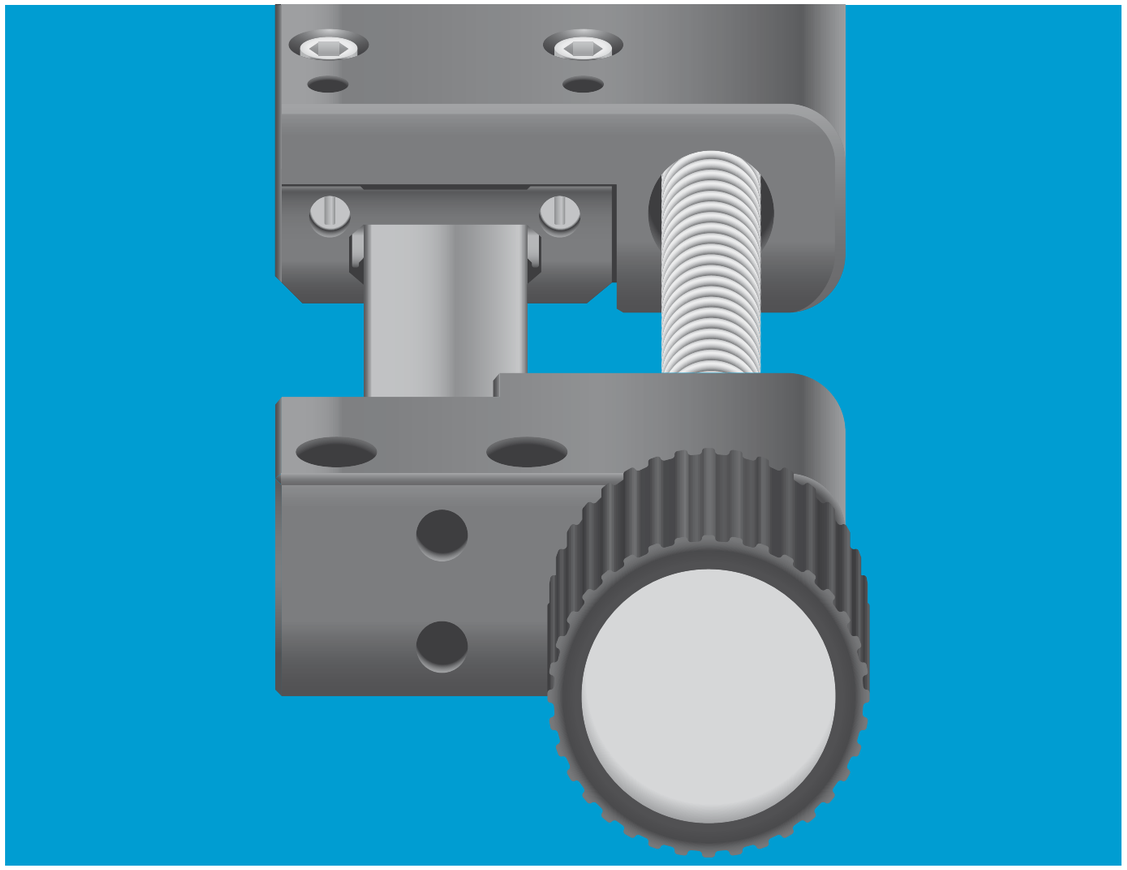
Part No.	Weight	Max. stroke length	Max. static load capacity axial	Max. static load capacity radial
	[kg]	[mm]	[N]	[N]
SETC-25-AWM	0.15	750	150	300

Dimensions [mm]

Part No.	A	Al	H	E1	E2	E3	E4	l	h1	lt	ts	s	sb	l2	d2[92)]
SETC-25-AWM	60	55	44	40	40	40	20	115	45	30	5.2	5.2	M4	17	Tr10x2

[92)] Lead screw end unmachined

More dimensions on request



drylin® general drive technology – linear modules SLT

Based on lubrication-free drylin® T miniature guide system

Trapezoidal or high-helix lead screw drives

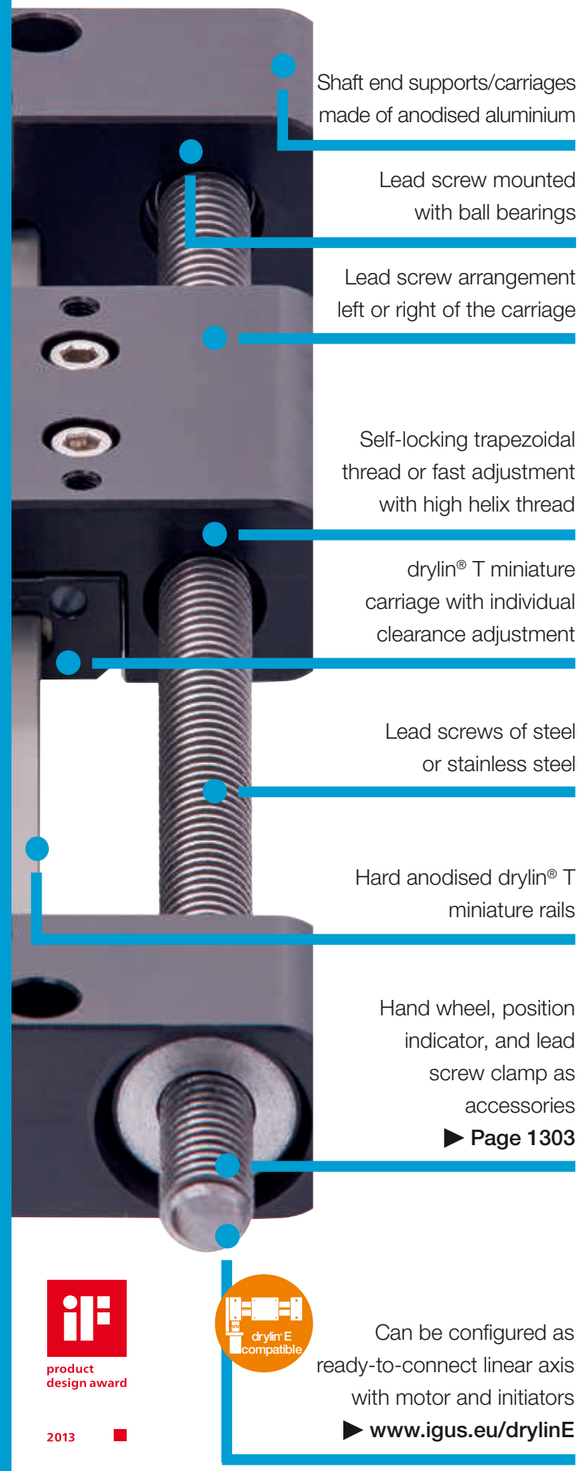
Flat and compact design

Carriages with individually adjustable clearance

Variable lead screw arrangement

drylin® SLT | Linear modules | Advantages

Flat, lightweight and lubrication-free



product design award 2013

Lubrication-free linear modules – drylin® SLT

An extremely flat structure, the lateral lead screw arrangement, a striking design, are just some of the reasons why the drylin® linear module SLT was honoured with the 2014 IF Award. Technically, the system is impressive with ball-bearing supported trapezoidal thread or high helix thread lead screws for motorised or manual operation. The basis of the SLT series is the drylin® T low profile linear guide system in sizes 12 and 15.

- Low profile structure through lateral lead screw arrangement
- Lubrication-free, corrosion-resistant, lightweight
- Variable pitch
- Adjustable drylin® T miniature carriage
- Lead screw arrangement can be selected either left or right

Typical application areas

- Format adjustments
- Laboratory and medical technology
- Optical equipment

Available in 3-8 days
Detailed information about delivery time online.

max. +60 °C
min. -40 °C

Stroke lengths 300 mm – 600 mm
More dimensions on request.

Product finder
▶ www.igus.eu/slt-productfinder

RoHS-II

In accordance with EC Directive 2011/65/EU (RoHS 2) Restriction (of the use of certain) hazardous substances

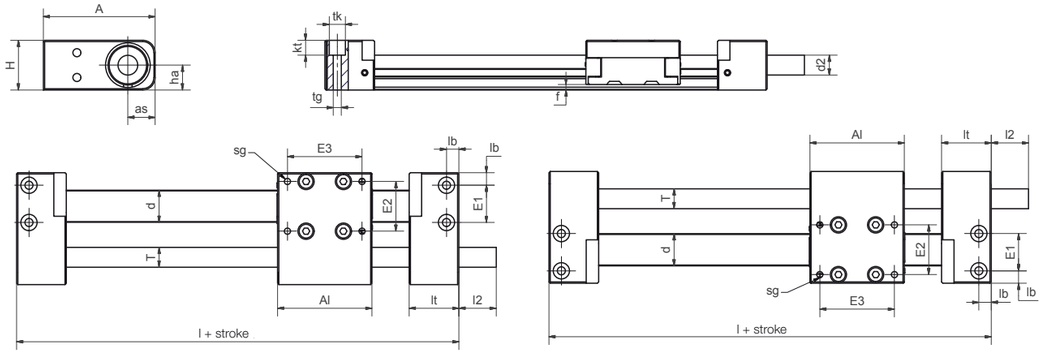
drylin® SLT | Linear modules | Product range

With ball bearing lead screw supports

Order key

SLT-BB-0412-ER-S0015RG-xxx

- **Stroke length in mm**
- **Lead screw end**
  - **G:** Threaded end
- **Thread**
  - **R:** Right
- **Pitch**
- **Lead screw**
  - **Steel or stainless steel**
- **Alignment lead screw**
  - **R:** Right (standard)
  - **L:** Left
- **Adjustable carriage TWE**
- **Installation size**
- **Design**
  - **BB:** with Ball Bearings
- **Type**



Lead screw alignment left

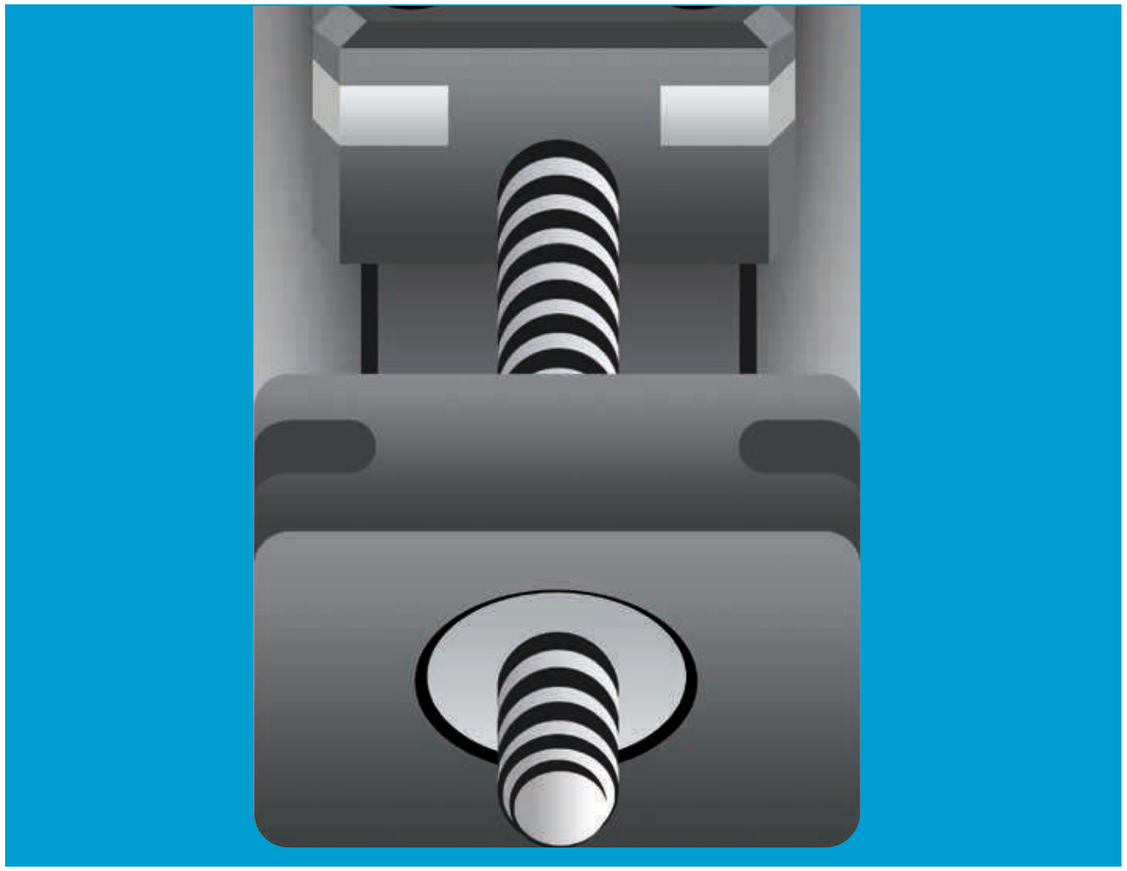
Lead screw alignment right

Technical data and dimensions [mm]

Part No.	Lead	Max. stroke length	Weight		Max. static load capacity		Max. RPM	Max. speed
			Additional (per 100 mm)		axial	radial		
			[kg]	[kg]	[N]	[N]	[1/min]	[m/min]
SLT-BB-0412	Tr08x1.5	300	0.15	0.06	100	200	1,000	1.5
	Sg08x15	300	0.15	0.06	25	100	600	9.0
SLT-BB-0415	Tr12x3	600	0.40	0.12	200	400	1,000	4.5
	Tr12x6	600	0.40	0.12	100	400	750	4.5
	Sg12x25	600	0.40	0.12	50	200	300	7.5

Part No.	A	Al	H	E1	E2	E3	l	l2	d2	ha	sg	tk	kt	tg	f	lb	lt	d	T	as
SLT-BB-0412	45	38	20	15	20	30	78	15	-	10	M3-7	6.5	6	M3	2.2	5	20	13	Tr08x1.5	11
SLT-BB-0415	58	45	30	19	25	35	89	17	12	15	M3-13	8	4.5	M5-15	2.8	6.5	22	17	Tr12x3	16

My sketches



drylin® general drive technology – linear modules SLN

- Based on lubrication-free drylin® N low profile guide
- Trapezoidal or high-helix lead screw drives
- Compact design
- Low-cost
- Dynamic due to leadscrew drive with ball-bearing

drylin® SLN | Miniature linear modules | Advantages

Compact, precise and lubrication-free

Support blocks from corrosion resistant, robust plastic

Lead screw mounted with plain or ball bearings

Low-cost, robust plastic carriages (basic series 03)

Carriage with manual height clearance adjustment (standard series 04)

Metal thread inserts

Minimal backlash with preloaded nut (preload series 05)

Rail made from anodised aluminium

Lead screws made from stainless steel with pitch M5 (5x0.8 mm) or high helix thread (5x5, 6x12.7)

Available hand wheels
▶ Page 1310

Configurable with motor as a ready to install linear drive (drylin® E ▶ Page 1259)

Lubrication-free miniature linear module – drylin® SLN

drylin® SLN linear axes provide a solution for compact installation spaces. The axis measures 28 x 22 mm and can be configured with stroke lengths of up to 250 mm. Thanks to the plastic glides, it runs extremely quietly and is also very light. The axis is based on the tried-and-tested drylin® N system, size 27. It is available both mounted on plain bearings or with ball bearings in the shaft end supports. The drylin® SLN linear axis can be adjusted manually using the hand wheel or combined with the drylin® E stepper and DC motors.

- Ultra-compact design
- 3 carriage types (basic/adjustable/preload)
- Lubrication-free drylin® low profile guide
- Modular design

Typical application areas

- Sensors
- Inspection technology
- Laboratory technology
- Medical technology

Available in 3-8 days
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

Length of carriage: 35 mm
Stroke lengths: up to 250 mm

Product finder
▶ www.igus.eu/sln-productfinder

drylin® SLN | Miniature linear modules | Product range

Miniature linear module, Basic version

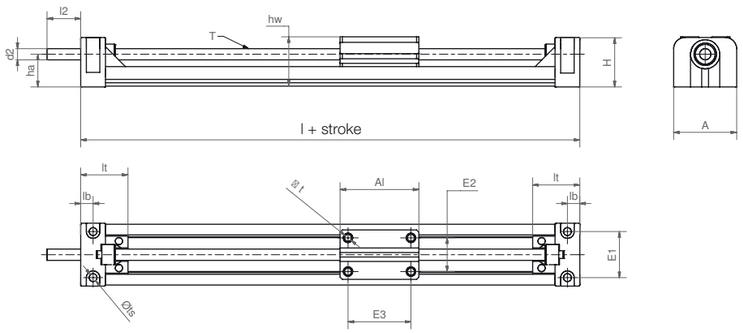
- Single parts made from aluminium and plastic
- Entry-level model
- Lead screw mounted with plain bearings
- Retrofitting possible
- Available accessories
  ▶ Page 1303
- Available with motor
  ▶ Page 1261

Order key

SLN-27-03-0008

- **Pitch**
- **Carriage version**
  - **03:** Basic
- **Dimension**
- **Standard**

drylin® E compatible



Technical data

Part No.	Max. stroke length	Weight	Additional	Max. static load capacity		Max. speed	Max. drive torque
			(per 100 mm)	Axial	Radial		
	[mm]	[kg]	[kg]	[N]	[N]	[U/min]	[Nm]
SLN-27-03-0008	250	0.5	0.40	10	40	100	0.1

Dimensions [mm]

Part No.	A	Al	H	E1	E2	E3	E11[102]	l	hw	lt	lb	ts	t	T	d2[98]	l2	ha
	±0.2	-0.1	±0.2	±0.15	±0.15	±0.15			±0.2	±0.2							
SLN-27-03-0008	28	35	22	20.5	15	28	15	77	22	21	5.5	3.5	3.2	M5	5	15	14.5

[102] The dimension E11 can only be found in conjunction with the igus motor connection

[98] Thread/remaining thread visible

drylin® SLN | Miniature linear modules | Product range

Miniature linear module, preload version

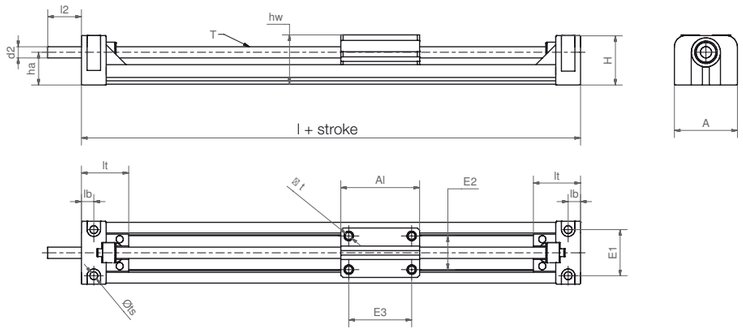
- Based on maintenance-free drylin® N low profile guides size 27
- BB-version (ball bearing) for low backlash run
- Manual and motorised operation possible
- Linear carriage with individual height clearance adjustment and optional preload
- Available accessories
  ▶ **Page 1303**
- Available with motor
  ▶ **Page 1261**

Order key

SLN-27-14-0008

Pitch:
0008: M5x0.8
0050: SG5x5
0025: DS6.35x2.54
0127: SG6.35x12.7
0254: DS6.35x25.4
Carriage version
4: Standard, adjustable
5: Standard, preload
Shaft end support type
0: Plain bearing
1: Ball bearing
drylin® N size 27
Linear module

drylin E compatible



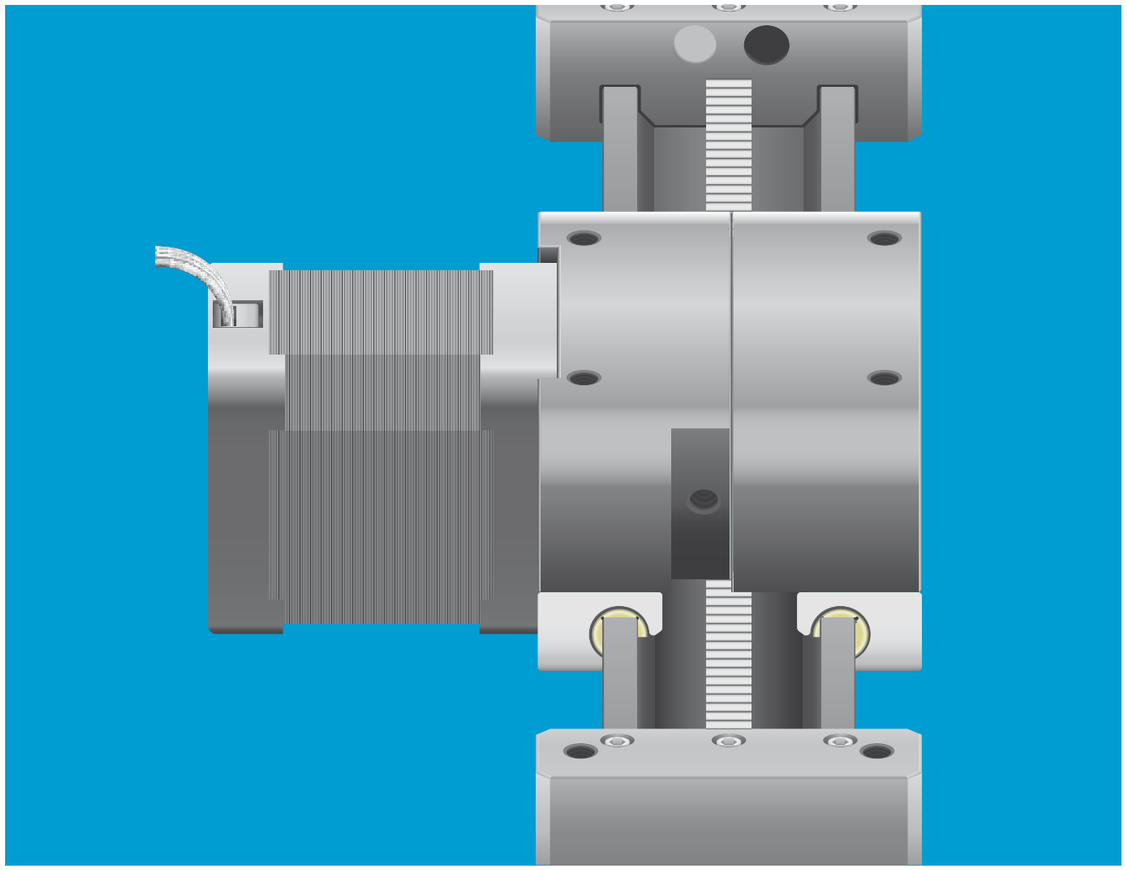
Technical data and dimensions [mm]

Part No.	Max. stroke length[101]	Weight	Additional	Max. static load capacity		Max. speed	Max. drive torque
			[kg]	Axial	Radial		
	[mm]	[kg]	(per 100 mm)	[N]	[N]	[U/min]	[Nm]
SLN-27-04	250	0.06	0.04	10	40	100	0.1
SLN-27-14	250	0.06	0.04	10	40	300	0.1
SLN-27-05	250	0.06	0.04	10	40	100	0.1
SLN-27-15	250	0.06	0.04	10	40	300	0.1

Part No.	A ±0.2	Al -0.1	H ±0.2	E1 ±0.15	E2 ±0.15	E3 ±0.15	E11[102]	l	hw ±0.2	lt ±0.2	lb	ts	tg	d2[98] Ø	l2	ha
SLN-27-04	28	35	21.5	15	15	28	15	77	22	20.2	5	3.5	M3	5	15	14
SLN-27-14	28	35	21.5	15	15	28	15	77	22	20.2	5	3.5	M3	Ø4h9 [98]	15	14
SLN-27-05	28	35	21.5	15	15	28	15	77	22	20.2	5	3.5	M3	5	15	14
SLN-27-15	28	35	21.5	15	15	28	15	77	22	20.2	5	3.5	M3	Ø4h9 [98]	15	14

[101] Fixed stroke lengths for SLN option: 100/150/200/250 mm
[102] The dimension E11 can only be found in conjunction with the igus motor connection
[98] Thread/ remaining thread visible

1234 Online tools and more information ▶ www.igus.eu/drylinSLN



drylin® general drive technology – cantilever axis

Dynamic

Rack and pinion drive

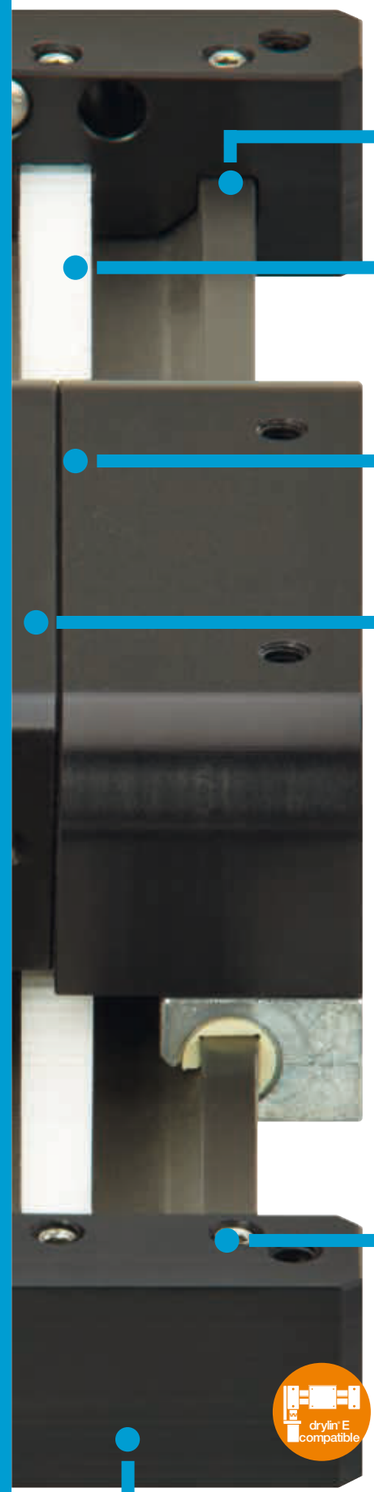
Light and compact

Ideal as z axis in linear robots

Lubrication and maintenance-free

drylin® cantilever axis | Advantages

Small and dynamic



Lubrication-free cantilever axis

The drylin® GRW cantilever axis was specifically designed for pick & place applications. Due to the direct rack drive, the GRW axis provides high dynamics for small loads and is the ideal z axis in multi-axis portals.

- Dynamic force transmission through rack
- For loads up to 1 kg
- Completely lubrication-free operation
- Assembly option for limit and reference switch

Typical application areas

- Multi-axis linear robots
- Test and measuring equipment
- Pick & place applications

Available in 3-8 days
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

Stroke lengths up to 300 mm

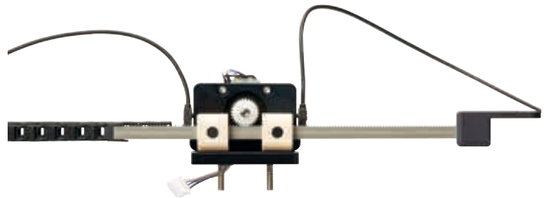
drylin® cantilever axis | Product overview

Direct drive via rack

drylin® GRW cantilever axis

- Direct dynamic force transfer via rack
- Stroke lengths up to 300 mm
- Ideal as z axis in multi-axis linea robots

▶ Page 1238



drylin® GRQ gripper axis

- Drive via toothed hollow square profile section
- Very light and compact design
- For loads up to 500 gr with a
- Speeds up to 0.7 m/s

▶ Page 1239

drylin® GRW axis in the line linear robot

- GRW as z axis in the line linear robot DLE-LG-001
- Ready-to-fit with NEMA17 stepper motors
- Linear robot systems available from stock

▶ Page 1292

drylin® GRQ in lift/swivel unit

- drylin® GRQ in lift/swivel unit drylin® HSQ
- Compact unit for lifting and swivelling tasks
- Ready to install with NEMA stepper motors

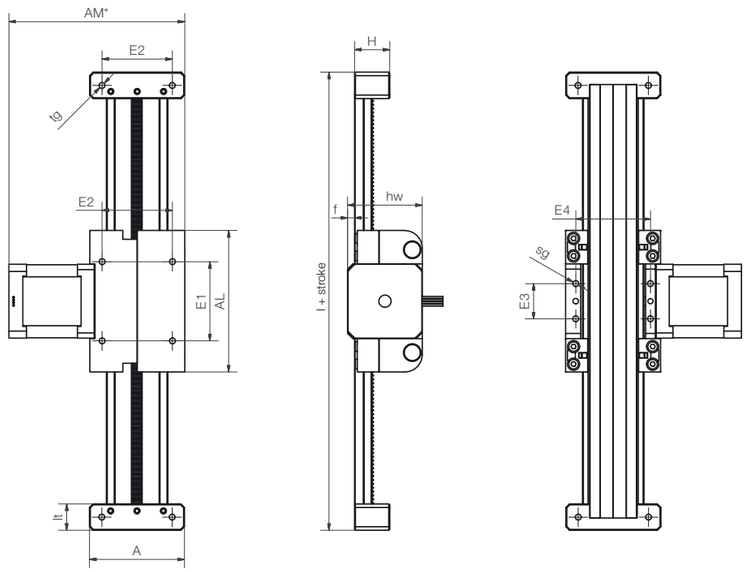
▶ Page 1240

drylin® GRW | Cantilever axis | Product range

Dynamic z axis for linear robot structures

- Direct force transfer via rack
- Compact structure
- For loads up to 10 N
- Available accessories ▶ **Page 1303**
- Available with motor ▶ **Page 1261**

drylin E compatible



Technical data

Part No.	Stroke length [mm]	Weight [kg]	Additional (per 100 mm)	Max. feed rate [mm/rev]	Max. load axial [N]
GRW-0630-A	150	0.5	0.1	44	10
GRW-0630-B	300	0.5	0.1	44	10

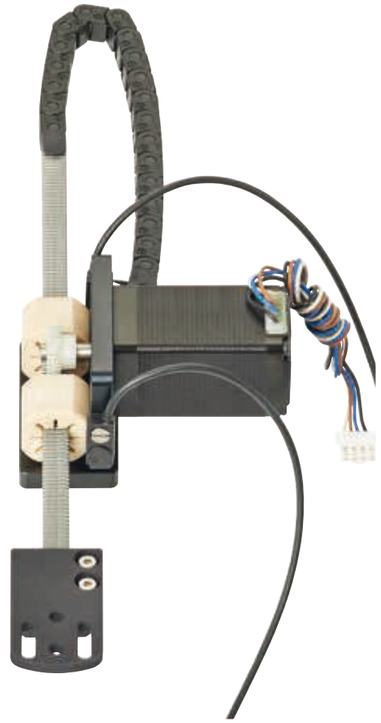
Dimensions [mm]

Part No.	A -0.3	Al	H	E1 +0.15	E2 +0.15	E3	E4	l	lt	hw	f	AM [131]	tg	sg
GRW-0630-A	54	80.5	20	45	40	20	42.5	110.5	15	42.5	4	100.0	M4	M4-8
GRW-0630-B	54	80.5	20	45	40	20	42.5	110.5	15	42.5	4	121.4	M4	M4-8

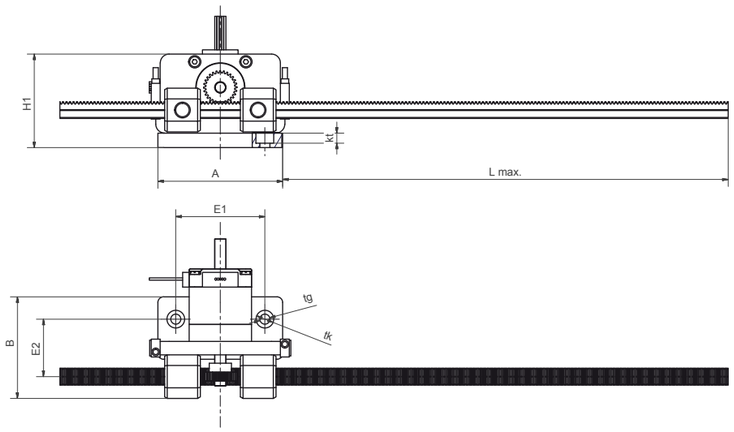
[131] Depending on the type of motor

drylin® GRQ | Gripper axis | Product range

Extremely light axis for pick& place



- Toothed, hard anodised and corrosion resistant square hollow section
- Loads up to 500 g with a speed up to 0.7 m/s
- iglidur® J plain bearings
- Drive: NEMA11 stepper motor with gear wheel



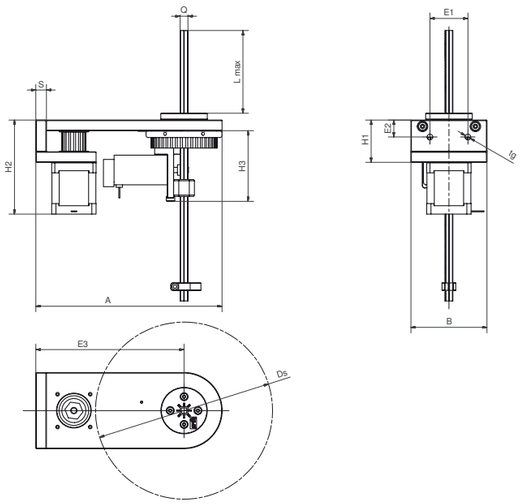
Dimensions [mm]

Part No.	F [N]	v [m/s]	L max	A	H1	E1	E2	B	tg	tk	kt	B	Q	D2
GRQ-10-A-56-120-11-L-01-000	5	0.7	200	56	42	40	26	46	4.5	8	4.5	52	7.5	22

drylin® HSQ | pivoting/lifting unit | Product range

Compact, modular and lubrication-free

- Toothed, hard anodised, corrosion resistant square hollow section
- Combination with iglidur® J slewing ring element
- Modular design
- Drive: NEMA11 stepper motor

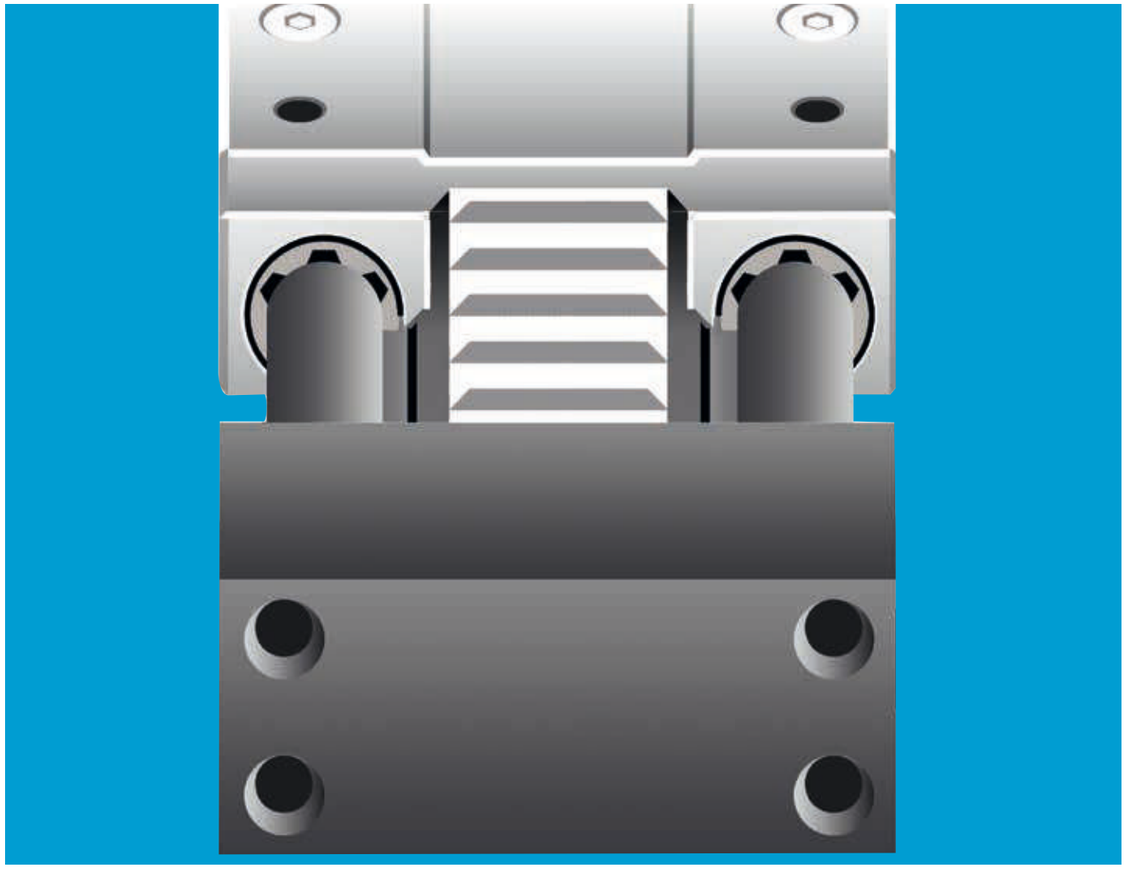


Further motors on request/suitable initiators available

Dimensions [mm]

Part No.	F	vL	vR	Lmax	(Ds)	A	B	H1	(H2)	(H3)	E1	E2	E3	Q	tg	S
	[g]			±0.15	±0.15		±0.15		±0.3						h9	
HSQ-10-1440-…	300	0.5	0.4	200	168	177	72	40	89	67	36	16	140	7.5	5.3	10

Order example:
HSQ-10-1440-A-xxx-17-L-11-L
(incl. stepper motor NEMA 17/11 with stranded wire)
HSQ-10-1440-A-xxx-17-E-11-E
(incl. stepper motor NEMA 17/11 with encoder)



drylin® general drive technology – tooth belt axis ZLW

Lubrication-free linear modules based on drylin® W guides

Drive: toothed belt

For fast positioning

End supports with grooved ball bearings

As single axis or for multi-axis linear robots

Fast and powerful

Lubrication-free toothed belt axes – drylin® ZLW

The drylin® toothed belt axes in the ZLW series are suitable for many different positioning and adjustment tasks. The lubrication-free drylin® W profile guide acts as a linear guide and a toothed belt acts as a drive. The stroke is individually selectable. Thanks to the lightweight design using plastic and aluminium, drylin® ZLW toothed belt axes have a low mass inertia, making them highly efficient. Whether as an individual system or a linear robot structure, the ZLW series offers the ideal solution in both confined spaces and applications that require a high level of torque support . All drylin® ZLW toothed belt axes can be ordered ready for connection and configured with drylin® E stepper and DC motors. It is also possible to integrate other motor components.

- Completely lubrication-free operation
- 3 types: Eco/basic/standard
- Variable carriage lengths
- Multiple motor kits available

Typical application areas

- Medical and laboratory technology
- Handling
- Positioning tasks (pick & place)
- Camera/sensor adjustment
- Machine construction

Available in 3-8 days
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

Carriage lengths: 60-250 mm
Carriage widths: 54-107 mm
Stroke lengths: up to 3,000 mm

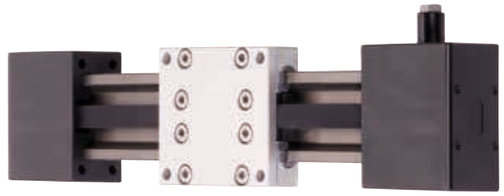
Product finder
▶ **www.igus.eu/zlw-productfinder**

Positioning with lubrication-free toothed belt drive

ZLW series Eco

- Low-cost starter axis in 2 sizes
- Lightweight
- Carriage and deflection housing made of plastic
- Anodised drylin® W aluminium profile section

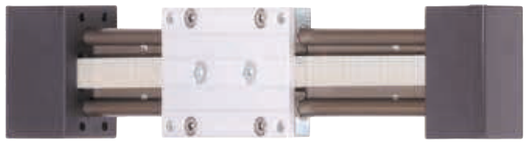
▶ **Page 1250**



ZLW series Basic

- Cost-effective deflection axis consisting of stainless-steel square section and high-performance polymer
- Neoprene toothed belts with fibre glass reinforcement
- Hard anodised drylin® W aluminium profile
- For installation sizes 0630 and 1040

▶ **Page 1250**



ZLW series Standard

- Effective PU toothed belt with steel coatings
- Single-section deflection axis made of stainless steel (shaft and tooth rim)
- Hard anodised drylin® W aluminium profile
- For installation sizes 0630/1040/1080/1660

▶ **Page 1250**

ZLW specialists

- Deep-freeze LT version for applications down to -30 °C
- UW version for under water use
- SW version for splash water applications
- For installation size 1040

▶ **Page 1250**

ZLW-OD opposite

- For quick reverse positioning
- Fast right/left adjustment
- Compact due to flat drylin® W double rails
- With angle flange

▶ **Page 1252**

ZAW – cantilever axis

- Secure mounting of the drive unit
- Traversing of profile section and load
- Fixed end block and floating shaft end support
- Size 1040 for max. stroke up to 1,000 mm

▶ **Page 1254**

ZLW – open design in installation size 20

- Variable shaft span of 120/160/200 mm
- Effective deflection axis and toothed belt
- Low weight aluminium version available
- Corrosion-resistant stainless steel version available

▶ **Page 1256**

Motors and mounting accessories

▶ **Page 1311**

Belt drive axis	Type	Shafts-Ø	Weight		Max. stroke length [120]	Transmission	Tooth profile	Carriage length
			without stroke	100 mm stroke				
ZLW-0630-...		[mm]	[kg]	[kg]	[mm]	[mm/U]		[mm]
...-02-E	ECO	□5	0.30	0.08	500	54	HTD 3M	60
...-02-B	Basic	□5	0.38	0.08	1,000	54	HTD 3M	60/100
...-02-S	Standard	□5	0.43	0.08	1,000	54	MTD3	60/100
...-OD-B	reverse Basic	□5	0.40	0.1	1,000	54	HTD 3M	60/100
...-OD-S	reverse Standard	□5	0.45	0.1	1,000	54	HTD 3M	60/100
ZLW-1040-...								
...-02-E	ECO	10	0.70	0.14	1,000	66	RPP 3M	100/150/200
...-02-B	Basic	10	0.90	0.14	2,000	66	RPP 3M	100/150/200
...-02-S	Standard	10	1.00	0.14	2,000	70	AT5	100/150/200
...-02-LT	Deep-freeze	10	1.00	0.14	2,000	70	AT5	100/150/200
...-02-UW	Underwater	10	1.00	0.14	1,000	70	AT5	100/150/200
...-02-SW	Splash water	10	1.00	0.14	2,000	70	AT5	100/150/200
...-OD-B	reverse Basic	10	1.00	0.17	1,500	66	RPP 3M	100/150/200
...-OD-S	reverse Standard	10	1.00	0.17	1,500	70	AT5	100/150/200
ZLW-1080-...								
...-02-S	Standard	10	1.30	0.14	2,000	70	AT5	100/150/200
ZLW-1660-...								
...-02-S	Standard	16	4.00	0.5	3,000	120	AT5	100/150/200/250

Max. radial load	Toothed belt material	Toothed belt width	Toothed belt tension	Guide bearing	Max. speed	Max. position variation	Idle torque	Max. drive torque
[N]		[mm]	[N]		[m/s]	[mm]	[Nm]	[Nm]
30	Neoprene with GF	9	20	Ball bearing	1.0	± 0.40	0.10	0.30
100	Neoprene with GF	9	75	Ball bearing	2.0	± 0.35	0.10	0.75
150	PU with steel	9	100	Ball bearing	2.0	± 0.30	0.15	1.00
50	Neoprene with GF	9	75	Ball bearing	1.0	± 0.35	0.10	0.75
75	PU with steel	9	100	Ball bearing	1.0	± 0.30	0.15	1.00
100	Neoprene with GF	15	50	Ball bearing	2.0	± 0.35	0.1	0.5
200	Neoprene with GF	16	150	Ball bearing	3.0	± 0.30	0.2	1.75
300	PU with steel	16	200	Ball bearing	5.0	± 0.20	0.3	2.40
300	TPUKF2	16	200	Cold ball bearing	5.0	± 0.20	0.3	2.40
100	PU + Aramid	16	50	xiros® ball bearing	1.0	± 0.50	0.15	0.50
200	PU + Stainless steel	16	200	stainless steel ball bearing	5.0	± 0.20	0.30	2.40
100	Neoprene with GF	16	150	Ball bearing	1.5	± 0.30	0.15	1.75
150	PU with steel	16	200	Ball bearing	2.5	± 0.20	0.25	2.40
300	PU with steel	16	200	Ball bearing	5	± 0.20	0.25	2.40
2000	PU with steel	32	500	Ball bearing	5	± 0.20	0.4	10.00

Tightening torque for drylin® connections between metal parts

Metric thread (Da)	Torque [Nm]	Recommended torque [Nm]
M3	0.5 - 1.1	0.7
M4	1.0 - 2.8	1.5
M5	2.0 - 5.5	3.0
M6	4.0 - 10.0	6.0
M8	8.0 - 23.0	15.0
M10	22.0 - 46.0	30.0

Note the minimal screw in depth for aluminium and zinc parts: 1.5 x Da

[120] When configuring your linear module, we ask that you note the igus® specifications for maximum stroke lengths. The performance and load specifications shown above for all drive units are based exclusively on stroke lengths within the recommended values. Exceeding these can result in undesirable effects to the function such as increased wear and noise. Belt or lead screw contact cannot be excluded, and the rated performance and load specifications may not be attainable.

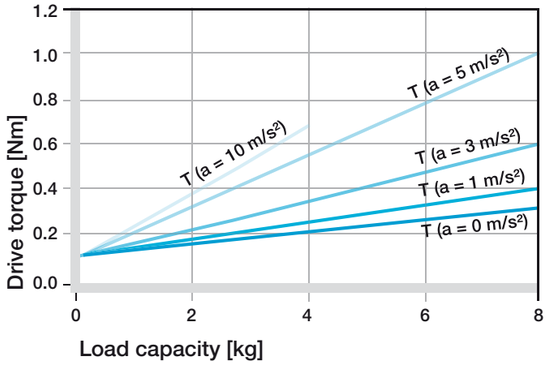


Diagram 01: Required drive torque [138]; horizontal orientation – ZLW-0630, Version basic 02

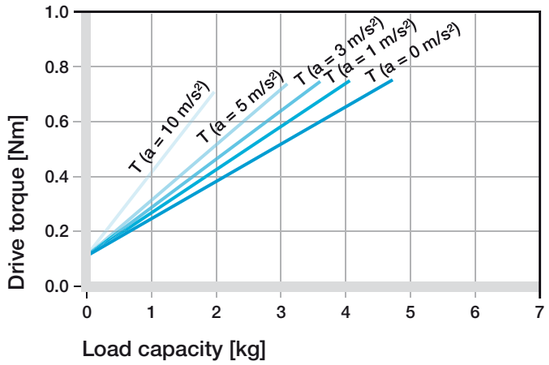


Diagram 02: Required drive torque[138]; vertical orientation – ZLW-0630, Version basic 02

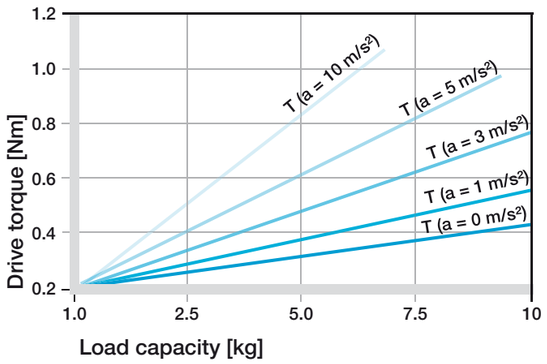


Diagram 03: Required drive torque[138]; horizontal orientation – ZLW-0630, Version standard 02

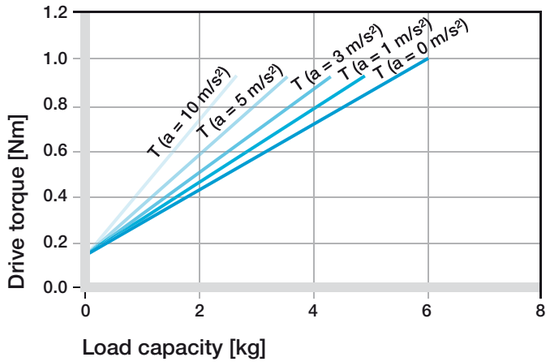


Diagram 04: Required drive torque[138]; vertical orientation – ZLW-0630, Version standard 02

[138] Assumption: the moving mass is located in a circumscribed circle with a max. R: 100 mm to the middle of the guiding rail, max. permissible torque ZLW-0630 Basic 02: 0.75 Nm, a: 0 m/s² , ZLW-0630 Standard 02: 1 Nm, a: 0 m/s², constant drive without nominal acceleration value

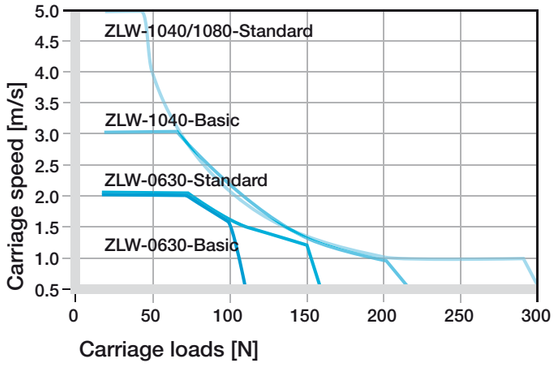


Diagram 05: Maximum load compared: ZLW-0630 and ZLW-1040/1080, 100 % OT (On-time). The diagram accounts for the sum of all forces active on the carriage.

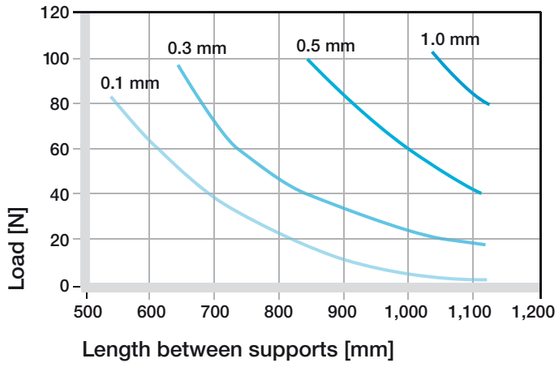


Diagram 06: Sag between unsupported end blocks ZLW-0630, Version basic 02 and standard 02. Sag permissible up to 2 mm maximum.

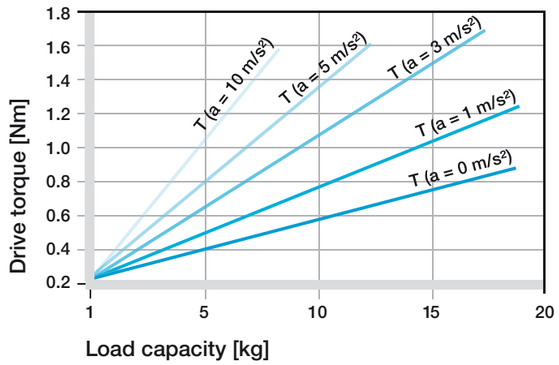


Diagram 07: Required drive torque[139]; horizontal orientation– ZLW-1040, Version basic 02

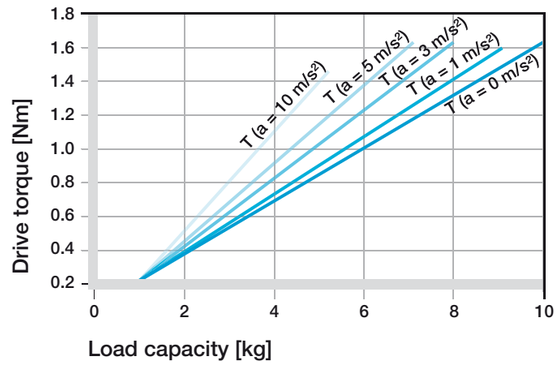


Diagram 08: Required drive torque[139]; vertical orientation – ZLW-1040, Version basic 02

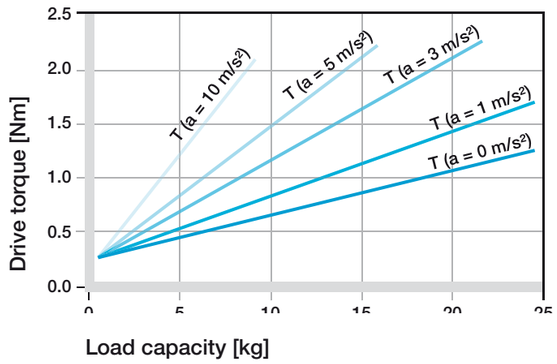


Diagram 09: Required drive torque[139]; horizontal orientation – ZLW-1040/1080, Version standard 02

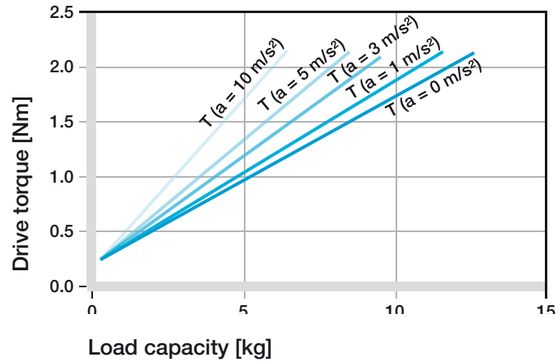


Diagram 10: Required drive torque[139]; vertical orientation – ZLW-1040/1080, Version standard 02

[139] Assumption: the moving mass is located in a circumscribed circle with a Max. R: 100 mm to the middle of the guiding rail, max. permissible torque ZLW-1040/1080 Basic 02: 1.75 Nm, a: 0 m/s² , ZLW-1040/1080 Standard 02: 2.4 Nm, a: 0 m/s², constant drive without nominal acceleration value

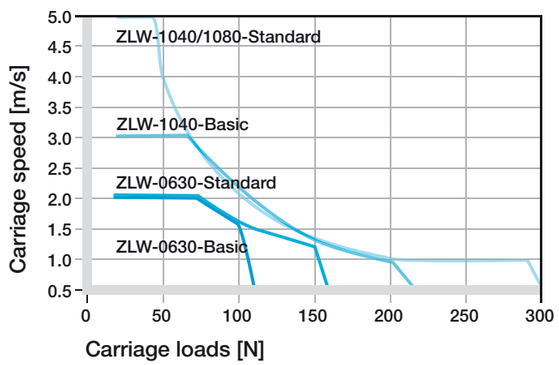


Diagram 11: Maximum load compared: ZLW-0630 and ZLW-1040/1080, 100 % OT (On-time). The diagram accounts for the sum of all forces active on the carriage.

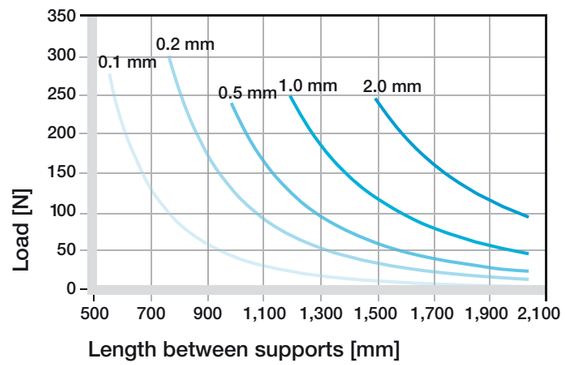


Diagram 12: Sag between unsupported end blocks ZLW-1040, Version Basic and ZLW-1040/1080 Version Standard 02. Sag permissible up to 2 mm maximum, horizontal orientation

drylin® ZLW-1660 | Technical data

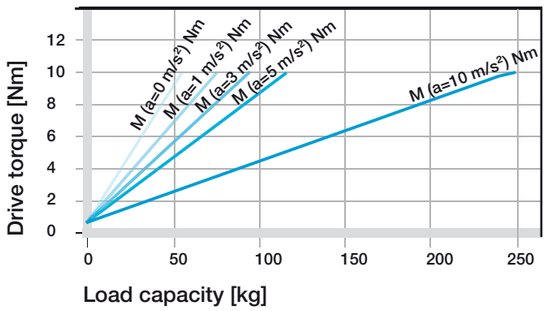


Diagram 07: Required drive torque[140]; horizontal orientation – ZLW-1660, Version standard 02

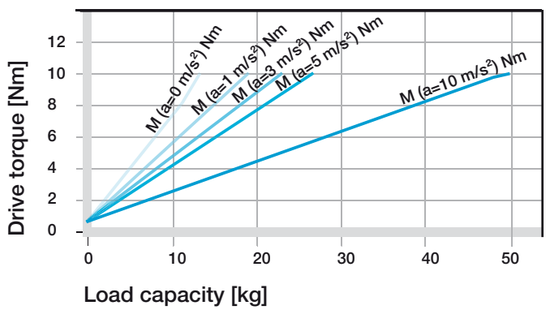


Diagram 08: Required drive torque[140]; vertical orientation – ZLW-1660, Version standard 02

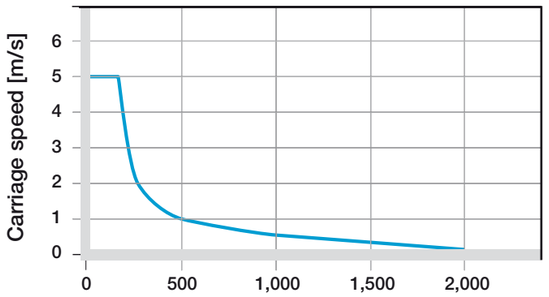
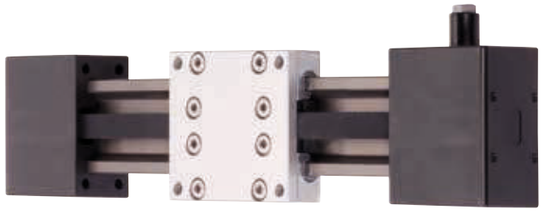
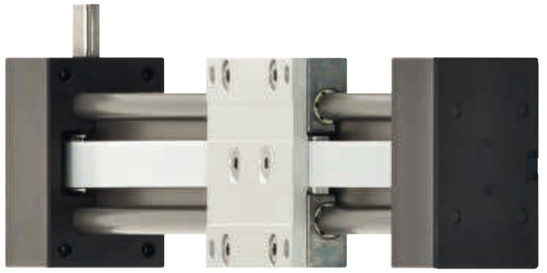


Diagramm 05: Maximal load, horizontal installation; the diagram accounts for the sum of all forces active on the carriage.

[138] Assumption: the moving mass is located in a circumscribed circle with a Max. R: 100 mm to the middle of the guiding rail, max. permissible torque ZLW-1660 Standard 02: 10 Nm, a: 0 m/s2, constant drive without nominal acceleration value

drylin® ZLW | Toothed belt axes | Product overview





Eco series

Many infeed movements require cost-effective linear axes that focus on pure adjustment tasks. This eco series with toothed belt was developed for the fast positioning of light loads. By the compact design and low weight due to aluminium and plastic, the ZLW eco is the perfect alternative to self-made solutions.

Basic series

Lubrication-free linear guide also driven by a toothed belt made from fibre glass reinforced Neoprene (black). The deflection shaft, consisting of a square stainless steel and toothed pulley made of high-performance polymer, rests on 2 grooved ball bearings. The drive pin is 6x6 mm square and made of stainless steel. The scope of supply includes a plastic adapter for a pin diameter of 10 mm.

Standard series

The lubrication-free linear guide is also driven by a toothed belt made from steel reinforced polyurethane (white). Deflection shaft and drive pulley – single-piece – are made from plated steel or stainless steel. The pulley shafts are mounted in two deep grooved ball bearings.

The ZLW specialists

LT – for use at temperatures down to -30 °C, the drive and deflection shaft end supports are fitted with cold ball bearings. Drive is a toothed belt suitable for low temperatures.

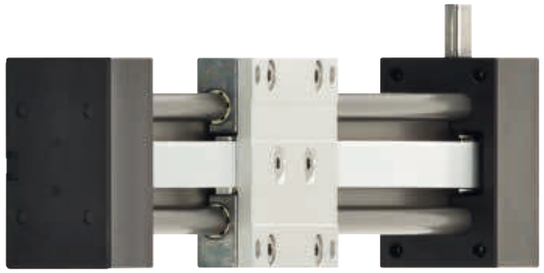
SW – the "SW" ZLW version is suitable for applications where there is contact with spray water. Corrosion-resistant due to PU toothed belt with stainless steel tie beams and stainless steel ball bearings, as well as shaft-end support housing made of anodised aluminium.

UW – maximum protection against corrosion is provided by the toothed belt axis; for underwater applications, among others. Linear carriages, drive and deflection shaft-end supports made of anodised aluminium, incl. lubrication-free xiros® ball bearings. A flexible toothed belt with aramid tie beams serves as the belt.

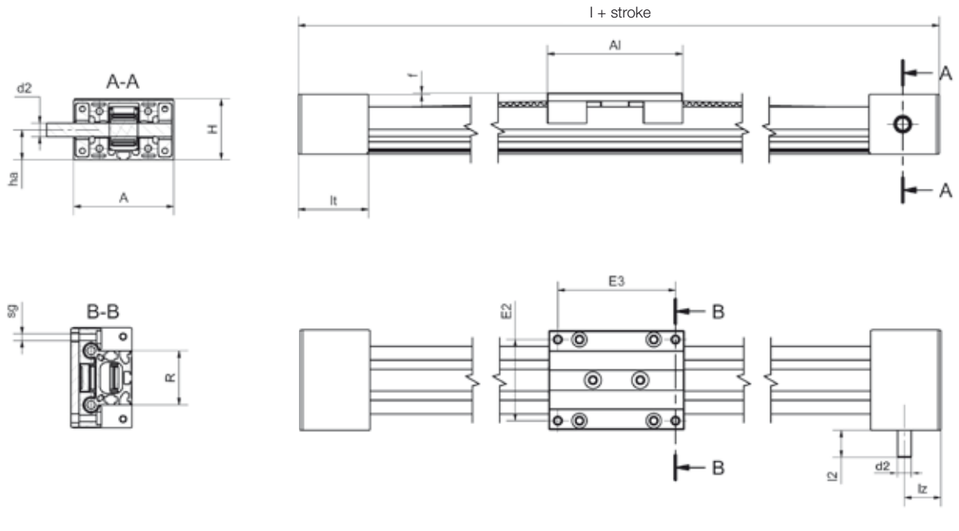
More Information online
www.igus.eu/ZLW

drylin® ZLW | Toothed belt axes | Product range

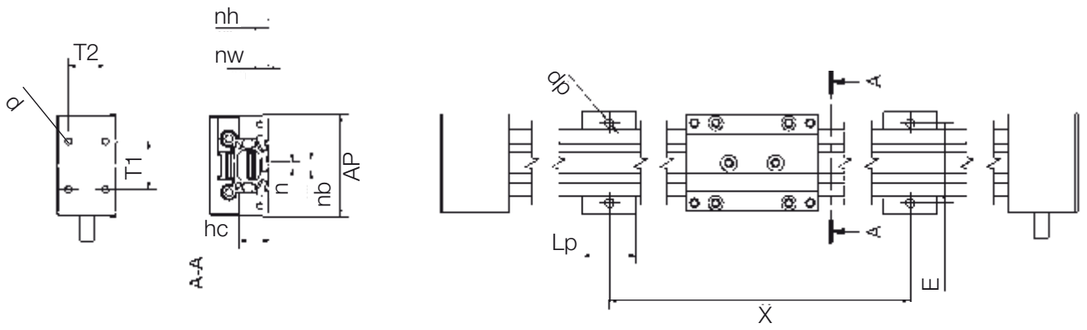
Toothed belt axis in versions Eco, Basic and Standard



- Fast positioning of small loads
- Quiet operation and flat design
- Drive shaft on one or both sides
- Linear carriages available in different lengths (except of the Eco version)
- Configurable with motor as a ready to install linear drive ▶ **Page 1284**
- Specialst in deep-freeze, underwater and spray-water areas ▶ **Page 1251**



Connecting dimensions



drylin® ZLW toothed belt axes

drylin® ZLW | Toothed belt axes | Product range

Order key

complete ▶ Page 1258

ZLW-0630-02-B

- **Design**
  - **E:** Type series Eco (0630/1040)
  - **B:** Type series Basic (0630/1040)
  - **S:** Type series Standard (all sizes)
- **Version**
  - **02:** With grooved ball bearings
- **Installation size**
- **Belt drive axis**

Order key specialists

ZLW-1040-LT-02-S

- **Design**
  - **S:** Design – standard
- **Version**
  - **02:** With grooved ball bearings
- **Options**
  - **LT:** For cold applications up to -30 °C
  - **UW:** For underwater applications
  - **SW:** For splash water applications
- **Type**
- **Belt drive axis**

Dimensions [mm]

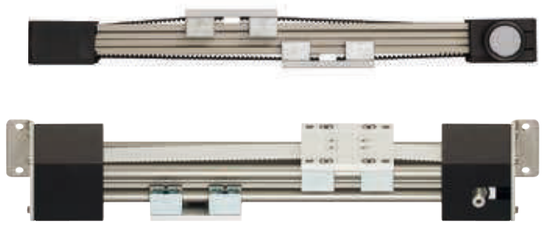
Part No.	A	Al	H	E2	E3	l	R	f	lt	sg	ha	hc	lz	l2	d2
	–0.3			±0.15	±0.15		±0.15		±0.3						h9
ZLW-0630-02	54	60	31	45	51	144	30	3	42	M4	14	22.5	20	20	8
ZLW-1040-02	74	100	44	60	87	204	40	1	52	M6	22	22.5	24	20	10
ZLW-1040-LT-02-S	74	100	44	60	87	204	40	1	52	M6	22	22.5	24	20	10
ZLW-1040-UW-02-S	74	100	44	60	87	204	40	1	52	M6	22	22.5	24	20	10
ZLW-1040-SW-02-S	74	100	44	60	87	204	40	1	52	M6	22	22.5	24	20	10
ZLW-1080-02	90	100	44	94	87	204	74	1	52	M6	22	22.5	24	12	10
ZLW-1660-02	104	100	72	86	82	252	60	2	76	M8	43	22.5	38	20	14

Connecting dimensions [mm]

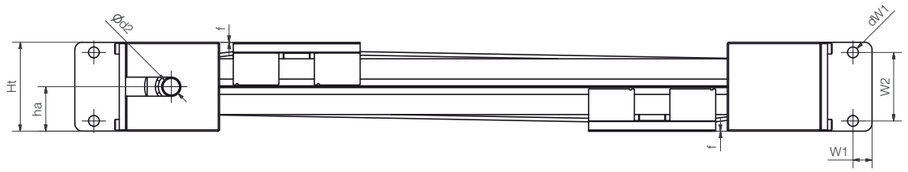
Part No.	X	E	AP	Lp	dp	n	nb	nw	nh	T1	T2	d
		±0.2	–1.0							±0.25	±0.25	
ZLW-0630-02	variable	40	52	15	5.5	5.2	9.5	4.3	7	20	21	3.2
ZLW-1040-02	variable	60	78	40	6.4	5.2	9.5	4.3	15.5	36	26.5	5.0
ZLW-1040-LT-02-S	variable	60	78	40	6.4	5.2	9.5	4.3	15.5	36	26.5	5.0
ZLW-1040-UW-02-S	variable	60	78	40	6.4	5.2	9.5	4.3	15.5	36	26.5	5.0
ZLW-1040-SW-02-S	variable	60	78	40	6.4	5.2	9.5	4.3	15.5	36	26.5	5.0
ZLW-1080-02	variable	94	111	40	6.4	5.2	9.5	4.36	15.5	36	27	M6
ZLW-1660-02	variable	100	122	40	9	10	15.4	13	27.6	65	60	M5

drylin® ZLW | Toothed belt axes | Product range

Opposed belt drive with angle flange

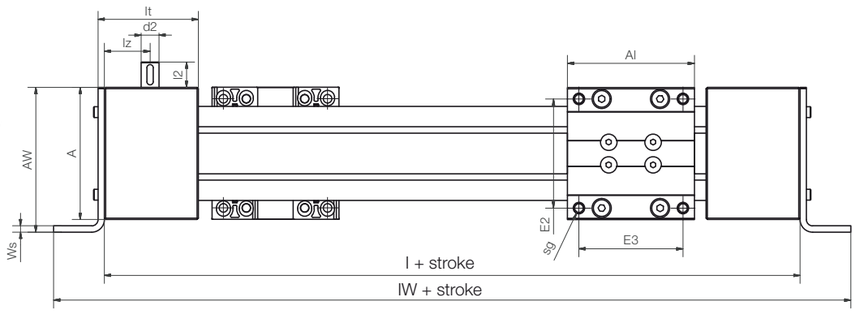


- Quick reverse positioning
- Fast right/left adjustment
- Available as standard and basic versions
- Incl. angle flange for fixing
- Individual stroke lengths up to max. 3,000 mm
- Radial loads up to 200 N

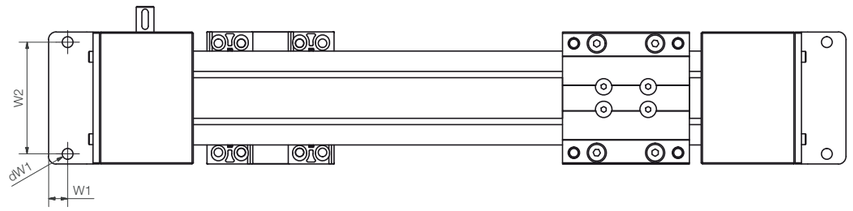


Angle flange alignment

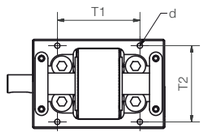
Option 02
mounted on the side, ZLW alignment on the edge



Option 04
mounted horizontally, ZLW alignment horizontal



Option 03
mounted on the front



drylin® ZLW toothed belt axes

drylin® ZLW | Toothed belt axes | Product range

Order key
complete ▶ Page 1258

ZLW-1040-OD-02

- **Version**
  02: With grooved ball bearings
- **Design**
  OD: Right/left and reverse
- **Type**
- **Belt drive axis**

Dimensions [mm]

Part No.	A	Al	H	Ht	E2	E3	L	R	f	lt	sg	ha	lz	Max. stroke length
	–0.3				±0.15	±0.15		±0.15		±0.3				[mm]
ZLW-0630-OD[109)]	54	60	31	28	45	51	144	30	3	42	M4	14	20	1,000
ZLW-1040-OD	74	100	45	44	60	87	204	40	1	52	M6	22	24	1,500
ZLW-1660-OD-02	104	100	70	70	86	82	248	58	0	79	M8	35	36	3,000
ZLW-1660-OD-03	104	100	70	70	86	82	248	58	0	79	M8	35	36	3,000
ZLW-1660-OD-04	104	100	70	70	86	82	248	58	0	74	M8	35	36	3,000

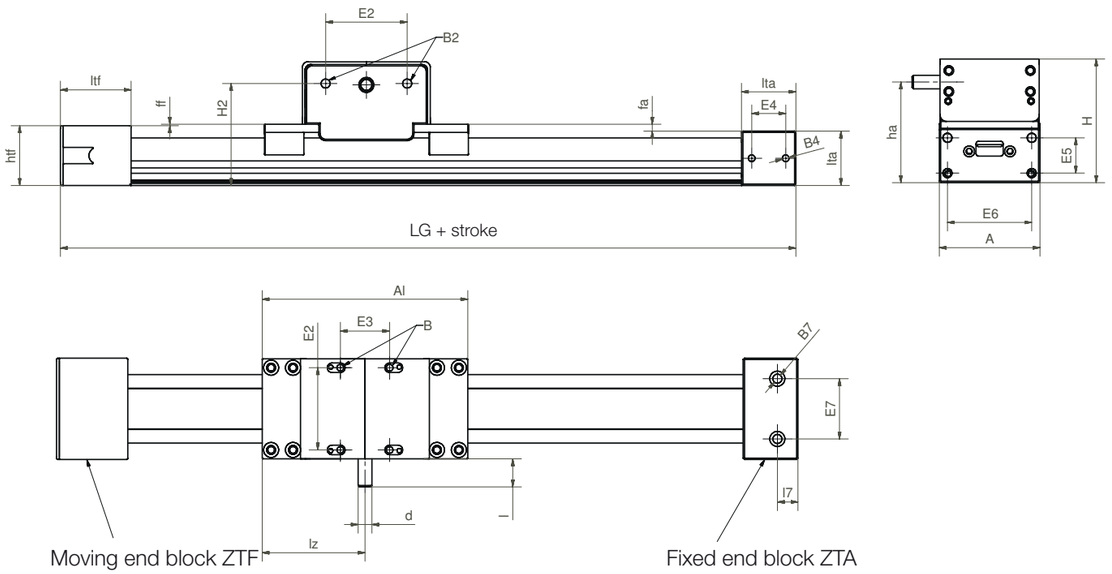
Part No.	l2	d2	d	T1	T2	Ws	W1	W2	dw1	lW	AW
		h9		±0.25	±0.25						
ZLW-0630-OD[109)]	20	8	4	20	21	2	20	2	5.5	260	60
ZLW-1040-OD	20	10	5	36	26.5	3	25	3	6.6	296	80
ZLW-1660-OD-02	20	14	M5-10 deep	65	60	5	15	54	8.5	328	114
ZLW-1660-OD-03	20	14	M5-10 deep	65	60	5	15	88	8.5	328	75
ZLW-1660-OD-04	20	14	M5-10 deep	65	60	5	–	–	–	248	70

[109)] **Basic version: 6 mm square, plastic adapter for pin diameter 10 mm included**

drylin® ZLW | Toothed belt axes | Product range

Cantilever axis

- Drive unit fixed, only profile and load are moved
- Hard-anodised aluminium axis profile
- Lightweight
- Max. stroke 1,000 mm
- Max. axial load 50 N
- Allowed moment for carriage $M_{y\,max}$: 15 Nm



drylin® ZLW toothed belt axes

Order key

complete ▶ Page 1258

ZAW-1040-02-S-150-L-500

Stroke length
max. 1,000 mm

Drive shaft
L: Drive shaft left
R: Drive shaft right
L/R: Drive shaft both-sides

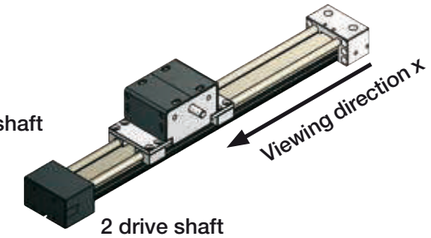
Carriage length
150: 150 mm

Design
S: Standard

Version
02: With grooved ball bearings

Type

Cantilever axis



1 drive shaft right

2 drive shaft left

Dimensions [mm]

Part No.	A	H	H2	LG	Al	ha	d	l	l7	lz	E2	E3
	–0.3				±0.3	±0.1	h9	+1			±0.15	±0.15
ZAW-1040	74	91	75	242	150	74	10	20	15	75	60	60

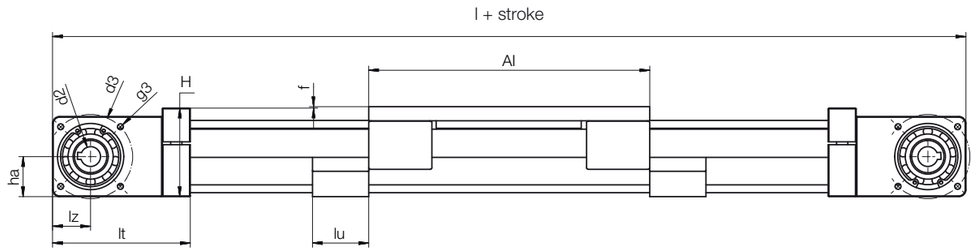
Part No. Connecting dimensions	B	B2	htf	ltf	ff	fa	lta	E4	B4	B7	E5	E6	E7
	–0.3			±0.3	±0.1	h9	±0.1		±0.15		±0.15		
ZAW-1040	M6	M8	44	52	2	5	40	25	M6	M6	26	62	44

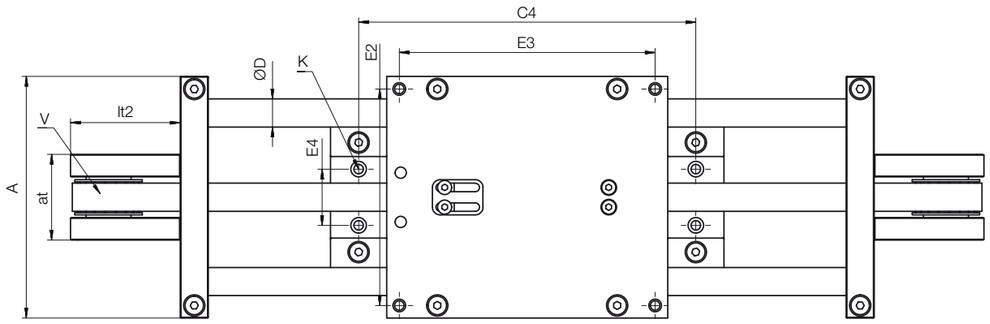
drylin® ZLW | Toothed belt axes | Product range

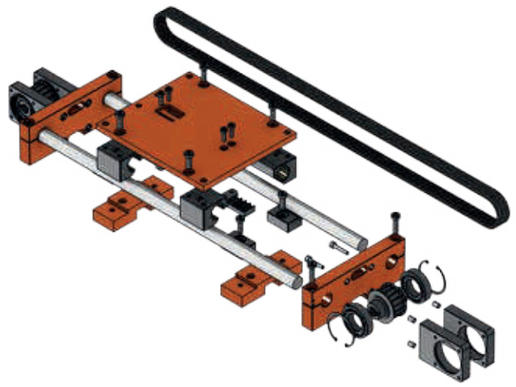
Aluminium version

Stainless steel version

- Dynamic due to drive and end support shafts supported on ball bearings
- Robust wide round belts
- Central belt adjustment at the carriage
- Based on lubrication-free drylin® W linear guide system
- Variable motor connection due to solid and hollow shafts







drylin® ZLW toothed belt axes

drylin® ZLW | Toothed belt axes | Product range

Order key

ZLW-20120-AL-02-S-200-H-2000

- **Stroke length:** max. 3,000 mm
- **Drive shaft:** Hollow shaft
- **Carriage length**
  - **200:** 200 mm
- **Version**
  - **S:** Standard
- **Version**
  - **02:** With grooved ball bearings
- **Design**
  - **AL:** Aluminium
  - **ES:** Stainless steel
- **Axis distance**
  - **120:** 120 mm
  - **160:** 160 mm
  - **200:** 200 mm
- **Type**
- **Belt drive axis**

Technical data

Part No.	Max. stroke length [mm]	Transmission [mm/U]	Tooth profile	Belt drive -material	Belt drive -tension [N]
ZLW-20120	3,000	140	8M	PU with steel cable	750
ZLW-20160	3,000	140	8M	PU with steel cable	750
ZLW-20200	3,000	140	8M	PU with steel cable	750

Dimensions [mm]

Part No.	A	Al	H	E2	E3	E4	C4	f	lt	ha	lz	l	d2 h7
ZLW-20120	172	200	63	154	182	40	240	-	98	28.5	27	396	14
ZLW-20160	212	200	63	194	182	80	240	-	98	28.5	27	396	14
ZLW-20200	252	200	63	234	182	120	240	-	98	28.5	27	396	14

Part No.	d3	g3	D	K For DIN912 - M6	at	lt2	lu	V [mm/rev]
ZLW-20120	60	M5	20	M8	61	78	40	144
ZLW-20160	60	M5	20	M8	61	78	40	144
ZLW-20200	60	M5	20	M8	61	78	40	144

drylin® ZLW | Toothed belt axes | Order key

Order key complete system:

ZLW-0630-OD-02-B-60-L-2000

Stroke length
- **ZLW-0630:** Max.1,000 mm, OD-Version max. 1,000 mm
- **ZLW-1040:** Max.2,000 mm, OD-Version max. 1,500 mm
- **ZLW-1080:** Max. 2,000 mm
- **ZLW-1660:** Max. 3,000 mm

Drive shaft
- **L:** Drive shaft left
- **R:** Right-hand drive shaft
- **L/R:** Drive both sides

Length of carriage
- **60:** 60 mm
- **100:** 100 mm
- **150:** 150 mm
- **200:** 200 mm
- **250:** 250 mm

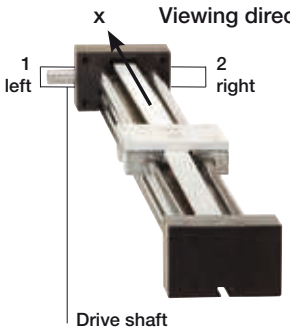
Design
- **S:** Type series – standard
- **B:** Type series – basic
- **E:** Type series – Eco

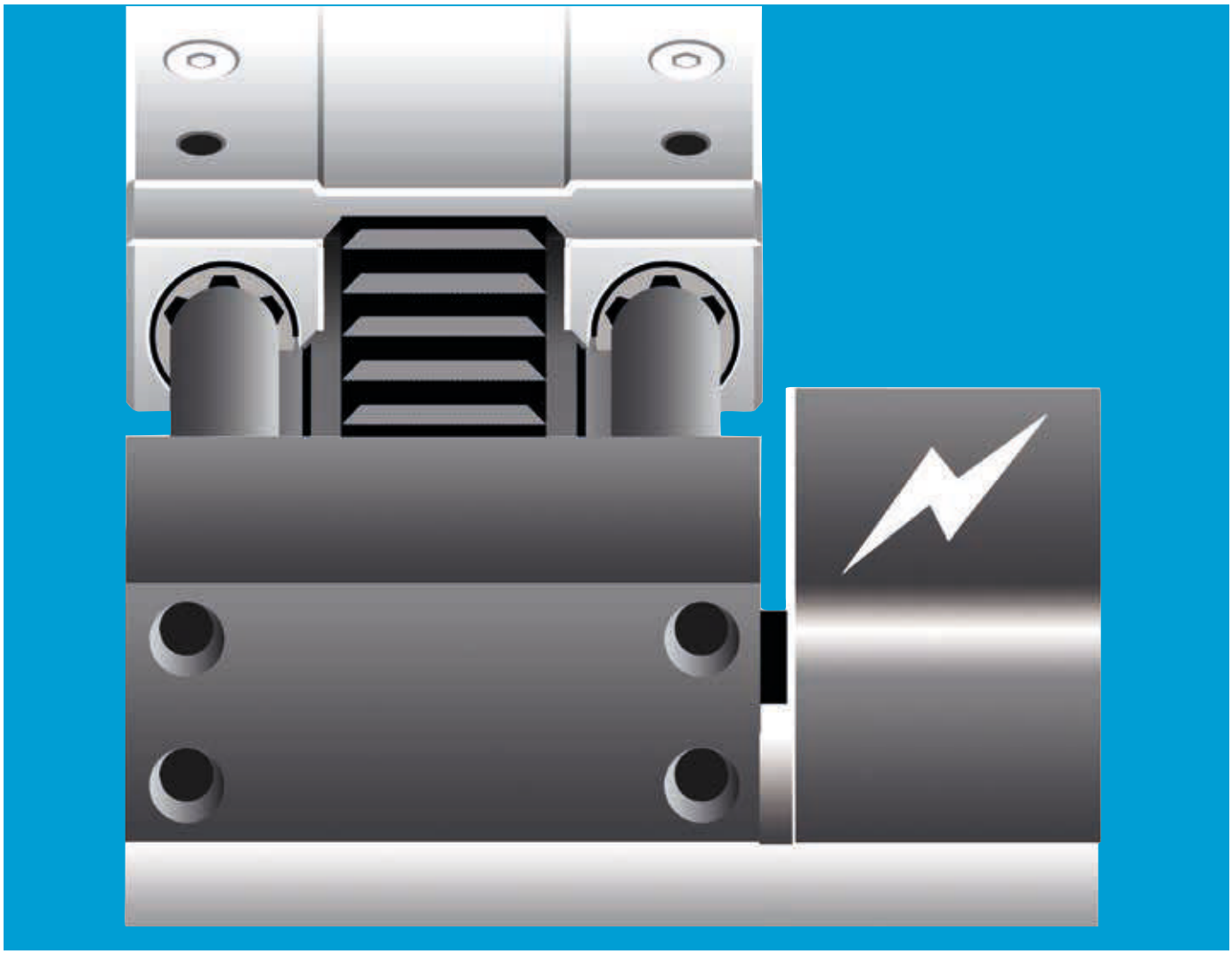
Version
- **02:** With grooved ball bearings

Options
- **OD:** Reverse (0630/1040)
- **LT:** For cold applications (1040)
- **UW:** For underwater applications (1040)
- **SW:** For splash water applications (1040)

Type
- **0630**
- **1040**
- **1660**

Belt drive axis





drylin® electric drive technology – drylin® E

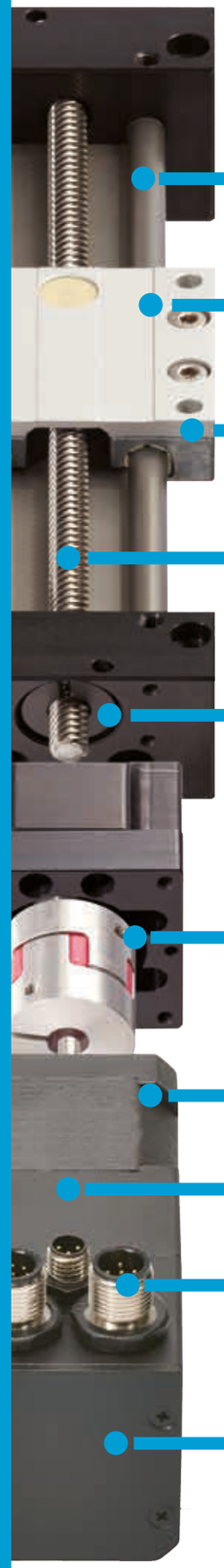
Lubrication-free linear modules with stepper and DC motors

Drive: lead screw, toothed belt or rack

Individual stroke lengths

Pre-configured linear axes and multi-axis linear robots available from 24 h

Lubrication and maintenance-free



Automation with drylin® E

The requirements for motorised adjustments are becoming ever more demanding, installation spaces are reducing in size and customised solutions are sought for many systems. drylin® offers the right linear axis for almost any installation size based on a thread, toothed belt or rack drive. Thanks to drylin® E-automation technology, drylin® linear axes can be operated with hybrid stepper motors or DC motors. Integrated encoders and freely positionable proximity switches offer outstanding machine reliability. The design can be flexibly adapted to the level of available space. The combination of linear axes makes it possible to offer entire structures linear/flat or room linear robots. For rapid solutions, igus® offers preconfigured and assembled systems from stock. All drylin® linear axes can be calculated online and configured and ordered entirely ready for installation and connection.

- Lubrication-free linear axes
- Clean and dirt resistant operation
- Extensive accessories

Typical application areas

- Packaging technology
- Laboratory technology
- Machinery of all kinds
- Medical

Available from stock

Detailed information about delivery time online.

Block pricing online

No minimum order value. From batch size 1.

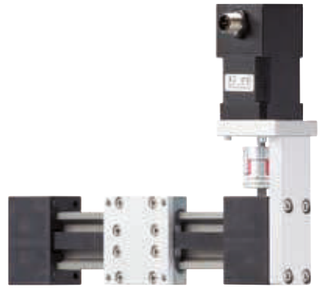
Product finder

▶ **www.igus.eu/drylinE-finder**

Linear axes with motor from 24h

- Pre-configured drylin® E linear axes available from stock
- Drive: lead screw or toothed belt
- NEMA stepper motor included

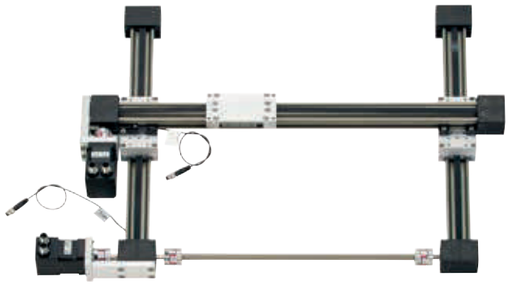
▶ **From page 1264**



Individual linear axes with motor

- Online configurable drylin® E linear axes
- Drive: lead screw, toothed belt or rack
- With stepper and DC motors

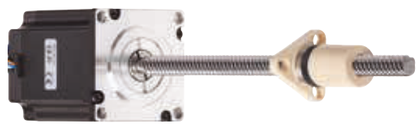
▶ **From page 1266**



Multi-axis linear robots

- Pre-configured assembly kits available from stock
- 3 different types: linear / flat / room
- Workspaces up to 500 x 500 x 100 mm

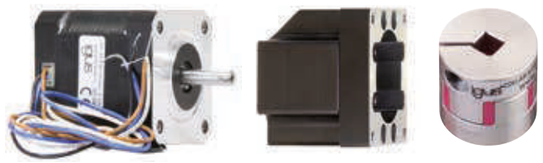
▶ **From page 1290**



Lead screw motors

- Precise and efficient
- Compact structure, variable lead screw pitches
- Stepper motors with/without encoder

▶ **From page 1298**

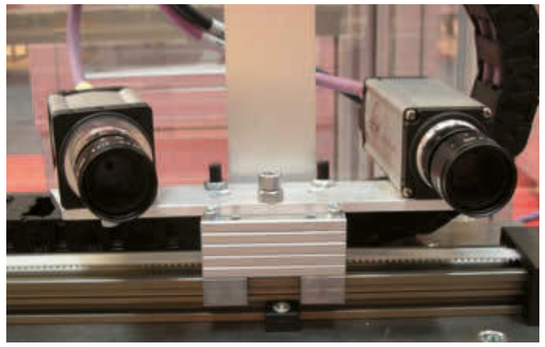


Electrical components and accessories

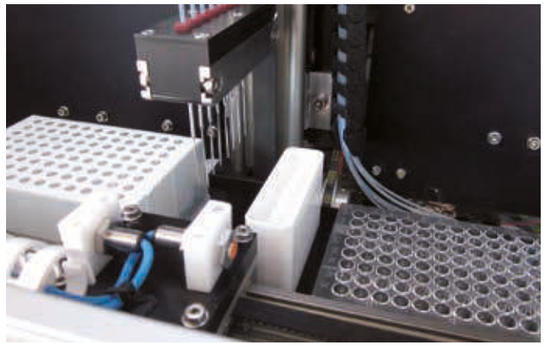
- Stepper and DC motors
- Limit and reference switches
- Couplings, motor flange and mounting accessories

▶ **From page 1317**

drylin® E | Linear axes with motor | Application examples

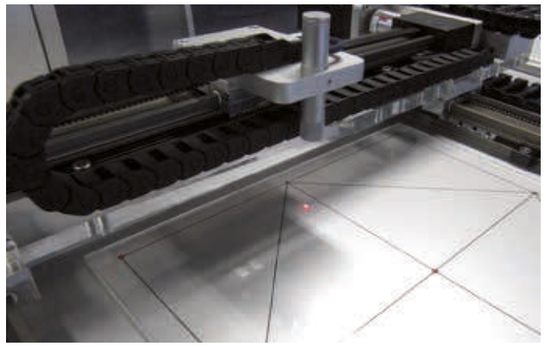


CAMERA ADJUSTMENT
Quiet, vibration and lubrication-free operation is given on this camera adjustment on a conveyor belt using a drylin® ZLW toothed belt axis.

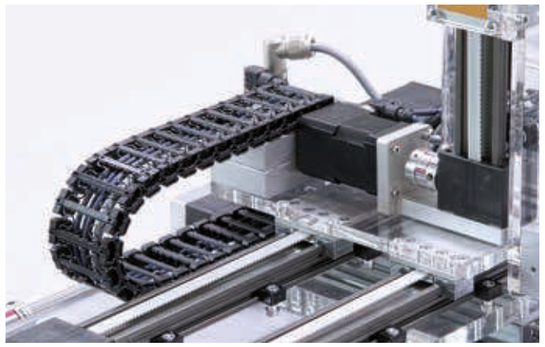


SAMPLER/PIPETTOR
Space-saving telescope adjustment through compact and lubrication-free drylin® ZLW toothed belt axes. (Sierra Sensors GmbH)

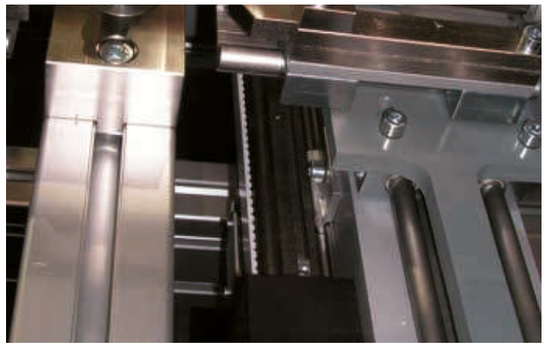
ADJUSTMENT OF INSPECTION EQUIPMENT
drylin® ZLW toothed belt axis in the inspection camera adjustment for the position inspection of sealing rings. (OLPE Jena GmbH)



SENSOR ADJUSTMENT/MEASURING SYSTEMS
drylin® ZLW-0630 toothed belt axes as a two-dimensional linear robot (X,Y axis) to adjust a laser measuring head. Compact, lightweight and maintenance-free due to polymer plain bearings.



PICK AND PLACE
Fast and maintenance-free handling with drylin® toothed belt as a three-dimensional linear robot (X,Y,Z axis).

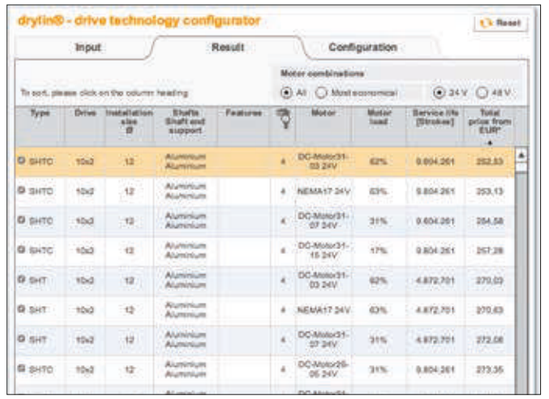


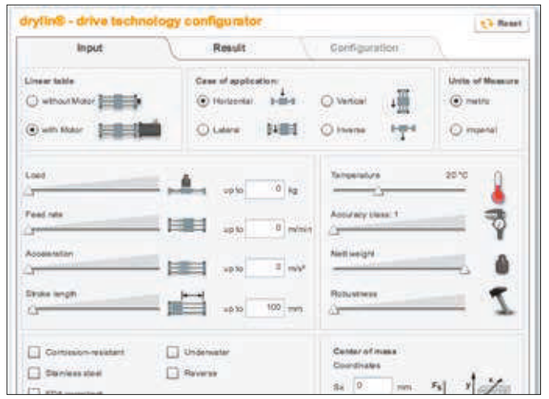
HANDLING OF SMALL PARTS
The tough and lubrication-free design of the ZLW and drylin® W profiles allows a long and maintenance-free process cycle.

www.igus.eu/drylinE-applications

drylin® E | Linear axes with motor | Product finder online

Complete drive technology configurable, incl. motors





Complete drive technology configurable with or without motor
After you have selected your application parameters, the product finder shows an overview of the linear tables and the motors that are suitable. The product finder calculates the individual price of the linear axis as well as the service life in strokes. With just few clicks, you can put together a complete linear axis incl. motor, connecting cables and built-on parts.

▶ www.igus.eu/linearmodule-configurator

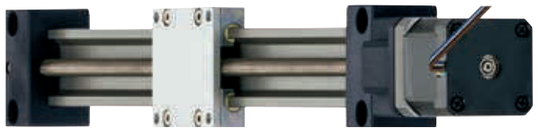
drylin® E | Linear axes with motor | DLE

Linear axes with motor from stock – available in 24 hours

DLE-SA-0001

DLE-SA-0002

DLE-SA-0003



DLE-SA-0004

DLE-SA-0005

DLE-SA-0006

drylin® E | Linear axes with motor | DLE

drylin® E electrical drive technology

Available in 24 hours:
drylin® E linear axes with motor

igus® now delivers ready to install, pre-configured linear modules (drive: lead screw or toothed belt) from stock within 24 hours.
You simply choose between 3 sizes, 3 stroke lengths and 3 stepper motors ... and the system is delivered in 24 hours after you place your order.

- Drive: lead screw or toothed belt
- Completely lubrication-free
- Stepper motors with stranded wires
- Pre-assembled and tested
- Based on drylin® linear axes ZLW and SAW

Technical data

Part No.	Installation size	Carriage length	Stroke length	Motor	Max. static load capacity axial [N]	Max. static load capacity radial [N]
DLE-SA-0001	ZLW-0630 Basic	60	300	NEMA17 stranded wires	35	140
DLE-SA-0002	ZLW-1040 Basic	100	500	NEMA23 stranded wires	100	400
DLE-SA-0003	ZLW-1080 Standard	100	1,000	NEMA23XL stranded wires	150	600
DLE-SA-0004	SAW-0630 Tr08x1.5	60	250	NEMA17 stranded wires	100	400
DLE-SA-0005	SAW-1040 Tr10x2	69	500	NEMA23 stranded wires	500	2,000
DLE-SA-0006	SAW-1080 Tr12x3	100	500	NEMA23XL stranded wires	750	2,000

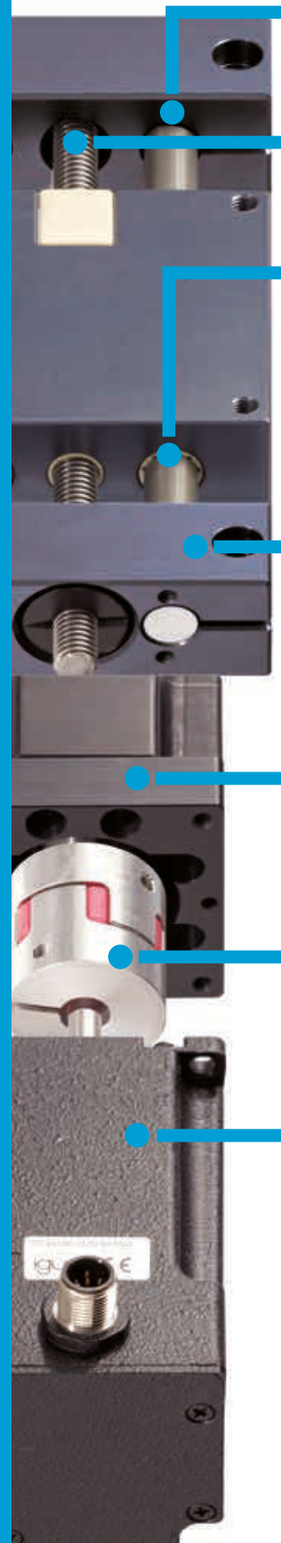
Dimensionally interchangeable with drylin® linear axes
- drylin® SAW ▶ **Page 1210**
- drylin® ZLW ▶ **Page 1243**

Technical data
- drylin® SAW ▶ **Page 1210**
- drylin® ZLW ▶ **Page 1244**

Further information about the motors
▶ **Page 1314**

drylin® E | Linear axes with motor | SHT

Linear axes with lead screw drive



3 possible shaft materials

4 trapezoidal thread pitches
3 high helix thread pitches

Lubrication and maintenance-free
with drylin® liners and lead screw nuts

Carriages and shaft end supports made from anodised aluminium

Motor flange: motor connections

Coupling

igus® DC motors	igus® stepper motors
● Cost-effective	● Cost-effective
● Maintenance-free	● Maintenance-free
● 4 versions	● 5 sizes
● Battery operation possible	● 17 versions

When to use it?

- For format adjustments and to position medium loads
- In extreme environments
- When a cost-effective, ready-to-fit solution is needed
- For low noise
- When installation space is limited

When not to use it?

- When high loads need to travel at highly dynamic forces
- When positioning accuracy < 0.1 mm is required
- When high running speed is required in continuous operation

Drawings, dimensions, technical specifications, such as SHT ▶ Page 1180

More information ▶ www.igus.eu/drylinSHT

drylin® E electrical drive technology

drylin® E | Linear axes with motor | SHT

Order key

SHT-12-BBZB-AWM-S0020RG-750-17-L-S-000

Type

Installation size

Design
- **S:** Standard
- **PL:** Preload (50 N)
- **BB:** Ball bearing
- **BBPL:** Ball bearing, preload (50 N)
- **BBZB:** Ball bearing, zero-backlash (only SHT-12 with Sg10x12)

Shaft material
- **AWM:** Hard-anodised aluminium
- **SWM:** Cf53 (1.1213)
- **EWM:** Stainless steel X105 (1.4125)

Lead screw material
- **S:** Steel
- **E:** Stainless steel

Pitch

SHT-12
- **0020:** Tr10x2 mm (steel/stainless steel)
- **0030:** Tr10x3 mm (steel/stainless steel)
- **0120:** Sg10x12 mm (stainless steel)
- **0500:** Sg10x50 mm (stainless steel)

SHT-20
- **0040:** Tr18x4 mm (steel/stainless steel)

SHT-30
- **0050:** Tr24x5 mm (steel/stainless steel)

Thread
- **R:** Right
- **L:** Left

Lead screw end
- **G:** Threaded end (with SHT-12)
- **Z:** End 12h9 (with SHT-20)
- **Z:** End 14h9 (with SHT-30)

Electrical connection alignment
- **000:** 0° (standard)
- **090:** 90°
- **180:** 180°
- **270:** 270°

Assembly
- **S:** Assembly on the drive shaft (standard)

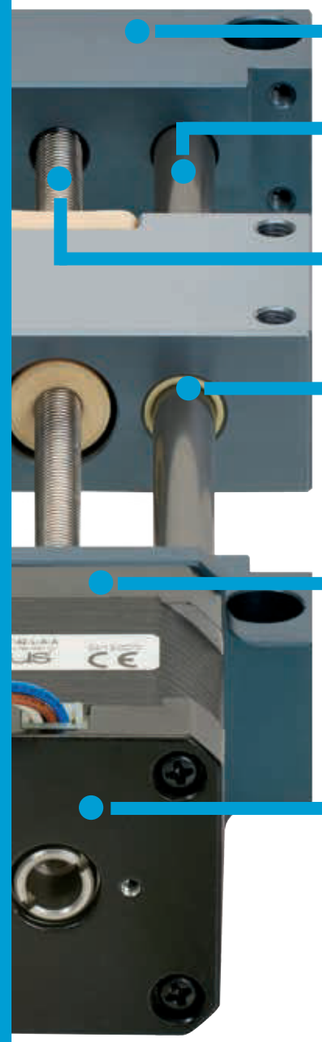
Motor option
- **L:** Stranded wires
- **M:** Metric Connector
- **C:** Encoder
- **D:** Encoder and brake
- **F:** Low profile connector (DC motor)

Motor size
- **17:** NEMA17: recomm.axis 12
- **23:** NEMA23: recommended axis 12/20
- **23XL:** NEMA23XL: recommended axis 20
- **34:** NEMA34: recommended axis 20/30
- **DC01:** DC motor: 0.1 Nm recomm. axis 12
- **DC03:** DC motor: 0.3 Nm recomm. axis 12
- **DC07:** DC motor: 0.7 Nm recomm. axis 12
- **DC15:** DC motor: 1.5 Nm recomm. axis 12

Stroke length
- **SHT-12:** max. 750 mm (BB max. 500 mm)
- **SHT-20:** max. 1,000 mm (BB max. 900 mm)
- **SHT-30:** max 1,250 mm (BB max. 1000 mm)

drylin® E | Linear axes with motor | SHTC

Linear axes with lead screw drive



Carriages and shaft end supports made from anodised aluminium

3 possible shaft materials

4 trapezoidal thread pitches
3 high helix thread pitches

Lubrication and maintenance-free with drylin® liners and lead screw nuts

Motor flange and coupling: motor connections

igus® DC motors	igus® stepper motors
● Cost-effective	● Cost-effective
● Maintenance-free	● Maintenance-free
● 4 versions	● 5 sizes
● Battery operation possible	● 17 versions

Drawings, dimensions, technical specifications, such as SHTC ▶ Page 1182

drylin® E | Linear axes with motor | SHTC

drylin® E electrical drive technology

Order key

SHTC-08-ZB-A-E127RG-100-17-L-000

Type

Installation size

Design
- **ZB:** Zero backlash

Shaft material
- **AWM:** Hard-anodised aluminium
- **EWM:** Stainless steel X105 (1.4125)

Lead screw design
- **E020RG:** Stainless steel, trapezoidal thread, pitch: 2 mm
- **E025RZ:** Stainless steel dryspin®, pitch: 2.54 mm
- **E127RZ:** Stainless steel high helix thread, pitch: 12.7 mm
- **E254RZ:** Stainless steel dryspin®, pitch: 25.4 mm

Stroke length
- **SHTC-08:** max. 300 mm

Motor size
- **17:** NEMA17

Motor option
- **L:** Stranded wires with motor flange
- **C:** Encoder with motor flange
- **G:** Lead screw motor with stranded wires
- **H:** Lead screw motor with encoder

Electrical connection alignment
- **000:** 0° (standard)
- **090:** 90°
- **180:** 180°
- **270:** 270°

drylin® E | Linear axes with motor | SLW

Linear axes with lead screw drive

Lubrication and maintenance-free drylin® W linear profile guides

Hard anodised drylin® W aluminium profile (plain profile shape)

4 trapezoidal thread pitches
3 high helix thread pitches

Shaft end supports from aluminium or plastic

Motor flange: motor connections

Coupling

igus® DC motors
- Cost-effective
- Maintenance-free
- 4 versions
- Battery operation possible

igus® stepper motors
- Cost-effective
- Maintenance-free
- 5 sizes
- 17 versions

When to use it?
- For format adjustments and to position medium loads
- In extreme environments
- When a cost-effective, ready-to-fit solution is needed
- For low noise
- When installation space is limited

When not to use it?
- When high loads need to travel at highly dynamic forces
- When positioning accuracy < 0.1 mm is required
- When high running speed is required in continuous operation

Drawings, dimensions, technical specifications, such as SLW ▶ Page 1196

More information ▶ www.igus.eu/drylinSLW

drylin® E | Linear axes with motor | SLW

drylin® E electrical drive technology

Order key

SLW-1040-EPL-07-S 0020 R G-750-17-L-S-000

Type
Installation size
Design
SLW-0630
- **BB:** Ball bearing

SLW-1040/1080/1660/2080
- **S:** Standard
- **E:** Adjustable linear bearing
- **PL:** Preload (50 N)
- **EPL:** Adjustable, preload (50 N)
- **BB:** Ball bearing
- **BBE:** Ball bearing, adjustable linear bearing
- **BBPL:** Ball bearing, preload (50 Nm)
- **BBEPL:** Ball bearing, adjustable linear bearing, preload (50N)

Carriage length
SLW-0630
- **06:** 60 mm (standard)

SLW-1040
- **07:** 69 mm (standard)
- **10:** 100 mm
- **15:** 150 mm

SLW-1080/1660/2080
- **15:** 150 mm (standard)

Lead screw material
- **S:** Steel
- **E:** Stainless steel

Pitch
SLW-0630
- **0015:** Tr08x1.5 mm (steel)
- **0150:** Sg08x15 mm (stainless steel)

SLW-1040/1080
- **0020:** Tr10x2 mm (steel/stainless steel)
- **0030:** Tr10x3 mm (steel/stainless steel)
- **0120:** Sg10x12 mm (stainless steel)
- **0500:** Sg10x50 mm (stainless steel)

SLW-1660
- **0040:** Tr14x4 mm (steel/stainless steel)

SLW-2080
- **0040:** Tr18x4 mm (steel/stainless steel)

Thread
- **R:** Right
- **L:** Left

Lead screw end
- **G:** Threaded end
- **Z:** End 12h9 (with SLW-2080)

Stroke length
- **SLW-0630:** max. 300 mm
- **SLW-1040/1080:** max. 750 mm (BB: max.500 mm)
- **SLW-1660:** max 750 mm
- **SLW-2080:** max 1,000 mm (BB: 900 mm)

Motor size/Recommended axis
- **17:** NEMA17 / 0630
- **23:** NEMA23 / 1040 / 1080
- **23XL:** NEMA23XL / 1040 / 1080 / 1660
- **34:** NEMA 34 / 2080
- **DC01:** DC motor: 0.1 Nm / 0630
- **DC03:** DC motor: 0.3 Nm / 0630, 1040
- **DC07:** DC motor: 0.7 Nm / 1040
- **DC15:** DC motor: 1.5 Nm / 1040 / 1660

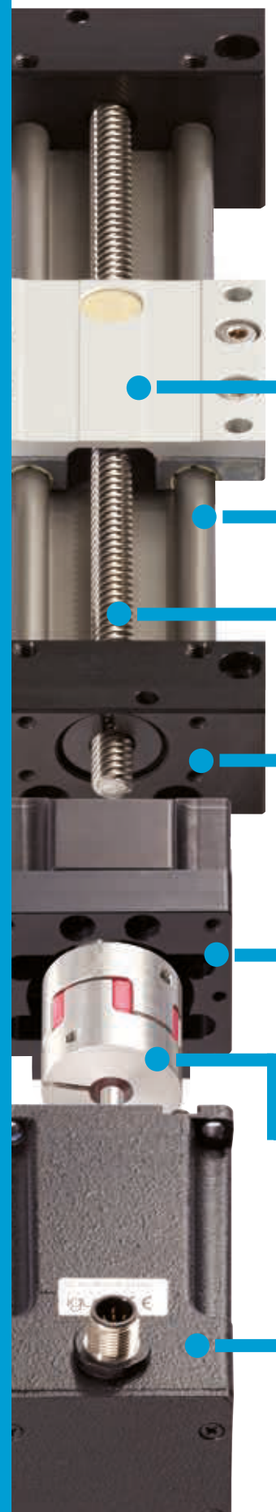
Motor option
- **L:** Stranded wires
- **M:** Metric Connector
- **C:** Encoder
- **D:** Encoder and brake
- **F:** Low profile connector (DC motor)

Assembly
- **S:** Assembly on the drive shaft (standard)

Electrical connection alignment
- **000:** 0° (standard)
- **090:** 90°
- **180:** 180°
- **270:** 270°

drylin® E | Linear axes with motor | SAW

Linear axes with lead screw drive



When to use it?

- For format adjustments and to position medium loads
- In extreme environments
- When a cost-effective, ready-to-fit solution is needed
- For low noise
- For unsupported installations

When not to use it?

- When high loads need to travel at highly dynamic forces
- When positioning accuracy < 0.1 mm is required
- When high running speed is required in continuous operation

Lubrication and maintenance-free drylin® W linear profile guides

Hard anodised drylin® W aluminium profile (high profile shape)

4 trapezoidal thread pitches
3 high helix thread pitches

Shaft end supports from aluminium or plastic

Motor flange: motor connections

Coupling

igus® DC motors
- Cost-effective
- Maintenance-free
- 4 versions
- Battery operation possible

igus® stepper motors
- Cost-effective
- Maintenance-free
- 5 sizes
- 17 versions

Drawings, dimensions, technical specifications, such as SAW ▶ Page 1210

More information ▶ www.igus.eu/drylinSAW

drylin® E | Linear axes with motor | SAW

drylin® E electrical drive technology

Order key

SAW-1040-EPL-07-S0020RG-450-17-M-S-000

Type

Installation size

Design

SAW-0630
- **S:** Standard
- **M:** Mono carriage (plastic)

SAW-1040/1660
- **S:** Standard
- **E:** Adjustable linear bearing
- **PL:** Preload (50 N)
- **EPL:** Adjustable, preload (50 N)

Carriage length

SAW-0630
- **06:** 60 mm (standard)

SAW-1040
- **07:** 69 mm (standard)
- **10:** 100 mm
- **15:** 150 mm

SAW-1660
- **15:** 150 mm (standard)

Lead screw material
- **S:** Steel
- **E:** Stainless steel

Pitch

SAW-0630
- **0015:** Tr08x1.5 mm (steel)
- **0150:** Sg08x15 mm (stainless steel)

SAW-1040
- **0020:** Tr10x2 mm (steel/stainless steel)
- **0030:** Tr10x3 mm (steel/stainless steel)
- **0120:** Sg10x12 mm (stainless steel)
- **0500:** Sg10x50 mm (stainless steel)

SAW-1660
- **0040:** Tr14x4 mm (steel/stainless steel)

Electrical connection alignment
- **000:** 0° (standard)
- **090:** 90°
- **180:** 180°
- **270:** 270°

Assembly
- **S:** Assembly on the drive shaft (standard)

Motor option
- **L:** Stranded wires
- **M:** Metric Connector
- **C:** Encoder
- **D:** Encoder and brake
- **F:** Low profile connector (DC motor)

Motor size
- **17:** NEMA17: recommended axis 0630
- **23:** NEMA23: recommended axis 1040
- **23XL:** NEMA23XL: recommended axis 1040
- **DC01:** DC motor: 0.1 Nm recomm. axis 0630
- **DC03:** DC motor: 0.3 Nm recomm. axis 0630/1040
- **DC07:** DC motor: 0.7 Nm recomm. axis 0630
- **DC15:** DC motor: 1.5 Nm recomm. axis 1040/1660

Stroke length
- **SAW-0630:** max. 300 mm
- **SAW-1040:** max. 500 mm
- **SAW-1660:** max. 750 mm

Lead screw end
- **G:** Threaded end

Thread
- **R:** Right
- **L:** Left

drylin® E | Linear axes with motor | SAWC

Linear axes with lead screw drive

When to use it?

- For format adjustments and to position medium loads
- When a compact solution with optimised useful full-length ratio is required
- For special requirement on the running behaviour
- When a cost-effective, ready-to-fit solution is needed
- For low noise
- For unsupported installations

When not to use it?

- When high loads need to travel at highly dynamic forces
- When positioning accuracy < 0.1 mm is required
- When high running speed is required in continuous operation

Shaft end support made from aluminium

Hard anodised drylin® W aluminium profile (high profile shape)

2 trapezoidal thread pitches
3 high helix thread pitches

Lubrication and maintenance-free drylin® W linear profile guides

igus® stepper motors
- Cost-effective
- Maintenance-free
- 2 sizes

Drawings, dimensions, technical specifications, such as SLN ▶ Page 1211

More information ▶ www.igus.eu/drylinSAWC

drylin® E electrical drive technology

drylin® E | Linear axes with motor | SAWC

Order key

SAWC-1040-EPL-07-S0020RG-300-17-L-S-090

Type

Installation size

Design

SAWC-0630
- **S:** Standard
- **M:** Mono carriage (plastic)

SAWC-1040
- **S:** Standard
- **E:** Adjustable linear bearing
- **PL:** Preload (50 N)
- **EPL:** Adjustable, preload (50 N)

Carriage length

SAWC-0630
- **06:** 60 mm (standard)

SAWC-1040
- **07:** 69 mm (standard)
- **10:** 100 mm
- **15:** 150 mm

Lead screw material
- **S:** Steel
- **E:** Stainless steel

Pitch

SAWC-0630
- **0015:** Tr08x1.5 mm
- **0150:** Sg08x15 mm (stainless steel)

SAWC-1040
- **0020:** Tr10x2 mm
- **0120:** Sg10x12 mm (stainless steel)
- **0500:** Sg10x50 mm

Electrical connection alignment
- **000:** 0° (standard)
- **090:** 90°
- **180:** 180°
- **270:** 270°

Assembly
- **S:** Assembly on the drive shaft (standard)

Motor option
- **L:** Stranded wires

Motor size
- **17:** NEMA17: recommended axis 0630
- **23:** NEMA23: recommended axis 1040

Stroke length

SAWC-0630: max. 300 mm
SAWC-1040: max. 500 mm

Lead screw end
- **G:** Threaded end

Thread
- **R:** Right

drylin® E | Linear axes with motor | SHTP

Linear axes with lead screw drive

Drive: trapezoidal or high-helix lead screw drives

Lubrication and maintenance-free due to drylin® liners and lead screw nuts

Carriages and shaft end supports made from polymers

Cost-effective motor flange made from curved sheet metal

Coupling

drylin® E NEMA17 stepper motors or drylin® E DC motors

When to use it?

- Cost-effective lead screw linear module with motor
- Loads up to 40 N
- Up to 100 rpm
- Maintenance and lubrication-free operation

When not to use it?

- When positioning accuracy < 0.3 mm is required
- For stroke lengths > 300 mm
- For long-term use

Drawings, dimensions, technical specifications, such as SHTP ▶ Page 1214

drylin® E | Linear axes with motor | SHTP

drylin® E electrical drive technology

Order key

SHTP-03-12-AWM-S0020RG-750-17-L-S-000

Type

Installation size

Shaft material
- **AWM:** Hard-anodised aluminium

Lead screw material
- **S:** Steel
- **E:** Stainless steel

Lead screw design
- **0020:** Tr10x2 mm (steel/stainless steel)
- **0030:** Tr10x3 mm (steel/stainless steel)
- **0120:** Sg10x12 mm (stainless steel)
- **0500:** Sg10x50 mm (stainless steel)

Thread
- **R:** Right
- **L:** Left

Lead screw end
- **G:** Threaded end, unmachined
- **Z:** Threaded pin Ø6h9

Stroke length
max. 300 mm

Motor size
- **17:** Stepper motor NEMA 17
- **DC03:** DC motor: 0.3 Nm

Motor option
- **L:** Stranded wires with motor flange
- **C:** Encoder with motor flange
- **G:** Lead screw motor with stranded wires
- **H:** Lead screw motor with encoder

Assembly
- **S:** Assembly on the drive shaft (standard)

Electrical connection alignment
- **000:** 0° (standard)
- **090:** 90°
- **180:** 180°
- **270:** 270°

drylin® E | Linear axes with motor | SLT

Linear axes with lead screw drive

Drive: trapezoidal or high-helix lead screw drives

Lubrication and maintenance-free due to drylin® liners and lead screw nuts

Carriage and shaft end made from anodised aluminium

Hard anodised drylin® T miniature guide rail

drylin® E NEMA17 stepper motors or drylin® E DC motors

When to use it?

- Extremely compact
- Pitch up to 15 mm/rev
- Variable lead screw alignment

When not to use it?

- Pitches > 50 mm
- When a large mounting surface is required
- When high loads need to travel at highly dynamic forces

Drawings, dimensions, technical specifications, such as SLT ▶ Page 1229

drylin® E | Linear axes with motor | SLT

drylin® E electrical drive technology

Order key

SLT-BB-0412-ER-S0015RG-750-17-L-S-000

Type

Design
- **BB:** With ball bearings

Installation size

Carriage
- **E:** Adjustable carriage TWE

Lead screw alignment
- **R:** Lead screw right
- **L:** Lead screw left

Lead screw design
- **0015:** Tr10x1.5 mm (steel/stainless steel)
- **0030:** Tr10x3 mm (steel/stainless steel)
- **0060:** Tr12x6 mm (steel/stainless steel)
- **0150:** Sg08x15 mm (stainless steel)
- **0250:** Sg12x20 mm (stainless steel)

Thread
- **R:** Right

Lead screw end
- **G:** Threaded end

Electrical connection alignment
- **000:** 0° (standard)
- **090:** 90°
- **180:** 180°
- **270:** 270°

Assembly drive shaft
- **S:** Motor assembly on the drive shaft (standard)

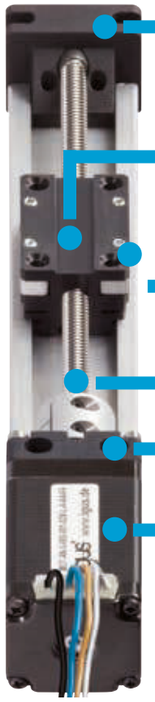
Motor option
- **L:** Stranded wires with motor flange
- **M:** Metric connectors
- **C:** Encoder
- **D:** Encoder and brake
- **F:** Low profile connector (DC)

Motor size
- **17:** NEMA 17
- **23:** NEMA 23
- **DC01:** DC motor: 0.1 Nm
- **DC03:** DC motor: 0.3 Nm
- **DC07:** DC motor: 0.7 Nm
- **DC15:** DC motor: 1.5 Nm

Stroke length
- **SLT-04-12:** max. 300 mm
- **SLT-04-15:** max. 600 mm

drylin® E | Linear axes with motor | SLN

Miniature linear axis with lead screw drive



Base body made from corrosion resistant structural plastic

Polymer bearings and lead screw nuts give lubrication-free operation

Lubrication and maintenance-free drylin® N low profile linear guides

1 trapezoidal thread pitch, 1 high helix thread pitch

Motor flange: motor connections

igus® stepper motors
- Cost-effective
- Maintenance-free
- 1 size
- 2 versions

Order key

SLN-27-14-0050-100-11-L-S-000

Type

Installation size

Shaft end support
- **1:** Plain bearing
- **2:** Ball bearing

Carriage
- **3:** Basic
- **4:** Standard, adjustable
- **5:** Standard, pre-load

Pitch
- **0008:** M5x0.8 (stainless steel)
- **0050:** Sg5x5 (stainless steel)
- **0025:** DST6.35x2.54 (stainless steel)
- **0127:** Sg6.35x12.7 (stainless steel)
- **0254:** DST6.35x25.4 (stainless steel)

Stroke length
- **max. 250 mm**

Motor pin alignment
- **000:** 0° (standard)
- **090:** 90°
- **180:** 180°
- **270:** 270°

Assembly
- **S:** Assembly on the drive shaft (standard)

Options
- **HR:** Hand wheel
- **D1-F:** DC Motor, 0.025 Nm, 375 rpm
- **E1-F:** DC Motor, 0.06 Nm, 137 rpm
- **J1-F:** DC Motor, 0.19 Nm, 36 rpm
- **11-L:** NEMA11, stranded wires
- **11-C:** NEMA11, encoder/stranded wires
- **11-G:** NEMA11 lead screw motor, stranded wires
- **11-H:** NEMA11 lead screw motor, encoder/ stranded wires

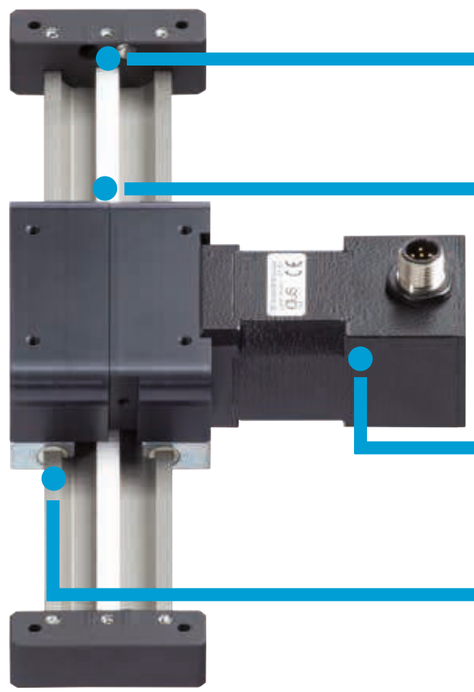
Drawings, dimensions, technical specifications, such as SLN ▶ Page 1232

 More information ▶ www.igus.eu/drylinSLN

drylin® E electrical drive technology

drylin® E | Linear axes with motor | GRW

Cantilever axis with rack drive



Aluminium body

Assembly option for limit reference switch already integrated

igus® stepper motors
- Cost-effective
- Maintenance-free
- 1 size
- 4 versions

Lubrication and maintenance-free drylin® W linear profile guides

More information ▶ www.igus.eu/drylinGRW

Order key

GRW-0630-A-80-150-17-L-S-000

Type

Installation size

Design
- **A:** Standard
- **B:** Longer stroke

Carriage length
- **80:** 80 mm

Stroke length
- **A:** max. 150 mm
- **B:** max. 300 mm

Motor pin alignment
- **000:** 0° (standard)
- **090:** 90°
- **180:** 180°
- **270:** 270°

Assembly
- **S:** Assembly with one drive shaft (standard)

Motor option
- **L:** Stranded wires
- **M:** Metric connectors
- **C:** Encoder
- **D:** Encoder and brake

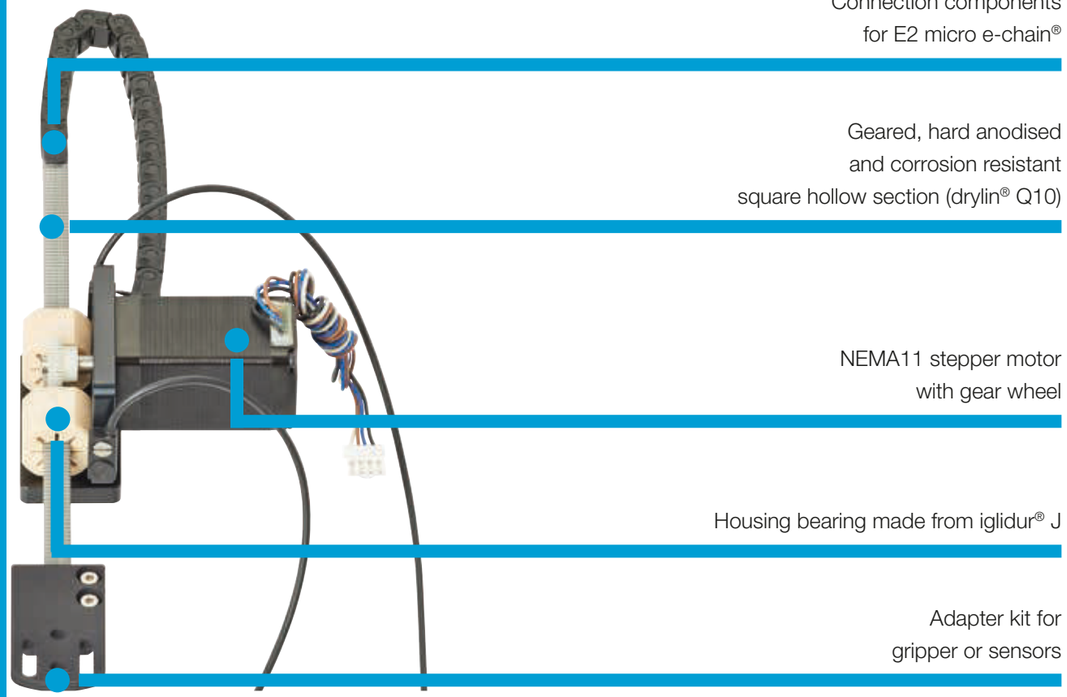
Motor size
- **17:** NEMA17

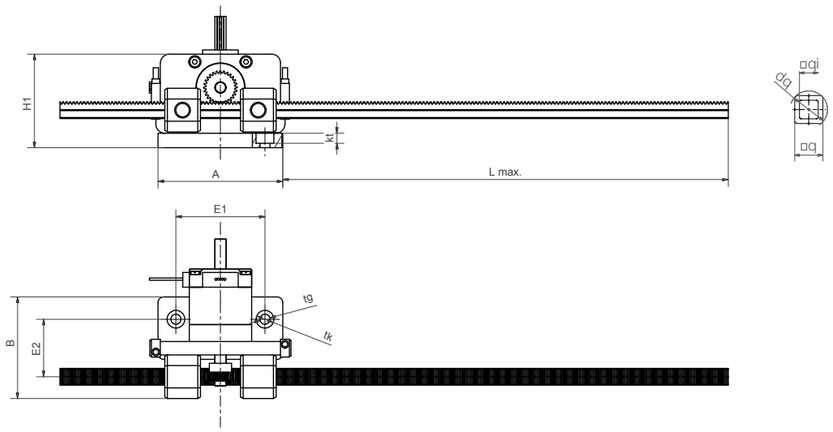
Drawings, dimensions, technical specifications, such as GRW ▶ Page 1237

igus® 3D-CAD files, prices and delivery time online ▶ www.igus.eu/drylinE

drylin® E | Linear axes with motor | GRQ

Gripper axis with rack drive





Dimensions [mm]

Part No.	F	v	L	A	H1	E1	E2	B	tg	tk	kt	B	q	dq	qi
	[N]	[m/s]	maxi												±0.02
GRQ-10-A-56-120-11-L-01-000	5	0.7	200	56	42	40	26	46	4.5	8	4.5	52	7.5	10	5

Drawings, dimensions, technical specifications, such as GRQ ▶ Page 1239

drylin® E | Linear axes with motor | GRQ

drylin® E electrical drive technology

Order key

GRQ-10-A-56-000-120-11-L-S-000

Type

Installation size

Design
- **A:** Standard

Drive unit width

End switch/ proximity switch
- **0:** Without
- **1:** Proximity switch L
- **2:** Proximity switch R
- **3:** Proximity switch L + R
- **4:** Proximity switch + trigger L
- **5:** Proximity switch + trigger R
- **6:** Proximity switch + trigger L + R

Chain connection/ Energy supply
- **0:** Without
- **1:** Chain connection L
- **2:** Chain connection R

Adapter / accessories
- **0:** Without
- **1:** Adapter plate L
- **2:** Adapter plate R

Motor pin alignment
- **000:** 0° (standard)
- **090:** 90°
- **180:** 180°
- **270:** 270°

Assembly
- **S:** Standard

Motor option
- **L:** Stranded wires
- **C:** Encoder, stranded wires

Motor size
- **11:** NEMA11

Stroke length
- **max. 200 mm**

drylin® E | Linear axes with motor | ZLW

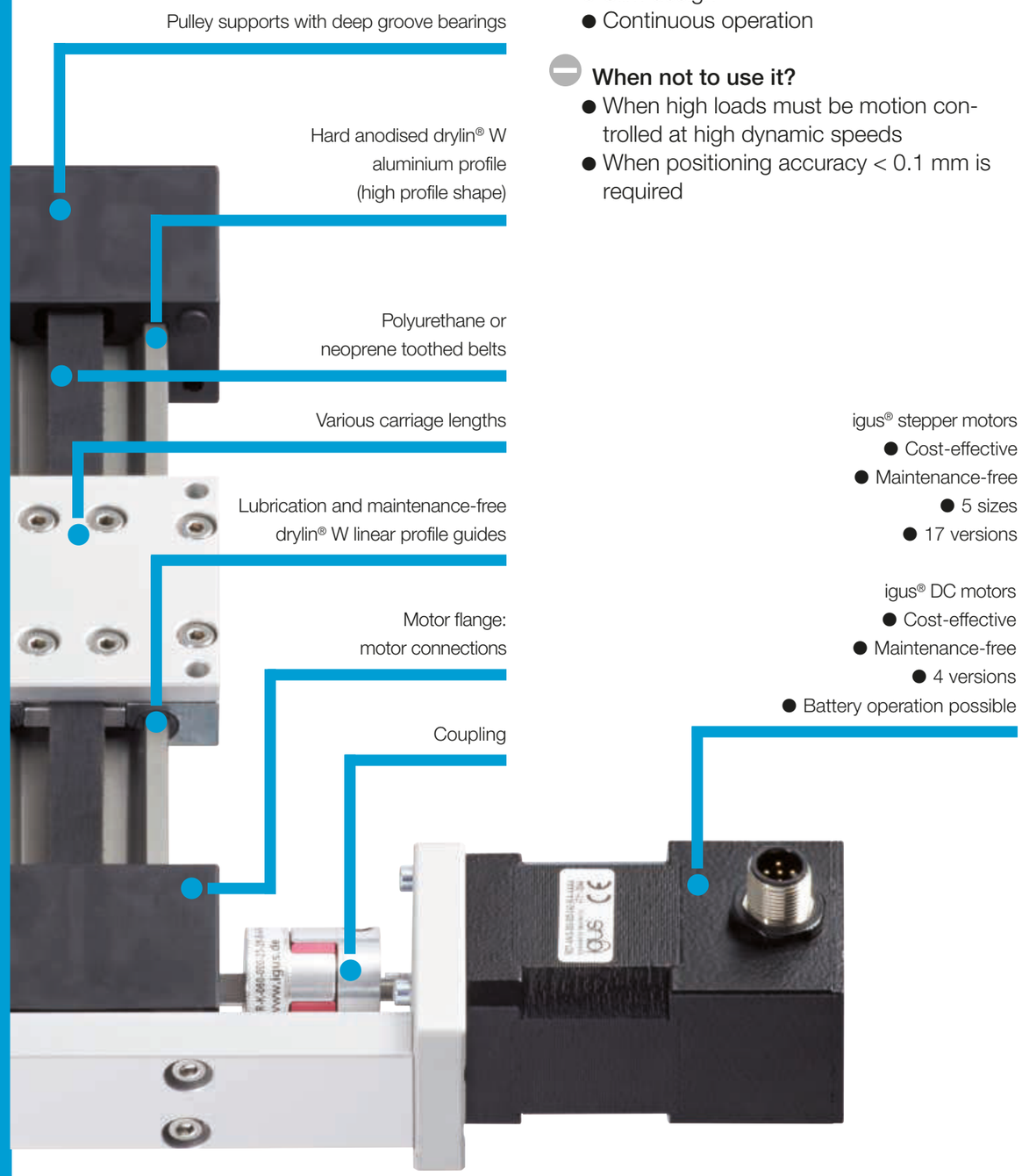
Linear axes with toothed belt

When to use it?

- Fast positioning of small loads
- Quiet operation
- Slim design
- Continuous operation

When not to use it?

- When high loads must be motion controlled at high dynamic speeds
- When positioning accuracy < 0.1 mm is required



Drawings, dimensions, technical specifications, such as ZLW ▶ Page 1243

drylin® E electrical drive technology

drylin® E | Linear axes with motor | ZLW

Order key

ZLW-1040-02-B-60-L-750-17-M-S-000

Type

Installation size

Version
02: With deep groove ball bearings

Design
E: Type series Eco

Carriage length
60: 60 mm (only ZLW 0630)
100: 100 mm
150: 150 mm
200: 200 mm
250: 250 mm

Drive shaft
L: Left-hand drive shaft
R: Right-hand drive shaft
L/R: Drive both sides

Stroke length
ZLW-0630: max. 1,000 mm
ZLW-1040: max. 2,000 mm
ZLW-1660: max. 3,000 mm

Electrical connection alignment
000: 0° (standard)
090: 90°
180: 180°
270: 270°

Assembly
Drive shaft on one side[135]
S: Motor assembly on defined drive shaft (L or R)
Drive shaft on both sides (L/R)[136]
L: Motor assembly on drive shaft left
R: Motor assembly on drive shaft right

Motor option
L: Stranded wires
M: Metric connector
C: Encoder
D: Encoder and brake
F: Low profile connector (DC motor)

Motor size
17: NEMA17: recommended axis 0630
23: NEMA23: recommended axis 1040
23XL: NEMA23XL: recommended axis 1040
34: NEMA34: recommended axis 1040/1660
DC01: DC motor 0.1 Nm: recommended axis 0630
DC03: DC motor: 0.3 Nm: recommended axis 0630
DC07: DC motor: 0.7 Nm recommended axis 1040
DC15: DC motor: 1.5 Nm recommended axis 1040

[135] **Assembly example, drive shaft on one side (connection alignment 0°):**

S: Motor assembly on defined drive shaft (L or R)

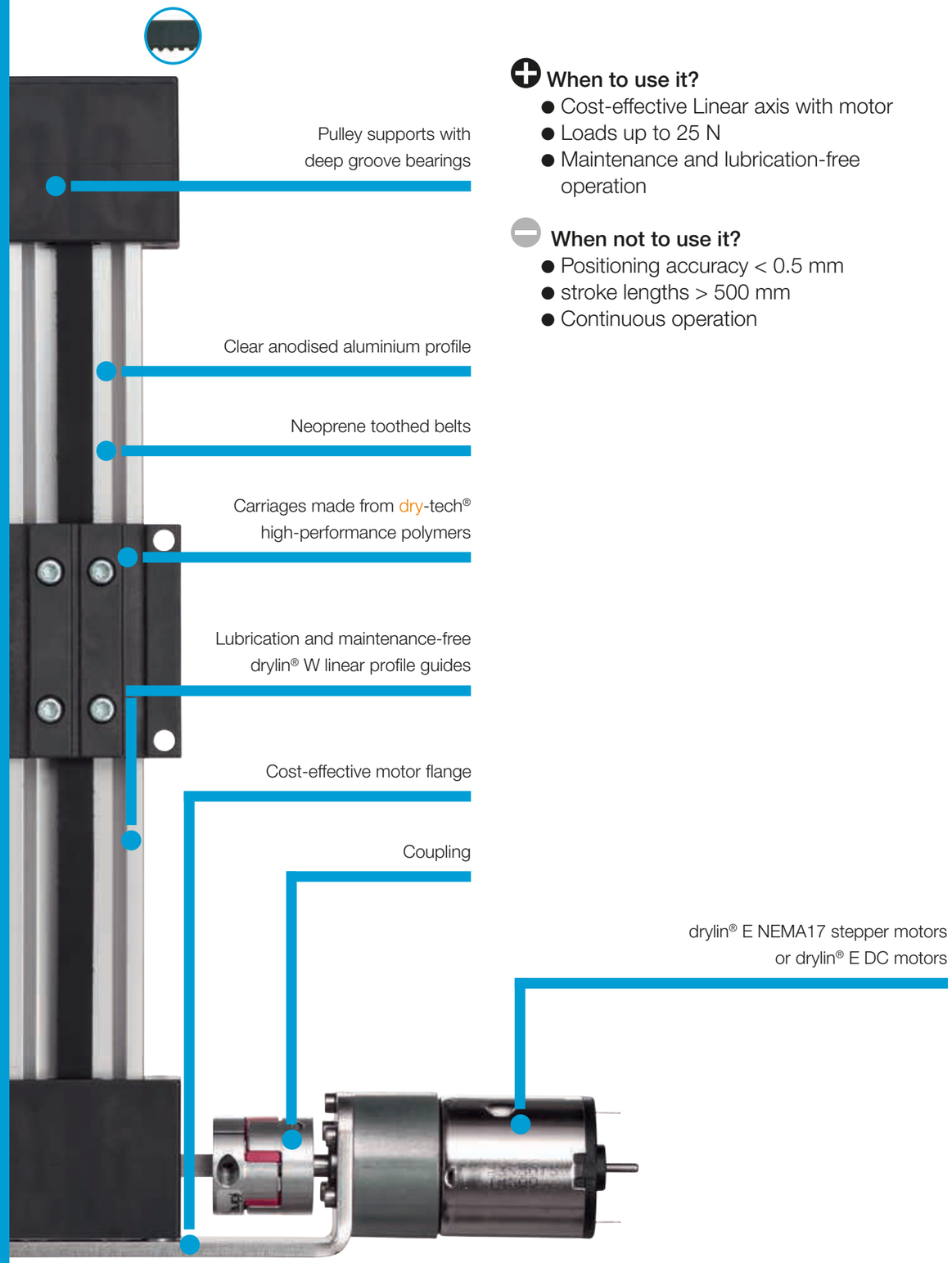
[136] **Assembly example, drive shaft on both sides (connection alignment 0°):**

L: Motor assembly on drive shaft left

R: Motor assembly on drive shaft right

drylin® E | Linear axes with motor | ZLW-Eco

Linear axes with toothed belt



When to use it?

- Cost-effective Linear axis with motor
- Loads up to 25 N
- Maintenance and lubrication-free operation

When not to use it?

- Positioning accuracy < 0.5 mm
- stroke lengths > 500 mm
- Continuous operation

Drawings, dimensions, technical specifications, such as ZLW ▶ Page 1243

drylin® E | Linear axes with motor | ZLW-Eco

drylin® E electrical drive technology

Order key

ZLW-0630-02-E-60-L-750-17-L-S-000

Type

Installation size

Type
- **02:** With deep groove ball bearings

Design
- **E:** Type series Eco

Carriage length
- **60:** 60 mm (only ZLW 0630)
- **100:** 100 mm
- **150:** 150 mm
- **200:** 200 mm
- **250:** 250 mm

Drive shaft
- **L:** Left-hand drive shaft
- **R:** Right-hand drive shaft
- **L/R:** Drive both sides

Stroke length
- **ZLW-0630:** max. 1,000 mm

Electrical connection alignment
- **000:** 0° (standard)
- **090:** 90°
- **180:** 180°
- **270:** 270°

Assembly

Drive shaft on one side[135]
- **S:** Motor assembly on defined drive shaft (L or R)

Drive shaft on both sides (L/R)[136]
- **L:** Motor assembly on drive shaft left
- **R:** Motor assembly on drive shaft right

Motor option
- **L:** Stranded wires
- **M:** Metric connector
- **C:** Encoder
- **D:** Encoder and brake
- **F:** Low profile connector (DC motor)

Motor size
- **17:** NEMA17
- **DC01:** DC motor 0.1 Nm
- **DC03:** DC motor: 0.3 Nm

[135] **Assembly example, drive shaft on one side (connection alignment 0°):**

S: Motor assembly on defined drive shaft (L or R)

[136] **Assembly example, drive shaft on both sides (connection alignment 0°):**

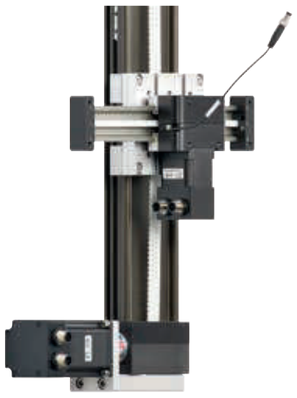
L: Motor assembly on drive shaft left

R: Motor assembly on drive shaft right

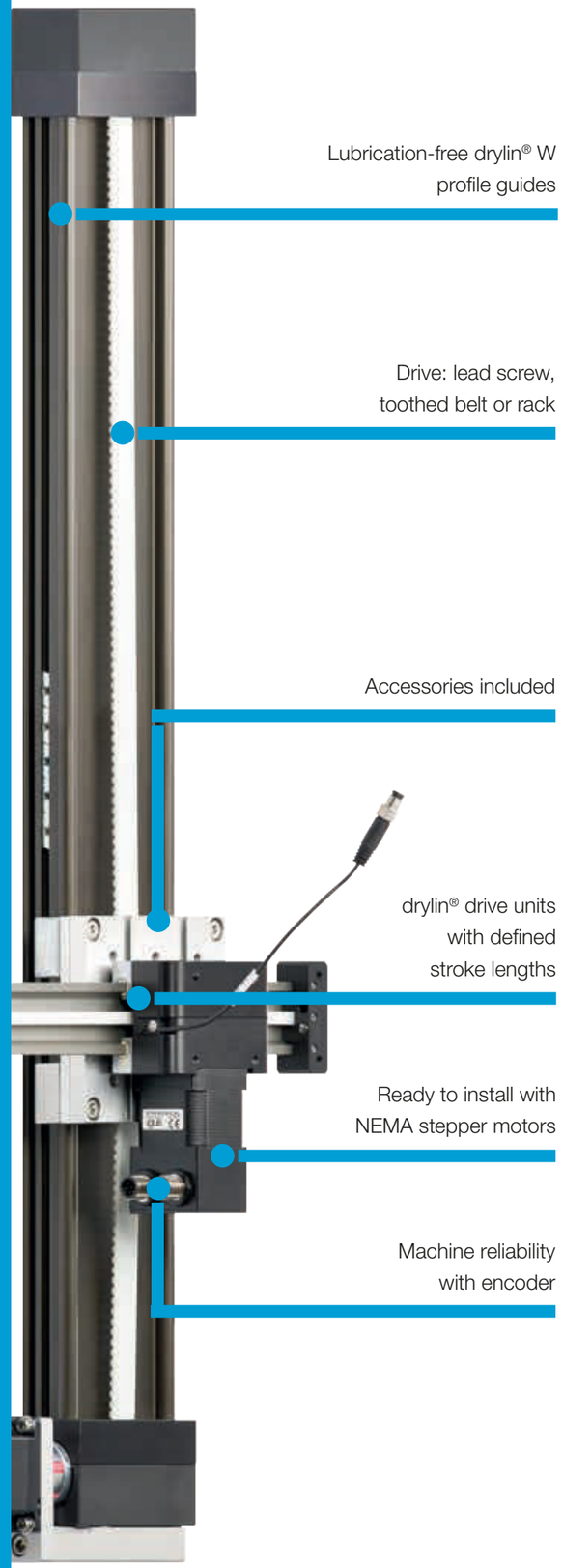
My sketches

Multi-axis modular linear robots

- Linear robot for vertical applications
- Flat linear robot for predefined surfaces
- Room linear robots for three dimensional applications
- Pre-assembled linear robots from stock
- Individual solutions



drylin® E | Multi-axis linear robots | Advantages



Multi axis linear robot adapter kit

Linear robots combine several linear axes in order to implement a predefined multidimensional movement. Our drylin® linear robots are based on proven Tribo technology, i.e. all systems use sliding, self-lubricating linear units, a fact that enables operation without external lubrication over the entire service life. Typical areas of use are pick&place automation, measuring and testing automation, assembly handling, marking and labelling devices, handling tasks in low-cost automation and autonomous assembly cells.

- Maintenance-free, dry operation
- Quiet operation
- Resistance to dust and dirt
- Corrosion-free
- Standard product range available in within 24 h
- Free consultation and installation at your premises

Typical application areas

- Pick and place
- Measurement and testing
- Labelling technology
- Component marking
- Assembly cells
- Sorting machines
- Safety systems

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

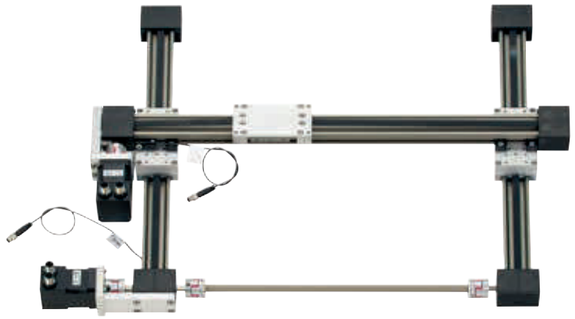
drylin® E | Multi-axis linear robots | Product overview

Ready-to-install linear robots available from stock in 24h

Linear robot

- Ready-to-use modular kit with cantilever axis
- Easy installation
- Proximity switch mounting by means of T groove along the entire length of the section

▶ **From page 1292**



Flat linear robot

- Using drylin® linear axis ZLW-0630
- NEMA17 stepper motors, assembled and tested
- Increased machine reliability with encoder

▶ **From page 1293**

Room linear robot

- Using drylin® linear axes ZLW-1040, ZLW-1080 and GRW-0630
- NEMA17/23 stepper motors, assembled and tested
- Increased machine reliability with encoder

▶ **From page 1294**

drylin® E | Multi-axis linear robots | Product range

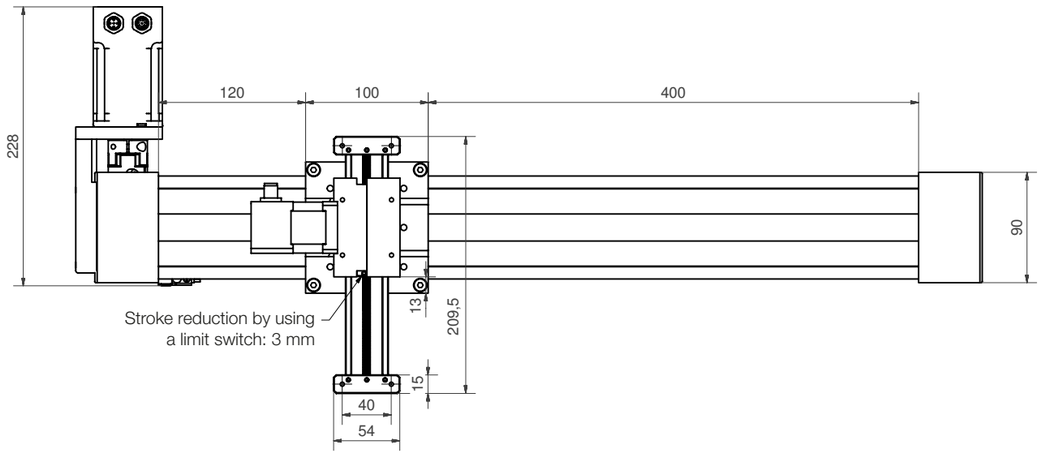
Linear robot – for vertical working planes

- **X-axis:** drylin® GRW-0630 rack drive with NEMA17 stepper motor with encoder
- **Y-axis**: drylin® ZLW-1080 toothed belt axis with NEMA23 stepper motor with encoder
- Proximity switches available

Technical data

Workspace:	500 x 100 mm
Max. speed:	1.0 m/s
Max. acceleration:	3.0 m/s²
Repeatability:	0.2 mm
Load capacity:	10 N

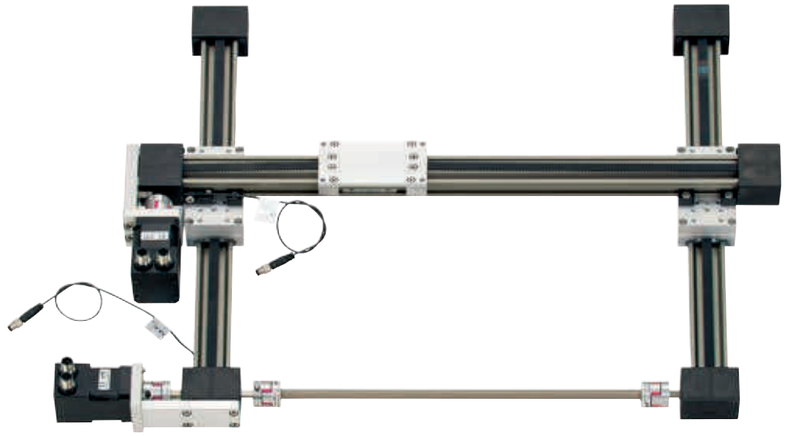
Part No.
DLE-LG-0001



drylin® E electrical drive technology

drylin® E | Multi-axis linear robots | Product range

Flat linear robot – for predefined surfaces



DLE-FG-0001

- **X-axis**: drylin® ZLW-0630 toothed belt axis with NEMA17 stepper motor with encoder
- **Y-axis**: drylin® ZLW-0630 toothed belt axis with NEMA17 stepper motor with encoder
- Proximity switches available

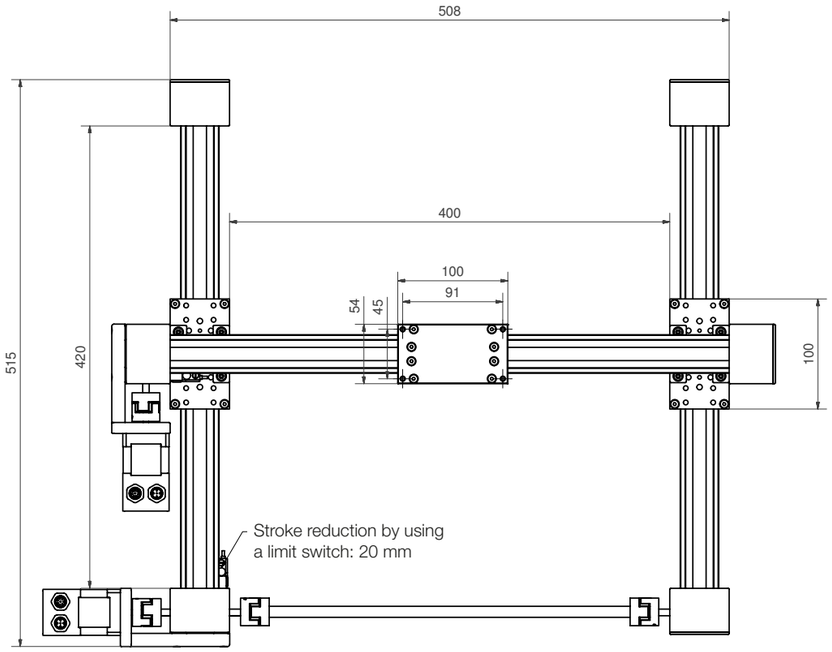
Technical data

Workspace:	300 x 300 mm
Max. speed:	1.5 m/s
Max. acceleration:	10 m/s²
Repeatability:	0.3 mm
Load capacity:	80 N

DLE-FG-0002

- **X-axis:** drylin® ZLW-0630 toothed belt axis with NEMA17 stepper motor with stranded wire
- **Y-axis:** drylin® ZLW-0630 toothed belt axis with NEMA17 stepper motor with stranded wire
- Proximity switches available

Part No.
DLE-FG-0001 version with encoder
DLE-FG-0002 version with stranded wire



drylin® E | Multi-axis linear robots | Product range

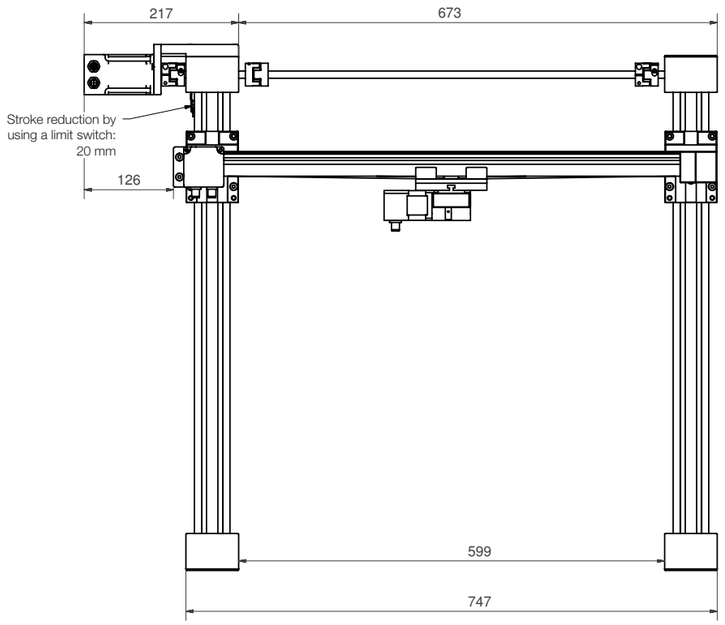
Room linear robot – for three dimensional applications

- **X-axis:** drylin® ZLW-1040 toothed belt axis with NEMA23 stepper motor with encoder
- **Y-axis**: drylin® ZLW-1080 toothed belt axis with NEMA23 stepper motor with encoder
- **Z-axis**: drylin® GRW cantilever axis with rack drive and NEMA17 stepper motor with encoder

Technical data

Workspace:	500 x 500 x 100 mm
Max. speed:	0.5 m/s
Max. acceleration:	1.5 m/s²
Repeatability:	0.8 mm
Load capacity:	10 N

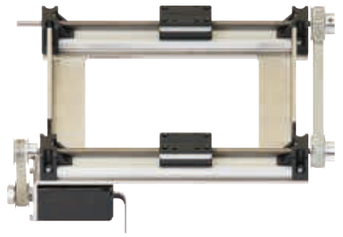
Part No.
DLE-RG-0001



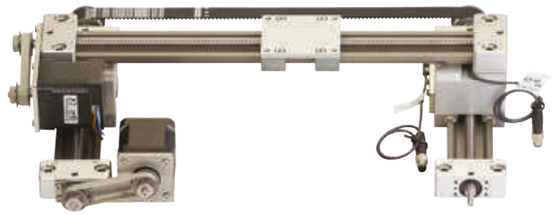
drylin® E | Multi-axis linear robots | Special solutions

Customised drylin® linear robots from batch size 1

Examples of small-sized multi-axis linear robots

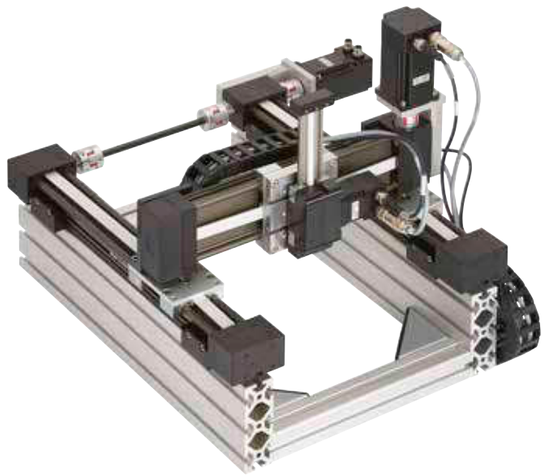


- Smallest applications
- Direct mounting on support plate
- 100% tested
- Installation height from 30 mm

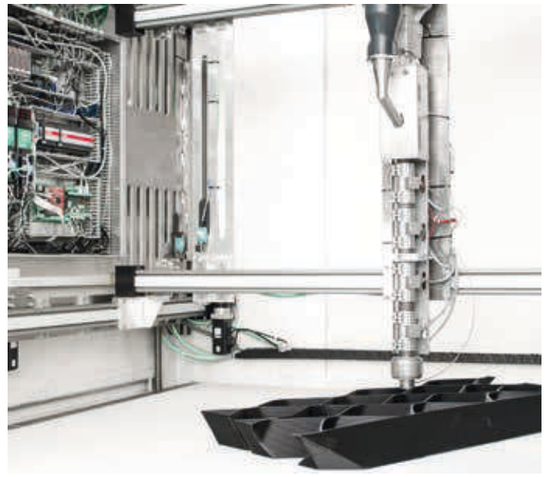


- Cost saving due to parallel synchronisation
- Extremely small and compact
- Repeatabilities up to 0.05 mm

Examples for pre-assembled multi-axis linear robots



- Outsourcing of engineering costs
- Everything from one source
- Completely ready-to-fit
- Gripper and camera directly adaptable

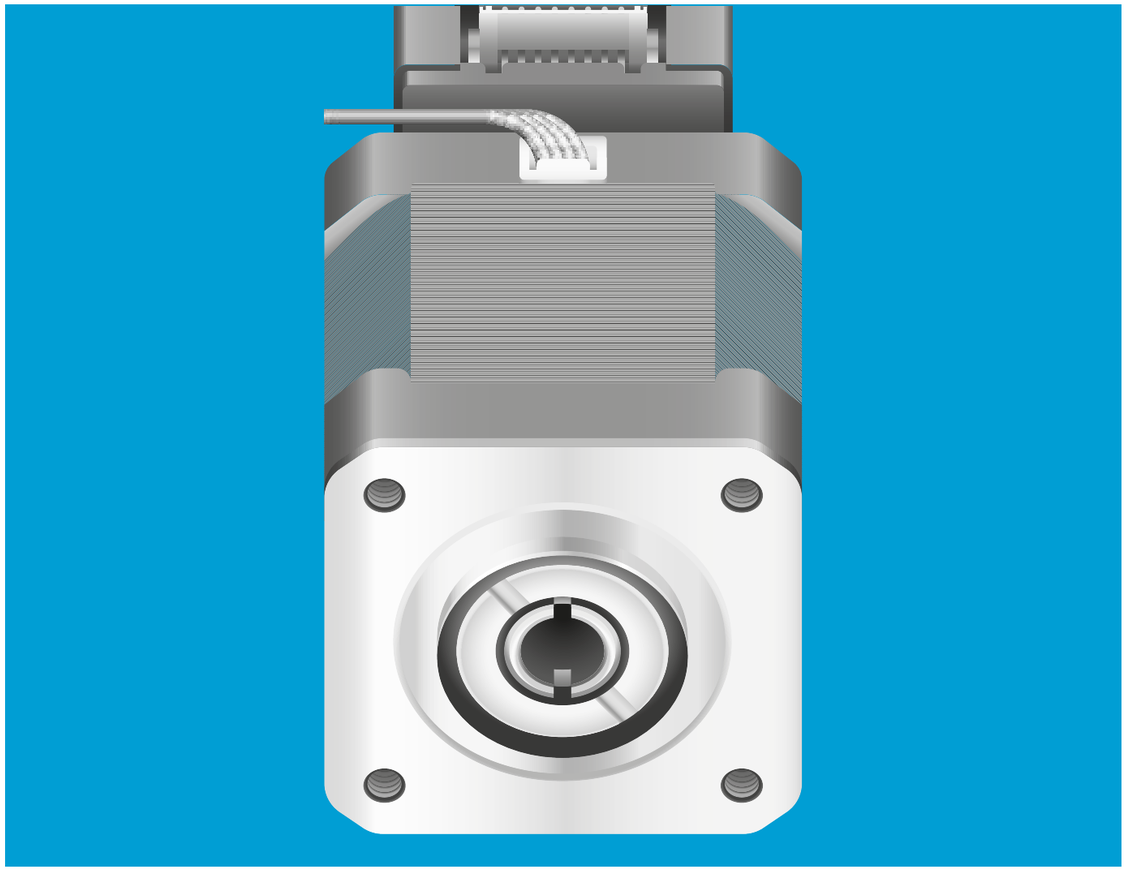


- Delivery in modules
- Design integration into your machine
- Combination with robolink® joint automation

Available on request
Detailed information about delivery time online.

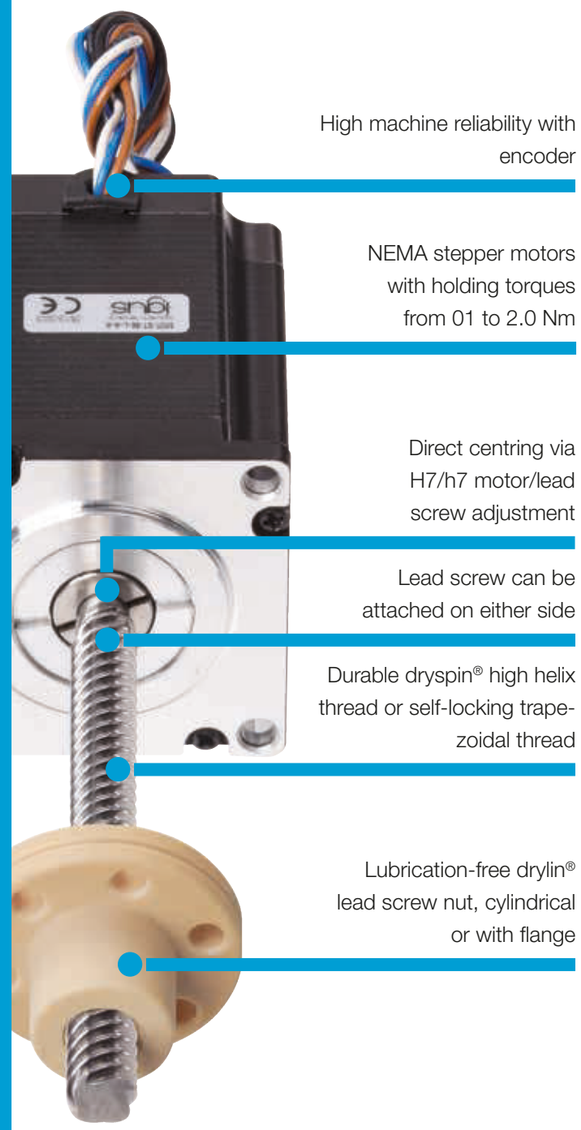
Customised linear robot request
▶ www.igus.eu/linear-robot-request

My sketches



drylin® electric drive technology – drylin® lead screw motors

- 7 lead screw types with pitches from 0.8 - 50 mm
- Maximum precision by centring the lead screw
- The lead screw can be attached on either side
- Space saving, versatile
- Available for delivery ready for connection with drylin® linear units SAWC and SLN



High machine reliability with encoder

NEMA stepper motors with holding torques from 01 to 2.0 Nm

Direct centring via H7/h7 motor/lead screw adjustment

Lead screw can be attached on either side

Durable dryspin® high helix thread or self-locking trapezoidal thread

Lubrication-free drylin® lead screw nut, cylindrical or with flange

Efficient, precise and compact – drylin® lead screw motors

drylin® E with the lead screw motor range is the optimum solution for systems that need a stepper motor with a directly integrated lead screw. The stand-alone versions have a compact design and are available with NEMA stepper motors with and without an encoder.

- 3 stepper motor sizes
- Lubrication-free drylin® lead screw technology
- Can be delivered ready for connection

Typical application areas

- Medical technology
- Tool building
- Laboratory technology

Available from stock

Detailed information about delivery time online.

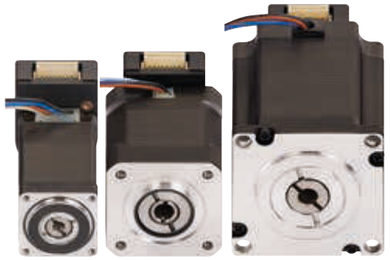
Block pricing online

No minimum order value. From batch size 1.

Lead screw motor

- NEMA 11/17/23 stepper motors
- Holding torque 01 - 2.0 Nm
- The lead screw can be attached on either side

▶ **From page 1300**



Lead screw motor with encoder

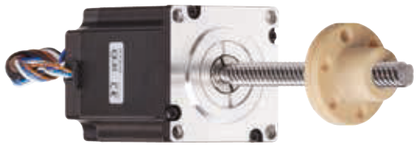
- NEMA 11/17/23 stepper motor
- Increased machine reliability
- Can be used with 7 lead screw pitches from 0.8 - 50 mm

▶ **From page 1300**

drylin® lead screws for stepper motor

- Efficient dryspin® high helix lead screw, ready to install with precision machined ends
- Self-locking trapezoidal thread lead screw, ready to install with precision machined ends
- Available for delivery individually or fully assembled

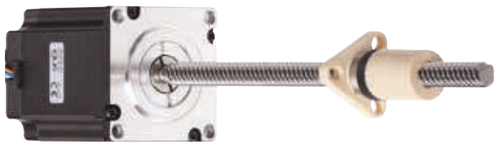
▶ **From page 1301**



Matching dryspin® high helix lead screw nut

- Available in several geometric designs and pitches

▶ **From page 1079**



Matching drylin® trapezoidal lead screw nut

- Lubrication-free, self-locking and available in several plastic materials

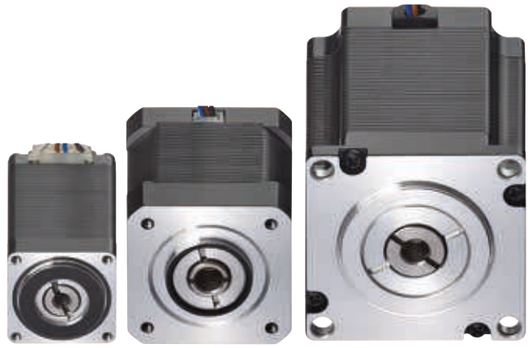
▶ **From page 1107**

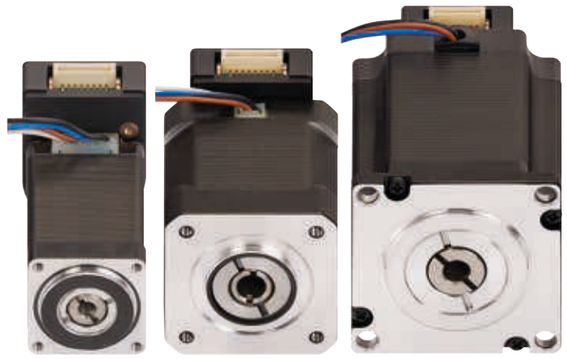
drylin® E lead screw motors installed in

- drylin® SAWC with motor ▶ **From page 1274**
- drylin® SHTC with motor ▶ **From page 1268**
- drylin® SLN with motor ▶ **Page 1280**

drylin® E | Lead screw motors | Product range

Stand-alone solution for customer requirements – with or without encoder





- 3 stepper motor sizes with stranded wire and holding torque 0.1 - 2 Nm
- 7 lead screw types with pitches from 0.8 - 50 mm
- Maximum precision by centring the lead screw with a H7/h7 motor/lead screw fit
- Matching lead screw nuts in the drylin® product range
- When using a stepper motor without an encoder the lead screw can be attached on either side
- Space saving, versatile
- Available for delivery ready for connection with drylin® linear axes SAWC, SLN and SLT

Technical data – stepper motor with stranded wire

Part No.	Motor size	Distance over hubs	Holding torque	Shaft load	Encoder
		[mm]	[Nm]	axial [N]	
MOT-ST-28-L-A-A	NEMA11	28	0.1	50	no
MOT-ST-42-L-A-A	NEMA17	42	0.5	100	no
MOT-ST-56-L-A-A	NEMA23	56	2.0	500	no
MOT-ST-28-L-C-A	NEMA11	28	0.1	50	yes
MOT-ST-42-L-C-A	NEMA17	42	0.5	100	yes
MOT-ST-56-L-C-A	NEMA23	56	2.0	500	yes

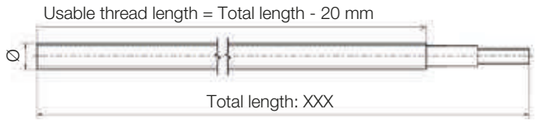
Detailed technical data online
▶ www.igus.eu/drylinE

drylin® E electrical drive technology

drylin® E | Lead screw motors | Product range

Lead screw with precision machined ends

- Material: stainless steel
- Lead screw needs to be secured with an adhesive
- Ready to fit



Technical data – high helix threads with dryspin® technology

Part No.	Motor size	Distance over hubs	Thread type	Lead screw Ø	Pitch	max.
		[mm]		[mm]	P	Length
DST-LS-MOT-6.35X2.54-R-XXX-ES	NEMA11	28	DST	6.35	2.54	300
DST-LS-MOT-6.35X25.4-R-XXX-ES	NEMA11	28	DST	6.35	25.4	300
DST-LS-MOT-10X12-R-XXX-ES	NEMA17/23	42 / 56	DST	10	12	500
DST-LS-MOT-10X25-R-XXX-ES	NEMA17/23	42 / 56	DST	10	25	500
DST-LS-MOT-10X50-R-XXX-ES	NEMA17/23	42 / 56	DST	10	50	500
DST-LS-MOT-14X25-R-1000-ES	NEMA17/23	42 / 56	DST	14	25	500

Technical data – trapezoidal lead screw

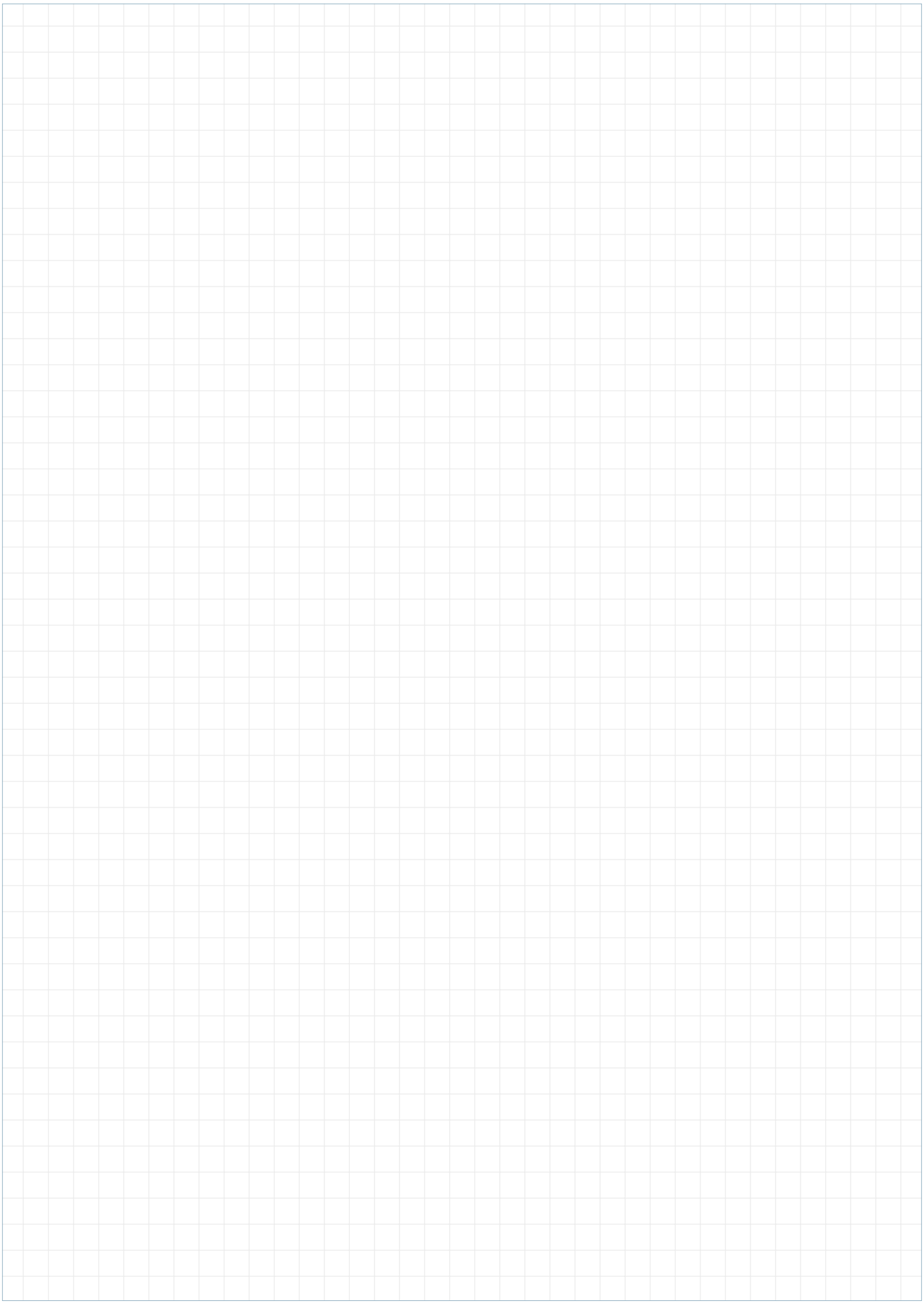
Part No.	Motor size	Distance over hubs	Thread type	Lead screw Ø	Pitch	max.
		[mm]		[mm]	P	Length
PTGSG-MOT-M5X0,8-R-XXX-ES	NEMA11	28	M5	5	0.8	250
PTGSG-MOT-08X1,5-R-XXX-ES	NEMA17/23	42 / 56	Tr	8	1.5	300
PTGSG-MOT-10X2-R-XXX-ES	NEMA17/23	42 / 56	Tr	10	22	500
PTGSG-MOT-12X3-R-XXX-ES	NEMA17/23	42 / 56	Tr	12	3	500
PTGSG-MOT-12X6P3-R-XXX-ES	NEMA17/23	42 / 56	Tr	12	6P3	500

XXX: Lead screw length

If required by the factory, please order using the following assembly number:
Assembly front: MONT004F000 (flange side)
Assembly back: MONT004B000 (assembly not possible with a motor with an encoder)

Lead screw needs to be secured with an adhesive (Loctite 648)!
Curing time: after 6 hours approx. 50%
after 24 hours 100%

My sketches



drylin® general drive technology – accessories

Accessories for manual positioning and format adjustment

Stepper and DC motors for electrical drive

Couplings and motor flanges

Cables and initiators

Assembly and fastening options

Secure, reproduce and turn

Accessories for drylin® drive technology – manual positioning

An extensive list of accessories is available for many drylin® drive units to perform manual adjustments quickly and conveniently. When directly configuring the linear unit with the order, the units are shipped completely assembled. Any subsequent reconfiguration may result in the lead screw having to be exchanged because the lead screw ends may be too short.

- Fast and precise positioning
- Ergonomic operation
- Provides a mechanical brake

Available from stock
Detailed information about delivery time online.

Block pricing online
No minimum order value. From batch size 1.

Manual operation, manual positioning

V-drive
- 360° continuously adjustable
- Fixing of setting angle with clamp
- Small flange saves installation space

▶ Page 1306

Position indicator
- Direct read-out of the carriage position for the lead screw unit
- Bore reducers included to enable fitting to the entire product

▶ Page 1308

Lead screw clamp
- For clamping of the lead screw
- Provides a mechanical brake to the lead screw
- Material: plastic housing with aluminium shaft clamp

▶ Page 1309

Adapter plate
- For manual orientation of position indicators and hand clamps
- Suitable for linear modules of SHT/SLW/SHTP series
- Material: plastic igumid G

▶ Page 1332

Hand wheel
- Rotary knob: defined standard for complete units
- Different outer-diameters available
- Different handles available

▶ Page 1310

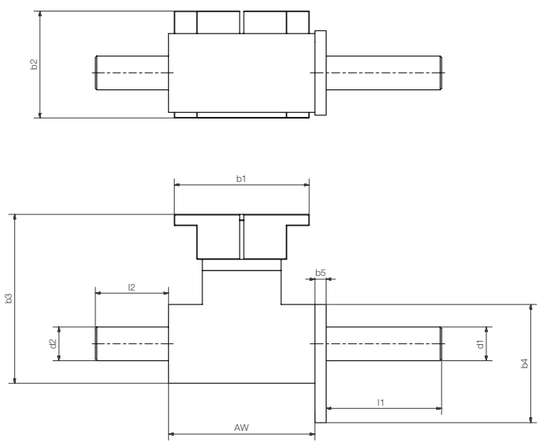
Flexshaft
- Optional offset operation of the drylin® linear modules
- Controls can be positioned independently
- Available in length 300, 500 and 1,000 mm
- Can be combined with other accessories

▶ Page 1311

drylin® drive technology | Accessories | Product range

V-drives – flexible adjustable

In addition to safety technology aspects, limited operating space requires drylin® drives to be operated with flexibility and ease. We provide a product line of continuously adjustable angular drives for adjustment options from a defined direction. For manual adjustments, the angular drives can also be configured with position indicator, clamp and hand-wheel, and are shipped pre-assembled. Angular drives with keyed/grooved shafts are available for motor interfaces with increased torque transfers.



- Double-side shaft output for angle drives WT-3 and WT-4
- For rotary transmissions of 90°
- Configuration with lead screw clamping/position indicator/hand wheel possible
- Position indicator, lead screw clamp, hand wheel available ▶ **Page 1308**

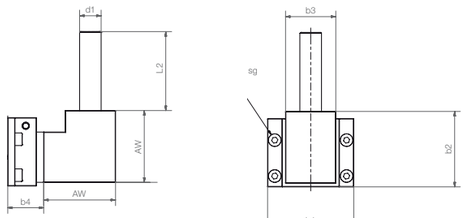
Dimensions [mm]

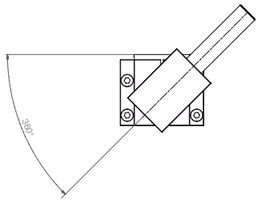
Part No.	M max. [N]	l[105)]	AW	d1	d2	l1	l2	b1	b2	b3	b4	b5
WT-3000-T	3	01:01	52	12	12	26 / 41 / 59 / 74	26	48	38	60	42	4
WT-4000-T	6	01:01	60	14	14	26 / 47 / 65 / 80	26	56	46	83	50	10

[105)] Gear ratio

- Flexible adjusting to your installation scenario with continuously variable adjustment (can be oscillated 360°)
- Max. drive torque 3 Nm
- Clamping using set screw
- Ø 12 mm h7 output shaft

Depending on the design, an adapter plate is used for connection to the linear system





Dimensions [mm]

Part No.	l[105)]	AW	b1	b2	b3	b4	L2	d1	sg
WT-3000 | 3100 | 3500	1:1	40	48	42	28	20	26	12	M4
WT-3600 | 3700	1:1	40	48	42	28	30	26	12	M4

[105)] Gear ratio

drylin® drive technology | Accessories | Product range

V-drives for heavy duty and hygienic design

drylin® angular drives provide for a maximum of positioning flexibility. The form fitting connection can give a maximum torque of up to 6 Nm.

- Flexible adjusting to your installation scenario with continuously variable adjustment (can be oscillated 360°)
- Max. drive torque 6 Nm through coupling
- Fixed using feather key groove
- Base shaft Ø 14 mm h7 with size
- Compatible with drylin® SHT/SHTC/SLW (sizes 16, 20 and 30)
- Position indicator, lead screw clamp, hand wheel available ▶ **Page 1308**

Dimensions [mm]

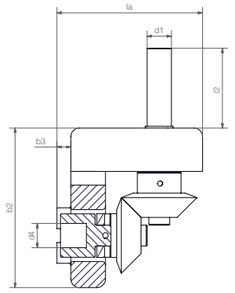
Part No.	l[105)]	AW	b1	b2	b3	b4	L2	d1	sg
WT-4000 | 4100 | 4200 | 4700	1:1	60	52	51	40	23	26	14	M4
WT-4600	1:1	60	52	51	40	33	26	14	M4

[105)] Gear ratio

Angular drive with hand wheel (optional)

Following the idea of “Hygienic Design” the V-drive is available as maintenance-free and washable stainless steel/polymer system.

- Max. drive torque 3 Nm
- Single parts made from stainless steel
- Easy to clean with water
- Compatible with drylin® SHTC-20-EWM-HYD ▶ **Page 1189**
- Position indicator, lead screw clamp, hand wheel available ▶ **Page 1308**



Dimension [mm]

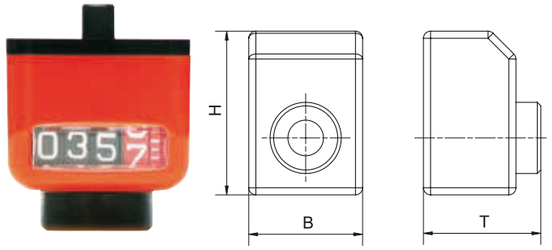
Part No.	l[105)]	la	kt	b1	b2	b3	d4	l2	d1	d2	d3	sg
WT-1100	1:1	84	4.5	65	92	8	12	26	14	25	30	M4

[105)] Gear ratio

drylin® drive technology | Accessories | Product range

Position indicator – safe reproducibility

To keep downtime to a minimum and make adjustments quickly and precisely, the indicator is used to create repeatable values. These can be shipped from stock for almost any linear unit in the matching pitch, in the required counting and viewing direction and in a variety of colours.



- Plastic analogue indicator for adjustment and direct reading of slide position
- 3- (P1), 4- (P5) or 5- (P6) digit counter (red digit indicates tenths)
- Can be combined with hand clamps and hand wheels
- Reduction sleeves included
- Adapter plate available ▶ Page 1332

Order key

SHT-P3-A-2-DX-O

- **Housing colour**
  - **O:** Orange (Standard)
- **Direction of rotation**
  - **DX:** Clockwise
  - **SX:** Anti clockwise
- **Pitch**
- **Display orientation**
- **Type**
- **Standard**

Installation options

0 degrees | 90 degrees | 180 degrees | 270 degrees

Display orientation

A
Standard

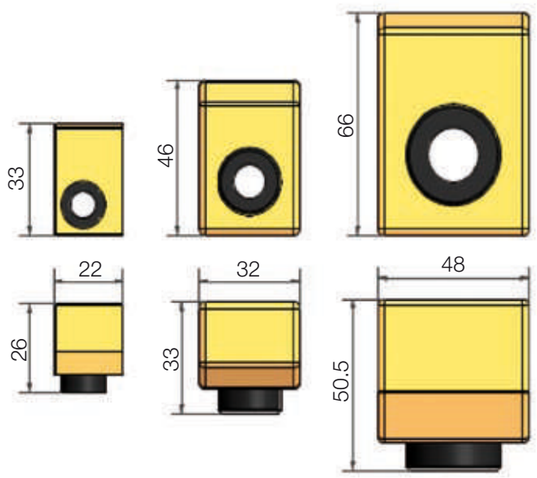
B (optional)
For vertical fitting position: display turned 180°

Dimensions [mm]

Pitch	for lead screw	Display after 1 rotation	Type
1.25	M8x1.25	001.25	P1[103]
1.5	Tr8x1.5	001.5	P1[103]
2	Tr10x2	002.0	P3[103]
3	Tr10x3; Tr12x3	003.0	P3[103]
4	Tr18x4; Tr14x4	004.0	P3[103]
5	Tr24x5	005.0	P3[103]
5	Tr26x5	005.0	P6[103]
6	Tr30x6	006.0	P6[103]
12	10x12	012.0	P3[103]
15	8x15	015.0	P1[103]
50	10x50	005.0	P3[103]
100	18x100	001.0	P3[103]

The pitch depends on the lead screw used.

[103] **P1: 3-digit, P3: 4-digit, P6: 5-digit**



P1
SLW-0630
SHTP-01-06

P3
All other
linear tables

P6
SHTC-40
SHTC-50

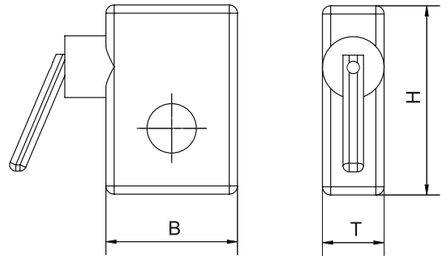
drylin® drive technology accessories

drylin® drive technology | Accessories | Product range

Lead screw clamp

Linear modules with trapezoidal threads are equipped with a self locking mechanism. Many applications call for an additional clamping option as an additional safeguard against unintentional movement.

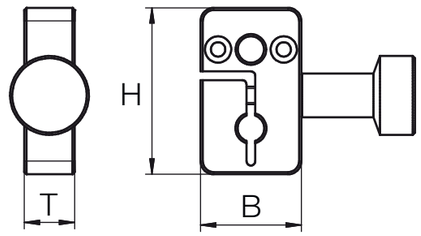
- Shaft clamping flange for attachment to the position indicator and subsequent mounting on the lead screw
- Provides a mechanical brake to the lead screw
- Material: Plastic housing with aluminium shaft clamp
- Reduction sleeves for further diameters available



Assembly and positioning with adapter plate
▶ Page 1332

Dimensions [mm]

Part No.	SHT-HK-12	SHT-HK-16	SHT-HK-20	SHT-HK-30
Lead screw size	10	14	12	14
Dimensions (B x H x T)	32 x 46 x 15	32 x 46 x 15	32 x 46 x 15	32 x 46 x 15



Dimensions [mm]

Part No.	SHT-HK-06	SHT-HK-06,35	SHT-HK-08
Lead screw size	6	6.35	8
Dimensions (B x H x T)	23 x 38 x 11.5	23 x 38 x 11.5	23 x 38 x 11.5

drylin® drive technology | Accessories | Product range

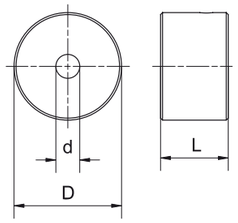
Hand wheels for drylin® linear modules

We have an extensive selection of hand-wheels available to ship from stock for the most varied requirements. These range from small compact sizes up to ø 125 with/without handle, and in various configurations.

Standard

With handle (optional)

- Rotary knob: defined standard for complete units
- Different outer-diameters available
- Different handles available



Order key

SHT-HR-8-27-17-OG

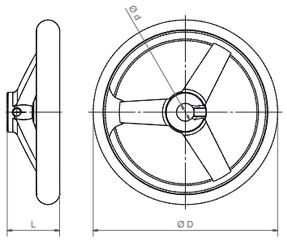
- **Handle (optional)**
  - **OG:** Without handle
  - **FG:** Fixed handle
  - **UG:** Folding handle
  - **SG:** Security handle
- **Length**
- **Outer diameter**
- **Inner diameter**
- **Hand wheel**
- **Standard**

Dimensions [mm]

d	D	L	OG	FG	UG	SG[104)]
4	22	15	●			
5	22	15	●			
8	27	17	●	–	–	–
10	27	17	●	–	–	–
12	42	23	●	–	–	–
14	42	23	●	–	–	–
6	50	52	–	●	–	–
8	80	75	–	●	●	●

d	D	L	OG	FG	UG	SG[104)]
10	80	75	–	●	●	●
12	80	75	–	●	●	●
12	125	109	–	●	●	●
14	125	109	–	●	●	●
16	125	109	–	●	●	●
20	198	141	–	●	–	–

[104)] The automatic panning will return on release



Stainless steel hand wheel

- Washable design for application in food and pharmaceutical industries
- Corrosion resistant stainless steel

Dimensions [mm]

Part No.	d	D	L	OG	Weight [g]
SHT-HR-12-125-36-OG-ES	12	125	36	●	625

drylin® drive technology accessories

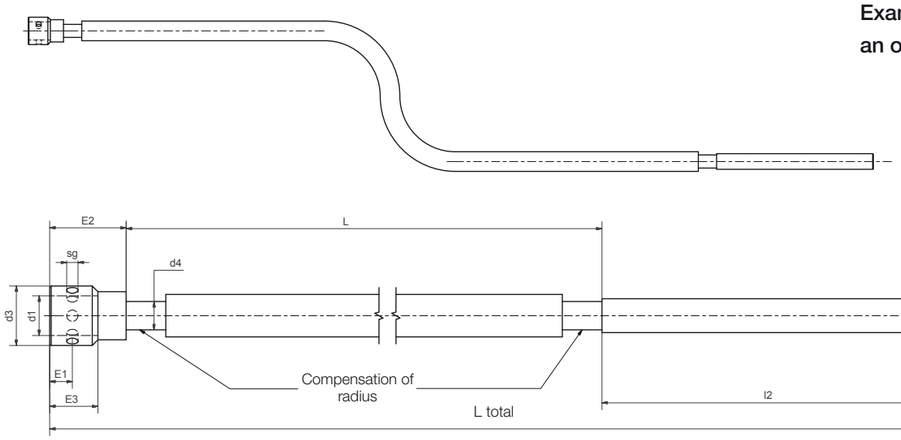
drylin® drive technology | Accessories | Product range

Flexshaft – separately located control of linear modules

The ideal complement to drylin® linear modules. The flexshaft enables the positioning of the hand wheel independent of the installation position of the linear unit. Distance up to 500 mm and offset by 85°.

- Lengths: 300 mm, 500 mm und 1,000 mm (flexible area)
- Flexible shaft: burnished steel
- Plastic coating: Rilsan
- Connection piece: stainless steel 1.4305
- For all journal diameters (10, 12 and 14 mm)
- Flexible installation
- Space saving
- Can be combined with a bearing block ▶ **Page 1154**
- Position indicator, lead screw clamp, hand wheel available ▶ **Page 1308**

Example of the function of an offset operating unit

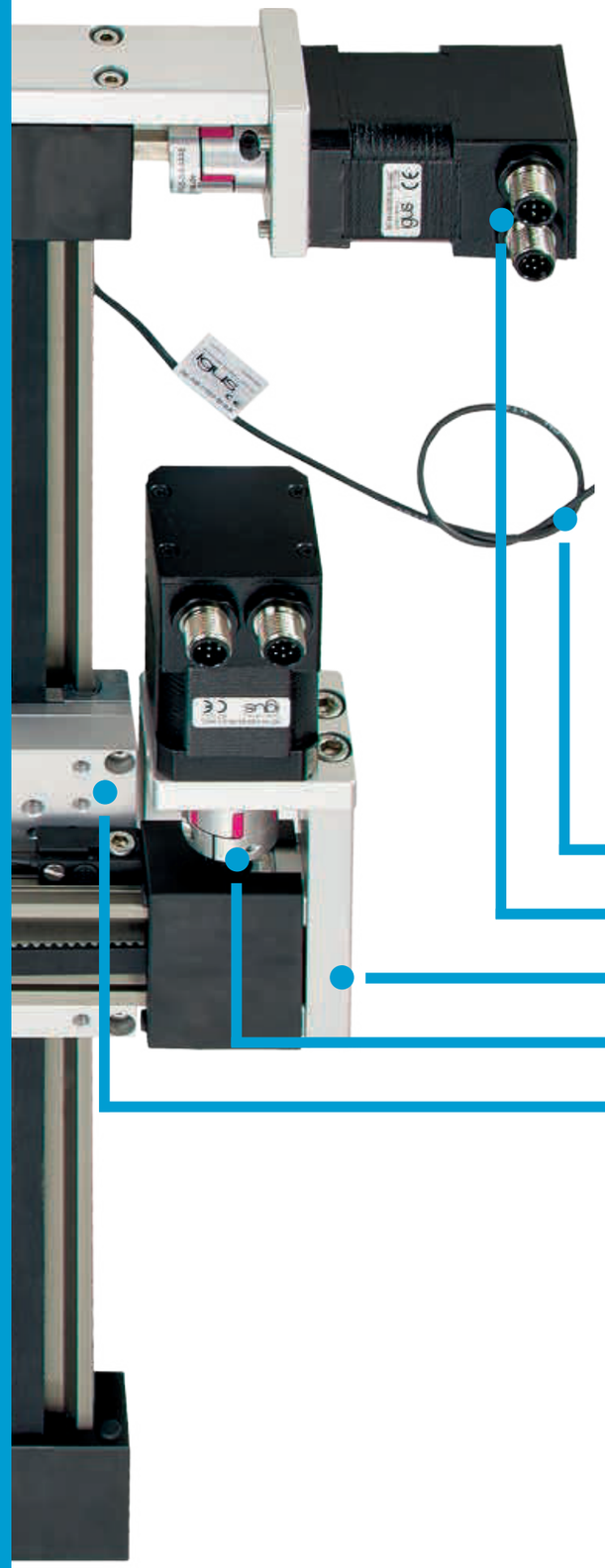


Dimensions [mm]

Part No.	d1	d2	d3	d4	l2	sg	E1	E2	E3	L	L total	L max.	T max. [Nm]	min. bend radius
FS-06-500-Z12X120-AA	14h7	12h7	21	6	120	M4	8.5	36.5	14.5	500	657	1,000	3	70
FS-08-1000-Z12X120-AA	14h7	12h7	21	8	120	M4	8.5	36.5	14.5	1,000	1,157	1,000	4.5	90

More dimensions on request

Automation from stock



Accessories for drylin® E linear axes

Almost every drylin® linear axis can be retrofitted with a corresponding motor and accessories such as initiators (proximity switches). igus® offers a large modular system of motors, matching couplings and motor flanges plus many practical components for the combination of linear axes as well as fastening material.

- Connection of stepper motors and DC motors
- Linear robot structures
- Fastening options

chainflex® motor and encoder cables

drylin® E stepper and DC motors

Motor flange made of aluminium

Couplings for motor and shaft connection

Adapter plates for linear robot structures

Available from stock
Detailed information about delivery time online.

Electric traversing, manual installation

Stepper motors

- Powerful in 2 sizes
- Motors with connector and stranded wire
- With encoder and brake
- Increased torque resistance due to machined flat motor shaft (D-cut)

▶ **Page 1314**

DC motors

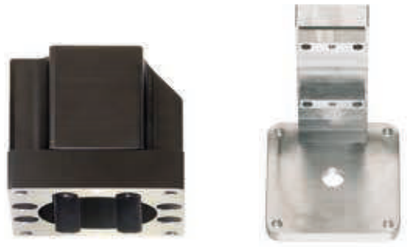
- 3 sizes
- Torque from 0.1 Nm to 1.8 Nm
- Up to 440 rpm
- Increased torque resistance due to machined flat motor shaft (D-cut)

▶ **Page 1318**

Couplings

- 3 sizes
- Vibration dampening and easy fitting
- Hole diameter 4-25 mm

▶ **Page 1322**



Motor flanges

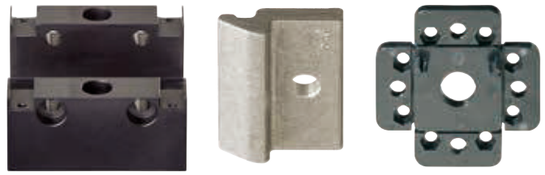
- Motor connection for drylin® linear axes
- For stepper and DC motors
- Suitable for igus® couplings

▶ **Page 1323**

Cables and initiators

- chainflex® connecting cables with straight or angled connectors
- Proximity switches: Limit and reference switches
- For drylin® linear modules and toothed belt axes

▶ **Page 1325**



Mounting accessories

- Adapter plates for linear robot structures
- Spacer for height adjustment of SHT/SLW linear modules
- Mounting material

▶ **Page 1326**

drylin® E | Stepper motors | Product overview

Various NEMA stepper motor options

Motor with stranded wires

Motors with stranded wires are the least expensive and the most common stepper motors. The connecting wires (length 30 cm) for this type directly exit from the housing and will be configured with a JST connector. They are usually installed in machines and equipment that have an additional housing or are used in clean environments.

Motor with connector

The connector interface provides a high IP65 protection level (IP: International Protection). The higher the IP rating, the better the motor is protected from the ingress of dirt and water.

Motor with connector and encoder

The encoder (for increased machine reliability) sends signals from the motor to the motor control. The encoder verifies that the required linear motion has occurred precisely.

Motor with connector, encoder and brake

The brake can hold the payload in position when the motor is not under power. This is used as a safety feature during power failures – recommended for vertically mounted systems.

All motors are delivered with a machined flat motor shaft (D-cut) for increased torque resistance.

Installation sizes of NEMA stepper motors

NEMA11: Tiny but with plenty of power

This motor has very compact dimensions. Even so, heavy loads can be moved with the suitable lead screw pitch. This motor is typically used on small test and analysis equipment and miniature adjustments.

NEMA17: Small, but lots of power

This little motor has impressive torque and high RPMs. Reliable operation at fast travel with low loads.

NEMA23: The best known stepper motor size

Versatile choice due to the high torque and rotational speed. This motor is the best choice for most applications with medium loads.

NEMA23XL: The power motor in the medium installation size

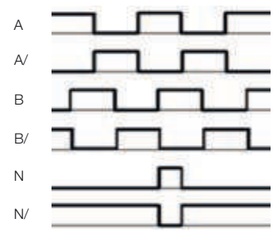
A development extension of the typical NEMA23 with nearly twice the torque. The assembly dimensions are identical to the NEMA23, allowing many applications.

NEMA34: The power pack in the large installation size

Applications with higher loads are implemented using the largest installation size. Heavy-duty format adjustments or parallel dual axis setups are among its primary duties.

Technical data

Distance over hubs		28	42	56	60	86
Motor		**NEMA11**	**NEMA17**	**NEMA23**	**NEMA23XL**	**NEMA34**
Connection dimensions	[mm]	28 x 28	42 x 42	56 x 56	60 x 60	86 x 86
Maximum voltage	[VDC]	60	60	60	60	60
Nominal voltage	[VDC]	24-48	24-48	24-48	24-48	24-48
Nominal current	[A]	1.0	1.8	4.2	4.2	6.4
Holding torque	[Nm]	0.13	0.5	2.0	3.5	5.9
Ratchet torque	[Nm]	0.004	0.022	0.068	0.075	0.210
Step angle	[°]	1.8	1.8	1.8	1.8	1.8
Resistance/phase	[Ω]	2.30 ±10%	1.75 ±10%	0.5 ±10%	0.65 ±10%	0.33 ±10%
Inductivity/phase	[mH]	1.40 ±20%	3.30 ±20%	1.90 ±20%	3.20 ±20%	3.00 ±20%
Moment of inertia - rotor	[kgcm²]	0.02	0.08	0.48	0.84	2.70
Shaft load, axial	[N]	7	7	15	15	65
Shaft load, radial	[N]	20	20	52	63	200

Encoder		
Operating voltage	[VDC]	5
Signals/rotation	[rpm]	500
Zero signal/index		Yes
Line driver		RS422 Protocol
Signal shape (Clock-wise motor rotation)	[CW]	

Technical data

Distance over hubs		28 (NEMA11)	42 (NEMA17)	56 (NEMA23)	60 (NEMA23XL)	86 (NEMA34)
Brake						
Operating voltage	[VDC]	-	24 ±10%	24 ±10%	24 ±10%	24 ±10%
Output rating	[W]	-	8	10	10	11
Holding torque	[Nm]	-	0.4	1.0	1.0	2.0
Mass moment of inertia	[kgcm²]	-	0.01	0.02	0.02	0.07

Distance over hubs		28 (NEMA11)	42 (NEMA17)	56 (NEMA23)	60 (NEMA23XL)	86 (NEMA34)
Weights						
Product weight	[kg]	0.25	0.32	1.12	1.56	3.20
With encoder	[kg]	0.27	0.34	1.14	1.58	3.30
With encoder and brake	[kg]	-	0.58	1.36	1.82	3.60

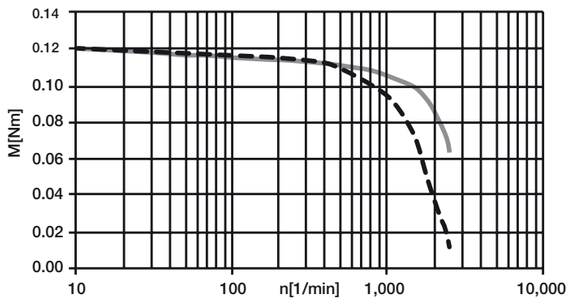
Operating data		
Ambient temperature	[°C]	-10 up to +50
Max. allowable temperature increase	[°C]	80
Insulation class		B
Air humidity (non condensing)	[%]	85
IP rating - motor housing		IP65 (shaft seal IP52, motor with stranded wires IP40)
CE conformity		EVM directive

drylin® E | Stepper motors | Characteristic curves

Characteristic curves

Flange size 28 (NEMA11)

MOT-AN-S-060-001-028-…



Flange size 42 (NEMA17)

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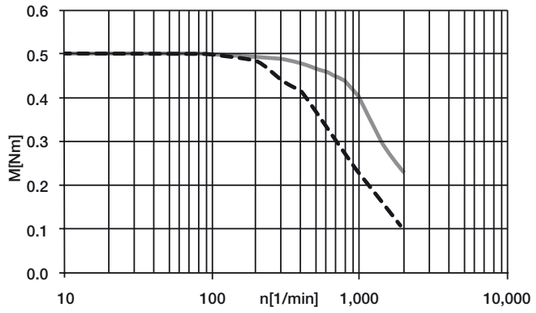
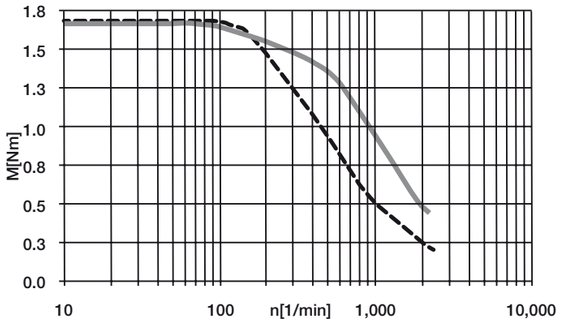


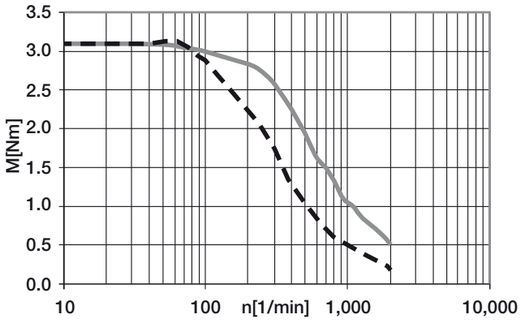
Flange size 56 (NEMA23)

MOT-AN-S-060-020-056-...



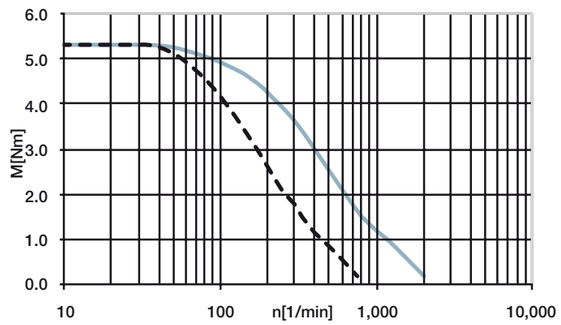
Flange size 60 (NEMA23XL)

MOT-AN-S-060-035-060-…



Flange size 86 (NEMA34)

MOT-AN-S-060-059-086-…



------- 24 VDC ——— 48 VDC

The characteristic curves are determined in quarter step mode

drylin® E | Stepper motors | Order key

Order key

MOT-AN-S-060-020-056-M-A-AAAA

- **Specification**
  - **AAAA:** Standard
  - **AAAC:** Encoder
  - **AAAD:** Encoder & brake
- **Options**
  - **A:** Without
  - **C:** Incremental encoder
  - **D Incremental encoder & brake**
- **Motor connection**
  - **M:** Metric connector
  - **L:** Stranded wires
- **Distance over hubs**
  - **028:** 28 mm (NEMA11)
  - **042:** 42 mm (NEMA17)
  - **056:** 56 mm (NEMA23)
  - **060:** 60 mm (NEMA23XL)
  - **086:** 86 mm (NEMA34)
- **Holding torque**
  - **001:** 0.1 Nm
  - **005:** 0.5 Nm
  - **020:** 2.0 Nm
  - **035:** 3.5 Nm
  - **059:** 5.9 Nm
- **Maximum voltage**
  - **060:** 60 V/DC
- **Motor**
  - **S:** Stepper motor
- **Type**
  - **AN:** Design
- **Product type**
  - **MOT:** Motor

More information ▶ www.igus.eu/drylinE

drylin® E | DC motors | Product range

DC motor with spur gear

This small DC motor can be powered directly from a power source, such as a battery. It reverses direction by changing the polarity. Typical applications are sensor/camera travel and light-duty format adjustments with drylin® lead screw or toothed belt axes.

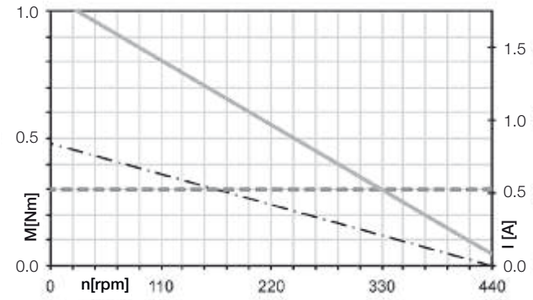
- Torque [Nm] from 0.1 Nm to 1.5 Nm
- Up to 440 RPM
- Can be operated at 12 & 24 VDC

Technical data

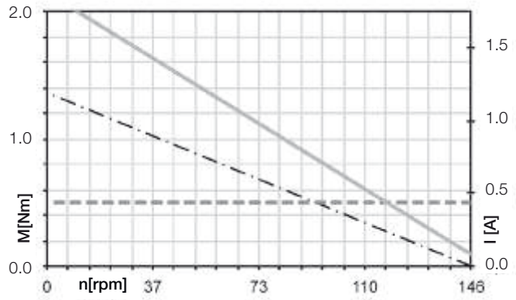
		MOT-AE-B-024-001-037-F-A-AAAA	MOT-AE-B-024-003-037-F-A-AAAA	MOT-AE-B-024-007-037-F-A-AAAA	MOT-AE-B-024-015-037-F-A-AAAA
Motor					
Maximum voltage	[VDC]	24	24	24	24
Nominal voltage	[VDC]	24	24	24	24
Nominal current	[A]	0.5	0.5	0.5	0.5
Nominal torque	[Nm]	0.1	0.3	0.7	1.5
Startup torque	[Nm]	0.3	0.5	1.0	1.8
Idling speed	[rpm]	440	146	58	22
Rated speed	[rpm]	350	112	47	17
Shaft load, axial	[N]	6.8	6.8	6.8	6.8
Shaft load, radial	[N]	9.8	9.8	9.8	9.8
Reduction gearing	[N]	10	30	75	200
Weight					
Product weight	[kg]	0.207	0.213	0.221	0.270
Operating data					
Ambient temperature	[°C]	-10 up to +60			
Max. allowable temperature increase	[°C]	60			
Air humidity (non condensing)	[%]	85			
IP rating - motor housing		IP30			
Operating mode		S2 (short-term operation)			
Motor connector assignments					
Low profile connector		Length 7 mm, width 4 mm, thickness 0.45 mm			

Characteristic curves 24 VDC

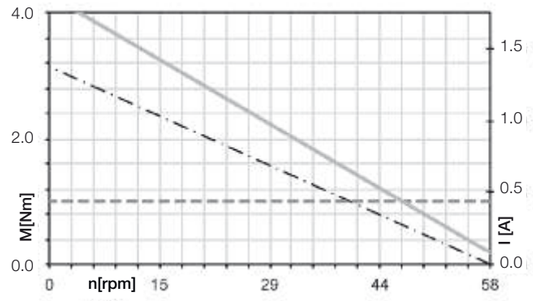
MOT-AE-B-024-001-037-F-A-AAAA



MOT-AE-B-024-003-037-F-A-AAAA



MOT-AE-B-024-007-037-F-A-AAAA



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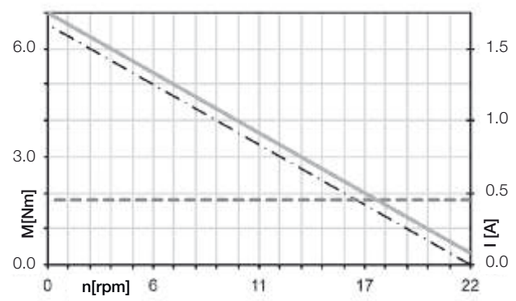
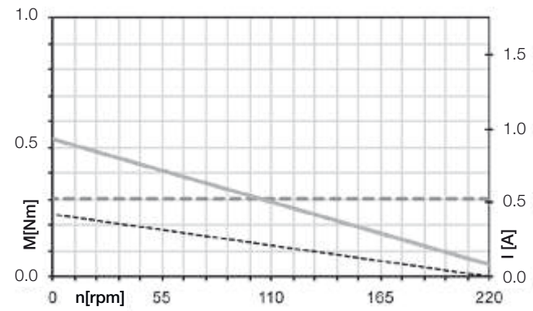


Characteristic curves 12 VDC

MOT-AE-B-024-001-037-F-A-AAAA



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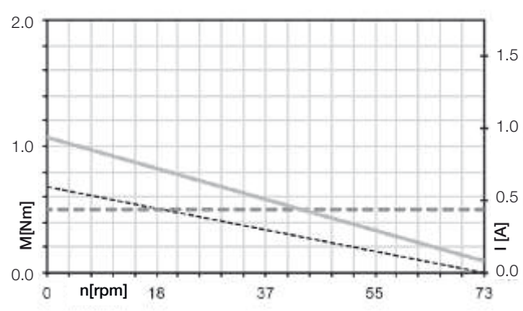

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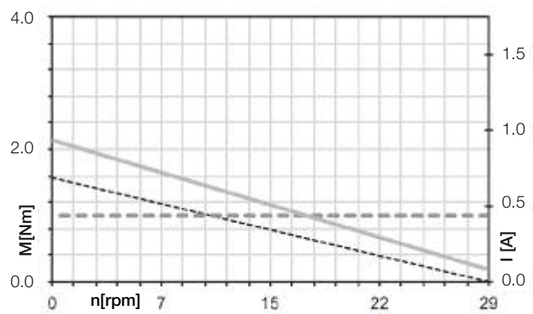

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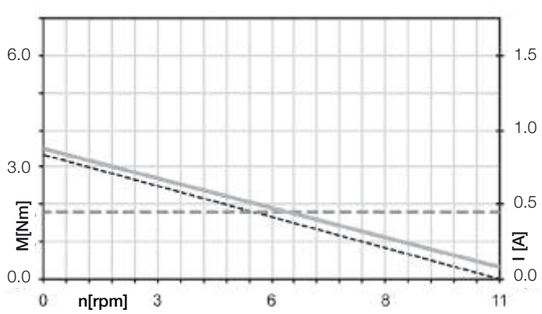
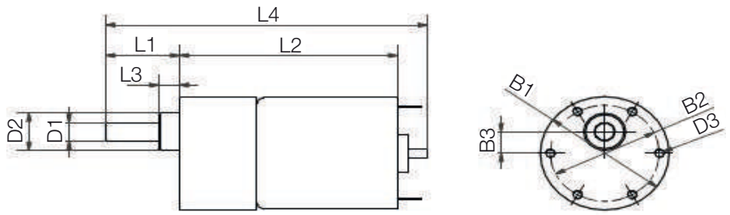


------- Torque ------- Max. continuous torque —— Motor current

drylin® E | DC motors | Product range

DC motor with spur gear



Dimensions [mm]

Part No.	B1 ±0.3	B2	B3 ±0.1	D1 -0.013	D2 ±0.025	D3	L1 ±1	L2 ±1	L3	L4
MOT-AE-B-024-001-037-F-A-AAAA	37.0	31	7	6	12	M3	21.0	59.5	6.0	92.5
MOT-AE-B-024-003-037-F-A-AAAA	37.0	31	7	6	12	M3	21.0	62.0	6.0	95
MOT-AE-B-024-007-037-F-A-AAAA	37.0	31	7	6	12	M3	21.0	64.5	6.0	97.5
MOT-AE-B-024-015-037-F-A-AAAA	37.0	31	7	6	12	M3	21.0	67.0	6.0	100.0

Order key

MOT-AE-B-024-015-037-F-A-AAAA

- **Specification**
  - **AAAA:** Standard
- **Options**
  - **A:** Without
- **Motor connection**
  - **F:** Low profile connector
- **Outer diameter**
  - **037:** 37 mm
- **Nominal torque**
  - **001:** 0.1 Nm
  - **003:** 0.3 Nm
  - **007:** 0.7 Nm
  - **015:** 1.5 Nm
- **Operating voltage**
  - **024:** 24 V/DC
- **Motor**
  - **B:** DC motor
- **Type**
  - **AE:** Design
- **Product type**
  - **MOT:** Motor

drylin® E | DC motors | Product range

Accessory: protection case for DC motors

Users benefit from protected DC motors in two ways. A motor housing prevents the ingress of particles of any kind. At the same time, the housing contains the appropriate motor connector for easy connection, with protection against occasional contact with water.

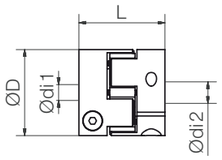
- Delivered ready to install with DC motor
- Increased operation reliability
- Quick connection with M12 connector
- For all drylin® E linear axes

Technical data

Part No.	Rated torque [Nm]	Rated speed [rpm]
MOT-DC-37-M-A-A	0.1	350
MOT-DC-37-M-A-B	0.3	112
MOT-DC-37-M-A-D	0.7	47
MOT-DC-37-M-A-H	1.5	17
MOT-DC-36-M-A-D	0.5	192
MOT-DC-42-M-A-D	1.0	252
MOT-DC-42-M-A-F	1.8	96

drylin® E | Accessories | Product range

Coupling – vibration dampening and easy fitting



The coupling connects the drive shaft of the axis to the motor. An elastic polymer insert in the centre of the coupling transfers the motor torque. This damping element compensates for radial and axial clearance.

- 20 versions from stock
- Vibration dampening and easy fitting

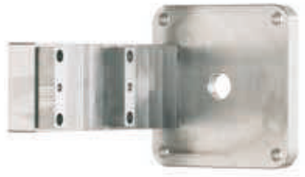
Coupling material: aluminium. TPU elastomeric centre. Shore hardness: 98 Sh A. temperature range -30 °C to +100 °C.

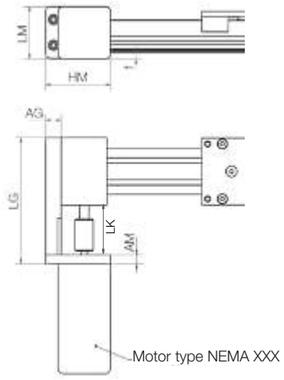
Belt drive axis	Motor	Coupling	Techn. data – coupling				
			D	di1	di2	L	Weight
				[mm]	[mm]	[mm]	[kg]
ZLW-0630-B	NEMA17	COU-AR-K-050-000-25-26-B-AAAB	25.00	5.00	□6.00	26.00	0.02
	NEMA23	COU-AR-K-063-000-25-26-B-AAAB	25.00	6.35	□6.00	26.00	0.02
	DC-Motor31	COU-AR-K-060-000-25-26-B-AAAB	25.00	6.00	□6.00	26.00	0.02
ZLW-0630-S	NEMA17	COU-AR-K-050-080-25-26-B-AAAA	25.00	5.00	8.00	26.00	0.02
	NEMA23	COU-AR-K-063-080-25-26-B-AAAA	25.00	6.35	8.00	26.00	0.02
	DC-Motor31	COU-AR-K-060-080-25-26-B-AAAA	25.00	6.00	8.00	26.00	0.02
ZLW-1040-B / ZAW	NEMA17	COU-AR-K-050-000-25-26-B-AAAB	25.00	5.00	□6.00	26.00	0.02
	NEMA23	COU-AR-K-063-000-25-26-B-AAAB	25.00	6.35	□6.00	26.00	0.02
	NEMA23XL	COU-AR-K-080-000-25-26-B-AAAB	25.00	8.00	□6.00	26.00	0.02
	DC-Motor31	COU-AR-K-060-000-25-26-B-AAAB	25.00	6.00	□6.00	26.00	0.02
ZLW-1040-S / ZAW	NEMA23	COU-AR-K-063-100-32-32-B-AAAA	32.00	6.35	10.00	32.00	0.05
	NEMA23XL	COU-AR-K-080-100-32-32-B-AAAA	32.00	8.00	10.00	32.00	0.05
	NEMA34	COU-AR-K-140-100-32-32-B-AAAA	32.00	14.00	10.00	32.00	0.05
	DC-Motor31	COU-AR-K-060-100-32-32-B-AAAA	32.00	6.00	10.00	32.00	0.05
ZLW-1660-S	NEMA 34	COU-AR-K-140-140-32-32-B-AAAA	32.00	14.00	14.00	32.00	0.05

Lead screw axis	Motor	Coupling	D	di1	di2	L	Weight
				[mm]	[mm]	[mm]	[kg]
SAW-0630 / SLW-BB-0630	NEMA17	COU-AR-K-050-080-25-26-B-AAAA	25.00	5.00	8.00	26.00	0.02
	DC-Motor31	COU-AR-K-060-080-25-26-B-AAAA	25.00	6.00	8.00	26.00	0.02
SAW-1040 / SLW-(BB)-1040	NEMA17	COU-AR-K-050-100-32-32-B-AAAA	32.00	5.00	10.00	32.00	0.05
	NEMA23	COU-AR-K-063-100-32-32-B-AAAA	32.00	6.35	10.00	32.00	0.05
	NEMA23XL	COU-AR-K-080-100-32-32-B-AAAA	32.00	8.00	10.00	32.00	0.05
	DC-Motor31	COU-AR-K-060-100-32-32-B-AAAA	32.00	6.00	10.00	32.00	0.05
SLW-(BB)-1660	NEMA23	COU-AR-K-063-140-32-32-B-AAAA	32.00	6.35	14.00	32.00	0.05
	NEMA23XL	COU-AR-K-080-140-32-32-B-AAAA	32.00	8.00	14.00	32.00	0.05
SLW-(BB)-2080	NEMA23	COU-AR-K-063-120-32-32-B-AAAA	32.00	6.35	12.00	32.00	0.05
	NEMA23XL	COU-AR-K-080-120-32-32-B-AAAA	32.00	8.00	12.00	32.00	0.05
	NEMA34	COU-AR-K-140-120-32-32-B-AAAA	32.00	14.00	12.00	32.00	0.05
SHT-(BB)-12	NEMA17	COU-AR-K-050-100-32-32-B-AAAA	32.00	5.00	10.00	32.00	0.05
	NEMA23	COU-AR-K-063-100-32-32-B-AAAA	32.00	6.35	10.00	32.00	0.05
	NEMA23XL	COU-AR-K-080-100-32-32-B-AAAA	32.00	8.00	10.00	32.00	0.05
	DC-Motor31	COU-AR-K-060-100-32-32-B-AAAA	32.00	6.00	10.00	32.00	0.05
SHT-(BB)-20	NEMA23	COU-AR-K-063-120-32-32-B-AAAA	32.00	6.35	12.00	32.00	0.05
	NEMA23XL	COU-AR-K-080-120-32-32-B-AAAA	32.00	8.00	12.00	32.00	0.05
	NEMA34	COU-AR-K-140-120-32-32-B-AAAA	32.00	14.00	12.00	32.00	0.05
SHT-(BB)-30	NEMA34	COU-AR-K-140-140-32-32-B-AAAA	32.00	14.00	14.00	32.00	0.05

drylin® E | Accessories | Product range

Motor flange for stepper and DC motors

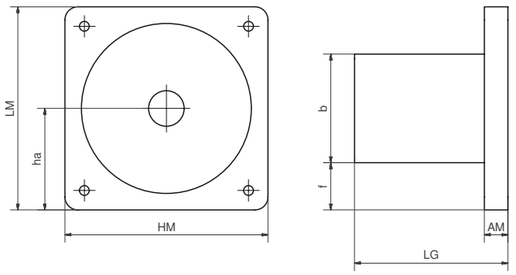




- 2 base plate lengths for each NEMA motor flange; others on request
- Suitable for drylin® coupling ▶ **Page 1322**

Dimensions [mm]

Part No.	Matching linear modules	Base plate				Motor flange		
		AG	LG	LK	AM	HM	LM	f
MF-0630-NEMA17-S	ZLW-0630	12	99.5	35.5	10	53	42	7
MF-0630-NEMA23-S	ZLW-0630	12	99.5	35.5	10	59	56	14
MF-1040-NEMA17-S	ZLW-1040	17	119	35	10	63	44	-
MF-1040-NEMA23-S	ZLW-1040	17	119	35	10	70.7	56.4	7
MF-1040-NEMA34-L	ZLW-1040	17	138	54	10	85	85	20.5
MF-1660-NEMA34-S	ZLW-1660	10	166	52	10	86	86	-
MF-2260-NEMA23-S	ZAW-1040	10	108	35	10	70.7	56.4	-
MF-0630-DC0310	ZLW-0630	12	99.5	35.5	10	53	42	7
MF-1040-DC0310	ZLW-1040	17	119	35	10	63	44	-



The motor flange, sometimes called motor enclosure, encloses and protects the coupling and provides the matching mounting dimensions for your NEMA motor.

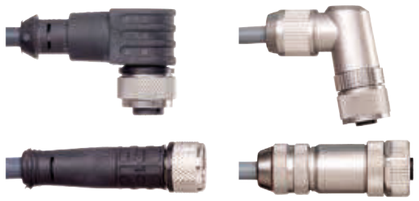
- Matches the drylin® coupling ▶ **Page 1322**

Dimensions [mm]

Part No.	Matching linear modules	LG	AM	HM	LM	b	f	ha
MF-1123-NEMA17	SAW/SLW-BB-0630	45	-	43	43	43	-	21.5
MF-2040-NEMA17	SAW/SLW-1040-AL, SHT-12	47	12	56	56	56	-	21.5
MF-2040-NEMA23-S	SAW/SLW-1040-AL, SHT-12/20	48	13	56	56	56	-	28
MF-3648-NEMA23	SHT-20, SHT-BB-20	56	13	56	56	56	-	28
MF-3648-NEMA34	SLW-1660/2080, SLW-BB-1660/2080	65	10	86	86	46	20	43
MF-3648-NEMA34-XL	SHT-30, SHT-BB-30	76	10	86	86	56	15	43
MF-1123-DC0310	SAW/SLW-BB-0630	45	-	43	43	43	-	21.5
MF-2040-DC0310	SAW/SLW-1040-AL, SHT12	47	12	43	43	43	-	21.5

drylin® E | Accessories | Product range

Connecting cables for NEMA stepper motors



The ideal complement to the drylin® E product range provides chainflex® connecting cables.

- Suitable for energy chains
- Shielded and oil resistant
- Straight and angled connectors

Flange size 42 (NEMA17), 56 (NEMA23), 60 (NEMA23XL)

Part No.	Jacket	Type	Cable length [m]	Connectors
Motor cable (overmoulded)				
MAT9043737	TPE	CF9-CF.INI	3.0	straight
MAT9043738	TPE	CF9-CF.INI	5.0	straight
MAT9043740	TPE	CF9-CF.INI	10.0	straight
MAT9043742	TPE	CF9-CF.INI	3.0	angled
MAT9043743	TPE	CF9-CF.INI	5.0	angled
MAT9043745	TPE	CF9-CF.INI	10.0	angled
Encoder (harnessed)				
MAT90432594-3	PVC	CF240	3.0	straight
MAT90432594-5	PVC	CF240	5.0	straight
MAT90432594-10	PVC	CF240	10.0	straight
MAT90436430-3	PVC	CF240	3.0	angled
MAT90436430-5	PVC	CF240	5.0	angled
MAT90436430-10	PVC	CF240	10.0	angled

Flange size 86 (NEMA34)

Part No.	Jacket	Type	Cable length [m]	Connectors
Motor cable (overmoulded)				
MAT90439520-3	PUR	CF78.UL	3.0	straight
MAT90439520-5	PUR	CF78.UL	5.0	straight
MAT90439520-10	PUR	CF78.UL	10.0	straight
Encoder (harnessed)				
MAT90439519-3	PVC	CF211	3.0	straight
MAT90439519-5	PVC	CF211	5.0	straight
MAT90439519-10	PVC	CF211	10.0	straight

Flange size 42 (NEMA17), 56 (NEMA23), 60 (NEMA23XL)

Part No.	Jacket	Type	Cable length [m]	Connectors
Brake cable				
MAT9043716	TPE	CF9-CF.INI	3.0	straight
MAT9043717	TPE	CF9-CF.INI	5.0	straight
MAT9043719	TPE	CF9-CF.INI	10.0	straight
MAT9043724	TPE	CF9-CF.INI	3.0	angled
MAT9043725	TPE	CF9-CF.INI	5.0	angled
MAT9043727	TPE	CF9-CF.INI	10.0	angled

drylin® E | Accessories | Product range

Proximity switches – limit and reference switches

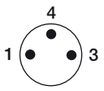
The compact and easy assembly of the proximity switches represent a logical extension of the kit approach for the drylin® E range. The plastic housing makes the proximity switches, which can be used as limit, position or reference switches, particularly light and tough.

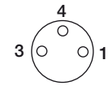
Technical data

Proximity switches	Unit	
Operating voltage	[VDC]	10...30
Max. trigger current	[mA]	100
Ambient temperature	[°C]	-25...+70
Trigger distance	[SN]	2.5
Protection class		IP67
Connectors		M8

Pin assignment

Proximity switch	M8 3 pin	Proximity switch cable	
PIN	Signal	PIN	Colour
1	+	1	Brown
3	-	3	Blue
4	Load	4	Black





20-30 mm of extra stroke length is needed for each limit reference switch.

Axis	Part No. Proximity switch kit	
	N.C./normally closed	N.O./normally open
SAW-0630	IK-0001	IK-0002
SAW-1040	IK-0001	IK-0002
SAW-1660	IK-0003	IK-0004
SLW-BB-0630	-	-
SLW-BB-1040	IK-0006	IK-0017
SLW-BB-1080	IK-0007	IK-0018
SLW-BB-1660	IK-0008	IK-0019
SLW-BB-2080	IK-0009	IK-0020
SHT-BB-12	IK-0011	IK-0022
SHT-BB-20	IK-0012	IK-0023
SHT-BB-30	-	-
SLW-1040-AL	IK-0006	IK-0017
SLW-1080	IK-0007	IK-0018
SLW-1660	IK-0008	IK-0019
SLW-2080	IK-0009	IK-0020
SHT-12	IK-0011	IK-0022
SHT-20	IK-0012	IK-0023
SHT-30	-	-
ZLW-0630-B	IK-0001	IK-0002
ZLW-0630-S	IK-0001	IK-0002
ZLW-1040-B	IK-0001	IK-0002
ZLW-1040-S	IK-0001	IK-0002
ZAW-1040-B	IK-0001	IK-0002
ZAW-1040-S	IK-0001	IK-0002
ZLW-1660-S	IK-0003	IK-0004

Matching cables are added by including the following attachments:

IK-0010-BG-3

- **Cable length:** 3m, 5m, 10m
- **Connector description**
- **BG:** Straight socket
- **Assignment number**
- **Proximity switch kit**

A proximity switch kit for SAW & ZLW includes a proximity switch, a bracket and mounting screws

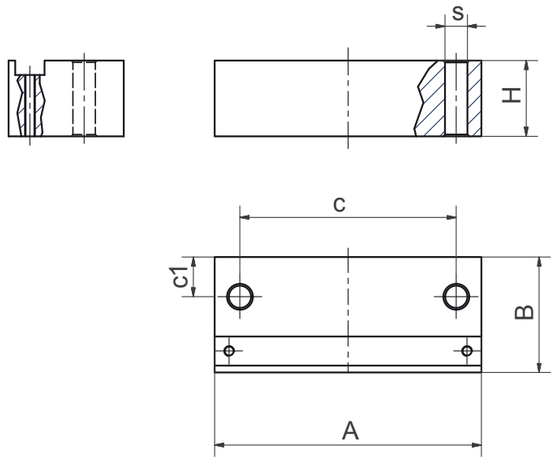
A proximity switch kit for SLW & SHT includes a proximity switch, two spacers and mounting screws.

drylin® drive technology | Accessories | Product range

Spacer – height compensation for SLW/SHT linear modules

The spacer is an aluminium standoff that brings the selected drylin® linear unit to a height that matches your NEMA stepper motor. An attachment feature for proximity switches is already integrated. Retro-fitting is also possible.

- Adapter kit contains 2 spacers for connection of a linear module



Part No.	Suitable for linear module
AK-0001	SLW-1040
AK-0002	SLW-1080
AK-0003	SLW-1660
AK-0004	SLW-2080
AK-0027	SHT-08
AK-0006	SHT-12
AK-0007	SHT-20
AK-0008	SHT-30
AK-0009	SLW-25120

Dimensions [mm]

Part No.	A	B	H	c ±0.1	c1	Ø s +0.2
AK-0001	74	32.0	21.0	60	11.0	6.2
AK-0002	108	32.0	21.0	94	11.0	6.2
AK-0003	104 -0.2	35.0	24.5	84	12.5	8.1
AK-0004	134	38.0	20.0	126	14.0	9.0
AK-0027	65	25.5	13.0	52	7.75	5.5
AK-0006	85	40.0	17.5	70	15.0	6.2
AK-0007	130	46.0	22.0	108	18.0	10.5
AK-0008	180	60.0	10.0	150 ±0.2	25.0	13.5
AK-0009	200	45.0	16.0	173 ±0.2	17.5	13.5

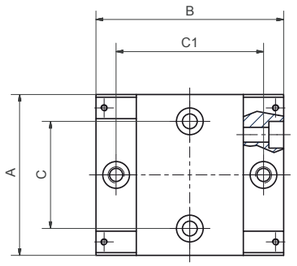
drylin® drive technology accessories

drylin® drive technology | Accessories | Product range

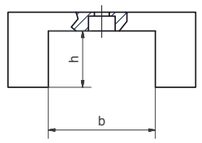
Mounting bracket for SAW linear modules and ZLW toothed belt axes

For the assembly of drylin® ZLW toothed belt axes

- Available for drylin® WSX/SAW(C)/ZLW Sizes 0630/1040/1080/1660
- Material: anodised aluminium
- Connection options: T-slots profile, linear axis/ initiators
- Freely positionable
- Quick assembly without bores



Part No.	Rail profile	Suitable for Linear module	Belt drive axis
ZSY-063009	WSX-06-30	SAW(C)-0630	ZLW-0630
ZSY-104024	WSX-10-40	SAW(C)-1040	ZLW-1040
ZSY-108005	WSX-10-80	SAW-1080	ZLW-1080
ZSY-166010	WSX-16-60	SAW-1660	ZLW-1660



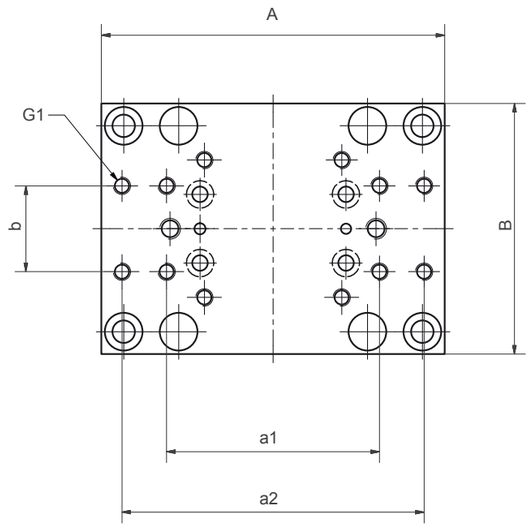
Dimensions [mm]

Part No.	A	B	H	h	b	C	C1	s	s1	s2
ZSY-063009	60	70	20	12	30	40	50	M6	Ø10	5.5
ZSY-104024	60	70	28	21	40	40	55	M6	Ø10	5.5
ZSY-108005	60	104	28	21	74	40	90	M6	Ø10	5.5
ZSY-166010	60	98	47	37	62	40	80	M8	Ø11	27

drylin® drive technology | Accessories | Product range

Adapter kit for linear robot setup

- Simple and fast multi-axes linear robot setup
- For lead screw and toothed belt axes
- energy chain® assembly preparation
- Anodised aluminium
- Space and weight reducing
- Mounting of y-axis on 2 x-axes



Mounting of y-axis on two x-axes

Part No.	x-axis	y-axis	Function linear robot setup
AK-0011	ZLW-0630, 100 mm carriage	ZLW-0630, ZLW-1040	Assembly Y axis
AK-0012	ZLW-1040, 100 mm carriage	ZLW-0630, ZLW-1040	Assembly Y axis
AK-0013	ZLW-1040, 150 mm carriage	ZLW-0630, ZLW-1040, ZLW-1080	Assembly Y axis
AK-0014	ZLW-1660, 250 mm carriage	ZLW-1040, ZLW-1080	Assembly Y axis
AK-0024	ZLW-1040, 200 mm carriage	ZLW-0630, ZLW-1040, ZLW-1080	Assembly Y axis
AK-0025	ZLW-1080, 150 mm carriage	ZLW-0630, ZLW-1040, GRW-0630	Assembly Y axis

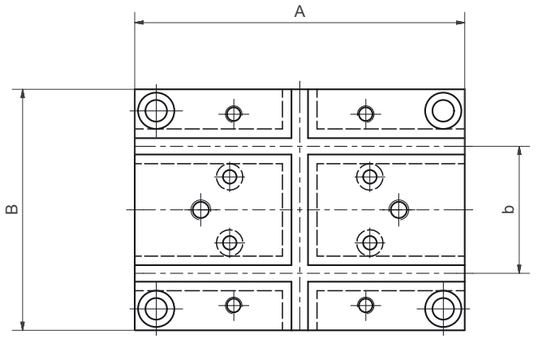
Dimensions [mm]

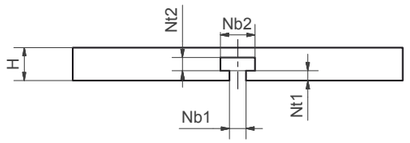
Part No.	A -0.3	B -0.3	H	a1	a2 +0.2	b
AK-0011	100	54	13	62	88	25
AK-0012	100	73	8	62	88	25
AK-0013	150	73	8	112	138	25
AK-0014	250	104	10	-	232	35
AK-0024	200	73	8	162	188	25
AK-0025	150	107	8	112	138	25

drylin® drive technology | Accessories | Product range

T-groove plates

- Anodised aluminium
- Various fastening options
- Can be retrofitted
- For XY linear robot structures
- Suitable igus® slot nuts available ▶ **Page 1330**





Variable T-slot mounting plates

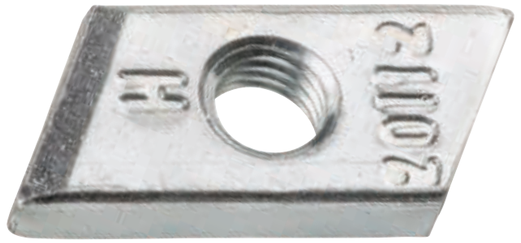
Part No.	Base axis	Axis to be mounted
AK-0021	SAW-1080, 100 mm carriage	ZLW/SAW-0630, ZLW/SAW-1040, GRW-0630
AK-0022	SAW-1040, 100 mm carriage	ZLW/SAW-0630, ZLW/SAW-1040, GRW-0630
AK-0023	SAW-1660, 150 mm carriage	ZLW/SAW-1040, ZLW/SAW-1080, ZLW/SAW-1660

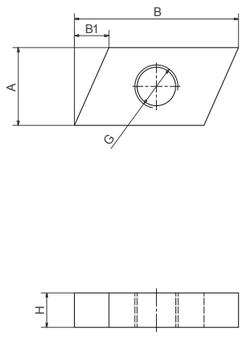
Dimensions [mm]

Part No.	A -0.3	B -0.3	H	b	Nb1 +0.2	Nb2	Nt1	Nt2 +0.2
AK-0021	100	107	10	42.5	5	10.5	3	4
AK-0022	100	73	10	38.5	5	10.5	3	4
AK-0023	150	104	10	42.5	5	10.5	3	4

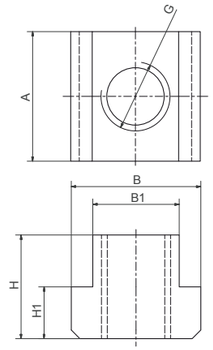
drylin® drive technology | Accessories | Product range

Slot nuts for mounting





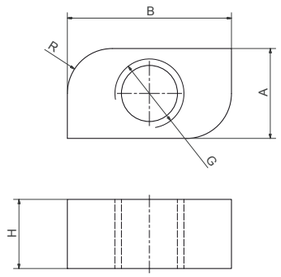
NOR-20602



NOR-20605

For the drylin® W high-profile rail, slot nuts offer variable ways of fastening sensors and initiators, for example. The robust profile rail is the basis of SAW linear modules as well as ZLW toothed belt axes and has up to 5 T-slots for mounting slot nuts. Moreover, slot nuts are used as a fastening option in the case of drylin® Q linear carriages. Roll-in slot nuts are available for retrofitting in closed T-slots.

- Variable positionable
- Ideal for drylin® E limit and reference switches
- Suitable for T-slots of the drylin® WSX high-profile rail
- Secure retention
- Can be retrofitted



NOR-20613

Part No.	Suitable for Rail profile	Suitable for Linear module/toothed belt axis
NOR-20602	WSX-06-30	SAW-0630, SAWC-0630, ZLW-0630
NOR-20602	WSX-10-40	SAW-1040, SAWC-1040, ZLW-1040
NOR-20602	WSX-10-80	SAW-1080, ZLW-1080
NOR-20602	AWMQ-12/20	QWE-01-12, QWE-01-20
NOR-20602	WSX-16-60	SAW-1660, ZLW-1660 (side slots)
NOR-20605	WSX-16-60	SAW-1660, ZLW-1660 (bottom slot)

Dimensions [mm]

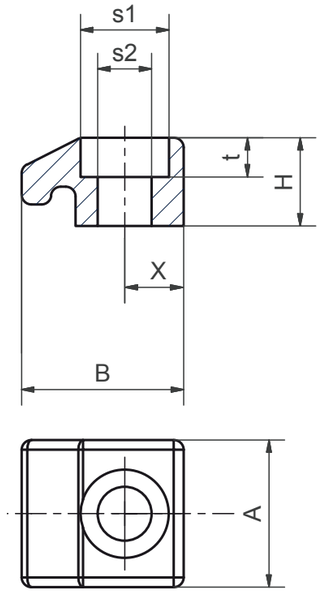
Part No.	A	B	B1	H	H1	G	R
NOR-20602	9	19	4	4	-	M5	-
NOR-20605	15	15	10	12	6	M8	-
NOR-20613 [132)]	5.2	9.5	-	4	-	M4	2.5

[132)] **Optionally available: roll-in slot nut for retrofitting**

drylin® drive technology accessories

drylin® drive technology | Accessories | Product range

Clamps for linear modules and toothed belt axes



Fixing clamps offer an easy fastening potential of the drylin® linear axes on aluminium profiles. Designed for the drylin® W high-profile rail, the clamps can be inserted into the slots of the rail and used to fix the axis in place.

- Secure mounting
- Variable positionable
- For drylin® SAW linear modules and ZLW toothed belt axes
- For drylin® WSX high-profile rails

Part No.	Suitable for toothed belt axis
ZTZ-063006	ZLW-0630
75.40 ZLW	ZLW-1040
75.40 ZLW	ZLW-1080
75.50 ZLW	ZLW-1660

Dimensions [mm]

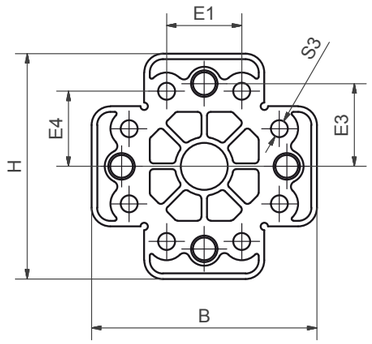
Part No.	B	A	H	X	s1	s2	t
ZTZ-063006	16.5	15	9	6	9	5.5	4
75.40 ZLW	27.65	40	8.7	8.6	-	6.4	-
75.50 ZLW	37.25	40	14.4	11	-	9	-

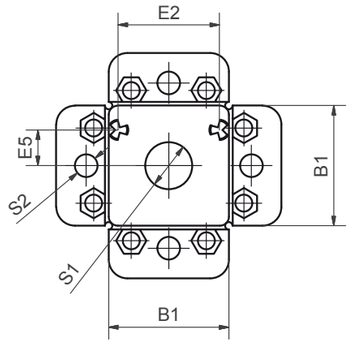
drylin® drive technology | Accessories | Product range

Adapter plate – variable arrangement of accessories

- Adapter plate for manual orientation of position indicators and hand clamps
- Suitable for drylin® linear modules of SLW/SHT/SHTP series
- Material: plastic

Installation note: Not used sections can be easily separated.



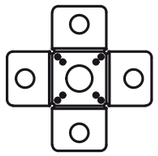


Part No.	Suitable for linear module
STZ-063008	SLW-0630/SHTP-06
STZ-104001	SLW-1040/SHT-12 SHT-20,SHTP-01/02-12
STZ-166001	SLW-1660
STZ-208001	SLW-2080
STZ-302403	SHT-30

Dimensions [mm]

Part No.	H	B	B1	T	T1	E1	E2	E3	E4	E5	S1	S2	S3	S4
STZ-063008	48	48	18	8	5	-	14,4/11[106)]	18	-	7.2/5.5	8.5	6	-	ø1.5
STZ-104001	60	60	32	16	6	20	27	22	20	9.5	12.5	6	4.5	M6
STZ-166001	60	71	32	20	6	20	58	22	20	4.5	14.5	6	4.5	ø11
STZ-208001	60	71	32	16	6	20	58	22	20	13	14.5	6	4.5	M10
STZ-302403	60	60	32	16	6	20	27	22	20	9.5	14.5	6	4.5	M6

[106)] Adapter plate with 8 pins

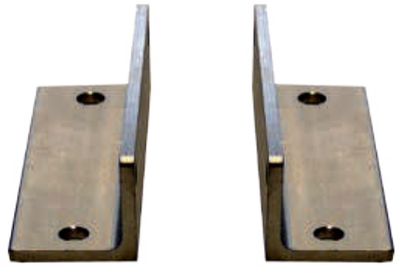


Position indicators and lead screw clamps available ▶ Page 1308

drylin® drive technology accessories

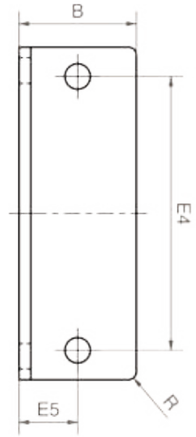
drylin® drive technology | Accessories | Product range

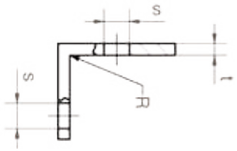
Stainless steel angle kit for SHT XZ structure

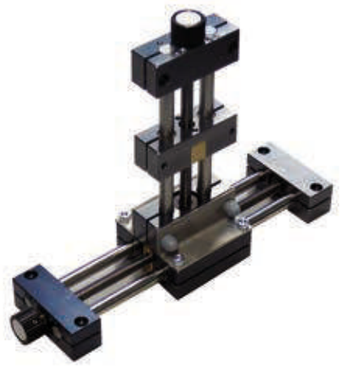


drylin® SHT-WS is an angle kit for the SHT linear modules series. Stainless steel angle brackets make any combination possible.

- 2 different sizes
- Can be combined with all drylin® linear modules series SHT/SHTC/SHTS with sizes 12 and 20





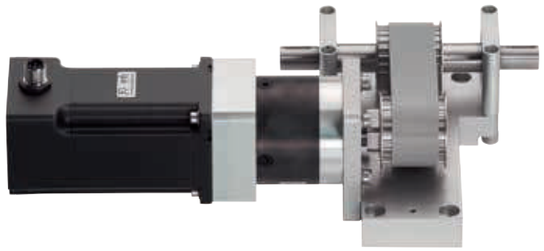


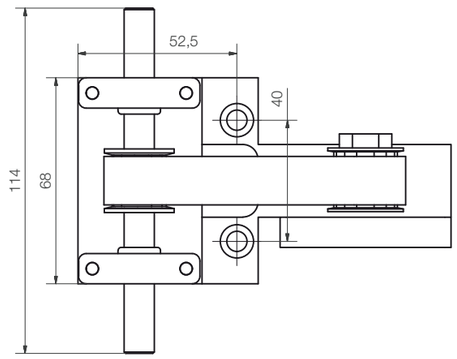
Dimensions [mm]

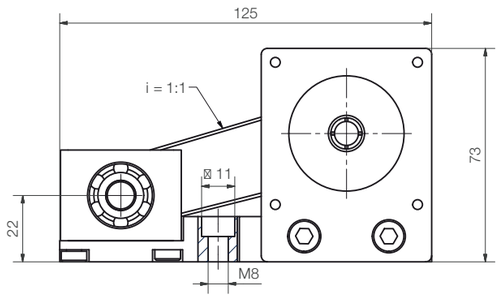
Part No.	A	H	B	E2	E3	E4	E5	s	t
SHT-WS-12	85	26.5	30	73	20.5	70	15	6.5	3
SHT-WS-20	130	36	35	108	18	115	35	8.5	5

drylin® drive technology | Accessories | Product range

Linear robot drives







- Connection of NEMA stepper motors in linear robot structures
- Space-saving
- More safety due to encoder and brake

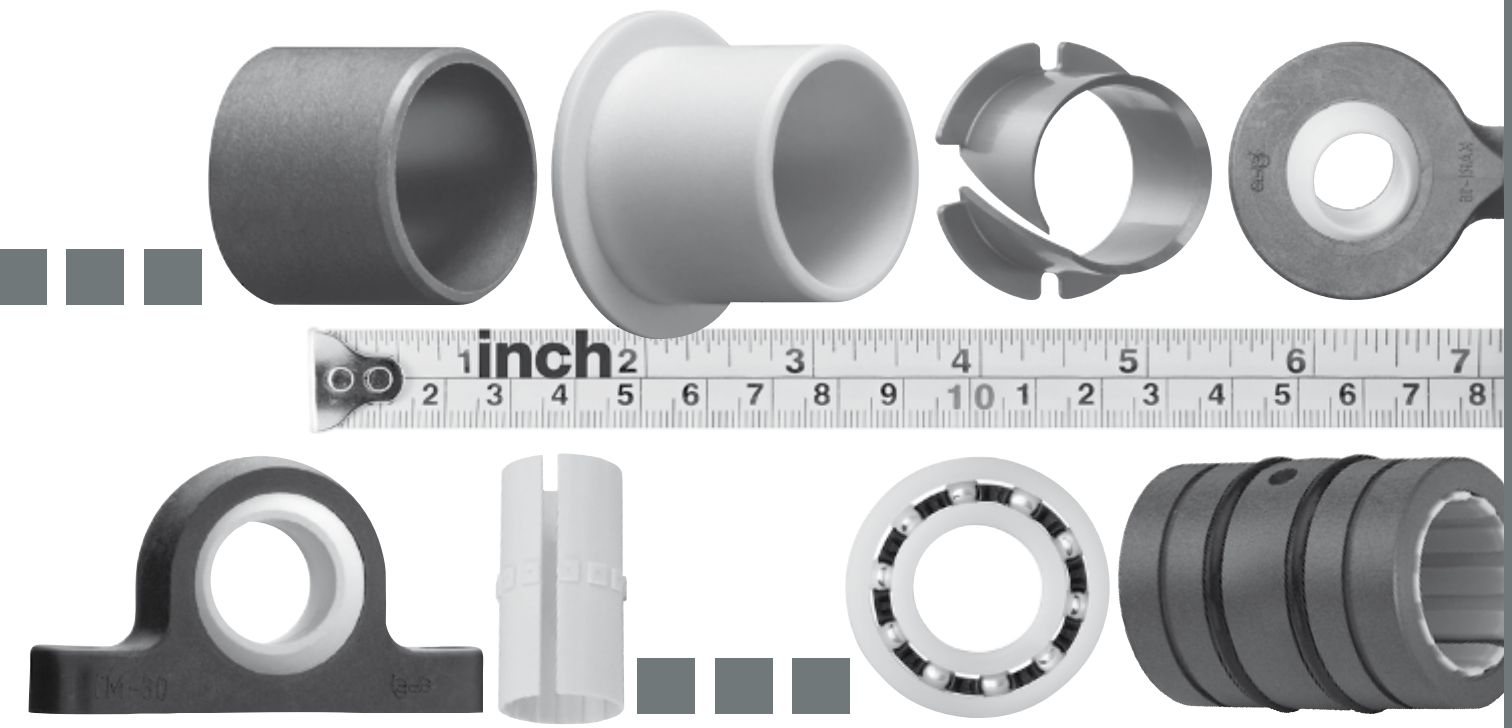
Dimensions [mm]

Part No.	Installation size	Motor	Design
GD-0001	1	NEMA23	Stranded wire
GD-0002	1	NEMA23	Connectors
GD-0003	1	NEMA23	Encoder
GD-0004	1	NEMA23	Encoder and brake
GD-0005	1	NEMA23XL	Stranded wire
GD-0006	1	NEMA23XL	Connectors
GD-0007	1	NEMA23XL	Encoder
GD-0008	1	NEMA23XL	Encoder and brake

My sketches

inch...

Catalogue products in imperial sizes



...plastics

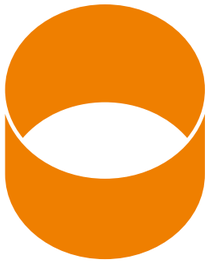
Imperial product range | Index

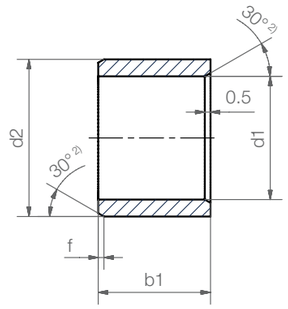
Imperial product range | Index

imperial product range

Imperial product range | Standards overview

Sleeve bearing (Form S)





2) Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the d1

d1 [imperial]	f [imperial]
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

Order key

Type	Dimensions [imperial]					
☐ S	I	-02	03	-03		
iglidur® material	Form S	Imperial	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 low-priced outdoor all-rounder
J	The versatile endurance runner
W(300)	The classic endurance runner up to 30 MPa
J3	The new endurance runner: specialist for pivoting and pulsating loads
J350	Endurance runner with high dimensional stability at high temperature
X	The chemical and temperature specialist
Z	Extremely long service life under extreme conditions
H1	Endurance runner with high media resistance
H370	Extremely 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

imperial iglidur® standards

Dimensions [imperial]

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

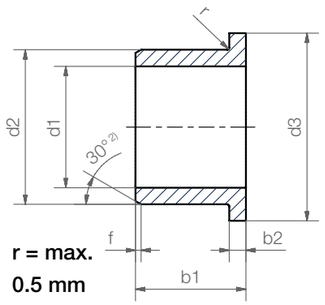
Dimensions [imperial]

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 1/4	3/4	☐SI-1820-12
1 1/8	1 1/4	1	☐SI-1820-16
1 1/8	1 1/4	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 bearing (Form F)



[2] Thickness < 1 mm: chamfer = 20°

Chamfer in relation to the d1

d1 [imperial]	f [imperial]
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

Order key

Type	Dimensions [imperial]				
☐ F	I	-02	03	-03	
iglidur® material	Form F	Imperial	Inner-Ø d1	Outer-Ø d2	Length b1

Choose the suitable material and dimensions for your application

Dimensions according to ISO 3547-1

Dimensions [imperial]

d1	d2	d3 d13	b1 h13	b2 –0.14	Part No.
1/8	3/16	3/16	312	32	☐FI-0203-03
3/16	1/4	1/4	375	32	☐FI-0304-04
1/4	5/16	3/8	430	32	☐FI-0405-06
1/4	5/16	1/2	500	32	☐FI-0405-08
5/16	3/8	1/4	0.50	32	☐FI-0506-04
5/16	3/8	3/8	500	32	☐FI-0506-06
5/16	3/8	1/2	500	32	☐FI-0506-08
3/8	15/32	1/4	687	46	☐FI-0607-04
3/8	15/32	3/8	687	46	☐FI-0607-06
3/8	15/32	1/2	687	46	☐FI-0607-08
3/8	15/32	3/4	687	46	☐FI-0607-12
7/16	17/32	1/2	750	46	☐FI-0708-08
1/2	19/32	1/4	875	46	☐FI-0809-04
1/2	19/32	3/8	875	46	☐FI-0809-06
1/2	19/32	1/2	875	46	☐FI-0809-08
1/2	19/32	3/4	875	46	☐FI-0809-12
1/2	19/32	1	875	46	☐FI-0809-16
5/8	23/32	1/2	937	46	☐FI-1011-08

imperial iglidur® standards

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 low-priced outdoor all-rounder
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J350	Endurance runner with high dimensional stability at high temperature
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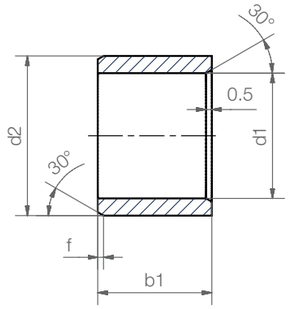
Z	Extremely long service life under extreme conditions
H1	Endurance runner with high media resistance
H370	Extremely long service life under water
A181	The universal bearing for food contact
A350	The endurance runner at higher temperatures in the food sector
A500	The media and temperature specialist in the food sector
Q2	The durable heavy duty bearing

Dimensions [imperial]

d1	d2	d3 d13	b1 h13	b2 –0.14	Part No.
5/8	23/32	3/4	937	46	☐FI-1011-12
5/8	23/32	1	937	46	☐FI-1011-16
3/4	7/8	1/2	1,125	62	☐FI-1214-08
3/4	7/8	3/4	1,125	62	☐FI-1214-12
3/4	7/8	1	1,125	62	☐FI-1214-16
7/8	1	1/2	1,250	62	☐FI-1416-08
7/8	1	3/4	1,250	62	☐FI-1416-12
7/8	1	1	1,250	62	☐FI-1416-16
1	1 1/8	1/2	1,375	62	☐FI-1618-08
1	1 1/8	3/4	1,375	62	☐FI-1618-12
1	1 1/8	1	1,375	62	☐FI-1618-16
1 1/4	1 13/32	1	1,687	78	☐FI-2022-16
1 1/4	1 13/32	1 1/4	1,687	78	☐FI-2022-20
1 1/2	1 21/32	1	2,000	78	☐FI-2426-16
1 1/2	1 21/32	1 1/2	2,000	78	☐FI-2426-24
1 3/4	1 15/16	2	2,375	93	☐FI-2831-32
2	2 3/16	2	2,625	93	☐FI-3235-32

Sleeve bearings

Image exemplary



Chamfer in relation to the d1

d1 [imperial]	f [imperial]
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

iglidur® A181 Chapter ▶ Page 325

d1	d2	b1	d1[3]		Housing bore		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**

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d1	d2	b1	d1[3]		Housing bore		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 1/4	3/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**A181SI-1820-12**
1 1/8	1 1/4	1	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**A181SI-1820-16**
1 1/8	1 1/4	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	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	**A181SI-3033-16**
1 7/8	2 1/16	2	1.8747	1.8786	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 bore		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1/8	1/4	1/4	.1280	.1262	.2515	.2510	.1250	.1241	**A200SI-0204-04**
3/16	5/16	1/4	.1905	.1887	.3140	.3135	.1875	.1866	**A200SI-0305-04**
1/4	3/8	1/4	.2539	.2516	.3765	.3760	.2500	.2491	**A200SI-0406-04**
1/4	3/8	3/8	.2539	.2516	.3765	.3760	.2500	.2491	**A200SI-0406-06**
1/4	3/8	1/2	.2539	.2516	.3765	.3760	.2500	.2491	**A200SI-0406-08**
5/16	15/32	1/2	.3164	.3141	.4390	.4385	.3125	.3116	**A200SI-0507-08**
3/8	1/2	1/4	.3789	.3766	.5015	.5010	.3750	.3741	**A200SI-0608-04**
3/8	1/2	1/2	.3789	.3766	.5015	.5010	.3750	.3741	**A200SI-0608-08**
1/2	5/8	1/2	.5047	.5020	.6260	.6250	.5000	.4990	**A200SI-0810-08**
1/2	5/8	3/4	.5047	.5020	.6260	.6250	.5000	.4990	**A200SI-0810-12**
5/8	13/16	5/16	.6297	.6270	.8135	.8125	.6250	.6240	**A200SI-1013-05**
5/8	13/16	3/4	.6297	.6270	.8135	.8125	.6250	.6240	**A200SI-1013-12**
3/4	1	3/4	.7559	.7525	1.0010	1.0000	.7500	.7490	**A200SI-1216-12**
3/4	1	1	.7559	.7525	1.0010	1.0000	.7500	.7490	**A200SI-1216-16**
7/8	1 1/8	1	.8809	.8775	1.1260	1.1250	.8750	.8740	**A200SI-1418-16**
1	1 9/32	3/4	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	**A200SI-1620-12**
1	1 9/32	1	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	**A200SI-1620-16**
1 1/4	1 17/32	1	1.2600	1.2531	1.5005	1.4995	1.2500	1,249	**A200SI-2024-16**
1 1/2	1 3/4	1 1/2	1.5100	1.5032	1.7505	1.7495	1.5000	1,499	**A200SI-2428-24**

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d1	d2	b1	d1[3]		Housing bore		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 1/4	3/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**A350SI-1820-12**
1 1/8	1 1/4	1	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**A350SI-1820-16**
1 1/8	1 1/4	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 bore		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 bore		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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Imperial product range | iglidur® | Sleeve bearings

d1	d2	b1	d1[3]		Housing bore		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 1/4	3/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**A500SI-1820-12**
1 1/8	1 1/4	1	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**A500SI-1820-16**
1 1/8	1 1/4	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 bore		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 bore		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**

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d1	d2	b1	d1[3]		Housing bore		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
1 1/8	1 1/4	1	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**GSI-1820-16**
1 1/8	1 1/4	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	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	**GSI-3033-16**
1 7/8	2 1/16	2	1.8747	1.8786	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 bore		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**

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d1	d2	b1	d1[3]		Housing bore		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 1/4	3/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**H1SI-1820-12**
1 1/8	1 1/4	1	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**H1SI-1820-16**
1 1/8	1 1/4	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 bore		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 1/4	3/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**H370SI-1820-12**
1 1/8	1 1/4	1	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**H370SI-1820-16**
1 1/8	1 1/4	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**
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 bore		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	.3128	.3122	.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**

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d1	d2	b1	d1[3]		Housing bore		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 1/4	3/4	1.1288	1.2808	1.2818	1.2808	1.1238	1.1226	**JSI-1820-12**
1 1/8	1 1/4	1	1.1288	1.2808	1.2818	1.2808	1.1238	1.1226	**JSI-1820-16**
1 1/8	1 1/4	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**

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d1	d2	b1	d1[3]		Housing bore		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	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	**JSI-3033-16**
1 7/8	2 1/16	2	1.8747	1.8786	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 bore		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**

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d1	d2	b1	d1[3]		Housing bore		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 1/4	3/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**J3SI-1820-12**
1 1/8	1 1/4	1	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**J3SI-1820-16**
1 1/8	1 1/4	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	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	**J3SI-3033-16**
1 7/8	2 1/16	2	1.8747	1.8786	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 bore		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**

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d1	d2	b1	d1[3]		Housing bore		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 1/4	3/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**J350SI-1820-12**
1 1/8	1 1/4	1	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**J350SI-1820-16**
1 1/8	1 1/4	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 bore		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**

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d1	d2	b1	d1[3]		Housing bore		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**

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d1	d2	b1	d1[3]		Housing bore		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**

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d1	d2	b1	d1[3]		Housing bore		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 bore		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**

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imperial iglidur® form S

d1	d2	b1	d1[3]		Housing bore		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 1/4	3/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**PSI-1820-12**
1 1/8	1 1/4	1	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**PSI-1820-16**
1 1/8	1 1/4	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	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	**PSI-3033-16**
1 7/8	2 1/16	2	1.8747	1.8786	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 bore		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**

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d1	d2	b1	d1[3]		Housing bore		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 1/4	3/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**P210SI-1820-12**
1 1/8	1 1/4	1	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**P210SI-1820-16**
1 1/8	1 1/4	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	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	**P210SI-3033-16**
1 7/8	2 1/16	2	1.8747	1.8786	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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d1	d2	b1	d1[3]		Housing bore		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 bore		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**

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d1	d2	b1	d1[3]		Housing bore		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 1/4	3/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**Q2SI-1820-12**
1 1/8	1 1/4	1	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**Q2SI-1820-16**
1 1/8	1 1/4	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	1.5005	1.4995	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	1.8747	1.8786	2.0633	2.0621	1.8737	1.8721	**Q2SI-3033-16**
1 7/8	2 1/16	2	1.8747	1.8786	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 bore		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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d1	d2	b1	d1[3]		Housing bore		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 1/4	3/4	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**WSI-1820-12**
1 1/8	1 1/4	1	1.1288	1.1254	1.2818	1.2808	1.1238	1.1226	**WSI-1820-16**
1 1/8	1 1/4	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	1.8747	1.8786	2.0621	2.0633	1.8721	1.8737	**WSI-3033-16**
1 7/8	2 1/16	2	1.8747	1.8786	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**

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imperial iglidur® form S

d1	d2	b1	d1[3]		Housing bore		Shaft size		Part No.
			max.	min.	max.	min.	max.	min.	
2 1/4	2 7/16	2	2.2577	2.2531	2.4377	2.4365	2.2507	2.2489	**WSI-3639-32**

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d1	d2	b1	d1[3]		Housing bore		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**

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d1	d2	b1	d1[3]		Housing bore		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**

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d1	d2	b1	d1[3]		Housing bore		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 1/4	3/4	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**ZSI-1820-12**
1 1/8	1 1/4	1	1.1279	1.1246	1.2818	1.2808	1.1238	1.1226	**ZSI-1820-16**
1 1/8	1 1/4	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**

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d1	d2	b1	d1[3]		Housing bore		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 57**

Imperial product range | iglidur® | With flange

Flange bearing

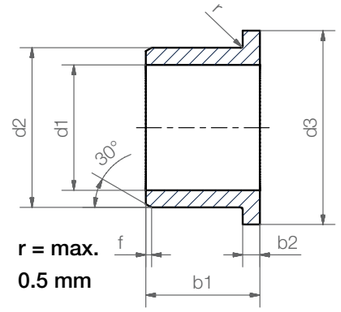

Image exemplary

Chamfer in relation to the d1

d1 [imperial]	f [imperial]
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 bore		Shaft size		Part No.
					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**

[3] **After press-fit. Testing methods ▶ Page 57**

Imperial product range | iglidur® | With flange

d1	d2	b1	d3	b2	d1[3]		Housing bore		Shaft size		Part No.
					max.	min.	max.	min.	max.	min.	
1 3/4	1 15/16	2	2.3750	.0930	1.7547	1.7507	1.9381	1.9371	1.7487	1.7471	**A181FI-2831-32**
2	2 3/16	2	2.6250	.0930	2.0057	2.0011	2.1883	2.1871	1.9981	1.9969	**A181FI-3235-32**

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d1	d2	b1	d3	b2	d1[3]		Housing bore		Shaft size		Part No.
					max.	min.	max.	min.	max.	min.	
1/8	1/4	1/4	.3600	.0470	.1280	.1262	.2515	.2510	.1250	.1241	**AFI-0204-04**
3/16	5/16	1/4	.3700	.0470	.1905	.1887	.3140	.3135	.1875	.1866	**AFI-0305-04**
1/4	3/8	1/4	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	**AFI-0406-04**
1/4	3/8	3/8	.5600	.0470	.2539	.2516	.3765	.3760	.2500	.2491	**AFI-0406-06**
5/16	15/32	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 bore		Shaft size		Part No.
					max.	min.	max.	min.	max.	min.	
1/8	3/16	3/16	.3120	.0320	.1266	.1247	.1878	.1873	.1243	.1236	**A350FI-0203-03**
3/16	1/4	1/4	.3750	.0320	.1888	.1869	.2503	.2497	.1865	.1858	**A350FI-0304-04**
1/4	5/16	3/8	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	**A350FI-0405-06**
1/4	5/16	1/2	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	**A350FI-0405-08**
5/16	3/8	1/4	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**A350FI-0506-04**
5/16	3/8	3/8	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**A350FI-0506-06**
5/16	3/8	1/2	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**A350FI-0506-08**
3/8	15/32	1/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**A350FI-0607-04**
3/8	15/32	3/8	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**A350FI-0607-06**
3/8	15/32	1/2	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**A350FI-0607-08**
3/8	15/32	3/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**A350FI-0607-12**
7/16	17/32	1/2	.7500	.0460	.4399	.4371	.5316	.5309	.4365	.4355	**A350FI-0708-08**
1/2	19/32	1/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**A350FI-0809-04**
1/2	19/32	3/8	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**A350FI-0809-06**

[3] After press-fit. Testing methods ▶ Page 57

Imperial product range | iglidur® | With flange

imperial iglidur® form F

d1	d2	b1	d3	b2	d1[3]		Housing bore		Shaft size		Part No.
					max.	min.	max.	min.	max.	min.	
1/2	19/32	1/2	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**A350FI-0809-08**
1/2	19/32	3/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**A350FI-0809-12**
1/2	19/32	1	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**A350FI-0809-16**
5/8	23/32	1/2	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**A350FI-1011-08**
5/8	23/32	3/4	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**A350FI-1011-12**
5/8	23/32	1	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**A350FI-1011-16**
3/4	7/8	1/2	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	**A350FI-1214-08**
3/4	7/8	3/4	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	**A350FI-1214-12**
3/4	7/8	1	1.1250	.0620	.7532	.7499	.8755	.8747	.7491	.7479	**A350FI-1214-16**
7/8	1	1/2	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	**A350FI-1416-08**
7/8	1	3/4	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	**A350FI-1416-12**
7/8	1	1	1.2500	.0620	.8782	.8749	1.0005	.9997	.8741	.8729	**A350FI-1416-16**
1	1 1/8	1/2	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	**A350FI-1618-08**
1	1 1/8	3/4	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	**A350FI-1618-12**
1	1 1/8	1	1.3750	.0620	1.0032	.9999	1.1255	1.1247	.9991	.9979	**A350FI-1618-16**
1 1/4	1 13/32	1	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**A350FI-2022-16**
1 1/4	1 13/32	1 1/4	1.6870	.0780	1.2537	1.2498	1.4068	1.4058	1.2488	1.2472	**A350FI-2022-20**
1 1/2	1 21/32	1	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**A350FI-2426-16**
1 1/2	1 21/32	1 1/2	2.0000	.0780	1.5037	1.4998	1.6568	1.6558	1.4988	1.4972	**A350FI-2426-24**
1 3/4	1 15/16	2	2.3750	.0930	1.7536	1.7497	1.9381	1.9371	1.7487	1.7471	**A350FI-2831-32**
2	2 3/16	2	2.6250	.0930	2.0040	1.9993	2.1883	2.1871	1.9981	1.9969	**A350FI-3235-32**

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d1	d2	b1	d3	b2	d1[3]		Housing bore		Shaft size		Part No.
					max.	min.	max.	min.	max.	min.	
1/8	3/16	3/16	.3120	.0320	.1266	.1247	.1878	.1873	.1243	.1236	**A500FI-0203-03**
3/16	1/4	1/4	.3750	.0320	.1888	.1869	.2503	.2497	.1865	.1858	**A500FI-0304-04**
1/4	5/16	3/8	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	**A500FI-0405-06**
1/4	5/16	1/2	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	**A500FI-0405-08**
5/16	3/8	1/4	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**A500FI-0506-04**
5/16	3/8	3/8	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**A500FI-0506-06**
5/16	3/8	1/2	.5620	.0320	.3143	.3120	.3753	.3747	.3115	.3106	**A500FI-0506-08**
3/8	15/32	1/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**A500FI-0607-04**
3/8	15/32	3/8	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**A500FI-0607-06**
3/8	15/32	1/2	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**A500FI-0607-08**
3/8	15/32	3/4	.6870	.0460	.3768	.3745	.4691	.4684	.3740	.3731	**A500FI-0607-12**
7/16	17/32	1/2	.7500	.0460	.4399	.4371	.5316	.5309	.4365	.4355	**A500FI-0708-08**
1/2	19/32	1/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**A500FI-0809-04**
1/2	19/32	3/8	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**A500FI-0809-06**
1/2	19/32	1/2	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**A500FI-0809-08**
1/2	19/32	3/4	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**A500FI-0809-12**
1/2	19/32	1	.8750	.0460	.5024	.4996	.5941	.5934	.4990	.4980	**A500FI-0809-16**
5/8	23/32	1/2	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**A500FI-1011-08**
5/8	23/32	3/4	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**A500FI-1011-12**
5/8	23/32	1	.9370	.0460	.6274	.6246	.7192	.7184	.6240	.6230	**A500FI-1011-16**

[3] After press-fit. Testing methods ▶ Page 57

Imperial product range | iglidur® | With flange

d1	d2	b1	d3	b2	d1[3]		Housing bore		Shaft size		Part No.
					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 bore		Shaft size		Part No.
					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**

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imperial iglidur® form F

d1	d2	b1	d3	b2	d1[3]		Housing bore		Shaft size		Part No.
					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**

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d1	d2	b1	d3	b2	d1[3]		Housing bore		Shaft size		Part No.
					Max.	Min.	max.	min.	Max.	Min.	
2 1/2	2 11/16	2	3.1250	.0930	2.5082	2.5035	2.6881	2.6869	2.5000	2.4999	**GFI-4043-32**
2 3/4	2 15/16	2	3.3750	.0930	2.7570	2.7523	2.9370	2.9358	2.7500	2.7490	**GFI-4447-32**

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d1	d2	b1	d3	b2	d1[3]		Housing bore		Shaft size		Part No.
		h13		–0.14	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**

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d1	d2	b1	d3	b2	d1[3]		Housing bore		Shaft size		Part No.
		h13		–0.14	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**

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d1	d2	b1	d3	b2	d1[3]		Housing bore		Shaft size		Part No.
					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	.3128	.3122	.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**

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d1	d2	b1	d3	b2	d1[3]		Housing bore		Shaft size		Part No.
					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 bore		Shaft size		Part No.
					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**

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d1	d2	b1	d3	b2	d1[3]		Housing bore		Shaft size		Part No.
					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 bore		Shaft size		Part No.
					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**

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imperial iglidur® form F

d1	d2	b1	d3	b2	d1[3]		Housing bore		Shaft size		Part No.
					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 bore		Shaft size		Part No.
					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**

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Imperial product range | iglidur® | With flange

d1	d2	b1	d3	b2	d1[3]		Housing bore		Shaft size		Part No.
					Max.	Min.	Max.	Min.	Max.	Min.	
5/16	3/8	1/4	.5000	.0320	.3164	.3141	.3765	.3760	.3125	.3116	**MFI-0506-04**
5/16	3/8	3/8	.5000	.0320	.3164	.3141	.3765	.3760	.3125	.3116	**MFI-0506-06**
5/16	3/8	1/2	.5000	.0320	.3164	.3141	.3765	.3760	.3125	.3116	**MFI-0506-08**
5/16	3/8	15/16	.5000	.0320	.3164	.3141	.3765	.3760	.3125	.3116	**MFI-0506-15**
5/16	7/16	3/16	.5600	.0620	.3164	.3141	.4390	.4385	.3125	.3116	**MFI-0507-03**
5/16	7/16	1/4	.5600	.0620	.3164	.3141	.4390	.4385	.3125	.3116	**MFI-0507-04**
5/16	7/16	5/16	.5600	.0620	.3164	.3141	.4390	.4385	.3125	.3116	**MFI-0507-05**
5/16	7/16	3/8	.5600	.0620	.3164	.3141	.4390	.4385	.3125	.3116	**MFI-0507-06**
5/16	7/16	1/2	.5600	.0620	.3164	.3141	.4390	.4385	.3125	.3116	**MFI-0507-08**
5/16	7/16	5/8	.5600	.0620	.3164	.3141	.4390	.4385	.3125	.3116	**MFI-0507-10**
5/16	7/16	3/4	.5600	.0620	.3164	.3141	.4390	.4385	.3125	.3116	**MFI-0507-12**
3/8	7/16	1/4	.5625	.0320	.3789	.3766	.4390	.4385	.3750	.3741	**MFI-0607-04**
3/8	7/16	3/8	.5625	.0320	.3789	.3766	.4390	.4385	.3750	.3741	**MFI-0607-06**
3/8	7/16	1/2	.5625	.0320	.3789	.3766	.4390	.4385	.3750	.3741	**MFI-0607-08**
3/8	1/2	1/8	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	**MFI-0608-02**
3/8	1/2	3/16	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	**MFI-0608-03**
3/8	1/2	1/4	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	**MFI-0608-04**
3/8	1/2	5/16	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	**MFI-0608-05**
3/8	1/2	3/8	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	**MFI-0608-06**
3/8	1/2	1/2	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	**MFI-0608-08**
3/8	1/2	5/8	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	**MFI-0608-10**
3/8	1/2	3/4	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	**MFI-0608-12**
3/8	1/2	1	.6250	.0620	.3789	.3766	.5015	.5010	.3750	.3741	**MFI-0608-16**
7/16	9/16	3/8	.6870	.0620	.4422	.4395	.5941	.5934	.4375	.4365	**MFI-0709-06**
7/16	9/16	1/2	.6870	.0620	.4422	.4395	.5941	.5934	.4375	.4365	**MFI-0709-08**
1/2	5/8	1/8	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	**MFI-0810-02**
1/2	5/8	1/4	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	**MFI-0810-04**
1/2	5/8	5/16	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	**MFI-0810-05**
1/2	5/8	3/8	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	**MFI-0810-06**
1/2	5/8	1/2	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	**MFI-0810-08**
1/2	5/8	5/8	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	**MFI-0810-10**
1/2	5/8	3/4	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	**MFI-0810-12**
1/2	5/8	1	.8750	.0620	.5047	.5020	.6260	.6250	.5000	.4990	**MFI-0810-16**
5/8	3/4	3/8	1.0000	.0620	.6297	.6270	.7510	.7500	.6250	.6240	**MFI-1012-06**
5/8	3/4	1/2	1.0000	.0620	.6297	.6270	.7510	.7500	.6250	.6240	**MFI-1012-08**
5/8	3/4	5/8	1.0000	.0620	.6297	.6270	.7510	.7500	.6250	.6240	**MFI-1012-10**
5/8	3/4	3/4	1.0000	.0620	.6297	.6270	.7510	.7500	.6250	.6240	**MFI-1012-12**
5/8	3/4	1	1.0000	.0620	.6297	.6270	.7510	.7500	.6250	.6240	**MFI-1012-16**
5/8	3/4	1 1/2	1.0000	.0620	.6297	.6270	.7510	.7500	.6250	.6240	**MFI-1012-24**
5/8	13/16	1/2	1.0630	.0620	.6297	.6270	.8135	.8125	.6250	.6240	**MFI-1013-08**
5/8	13/16	5/8	1.0630	.0620	.6297	.6270	.8135	.8125	.6250	.6240	**MFI-1013-10**
5/8	13/16	3/4	1.0630	.0620	.6297	.6270	.8135	.8125	.6250	.6240	**MFI-1013-12**
5/8	13/16	1	1.0630	.0620	.6297	.6270	.8135	.8125	.6250	.6240	**MFI-1013-16**
3/4	7/8	3/8	1.1250	.0620	.7559	.7525	.8760	.8750	.6250	.6240	**MFI-1214-06**
3/4	7/8	1/2	1.1250	.0620	.7559	.7525	.8760	.8750	.6250	.6240	**MFI-1214-08**
3/4	7/8	3/4	1.1250	.0620	.7559	.7525	.8760	.8750	.7500	.7490	**MFI-1214-12**

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Imperial product range | iglidur® | With flange

imperial iglidur® form F

d1	d2	b1	d3	b2	d1[3]		Housing bore		Shaft size		Part No.
					Max.	Min.	Max.	Min.	Max.	Min.	
3/4	7/8	1	1.1250	.0620	.7559	.7525	.8760	.8750	.7500	.7490	**MFI-1214-16**
3/4	7/8	1 1/2	1.1250	.0620	.7559	.7525	.8760	.8750	.7500	.7490	**MFI-1214-24**
3/4	1	1/2	1.2500	.1560	.7559	.7525	1.0010	1.0000	.7500	.7490	**MFI-1216-08**
3/4	1	5/8	1.2500	.1560	.7559	.7525	1.0010	1.0000	.7500	.7490	**MFI-1216-10**
3/4	1	3/4	1.2500	.1560	.7559	.7525	1.0010	1.0000	.7500	.7490	**MFI-1216-12**
3/4	1	1	1.2500	.1560	.7559	.7525	1.0010	1.0000	.7500	.7490	**MFI-1216-16**
3/4	1	1 1/2	1.2500	.1560	.7559	.7525	1.0010	1.0000	.7500	.7490	**MFI-1216-24**
7/8	1	3/4	1.2500	.0620	.8809	.8775	1.0010	1.0000	.8750	.8740	**MFI-1416-12**
7/8	1	1	1.2500	.0620	.8809	.8775	1.0010	1.0000	.8750	.8740	**MFI-1416-16**
7/8	1	1 1/2	1.2500	.0620	.8809	.8775	1.0010	1.0000	.8750	.8740	**MFI-1416-24**
7/8	1 1/8	1/2	1.3750	.1560	.8809	.8775	1.1260	1.1250	.8750	.8740	**MFI-1418-08**
7/8	1 1/8	3/4	1.3750	.1560	.8809	.8775	1.1260	1.1250	.8750	.8740	**MFI-1418-12**
7/8	1 1/8	1	1.3750	.1560	.8809	.8775	1.1260	1.1250	.8750	.8740	**MFI-1418-16**
7/8	1 1/8	1 1/2	1.3750	.1560	.8809	.8775	1.1260	1.1250	.8750	.8740	**MFI-1418-24**
1	1 1/8	3/16	1.3750	.0620	1.0059	1.0025	1.1260	1.1250	1.0000	.9990	**MFI-1618-03**
1	1 1/8	3/4	1.3750	.0620	1.0059	1.0025	1.1260	1.1250	1.0000	.9990	**MFI-1618-12**
1	1 1/8	1	1.3750	.0620	1.0059	1.0025	1.1260	1.1250	1.0000	.9990	**MFI-1618-16**
1	1 1/8	1 1/2	1.3750	.0620	1.0059	1.0025	1.1260	1.1250	1.0000	.9990	**MFI-1618-24**
1	1 1/4	1/2	1.5000	.1880	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	**MFI-1620-08**
1	1 1/4	5/8	1.5000	.1880	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	**MFI-1620-10**
1	1 1/4	3/4	1.5000	.1880	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	**MFI-1620-12**
1	1 1/4	1	1.5000	.1880	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	**MFI-1620-16**
1	1 1/4	1 1/2	1.5000	.1880	1.0059	1.0025	1.2510	1.2500	1.0000	.9990	**MFI-1620-24**
1 1/4	1 1/2	7/16	1.7500	.2000	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	**MFI-2024-07**
1 1/4	1 1/2	3/4	1.7500	.2000	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	**MFI-2024-12**
1 1/4	1 1/2	1	1.7500	.2000	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	**MFI-2024-16**
1 1/4	1 1/2	1 1/2	1.7500	.2000	1.2600	1.2531	1.5005	1.4995	1.2500	1.2490	**MFI-2024-24**
1 3/8	1 5/8	3/4	1.8750	.1250	1.3850	1.3182	1.6255	1.6245	1.3750	1.3740	**MFI-2226-12**
1 3/8	1 5/8	1	1.8750	.1250	1.3850	1.3182	1.6255	1.6245	1.3750	1.3740	**MFI-2226-16**
1 1/2	1 3/4	3/4	2.0000	.1250	1.5100	1.5032	1.7505	1.7495	1.5000	1.4990	**MFI-2428-12**
1 1/2	1 3/4	1	2.0000	.1250	1.5100	1.5032	1.7505	1.7495	1.5000	1.4990	**MFI-2428-16**
1 1/2	1 3/4	1 1/2	2.0000	.1250	1.5100	1.5032	1.7505	1.7495	1.5000	1.4990	**MFI-2428-24**
1 5/8	1 7/8	1	2.1250	.1250	1.6350	1.6282	1.8755	1.8745	1.6250	1.6240	**MFI-2630-16**
1 3/4	2	3/4	2.2500	.1250	1.7560	1.7532	2.0005	1.9995	1.7500	1.7490	**MFI-2832-12**
1 3/4	2	1	2.2500	.1250	1.7560	1.7532	2.0005	1.9995	1.7500	1.7490	**MFI-2832-16**
1 3/4	2	1 1/2	2.2500	.1250	1.7560	1.7532	2.0005	1.9995	1.7500	1.7490	**MFI-2832-24**
2	2 1/4	1	2.5000	.1250	2.0100	2.0032	2.2550	2.2540	2.0000	1.9990	**MFI-3236-16**
2	2 1/4	1 1/2	2.5000	.1250	2.0100	2.0032	2.2550	2.2540	2.0000	1.9990	**MFI-3236-24**
2	2 1/4	2	2.5000	.1250	2.0100	2.0032	2.2550	2.2540	2.0000	1.9990	**MFI-3236-32**

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d1	d2	b1	d3	b2	d1[3]		Housing bore		Shaft size		Part No.
					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**

iglidur® P210

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d1	d2	b1	d3	b2	d1[3]		Housing bore		Shaft size		Part No.
					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**
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**

iglidur® Q

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d1	d2	b1	d3	b2	d1[3]		Housing bore		Shaft size		Part No.
					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	3/4	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 57

imperial iglidur® form F

Imperial product range | iglidur® | With flange

Imperial product range | iglidur® | With flange

d1	d2	b1	d3	b2	d1[3]		Housing bore		Shaft size		Part No.
					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**

iglidur® Q2

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d1	d2	b1	d3	b2	d1[3]		Housing bore		Shaft size		Part No.
					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 57

Imperial product range | iglidur® | With flange

imperial iglidur® form F

d1	d2	b1	d3	b2	d1[3]		Housing bore		Shaft size		Part No.
					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 bore		Shaft size		Part No.
					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**

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d1	d2	b1	d3	b2	d1[3]		Housing bore		Shaft size		Part No.
					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	7/8	1.6870	.0780	1.2548	1.2508	1.4068	1.4058	1.2488	1.2472	**WFI-2022-14**
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 bore		Shaft size		Part No.
					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**

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d1	d2	b1	d3	b2	d1[3]		Housing bore		Shaft size		Part No.
					Max.	Min.	Max.	Min.	Max.	Min.	
1/4	5/16	1/4	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.2481	**XFI-0405-04**
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**

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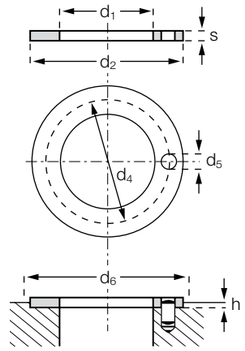
d1	d2	b1	d3	b2	d1[3]		Housing bore		Shaft size		Part No.
					Max.	Min.	Max.	Min.	Max.	Min.	
1/8	3/16	3/16	.3120	.0320	.1266	.1247	.1878	.1873	.1243	.1236	**ZFI-0203-03**
3/16	1/4	1/4	.3750	.0320	.1888	.1869	.2503	.2497	.1865	.1858	**ZFI-0304-04**
1/4	5/16	3/8	.5000	.0320	.2518	.2495	.3128	.3122	.2490	.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 57

Imperial product range | iglidur® | Thrust washers

Thrust washer

Image exemplary



iglidur® A200

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d1	d1[3]		d2		s	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

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d1	d2	s	d4	d5	h	d6	Part No.
+.010	-.010	-.0020	±.005	.015 + .005	+.008	+.005	
.5000	.8750	.0585	.6920	.0670	.0400	.8750	**GTI-0814-01**
.6250	1.1250	.0585	.8800	.0990	.0400	1,125	**GTI-1018-01**
.7500	1.2500	.0585	1,005	.0990	.0400	1,250	**GTI-1220-01**
.8750	1.5000	.0585	1,192	.1300	.0400	1,500	**GTI-1424-01**
1.0000	1.7500	.0585	1,380	.1300	.0400	1,750	**GTI-1628-01**
1.2500	2.1250	.0585	1,692	.1610	.0400	2,125	**GTI-2034-01**
1.5000	2.5000	.0585	2,005	.1920	.0400	2,500	**GTI-2440-01**
1.7500	2.7500	.0585	2,255	.1920	.0400	2,750	**GTI-2844-01**
2.0000	3.0000	.0895	2,505	.1920	.0700	3,000	**GTI-3248-01**

iglidur® M250

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d1	d1[3]		d2		s	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 57

Imperial product range | iglidur® | Thrust washers

iglidur® W300

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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

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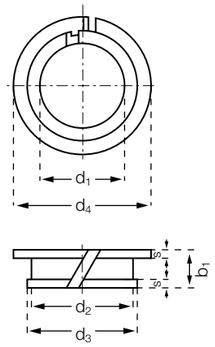
d1	d2	s	d4	d5	h	d6	Part No.
+.010	-.010	-.0020	±.005	.015 + .005	+.008	+.005	
.500	.8750	.0585	.6920	.0670	.0400	.8750	**XTI-0814-01**
.625	1.1250	.0585	.8800	.0990	.0400	1.1250	**XTI-1018-01**
.750	1.2500	.0585	1.0050	.0990	.0400	1.2500	**XTI-1220-01**
.875	1.5000	.0585	1.1920	.1300	.0400	1.5000	**XTI-1424-01**
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 57

Imperial product range | iglidur® | Other designs

Clip bearings



Clip bearings

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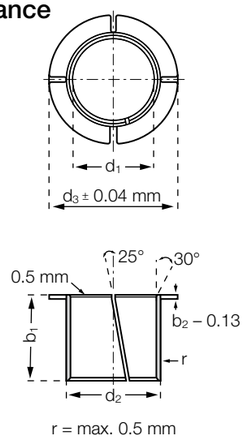
d1	d2	d3	d4	s	b1	Part No.
D11[7]				–0.10	+0.20	
3/16	0.2343	1/4	5/16	0.032	0.138	**MCI-03-01**
3/16	0.2343	1/4	5/16	0.032	0.20	**MCI-03-02**
1/4	0.3125	11/32	7/16	0.032	0.138	**MCI-04-01**
1/4	0.3125	11/32	7/16	0.032	0.20	**MCI-04-02**
5/16	0.375	13/32	1/2	0.032	0.138	**MCI-05-01**
5/16	0.375	13/32	1/2	0.032	0.20	**MCI-05-02**
3/8	0.4375	15/32	9/16	0.032	0.138	**MCI-06-01**
3/8	0.4375	15/32	9/16	0.032	0.20	**MCI-06-02**
7/16	0.50	17/32	5/8	0.032	0.138	**MCI-07-01**
7/16	0.50	17/32	5/8	0.032	0.20	**MCI-07-02**
1/2	0.5625	19/32	11/16	0.032	0.138	**MCI-08-01**
1/2	0.5625	19/32	11/16	0.032	0.20	**MCI-08-02**

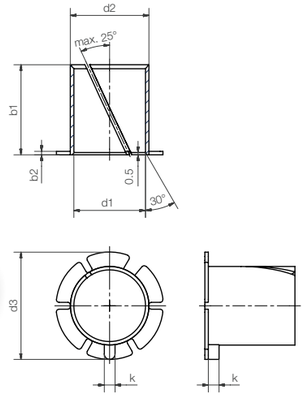
[7] d1 measurement is measured with a plug gauge after fitting into a reference housing d2 (+0.005). Please see D11 tolerances table ▶ Page 523

Imperial product range | iglidur® | Other designs

Split bearing, low clearance



Split bearing, anti-rotation feature



Split bearing, low clearance

Chapter ▶ Page 525

d1	Shaft diameter		d2	Housing bore		d3	b1	b1-Tolerance	b2	Part No.
	Min.	Max.		Min.	Max.					
3/16	.1875	.1865	0.2339	.2351	.2339	19/61	3/16	–0.016	0.0252	**MYI-03-03**
1/4	.0025	.2490	0.2965	.2979	.2965	13/32	1/4	–0.016	0.0252	**MYI-04-04**
5/16	.3125	.3115	0.3744	.3758	.3744	1/2	5/16	–0.017	0.0299	**MYI-05-05**
3/8	.3750	.3740	0.437	.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	3/4	–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	0.687	.6887	.6870	15/16	7/16	–0.018	0.0299	**MYI-10-07**
5/8	.6250	.6240	0.687	.6887	.6870	15/16	5/8	–0.018	0.0299	**MYI-10-10**
5/8	.6250	.6240	0.687	.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	0.937	.9391	.9370	1 5/16	15/32	–0.019	0.0299	**MYI-14-7.5**
7/8	.8750	.8740	0.937	.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

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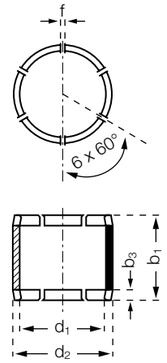
d1	Shaft diameter		d2	Housing bore		d3	b1	b1-Tolerance	b2	k	Part No.
	Min.	Max.		Min.	Max.						
1/4	.0025	.2490	0.2965	.2979	.2965	13/32	1/4	–0.016	0.0252	1/16	**MYI-04-04-K**
5/16	.3125	.3115	0.3744	.3758	.3744	1/2	5/16	–0.017	0.0299	3/32	**MYI-05-05-K**
1/2	.5000	.4990	0.5618	.5635	.5618	3/4	1/2	–0.018	0.0299	3/32	**MYI-08-08-K**
5/8	.6250	.6240	0.687	.6887	.6870	15/16	7/16	–0.018	0.0299	1/8	**MYI-10-07-K**
5/8	.6250	.6240	0.687	.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**

Imperial product range | iglidur® | Other designs

imperial iglidur® other designs

Sleeve bearing, zero clearance



JVSI – zero clearance and preloaded bearings

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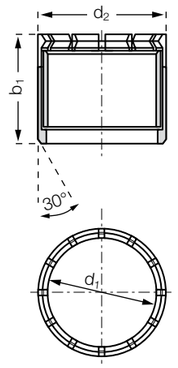
d1	d1[14]		d2	b1	b1-Tolerance	Part No.
	Max.	Min.		h13		
3/8	.3773	.3750	1/2	3/8	0.075	**JVSI-0608-06**
1/2	.5040	.5013	5/8	1/2	0.075	**JVSI-0810-08**
5/8	.6297	.6270	3/4	5/8	0.075	**JVSI-1012-10**
3/4	.7541	.7505	1 1/8	3/4	0.075	**JVSI-1214-12**
1	1.0041	1.0007	28.58	1	0.10	**JVSI-1618-16**

[14] **d1 – Measured after pressfit in housing bore. d2 H7 within the measurement plane**

Sleeve bearing, for all shafts



PEPSI – for all shaft surfaces

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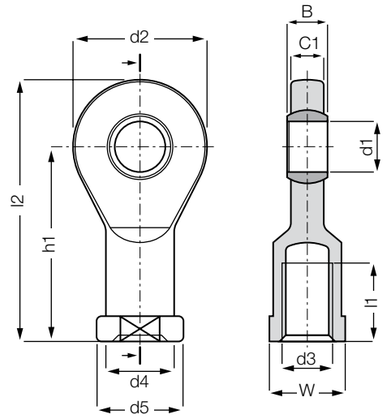
d1	d2	b1	Part No.
1/4	3/8	3/8	**PEPSI-0406-06**
3/8	1/2	1/2	**PEPSI-0608-08**
1/2	5/8	1/2	**PEPSI-0810-08**
5/8	3/4	3/4	**PEPSI-1012-12**
3/4	7/8	3/4	**PEPSI-1214-12**
1	1 1/8	1	**PEPSI-1618-16**

Rod ends with female thread: EBRI and EBLI



EBRI/EBLI Chapter ▶ Page 656

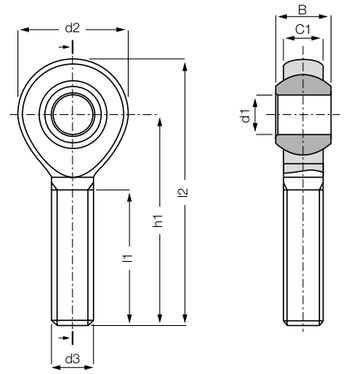
Part No.		d1	d2	d3	d4	d5	C1	B
Right-hand thread	Left-hand thread	E10						
EBRI-03	EBLI-03	0.19	0.748	10–32	0.3543	0.4331	0.1732	0.19
EBRI-04	EBLI-04	0.25	0.827	1/4–28	0.4331	0.5118	0.1732	0.25
EBRI-05	EBLI-05	0.3125	0.945	5/16–24	0.5118	0.6299	0.2362	0.3125
EBRI-06	EBLI-06	0.375	1,142	3/8–24	0.5906	0.748	0.2756	0.375
EBRI-07	EBLI-07	0.4375	1,339	7/16–20	0.7087	0.8661	0.315	0.4063
EBRI-08	EBLI-08	0.50	1,339	1/2–20	0.7087	0.8661	0.315	0.4063
EBRI-10[17)]	EBLI-10[17)]	0.625	1,693	5/8–18	–	–	0.4134	0.50
EBRI-12	EBLI-12	0.75	2,087	3/4–16	1.0630	1.3386	0.5118	0.625

Part No.		h1	l1	l2	W	Max. pivot angle
Right-hand thread	Left-hand thread	E10				
EBRI-03	EBLI-03	1.1811	0.4724	1.5551	0.35	30°
EBRI-04	EBLI-04	1.1811	0.4724	1.5945	0.43	25°
EBRI-05	EBLI-05	1.4173	0.6299	1.8898	0.55	22°
EBRI-06	EBLI-06	1.6929	0.7087	2.2638	0.67	22°
EBRI-07	EBLI-07	1.9685	0.7874	2.6378	0.75	18°
EBRI-08	EBLI-08	1.9685	0.7874	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 strength		Max. radial load		Min. thread depth	Max. torque strength	Max. torque through ball	Weight
Right-hand thread	Left-hand thread	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	Thread [imperial]	Female thread [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

Rod ends with male thread: KARI and KALI

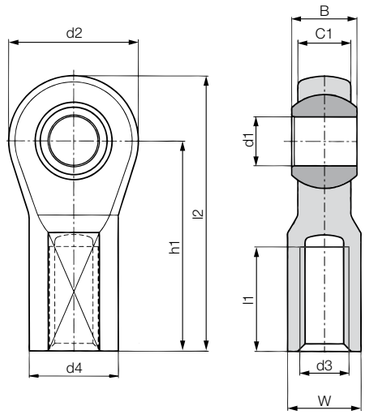


KARI/KALI Chapter ▶ Page 652

Part No.		d1	d2	d3	C1	B	h1	l1	l2	Max. pivot angle
		E10								
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 strength		Max. radial load		Min. thread depth	Max. torque strength	Max. torque through ball	Weight
		Short-term	Long-term	Short-term	Long-term		Male thread		
Right-hand thread	Left-hand thread	[N]	[N]	[N]	[N]	[imperial]	[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

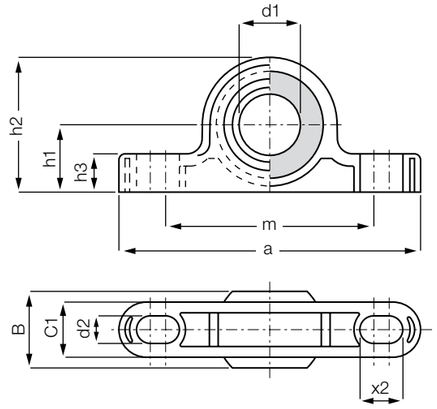
Chapter ▶ Page 646

Part No.		d1 E10	d2	d3	d4	C1	B	h1	l1	l2	W	Max. pivot angle
Right-hand thread	Left-hand thread											
KBRI-03	**KBLI-03**	.1900	.625	10-32	.406	.246	.312	1,062	.500	1,374	.312	25°
KBRI-04	**KBLI-04**	.2500	.750	1/4-28	.469	.272	.365	1,312	.687	1,687	.375	25°
KBRI-05	**KBLI-05**	.3125	.875	5/16-24	.500	.340	.437	1,375	.687	1,813	.437	25°
KBRI-06	**KBLI-06**	.3750	1.00	3/8-24	.687	.394	.500	1,625	.812	2,125	.562	22°
KBRI-07	**KBLI-07**	.4375	1,125	7/16-20	.750	.456	.562	1,812	.937	2,374	.625	22°
KBRI-08	**KBLI-08**	.5000	1,312	1/2-20	.875	.487	.625	2,125	1,062	2,781	.750	22°
KBRI-10	**KBLI-10**	.6250	1.50	5/8-18	1.00	.545	.750	2.50	1,375	3.25	.875	22°
KBRI-12	**KBLI-12**	.7500	1.75	3/4-16	1,125	.676	.875	2,875	1,562	3.75	1.00	22°
KBRI-16	**KBLI-16**	1.00	2.75	1-12	1,625	1.00	1,375	4,125	2,125	5.50	1.500[18)]	20°

[18)] Spanner flat design

Part No.		Max. static tensile strength		Max. radial load		Min. thread depth	Max. torque strength	Max. torque through ball	Weight
Right-hand thread	Left-hand thread	Short-term [N]	Long-term [N]	Short-term [N]	Long-term [N]	Thread [imperial]	Female thread [Nm]	[Nm]	[g]
KBRI-03	**KBLI-03**	900	450	300	150	.350	2	3	3.3
KBRI-04	**KBLI-04**	1,100	550	400	200	.480	5	4	5.1
KBRI-05	**KBLI-05**	1,700	850	500	250	.480	6	10	7.1
KBRI-06	**KBLI-06**	2,000	1,000	1,000	500	.568	7	15	12.6
KBRI-07	**KBLI-07**	2,300	1,150	1,200	600	.655	18	25	16.1
KBRI-08	**KBLI-08**	2,600	1,300	1,500	750	.743	23	35	26.5
KBRI-10	**KBLI-10**	4,900	2,450	1,700	850	.962	30	50	38.7
KBRI-12	**KBLI-12**	5,600	2,800	2,300	1,150	1,093	40	70	54.4
KBRI-16	**KBLI-16**	6,000	3,000	2,600	1,300	1,488	46	85	197.5

Pillow block bearing: KSTI



KSTI

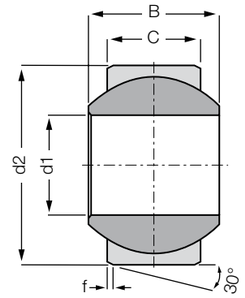
Chapter ▶ Page 686

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 strenght		Max. axial static compressive strength for longitudinal holes	Max. torque	Weight
	Short-term [N]	Long-term [N]	[N]	[Nm]	[g]
KSTI-03	550	275	300	0.6	1.7
KSTI-04	600	300	300	0.6	2.8
KSTI-05	800	400	400	0.8	4.5
KSTI-06	1,000	500	500	1.3	7.5
KSTI-07	1,100	550	600	2.5	9.7
KSTI-08	1,200	600	600	2.5	13.5
KSTI-10	2,100	1,050	800	2.5	21.5
KSTI-12	3,100	1,550	1,200	4.5	33.4
KSTI-16	5,400	2,700	1,600	10.5	85.8

The maximum torques for longitudinal holes correspond to the permissible torque of the fixing screws (fixing category 5.8).

Pressfit spherical bearing: KGLI

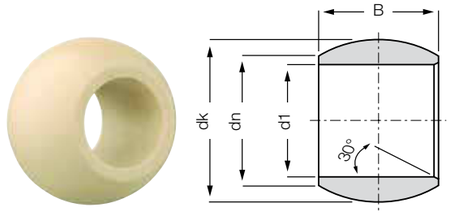


KGLI Chapter ▶ Page 714

Part No.	Max. static Load radial [N]	Max. static Load axial[29] [N]	Max. 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

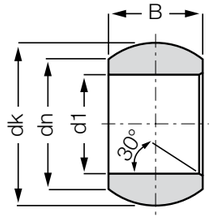
[29] The maximum static axial load is determined in a remote location hole.

Standard spherical balls: WKI and WEI



WKI Chapter ▶ Page 735

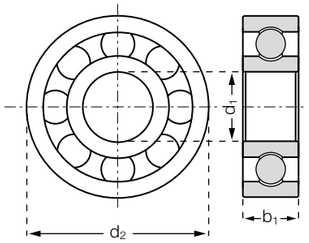
Part No.	d1 E10	dn	dK	B	Weight [g]
WKI-03	.1900	.307	.444	.312	0.6
WKI-04	.2500	.354	.516	.375	1.0
WKI-05	.3125	.447	.625	.437	1.7
WKI-06	.3750	.504	.718	.500	2.3
WKI-07	.4375	.601	.828	.562	3.5
WKI-08	.5000	.700	.938	.625	5.0
WKI-10	.6250	.838	1,125	.750	8.2
WKI-12	.7500	.978	1,312	.875	12.5
WKI-16	1.00	1,269	1.75	1,375	31.7



WEI Chapter ▶ Page 735

Part No.	d1 H10	dn	dK	B	Weight [g]
WEI-03	.1900	.354	.402	.1900	0.3
WEI-04	.2500	.314	.402	.2500	0.3
WEI-05	.3125	.415	.520	.3125	0.7
WEI-06	.3750	.506	.630	.3750	1.3
WEI-07	.4375	.581	.709	.4063	1.6
WEI-08	.5000	.581	.709	.4063	2.6
WEI-10	.6250	.802	.945	.5000	3.1
WEI-12	.7500	.951	1,138	.6250	5.9
WEI-16	1.00	1.18	1,398	.7500	9.2

Radial deep-groove ball bearings, temperature up to +80 °C



Made from xirodur® B180
PA cage, glass balls
+80 °C
–40 °C

Made from xirodur® B180
PA cage, stainless steel balls
+80 °C
–40 °C

xirodur® B180 Chapter ▶ Page 774

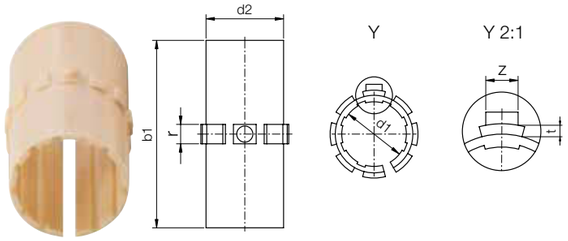
Part No.	Races	Cage	Ball ES	Ball GL	Inner-Ø (d1) JS10	Outer-Ø (d2) h9	Width b1
BB-I-0620-06-B180-10-☐[142]	B180	PA	1.4401	Glass	3/16	5/8	10/51
BB-I-0820-06-B180-10-ES	B180	PA	1.4401	–	1/4	5/8	10/51
BB-I-0824-07-B180-10-☐[142]	B180	PA	1.4401	Glass	1/4	3/4	7/32
BB-I-1228-10-B180-10-ES	B180	PA	1.4401	–	3/8	7/8	5/16
BB-I-1236-12-B180-10-☐[142]	B180	PA	1.4401	Glass	3/8	1 1/8	3/8
BB-I-1636-12-B180-10-☐[142]	B180	PA	1.4401	Glass	1/2	1 1/8	3/8
BB-I-2044-12-B180-10-☐[142]	B180	PA	1.4401	Glass	5/8	1 3/8	3/8
BB-I-2452-16-B180-10-☐[142]	B180	PA	1.4401	Glass	3/4	1 5/8	1/2
BB-I-3264-12-B180-10-☐[142]	B180	PA	1.4401	Glass	1	2	1/2

[142] For radial deep-groove ball bearings with stainless steel balls please add suffix "-ES", for glass balls add suffix "-GL".

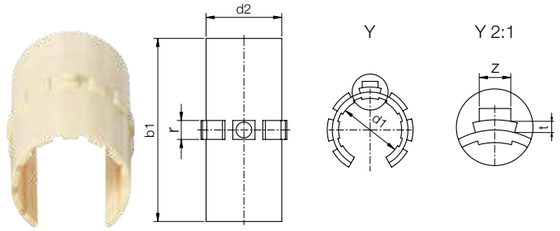
Part No.	Max. stat. bearing load axial [N]	Bearing load stat. [N]	Bearing load dyn. [N]	Max. speed [min⁻¹]	Weight ES [g]	Weight GL [g]
BB-I-0620-06-B180-ES/-GL	35	45	49	3,700	1.6	1.0
BB-I-0820-06-B180-ES	40	47	51	3,500	1.3	–
BB-I-0824-07-B180-ES/-GL	50	60	75	3,200	1.6	1.0
BB-I-1228-10-B180-ES	55	70	89	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

Imperial product range | drylin® R | Liners

Closed, long design: JUI



Open, long design: JUIO

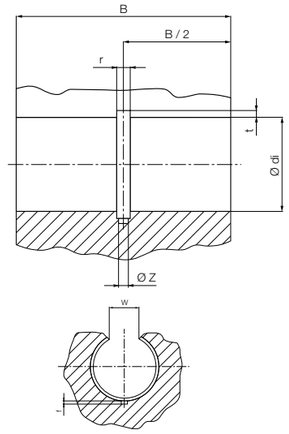


JUI-01/JUIO-01 Chapter ▶ Page 946

Part No.		Ø Shaft	Tolerance[78)]	d2	b1	r	t	z
closed	open						–0.004	–0.020
JUI-01-06	–	3/8	+0.0016 +0.0024	0.4684	0.846	0.125	0.0311	0.0866
JUI-01-08	JUIO-01-08	1/2	+0.0016 +0.0024	0.5934	1.22	0.125	0.0391	0.1024
JUI-01-10	JUIO-01-10	5/8	+0.0016 +0.0024	0.7184	1.46	0.1406	0.0391	0.1181
JUI-01-12	JUIO-01-12	3/4	+0.0016 +0.0024	0.8747	1,575	0.1875	0.0391	0.1339
JUI-01-16	JUIO-01-16	1	+0.0016 +0.0024	1.1247	2,205	0.1875	0.0391	0.1496
JUI-01-20	JUIO-01-20	1 1/4	+0.0020 +0.0032	1.4058	2,579	0.1875	0.0391	0.1496
JUI-01-24	JUIO-01-24	1 1/2	+0.0020 +0.0032	1.6558	2,953	0.25	0.0625	0.1811
JUI-01-32	JUIO-01-32	2	+0.0024 +0.0040	2.1871	3,937	0.2813	0.0625	0.228

Housing bore for liner JUI-01/JUIO-01

Part No.		di		B	W	r	t	f	z
		H7		h10	+0.008	0.002	0.004	0.002	0.008
closed	open	Min.	Max.						
JUI-01-06	–	.4680	.4684	.875	–	.1250	.031	.039	.102
JUI-01-08	JUIO-01-08	.5940	.5934	1.25	0.394	.1250	.031	.059	.122
JUI-01-10	JUIO-01-10	.7190	.7184	1.5	0.433	.1406	.031	.067	.142
JUI-01-12	JUIO-01-12	.8755	.8747	1,625	0.492	.1875	.031	.079	.142
JUI-01-16	JUIO-01-16	1.1255	1.1247	2.25	0.63	.1875	.031	.079	.161
JUI-01-20	JUIO-01-20	1.4068	1.4058	2,625	0.709	.1875	.031	.079	.161
JUI-01-24	JUIO-01-24	1.6568	1.6558	3	0.866	.2500	.051	.089	.200
JUI-01-32	JUIO-01-32	2.1881	2.1871	4	1,181	.2813	.051	.098	.240



[78)] According to igus® testing method ▶ Page 1000

Please note: Installation instructions ▶ Page 945

Part No.	d1	d2	b1	r	t	z
E7UI-01-08	1/2	0.5934	1.22	0.125	0.0391	0.1024
E7UI-01-10	5/8	0.7184	1.46	0.146	0.0391	0.1181
E7UI-01-12	3/4	0.8747	1,575	1,575	0.0391	0.1339
E7UI-01-16	1	1.1247	2,205	2,205	0.0391	0.1496
E7UI-01-20	1 1/4	1.4058	2,579	2,579	0.0391	0.1496
E7UI-01-24	1 1/2	1.6558	2,953	2,953	0.0625	0.1811
E7UI-01-32	2	2.1871	3,937	3,937	0.0625	0.228

JUI can be combined with:

RJUI-01, RJUI-03,
TJUI-01, TJUI-03

▶ Page 1405 and 1406

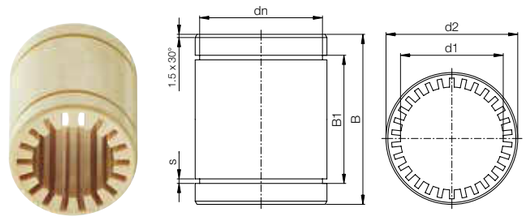
JUIO can be combined with:

OJUI-01, OJUI-03

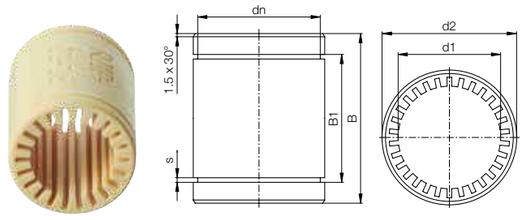
▶ Page 1404

Imperial product range | drylin® R | Solid polymer bearings

Standard design: RJI



Precise: RJIP



RJI-01/RJIP-01 Chapter ▶ Page 962

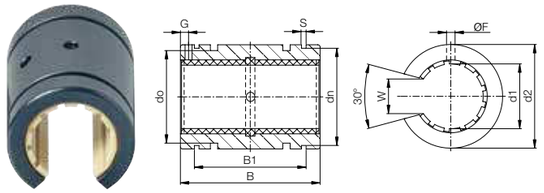
Part No.		Shaft	Tolerance[78)]	Tolerance[78)]	F max.	F max.
		Ø	bearing inner	bearing inner	dynamic[82)]	static[82)]
Standard	Precise		diameter – RJI	diameter – RJIP	P = 2.5 MPa	P = 17.5 MPa
–	RJIP-01-04	1/4	–	+ 0.00 +0.0014	180	1,267
RJI-01-06	RJIP-01-06	3/8	+0.0010 +0.0024	+ 0.00 +0.0014	265	1,855
RJI-01-08	RJIP-01-08	1/2	+0.0013 +0.0030	+ 0.00 +0.0017	505	3,535
RJI-01-10	RJIP-01-10	5/8	+0.0013 +0.0030	+ 0.00 +0.0017	755	5,285
RJI-01-12	RJIP-01-12	3/4	+0.0016 +0.0036	+ 0.00 +0.0020	982	6,877
RJI-01-16	RJIP-01-16	1	+0.0016 +0.0036	+ 0.00 +0.0020	1,815	12,705
RJI-01-20	RJIP-01-20	1 1/4	+0.0020 +0.0044	+ 0.00 +0.0024	2,645	18,515
RJI-01-24	–	1 1/2	+0.0020 +0.0044	–	3,630	25,410
RJI-01-32	–	2	+0.0024 +0.0053	–	6,452	45,167

Part No.		d1	d2	B	B1	s	dn
Standard	Precise						
–	RJIP-01-04	1/4	0.4999	0.74803	0.5188	0.0409	0.4669
RJI-01-06	RJIP-01-06	3/8	0.625	0.875	0.689	0.0410	0.587
RJI-01-08	RJIP-01-08	1/2	0.875	1.25	1.0125	0.0480	0.82
RJI-01-10	RJIP-01-10	5/8	1,125	1.50	1.0950	0.0580	1.0600
RJI-01-12	RJIP-01-12	3/4	1.25	1,625	1.25	0.0580	1,177
RJI-01-16	RJIP-01-16	1	1.5625	2.25	1,864	0.0700	1,471
RJI-01-20	RJIP-01-20	1 1/4	2.00	2,625	1,984	0.0700	1,889
RJI-01-24	–	1 1/2	2,375	3.00	2.39	0.0890	2,241
RJI-01-32	–	2	3.00	4.00	3,163	0.1050	2,839

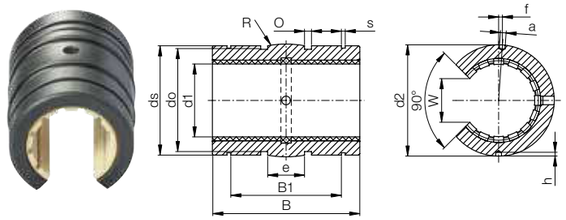
[78)] According to igus® testing method ▶ Page 1000; [82)] Design standards ▶ Page 944

Please note: Installation instructions ▶ Page 945

Open anodised aluminium adapter – version 01 (standard bearing)



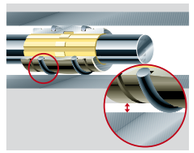
Open anodised aluminium adapter – version 03 (floating bearing)



OJUI-01/OJUI-03 Chapter ▶ Page 973

Part No.	Ø Shaft	Tolerance[78)]	d2	B	W
			h7	h10	±0.012
OJUI-01-08/-03-08	1/2	+0.0016 +0.0032	.8750/.8673	1.25/1.2461	.3940
OJUI-01-10/-03-10	5/8	+0.0016 +0.0032	1,125/1.1173	1.50/1.4961	.4330
OJUI-01-12/-03-12	3/4	+0.0016 +0.0032	1.25/1.2421	1,625/1.6173	.4920
OJUI-01-16/-03-16	1	+0.0016 +0.0032	1.5625/1.5547	2.25/2.2421	.6300
OJUI-01-20/-03-20	1 1/4	+0.0020 +0.0041	2.00/1.9881	2,625/2.6173	.7090
OJUI-01-24/-03-24	1 1/2	+0.0020 +0.0041	2,375/2.3634	3.00/2.9921	.8660
OJUI-01-32/-03-32	2	+0.0024 +0.0051	3.00/2,988	4.00/3.9921	1,181

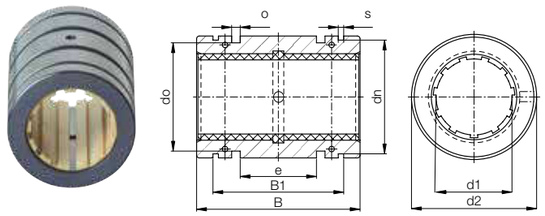
Part No.	s	dn	B1	F	G	do
		h10	H10	+0.004	+0.004	
OJUI-01-08/-03-08	.0520	.8200	.9790/.9870	.1360	.6250	.6846
OJUI-01-10/-03-10	.0620	1.0600	1,124/1,136	.1360	.1250	.9346
OJUI-01-12/-03-12	.0620	1,177	1,186/1,198	.1360	.1250	1.0590
OJUI-01-16/-03-16	.0740	1,471	1,773/1,789	.1360	.1250	1,372
OJUI-01-20/-03-20	.0740	1,889	2.0230/2.0390	.2010	.1875	1.8094
OJUI-01-24/-03-24	.0950	2,241	2.44/2,463	.2010	.1875	2,113
OJUI-01-32/-03-32	.1110	2,839	3,222/3,249	.2650	.3125	2.7378



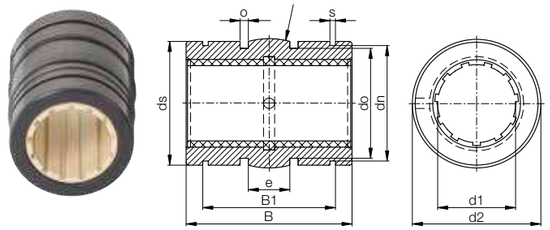
[78)] According to igus® testing method ▶ Page 1000

Please note: Installation instructions ▶ Page 945

Closed, anodised aluminium adapter – version 01 (standard bearing)



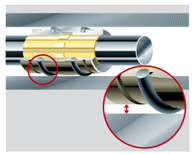
Closed, anodised aluminium adapter – version 03 (floating bearing)



RJUI-01/RJUI-03 Chapter ▶ Page 966

Part No.	Ø Shaft	Tolerance[78)]	d2	B	B1
			h7	h10	H10
RJZI-01-04[110)]/-03-04[110)]	1/4	+0.0016 +0.0032	.5000/.4921	.7500/.7460	.5190/.5270
RJUI-01-06/-03-06	3/8	+0.0016 +0.0032	.6250/.6173	.8750/.8713	.6440/.6520
RJUI-01-08/-03-08	1/2	+0.0016 +0.0032	.8750/.8673	1.25/1.2461	.9790/.9870
RJUI-01-10/-03-10	5/8	+0.0016 +0.0032	1,125/1.1173	1.50/1.4961	1,124/1,136
RJUI-01-12/-03-12	3/4	+0.0016 +0.0032	1.25/1.2421	1,625/1.6173	1,186/1,198
RJUI-01-16/-03-16	1	+0.0016 +0.0032	1.5625/1.5547	2.25/2.2421	1,773/1,789
RJUI-01-20/-03-20	1 1/4	+0.0020 +0.0041	2.00/1.9881	2,625/2.6173	2.0230/2.0390
RJUI-01-24/-03-24	1 1/2	+0.0020 +0.0041	2,375/2.3634	3.00/2.9921	2.44/2,463
RJUI-01-32/-03-32	2	+0.0024 +0.0051	3.00/2.9881	4.00/3.9921	3,222/3,249

Part No.	s	dn	ds	do	e	o
	H10	h10	h10			–0.004
RJZI-01-04[110)]/-03-04[110)]	.0410	.4670	.4803	.3990	.125	.0800
RJUI-01-06/-03-06	.0410	.5870	.6055	.5240	.243	.0800
RJUI-01-08/-03-08	.0520	.8200	.8556	.7120	.281	.1250
RJUI-01-10/-03-10	.0620	1.0600	1.1055	.9620	.312	.1250
RJUI-01-12/-03-12	.0620	1,177	1.23	1.0870	.312	.1250
RJUI-01-16/-03-16	.0740	1,471	1.5271	1,399	.500	.1250
RJUI-01-20/-03-20	.0740	1,889	1.9606	1,837	.625	.1250
RJUI-01-24/-03-24	.0950	2,241	2.3358	2,152	.650	.1620
RJUI-01-32/-03-32	.1110	2,839	2.9606	2,775	1.00	.1890

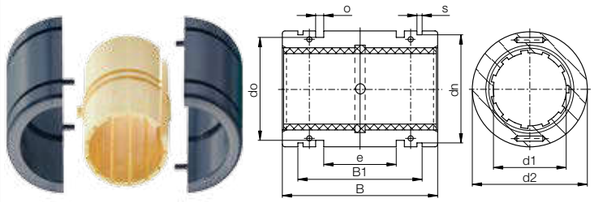


[78)] According to igus® testing method ▶ Page 1000

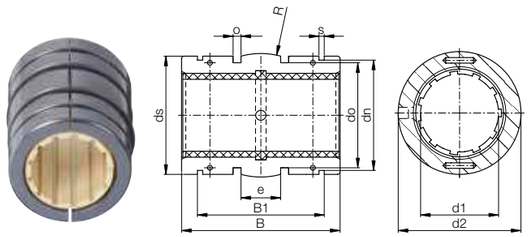
[110)] Ø < 3/8" with press-fit sleeve bearings

Please note: Installation instructions ▶ Page 945

Split aluminium adapter – version 01 (standard bearing)



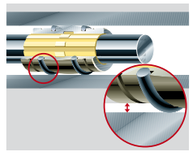
Split aluminium adapter – version 03 (floating bearing)



TJUI-01/TJUI-03 Chapter ▶ Page 971

Part No.	Ø Shaft	Tolerance[78)]	d2	B	B1
			h7	h10	H10
TJUI-01-08/-03-08	1/2	+0.0016 +0.0036	.8750	1.25/1,242	.9790
TJUI-01-10/-03-10	5/8	+0.0016 +0.0036	1,125	1.50/1,492	1,124
TJUI-01-12/-03-12	3/4	+0.0016 +0.0036	1.25	1,625/1,617	1,186
TJUI-01-16/-03-16	1	+0.0016 +0.0036	1.5625	2.25/2.2382	1,773
TJUI-01-20/-03-20	1 1/4	+0.0020 +0.0039	2.00	2,625/2.6134	2.0230
TJUI-01-24/-03-24	1 1/2	+0.0020 +0.0047	2,375	3.00/2.9843	2.44
TJUI-01-32/-03-32	2	+0.0024 +0.0057	3.00	4.00/3.9803	3,222

Part No.	s	dn	ds	do	e	o
	H10	h10	h10			+0.008
TJUI-01-08/-03-08	.0520	.8200	0.8563	.7120	.281	.1250
TJUI-01-10/-03-10	.0620	1.0600	1.1039	.9620	.312	.1250
TJUI-01-12/-03-12	.0620	1,177	1.2276	1.0870	.312	.1250
TJUI-01-16/-03-16	.0740	1,471	1,535	1,399	.500	.1250
TJUI-01-20/-03-20	.0740	1,889	1.9654	1,837	.625	.1250
TJUI-01-24/-03-24	.0950	2,241	2,337	2,152	.650	.1620
TJUI-01-32/-03-32	.1110	2,839	2.9531	2,775	1.00	.1890

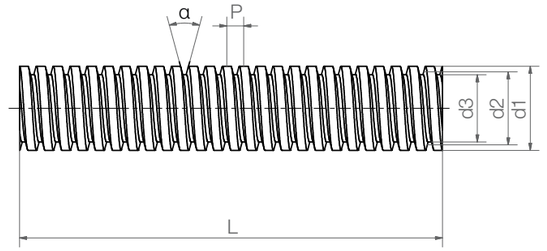


[78)] According to igus® testing method ▶ Page 1000

Please note: Installation instructions ▶ Page 945

Lead screws – "ACME" USA standard

Stainless steel, rolled (1.4301)



Technical data

Helix deviation	0.1 mm to 300 mm
Straightness (standard)	0.3 mm to 300 mm
Aligned	<0.1 mm to 300 mm
Tolerance (acc. to DIN 103)	7e

The tensile/compressive strength of the EN AW 6082 lead screw material is 160 MPa per mm² (elongation limit 0.2 mm).

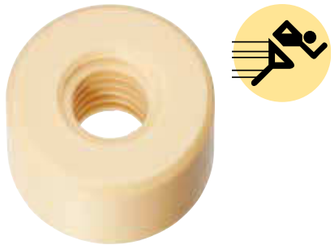
Technical data

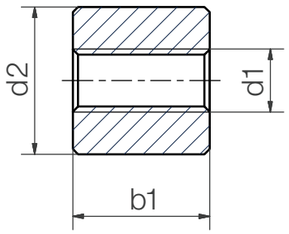
Thread	Hand of rotation, right	Pitch P [mm]	Number of threads per inch	Pitch angle	Weight [lb]	Part No.
1/4-16	●	1.59	16	4.56°	0.25	ACME-1/4-16-R-ES
3/8-20	●	1.27	10	2.43°	0.56	ACME-3/8-20-R-ES
3/8-12	●	1.12	12	2.14°	0.56	ACME-3/8-12-R-ES
3/8-10	●	2.54	20	4.85°	0.56	ACME-3/8-10-R-ES
1/2-10	●	2.54	10	3.64°	1.00	ACME-1/2-10-R-ES
5/8-8	●	3.18	8	3.65°	1.60	ACME-5/8-8-R-ES
3/4-10	●	4.23	10	4.04°	2.25	ACME-3/4-10-R-ES
3/4-6	●	2.54	6	2.43°	2.25	ACME-3/4-6-R-ES
1-10	●	5.08	10	3.64°	4.00	ACME-1-10-R-ES
1-5	●	2.54	5	1.82°	4.00	ACME-1-5-R-ES

Dimensions

Outer Ø		Core Ø		Max. length	Part No.
d1 [mm]	d1 [imperial]	d3 [mm]	d3 [imperial]	L	
6.4	0.250	4.8	0.187	1,829	ACME-1/4-16-R-ES
9.5	0.375	8.3	0.325	1,829	ACME-3/8-20-R-ES
9.5	0.375	7.4	0.292	1,829	ACME-3/8-12-R-ES
9.5	0.375	7.0	0.275	1,829	ACME-3/8-10-R-ES
12.7	0.500	10.2	0.400	1,829	ACME-1/2-10-R-ES
15.9	0.625	12.7	0.500	1,829	ACME-5/8-8-R-ES
19.1	0.750	14.9	0.585	1,829	ACME-3/4-10-R-ES
19.1	0.750	16.5	0.650	1,829	ACME-3/4-6-R-ES
25.4	1,000	20.3	0.800	1,829	ACME-1-10-R-ES
25.4	1,000	22.9	0.900	1,829	ACME-1-5-R-ES

Lead screw nuts– "ACME" USA standard, Standard iglidur® J





Technical data – iglidur® J

Thread	Efficiency η	Idling torque[118] [Nm]	Coeffi. of friction μ
1/4-16	24-44	0.0029	0.1-0.25
3/8-20	14-30	0.0034	0.1-0.25
3/8-12	22-41	0.0041	0.1-0.25
3/8-10	25-46	0.0044	0.1-0.25
1/2-10	20-39	0.0052	0.1-0.25
5/8-8	20-39	0.0065	0.1-0.25
3/4-6	22-41	0.0082	0.1-0.25
3/4-10	14-30	0.0068	0.1-0.25
1-5	20-39	0.0105	0.1-0.25
1-10	11-24	0.0084	0.1-0.25

[118] Theoretical idling torque assuming the best possible coefficient of friction at a 5N load

Technical data and dimensions – cylindrical lead screw nuts

Thread	Hand of rotation, right	Effective supp. surface J	Max. stat. axial F [N]	d1	d2	b1	Weight [lb] J	Part No.
1/4-16	●	111	200	0.250	0.625	0.500	0.12	**JSRI-01-1/4-16**
3/8-20	●	266	1,065	0.380	0.875	0.750	0.35	**JSRI-01-3/8-20**
3/8-12	●	253	1,014	0.380	0.875	0.750	0.35	**JSRI-01-3/8-12**
3/8-10	●	247	989	0.380	0.875	0.750	0.35	**JSRI-01-3/8-10**
1/2-10	●	456	1,824	0.500	1,000	1,000	0.57	**JSRI-01-1/2-10**
5/8-8	●	570	2,281	0.630	1,375	1,000	1.13	**JSRI-01-5/8-8**
3/4-10	●	975	3,902	0.750	1,500	1,375	1.75	**JSRI-01-3/4-10**
3/4-6	●	929	3,716	0.750	1,500	1,375	1.75	**JSRI-01-3/4-6**
1-10	●	1,925	7,702	1,000	2,000	2,000	4.53	**JSRI-01-1-10**
1-5	●	1,824	7,297	1,000	2,000	2,000	4.53	**JSRI-01-1-5**

Complete product range online
Lead screw nuts made from 5 iglidur® materials
▶ **www.igus.eu/ACME-threads**

iglidur® J:
High efficiency

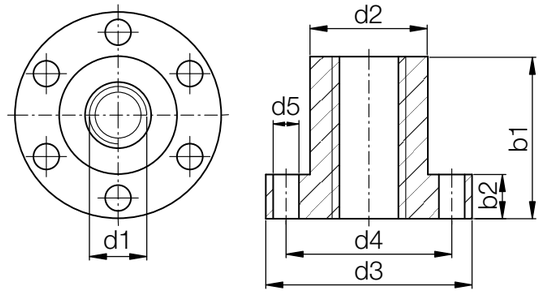
iglidur® W300:
Extremely resilient and wear resistant

iglidur® J350:
For temperatures up to +150 °C

iglidur® R:
The low-cost option for serial production

iglidur® A180:
FDA-compliant for the food and pharmaceutical industries

High efficiency



Technical data – with flange

Thread	Hand of rotation, right	Effective supporting surface J	Max. stat. axial F [N]	Part No.
1/4-16	●	111	175	**JFRI-01-1/4-16**
3/8-20	●	355	1,420	**JFRI-01-3/8-20**
3/8-12	●	338	1,352	**JFRI-01-3/8-12**
3/8-10	●	330	1,318	**JFRI-01-3/8-10**
1/2-10	●	627	2,508	**JFRI-01-1/2-10**
5/8-8	●	784	3,136	**JFRI-01-5/8-8**
3/4-10	●	975	3,902	**JFRI-01-3/4-10**
3/4-6	●	929	3,716	**JFRI-01-3/4-6**
1-10	●	1,685	6,739	**JFRI-01-1-10**
1-5	●	1,596	6,385	**JFRI-01-1-5**

Dimensions – with flange

d1	d2	d3	d4	d5	b1	b2	Weight [lb]	Part No.
0.250	0.500	1,000	0.750	0.130	0.500	0.200	0.01	**JFRI-01-1/4-16**
0.380	1,000	1,630	1,310	1,200	1,000	0.380	0.06	**JFRI-01-3/8-20**
0.380	1,000	1,630	1,310	0.200	1,000	0.380	0.06	**JFRI-01-3/8-12**
0.380	1,000	1,630	1,310	0.200	1,000	0.380	0.06	**JFRI-01-3/8-10**
0.500	1,125	1,880	1,000	0.240	1,380	0.500	0.11	**JFRI-01-1/2-10**
0.630	1,125	1,880	1,000	0.240	1,380	0.500	0.10	**JFRI-01-5/8-8**
0.750	1,125	1,880	1,500	0.240	1,380	0.500	0.09	**JFRI-01-3/4-10**
0.750	1,125	1,880	1,500	0.240	1,380	0.500	0.09	**JFRI-01-3/4-6**
1,000	1,500	2,500	2,000	0.280	1,750	0.590	0.19	**JFRI-01-1-10**
1,000	1,500	2,500	2,000	0.280	1,750	0.590	0.19	**JFRI-01-1-5**

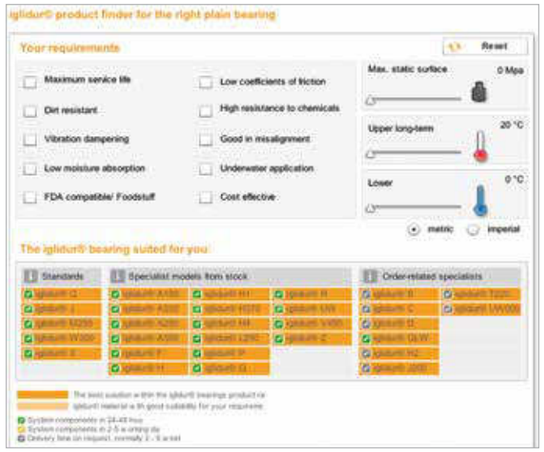
service

Chemical test table, material data,
Online tools, forms, addresses

...plastics

Product finder for plain bearings

Find the right iglidur® material easily and quickly



The iglidur® product finder shows you the right plain bearing solution for your application with just a few clicks. With a direct link to the online catalogue with much more information and direct price display.

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Expert for plain bearings

Service life calculation

By entering application parameters, you can calculate the expected service life for iglidur® bearings. Easier and quicker product selection and lifetime calculation.

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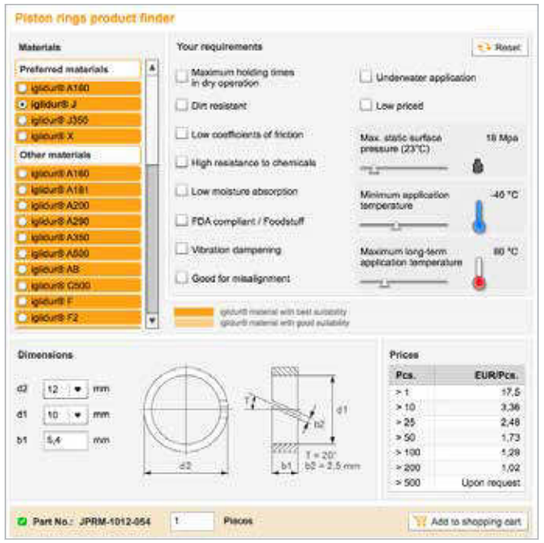
Product finder for piston rings

Material selection and individual dimensions



Configure the piston ring you require from the entire range of iglidur® bearings for the most varied conditions of use.

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Download the online tools App

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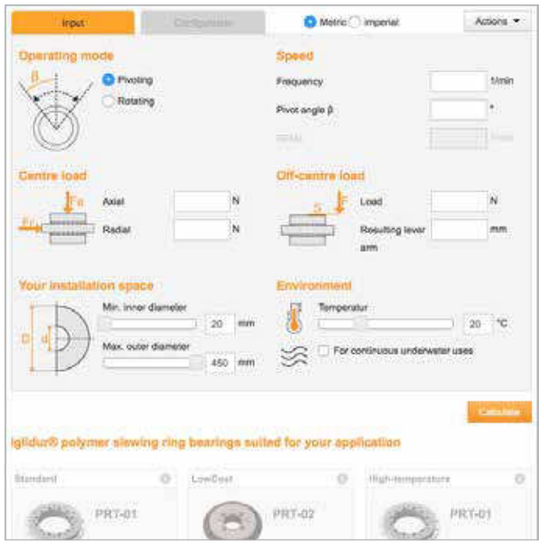
Expert for slewing ring bearing

Find the right solution quickly



With just a few clicks, you can reach the iglidur® PRT expert who show slewing bearings suitable for your application and calculate their expected service life. Simply enter the parameters of your application and select the type of slewing ring bearing that is suitable for you.

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Product finder for bar stocks

Material finder and required dimensions

The iglidur® product finder for bar stocks shows you in just a few clicks the right iglidur® material for your application. Simply enter parameters for environmental conditions
and other factors relevant for you. You will then be shown the best solution for your application as well as further suitable materials. With a direct link to the bar stock configurator where you can enter your required dimensions and submit an enquiry.

▶ www.igus.eu/barstockfinder

Download the online tools App

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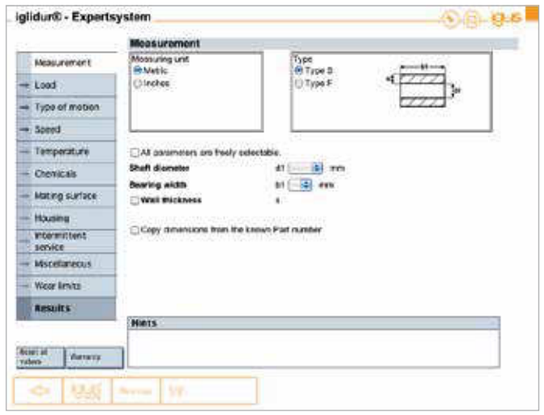
Expert for bar stocks

iglidur® bar stock, calculable



After you have entered the bar stock dimensions and the load, speeds and types of movement occurring in your application, the service life of the materials will be shown in the iglidur® bar stock expert. The calculation is now carried out for 25 different materials. Other conditions such as temperature, chemicals and other things can be included in the calculation.

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Product finder for special parts

Special parts according to customer request

Sometimes our customers require custom parts or services, and for many years this has been an important part of the igus® support. Now, with speedigus® , we combine custom parts with speed, using the benefits of igus® tribo-plastics.

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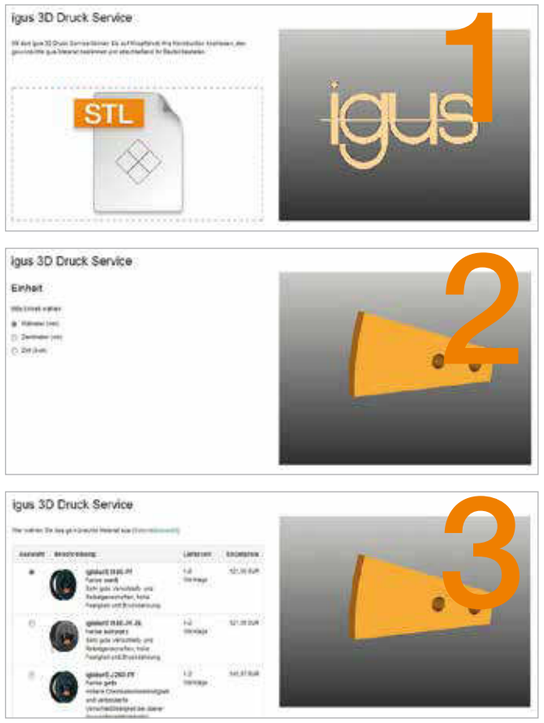
3D printing service

For wear-resistant parts made of Tribo plastics



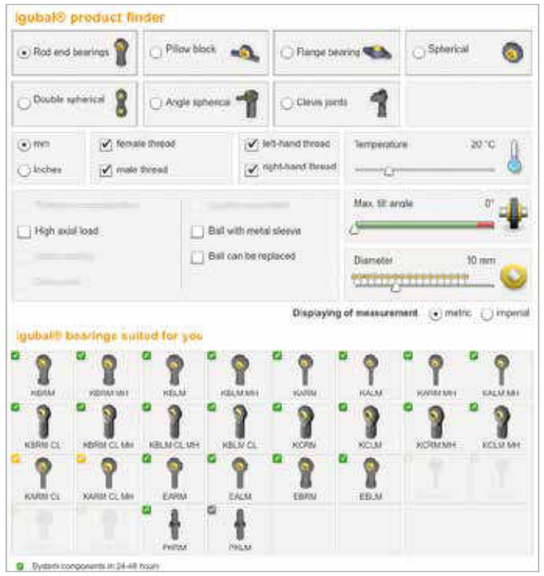
Very strong in tests compared to milled and injection-moulded parts. We print your individual part made of lubrication-free, abrasion-resistant iglidur® plastics; easily ordered and quickly installed: everything from the prototype to the complex special part. Upload your 3D file, check the 360° view and the units of measurement, and select a Tribo-Filament. Depending on the complexity of your product, we will then deliver it in as little as 24 hours.

▶ www.igus.eu/3dprintservice

Please notice: The 3D printing service is only available in German at the moment.

Product finder for spherical bearings

The quick path to the right igubal® spherical bearing



The iglidur® product finder shows you the right plain bearing solution for your application with just a few clicks. Enter a few details about your required product and any other factors that you feel are relevant. You will then get an overview of the most suitable solutions for your application. Just one click takes you to the online catalogue where you can find much more information and prices.

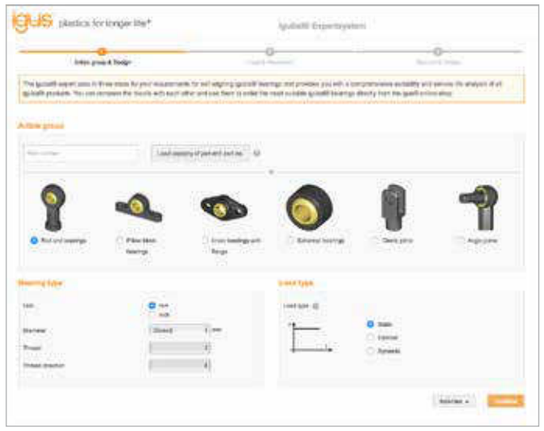
▶ **www.igus.eu/igubalfinder**

Download the online tools App

Download on the App Store

Expert for spherical bearings

Service life calculation



Thanks to igubal® spherical bearings expert, you only need to provide a few details of your application in order to obtain an overview of suitable igubal® spherical bearings and corresponding information regarding service life in your application.

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Configurator for double joints

Configure individual double joints

Simply choose one of three versions and then add your own data. Just a few mouse clicks take you to your individual double joint specially for your application.

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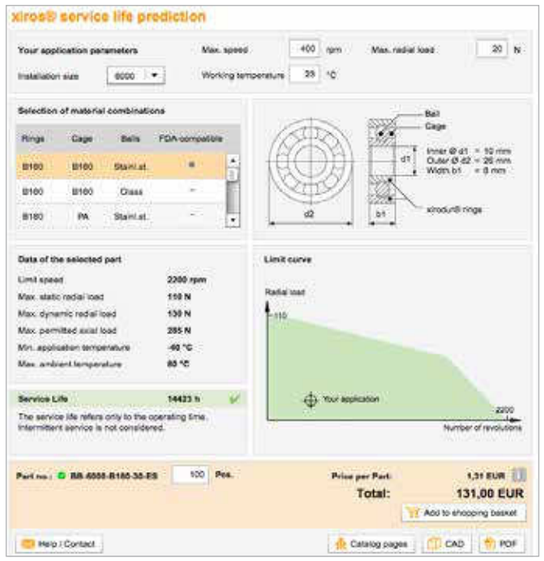
Service life predictor for plastic ball bearings

Service life calculation of polymer ball bearings



The xiros® service life predictor calculates quickly and easily the expected service life of the xiros® plastic ball bearings specifically designed for your application. This xiros® service life calculator is continually being supplemented with new values and xirodur® materials.

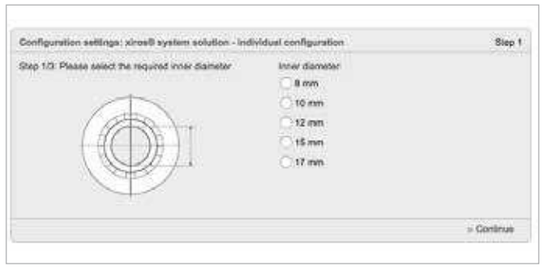
▶ **www.igus.eu/xiros-expert**

Download the online tools App

Download on the App Store

System solution configurator

xiros® aluminium tube system configuration



In just 3 steps, you can configure a custom xiros® system solution by selecting the inner diameter, outer diameter and determining the length. Based on this information, a specific price is issued and the configured item can be placed in your shopping cart and ordered online.

▶ **www.igus.eu/xiros-configurator**

Expert for linear guides

System selection & service life calculation with CAD

Configure and calculate linear bearings – constantly expanded by new sizes and products. Easily calculate the service life of your required linear guide and configure with a few clicks. Select a drylin® system and add the relevant environmental parameters. Then select the bearing size, carriage, number and position. Enter the distance between the rails and the mounting. Define more relevant parameters of the guidance and select a rail length. The results are displayed.

▶ **www.igus.eu/drylin-expert**

Download the online tools App

Download on the App Store

Special configurator for camera slider

Configure and order products online

Assemble double rail and carriage to your requirements. You receive the systems without mounting holes or already machined. drylin® W profile rails with standard holes or without holes can be delivered in one piece up to 4,000 mm long – Your required length is cut to size. drylin® W profiles with 3/8" threaded holes are available, also available in fixed lengths of 1,000/1,500 mm.

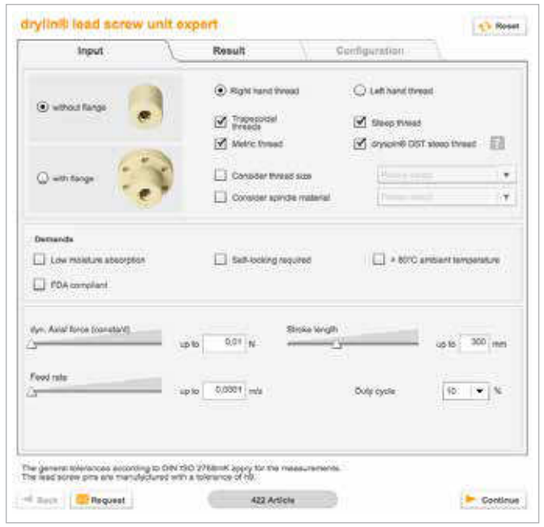
▶ **www.igus.eu/slider-configurator**

Download the online tools App

Download on the App Store

Expert for lead screw units

Find and calculate suitable lead screw units



Our drylin® expert systems for lead screw modules help you to find the right product quickly whilst giving the predicted service life. You have the option to configure and request your required dimension for lead screw nuts and lead screws.

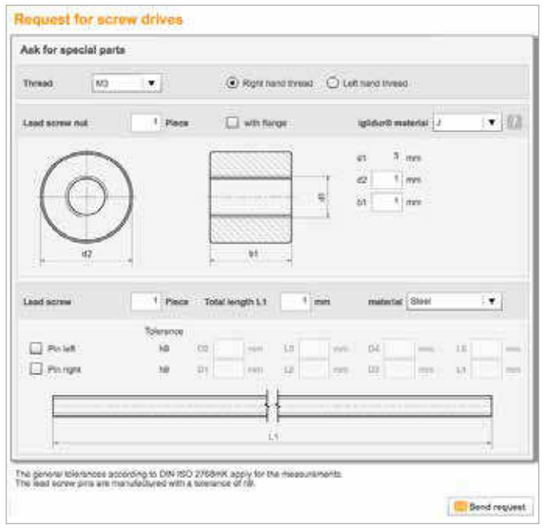
► **www.igus.eu/leadscrew-expert**

Download the online tools App

Download on the App Store

Configurator for lead screw units

Configure required dimensions

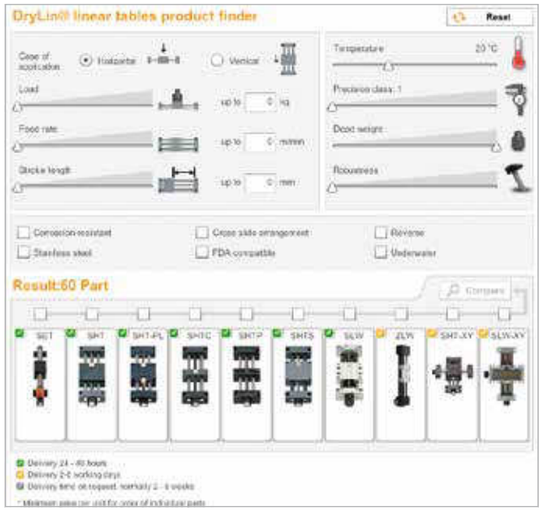


Ask quickly and easily for lead screw nuts and lead screws in individual required dimensions.

► **www.igus.eu/leadscrew-configurator**

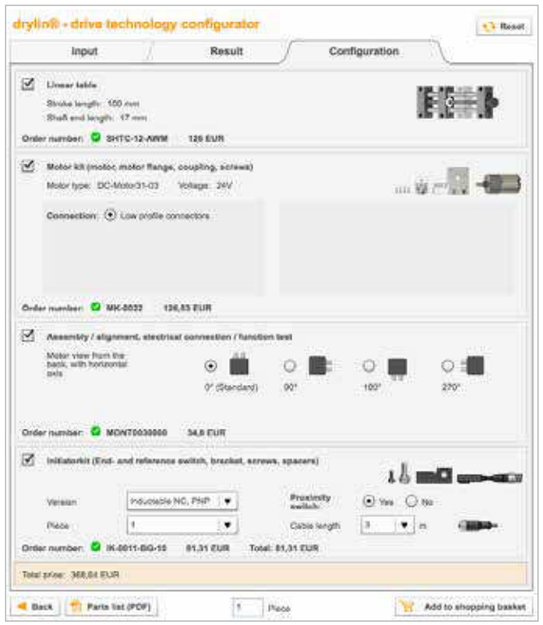
Configurator for drive technology

Complete drive technology configurable with or without motor



After you have selected your application parameters, the product finder shows an overview of the linear tables and the motors that are suitable. The product finder calculates the individual price of the linear axis as well as the utilization rate of the motors and the service life in strokes. With just few clicks, you can thus put together a complete linear axis incl. motor, connecting cables and built-on parts.

► **www.igus.eu/linearmodule-configurator**



CAD configurator

Quickly generate complete 3D-models

For nearly all igus® products, CAD data are available for downloading free of charge. Simply choose a product group, call up a CAD model, select 2D or 3D output, and generate. You can download all generated CAD files via the download centre or transfer them directly to your CAD system by clicking on "Click2CAD".

▶ www.igus-cad.eu

igus® download

Free download of all product catalogues, brochures, instructions; videos, etc.

The latest downloads are available here. Left-click on the program symbol in order to display the file. Right-click on the program symbol to download the file.

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My sketches

Chemical resistance

Chemicals, iglidur®	A180, A181, J200, R, UW, xirodur® B180, xirodur® S180, xirodur® F180, xirodur® M180	A200, G, GLW, G V0, M250, N54, Q2, W300, C, L250, L100, AB, I3, xirodur® G220, igumid G	A350	A500, C500, UW500, X, X6, xirodur® A500, L500	A290, F, Q290, W360,	J, J2, J3, J4, JB,	J260	J350	H, H1, H2, H370, H4	F2, K, P, P210	Q	V400	Z	B	D	T220	PEP	A160, B160, UW160, xirodur® C160	I170	I180, I180–BL	xirodur® D180	xiros® ball bearings PEEK–cage	PP–PE–cage	PA–cage
Acetaldehyde (aqueous), 40 %	+	o	x	+	o	+	–	x	x	–	o	x	x	o	+	–	o	+	x	–		+	+	o
Acetamide (aqueous), 50 %	+	+[1]	x	+	+[1]	+	–	x	x	x	+[1]	x	x	x	+	x	+[1]	x	+	–		+	x	+
Acetic acid, 10 %	+	–	+	+	–	+	+	+	+	+	+	+	+	–	+	+	o	+	+	+		+	+	–
Acetic acid, 2 %	+	–	+	+	–	+	+	+	+	+	o	+	+	–	+	+	o	+	+	+	–	x	x	o
Acetic acid, 90 %	–	–	+	o	–	–	–	x	+	–	–	+	+	–	–	–	–	+	–	–		+	+	–
Acetone	+	+	–	+	o	+	–	–	+	–	+	+	+	o	o	–	+	+	–	–		+	+	+
Acetyl chloride	–	–	x	x	–	–	x	x	x	x	–	x	x	x	–	x	–	x	x	x		x	x	–
Acrylnitrile	o	+	x	+	+	o	–	x	x	–	+	x	x	–	o	–	+	x	+	–		+	+	+
Air, liquid	o	o	x	x	o	o	x	x	x	o	o	x	x	x	o	o	x	x	x	x		n. s.	x	–
Allyl alcohol	+	o	x	+	o	+	x	x	+	+	+	x	+	o	+	+	+	+	–	–		+	+	o
Aluminium chloride (aqueous), 10 %	o	o	x	+	o	o	o	x	+	o	o	x	x	o	o	o	o	+	+	o		+	+	o
Aluminium cleaner	–	–	x	o	–	–	x	x	o	x	–	x	x	–	–	x	–	x	x	x		o	x	–
Aluminium sulfate (aqueous), 10 %	o	o	x	+	o	o	+	x	+	o	o	x	+	o	o	o	o	+	+	+		+	+	o
Aluminum salts of mineral acids, 20 %	o	o	x	x	o	o	x	x	x	o	o	x	x	x	o	o	x	x	x	x		x	x	o
Ammonium carbonate (aqueous), 10 %	+	+[1]	x	+	+[1]	+	o	x	+	+	+[1]	x	+	o	+	+	+[1]	+	+	o		+	+	+
Ammonium carbonate (aqueous), 10 %	+	+	x	+	+	+	x	x	+	x	x	x	+	x	+	x	+	x	x	x		+	+	+
Ammonium chloride (aqueous), 10 %	+	+[1]	x	+	+[1]	+	+	x	+	+	+[1]	x	+	o	+	+	+[1]	+	x	+	o	+	+	+
Amyl acetate, 100 %	–	–	x	+	–	–	–	x	+	o	+	x	+	–	o	o	o	o	–	–		+	o	–
Amyl alcohol	+	+	x	+	+	+	+	x	+	o	+	x	o	o	+	+	+	+	+	+		+	+	+
Aniline (aqueous), saturated solution	o	o	x	+	o	o	–	x	+	o	o	x	x	–	o	o	o	+	–	–		+	+	o
Anisole	o	+	x	+	+	o	–	x	+	x	+	x	o	o	o	x	o	o	–	–		+	o	+
Anodic solutions (HNO3–30 %/H2SO4–10 %)	–	o	x	x	o	–	x	x	x	o	o	x	x	x	–	o	–	x	x	x		x	+	o
Aqua regia HCl/HNO3 (75/50 Vol.)	o	+	x	+	+	o	–	x	x	–	+	x	x	–	o	–	+	+	o	–		+	x	+
Aromatic compounds	+	+	+	x	+	+	x	x	x	o	x	x	x	x	x	o	x	x	x	x		x	x	+
Barium chloride (aqueous), 10 %	+	o	x	+	o	+	+	x	+	+	+[1]	x	+	–	+	+	+[1]	+	+	+		+	+	o
Barium salts of mineral acids	+	o	x	x	o	o	x	x	x	o	o	x	x	x	o	o	x	x	x	x		x	x	o
Barium sulfate (aqueous), 10 %	+	o	x	+	o	+	o	x	+	+	+[1]	x	+	o	+	+	+[1]	+	x	o		+	+	o
Benzaldehyde	+	o	x	+	o	o	–	x	o	–	o	x	x	–	o	–	o	+	–	–		+	+	o
Benzoic acid (aqueous), 20 %	o	o	x	+	o	o	–	x	x	+	o	x	+	o	o	+	o	+	+	+		+	+	o
Benzyl alcohol	+	+	+	+	+	o	–	+	x	x	o	x	o	o	o	x	o	+	–	–		+	+	+
Biphenyl	+	+	x	x	+	+	x	x	x	–	x	x	x	x	x	–	x	x	x	x		x	x	+
Bitumen, DIN 51567	+	o	–	+	o	o	+	x	x	o	o	x	+	–	o	o	o	o	x	+		+	o	o
Bleaching solution	–	–	x	+	–	–	x	x	x	–	o	x	+	–	–	–	–	x	x	x		+	x	–
Bleaching solution (aqueous), 10 %	–	–	x	+	–	–	x	x	+	o	o	x	+	–	–	o	⁻	x	+	+		+	x	–
Boric acid (aqueous), 10 %	+	o	+	+	o	+	+	x	x	–	+[1]	x	+	–	–	+	+[1]	+	+	+	o	+	+	o
Brandy vinegar	o	o	x	+	o	o	x	x	+	o	o	x	+	o	o	o	o	+	x	x		+	+	o

Chemical resistance

Chemicals, iglidur®	A180, A181, J200, R, UW, xirodur® B180, xirodur® S180, xirodur® F180, xirodur® M180	A200, G, GLW, G V0, M250, N54, Q2, W300, C, L250, L100, AB, I3, xirodur® G220, igumid G	A350	A500, C500, UW500, X, X6, xirodur® A500, L500	A290, F, Q290, W360,	J, J2, J3, J4, JB,	J260	J350	H, H1, H2, H370, H4	F2, K, P, P210	Q	V400	Z	B	D	T220	PEP	A160, B160, UW160, xirodur® C160	I170	I180, I180–BL	xirodur® D180	xiros® ball bearings PEEK–cage	PP–PE–cage	PA–cage
Bromhydric acid (aqueous), 10 %	–	–	x	+	–	–	–	x	o	–	–	x	+	–	–	–	–	+	x	–		+	+	–
Bromine (aqueous), 25 %	–	–	x	+	–	–	–	x	–	–	–	x	o	–	–	–	–	–	–	–		+	–	–
Bromine vapors	–	–	x	x	–	–	x	x	x	–	–	x	x	x	–	–	–	o	x	x		x	0	–
Butanole	+	+	+	+	+	+	o	x	+	+	+	x	o	–	o	+	+	+	+	o		+	+	+
Butter	+	+	x	+	+	+	+	x	+	+	+	x	+	o	+	+	+	+	+	+		+	+	+
Butter acid	o	o	x	+	o	–	–	x	+	o	–	x	+	–	–	o	–	+	–	–		+	+	o
Butyl acetate	+	+	o	+	o	o	x	x	+	o	o	x	+	x	o	o	o	+	–	–		+	+	+
Butyl glycol	+	+	–	+	+	+	o	x	+	+	+	x	+	o	+	+	+	+	x	o		+	+	+
Butyl glycolate	+	+	x	x	+	+	x	x	x	+	x	x	x	x	x	x	x	x	x	x		x	x	+
Butyl phthalate	+	+	x	x	+	+	x	x	x	+	x	x	x	x	x	x	x	+	x	x		x	+	+
Calcium chloride, saturated solution	+	+[1]	x	+	+[1]	+	+	x	+	+	+[1]	x	+	+	+	+	+[1]	+	+	+	o	+	+	+
Calcium hydroxide (aqueous)	+	+	+	x	+	+	x	x	x	+	x	x	x	x	x	x	x	+	x	x		x	+	+
Calcium hypochlorite	+	+	x	x	+	+	x	x	x	o	x	x	x	x	x	o	x	o	+	+		x	o	+
Camphor	+	+	x	+	+	+	o	x	+	x	+	x	+	o	+	x	+	+	+	o		+	+	+
Carbon bisulphide	+	+	x	+	+	+	x	x	+	x	+	x	x	x	+	x	+	x	x	x		+	x	+
Carbon dioxide gas	+	+	x	+	+	+	+	x	+	+	x	x	x	–	+	+	x	+	+	+		n. s.	x	+
Casein	+	+	x	x	+	+	x	x	x	+	x	x	x	x	x	x	x	x	x	x		+	+	+
Caustic potash lye (aqueous), 40 %	+	+	x	+	+	+	x	x	x	x	x	x	+	x	+	x	+	x	x	x		n. s.	x	+
Caustic potash, 10 %	o	+[1]	+	x	+[1]	o	x	x	x	–	x	x	x	x	o	–	x	+	+	+		+	+	–
Caustic potash, 20 %	–	o	+	+	o	–	–	x	+	–	x	x	+	o	–	–	–	+	x	–		x	+	+
Caustic potash, 50 %	–	o	+	x	o	–	x	x	x	–	o	x	x	x	–	–	–	+	+	+		+	+	o
Caustic sodium bicarb. (aqueous), 50 %	o	o	x	+	o	o	x	x	x	x	x	x	+	o	o	x	o	x	x	x		+	x	+
Cellulose paints	+	+	x	x	x	+	x	x	x	x	x	x	x	x	+	+	x	x	x	x		x	x	+
Chloramine	x	–	x	x	–	–	x	x	x	–	–	x	x	x	–	–	–	+	x	x		x	+	–
Chlorethanal	–	–	x	x	–	–	x	x	x	–	–	x	x	x	–	–	–	x	x	x		x	x	–
Chlorinated water, saturated solution	–	–	x	+	–	–	o	x	x	–	o	+	o	–	–	–	–	o	o	o		+	o	–
Chlorine	–	–	x	x	–	–	x	x	x	–	–	x	x	x	–	–	–	–	–	–		x	–	–
Chlorine gas	–	–	x	–	–	–	–	x	–	–	–	o	–	–	–	–	–	–	–	–		–	–	–
Chloroacetic acid (aqueous), 10 %	–	–	x	+	–	–	–	x	x	–	–	x	–	–	–	–	–	+	o	–		+	+	–
Chlorobromomethane, 98%	x	o	x	+	o	x	x	x	x	o	o	x	x	o	x	o	x	–	x	x		+	–	o
Chloroform	–	–	–	+	o	–	–	–	o	–	–	x	o	–	–	–	–	o	–	–		+	o	–
Chlorsulphonic acid (aqueous)	–	–	x	–	o	–	–	x	–	–	–	x	+	–	–	–	–	–	–	–		–	–	–
Chromic acid (aqueous), 1%	o	–	x	+	–	o	o	x	–	o	o	+	o	–	o	o	o	+	o	o		+	+	–
Chromic acid (aqueous), 10 %	–	–	x	+	–	–	–	x	–	–	–	+	o	–	–	–	–	+	o	–		+	+	–
Citric acid (aqueous), 10 %	+	+[1]	+	+	+[1]	+	+	x	+	+	o	x	+	x	+	+	o	+	+	+	o	+	+	+
Citric acid, concentrated solution	o	o	x	+	o	o	+	x	o	x	–	x	+	o	o	x	–	+	x	+		+	+	+
Citrus fruits	+	+	x	x	+	+	x	x	x	+	x,	x	x	x	x	x	x	+	x	x		+	+	o
Cobalt salts (aqueous)	+	+	x	x	+	+	x	x	x	+	x	x	x	x	x	x	x	x	x	–		n. s.	+	–

Chemical resistance

Chemicals, iglidur®	A180, A181, J200, R, UW, xirodur® B180, xirodur® S180, xirodur® F180, xirodur® M180	A200, G, GLW, G V0, M250, N54, Q2, W300, C, L250, L100, AB, I3, xirodur® G220, igumid G	A350	A500, C500, UW500, X, X6, xirodur® A500, L500	A290, F, Q290, W360,	J, J2, J3, J4, JB,	J260	J350	H, H1, H2, H370, H4	F2, K, P, P210	Q	V400	Z	B	D	T220	PEP	A160, B160, UW160, xirodur® C160	I170	I180, I180–BL	xirodur® D180	xiros® ball bearings PEEK–cage	PP–PE–cage	PA–cage
Copper sulfate, 0.5 %	+	o	+	+	o	+	x	x	+	x	o	x	+	o	+	x	o	x	x	x		+	x	o
Copper sulfate, saturated solution	o	o	+	+	o	o	x	x	+	x	o	x	+	o	o	x	o	x	+	+		+	+	–
Cresol	–	–	x	+	–	–	–	x	+	–	–	x	+	–	–	–	–	+	o	–		n. s.	–	–
Cyclohexane	+	+	+	+	+	+	o	x	+	–	+	x	+	–	–	–	+	+	+	o		x	+	+
Decahydronaphthalene = decalin	+	+	–	+	+	+	x	x	+	–	+	x	+	–	–	–	+	–	+	+		+	+	+
Dibutylether	+	+	x	x	+	+	x	x	x	+	x	x	x	x	x	x	x	o	x	x		+	–	+
Dibutylphthalate	+	+	x	+	+	+	–	x	+	+	+	x	+	o	+	+	+	+	x	–		n. s.	o	+
Dichlorethylene	–	–	x	+	–	–	–	x	+	–	–	x	+	–	–	–	–	x	x	–		+	+	+
Dichlorobenzene	–	+	x	+	+	–	x	x	+	–	+	x	o	x	–	–	–	o	–	–		+	+	+
Dichloroethene	–	+	x	+	+	–	x	x	+	–	+	x	o	x	–	–	–	+	x	x		+	o	+
Diethyl ether	o	o	+	+	+	+	–	x	x	+	+	x	+	o	o	+	+	o	–	–		+	x	–
Dimethyl formamide	o	+	+	+	+	+	–	x	+	+	+	+	+	o	+	+	+	+	–	–		+	o	o
Dioctylphthalate	+	+	+	+	+	+	x	x	+	o	+	x	+	x	o	o	+	+	x	x		+	+	+
Dioxan	o	+	x	+	+	o	–	x	+	+	+	x	+	x	o	+	o	+	–	–		+	+	+
Drilling oils	+	+	+	x	+	+	x	x	x	+	x	x	x	x	x	x	x	x	x	x		x	x	+
Edible fat, 100 %	+	+	+	+	+	+	x	x	+	+	+	x	+	o	+	+	+	+	x	x		+	+	+
Edible oils	+	+	+	+	+	+	x	x	+	+	+	x	+	o	+	+	+	+	x	x		+	+	+
Ethanal (aqueous), 40 %	+	o	x	x	o	o	x	x	x	o	o	x	x	x	o	o	x	o	x	x		o	+	–
Ethanol (aqueous), 96%	+	o	+	+	o	o	+	x	+	–	o	+	o	o	+	–	o	+	x	+	o	x	o	o
Ethyl acetate	+	+	–	+	+	+	–	x	+	–	+	+	+	o	+	–	+	+	–	–	o	+	+	o
Ethyl chloride	+	+	–	+	+	+	–	x	+	–	+	x	+	o	+	–	+	+	x	–		n. s.	x	+
Ethylene	+	+	x	x	+	+	x	x	x	+	x	x	x	x	x	x	–	x	x	x		+	+	+
Ethylene diamine (1.2–ethylene diamine)	+	+	x	+	+	+	o	x	o	+	+	+	+	o	o	x	+	+	x	o		+	+	+
Ethylene glycol (aqueous), 95 %	+	o	x	+	o	+	o	x	+	+	o	+	+	–	+	+	o	+	x	o		+	+	+
Ethylene oxide (1.2–epoxyethane)	+	o	+	x	o	o	x	x	x	o	o	x	x	x	o	o	x	–	x	x		+	+	o
Fats, cooking	+	+	x	+	+	+	o	x	+	+	+	x	+	o	+	+	+	+	x	o		x	–	o
Ferric chloride, 2.5 %	+	o	x	x	o	+	x	x	+	x	o	x	+	o	+	x	o	x	x	x		o	+	+
Ferric chloride, 5 %	–	o	x	o	o	–	o	x	+	x	o	x	+	o	–	x	–	x	x	o		+	+	–
Ferric chloride, saturated solution	+	o	x	x	o	+	x	x	+	x	o	x	+	o	+	x	o	+	x	x		x	x	+
Fluor	–	–	+	x	–	–	x	x	x	–	–	x	x	x	–	–	–	–	x	x		+	+	+
Fluorocarbons	o	+	x	+	o	+	o	x	+	o	+	x	o	x	o	o	+	x	x	o		x	–	–
Formaldehyde (aqueous), 30 %	+	o	+	+	o	+	+	+	+	+	+[1]	x	+	o	+	+	+[1]	+	+	+		+	+	–
Formamide	+	o	–	+	o	+	o	x	x	x	o	x	+	–	o	x	o	+	x	o		+	+	o
Formic acid (aqueous), 2%	o	–	x	o	–	–	+	x	+	o	–	x	o	–	–	o	–	+	+	+		o	+	–
Formic acid, 10 %	–	–	x	–	–	–	x	x	o	–	–	x	–	–	–	–	–	+	+	+		–	+	–
Formic acid, 90 %	–	–	x	–	–	–	–	x	o	–	–	x	–	–	–	–	–	+	+	–		–	+	–
Fruit juices	+	+	–	x	+	+	x	x	x	+	x	x	x	x	x	x	x	+	x	x		+	+	o
Furfurol	+	o	x	+	o	+	o	x	+	+	+	x	+	o	+	+	+	o	–	–		x	+	+

Chemical resistance

Chemicals, iglidur®	A180, A181, J200, R, UW, xirodur® B180, xirodur® S180, xirodur® F180, xirodur® M180	A200, G, GLW, G V0, M250, N54, Q2, W300, C, L250, L100, AB, I3, xirodur® G220, igumid G	A350	A500, C500, UW500, X, X6, xirodur® A500, L500	A290, F, Q290, W360,	J, J2, J3, J4, JB,	J260	J350	H, H1, H2, H370, H4	F2, K, P, P210	Q	V400	Z	B	D	T220	PEP	A160, B160, UW160, xirodur® C160	I170	I180, I180–BL	xirodur® D180	xiros® ball bearings PEEK–cage	PP–PE–cage	PA–cage
Glycerine	–	+	+	+	+	+	o	x	+	+	+	x	+	x	+	+	+	+	+	o		+	+	o
Glycol	+	o	+	+	o	o	x	x	+	+	o	x	+	o	o	+	o	+	+	+		+	o	o
Grease, mineral	+	+	+	+	+	+	+	x	+	o	+	+	+	–	+	o	o	x	x	+		+	+	+
Grease, synthetic	o	o	x	+	o	o	o	x	+	–	+	+	+	–	o	–	o	x	x	o		+	x	+
Heptane	+	+	+	+	+	+	+	x	+	o	+	x	+	–	–	o	+	+	+	+		+	+	+
Hexachlorobenzene	+	–	x	+	–	–	x	x	x	x	–	x	o	x	–	–	–	x	+	+		+	+	+
Hexachloroethane	+	+	x	+	+	+	x	x	x	x	+	x	o	x	–	–	–	–	x	x		+	x	–
Hexamethylphosphoric acid triamide	+	–	x	x	–	–	x	x	x	–	-	x	x	x	–	–.	–	x	x	x		+	–	+
Hexane	+	+	+	+	+	+	+	x	+	–	+	+	+	–	–	–	+	+	+	+		x	x	–
Humic acids	o	o	x	x	o	o	x	x	x	o	o	x	x	x	o	o	x	+	x	x		+	+	+
Hydrochinone (aqueous), 5 %	o	-	x	+	-	o	o	x	x	o	-	x	+	–	o	o	–	+	+	o		x	+	o
Hydrochloric acid, 10 %	–	–	+	+	–	–	–	o	–	–	–	+	+	–	–	–	–	+	x	–		+	+	–
Hydrochloric acid, 2%	–	-	+	+	-	–	+	x	–	–	o	+	+	–	–	–	–	+	x	+	–	+	+	–
Hydrochloric acid, L20	–	–	+	x	–	–	x	–	x	o	–	x	x	x	–	o	–	x		x		x	x	–
Hydrofluoric acid (aqueous), 4%	–	-	–	+	-	–	–	x	–	–	-	–	–	–	–	–	–	+	+	–		+	x	+
Hydrofluorosilicic acid (aqueous),30 %	x	–	x	x	–	–	x	x	x	–	–	x	x	x	–	–	–	+	x	x		n. s.	x	o
Hydrogen chloride gas	–	–	x	x	–	–	x	x	x	–	–	x	x	x	–	–	–	+	x	x		x	+	–
Hydrogen peroxide, 0.5 %	+	+	–	+	+	+	+	o	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+
Hydrogen peroxide, 30 %	–	–	–	+	–	–	–	–	–	–	x	–	–	–	–	–	–	+	x	–	o	+	+	+
Hydrogen sulfide (aqueous)	+	o	x	x	o	+	x	x	x	o	o	x	x	x	–	o	o	+	x	x		x	+	o
Hydrogen sulfide (dry)	+	+	+	+	o	x	+	x	+	+	+	x	+	x	x	+	x	+	+	+		o	+	–
India Ink	+	+[1]	x	+	+[1]	+	+	x	+	x	+[1]	x	+	x	+	x	+[1]	x	x	+		+	x	+
Inert gases (argon, helium, neon)	+	+	x	x	+	+	x	x	x	+	x	x	x	x	x	x	x	x	x	x		+	+	+
Ink	+	+[1]	–	+	+[1]	+	+	x	+	+	+[1]	+	+	+	+	+	+[1]	+	+	+		+	–	o
Iodine tincture, 3%	o	–	–	+	–	o	–	x	+	x	o	x	+	–	o	x	o	+	o	–		+	o	+
Iron(III) chloride (aqueous), acidic, 10 %	–	–	x	+	+	–	–	x	+	–	o	x	+	–	–	x	–	+	x	–		o	x	o
Iron(III) chloride (aqueous), neutral, 10 %	o	+[1]	x	o	o	o	+	x	+	x	o	x	+	o	o	x	–	+	x	+		x	x	o
Isooctane, 80 %	+	+	+	+	+	+	+	x	+	o	+	x	+	–	–	o	+	+	+	+		+	+	–
Isopropyl alcohol = isopropanol	+	+	+	+	+	+	+	x	+	+	o	x	o	o	+	+	o	+	+	+	o	+	+	+
Isopropylether	+	+	x	+	+	+	–	x	x	o	+	x	+	o	+	o	+	o	x	–		+	+	+
Ketones (aliphatic)	+	o	+	x	o	o	x	x	x	–	o	x	x	x	o	–	x	x	x	x		+	x	o
Lactic acid, 10 %	+	+	+	+	+	+	+	x	+	+	o	x	+	o	o	o	o	+	+	+	–	+	+	+
Lactic acid, 90 %	+	o	o	+	o	o	+	x	+	o	o	x	+	o	o	o	o	+	+	+		+	+	+
Lead acetate (aqueous), 10 %	+	o	x	+	o	+	+	x	x	o	o	x	+	–	+	o	o	+	+	+		+	+	o
Lead stearate	+	+	x	+	+	+	+	x	+	+	+	x	+	o	+	+	+	x	+	+		+	x	+
Linseed oil	+	+	+	+	+	+	+	x	+	+	+	+	+	–	+	+	+	+	+	+		+	x	o
Lithium bromide/ –chloride/ –salts (aqueous), 50 %	+	o	x	+	o	+	+	x	x	o	o	x	+	–	+	o	o	x	x	+		+	+	+

Chemical resistance

Chemicals, iglidur®	A180, A181, J200, R, UW, xirodur® B180, xirodur® S180, xirodur® F180, xirodur® M180	A200, G, GLW, G V0, M250, N54, Q2, W300, C, L250, L100, AB, I3, xirodur® G220, igumid G	A350	A500, C500, UW500, X, X6, xirodur® A500, L500	A290, F, Q290, W360,	J, J2, J3, J4, JB,	J260	J350	H, H1, H2, H370, H4	F2, K, P, P210	Q	V400	Z	B	D	T220	PEP	A160, B160, UW160, xirodur® C160	I170	I180, I180–BL	xirodur® D180	xiros® PEEK–cage	ball bearings PP–PE–cage	PA–cage
Lithium chloride in alcohol, 20 %	+	–	x	x	–	–	x	x	x	x	–	x	x	x	–	x	–	x	x	x		+	x	o
Magnesium chloride (aqueous), 10 %	+	+[1]	x	+	+[1]	+	+	x	+	+	+[1]	+	+	+	+	+	+	+[1]	+	+	+		n. s.	x	o
Magnesium hydroxide (aqueous)	+	+[1]	x	+	+[1]	+	+	x	+	+	+	+	+	+	+	+	+	+	+	x	+		+	+	+
Maleic acid (aqueous), 10 %	–	o	x	x	o	–	x	x	x	–	o	x	x	x	–	–	–	+	x	x		n. s.	+	o
Maleic acid, concentrated solution	o	–	x	+	–	o	o	x	+	x	o	x	+	–	o	x	–	+	x	o		+	+	+
Malt	+	+	x	x	+	+	x	x	x	+	x	x	x	x	x	x	x	x	x	x		+	+	–
Manganese sulfate (aqueous), 10 %	+	o	x	+	o	+	x	x	+	x	+	x	+	o	+	x	+	x	x	x		n. s.	x	+
Mercury	+	+	x	+	+	+	+	x	+	+	+	+	+	+	+	+	+	+	+	+		+	o	+
Mercury chloride, 6 %	–	–	x	+	–	–	+	x	o	o	–	x	x	–	–	o	–	+	+	+		+	+	+
Methane	+	+	+	+	+	+	+	+	+	+	x	x	x	–	+	+	x	+	x	x		n. s.	+	+
Methanol	+	+	+	x	+	+	x	+	x	+	x	x	x	x	x	x	x	+	o	o	–	+	+	+
Methanol +20 % CaCl2 or LiCl	+	⁻	x	o	o	o	–	x	o	+	o	+	o	+	+	+	o	+	o	–		n. s.	+	+
Methyl acetate	o	+	x	+	+	o	x	x	+	o	+	x	+	x	o	o	o	+	x	x		o	x	–
Methyl ethyl ketone	o	+	–	+	+	o	–	–	+	–	+	x	+	–	o	–	o	+	x	–		n. s.	–	–
Methylamine	+	+	x	x	+	+	x	x	x	+	x	x	x	x	x	x	x	+	x	x		+	+	+
Methylene chlorid	o	–	–	x	–	–	x	–	+	–	–	+	o	o	–	–	–	–	–	–		n. s.	+	+
Milk	+	+[1]	+	+	+[1]	+	+	x	+	+	+[1]	+	+	+	+	+	+[1]	+	+	+		+	+	+
Molasses	+	+	+	x	+	+	x	+	x	+	x	x	x	x	x	x	x	+	x	x		n. s.	+	+
Molykote–lubrication grease	+	+	x	+	+	+	x	x	+	x	+	x	+	x	+	x	+	x		x		+	+	o
Mortar, cement, lime	+	+	x	x	+	+	x	x	x	+	x	x	x	x	x	x	x	x	x	x		+	x	+
Naphthalene	+	+	x	+	+	+	o	x	+	+	+	x	+	–	+	+	+	+	o			n. s.	x	+
Naphthalenesulfonic acid	–	⁻	x	x	⁻	–	x	x	x	x	⁻	x	x	x	–	x	–	x	x	x		+	+	+
Nickel salts (aqueous), 10 %	+	o	x	x	o	+	x	x	x	x	o	x	x	x	–	x	o	x	x	x		n. s.	+	+
Nitric acid (aqueous), 2%	–	⁻	+	+	⁻	–	o	+	–	–	⁻	+	+	–	–	–	–	+	x	o	–	+	+	–
Nitric acid (aqueous), 5 %	–	–	x	+	–	–	–	x	–	–	–	+	+	–	–	–	–	+	x	–		+	+	–
Nitric acid (aqueous), L50	–	⁻	x	x	⁻	–	x	x	x	–	⁻	x	x	x	–	–	⁻	x		x		+	+	+
Nitriloacetic acid	+	+	x	x	+	+	x	x	x	+	x	x	x	x	x	x	x	x	x	x		n. s.	x	o
Nitro paint hazard class A I	+	o	x	x	o	+	x	x	x	o	o	x	x	x	–	o	o	x	x	x		n. s.	x	o
Nitro paint hazard class A II	+	+	x	x	+	+	x	x	x	o	x	x	x	x	x	o	x	x	x	x		n. s.	x	o
Nitrobenzene	o	–	–	+	–	o	–	x	o	–	o	+	–	–	–	–	–	+	–	–		n. s.	x	+
Nitrogen oxides (dry)	–	o	x	x	o	–	x	x	x	o	o	x	x	x	–	o	⁻	–	x	x		+	+	+
Nitromethane	–	o	x	+	o	–	x	x	o	–	x	x	+	o	–	–	–	+	x	x		n. s.	x	+
Nitrotoluene	o	o	x	x	o	o	x	x	x	–	o	x	x	x	o	–	x	+	x	x		+	+	o
Nitrous gases	–	o	x	x	o	–	x	x	x	x	o	x	x	x	–	x	–	x	x	x		+	+	–
Octane	x	+	?	x	+	+	x	x	x	+	x	x	x	x	x	x	x	+	x	x		n. s.	+	o
Oil, edible oil	+	+	+	+	+	+	+	+	+	+	+	+	+	o	+	+	+	+	x	+		n. s.	+	+
Oleic acid	+	+	x	+	+	+	+	x	+	+	+	+	+	o	+	+	+	+	+	+		–	–	–
Oleum	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	x	–		+	+	+
Oxalic acid (aqueous), 10 %	x	o	+	+	o	x	+	x	x	+	o	x	+	–	x	+	x	+	x	+		+	+	+

Chemical resistance

Chemicals, iglidur®	A180, A181, J200, R, UW, xirodur® B180, xirodur® S180, xirodur® F180, xirodur® M180	A200, G, GLW, G V0, M250, N54, Q2, W300, C, L250, L100, AB, I3, xirodur® G220, igumid G	A350	A500, C500, UW500, X, X6, xirodur® A500, L500	A290, F, Q290, W360,	J, J2, J3, J4, JB,	J260	J350	H, H1, H2, H370, H4	F2, K, P, P210	Q	V400	Z	B	D	T220	PEP	A160, B160, UW160, xirodur® C160	I170	I180, I180–BL	xirodur® D180	xiros® PEEK–cage	ball bearings PP–PE–cage	PA–cage
Oxygen gas +23°C, without pressure	+	+	x	+	+	+	+	x	+	+	x	x	x	–	+	+	x	+	x	+		x	x	–
Ozone	–	–	–	+	–	–	+	x	–	–	–	x	+	–	–	–	–	o	+	+		+	+	o
Palmitic acid	+	+	x	x	+	+	x	x	x	+	x	x	x	x	x	x	x	+	+	+		+	o	–
paraffin oil	+	+	+	+	+	+	+	x	+	–	+	x	+	–	–	–	+	+	+	+		n. s.	+	+
Paraffins	+	+	x	x	+	+	x	x	x	+	x	x	x	x	x	x	x	+	x	x		n. s.	+	+
Perchlorethene	–	–	–	+	–	–	–	–	x	–	–	x	+	–	–	–	–	o	o	–		n. s.	+	+
Perchloric acid, 10 %	–	–	x	+	–	–	–	x	x	–	–	x	+	–	–	–	–	+	x	–		+	o	–
Perfumes	+	+	x	x	+	+	x	x	x	+	x	x	x	x	x	x	x	+	x	x		+	+	+
Phenol (aqueous), 6 %	–	–	–	x	–	–	–	x	+	–	–	x	+	–	–	–	–	x	x	–		x	+	–
Phenol (aqueous), 88%	–	–	–	x	–	–	x	x	x	x	–	x	x	x	–	x	–	+	x	x		x	+	–
Phenol (spirituous), 70 %	–	–	x	o	–	–	–	x	+	–	–	x	+	–	–	–	–	+		–		+	+	–
Phosphoric acid (aqueous), 0.3 %	+	o	x	+	o	+	+	x	o	–	o	x	+	o	–	+	o	+	+	+		o	x	–
Phosphoric acid (aqueous), 10 %	–	–	–	+	–	–	o	x	–	–	–	x	+	–	–	–	–	+	x	o		+	+	–
Phosphoric acid (aqueous), 3%	+	o	x	+	–	o	+	x	o	–	o	x	+	o	–	+	o	+	x	+	o	+	+	o
Phthalic acid, saturated solution	+	o	x	+	o	+	o	x	o	+	o	x	+	o	+	+	o	+	+	+		+	+	o
Polyester resins (with styrene)	o	+	x	+	+	+	–	x	+	o	+	x	+	–	o	o	+	x	x	–		+	+	o
Potassium bromide (aqueous), 10 %	+	o	x	+	o	o	+	x	+	o	+[1]	x	+	–	+	o	+	+	+	+		x	+	o
Potassium carbonate (aqueous), 60 %	+	+[1]	x	+	+[1]	+	+	x	+	o	+[1]	x	+	o	+	o	+	+	x	+		+	+	o
Potassium chloride (aqueous), 10 %	+	+[1]	x	x	+[1]	+	x	x	x	+	x	x	x	x	x	x	x	+	+	+		+	+	+
Potassium chloride (aqueous), 90 %	+	+[1]	x	+	+[1]	+	+	x	+	+	+[1]	+	+	+	+	+	+	+	x	+		x	+	+
Potassium dichromate (aqueous) 5 %	+	o	–	+	o	o	+	x	+	o	o	x	+	–	+	o	o	+	+	+		+	+	+
Potassium nitrate (aqueous), 10 %	+	+[1]	x	+	+[1]	+	+	x	+	+	+[1]	+	+	+	+	+	+	+	+	+		+	+	o
Potassium permanganate (aqueous), 1%	+	–	–	+	–	+	+	x	–	+	o	x	+	–	+	+	o	+	+	+		+	+	+
Potassium sulfate, saturated solution	+	+[1]	x	+	+[1]	+	+	x	+	o	+[1]	x	+	o	+	o	+	+	+	+		+	+	–
Propane, propene	+	+	x	+	+	+	–	x	+	+	+	x	+	o	+	+	+	+	+	–		+	x	+
Propanole	+	+	–	+	+	+	+	x	o	+	+	+	o	o	+	+	+	+	+	+		+	+	+
Propenoic acid	o	–	x	x	–	–	x	x	x	–	–	x	x	x	–	–	–	x	x	x		+	+	+
Pyridine	o	+	–	+	+	o	–	x	+	x	+	x	+	x	o	x	o	o	–	–		x	x	–
Pyrocatechol (aqueous), 6 %	–	–	x	+	–	–	–	x	x	–	o	x	o	–	–	–	–	x	x	–		+	x	–
Pyruvic acid (aqueous), 10 %	x	o	x	x	o	x	x	x	x	o	o	x	x	x	–	o	x	x	x	x		x	x	o
Resorcinol (1.3–Dihydroxy-benzene), 50 %	x	–	x	x	–	–	x	x	x	–	–	x	x	x	–	–	–	x	o	o		+	+	–
Salicylic acid	–	+	–	+	+	–	+	x	+	–	+	x	+	x	–	–	–	+	+	+		x	x	–
Seawater	+	+	+	x	+	+	x	+	x	+	x	x	x	x	x	x	x	+	x	x		+	x	o
Silicon oils	+	+	+	+	+	+	+	x	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Silver nitrate	+	+[1]	x	+	+[1]	+	+	x	+	o	+[1]	x	+	x	+	o	+[1]	+	+	+		+	+	+

Chemical resistance

Chemicals, iglidur®	A180, A181, J200, R, UW, xirodur® B180, xirodur® S180, xirodur® F180, xirodur® M180	A200, G, GLW, G V0, M250, N54, Q2, W300, C, L250, L100, AB, I3, xirodur® G220, igumid G	A350	A500, C500, UW500, X, X6, xirodur® A500, L500	A290, F, Q290, W360,	J, J2, J3, J4, JB,	J260	J350	H, H1, H2, H370, H4	F2, K, P, P210	Q	V400	Z	B	D	T220	PEP	A160, B160, UW160, xirodur® C160	I170	I180, I180–BL	xirodur® D180	xiros® ball bearings PEEK–cage	PP–PE–cage	PA–cage
Soap suds	+	+[1]	+	+	+[1]	+	+	x	+	+	+[1]	+	+	+	+	+	+[1]	+	x	+		+	+	+
Soda lye (aqueous), 10 %	+	–	+	+	–	o	x	x	+	–	o	+	+	–	–	–	o	+	x	x		+	x	+
Soda lye (aqueous), 50 %	o	o	x	+	o	o	x	x	x	x	x	x	+	o	o	x	o	x	+	x		+	+	–
Soda solution, 10 %	+	+[1]	+	+	+[1]	+	x	x	+	+	+[1]	x	+	x	+	+	+[1]	+	+	+	o	+	+	+
Sodium acetate (aqueous), 10 %	+	–	x	+	+[1]	+	+	x	+	o	+	x	+	o	+	o	+	+	+	+		n. s.	x	–
Sodium bisulphite (aqueous), 10 %	+	+[1]	–	+	+[1]	+	o	x	+	+	+[1]	x	+	x	+	+	+[1]	+	+	o		+	+	–
Sodium bromide (aqueous), 10 %	+	+[1]	x	+	+[1]	+	+	x	+	+	+[1]	x	+	+	+	+	+[1]	+	+	+		+	+	+
Sodium carbonate (aqueous), 21.5 %	+	+[1]	–	+	+[1]	+	+	x	+	+	+[1]	x	+	x	+	+	+	+	x	+		+	+	+
Sodium carbonate (aqueous), 50 %	+	+[1]	–	+	+[1]	+	+	x	+	+	+[1]	x	+	o	+	+	+	+	x	+		+	+	+
Sodium carbonate, 5 %	+	+[1]	–	+	+[1]	+	+	x	+	+	+[1]	x	+	x	+	+	+	+	+	+		+	+	+
Sodium chlorate (aqueous), 10 %	+	o	x	x	o	o	x	x	x	o	o	x	x	x	o	o	x	+	x	x		+	+	+
Sodium chloride, saturated solution	+	+[1]	x	+	+[1]	+	+	x	+	+	+[1]	x	+	+	+	+	+[1]	+	+	+		n. s.	+	o
Sodium dichromate (aqueous), 10 %	x	o	x	x	o	x	x	x	x	o	o	x	x	x	–	o	x	x	x	x		+	+	+
Sodium dodecyl benzene-sulfonate	+	+	x	x	+	+	x	x	x	+	x	x	x	x	x	x	x	+	x	x		n. s.	x	o
Sodium hypochlorite (aqueous), 10 %	–	–	x	+	–	–	o	x	o	o	o	x	x	o	o	o	o	+	+	o	o	n. s.	+	+
Sodium hypophosphite (aqueous), 10 %	+	+	x	x	+	+	x	x	x	+	x	x	x	x	x	x	x	x	x	x		+	+	–
Sodium nitrate (aqueous), 10 %	+	+[1]	–	+	+[1]	+	+	x	+	+	+[1]	x	+	+	+	+	+[1]	+	+	+	o	n. s.	x	+
Sodium nitrilotriacetate (aqueous), 10 %	+	+	x	x	+	+	x	x	x	+	x	x	x	x	x	x	x	x	x	x		+	+	+
Sodium oleate	+	+	x	x	+	+	x	x	x	+	x	x	x	x	x	x	x	x	x	x		n. s.	x	+
Sodium salts, 10 %	+	+	x	x	+	+	x	x	x	+	x	x	x	x	x	x	x	x	x	x		n. s.	x	+
Sodium sulfate, 10 %	+	+[1]	x	+	+[1]	+	+	x	+	+	+[1]	x	+	+	+	+	+[1]	+	+	+		n. s.	x	+
Sodium sulfite, neutral, 2 %	o	+[1]	x	+	+[1]	o	o	x	+	o	+[1]	x	+	x	o	o	o	+	+	+		+	+	+
Sodium thiosulfate, 10 %	+	+[1]	–	+	+[1]	+	+	x	+	+	+[1]	x	+	x	+	+	+[1]	x	x	+		+	+	+
Soldering fluid	–	–	x	x	–	–	x	x	x	–	–	x	x	x	–	–	–	x	x	x		n. s.	x	–
Styrol	o	+	x	+	+	o	–	x	+	–	+	x	+	–	–	–	+	o	x	–		x	–	o
Sulfuric acid, 10 %	–	–	+	o	–	–	o	o	–	–	–	+	+	–	–	–	–	+	+	o		–	o	–
Sulfuric acid, 2 %	–	–	+	o	–	–	o	+	o	–	–	+	+	–	–	–	–	+	x	o	–	+	+	+
Sulfuric acid, concentrated, 98 %	–	–	–	–	–	–	–	x	–	–	–	–	o	–	–	–	–	o	–	–		o	+	–
Sulphur	+	+	x	+	+	+	+	x	+	+	+	+	+	+	+	+	+	+	+	+		+	x	o
Tallow	+	+	x	+	+	+	+	x	+	+	+	+	+	+	+	+	+	+	x	+		+	o	+
Tar	+	+	+	+	+	+	o	x	+	+	+	x	+	x	+	+	+	+	x	o		+	+	+
Tetrahydrofuran (solvent)	o	+	–	+	+	o	–	x	+	+	+	+	+	x	o	+	o	o	–	–		+	+	+
Tetralin	+	+	x	+	+	+	x	x	+	–	+	x	+	x	–	–	+	–	–	–		+	o	+
Thionyl chloride	o	o	–	+	o	o	–	x	x	x	o	x	x	o	o	x	o	–	–	–		+	–	+
Toluol	o	+	o	+	+	o	–	o	+	–	+	+	+	–	–	–	+	o	–	–		+	+	+

Chemical resistance

Chemicals, iglidur®	A180, A181, J200, R, UW, xirodur® B180, xirodur® S180, xirodur® F180, xirodur® M180	A200, G, GLW, G V0, M250, N54, Q2, W300, C, L250, L100, AB, I3, xirodur® G220, igumid G	A350	A500, C500, UW500, X, X6, xirodur® A500, L500	A290, F, Q290, W360,	J, J2, J3, J4, JB,	J260	J350	H, H1, H2, H370, H4	F2, K, P, P210	Q	V400	Z	B	D	T220	PEP	A160, B160, UW160, xirodur® C160	I170	I180, I180–BL	xirodur® D180	xiros® ball bearings PEEK–cage	PP–PE–cage	PA–cage
Transformer oil	+	+	+	+	+	+	o	x	+	+	+	x	+	–	+	+	+	o	+	o		+	o	+
Trichlorethylene	–	–	–	+	–	–	–	–	o	–	–	x	+	–	–	–	–	o	–	–		x	+	–
Trichloroacetic acid (aqueous), 50 %	–	-	x	x	-	–	x	x	x	–	-	x	x	x	–	–	-	+	x	x		+	o	+
Trichloroethane	–	o	x	+	o	–	x	x	+	–	o	x	o	x	–	–	–	x	–	–		+	x	o
Triethanolamine, 90 %	+	+[1]	–	+	+[1]	+	+	x	+	+	+[1]	x	+	x	+	+	+[1]	x	+	+	o	+	o	–
Trisodium phosphate, 90 %	+	+	x	+	+	+	+	x	+	+	+	x	+	x	+	+	+	x	x	+		+	x	+
Uranium fluorides	–	–	x	x	–	–	x	x	x	–	–	x	x	x	–	–	–	x	x	x		+	x	+
Urea	+	+	x	+	+	+	+	x	+	+	+	x	+	o	+	+	+	+	+	+	o	x	+	+
Uric acid (aqueous), 10 %	+	+	+	x	+	+	x	x	x	+	x	x	x	x	x	x	x	+	x	x		+	+	+
Urine	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	x	+		x	x	–
Vaseline	o	o	+	+	+	+	o	x	+	o	+	x	+	o	o	+	+	+	+	o		+	+	+
Violet oil	+	+	x	+	+	+	x	x	+	x	+	x	+	x	+	x	+	x	x	x		+	+	o
Wash machine cleaner (phosphoric and nitric acids)	+	o	x	+	o	–	x	x	+	+	o	x	+	o	–	+	–	+	x	x		+	o	+
Water glass (sodium silicate)	+	+[1]	x	+	+[1]	+	+	x	+	+	+[1]	x	+	+	+	+	+[1]	+	+	+		+	+	–
Water vapour	x	–	o	+	–	x	o	x	+	–	o	o	o	–	x	–	x	+	x	o		+	+	o
Wax, melted	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	o	+	+		+	x	+
White spirit	+	+	x	+	+	+	o	x	+	+	+	x	+	x	+	+	+	x	x	o		+	+	o
Wine acid	o	o	+	+	o	+	+	x	+	x	+[1]	x	+	o	o	x	+[1]	+	+	+		+	+	–
Xylol	o	o	+	+	+	o	–	x	+	–	+	x	+	o	–	–	+	–	–	–		+	x	+
Zinc chloride (aqueous), 10 %	–	–	x	+	+	–	–	x	+	–	o	x	+	–	–	x	–	+	+	–		+	–	o
Zinc oxide	+	+	x	+	+	+	+	x	+	+	+	+	+	+	+	+	+	x	+	+		+	+	o
Zinc sulfate (aqueous), 10 %	+	+[1]	x	+	+[1]	+	+	x	+	+	+[1]	x	+	+	+	+	+[1]	+	+	+		+	x	+

Resistance classification: + resistant; o conditionally resistant; – not resistant; x no data available

[1] The bearings are not chemically attacked by these substances. However, there may be a dimensional change due to moisture absorption.

The data was determined using laboratory specimens or based on comparisons with similar chemicals. Therefore, this data can only act as a reference. 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. The data is based on our current knowledge. Future discoveries may lead to changes in the classification of the chemical resistance.

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. water 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. permissible 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 volume resistance	**Ωcm**	$> 10^{13}$	DIN IEC 93
Surface resistance	**Ω**	$> 10^{12}$	DIN 53482

iglidur® E7

General properties	Unit	iglidur® E7	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. water absorption	**% weight**	0.1	
Mechanical properties			
Flexural modulus	**MPa**	1,477	DIN 53457
Flexural strength at +20°C	**MPa**	22	DIN 53452
Max. permissible surface pressure (+20 °C)	**MPa**	18	
Shore D hardness		61	DIN 53505
Physical and thermal properties			
Max. long-term application temperature	**°C**	+70	
Max. short-term application temperature	**°C**	+90	
Min. application temperature	**°C**	–50	
Electrical properties			
Surface resistance	**Ω**	$> 10^{9}$	DIN 53482

igumid G

General properties	Unit	igumid G	Testing method
Density	**g/cm³**	1.37	
Colour		black	
Max. moisture absorption at +23 °C/50 % r.h.	**% weight**	1.4	DIN 53495
Max. water 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	
Electrical properties			
Specific volume resistance	**Ωcm**	$> 10^{11}$	DIN IEC 93
Surface resistance	**Ω**	$> 10^{11}$	DIN 53482

iguton G

General properties	Unit	iguton G	Testing method
Density	**g/cm³**	1.69	
Colour		brown	
Max. moisture absorption at +23 °C/50 % r.h.	**% weight**	0.1	DIN 53495
Max. water absorption	**% weight**	0.2	
Mechanical properties			
Flexural modulus	**MPa**	10,200	DIN 53457
Flexural strength at +20°C	**MPa**	140	DIN 53452
Max. permissible 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	
Min. application temperature	**°C**	–40	
Electrical properties			
Specific volume 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/50 % r.h.	% weight	0.2	DIN 53495
Max. water absorption	% weight	1.1	
Mechanical properties			
Flexural modulus	MPa	1,900	DIN 53457
Flexural strength at +20°C	MPa	68	DIN 53452
Max. permissible 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 volume 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/50 % r.h.	% weight	1.4	0.9	DIN 53495
Max. water 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. permissible 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 volume resistance	Ωcm	~ 10^{11}	10^{4}–10^{9}	DIN IEC 93
Surface resistance	Ω	~ 10^{11}	10^{4}–10^{9}	DIN 53482

Material properties table

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. water absorption	% weight	5.2	
Mechanical properties			
Flexural modulus	MPa	5,500	DIN 53457
Flexural strength at +20°C	MPa	150	DIN 53452
Max. permissible 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	
Min. application temperature	°C	–40	
Electrical properties			
Specific volume resistance	Ωcm	> 10^{13}	DIN IEC 93
Surface resistance	Ω	> 10^{11}	DIN 53482

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/50 % r.h.	% weight	2.0	1.4	DIN 53495
Max. water 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. permissible 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 volume resistance	Ωcm	> 10^{11}	> 10^{3}	DIN IEC 93
Surface resistance	Ω	> 10^{11}	> 10^{9}	DIN 53482

[1)] Without additional load; no gliding movement; relaxation not excluded.

iglidur® | Analysis

Date:	Phone: +49 2203 9649 145 Fax: +49 2203 9649-334
From: Phone: Fax:	To: **igus® GmbH** Technical Sales iglidur® plain bearings P.O.Box 90 61 23 51127 Cologne (Porz-Lind)

Please enter as much information as possible. 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): .....
Running speed (m/s): .....

Type of motion:

- ☐ Rotating with ..... r/min
- ☐ oscillating with ..... degrees
- ☐ linear with ..... mm stroke

Speed (1/min): .....

Lubrication:

- ☐ Dry
- ☐ Oil
- ☐ Grease
- ☐ Water

Ambient temperature (°C) .....
Surrounding media (e.g. acids, water, alkalines etc.): .....
.....
Shaft material (e.g. steel, plastic): .....
.....
Average roughness Ra: .....
Housing material: .....
Intermittent rating: .....
Run time (s): .....
Down time (s): .....
Target service life: .....

What type of bearing are you currently using?

- ☐ iglidur®
- ☐ Wrapped bushing
- ☐ Sinter
- ☐ Roller bearing
- ☐ Other

Which problem can iglidur® solve for you?

- ☐ Dry running
- ☐ Abrasion resistance
- ☐ Edge pressure
- ☐ Vibration dampening
- ☐ Chemicals
- ☐ Temperatures
- ☐ Dirt, dust, ...
- ☐ Cost reduction

Other load characteristics: .....
.....

Sketch:

All calculations easily and quickly also online with our expert system
▶ www.igus.eu/drylin-expert

igubal® | Analysis

Date:	Phone: +49 2203 9649 145 Fax: +49 2203 9649-334
From: Phone: Fax:	To: **igus® GmbH** Technical Sales igubal® spherical bearings P.O.Box 90 61 23 51127 Cologne (Porz-Lind)

Please enter as much information as possible. 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 ends, Type B — ☐ (Female thread)
Pillow block bearings — ☐
Spherical bearings — ☐
Flange bearing — ☐ 2-hole, ☐ 4-hole
Clevis joint — ☐ With pin and clip, ☐ With spring-loaded pin
Dimensional series — ☐ E, ☐ K
Thread — ☐ Standard thread, ☐ Fine thread

Speed (m/s; 1/min): .....

Type of movements:

- ☐ Rotating
- ☐ Oscillating with ..... degrees
- ☐ Linear

Lubrication:

- ☐ Dry
- ☐ Oil
- ☐ Grease
- ☐ Water

Shaft diameter (mm/inch): .....
.....
Bearing load (N): .....
Ambient temperature (°C): .....
Shaft material (e.g. steel, 303 stainless steel, plastic): .....
.....

Average roughness Ra: .....
Target service life (hrs): .....
Current bearing type: .....
.....
Surrounding media (e.g. acids, water, alkalines): .....
.....

Which problem can igubal® solve for you?

- ☐ Dry running
- ☐ Corrosion
- ☐ Vibration damping
- ☐ Cost reduction
- ☐ Chemicals
- ☐ Dirt
- ☐ Dust
- ☐ Weight

Other load characteristics: .....
.....

Sketch:

All calculations easily and quickly also online with our expert system
▶ www.igus.eu/drylin-expert

Date:	Phone: +49 2203 9649 145 Fax: +49 2203 9649-334
From: Phone: Fax:	To: **igus® GmbH** Technical Sales drylin® linear technology P.O.Box 90 61 23 51127 Cologne (Porz-Lind)

Application: .....

.....

Current guide system: .....

Orientation of system (1 = horizontal, 2 = lateral, 3 = vertical): .....

Number of bearings per rail/shaft: ..... Number of rails/shafts: .....

Type of drive: ..... Drive force [N]: .....

Average speed: ..... Maximum speed: .....

Length of stroke: ..... Expected service life: .....

Operating time: .....

Ambient temperature: ..... Maximum temperature: .....

Surrounding medium: ..... Lubrication: .....

Static load: ..... Dynamic load: .....

For the following data, the drawings on next pages will help you!

Distance between bearings/carriages on a rail/shaft (wx): .....

Distance between rails/shafts (b): .....

Distance to centre of gravity in x-direction (Sx): .....

Distance to centre of gravity in y-direction (Sy): .....

Distance to centre of gravity in z-direction (Sz): .....

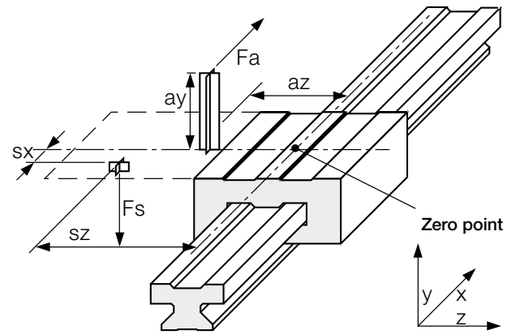
Distance to the drive force in y-direction (ay): .....

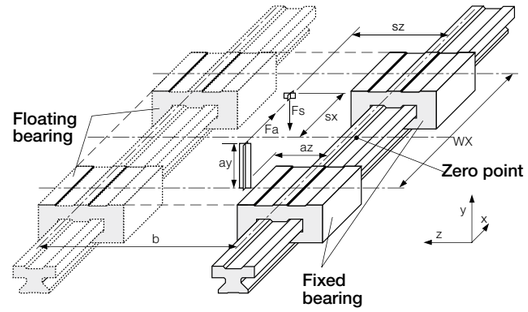
Distance to the drive force in z-direction (az): .....

Please enter all the data you know and if possible make sketch.

All calculations easily and quickly also online with our expert system
▶ www.igus.eu/drylin-expert

Horizontal orientation





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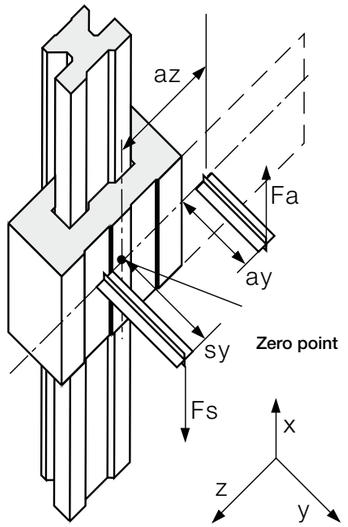
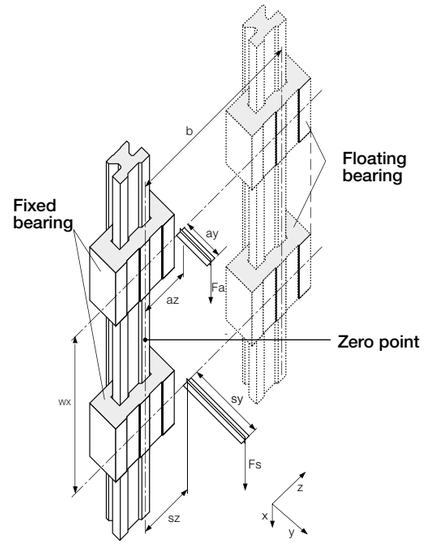
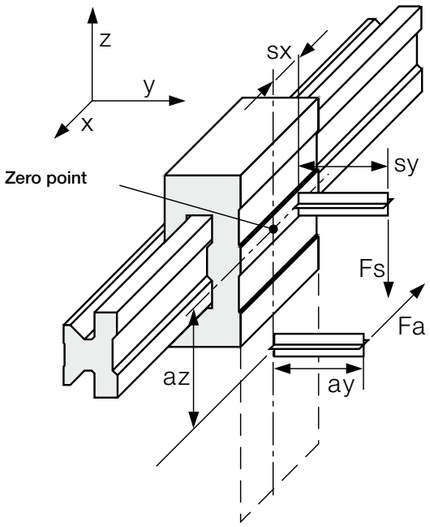
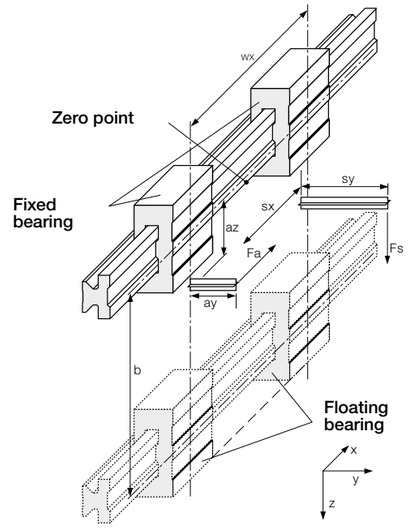




Lateral orientation





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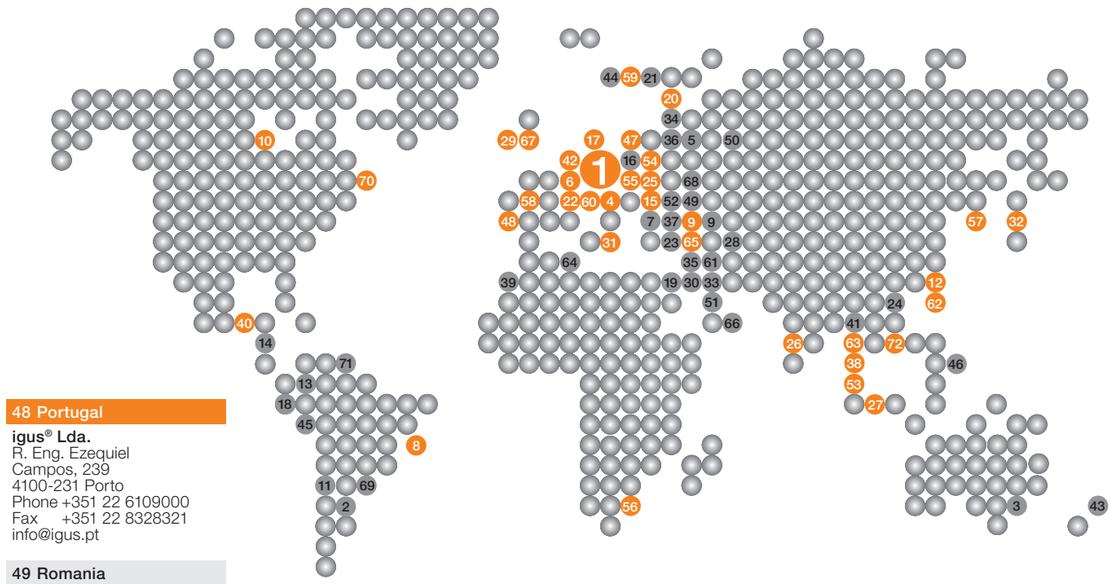

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